



REPORT

QUARTERLY MONITORING REPORT FIRST QUARTER 2025 RESERVE SILICA RECLAMATION SITE

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1.0 INTRODUCTION

This report, prepared by WSP USA Inc. (WSP) for Holcim (US) Inc., presents the results of surface water and groundwater monitoring conducted at the Reserve Silica Reclamation Site (Site) during the first quarter of 2025. The Site is located at 26000 Black Diamond Ravensdale Road in Ravensdale, Washington. Figure 1 shows the Site location.

A Model Toxics Control Act (MTCA) Remedial Investigation/Feasibility Study (RI/FS) is being conducted at the Site under Agreed Order (AO) No. DE 16052. An RI Work Plan (Work Plan), supporting Sampling and Analysis Plan (SAP), and Quality Assurance Project Plan (QAPP) (Golder 2021) describe the RI monitoring requirements and sampling procedures. Groundwater and surface water monitoring at the Site is currently being conducted in accordance with the Work Plan and supporting documents. Historical groundwater and surface water monitoring activities at the Site were conducted under the requirements of Post-Closure Care and Maintenance Permits issued by Public Health – Seattle and King County (Public Health). The first quarter monitoring event was conducted in March 2025.

2.0 BACKGROUND

2.1 Site Background

The following briefly describes the historical mining and reclamation activities that occurred at the Site and includes a discussion of the quarterly monitoring program.

2.1.1 Lower Disposal Area Background

The Lower Disposal Area (LDA) is a former open pit sand mine that was reclaimed by placing cement kiln dust (CKD) and other material into the mine excavation from June 1979 to October 1982. The LDA was filled with approximately 175,000 tons of CKD. Records indicate that a cap consisting of clay and up to 7 feet of overburden material from sand mining operations was placed over the CKD.

Historically, high pH seepage surfaced along the slope west of the LDA. The outbreaks are primarily located along the northern half of the western boundary of the LDA and records as early as 1987 indicate a leachate collection system was implemented for the LDA seepage. The leachate drained through low-lying, marshy areas and commingled with stormwater before flowing to the three Infiltration Ponds (the Infiltration Ponds as shown in Figure 2) near the Black Diamond Ravensdale Road (ARCADIS 2004). In 2013, a new seepage collection ditch was installed to intercept and collect the seepage (see Section 2.2.3 of this report), which then flowed inside a pipe to the Infiltration Ponds. In 2018, a water treatment system was constructed, and the high pH water captured by the collection ditch is currently piped to the on-site treatment area for pH neutralization and dissolved metals removal. The treated water discharges from the treatment system to the Infiltration Ponds.

2.1.2 Dale Strip Pit Background

The Dale Strip Pit (DSP) was created to mine the Dale No. 4 coal seam from the surface starting in 1946. Prior to 1946, the coal seam was worked from an underground mine. The underground mining chutes were driven upward to the surface to provide ventilation and allow the transportation of timbers into the mine. Construction of the mine allowed groundwater to drain by gravity to the mine portal (Portal). The Portal has since collapsed, and now a pipe in the collapsed Portal allows water to continuously drain from the mine under an Ecology Sand and Gravel General Permit (Ecology 2005) with monitoring as described below. The Portal is located north of the LDA on the east side of the main haul road.

The DSP was approximately 1,800 feet long (north to south), an average of 140 feet wide (east to west), and an average of 40 feet deep. It was filled in the 1970s and 1980s with approximately 250,000 cubic yards of material including CKD, borrow, and other materials pursuant to a permit from Public Health. It is estimated that about one third of the DSP was filled with CKD (ARCADIS 2004).

2.2 Interim Remedial Actions

2.2.1 LDA Cover Upgrade

During September and October 2007, the existing soil cover on the LDA was regraded to provide positive drainage at all locations, reduce overly steep slope areas, and place a minimum 2-foot-thick, clean soil cover over the entire area, including locations where CKD was exposed at the surface. The construction activities are described in the Construction Summary Report (Golder 2008a).

2.2.2 LDA Seep Collection System Test Trenches

During September and October 2008, test trenches for collecting high pH seepage were constructed (Golder 2008b). The purpose of this test system was to evaluate the feasibility of using a more extensive trench system to collect high pH seepage that would otherwise discharge at the ground surface adjacent to the LDA. Details of the test trench construction are presented in the Construction Summary Report (Golder 2009a).

Between October 2008 and September 2009, Golder monitored seepage flow rates from each of the two test trenches and the pipeline discharge once per month, on average. A summary of activities and results of this monitoring program is presented in the flow monitoring report (Golder 2009b).

2.2.3 LDA Seep Collection Ditch and Seepage Treatment System

In February 2013, a surface water collection ditch and concrete catch basin were constructed on the bench below the main access road on the west side of the LDA. This system was installed to capture leachate seeps emerging from the bank along the east side of the bench (west of the main access road) and direct them into the existing pipeline that carries flow from the test trenches to the Infiltration Ponds. In April 2015, the 4-inch-diameter pipeline from the catch basin to the Infiltration Ponds, approximately 1,000 feet in length, was replaced with a 12-inch-diameter pipeline to alleviate plugging issues.

In December 2017, the seepage collection trench was further extended approximately 100 feet to the north to collect additional seepage that was not previously captured. Seepage water was then redirected into a seepage treatment system, which completed construction and started initial operations on September 28, 2018. The treatment system uses carbon dioxide (CO₂) sparging to neutralize pH levels and arsenic and lead adsorption using an iron-based adsorption media.

During the initial year of operation, the system operated intermittently, with system shut-downs occurring as various upgrades and modifications were completed to increase the long-term operational efficiency of the treatment system. The system began continuously operating in June 2019, with only minor shutdowns occurring to complete routine maintenance.

2.2.4 LDA Interceptor Trench

In September 2013, a gravel-filled interceptor trench that included a perforated drainpipe and vertical downgradient liner was installed south of the LDA to intercept clean groundwater moving in a northerly direction prior to encountering the CDK in the LDA.

2.2.5 DSP Cover Upgrade

Cover upgrade activities began at the DSP in November 2010 and were completed in July 2011. Cover upgrade activities included stripping surficial vegetation and topsoil, regrading the existing surface to establish positive drainage, placing low permeability soil to provide a minimum 2-foot-thick layer at all locations, filling the existing ditch along the northeast side of the DSP, replacing topsoil, and revegetating the cover surface.

3.0 MONITORING PROGRAM

The purpose of the quarterly monitoring activities is to assess the groundwater and surface water conditions with respect to potential impact from the CKD placed in the LDA and the DSP. Prior to the start of the RI, quarterly monitoring and reporting activities were conducted under requirements of Post-Closure Care and Maintenance Permits issued by Public Health. The current RI groundwater and surface water requirements are detailed within the Work Plan (Golder 2021).

3.1 LDA Sampling Locations

The LDA groundwater and surface water sampling locations are shown in Figure 2. Monitoring well construction details are provided in Table 1. Shallow monitoring wells were installed near the LDA in July 2005 and are monitored to assess the shallow groundwater conditions with respect to potential impact from the CKD. Four of the wells (MW-1A, MW-2A, MW-5A, and MW-6A) are located around the Infiltration Ponds. MW-3A is located west of the high pH seepage area. MW-4A, a background well, is located south of, and upgradient with respect to groundwater flow and surface water drainage of the high pH seepage area. The Still Well is a 2-inch-diameter flush-mount well located within the high pH seepage zone west of the LDA.

As part of the RI, during September 2021, the following groundwater monitoring wells were also installed to evaluate groundwater quality in and downgradient of the LDA:

- MW-7A and MW-8A were installed west and southwest of the Infiltration Ponds to evaluate groundwater gradients and groundwater quality.
- MW-9A and MW-10A are located west of the high pH seepage area and the South Pond, near the western property boundary to evaluate groundwater gradients and groundwater quality.

The LDA surface water sampling locations evaluate the high pH seepage that occurs west of the LDA:

- The South Pond is a closed depression located west of the high pH seepage area.
- The Weir is located north of the access road to MW-3A immediately below the discharge point from the wetlands. If no flow is observed at the Weir, the constructed wetlands upstream are the alternative sampling location.
- The Infiltration Ponds are located at the north end of the Site near Ravensdale-Black Diamond Road and receive treated water from the on-site seepage treatment system. The surface sample is collected from the southwest area of the Infiltration Ponds.

In 2006, bedrock monitoring wells were installed along the west side of the main access road, west of the LDA. The bedrock wells were installed to assess groundwater conditions in the bedrock immediately downgradient of the LDA. MWB-1LDA is located near the northern tip of the LDA, MWB-2LDA is located near the center of the LDA, and MWB-3 LDA is located near the southern end of the LDA. In accordance with the Work Plan, field

parameters are monitored in the LDA bedrock monitoring wells semi-annually, and the wells are sampled annually.

3.2 DSP Sampling Locations

The DSP groundwater monitoring locations are shown in Figure 2. The DSP bedrock groundwater monitoring program includes four wells in the DSP area (MWB-1SDSP, MWB-1DDSP, MWB-5DSP, and MWB-6DSP), which evaluate groundwater quality beneath, upgradient, and downgradient of the DSP. Field parameters of groundwater discharging from the Portal are monitored semi-annually, and the Portal is sampled annually. The Portal was originally constructed to drain water from the Dale Strip Coal mine. In accordance with the Work Plan, field parameters are monitored in the DSP bedrock monitoring wells semi-annually, and the wells are sampled annually. There are two additional monitoring wells (MWB-2DSP and MWB-4SDSP) near the DSP area that are monitored semi-annually for water levels and field parameters only.

3.3 LDA Interceptor Trench

The purpose of the Interceptor Trench is to intercept clean shallow groundwater from the southern and southeast end of the LDA. The interceptor trench is approximately 220 feet and 20 feet, it is filled with gravel with a perforated drainage pipe in the bottom that discharges from the hillside to the south of the LDA. Monitoring is performed at the Interceptor Trench outfall for flow, pH, turbidity, and total dissolved solids. The purpose of the monitoring is to ensure that the trench is not collecting impacted groundwater.

4.0 SAMPLING ACTIVITIES

The following section summarizes the activities associated with the current monitoring event.

4.1 Procedures

4.1.1 Water Level and Field Parameter Measurements

Depth to water measurements were collected from all monitoring wells at the Site during the period of March 24 to 27, 2025. Table 1 presents depth to water measurements and elevations. Groundwater elevation contour map is provided in Figure 3A-C.

Field parameters for groundwater and surface water were measured as part of the sampling activities described in the following sections. These measurements were performed with the following equipment:

- YSI ProDSS multimeter with pH, oxidation-reduction potential (ORP), conductivity, dissolved oxygen (DO), and temperature probes
- Hach 2100Q Turbidimeter

4.1.2 Laboratory Analysis

Laboratory analyses were performed on samples collected from the various locations described in the following sections. Although the analytic parameters varied between the types of samples, the following elements are common to all the sampling and analysis activities:

- The collected samples were transported to the laboratory within appropriate sample hold times following chain-of-custody protocols.
- The testing was performed by Analytical Resources, Inc. (ARI) of Tukwila, Washington.

- All samples were tested for the following parameters using the methods indicated:

Antimony	EPA Method 200.8
Arsenic	EPA Method 200.8
Lead	EPA Method 200.8
Potassium	EPA Method 6010D
Vanadium	EPA Method 200.8
Total Dissolved Solids (TDS)	SM 2540 C

- Interceptor Trench samples are tested for the following parameters using the method indicated:

pH	Field Measurement
TDS	SM 2540 C
Turbidity	Field Measurement

- Summaries of historical analytic data for the various sampling locations are presented in Appendix A. The data validation report and the laboratory analytical data packages are provided in Appendix C. Sampling Integrity Data Sheets (SIDS) are provided in Appendix D.

4.1.3 LDA Groundwater Sampling

During the period of March 24, 26, and 27, 2025, WSP sampled groundwater from shallow groundwater monitoring wells outside of the LDA (MW-1A, MW-2A, MW-3A, MW-4A, MW-5A, MW-6A, MW-7A, MW-8A, MW-9A, MW-10A, and Still Well) and bedrock wells (MWB-1LDA, MWB-2LDA, and MWB-3LDA).

The following methods and procedures were used to collect groundwater samples:

- Depth to groundwater was measured in the wells prior to purging and sampling.
- Using a dedicated bladder pump or dedicated tubing connected to a peristaltic pump (if groundwater elevation allowed), water from wells MW-1A, MW-2A, MW-3A, MW-4A, MW-5A, MW-6A, MW-7A, MW-8A, MW-9A, and MW-10A was purged at a rate between approximately 100 and 500 milliliters (mL) per minute.
- Field parameters of pH, conductivity, temperature, DO, ORP, and turbidity were measured and recorded during purging at approximately five-minute intervals until parameters were stable.
- Once the field parameters stabilized, the purging phase of the process was concluded. Groundwater samples were then collected directly from the dedicated sample tubing.
- Grab water sample was collected from the Still Well using dedicated sample tubing connected to a peristaltic pump. Field parameters of pH, conductivity, temperature, DO, ORP, and turbidity were measured and recorded at the time of sample collection.
- For quality control purposes, a duplicate sample was collected from MW-2A (labeled as MW-45A).
- Laboratory-provided containers were used to collect the samples. For each groundwater sample, one 500-mL bottle preserved with nitric acid and one 1-Liter (L) unpreserved bottle were collected. The samples were then labeled and placed in a cooler with ice.

- The pH of the water in some of the wells is occasionally greater than 10. Sampling protocol requires that the preserved samples for dissolved metals analysis have a pH of less than 2. To meet this requirement, the pH of the LDA groundwater samples collected for metals analysis was checked at the time of sample receipt at the laboratory and additional nitric acid was added until the pH was less than 2 if necessary.

All groundwater and quality control samples were analyzed for the parameters listed in Section 4.1.2. Field parameters and analytical data are presented in Table 2.

4.1.4 LDA Surface Water Sampling

On March 24, 2025, WSP collected samples at the South Pond, and Weir surface water monitoring locations. On March 26, 2025, WSP collected a sample from the Infiltration Ponds surface water monitoring location. The following methods and procedures were used to collect surface water samples:

- Field parameters of pH, conductivity, temperature, DO, ORP, and turbidity were measured and recorded. These parameters were measured and recorded at each of the surface water locations at the time of sample collection.
- Grab surface water samples were collected using dedicated sample tubing connected to a peristaltic pump.
- For quality control purposes, a duplicate sample was collected from the Infiltration Ponds (labeled as MW-35A).
- Laboratory-provided containers were used to collect the surface water samples. For each surface water sample, one 500-mL bottle preserved with nitric acid and one unpreserved 1-L bottle were collected. The samples were labeled and placed in a cooler with ice.
- Sampling protocol requires that the preserved samples for dissolved metals analysis have a pH of less than 2. To meet this requirement, the pH of the LDA surface water samples collected for metals analysis was checked at the time of sample receipt at the laboratory and additional nitric acid was added until the pH was less than 2 if necessary.

All surface water and quality control samples were analyzed for the parameters listed in Section 4.1.2. Field parameters and analytical data are presented in Table 2.

4.1.5 DSP Groundwater Sampling

On March 25 to 26, 2025, WSP sampled groundwater from the DSP groundwater monitoring wells (MWB-1SDSP, MWB-1DDSP, MWB-5DSP, and MWB-6DSP), and the Portal. The following methods and procedures were used in collecting the groundwater samples:

- Depth to groundwater was measured in the wells prior to purging and sampling.
- Using the dedicated discharge tubing connected to the dedicated bladder pump, water from wells MWB-1DDSP, MWB-1SDSP, MWB-5DSP, and MWB-6DSP was purged at a rate between approximately 100 and 500 mL per minute.
- Field parameters of pH, conductivity, temperature, DO, ORP, and turbidity were measured and recorded during purging at approximately five-minute intervals until parameters were stable.
- Once the field parameters stabilized, the purging phase of the process was concluded. Groundwater samples were then collected directly from the dedicated sample tubing.

- Grab water samples were collected from the Portal using dedicated sample tubing connected to a peristaltic pump. The water quality parameters were measured and recorded at the Portal at the time of sample collection.
- For quality control purposes, a duplicate sample was collected from MWB-6DSP (labeled as MW-55A).
- Laboratory-provided containers were used to collect the samples. For each groundwater sample, two 500-mL bottles preserved with nitric acid and one 1-L unpreserved bottle were collected. The samples were labeled and placed in a cooler with ice.

All groundwater and quality control samples were analyzed for the parameters listed in Section 4.1.2. Field parameters and analytical data are presented in Table 2.

In addition, water levels and field parameters were measured in DSP monitoring wells 2DSP and 4SDSP.

4.1.6 LDA Interceptor Trench Sampling

On March 24, 2025, WSP sampled groundwater from the Interceptor Trench outfall. The following methods and procedures were used to collect the sample:

- Field pH, turbidity, and flow rate at the Interceptor Trench outfall were measured and recorded.
- Grab water samples were collected from the Interceptor Trench by placing the sample bottles under the flow of water.
- Laboratory-provided containers were used to collect the sample for TDS lab analysis. One 1-L unpreserved bottle was collected. The sample was then labeled and placed in a cooler with ice.

The Interceptor Trench sample was analyzed for the parameters listed in Section 4.1.2. Field parameters and analytical data are presented in Table 3.

5.0 RESULTS

Analytical results from the March 2025 monitoring round are presented in Table 2. Table 3 presents the current and historical summary of the Interceptor Trench monitoring data. Historical summary tables of analytical results at each sampling location are provided in Appendix A and concentrations trend graphs for key parameters are provided in Appendix B. All analytical data were subject to a data validation review. Data validation was conducted in accordance with the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (EPA 2020), the SAP, and the QAPP (Golder 2021). Data reporting qualifiers are included with the analytical results in Appendix A. The data validation review found that all the data was considered valid and usable. The data validation and raw analytical data packages provided by the laboratory are provided in Appendix C. Data collected during this sampling round will be combined with all RI data to complete the evaluations and requirements of the RI/FS.

6.0 OPERATIONS AND MAINTENANCE OF THE LEACHATE TREATMENT SYSTEM

The leachate treatment system began start-up operations in September 2018. The system operated intermittently from December 2018 to May 2019 as the system upgrades were completed during that time, which included various upgrades and modifications to improve the system's long-term operating efficiency. The system began continuous operations in June 2019, with minor shutdowns occurring to complete routine maintenance and continued minor modifications to improve long-term operating efficiency.

Ecology's Water Quality Program has indicated that discharges from the treatment system to the Infiltration Ponds should be regulated under an individual State Waste Discharge Permit (SWDP). Reserve Silica submitted an application to obtain a SWDP in December 2024. State Waste Discharge Permit No. ST0501373 was issued as a temporary permit effective February 14, 2025. Ecology anticipates finalizing the State Waste Discharge Permit in the summer of 2025.

The treatment system includes a 4,200-gallon mixing tank (steel rectangular box-shaped tank) that receives the influent water coming from the seepage collection ditch and piping. Water from the tank constantly flows through the carbon dioxide (CO₂) sparge unit, which continuously monitors the water pH and activates CO₂ sparging when the water pH exceeds 8.5. CO₂ sparging continues until the pH reduces to 8. The sparged water is pumped back into the mixing tank to maintain the neutralized water within the tank. The influent flow, pumping from the tank and through the CO₂ sparge unit, and discharge from the sparge unit back into the tank are all specifically located in different areas of the mixing tank to provide constant circulation effectively providing pH neutralization throughout the tank. The mixing tank contains a float switch-activated discharge pump that activates when the water reaches a set height within the tank and turns the pump off when the water is lowered to the desired height. Neutralized water pumped from the tank is discharged through filters and an iron-based adsorption media to remove arsenic, prior to discharge of the water to the Infiltration Ponds.

The continuous pH monitoring system is connected to telemetry that sends pH readings and alerts to WSP engineer's cell phones if readings outside of the set ranges occur allowing for response and troubleshooting. Routine inspections of the treatment system are conducted approximately once every two weeks. The inspections include routine maintenance activities such as cleaning scale off pump parts, hoses, and probes to sustain continued operations of the treatment system. The treatment system has been effective in reducing the pH of the seepage water to below 8 standard units and reducing metals concentrations before discharge to the Infiltration Ponds. Typical maintenance downtime of less than 1 day occasionally occurs. Optimization of the metals adsorption system continues, as calcium carbonate clogging of the adsorption system frequently arises. Table 4 provides the 2025 first quarter laboratory analytical data for samples collected: before the pH treatment tank (influent), pre-iron-based adsorption media, and post-iron-based adsorption media. The laboratory analytical report is provided in Appendix C.

The treatment system has been effective in reducing the impacts to groundwater in the immediate vicinity of the Infiltration Ponds that were historically observed in groundwater monitoring wells MW-5A and MW-6A. Additional modifications and improvements are anticipated to occur to the treatment system during the MTCA cleanup process to improve system performance and efficiency and achieve Site-specific cleanup standards that are protective of human health and the environment.

7.0 LIMITATIONS

WSP prepared this report for the exclusive use of Holcim (US) Inc. and their authorized agents. It may also be submitted to regulatory agencies.

Within the limitations of scope, schedule, and budget, our services have been executed in accordance with generally accepted environmental science practices in this area at the time this report was prepared. No warranty or other conditions, express or implied, should be understood. This report was prepared, in part, based on previous investigations and data collected by others. WSP USA Inc. is not responsible for any data that were inaccurately reported by others and reproduced here.

8.0 REFERENCES

- ARCADIS (U.S.) Inc. (ARCADIS). 2004. Lower Disposal Area and Dale Strip Pit Conceptual Design Plan, Reserve Silica Property, 28131 Black Diamond-Ravensdale Road, Ravensdale, Washington. April 28.
- Golder Associates Inc. (Golder). 2008a. Construction Summary Report, Lower Disposal Area Cover Upgrade, Reserve Silica Site, Reserve Silica Site, Ravensdale, Washington, July 25.
- Golder. 2008b. Draft Workplan for Seep Collection Test Trenches, Lower Disposal Area, Reserve Silica Site, Ravensdale, Washington. August 4.
- Golder. 2009a. Construction Summary Report, Seep Collection System Test Trenches, Reserve Silica Site, Ravensdale, Washington. March 6.
- Golder. 2009b. Flow Monitoring Seep Collection System Test Trenches, Reserve Silica Site, Lower Disposal Area, Ravensdale, Washington. December.
- Golder. 2021. Remedial Investigation/Feasibility Study Work Plan, Reserve Silica Reclamation Site, Ravensdale, Washington. July 22.
- Washington State Department of Ecology (Ecology). 2005. Sand and Gravel General Permit. Limit for Discharge to Ground Water. January 5.
- USEPA (EPA). 2020. National Functional Guidelines for Inorganic Superfund Data Review. Office of Superfund Remediation and Technology Innovation. OLEM 9240.1-66, EPA 542-R-20-006. November.

TABLES

Table 1: First Quarter 2025 Water Level Measurements

Sample Area	Sample Location ID	Date Measured	Well Data				Water Levels		
			Total Well Depth (feet bgs)	Screened Interval (feet bgs)	Bentonite Seal (feet bgs)	Casing Diameter (inches)	TOC Elevation (feet NAVD88)	Depth to Water (feet btoc)	Groundwater Elevation (feet NAVD88)
LDA - Shallow Groundwater	MW-1A	3/26/2025	44	28-43	2-26	2	613.44	25.00	588.44
	MW-2A	3/26/2025	40	25-40	2-23	2	607.21	18.86	588.35
	MW-3A	3/24/2025	20	4-20	2-4	2	689.11	4.87	684.24
	MW-4A	3/24/2025	20	5-20	2-4	2	705.45	3.42	702.03
	MW-5A	3/26/2025	40	25-40	2-23	2	611.23	22.77	588.46
	MW-6A	3/26/2025	39	24-39	2-22	2	608.95	20.57	588.38
	MW-7A	3/27/2025	20	10-20	2-7	2	592.69	4.19	588.50
	MW-8A	3/27/2025	26	16-26	2-13	2	601.49	13.05	588.44
	MW-9A	3/24/2025	13	8-13	2-5	2	697.29	2.54	694.75
	MW-10A	3/24/2025	29	9-29	2-6	2	698.02	5.14	692.88
LDA - Bedrock Groundwater	MWB-1LDA	3/26/2025	135	115-135	2-105	2	704.68	21.47	683.21
	MWB-2LDA	3/27/2025	125	110-125	2-103	2	741.66	34.36	707.30
	MWB-3LDA	3/27/2025	145	125-145	2-115	2	744.19	0.70	743.49
DSP - Bedrock Groundwater	MWB-1SDSP	3/25/2025	160	150-160	138-148	2	936.29	32.84	903.45
	MWB-1DDSP	3/25/2025	265	255-265	243-253	2	935.37	46.73	888.64
	MWB-2DSP	3/26/2025	258	238-258	-	2	934.82	184.00	750.82
	MWB-4SDSP	3/26/2025	43	32-42.8	-	2	932.41	15.10	917.31
	MWB-5DSP	3/25/2025	83	73-83	2-61	2	935.05	17.73	906.73
	MWB-6DSP	3/25/2025	195	120-195	2-108	2	918.67	17.40	904.51

Notes:

- Not measured or not available
 feet bgs Feet below ground surface
 feet NAVD88 Feet in NAVD88 datum
 TOC Top of casing

Table 2: First Quarter 2025 Field Parameters and Analytical Data

Sample Area	Sample Location ID	Date Sampled	Field Parameters									Gen. Chem.	Metals (ug/L)				
			TOC Elevation (feet NAVD88)	Depth to Water (feet btoc)*	Groundwater Elevation (feet NAVD88)	Temperature (°C)	Conductivity (umhos/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (Rel mV)	Turbidity (NTU)	pH (standard units)	Total Dissolved Solids (mg/L)	Antimony, Total	Arsenic, Total	Potassium, Total	Lead, Total	Vanadium, Total
Preliminary Cleanup Level ^a			-	-	-	-	-	-	-	-	6.5-8.5	-	5.6	8	-	2.5	80
LDA - Shallow Groundwater	MW-1A	3/26/2025	613.44	25.00	588.44	70.2	675.8	9.71	130.9	2.35	6.70	387	1.1	1.04	23500	0.2 U	0.634
	MW-2A	3/26/2025	607.21	18.86	588.35	9.6	713.0	13.91	151.9	4.80	7.00	434	2.31	1.45	88700	0.2 U	0.996
	MW-2A Duplicate (MW-45A)	3/26/2025	-	-	-	9.6	713.0	13.91	151.9	4.80	7.00	429	2.35	1.47	85600	0.2 U	1.02
	MW-3A	3/24/2025	689.11	4.87	684.24	9.1	1104.0	0.83	181.0	9.52	6.66	712	1.42	3.37	104000	0.2 U	0.418
	MW-4A	3/24/2025	705.45	3.42	702.03	9.3	558.7	2.28	91.0	6.00	6.39	324	0.3 U	0.3 J	1050	0.2 U	0.592
	MW-5A	3/26/2025	611.23	22.77	588.46	8.1	1449.0	8.60	178.5	2.84	7.24	912	4.63	3.31	272000	0.2 U	1.43
	MW-6A	3/26/2025	608.95	20.57	588.38	7.1	1623.0	9.61	181.5	9.06	7.50	977	6.55	2.1	328000	0.2 U	0.972
	MW-7A	3/27/2025	592.69	4.19	588.50	7.0	667.8	1.47	117.6	3.87	7.06	397	0.628	1.43	23400	0.2 U	0.552
	MW-8A	3/27/2025	601.49	13.05	588.44	8.4	136.9	8.80	147.6	3.30	7.01	477	3.02	4.54	131000	0.2 U	2.25
	MW-9A	3/24/2025	697.29	2.54	694.75	8.7	551.8	3.64	115.5	2.68	6.73	358	0.3 U	0.358 J	1650	0.2 U	0.636
	MW-10A	3/24/2025	698.02	5.14	692.88	9.8	183.3	8.76	104.0	6.03	6.48	113	0.3 U	0.39 J	862	0.2 U	0.666
	Still Well	3/24/2025	-	-	-	9.5	6490.0	0.76	212.8	9.89	12.47	1700	5.14	45.1	375000	0.77	2.11
LDA - Bedrock Groundwater ^b	MWB-1LDA	3/26/2025	704.68	21.47	683.21	11.9	369.3	0.37	62.2	3.28	7.35	222	0.3 U	6.55	933	0.2 U	0.2 U
	MWB-2LDA	3/27/2025	741.66	34.36	707.30	11.2	337.3	0.70	75.1	2.86	7.22	202	0.3 U	5.42	981	0.2 U	0.2 U
	MWB-3LDA	3/27/2025	744.19	0.70	743.49	11.2	215.6	3.64	65.1	3.76	6.65	143	0.3 U	4.52	892	0.2 U	0.2 U
LDA- Surface Water	South Pond	3/24/2025	-	-	-	12.60	914.00	8.50	185.50	5.23	8.97	638	2.05	7.63	207000	4.12	12.6
	Weir	3/24/2025	-	-	-	10.20	680.70	802.00	175.70	7.31	7.41	449	4.35	2.89	87400	0.2 U	0.668
	Infiltration Ponds	3/26/2025	-	-	-	16.6	1839.0	10.48	181.6	150.00	8.31	1250	12.2	17.3	457000	2.12	1.94
	Infiltration Ponds Duplicate (MW-35A)	3/26/2025	-	-	-	16.6	1839.0	10.48	181.6	150.00	8.31	1250	12.7	16.3	446000	23.6	1.9
DSP - Bedrock Groundwater ^b	MWB-1SDSP	3/25/2025	936.29	32.84	903.45	12.6	1651.0	0.92	69.1	1.97	6.81	1130	0.3 U	15.2	5430	0.2 U	0.2 U
	MWB-1DDSP	3/25/2025	935.37	46.73	888.64	15.7	1194.0	0.65	45.3	4.53	7.10	828	0.3 U	5.10	4280	0.23	0.2 U
	MWB-2DSP	3/26/2025	934.82	184.00	750.82	12.9	554.4	6.40	75.4	6.98	7.16	-	-	-	-	-	-
	MWB-4SDSP	3/26/2025	932.41	15.10	917.31	12.8	649.0	10.58	76.9	2.71	7.80	-	-	-	-	-	-
	MWB-5DSP	3/25/2025	935.05	17.73	906.73	14.8	890.0	1.20	31.5	3.20	7.00	502	0.3 U	5.43	2700	0.2 U	0.2 U
	MWB-6DSP	3/25/2025	918.67	17.40	904.51	12.1	456.3	0.76	67.3	3.19	7.15	259	0.3 U	1.18	1110	0.2 U	0.2 U
	MWB-6DSP Duplicate (MW-55A)	3/25/2025	-	-	-	12.1	456.3	0.76	67.3	3.19	7.15	259	0.3 U	1.17	1090	0.2 U	0.2 U
	Portal	3/26/2025	-	-	-	12.2	735.0	5.65	124.8	54.00	6.38	369	0.3 U	5.11	23800	0.2 U	0.2 U

Table 2: First Quarter 2025 Field Parameters and Analytical Data (continued)

Notes:	
	Orange shaded values indicate parameter results above the Preliminary Cleanup Level (PCUL), except for pH, which could be above or below the PCUL.
-	Not measured or not collected.
*	Depth to water (DTW) measurements for all shallow wells collected on the same day; date noted is sampling date.
a	Preliminary Cleanup Level (PCUL) provided by Ecology 30 Sept 2022
b	LDA and DSP bedrock wells are monitored semi-annually
J	Data validation code; estimated value.
J+	Data validation code; estimated value with high bias
J-	Data validation code; estimated value with low bias.
U	Data validation code; not detected at the Reporting Limit (RL).
DRY	Location is dry. Unable to collect field parameters or samples.
°C	Degrees Celsius
feet bmp	Feet below measuring point
feet NAVD88	Feet in NAVD88 datum
ug/L	Micrograms per liter
µmhos/cm	Micromhos per centimeter
mV	Millivolts
NTU	Nephelometric Turbidity Unit
TOC	Top of casing inside PVC well

Table 3: Interceptor Trench Discharge Monitoring

Date Sampled	Time Sampled	Flow (gpm)	Field pH (standard units)	Turbidity (NTU)	Total Dissolved Solids (mg/L)
19-Oct-13	8:45	0.3	7.47	-	-
19-Nov-13	9:25	0.7	7.52	-	-
23-Dec-13	15:25	1.2	7.27	-	-
20-Jan-14	11:15	0.8	7.58	1	277
-	-	-	-	-	-
31-Mar-14	11:12	1	7.22	1.6	257
22-Apr-14	16:05	3.6	6.85	474	214
27-May-14	15:30	0.8	7.12	21.9	294
27-Jun-14	11:10	0.3	7.13	13.3	136
31-Jul-14	19:45	0.2	6.95	4.1	305
28-Aug-14	14:00	0.1	7.2	1.8	294
29-Sep-14	13:39	0.1	7.87	1.4	340
29-Oct-14	11:45	0.3	7.03	1.1	319
24-Nov-14	11:50	0.8	7.09	0.7	229
22-Dec-14	8:00	0.4	7.08	0.4	253
30-Jan-15 ¹	10:10	1.1	7.09	0.7	270
4-May-15	9:30	0.31	7.54	2.05	290
4-Aug-15	12:20	0.06	7.61	1.51	268
3-Nov-15	13:15	0.8	7.38	36.9	320
8-Feb-16	10:40	1.9	7.23	9.29	279
2-May-16	16:00	0.5	7.77	22.5	431
22-Aug-16	11:00	0.08	7.78	3.34	302
1-Nov-16	11:40	2.4	8.16	96.3	345
2-Feb-17	9:25	4.5	7.61	0.85	514
30-May-17	15:45	4.5	7.33	4.04	324
18-Aug-17	8:50	0.1	7.57	34	300
10-Nov-17	11:20	1.1	6.81	12.9	365
28-Feb-18	10:16	2.22	7.02	37.9	381
2-May-18	11:45	1.18	7.46	2.89	339
22-Aug-18	10:00	0.13	7.32	19.3	287
7-Nov-18	14:40	0.33	7.24	3.05	342
13-Mar-19	11:31	1.43	7.61	19.4	313
9-May-19	10:30	0.88	7.77	8.9	394
26-Aug-19	18:15	0.42	7.25	26.4	361
14-Nov-19	13:30	0.42	7.05	34.5	447
13-Feb-20	12:35	1.58	6.95	1.76	306
13-Aug-20	12:00	0.21	7.32	20.8	339
10-Dec-20	12:22	3.8	7.7	228	691
4-Mar-21	12:20	3.5	7.23	116	584
10-Jun-21	13:10	0.2	7.02	6.31	360

Table 3: Interceptor Trench Discharge Monitoring (continued)

Date Sampled	Time Sampled	Flow (gpm)	Field pH (standard units)	Turbidity (NTU)	Total Dissolved Solids (mg/L)
15-Oct-21	13:55	0.2	7.08	31	382
7-Jan-22	11:58	9.2	7.43	6.23	288
17-Mar-22	15:25	3.5	11.75^	3.24	368
22-Jun-22	14:05	2.2	6.94	6.21	415
23-Sep-22	14:46	0.11	7.54	4.77	330
14-Dec-22	9:20	0.79	7.19	2.27	279
13-Mar-23	9:25	2.25	6.9	1.07	232
27-Jun-23	9:55	0.33	7.05	7.31	381
7-Sep-23	14:38	-	7.68	21.5	295
12-Dec-23	15:28	4.76	6.98	1.51	244
6-Mar-24	14:30	3.17	8.39	2.31	359
17-Jun-24	15:40	1.98	7.04	8.04	448
16-Sep-24	14:15	0.15	8.02	2.53	328
9-Dec-24	14:40	1.59	9.77	1.32	277
24-Mar-25	13:05	1.59	7.14	5.85	309

Notes:

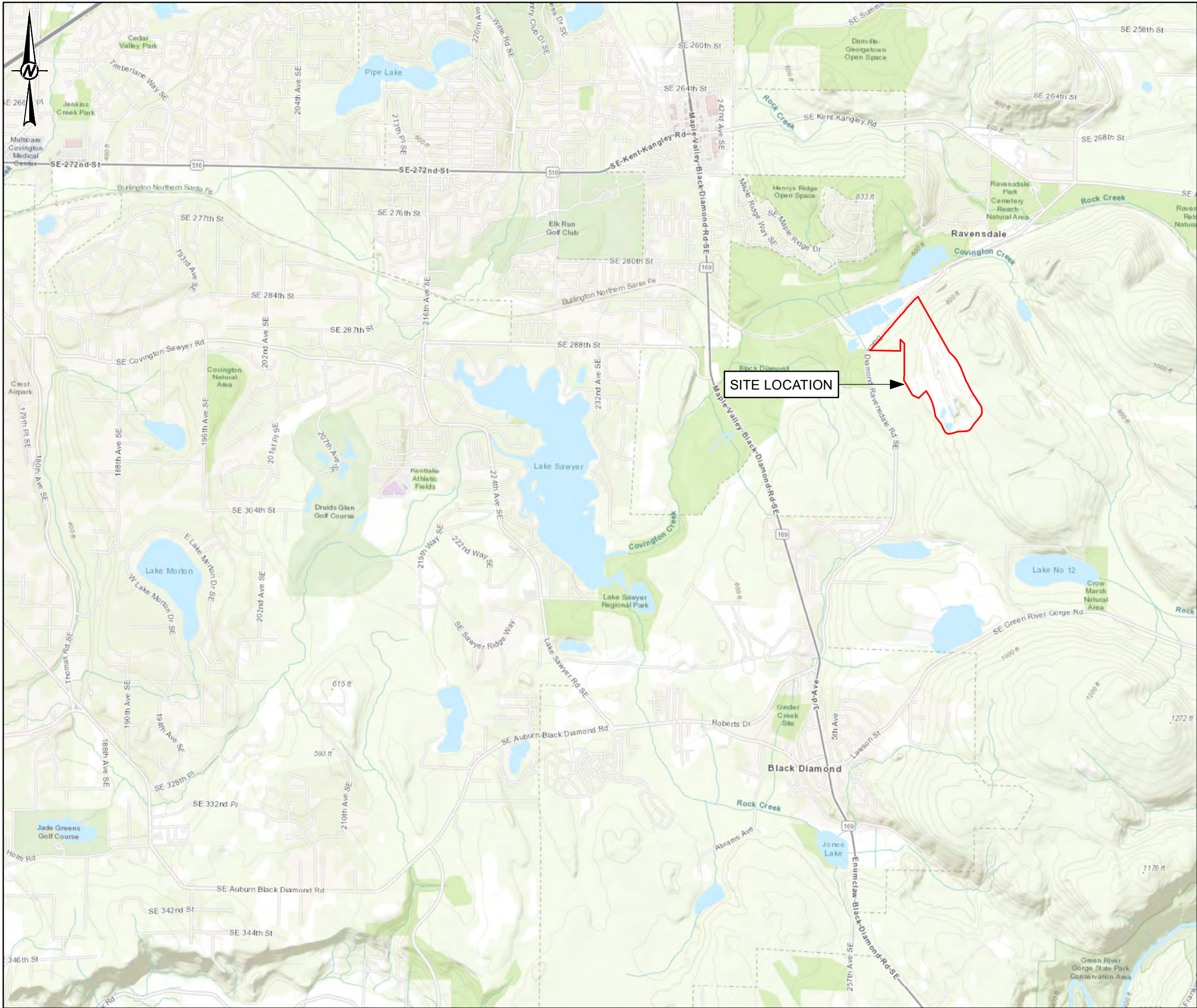
-	Not measured or not available
^	pH values error, due to faulty pH probe.
gpm	Gallons per minute
mg/L	Milligrams per liter
NTU	Nephelometric Turbidity Unit

Table 4: First Quarter 2025 Treatment System Metals Monitoring

Sample Location	Sample ID	Date Sampled	pH (standard units)	Total Antimony (ug/L)	Dissolved Antimony (ug/L)	Total Arsenic (ug/L)	Dissolved Arsenic (ug/L)	Total Potassium (ug/L)	Dissolved Potassium (ug/L)	Total Lead (ug/L)	Dissolved Lead (ug/L)	Total Vanadium (ug/L)	Dissolved Vanadium (ug/L)
pH Tank Influent	Tank-Influent	27-Mar-25	12.30	13.6	13.7	29.3	10.1	437	437	53.9	28.1	3.02	2.5
pH Tank Effluent/Filter Media Influent	Sand-Effluent	27-Mar-25	7.94	14.6	14.1	25.3	24.5	408	406	30.3	0.735	3.08	3.16
Filter Media Effluent	As-Effluent	27-Mar-25	7.72	13.7	13.3	23.3	21.7	371	359	26.1	4.44	3.57	2.75

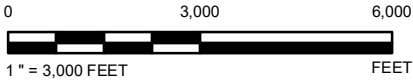
Notes:
- Not measured or not available
ug/L Micrograms per liter

FIGURES



LEGEND

Property Boundary



REFERENCE(S)

1. ASPECT CONSULTING (PROPERTY BOUNDARY)
2. ESRI (WASHINGTON STATE COUNTY BOUNDARY)
3. COORDINATE SYSTEM: NAD 1983 STATEPLANE WASHINGTON NORTH FIPS 4601 FEET
4. MAP SERVICE LAYER CREDITS: SOURCES: ESRI, HERE, GARMIN, USGS, INTERMAP, INCREMENT P, NRCAN, ESRI JAPAN, METI, ESRI CHINA (HONG KONG), ESRI KOREA, ESRI (THAILAND), NGCC, (C) OPENSTREETMAP CONTRIBUTORS, AND THE GIS USER COMMUNITY SOURCES: ESRI, HERE, GARMIN, INTERMAP, INCREMENT P CORP., GEBCO, USGS, FAO, NPS, NRCAN, GEOBASE, IGN, KADASTER NL, ORDNANCE SURVEY, ESRI JAPAN, METI, ESRI CHINA (HONG KONG), (C) OPENSTREETMAP CONTRIBUTORS, AND THE GIS USER COMMUNITY

CLIENT

HOLCIM

PROJECT

RI WORK PLAN 2020
RAVENSDALE, WA

TITLE

SITE LOCATION MAP

CONSULTANT



YYYY-MM-DD	2025-05-14
DESIGNED	TL
PREPARED	TL/KAS
REVIEWED	JX
APPROVED	GZ

PROJECT NO.

31406578.8318

PHASE

300

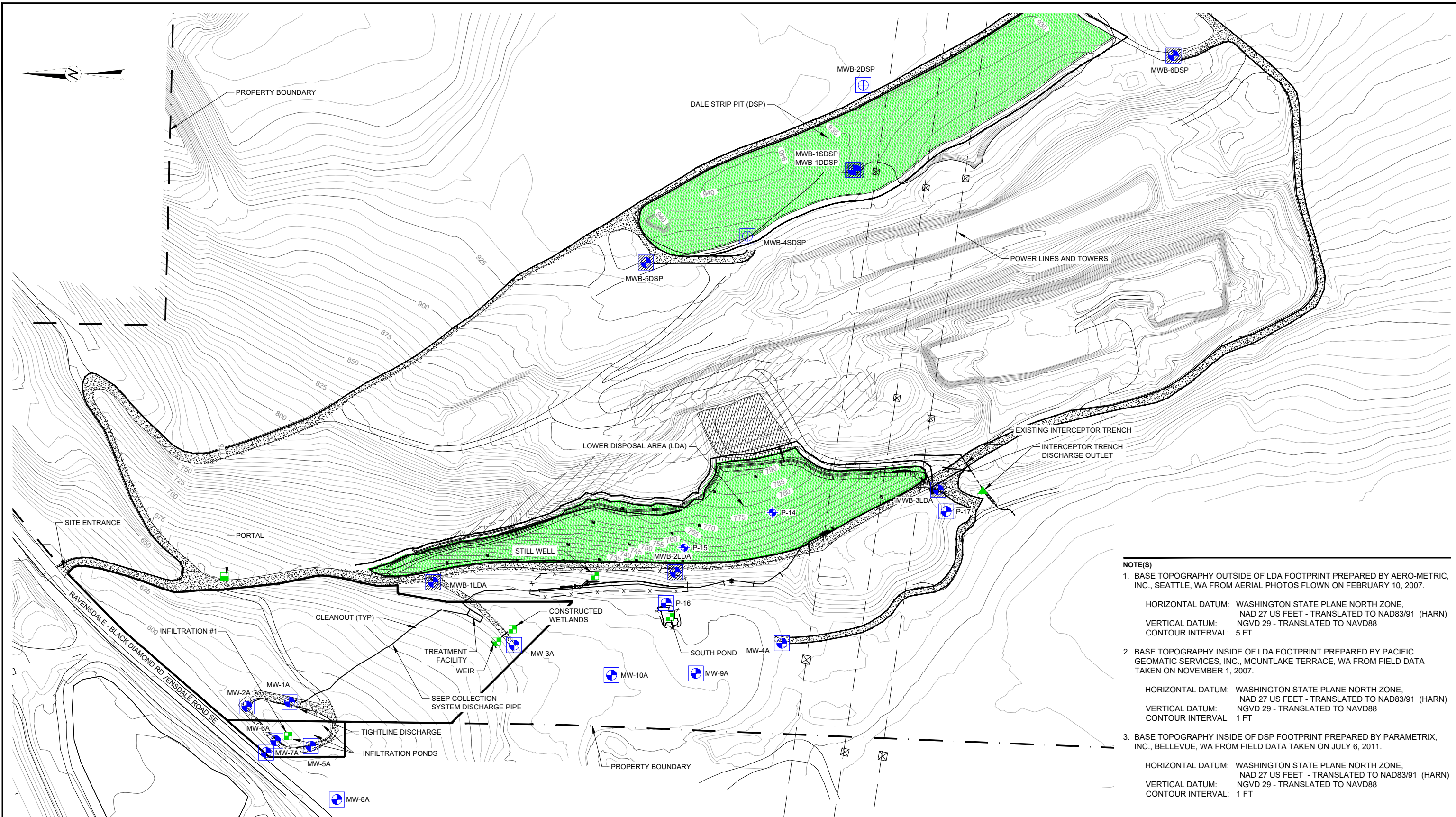
REV.

A

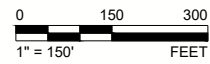
FIGURE

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LEGEND			
	COVER AREA		LDA SURFACE WATER SAMPLING LOCATION
	MWB-1A SHALLOW MONITORING WELL		DSP BEDROCK SAMPLING LOCATION (PORTAL)
	MWB-1DDSP BEDROCK MONITORING WELL		INTERCEPTOR TRENCH SAMPLING LOCATION
	MWB-2DSP BEDROCK MONITORING WELL (NOTE 4)		FENCE LINE
	DISPOSAL AREA MONITORING WELL		



CLIENT
HOLCIM

CONSULTANT



YYYY-MM-DD	2025-05-14
DESIGNED	TK
PREPARED	TR
REVIEWED	DE
APPROVED	GZ

NOTE(S)

1. BASE TOPOGRAPHY OUTSIDE OF LDA FOOTPRINT PREPARED BY AERO-METRIC, INC., SEATTLE, WA FROM AERIAL PHOTOS FLOWN ON FEBRUARY 10, 2007.

HORIZONTAL DATUM: WASHINGTON STATE PLANE NORTH ZONE, NAD 27 US FEET - TRANSLATED TO NAD83/91 (HARN)
VERTICAL DATUM: NGVD 29 - TRANSLATED TO NAVD88
CONTOUR INTERVAL: 5 FT
2. BASE TOPOGRAPHY INSIDE OF LDA FOOTPRINT PREPARED BY PACIFIC GEOMATIC SERVICES, INC., MOUNTLAKE TERRACE, WA FROM FIELD DATA TAKEN ON NOVEMBER 1, 2007.

HORIZONTAL DATUM: WASHINGTON STATE PLANE NORTH ZONE, NAD 27 US FEET - TRANSLATED TO NAD83/91 (HARN)
VERTICAL DATUM: NGVD 29 - TRANSLATED TO NAVD88
CONTOUR INTERVAL: 1 FT
3. BASE TOPOGRAPHY INSIDE OF DSP FOOTPRINT PREPARED BY PARAMETRIX, INC., BELLEVUE, WA FROM FIELD DATA TAKEN ON JULY 6, 2011.

HORIZONTAL DATUM: WASHINGTON STATE PLANE NORTH ZONE, NAD 27 US FEET - TRANSLATED TO NAD83/91 (HARN)
VERTICAL DATUM: NGVD 29 - TRANSLATED TO NAVD88
CONTOUR INTERVAL: 1 FT

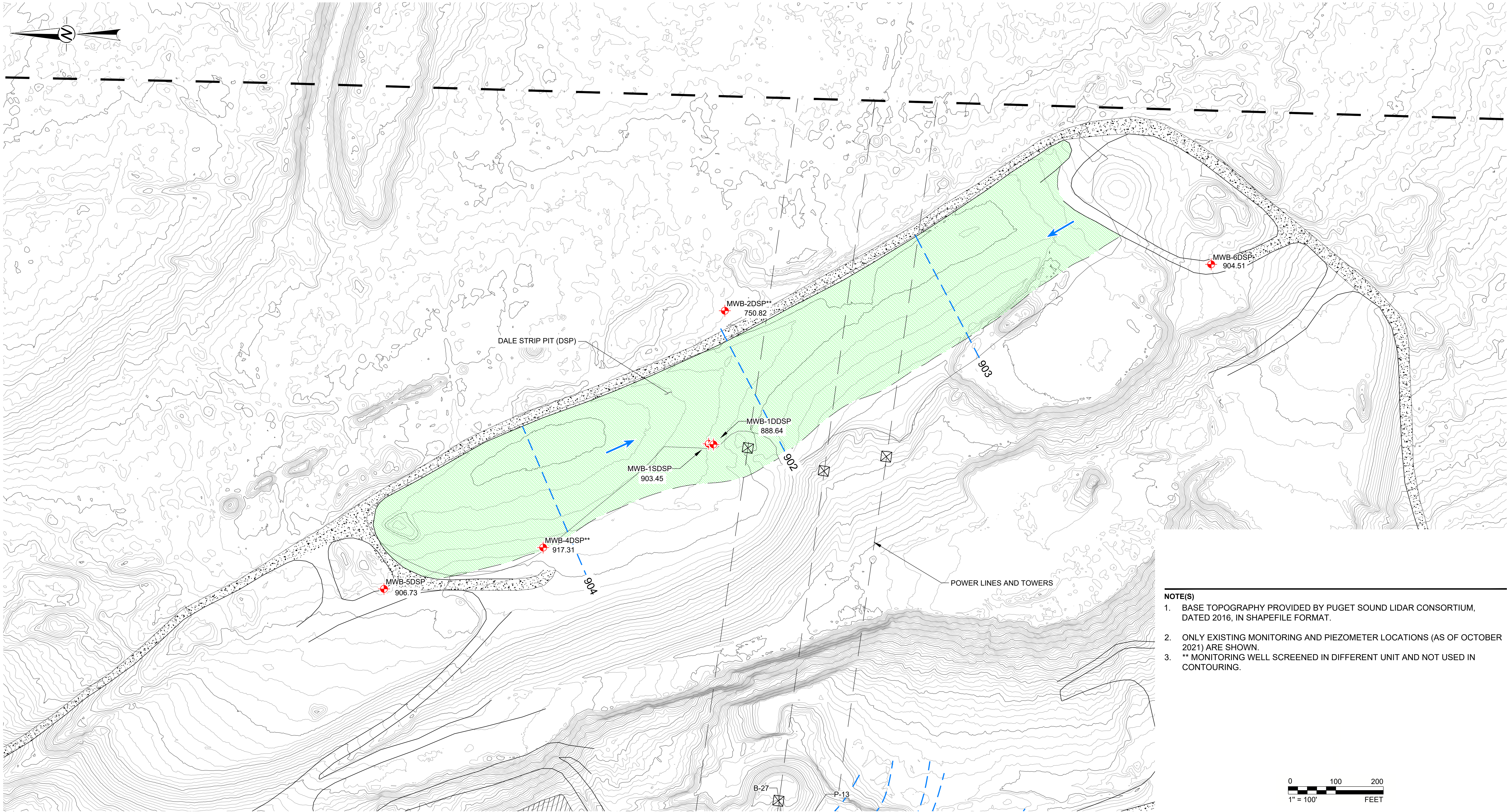
PROJECT
MARCH 2025 GROUNDWATER MONITORING
RAVENSDALE, WA

TITLE
SITE PLAN

PROJECT NO.	TASK	REV.	FIGURE
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1 in IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM A3 AND

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LEGEND			
	COVER AREA		P-1
	MW-1A		GOLDER PIEZOMETER
	MWB-1DDSP		LDA SURFACE WATER SAMPLING LOCATION
	P-14		DSP BEDROCK SAMPLING LOCATION (PORTAL)
	AMW-1		INTERCEPTOR TRENCH SAMPLING LOCATION
	ALLUVIAL MONITORING WELL		FENCE LINE
	BEDROCK MONITORING WELL		
	LDA MONITORING WELL		
	PLANT SITE MONITORING WELLS		

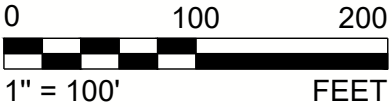
CLIENT
HOLCIM

CONSULTANT



YYYY-MM-DD	2025-05-14
DESIGNED	AW
PREPARED	TR
REVIEWED	AP
APPROVED	GZ

- NOTE(S)
1. BASE TOPOGRAPHY PROVIDED BY PUGET SOUND LIDAR CONSORTIUM, DATED 2016, IN SHAPEFILE FORMAT.
 2. ONLY EXISTING MONITORING AND PIEZOMETER LOCATIONS (AS OF OCTOBER 2021) ARE SHOWN.
 3. ** MONITORING WELL SCREENED IN DIFFERENT UNIT AND NOT USED IN CONTOURING.

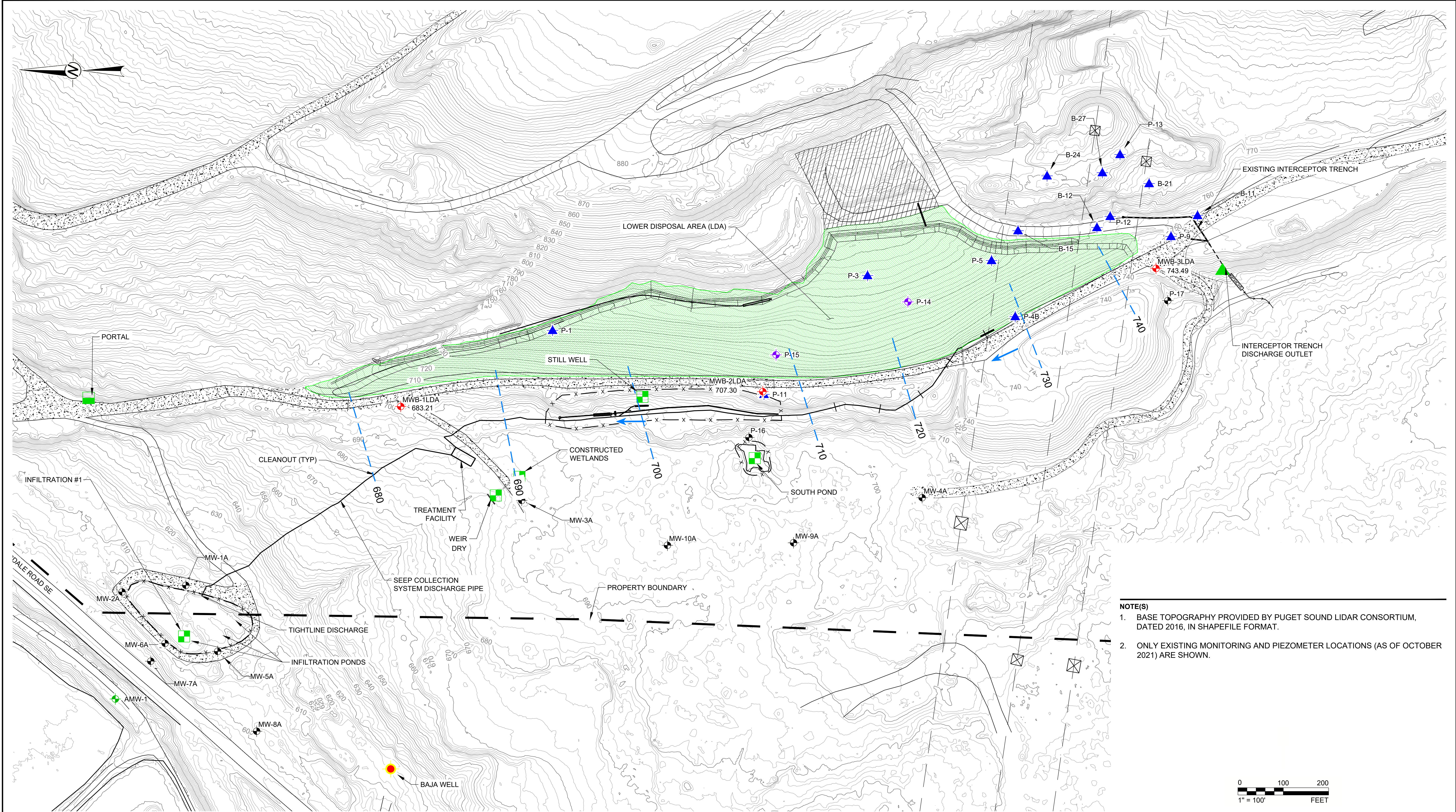


PROJECT
MARCH 2025 GROUNDWATER ELEVATIONS
RAVENSDALE, WA

TITLE
DSP BEDROCK GROUNDWATER ELEVATIONS

PROJECT NO.	TASK	REV.	FIGURE
31406578.8318	300	A	3A

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- NOTE(S)**
1. BASE TOPOGRAPHY PROVIDED BY PUGET SOUND LIDAR CONSORTIUM, DATED 2016, IN SHAPEFILE FORMAT.
 2. ONLY EXISTING MONITORING AND PIEZOMETER LOCATIONS (AS OF OCTOBER 2021) ARE SHOWN.

LEGEND			
	COVER AREA		P-1
	MW-1A		GOLDER PIEZOMETER
	MWB-1DDSP		ALLUVIAL MONITORING WELL
	P-14		LDA SURFACE WATER SAMPLING LOCATION
	AMW-1		DSP BEDROCK SAMPLING LOCATION (PORTAL)
			INTERCEPTOR TRENCH SAMPLING LOCATION
			PLANT SITE MONITORING WELLS
			FENCE LINE
			PRIVATE WELL

CLIENT
HOLCIM

CONSULTANT



YYYY-MM-DD	2025-05-14
DESIGNED	AW
PREPARED	TR
REVIEWED	AP
APPROVED	GZ

PROJECT
MARCH 2025 GROUNDWATER ELEVATIONS
RAVENSDALE, WA

TITLE
LDA BEDROCK GROUNDWATER ELEVATIONS

PROJECT NO.	TASK	REV.	FIGURE
31406578.8318	300	A	3B

1 in IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI D

APPENDIX A

**Summary Data Tables for Individual
Wells and Monitoring Locations**

**Table A-1a: Summary of Lower Disposal Area - Surface Water Sampling Results - Infiltration Ponds #1
Ravensdale Site, Ravensdale, Washington**

Date Sampled	Field Parameters						Gen-Chem	Metals (ug/L)				
	Temperature (°C)	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction Potential (Rel mV)	Turbidity (NTU)	pH (standard units)	Total Dissolved Solids (mg/L)	Antimony	Arsenic	Lead	Potassium	Vanadium
Preliminary Cleanup Level ^c	-	-	-	-	-	6.5-8.5	-	5.6	8	2.5	-	80
1-Feb-05	8.17	1315	-	-	8.13	9.95	874	-	84.9	4.99	-	-
9-Mar-05	14.04	1183	-	-	23.00	9.59	960	-	96.2	3.92	-	-
5-Apr-05	11.00	1115	-	-	43.70	9.80	800	-	62.3	3.21	-	-
10-May-05	14.91	1275	-	-	564.00	9.83	844	-	76.5	5 U	-	-
7-Jun-05	15.11	1140	-	-	239.00	9.61	804	-	84.3	5 U	-	-
15-Jul-05 ^a	23.56	1276	-	-	94.40	9.30	1100	-	92.5	4.14	-	-
15-Jul-05 ^b	-	-	-	-	-	-	874	-	99.9	3.82	-	-
9-Aug-05 ^a	19.05	1744	-	-	57.20	9.44	1000	-	123	5.1	-	-
9-Aug-05 ^b	-	-	-	-	-	-	1030	-	140	6.12	-	-
14-Sept-05 ^a	13.59	1154	-	-	99.80	8.97	790	-	110	3.54	-	-
14-Sept-05 ^b	-	-	-	-	-	-	806	-	118	5.18	-	-
5-Oct-05	14.82	970	-	-	82.70	8.98	736	-	89.3	2.83	-	-
9-Nov-05	8.43	1285	-	-	135.00	8.83	970	-	46	10 U	-	-
9-Dec-05	2.12	1361	-	-	14.20	9.71	980	-	64.6	3.11	-	-
19-Jan-06	6.66	728	7.96	-	64.70	10.13	470 J	-	40.7	2.29	-	-
16-Feb-06	2.63	624	9.75	30.3	25.20	8.54	530 J	-	13.3	1 U	-	-
15-Mar-06	7.16	639	11.61	236.8	23.10	9.22	530 J	-	22.5	1 U	-	-
7-Apr-06	11.91	1013	10.81	27.8	18.80	9.98	780	-	63.8	3.24	-	-
16-May-06	15.58	1160	7.58	50.6	16.50	9.57	950	-	77.9	2.49	-	-
23-Jun-06	18.63	1261	7.41	-	126.00	9.85	920	-	70.7	3.65	-	-
20-Jul-06	20.65	932	5.36	-35.1	279.00	8.94	980	-	108	3.48	-	-
22-Aug-06	15.65	860	7.64	86.5	218.00	9.22	760	-	116	3.84	-	-
26-Sep-06	21.86	903	8.98	-72.8	263.00	8.89	820	-	75.8	3.06	-	-
26-Oct-06	11.04	702	9.97	90.4	221.00	8.56	760	-	68.3	1.66	-	-
15-Nov-06	7.73	715	9.21	149.2	33.60	9.07	500	-	20.8	2.29	-	-
20-Dec-06	4.98	1082	9.05	86.3	9.29	9.78	680	-	51.3	2.67	-	-
24-Jan-07	2.12	1058	10.71	130.4	20.50	9.97	640 J	-	66.1	7.58	-	-
12-Feb-07	10.10	1218	12.40	-61.8	103.00	9.98	860	-	90.1	4.49	-	-
27-Mar-07	7.94	772	9.67	13.3	25.50	8.27	540 J	-	49.8	2.74	-	-
18-Apr-07	7.52	2418	9.23	84.4	58.10	11.73	1400	-	79.2	10.5	-	-
31-May-07	15.45	1879	6.47	-92.2	3.15	9.79	1300	-	165	8.11	-	-
20-Jun-07	24.18	1925	10.88	-52.1	251.00	10.24	1300 J	-	144	5.34	-	-
31-Jul-07	19.05	1418	5.97	-36.1	128.00	9.81	1200	-	140	7.23	-	-
29-Aug-07	18.00	1193	5.60	-35.4	158.00	9.29	1300 J	-	164	7.01	-	-
27-Sep-07	14.97	987	5.44	45.9	186.00	8.99	970	-	196	5.49	-	-
26-Oct-07	2.66	504	6.02	63.1	282.00	8.64	770 J	-	42.9	2.25	-	-
30-Nov-07	1.86	955	9.77	190.1	163.00	10.02	570	-	48.9	1.62	-	-
12-Dec-07	4.22	790	11.11	126.8	56.00	9.40	520	-	34.3	1.67	-	-
24-Jan-08	2.12	875	19.35	142.0	-	8.68	640	-	42.8	1.66	-	-
28-Feb-08	-	-	-	-	25.60	-	510	-	41.3	2.66	-	-
25-Mar-08	5.27	937	14.46	91.0	86.80	9.60	630	-	50.2	2.15	-	-
29-Apr-08	9.02	1079	10.56	190.8	61.30	9.87	670 J	-	66	2.87	-	-
20-May-08	15.42	1191	7.58	160.0	91.40	9.75	820	-	85.9	4.85	-	-
18-Jun-08	12.94	1124	9.62	167.3	76.90	9.65	810 J	-	77.6	3.67	-	-
26-Aug-08	15.95	880	3.75	53.5	490.00	8.00	650 J	-	76.9	1.64	144000	-
20-Nov-08	6.91	897	7.02	183.5	376.00	10.22	960	-	87.2	4.21	313000	-
12-Feb-09	1.29	-	13.72	-	10.20	10.52	800	-	118	5.84	271000	-
19-May-09	11.90	862	6.52	71.9	133.00	9.59	840 J	-	91.3	3.99	238000	-
18-Nov-09	5.70	852	6.61	185.9	68.00	9.88	490	-	40	4.4	160000	-
15-Dec-09	2.30	1162	8.22	460.1	63.30	9.97	640	-	71	7.2	220000	-

**Table A-1a: Summary of Lower Disposal Area - Surface Water Sampling Results - Infiltration Ponds #1
Ravensdale Site, Ravensdale, Washington**

Date Sampled	Field Parameters						Gen-Chem Total Dissolved Solids (mg/L)	Metals (ug/L)				
	Temperature (°C)	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction Potential (Rel mV)	Turbidity (NTU)	pH (standard units)		Antimony	Arsenic	Lead	Potassium	Vanadium
Preliminary Cleanup Level ^c	-	-	-	-	-	6.5-8.5	-	5.6	8	2.5	-	80
24-Mar-10	13.00	1299	5.83	408.2	13.00	10.48	1000	-	140	8.5	340000	-
17-Jun-10	12.00	947	4.45	332.1	33.60	10.56	540	-	62	6.2	220000	-
22-Sep-10	15.60	1736	3.14	342.5	33.00	9.84	1300	-	130	21	360000	-
8-Dec-10	5.40	1382	7.73	371.1	12.10	10.75	870	-	100	12	300000	-
29-Mar-11	9.60	627	5.16	577.6	19.80	11.05	760 J	-	78	3.1	270000	-
21-Jun-11	21.00	1778	5.46	239.1	11.60	10.44	1700 J	-	78	11	340000	-
27-Sep-11	14.80	1382	3.98	239.8	33.40	9.58	1600	-	120	13	670000	-
14-Dec-11	3.10	1046	5.60	281.7	15.70	9.93	1100	-	87	14	330000	-
20-Mar-12	6.10	986	11.04	271.1	11.70	10.32	500	-	71	3.3	180000	-
19-Jun-12	14.80	862	7.83	352.2	38.80	9.57	500	-	64	3.7	180000	-
20-Sep-12	12.40	1961	1.81	419.0	10.30	9.43	4600 J	-	130	2.1	440000	-
19-Dec-12	4.10	1320	10.11	303.1	5.86	9.69	700	-	75	4.3	250000	-
25-Feb-13	7.10	1963	9.30	234.7	26.60	11.30	1000	-	90	6	370000	-
22-May-13	10.50	4380	7.72	411.7	202.00	12.56	1400	-	25	11	530000	-
21-Aug-13	20.10	12850	1.24	-2.3	18.20	12.18	3430	-	106	47.5	1180000	-
20-Nov-13	5.70	1198	8.03	131.9	22.20	10.23	704	-	41.3	6.2	260000	-
1-Apr-14	9.80	1708	9.77	136.4	8.79	12.26	832	-	24.1	3	317000	-
23-May-14	12.63	6574	8.63	120.8	-	12.61	2120	-	4.8	35.4	811000	-
13-Aug-14	18.99	3273	6.29	77.7	89.00	12.34	1660	-	71.4	6.3 J	548000	-
11-Nov-14	8.80	578	3.55	179.2	62.50	12.73	2000	-	56.7	20.4	739000	-
11-Feb-15	9.70	487	9.97	66.2	42.00	9.40	337	-	9.1	0.9	87700	-
4-May-15	14.30	4210	5.60	281.2	7.67	12.53	1670	-	35.3	7.4	589000	-
5-Aug-15	19.90	4890	5.14	18.8	89.80	11.79	3080	-	85.4	18.1	1150000	-
3-Nov-15	9.20	760	6.39	129.9	34.60	9.78	707	-	23.5	5.3	235000	-
9-Feb-16	10.20	-	10.29	100.3	8.01	12.78	1330	-	5.3	24.8	530000	-
2-May-16 ^d	-	-	-	-	-	-	2490	-	24	37 J-	996000	-
23-Aug-16	19.30	4250	3.95	386.5	46.30	11.76	2970	-	105	14.3	989000	-
1-Nov-16	11.70	229	9.26	185.2	48.90	10.33	508	-	12.6	0.792	164000	-
1-Feb-17	2.40	8890	10.78	26.1	3.17	13.36	2220	-	10.1	46.8	854000	-
30-May-17	14.70	6800	56.90	17.7	1.38	12.73	1720	-	1.75	31.6 J+	759000	-
17-Aug-17	18.10	5410	3.88	-19.5	14.90	11.93	3080	-	62.6	32.8	1150000	-
10-Nov-17	7.90	2016	7.72	64.4	30.70	12.00	1520	-	63	32.2	578000	-
27-Feb-18	5.70	5062	8.76	42.0	3.74	12.28	1620	-	15	54.6	678000	-
1-May-18	12.30	6620	5.25	-	1.94	12.73	2070	-	2.42	30.1 J+	745000	-
21-Aug-18	23.85	5058	2.95	106.0	5.62	11.64	3090	-	77.3	28.8	1200000	-
6-Nov-18	11.70	1078	3.50	-5.4	46.90	8.48	1180	-	6.03	5.44	359000 J+	-
13-Mar-19	3.90	331	8.08	183.7	29.10	10.72	455	-	11.9	2.21	185000	-
8-May-19	17.20	6113	6.38	6.4	6.17	12.39	2040	-	7.7	26.8	830000	-
26-Aug-19	24.22	4177	2.47	Note 1	7.21	9.12	2840	-	17.2 J	5.27 J	1020000	-
13-Nov-19	8.70	2523	1.61	-201.7	33.00	8.67	1930	-	32.5	4.44	726000	-
12-Feb-20	7.80	971	7.99	150.3	16.00	7.92	836	-	14.3	3.96	243000	-
12-Aug-20	18.30	3655	4.33	123.5	5.74	8.98	2570	-	20.8	2.59	988000	-
9-Dec-20	8.30	740	7.80	202.0	18.40	8.21	632	-	14.9	5.11	207000	-
3-Mar-21	8.30	1446	7.87	217.0	15.50	8.56	1310	-	35.3	6.11	509000	-
9-Jun-21	15.10	2963	4.88	174.9	4.37	8.79	2400	-	23.7	1.51	923000	-
13-Oct-21	9.30	2563	4.73	34.2	39.30	8.84	2610 J-	16.1	19.7	6.12	831000	3.11
5-Jan-22	1.20	510	9.85	236.4	14.00	8.01	679	6.32	12.1	6.31	226000	3.36
16-Mar-22	11.10	786	10.41	172.1	12.8	7.45	733	7.59	10.6	4.77	236000	1.82
23-Jun-22	14.90	1982	2.58	156.8	5.3	8.34	1650	8.5	10.2	3.44	549000	0.97
28-Sep-22	16.20	3251.00	7.06	-49.10	3.18	8.75	2730 J	24	5.88	1.11	1040000	0.516

**Table A-1a: Summary of Lower Disposal Area - Surface Water Sampling Results - Infiltration Ponds #1
Ravensdale Site, Ravensdale, Washington**

Date Sampled	Field Parameters						Gen-Chem	Metals (ug/L)				
	Temperature (°C)	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction Potential (Rel mV)	Turbidity (NTU)	pH (standard units)	Total Dissolved Solids (mg/L)	Antimony	Arsenic	Lead	Potassium	Vanadium
Preliminary Cleanup Level ^c	-	-	-	-	-	6.5-8.5	-	5.6	8	2.5	-	80
5-Jan-23	8.80	1047.00	8.40	191.00	8.47	8.16	1560	18.8	26.7	2.49	567000	4.45
13-Mar-23	7.20	1831.00	11.21	177.80	31.80	8.29	1050	8.27	16.3	5.8	401000	4
28-Jun-23	19.90	3514.00	4.58	91.00	4.73	8.64	2270	8.82	8.35	1.37	879000	0.935 J
8-Sep-23	19.50	3882.00	2.26	48.50	14.50	8.96	2550 J-	10.2	11.5	3.91	929000	0.929
15-Dec-23	6.90	2395.00	9.94	163.00	3.19	8.49	1240	22.7	15.3	2.16	447000	3.31
4-Mar-24	6.80	1477.00	7.24	237.40	9.50	8.17	1370 J	13.3	21.8	2.86	471000	3.16
18-Jun-24	15.80	3495.00	10.86	173.00	4.69	8.41	1370 J	9.87	9.58	0.162 J	775000	0.716
16-Sep-24	17.40	2932.00	8.39	228.90	24.30	8.30	2080	14.4	16.3	15.6	708000	2.63
11-Dec-24	3.70	2497.00	7.95	153.90	7.10	8.50	1610	14.9	22.0	2.82	556000	2.14
26-Mar-25	16.60	1839.00	10.48	181.60	150.00	8.31	1250	12.2	17.3	2.12	457000	1.94

Notes:

Dissolved metals were analyzed at the Site until December 2020 (Q4 2020). Total metals were analyzed for Q4 2020 and will continue to be analyzed moving forward. Iron and manganese are not included in the COPCs at the Site and are not analyzed beginning in Q2 2021. Antimony and Vanadium were included as COPCs for surface water locations and shallow groundwater monitoring wells at the Site beginning in Q3 2021.

- Not analyzed or not available

Orange shaded values indicate parameter results above the Preliminary Cleanup Level (PCUL), except for pH, which could be above

a North Creek Analytical, Inc.

b Severn Trent Laboratories

c Preliminary Cleanup Level (PCUL) provided by Ecology 30 Sept 2022

d Field parameters for Infiltration Ponds #1 were inadvertently not collected during May 2016 sampling

U Data validation code; not detected at the Reporting Limit (RL)

J Data validation code; estimated value

J+ Data validation code; estimated value with positive bias

°C Degrees Celsius

Note 1 ORP measurements not available due to faulty sensor.

µmhos/cm Micromhos per centimeter

feet bmp Feet below measuring point

feet NAVD88 Feet NAVD88 Datum

mg/L

mV

NTU

**Table A-1b: Summary of Lower Disposal Area - Surface Water Sampling Results - Weir
Ravensdale Site, Ravensdale, Washington**

Date Sampled	Field Parameters							Gen-Chem	Metals (ug/L)				
	Temperature (°C)	Conductivity (umhos/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction Potential (mV)	Turbidity (NTU)	pH (standard units)	Weir Flow Rate (gpm)		Total Dissolved Solids (mg/L)	Antimony	Arsenic	Lead	Potassium
Preliminary Cleanup Level ^a	-	-	-	-	-	6.5-8.5	-	-	5.6	8	2.5	-	80
1-Feb-05	8.47	2205	-	-	6.24	10.23	-	1440	-	149	10.7	-	-
9-Mar-05	11.38	2054	-	-	7.80	10.15	2.64	1630	-	200	11.9	-	-
5-Apr-05	7.7	2169	-	-	7.99	10.42	10.00	1420	-	129	8.61	-	-
10-May-05	14.1	1912	-	-	562.00	9.87	25.00	1210	-	105	7.63	-	-
7-Jun-05	15.74	2588	-	-	11.60	10.03	6.82	1570	-	138	10.1	-	-
15-Jul-05 ^a	20.38	3184	-	-	8.91	10.36	0.94	3200	-	192	9.98	-	-
15-Jul-05 ^b	-	-	-	-	-	-	-	1990	-	189	10.8	-	-
9-Aug-05 ^a	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	-	DRY	DRY	-	-
9-Aug-05 ^b	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	-	DRY	DRY	-	-
14-Sept-05 ^a	15.60	3792	-	-	14.50	9.92	0.07	2800	-	208	57.8	-	-
14-Sept-05 ^b	-	-	-	-	-	-	-	2730	-	223	73.3	-	-
5-Oct-05	12.96	3237	-	-	4.99	9.89	0.32	2150	-	170	12.5	-	-
9-Nov-05	8.40	2545	-	-	13.80	9.64	7.50	1900	-	78.2	10 U	-	-
9-Dec-05	3.34	1377	-	-	8.03	10.43	5.00	1700	-	130	6.12	-	-
19-Jan-06	7.37	1424	7.92	-	12.20	10.61	7.50	1000 J	-	89.5	4.81	-	-
16-Feb-06	3.74	1680	12.19	*	14.60	10.78	7.50	1400 J	-	105	5.46	-	-
15-Mar-06	7.21	1634	12.61	194.4	7.44	10.63	5.28	1300 J	-	128	6.38	-	-
7-Apr-06	14.33	2055	8.54	55.3	9.21	10.84	3.17	1500	-	143	6.63	-	-
16-May-06	21.65	2474	6.09	11.6	9.37	10.69	0.83	2000	-	157	8.19	-	-
23-Jun-06	24.58	2820	6.66	-	15.40	11.64	0.63	1400	-	154	13.1	-	-
20-Jul-06	21.17	3291	8.56	-85.5	68.30	10.75	DRY*	2300	-	131	9.41	-	-
22-Aug-06	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	-	DRY	DRY	-	-
26-Sep-06	16.38	2997	3.00	-57.1	31.60	9.92	DRY*	2900	-	103	16.8	-	-
26-Oct-06	11.00	2650	5.35	59.6	25.80	9.65	0.63	2300	-	132	26.3	-	-
15-Nov-06	8.51	1708	8.16	-35.7	34.70	10.15	17.14	1200	-	67.4	8.07	-	-
20-Dec-06	5.07	1927	8.84	14.8	7.94	10.67	10.91	1200	-	99.7	4.78	-	-
24-Jan-07	2.30	1846	10.72	5.9	11.70	10.37	9.00	1100 J	-	126	16.1	-	-
12-Feb-07	9.26	1777	11.75	-91.3	26.70	10.56	6.00	1100	-	139	7.12	-	-
27-Mar-07	8.71	1219	9.18	-12.6	13.80	8.70	24.00	840 J	-	88.5	4.86	-	-
18-Apr-07	7.39	4563	8.65	41.0	16.80	12.12	9.00	2000	-	97.5	32.5	-	-
31-May-07	-	3916	6.33	-149.5	10.70	10.96	1.36	2100	-	275	22.9	-	-
20-Jun-07	22.59	3336	8.50	-20.4	42.50	10.46	0.29	2400 J	-	255	27.4	-	-
31-Jul-07	18.94	3915	7.85	-69.2	41.30	10.92	0.06	3300	-	236	12.6	-	-
29-Aug-07	21.52	2406	5.75	-5.3	24.10	9.72	DRY*	2300 J	-	129	8.45	-	-
27-Sep-07	13.88	2009	5.75	15.5	28.30	9.56	0.06	1600	-	207	4.37	-	-
26-Oct-07	7.68	1662	9.06	80.5	13.00	9.92	2.04	1800 J	-	132	7.53	-	-
30-Nov-07	4.34	2446	9.63	26.7	11.70	9.86	2.63	1600	-	135	8.27	-	-
12-Dec-07	5.88	2056	10.34	39.3	10.30	10.18	2.63	1500	-	105	5.73	-	-
24-Jan-08	3.05	1601	15.03	42.3	-	9.40	2.63	1000	-	87.4	4.06	-	-
28-Feb-08	-	-	-	-	9.22	-	4.13	1200	-	118	8.92	-	-
25-Mar-08	6.80	1622	12.37	95.1	16.40	9.98	5.25	1100	-	110	3.86	-	-
29-Apr-08	7.53	1997	9.10	137.4	11.90	10.29	7.50	1100 J	-	124	7.05	-	-
20-May-08	16.35	2504	9.03	77.4	32.90	10.92	7.50	1700	-	146	14.7	-	-
18-Jun-08	11.82	2925	8.32	68.3	25.70	11.14	1.69	1800 J	-	208	8.48	-	-
26-Aug-08	17.69	3376	7.98	62.8	41.10	10.43	0.84	2200 J	-	287	13.2	647000	-
20-Nov-08	8.10	1447	9.65	112.0	43.70	11.00	11.25	1400	-	121	16.2	485000	-
12-Feb-09	2.99	1214	14.46	-	14.60	10.93	4.06	1200	-	219	11.8	434000	-
19-May-09	13.05	1962	7.92	32.6	36.70	10.23	7.50	1800 J	-	210	13.7	521000	-
24-Sep-09	16.30	2792	1.59	263.8	13.70	8.82	DRY*	2400	-	130	53	730000	-
15-Dec-09	2.80	1702	7.47	343.0	-	10.18	6.67	1200	-	170	22	330000	-
24-Mar-10	13.80	2629	2.09	270.7	263.00	11.46	6.03	1800	-	180	20	600000	-
17-Jun-10	12.00	1876	0.01	-	157.00	10.76	14.15	1200	-	27	3.9	410000	-
20-Sep-10	11.40	3100	6.34	198.6	12.20	10.63	2.38	2800	-	250	40	580000	-
7-Dec-10	6.60	2455	4.03	154.0	11.00	11.61	16.69	1600	-	240	26	510000	-
30-Mar-11	8.10	848	0.22	136.1	31.50	13.08	58.61	940 J	-	91	9.9	330000	-
22-Jun-11	14.40	2286	5.68	164.2	13.20	11.28	5.68	2600 J	-	120	25	490000	-
27-Sep-11	16.20	1911	4.62	253.4	39.10	10.07	13.40	2100	-	170	45	880000	-
15-Dec-11	4.10	1439	7.40	139.4	10.60	10.33	6.65	1400	-	180	21	500000	-
20-Mar-12	5.20	1687	8.50	27.5	9.60	11.17	60.00	410	-	130	7.4	290000	-
18-Jun-12	14.70	2336	0.11	326.9	15.60	11.25	60.00	410	-	130	9.8	430000	-
20-Sep-12	15.30	2972	7.81	106.0	12.10	9.55	0.10	1400 J	-	130	2.2	450000	-

**Table A-1b: Summary of Lower Disposal Area - Surface Water Sampling Results - Weir
Ravensdale Site, Ravensdale, Washington**

Date Sampled	Field Parameters							Gen-Chem	Metals (ug/L)				
	Temperature (°C)	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction Potential (mV)	Turbidity (NTU)	pH (standard units)	Weir Flow Rate (gpm)		Total Dissolved Solids (mg/L)	Antimony	Arsenic	Lead	Potassium
Preliminary Cleanup Level ^a	-	-	-	-	-	6.5-8.5	-	-	5.6	8	2.5	-	80
18-Dec-12	4.80	1908	9.34	-14.2	7.41	10.28	18.50	870	-	120	8.1	390000	-
26-Feb-13	5.80	6470	11.27	161.6	22.00	12.46	9.90	1800	-	99	62	710000	-
23-May-13	10.50	1625	9.14	291.8	14.40	9.93	4.84	980	-	94	21	310000	-
21-Aug-13	15.70	7260	7.69	51.6	9.00	10.71	0.32	2780	-	342	18.3	954000	-
19-Nov-13	8.10	2032	10.00	87.4	9.95	11.19	25.40	1270	-	70.8	16.9	487000	-
1-Apr-14	13.70	3420	9.11	129.4	59.00	12.57	20.77	1300	-	37.3	12	572000	-
23-May-14	12.83	986	11.63	105.7	-	9.36	-	822	-	47	13.9	274000	-
13-Aug-14	18.38	2000	5.52	63.6	8.93	8.02	2.00	1250	-	13.4	0.6	326000	-
11-Nov-14	6.70	259	9.77	164.8	4.27	8.09	1.50	955	-	19	0.2	315000	-
12-Feb-15	10.00	669	11.13	142.9	2.75	8.62	40.00	1490	-	14.9	1.8	155000	-
4-May-15	13.70	1293	8.69	181.7	155.00	9.38	0.09	1100	-	43.3	11.3	292000	-
5-Aug-15	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	-	DRY	DRY	DRY	-
3-Nov-15	9.70	1296	7.66	165.6	13.70	8.03	1.98	1200	-	11.4	0.8	355000	-
9-Feb-16	9.10	838	8.79	181.4	2.17	7.87	0.69	529	-	7.8	0.5 J+	145000	-
2-May-16	23.40	1126	6.16	128.1	7.59	7.63	DRY*	688	-	7.6	0.06 J-	162000	-
23-Aug-16	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	-	DRY	DRY	DRY	-
1-Nov-16	11.70	332	7.12	97.5	7.71	7.76	7.24	703	-	9.18	0.3	207000	-
1-Feb-17	2.30	925	11.55	39.1	2.04	7.71	0.30	567	-	4.9	0.09 J	135000	-
30-May-17	13.30	817	57.50	8.3	22.20	7.40	0.30	516	-	13.1	0.08 J+	94300	-
17-Aug-17	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	-	DRY	DRY	DRY	-
9-Nov-17	7.00	851	7.57	88.0	67.30	8.43	-	865	-	36.6	10.7	236000	-
27-Feb-18	5.50	498	10.68	106.0	5.39	8.60	-	503	-	9.7	1.23	127000	-
1-May-18	12.80	894	8.87	-	2.39	7.97	-	656	-	7.81	0.1 UJ	195000	-
21-Aug-18	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	-	DRY	DRY	DRY	-
7-Nov-18	8.50	1079	7.37	166.6	5.48	7.94	-	1030	-	15.7	0.089 J	322000 J+	-
11-Mar-19	5.00	525	9.79	146.3	1.28	7.76	-	541	-	4.21	0.1 U	133000	-
9-May-19	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	-	DRY	DRY	DRY	-
26-Aug-19	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	-	DRY	DRY	DRY	-
14-Nov-19	7.40	842	4.10	214.3	19.00	7.74	DRY*	783	-	11.3	0.076 J	242000	-
12-Feb-20	7.20	401	8.41	-38.3	2.47	7.53	3.96	348	-	4.81	0.1 U	86900	-
13-Aug-20	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	-	DRY	DRY	DRY	-
10-Dec-20	7.20	581	6.72	185.0	0.96	7.80	8	560	-	5.13	0.1 U	126000	-
4-Mar-21	4.90	427	7.11	146.0	2.50	7.86	3	424	-	3.7	0.114	80600	-
10-Jun-21	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	-	DRY	DRY	DRY	-
13-Oct-21	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
6-Jan-22	4.90	269	10.81	211.8	15.90	7.63	300	228	5.52	4.33	0.698	50500	1
17-Mar-22	7.00	410	9.46	157.2	0.91	7.43	8	394	5.37	3.5	0.055 J	86000	1
21-Jun-22	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
12-Sep-22	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
13-Dec-22	5.60	712	6.9	12.5	1.29	7.83	-	535	10.5	3.27	0.113 J+	111000	1.01
15-Mar-23	5.10	758.2	6.46	202.5	9.22	7.49	0.1	437	5.92	3.49	0.197	96000	0.825
26-Jun-23	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
7-Sep-23	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
13-Dec-23	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
5-Mar-24	4.10	673	7.31	117.1	9.45	7.09	1.59	445	5.28	4.74	2.23	76800	1.16
17-Jun-24	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
16-Sep-24	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
9-Dec-24	6.6	823	40.22	58.4	1.07	7.36	-	542	5.42	3.70	0.136 U	99800	0.67
24-Mar-25	10.2	680.7	802	175.7	7.31	7.41	-	449	4.35	2.89	0.2 U	87400	0.668

Notes:

Dissolved metals were analyzed at the Site until December 2020 (Q4 2020). Total metals were analyzed for Q4 2020 and will continue to be analyzed moving forward. Iron and manganese are not included in the COPCs at the Site and are not analyzed beginning in Q2 2021. Antimony and Vanadium were included as COPCs for surface water locations and shallow groundwater monitoring wells at the Site beginning in Q3 2021.

* Sample collected from constructed wetland (alternative sampling location) upstream of weir

- Not analyzed or not available

DRY Weir dry; unable to collect field parameters or samples

Orange shaded values indicate parameter results above the Preliminary Cleanup Level (PCUL), except for pH, which could be above or below the PCUL.

^a Preliminary Cleanup Level (PCUL) provided by Ecology 30 Sept 2022

U Data validation code; not detected at the Reporting Limit (RL)

J Data validation code; estimated value

J+ Data validation code; estimated value with positive bias

°C Degrees Celsius

µmhos/cm Micromhos per centimeter

feet bmp Feet below measuring point

feet NAVD88 Feet NAVD88 Datum

gpm Gallons per minute

mg/L Milligrams per liter

mV Millivolts

NTU Nephelometric Turbidity Unit

**Table A-1c: Summary of Lower Disposal Area - Surface Water Sampling Results - South Pond
Ravensdale Site, Ravensdale, Washington**

Date Sampled	Field Parameters						Gen-Chem Total Dissolved Solids (mg/L)	Metals (ug/L)				
	Temperature (°C)	Conductivity (umhos/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction Potential (Rel mV)	Turbidity (NTU)	pH (standard units)		Antimony	Arsenic	Lead	Potassium	Vanadium
Preliminary Cleanup Level ^c	-	-	-	-	-	6.5-8.5	-	5.6	8	2.5	-	80
1-Feb-05	7.13	9580	-	-	4.19	13.02	4080	-	174	24.3	-	-
9-Mar-05	14.28	9979	-	-	6.79	12.52	4640	-	240	42.1	-	-
5-Apr-05	9.90	10820	-	-	43.50	11.99	3830	-	133	9.85	-	-
10-May-05	15.10	6091	-	-	45.60	12.14	3270	-	92.9	25.5	-	-
7-Jun-05	14.49	8257	-	-	24.20	12.19	3780	-	132	24.7	-	-
15-Jul-05 ^a	18.34	6937	-	-	6.89	11.69	5000	-	281	31.8	-	-
15-Jul-05 ^b	-	-	-	-	-	-	4260	-	237	34.2	-	-
9-Aug-05 ^a	23.53	7654	-	-	17.1	10.26	6600	-	322	44.5	-	-
9-Aug-05 ^b	-	-	-	-	-	-	5580	-	340	37.1	-	-
14-Sept-05 ^a	18.55	6730	-	-	10.00	10.51	5100	-	235	19.3	-	-
14-Sept-05 ^b	-	-	-	-	-	-	4750	-	268	34.2	-	-
5-Oct-05	12.14	4323	-	-	17.60	9.80	3090	-	130	26.5	-	-
9-Nov-05	6.78	3784	-	-	11.80	11.12	2600	-	121	21.7	-	-
9-Dec-05	3.22	8745	-	-	12.90	12.85	3900	-	175	14.1	-	-
19-Jan-06	7.73	5215	5.43	-	13.30	12.52	2000 J	-	20.3	3.24	-	-
16-Feb-06	3.96	9342	8.97	231.2	9.08	12.30	4100 J	-	43	25.6	-	-
15-Mar-06	8.72	12910	9.59	222.1	7.64	12.60	5100 J	-	38.6	41.8	-	-
7-Apr-06	14.26	15220	6.90	18.9	3.65	12.92	5700	-	48.5	65.6	-	-
16-May-06	19.75	10880	2.61	33.8	15.40	12.46	5100	-	130	92.1	-	-
23-Jun-06	22.76	7586	2.98	-	14.10	12.65	5100	-	130	57.9	-	-
20-Jul-06	24.33	7457	0.73	-148.4	16.70	11.33	6400	-	272	51.3	-	-
22-Aug-06	15.03	7481	3.75	61.0	14.10	10.40	6100	-	318	33.2	-	-
26-Sep-06	17.30	8409	1.31	-312.4	15.10	12.38	5500	-	230	45.7	-	-
26-Oct-06	10.95	6075	4.10	-265.6	13.30	12.18	4600	-	243	41.5	-	-
15-Nov-06	8.07	5022	7.71	-152.7	21.50	12.24	2600	-	76.2	3.68	-	-
20-Dec-06	6.32	9148	5.73	-139.6	12.20	12.85	2900 J	-	46.1	1.28	-	-
24-Jan-07	2.15	12690	9.24	-98.4	9.74	13.10	3000 J	-	19.2	26.8	-	-
12-Feb-07	9.35	14110	8.43	-86.7	32.50	13.13	4700	-	96.2	83.5	-	-
27-Mar-07	9.16	10560	8.41	-46.2	7.42	11.31	2900 J	-	5.98	14.5	-	-
18-Apr-07	8.27	14570	8.32	10.8	10.30	12.79	5200	-	19.8	22.1	-	-
31-May-07	23.66	13410	6.42	-95.0	31.20	11.77	5100	-	78.4	50.4	-	-
20-Jun-07	26.35	10050	5.53	-195.7	27.90	12.29	5300 J	-	112	38.2	-	-
31-Jul-07	21.39	6666	4.76	-106.4	72.00	10.86	6300	-	208	68.8	-	-
29-Aug-07	22.61	6950	1.57	-193.4	61.80	12.05	6300 J	-	149	30.6	-	-
27-Sep-07	11.45	5059	2.66	-180.4	78.40	11.43	4800	-	190	17.4	-	-
26-Oct-07	6.98	4147	1.44	-204.7	39.50	12.48	3900 J	-	168	25.5	-	-
30-Nov-07	2.86	5030	8.50	-74.9	12.40	12.20	2600	-	121	14.3	-	-
12-Dec-07	4.45	3564	2.03	-141.8	20.70	10.93	2700	-	79.3	9.87	-	-
24-Jan-08	1.13	4859	4.10	-186.8	-	11.19	2200	-	86.1	6.79	-	-
28-Feb-08	-	-	-	-	18.10	-	2800	-	183	73.4	-	-
25-Mar-08	7.37	5413	7.88	-58.2	122.00	12.29	2900	-	182	13	-	-
29-Apr-08	8.43	3685	9.04	59.3	19.20	11.63	2400 J	-	152	16	-	-
20-May-08	18.03	3554	6.69	58.0	156.00	11.01	2100	-	137	38.3	-	-
18-Jun-08	13.01	5680	6.46	57.5	71.80	11.14	4000 J	-	279	34.4	-	-
26-Aug-08	18.02	2800	5.72	16.9	49.80	10.08	2500 J	-	91.7	18.6	557000	-
20-Nov-08	7.46	2011	9.04	38.3	23.60	10.49	2300	-	72.9	9.2	566000	-
12-Feb-09	1.63	1870	11.74	-	46.10	10.83	2300	-	129	17.2	738000	-
19-May-09	12.73	1895	5.37	-16.4	168.00	9.82	1700 J	-	78.9	11.3	515000	-
23-Sep-09	21.50	4190	0.09	175.1	14.40	9.70	4100	-	120	99	1300000	-
14-Dec-09	+	+	+	+	+	+	+	-	+	+	+	-
22-Mar-10	13.10	2480	-	342.0	15.60	10.05	1700	-	76	34	520000	-
17-Jun-10	13.40	2429	5.14	-	26.10	10.77	2100	-	120	89	630000	-
21-Sep-10	16.30	2733	1.10	216.8	21.50	9.81	2200	-	25	27	510000	-
8-Dec-10	6.00	1994	2.70	-	18.70	10.05	1400	-	53	18	490000	-

**Table A-1c: Summary of Lower Disposal Area - Surface Water Sampling Results - South Pond
Ravensdale Site, Ravensdale, Washington**

Date Sampled	Field Parameters						Gen-Chem Total Dissolved Solids (mg/L)	Metals (ug/L)				
	Temperature (°C)	Conductivity (umhos/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction Potential (Rel mV)	Turbidity (NTU)	pH (standard units)		Antimony	Arsenic	Lead	Potassium	Vanadium
Preliminary Cleanup Level ^c	-	-	-	-	-	6.5-8.5	-	5.6	8	2.5	-	80
30-Mar-11	9.10	509	0.37	179.2	13.80	12.04	730 J	-	36	14	260000	-
21-Jun-11	21.60	2092	1.90	192.2	13.60	10.07	2800 J	-	62	29	380000	-
27-Sep-11	14.60	1516	9.34	220.4	32.50	9.34	1800	-	78	36	780000	-
15-Dec-11	3.00	1449	1.90	94.6	13.80	10.75	2100	-	140	74	630000	-
21-Mar-12	2.60	1088	8.10	285.7	13.10	9.95	780	-	30	7.2	240000	-
19-Jun-12	17.10	1747	5.54	345.3	10.80	9.93	780	-	70	29	400000	-
20-Sep-12	-	-	-	-	-	-	-	-	-	-	-	-
19-Dec-12	4.00	1771	6.37	104.0	6.12	10.71	1300	-	47	18	440000	-
26-Feb-13	6.90	3720	5.40	196.7	10.60	11.86	1100	-	140	39	690000	-
23-May-13	11.50	2335	5.21	323.5	44.10	12.48	1800	-	130	50	530000	-
22-Aug-13	DRY	DRY	DRY	DRY	DRY	DRY	DRY	-	DRY	DRY	DRY	-
19-Nov-13	8.20	1256	4.12	79.3	18.20	9.89	1260	-	39.8	20.4	487000	-
1-Apr-14	15.30	2053	4.42	130.9	772.00	11.27	1800	-	113	42.2	649000	-
23-May-14	14.15	2187	5.50	77.3	-	10.19	1860	-	112	23.6	623000	-
13-Aug-14	20.29	1298	5.35	40.1	24.80	9.63	949	-	44.9	22.8	306000	-
12-Nov-14	1.30	315	4.55	-0.5	22.10	10.45	2440	-	122	34.2	804000	-
12-Feb-15	11.10	1267	4.01	-8.2	23.90	10.20	905	-	27.2	9.6	320000	-
4-May-15	15.60	3200	4.35	240.5	9.21	10.42	2280	-	154	30.8	774000	-
5-Aug-15	DRY	DRY	DRY	DRY	DRY	DRY	DRY	-	DRY	DRY	DRY	-
3-Nov-15	8.30	1143	2.01	88.1	35.40	9.22	1050	-	28	28.2	364000	-
9-Feb-16	7.30	1672	3.45	95.9	7.79	10.45	1170	-	51 J+	34	410000	-
3-May-16	14.20	3150	3.61	335.2	63.80	10.35	2260	-	148	97.9 J+	777000	-
24-Aug-16	DRY	DRY	DRY	DRY	DRY	DRY	DRY	-	DRY	DRY	DRY	-
1-Nov-16	12.10	401	5.56	-65.9	15.00	9.43	742	-	21.9	14.1	356000	-
1-Feb-17	2.10	2064	4.82	5.0	17.80	10.27	1330	-	57.6	139	455000	-
31-May-17	14.50	2594	5.36	-	22.70	9.93	1920	-	105	51.5 J+	664000	-
17-Aug-17	DRY	DRY	DRY	DRY	DRY	DRY	DRY	-	DRY	DRY	DRY	-
9-Nov-17	6.50	1049	6.38	92.3	14.40	10.13	1260	-	58.8	53.4 J+	441000	-
27-Feb-18	6.50	1379	4.05	-71.0	6.11	10.94	865	-	61.7	47.7 J+	429000	-
2-May-18	11.60	2547	-	-	25.30	10.36	1860	-	85.9	26.7 J+	611000	-
22-Aug-18	DRY	DRY	DRY	DRY	DRY	DRY	DRY	-	DRY	DRY	DRY	-
7-Nov-18	9.70	995	6.72	126.8	20.60	9.15	1040	-	76	65.5	33000 J+	-
11-Mar-19	10.60	1354	5.93	-18.7	7.19	10.31	1270	-	49.3	41.7	458000	-
9-May-19	DRY	DRY	DRY	DRY	DRY	DRY	DRY	-	DRY	DRY	DRY	-
26-Aug-19	DRY	DRY	DRY	DRY	DRY	DRY	DRY	-	DRY	DRY	DRY	-
14-Nov-19	8.70	1180	5.98	30.9	7.38	9.03	1120	-	67.2	76.4	418000	-
13-Feb-20	4.30	1032	2.51	-126.9	6.10	10.46	927	-	28.1	13	348000	-
13-Aug-20	DRY	DRY	DRY	DRY	DRY	DRY	DRY	-	DRY	DRY	DRY	-
10-Dec-20	5.60	1000	2.52	66.8	6.02	9.66	952	-	12	6.63	318000	-
4-Mar-21	8.10	1271	1.98	38.0	8.02	10.35	4820	-	50.6	35.7	435000	-
10-Jun-21	DRY	DRY	DRY	DRY	DRY	DRY	DRY	-	DRY	DRY	DRY	-
13-Oct-21	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
6-Jan-22	4.50	305	10.57	-30.2	4.07	9.42	300	2.29	4.42	2.29	77100	4.27
17-Mar-22	8.80	997	8.53	-66.4	4.54	11.32	912	4.85	22.60	16.70	358000	37.80
21-Jun-22	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
12-Sep-22	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
13-Dec-22	4.1	1319	8.1	-51.9	15.8	9.45	1170	17.5	40.5	33.1	384000	79.3
15-Mar-23	8.9	1467	10.36	-7.6	6.57	9.33	913	2.75	8.5	4.84	347000	12.3
26-Jun-23	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
6-Sep-23	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
13-Dec-23	5.2	2217	7.86	-41.2	8.63	9	1180	3.98	21.1	15.8	394000	53.4
5-Mar-24	10.5	2327	7.99	-12.1	6.72	9.9	1220	3.99	21.6	15.2	435000	75.1
17-Jun-24	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
16-Sep-24	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
9-Dec-24	3.4	1407	43.39	122.1	7.18	8.68	929	2.99	10.9	6.18	300000	19.3
24-Mar-25	12.6	914	8.5	185.5	5.23	8.97	638	2.05	7.63	4.12	207000	12.6

**Table A-1c: Summary of Lower Disposal Area - Surface Water Sampling Results - South Pond
Ravensdale Site, Ravensdale, Washington**

Notes:

Dissolved metals were analyzed at the Site until December 2020 (Q4 2020). Total metals were analyzed for Q4 2020 and will continue to be analyzed moving forward. Iron and manganese are not included in the COPCs at the Site and are not analyzed beginning in Q2 2021. Antimony and Vanadium were included as COPCs for surface water locations and shallow groundwater monitoring wells at the Site beginning in Q3 2021.

-	Not analyzed or not available	
+	Orange shaded values indicate parameter results above the Preliminary Cleanup Level (PCUL), except for pH, which could be above or below the PCUL.	
+	South Pond frozen; unable to collect field parameters or samples	
Dry	South Pond dry; unable to collect field parameters or samples	
a	North Creek Analytical, Inc.	
b	Severn Trent Laboratories	
c	Preliminary Cleanup Level (PCUL) provided by Ecology 30 Sept 2022	
U	Data validation code; not detected at the Reporting Limit (RL)	
J	Data validation code; estimated value	
J+	Data validation code; estimated value with positive bias	
°C	Degrees Celsius	
µmhos/cm	Micromhos per centimeter	mg/L
feet bmp	Feet below measuring point	mV
feet NAVD88	Feet NAVD88 Datum	NTU

**Table A-2a: Summary of Lower Disposal Area - Shallow Groundwater Sampling Results - Well MW-1A
Ravensdale Site, Ravensdale, Washington**

Date Sampled	Field Parameters								Gen. Chem.	Metals (ug/L)				
	Depth to Water (feet btoc)	Groundwater Elevation (feet NAVD88)	Temperature (°C)	Conductivity (umhos/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction Potential (Rel mV)	Turbidity (NTU)	pH (standard units)		Total Dissolved Solids (mg/L)	Antimony	Arsenic	Lead	Potassium
Preliminary Cleanup Level ^a	-	-	-	-	-	-	-	6.5-8.5	-	5.6	8	2.5	-	80
15-Jul-05	35.43	578.01	15.17	883	-	-	358	7.03	664	-	8.47	2 U	-	-
9-Nov-05	31.83	581.61	10.77	1037	-	-	22.2	6.89	680	-	3.45	1 U	-	-
15-Feb-06	23.91	589.53	9.14	623	1.53	497.4	6.76	7.26	470 J	-	3.25	1 U	-	-
17-May-06	31.91	581.53	11.32	1029	1.33	121.6	10.3	7.18	600	-	5.18	1 U	-	-
23-Aug-06	35.35	578.09	19.21	481	5.97	60.4	6.3	6.67	340	-	1.7	1 U	-	-
14-Nov-06	20.00	593.44	10.35	635	4.55	95.1	22.2	7.23	550	-	3.07	1 U	-	-
14-Feb-07	29.29	584.15	11.13	435	3.88	85.6	32.1	6.76	260	-	2	1 U	-	-
30-May-07	32.90	580.54	10.30	545	6.63	145.7	6.93	6.81	320	-	2.48	1 U	-	-
27-Aug-07	35.68	577.76	10.49	428	7.13	76.7	8.65	6.95	260 J	-	1.87	1 U	-	-
29-Nov-07	32.75	580.69	10.10	625	7.14	144.3	12.2	6.96	340 J	-	2.32	1 U	-	-
27-Feb-08	27.83	585.61	-	-	-	-	19.6	-	320	-	2.58	1 U	-	-
20-May-08	31.86	581.58	10.22	471	6.38	177.0	109	6.48	290 J	-	2.24	1 U	-	-
27-Aug-08	36.04	577.40	9.84	427	7.40	118.4	63.6	7.08	260	-	2.05	1 U	23000	-
26-Sep-08	Test Trench Drain Line Installed													
16-Oct-08	35.65	577.79	9.51	443	9.78	113.9	38	7.38	260 J	-	1.79	1 U	22900	-
20-Nov-08	25.62	587.82	9.49	563	6.11	231.0	5.48	7.18	430	-	3.68	1 U	106000	-
30-Dec-08	23.14	590.30	9.84	402	8.40	106.9	8.92	7.25	280 J	-	2.47	1 U	43900	-
15-Jan-09	20.66	592.78	8.40	336	9.65	229.6	1.07	6.88	290	-	2.25	1 U	35700	-
12-Feb-09	30.00	583.44	9.05	372	8.46	-	16.7	7.34	320	-	1.93	1 U	27000	-
12-Mar-09	31.30	582.14	9.13	409	8.60	174.9	15.8	7.03	340	-	1.66	1 U	20600	-
16-Apr-09	23.88	589.56	8.17	343	10.24	131.8	13.5	6.78	310	-	1.77	1 U	24600	-
19-May-09	30.50	582.94	8.99	392	8.69	82.6	23.7	7.75	340 J	-	1.56	1 U	19600	-
23-Jun-09	34.00	579.44	9.21	480	9.56	79.0	22.9	7.89	430	-	2 U	2 U	20000	-
25-Aug-09	36.95	576.49	13.10	373	6.47	311.9	4.98	6.76	270 J+	-	0.64 J	2 U	17000	-
23-Sep-09	37.12	576.32	11.30	336	6.90	368.3	21.3	6.73	240	-	2 U	0.18 J	14000	-
15-Dec-09	28.30	585.14	9.20	643	5.30	567.0	18	6.72	330	-	2 U	2 U	26000	-
24-Mar-10	30.03	583.41	9.80	562	5.72	545.9	5.04	6.74	370	-	1.9 J	2 U	19000	-
16-Jun-10	23.55	589.89	9.20	506	5.93	405.4	16.1	6.53	40 U	-	3.6	2 U	20000	-
21-Sep-10	35.89	577.55	10.40	593	4.82	288.5	117	6.96	370	-	2.6	0.23 J	19000	-
7-Dec-10	27.39	586.05	10.00	504	1.45	198.4	139	7.15	330	-	2.3	2 U	14000	-
29-Mar-11	29.76	583.68	8.10	247	2.47	169.0	6.81	7.14	300	-	2.4	2 U	15000	-
21-Jun-11	30.45	582.99	9.30	606	4.58	332.9	3.56	7.17	400 J	-	5 U	2 U	16000	-
27-Sep-11	36.65	576.79	9.90	366	7.27	356.2	2.18	6.85	310	-	5 U	2 U	17000	-
14-Dec-11	31.53	581.91	9.20	407	1.97	234.7	20.4	7.09	370	-	5 U	2 U	16000	-
20-Mar-12	21.60	591.84	7.70	561	7.06	385.4	4.8	7.18	280	-	2.3	0.4 U	16000	-
19-Jun-12	21.60	591.84	10.00	575	7.04	378.2	5.6	7.31	330	-	2.5	0.4 U	16000	-
19-Sep-12	36.42	577.02	11.30	561	8.76	286.0	2.49	7.02	310	-	2.4	0.4 U	17000	-
19-Dec-12	23.43	590.01	9.30	671	6.67	348.2	0.74	7.26	20 U	-	1.7	0.4 U	17000	-
25-Feb-13	29.32	584.12	8.00	572	9.51	337.0	26	7.28	300	-	2.5	0.4 U	16000	-
22-May-13	31.23	582.21	9.00	518	8.59	397.7	4.68	7.40	310	-	1.8	0.4 U	15000	-
21-Aug-13	37.02	576.42	10.20	534	9.27	152.7	1.46	7.11	227	-	1.2	0.1 U	14100	-
20-Nov-13	29.69	583.75	9.50	852	7.62	243.5	39.5	6.75	419	-	1.6	0.1 U	19900	-
1-Apr-14	23.29	590.15	8.90	347	7.60	248.1	2.54	7.30	247	-	2	0.1 U	16500	-
21-May-14	28.31	585.13	9.50	349	4.02	178.6	-	7.12	280	-	1.8	0.1 U	15100	-
13-Aug-14	36.52	576.92	12.10	441	9.22	51.9	6.2	7.10	283	-	1.4	0.1 U	15200	-
13-Nov-14	31.63	581.81	11.50	438	8.80	173.0	14.7	7.10	352	-	1.6	0.1 U	17100	-
11-Feb-15	23.02	590.42	9.40	498	3.89	98.1	10.5	7.72	319	-	9.1	0.3	42900	-
4-May-15	31.93	581.51	9.80	578	7.35	416.9	1.05	7.26	413	-	1.7	0.1 U	16000	-
6-Aug-15	37.65	575.79	10.70	447	0.17	71.6	49	7.21	343	-	3.9	0.1 U	10300	-
4-Nov-15	32.89	580.55	9.50	657	8.56	240.5	5.7	6.92	554	-	2.3	0.1 U	49300	-
10-Feb-16	25.39	588.05	9.80	322	7.36	204.8	3.21	7.31	202	-	2	0.1 U	22200	-
2-May-16	32.32	581.12	10.80	579	5.95	250.2	4.7	7.02	350	-	1.8	0.04 J-	17800	-
23-Aug-16	37.66	575.78	11.00	488	1.34	459.9	259	7.08	413	-	3.88	0.07 J	14600	-
2-Nov-16	31.30	582.14	9.70	280	3.94	225.0	6.13	7.18	531	-	2.13	0.12	37700	-
1-Feb-17	29.01	584.43	8.60	510	5.26	187.7	0.97	7.04	270	-	1.47	0.1 U	19000	-
30-May-17	28.47	584.97	9.50	483	6.89	4.7	4.85	6.96	290	-	2.09	0.1 U	15700	-
17-Aug-17	36.30	577.14	10.50	536	3.79	82.5	6.44	6.96	283	-	1.55	0.1 U	15500	-
9-Nov-17	32.20	581.24	9.20	460	5.89	75.1	2.7	7.01	380	-	1.63	0.1 U	16300	-
27-Feb-18	25.18	588.26	8.90	215	7.35	121.6	6.04	6.31	186	-	1.72	0.1 U	15500	-
1-May-18	26.98	586.46	9.50	391	7.82	-	3.06	6.94	214	-	1.65	0.1 UJ	14100	-
21-Aug-18	37.29	576.15	10.02	266	7.37	75.6	129	6.84	215	-	1.51	0.1 U	13300	-
6-Nov-18	34.18	579.26	9.60	340	9.13	215.4	1	6.93	327	-	1.67	0.1 U	16600	-

**Table A-2a: Summary of Lower Disposal Area - Shallow Groundwater Sampling Results - Well MW-1A
Ravensdale Site, Ravensdale, Washington**

Date Sampled	Field Parameters								Gen. Chem.	Metals (ug/L)				
	Depth to Water (feet btoC)	Groundwater Elevation (feet NAVD88)	Temperature (°C)	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction Potential (Rel mV)	Turbidity (NTU)	pH (standard units)	Total Dissolved Solids (mg/L)	Antimony	Arsenic	Lead	Potassium	Vanadium
Preliminary Cleanup Level ^a	-	-	-	-	-	-	-	6.5-8.5	-	5.6	8	2.5	-	80
11-Mar-19	27.75	585.69	8.90	323	5.65	185.3	4.29	6.94	269	-	1.36	0.1 U	14400	-
8-May-19	30.05	583.39	9.80	448	7.77	97.6	1.11	6.87	320	-	1.25	0.1 U	15100	-
26-Aug-19	37.02	576.42	9.83	329	1.16	Note 1	7.97	7.11	258	-	0.904	0.1 U	10700	-
13-Nov-19	35.13	578.31	9.20	376	5.50	144.0	8.26	6.87	320	-	1.23	0.1 U	15800	-
12-Feb-20	20.38	593.06	9.00	381	2.58	191.6	1.33	7.15	268	-	1.25	0.1 U	26600	-
12-Aug-20	36.61	576.83	9.50	285	5.01	198.7	0.8	6.96	214	-	1.14	0.1 U	14100	-
9-Dec-20	32.05	581.39	9.10	425	7.17	211.0	1.57	6.86	347	-	1.11	0.1 U	17100	-
3-Mar-21	27.01	586.43	8.60	383	5.71	248.0	0.6	6.83	299	-	1.16	0.1 U	17400	-
9-Jun-21	35.32	578.12	9.20	422	8.47	151.0	2.22	6.68	310	-	1.39	0.1 U	16300	-
12-Oct-21	33.84	579.60	9.30	329	9.07	160.8	1.55	6.34	236 J-	0.846	1.13	0.1 U	12500	0.801
5-Jan-22	25.20	588.24	9.20	344	7.96	170.2	0.67	6.54	255	1.06	1.02	0.1 U	18100	0.782
16-Mar-22	23.67	589.77	9.30	386	7.79	155.0	0.96	5.60	350	1.58	1.33	0.1 U	36800	0.887
23-Jun-22	27.91	585.53	9.80	356	7.21	152.8	2.55	6.93	281	1.08	1.04	0.1 U	16500	0.86
23-Sep-22	37.05	576.39	13.2	312.5	6.93	128.4	2.84	6.91	222	0.83	1.2	0.137	14100	0.786
13-Dec-22	32.35	581.09	9.4	394.6	8.79	99.3	0.31	6.77	234	0.955	1.13	0.1 U	14500	0.791
13-Mar-23	29.36	584.08	8	584.2	9.22	90.2	0.29	6.85	298	0.86	1.27	0.053 J	14000	0.935
28-Jun-23	34.78	578.66	9.4	527	9.69	277.4	0.85	6.68	363	0.87	1.18	0.1 U	16600	0.862
5-Sep-23	37.62	575.82	9.5	586.1	5.14	77.6	3.75	6.97	360 J-	0.41	3.82	0.586	13300	2.23
12-Dec-23	22.16	591.28	9.2	806	7.53	120.7	1.27	6.7	424	1.71	1.39	0.103 U	43400	0.986
4-Mar-24	26.79	586.65	8.4	437.2	8.26	194.8	0.42	6.56	274 J	0.83	1.02	0.103 U	13400	0.614
18-Jun-24	32.56	580.88	8.8	700	12.5	119.2	0.39	6.64	335	0.87	1.14	0.103 U	13900	0.684
16-Sep-24	36.11	577.33	9.5	366.8	9.72	174.4	0.64	6.51	205	0.668	0.996	0.103 U	10700	0.585 J
11-Dec-24	31.08	582.36	9	491.7	8.26	122.5	0.78	6.65	285	0.726	1.09	0.0680 U	12300	0.583
26-Mar-25	25	588.44	70.2	675.8	9.71	130.9	2.35	6.7	387	1.1	1.04	0.2 U	23500	0.634

Notes:

Top of casing elevation (feet NAVD88): 613.44

Dissolved metals were analyzed at the Site until December 2020 (Q4 2020). Total metals were analyzed for Q4 2020 and will continue to be analyzed moving forward. Iron and manganese are not included in the COPCs at the Site and are not analyzed beginning in Q2 2021. Antimony and Vanadium were included as COPCs for surface water locations and shallow groundwater monitoring wells at the Site beginning in Q3 2021.

- Not measured or not available

Orange shaded values indicate parameter results above the Preliminary Cleanup Level (PCUL), except for pH, which could be above or below the PCUL.

a Preliminary Cleanup Level (PCUL) provided by Ecology 30 Sept 2022

U Data validation code; not detected at the Reporting Limit (RL)

J Data validation code; estimated value

J+ Data validation code; estimated value with positive bias

°C Degrees Celsius

Note 1 ORP measurements not available due to faulty sensor.

µmhos/cm Micromhos per centimeter

feet bmp Feet below measuring point

feet NAVD88 Feet NAVD88 Datum

mg/L Milligrams per liter

mV Millivolts

NTU Nephelometric Turbidity Unit

**Table A-2b: Summary of Lower Disposal Area - Shallow Groundwater Sampling Results - Well MW-2A
Ravensdale Site, Ravensdale, Washington**

Date Sampled	Field Parameters								Gen. Chem.	Metals (ug/L)				
	Depth to Water (feet btoc)	Groundwater Elevation (feet NAVD88)	Temperature (°C)	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction Potential (Rel mV)	Turbidity (NTU)	pH (standard units)		Total Dissolved Solids (mg/L)	Antimony	Arsenic	Lead	Potassium
Preliminary Cleanup Level ^a	-	-	-	-	-	-	-	6.5-8.5	-	5.6	8	2.5	-	80
15-Jul-05	29.18	578.03	13.78	853	-	-	28.3	7.7	606	-	2 U	2 U	-	-
9-Nov-05	25.64	581.57	10.95	860	-	-	3.82	7.43	550	-	1.31	1 U	-	-
15-Feb-06	17.64	589.57	7.81	709	0.82	467.7	3.96	7.86	520 J	-	1.06	1 U	-	-
17-May-06	25.76	581.45	9.67	810	2.17	246.1	3.01	7.06	490	-	1.13	1 U	-	-
23-Aug-06	29.13	578.08	12.86	759	2.6	12	9.82	7.4	570	-	1.54	1 U	-	-
14-Nov-06	13.74	593.47	10.44	649	3.72	63.6	9.78	7.72	460	-	1.36	1 U	-	-
14-Feb-07	22.09	585.12	10.77	648	1.69	11.5	52.4	7.51	380	-	1.07	1 U	-	-
30-May-07	26.72	580.49	11.46	732	2.05	72.2	12.8	7.44	480	-	1.17	1 U	-	-
27-Aug-07	29.45	577.76	10.8	829	7.41	62.8	117	7.58	590 J	-	1.09	1 U	-	-
29-Nov-07	26.57	580.64	10.74	899	2	81.1	392	6.05	490	-	1.03	1 U	-	-
27-Feb-08	21.45	585.76	-	-	-	-	446	-	400	-	1.09	1 U	-	-
20-May-08	25.73	581.48	9.48	706	3.07	110.2	419	7.26	420 J	-	1.21	1 U	-	-
27-Aug-08	29.84	577.37	9.87	824	4.74	91.5	571	7.43	550 J	-	1.3	1 U	65100	-
26-Sep-08	Test Trench Drain Line Installed													
16-Oct-08	29.13	578.08	9.76	820	4.56	53.6	227	7.33	520 J	-	1.3	1 U	76300	-
20-Nov-08	19.48	587.73	9.31	462	5.24	240.1	6.16	7.35	360	-	1.76	1 U	67000	-
30-Dec-08	16.93	590.28	9.85	480	6.18	66.8	56.1	7.35	390 J	-	1.55	1 U	61500	-
15-Jan-09	14.46	592.75	7.71	402	7.47	177.8	1.61	7.61	360	-	1.57	1 U	58500	-
12-Feb-09	23.84	583.37	9.63	-	8.72	-	74.9	7.54	390	-	1.3	1 U	48100	-
12-Mar-09	25.15	582.06	9.11	454	7.22	163.7	573	7.19	400	-	1.17	1 U	43100	-
16-Apr-09	17.72	589.49	8.4	417	8.27	126.4	128	7.26	400	-	1.4	1 U	48800	-
19-May-09	24.38	582.83	8.8	448	6.88	72	178	7.95	410 J	-	1.1	1 U	44000	-
23-Jun-09	27.85	579.36	8.95	507	7.76	61.9	256	8.07	490	-	2 U	2 U	39000	-
25-Aug-09	30.68	576.53	10.5	707	6.94*	307.4	4.38	7.17	530 J+	-	2 U	0.18 J	49000	-
23-Sep-09	30.84	576.37	11.2	661	5.41	374.7	15	7.28	500	-	2 U	2 U	51000	-
15-Dec-09	22.10	585.11	9.5	720	5.1	579	39	6.92	380	-	2 U	2 U	42000	-
24-Mar-10	23.82	583.39	10	602	4.1	535.3	43.3	6.93	370	-	1.7 J	2 U	39000	-
17-Jun-10	17.45	589.76	9.3	547	4.06	-	157	6.57	350	-	3.9	2 U	39000	-
22-Sep-10	29.66	577.55	10.2	722	5.77	360.2	7.2	7.22	450	-	3.3	2 U	55000	-
8-Dec-10	22.10	585.11	9.9	566	6.69	-	64.6	7.09	350	-	2 U	2 U	35000	-
29-Mar-11	19.94	587.27	8.4	251.3	6.95	620	28	7.13	250 J	-	1.4 J	2 U	30000	-
21-Jun-11	24.25	582.96	9.9	628	5.23	344.3	37	7.29	410 J	-	5 U	2 U	28000	-
28-Sep-11	30.41	576.8	9.5	57.5	6.54	481.7	13.8	7.24	500	-	5 U	2 U	54000	-
14-Dec-11	25.35	581.86	9.3	441	3.86	346.5	386	7.26	440	-	5 U	2 U	29000	-
20-Mar-12	15.45	591.76	7.7	580	1.53	382	32.3	7.4	280	-	2.2	0.4 U	26000	-
19-Jun-12	23.88	583.33	9	590	1.85	388.1	55.7	7.74	320	-	2.5	0.4 U	23000	-
19-Sep-12	30.18	577.03	11.1	695	7.03	297	9.31	7.41	420	-	2.7	0.4 U	42000	-
19-Dec-12	17.24	589.97	9.4	704	6.33	317	55.2	7.4	310	-	1.7	0.4 U	25000	-
25-Feb-13	23.12	584.09	9.1	585	6.04	339	110	7.46	370	-	2.5	0.4 U	24000	-
22-May-13	25.05	582.16	8.6	537	8.41	391.5	12.3	7.51	310	-	1.9	0.4 U	22000	-
21-Aug-13	30.75	576.46	10.6	684	8.42	150.2	5.85	7.74	419	-	1.5	0.2	27700	-
20-Nov-13	23.51	583.7	9.6	513	6.19	230.4	32.1	6.81	364	-	1.3	0.1 U	27500	-
1-Apr-14	17.11	590.1	8.5	386	7.32	243.1	14.6	7.46	294	-	1.4	0.1 U	31700	-
21-May-14	22.07	585.14	9.1	365	6.02	212.7	-	6.93	273	-	1.3	0.1 U	24700	-
12-Aug-14	31.32	575.89	13.16	552	6.56	76.7	6.8	7.36	394	-	1.5	0.1 U	25300	-
13-Nov-14	25.48	581.73	12.3	459.5	7.22	189.8	7.2	7.19	367	-	1.4	0.1 U	25500	-
11-Feb-15	16.83	590.38	9.3	447	6.76	134.4	36.6	7.52	286	-	1.7	0.1 U	30400	-
4-May-15	25.78	581.43	10.2	619	6.27	407.1	7.7	7.36	382	-	1.4	0.1 U	25200	-
6-Aug-15	31.87	575.34	11.3	500	9.18	207.1	28.1	7.23	394	-	1.5	0.1 U	22000	-
4-Nov-15	26.74	580.47	9.9	481	8.76	222.6	16.8	6.88	381	-	1.1	0.1 U	21800	-
10-Feb-16	19.19	588.02	9	376	7.35	206	40.2	7.68	261	-	3.6	0.1 U	37100	-
2-May-16	26.14	581.07	11.3	552	3.19	194.5	87.8	7.35	344	-	2.1	0.01 J-	31200	-
23-Aug-16	31.64	575.57	10.5	545	7.62	486.5	10.8	7.18	412	-	1.54	0.1 U	32600	-
2-Nov-16	25.12	582.09	10.2	220	4.01	238.9	245	7.19	431	-	1.4	0.1 U	30600	-
1-Feb-17	22.84	584.37	9.1	580	5.06	186.3	13.6	7.35	317	-	3.17	0.1 U	51100	-
30-May-17	22.31	584.9	9.4	520	7.01	4.99	40.2	7.18	322	-	1.78	0.1 U	34100	-
17-Aug-17	30.08	577.13	10.6	626	5.63	134.2	32.3	7.21	370	-	1.28	0.1 U	28900	-
9-Nov-17	26.04	581.17	9.8	479.5	5.79	74.4	68.8	7	391	-	1.39	0.1 U	25400	-
27-Feb-18	19.03	588.18	8.8	293.1	7.43	185.2	15.1	6.9	254	-	3.98	0.1 U	41900	-
1-May-18	20.84	586.37	9.1	531	7.46	-	25	7.35	316	-	3	0.1 UJ	40600	-
21-Aug-18	31.09	576.12	10.39	437	7.33	115.2	19.1	7.04	358	-	1.48	0.1 U	26900	-
6-Nov-18	28.00	579.21	9.7	420.1	8.17	210.3	6.74	6.97	418	-	1.3	0.1 U	23400	-
11-Mar-19	21.61	585.6	9	351.2	9.2	187.1	20.6	7.11	312	-	1.57	0.1 U	32700	-

**Table A-2b: Summary of Lower Disposal Area - Shallow Groundwater Sampling Results - Well MW-2A
Ravensdale Site, Ravensdale, Washington**

Date Sampled	Field Parameters								Gen. Chem.	Metals (ug/L)				
	Depth to Water (feet btoC)	Groundwater Elevation (feet NAVD88)	Temperature (°C)	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction Potential (Rel mV)	Turbidity (NTU)	pH (standard units)	Total Dissolved Solids (mg/L)	Antimony	Arsenic	Lead	Potassium	Vanadium
Preliminary Cleanup Level ^a	-	-	-	-	-	-	-	6.5-8.5	-	5.6	8	2.5	-	80
8-May-19	23.88	583.33	9.8	443.1	8.05	109.6	7.79	7.06	316	-	1.66	0.1 U	32900	-
26-Aug-19	30.90	576.31	10.91	495	8.65	Note 1	12.7	6.91	394	-	1.28	0.1 U	21100	-
13-Nov-19	28.91	578.3	9.8	506	7.81	180.4	14.4	6.87	429	-	1.34	0.1 U	22900	-
12-Feb-20	14.21	593	8.1	319.3	9.95	189.3	14.6	7.27	277	-	1.95	0.1 U	56300	-
12-Aug-20	30.41	576.8	9.5	463.3	6.6	185.5	72.9	7.03	359	-	1.2	0.1 U	22400	-
9-Dec-20	25.91	581.3	9.4	533	6.44	213	9.96	6.97	400	-	1.38	0.49 J	26800	-
3-Mar-21	20.83	586.38	8.9	330	5.24	216.5	12.4	7.18	268	-	1.8	0.219	61100	-
9-Jun-21	29.14	578.07	9.1	459.8	8.65	193.6	1.34	6.88	360 J	-	1.25	0.058 J	21800	-
12-Oct-21	27.75	579.46	10.4	595	9.33	188.2	0.56	6.53	439 J-	1.19	1.1	0.1 U	21900	1.07
6-Jan-22	19.05	588.16	10.2	466.3	4.66	197.7	2.69	7.14	368	3.24	1.89	0.1 U	80700	1.19
16-Mar-22	17.54	589.67	8.4	304.1	9.88	154.6	6.43	6	291	3.26	1.85	0.218	60900	1.15
23-Jun-22	21.76	585.45	9.5	442.6	6.06	158.8	1.49	7.10	369	1.94	1.5	0.1 U	37500	1.15
23-Sep-22	30.87	576.34	11.2	471.5	8.5	190.3	2.04	6.82	351	0.923	1.17	0.13	23300	1.18
13-Dec-22	26.24	580.97	9.9	557	8.35	117.4	4.38	6.81	319	1.17	1.28 J	0.218 J+	21800	1.59
14-Mar-23	23.24	583.97	8.6	664.2	7.67	174.1	0.97	7.08	368	1.65	1.49	0.1 U	28800	1.03
28-Jun-23	28.64	578.57	10.5	521	9.26	275.7	2.1	6.79	361	1.05	1.12	0.371 J	19600	1.02
5-Sep-23	31.49	575.72	9.6	699	11.67	128.3	3.01	7.06	400 J-	0.74	1.1	0.383 J	19800	1.06
12-Dec-23	16.04	591.17	9.9	894	8.57	137	4.29	7.01	529	3.53	1.94	0.103 U	133000	1.5
4-Mar-24	20.65	586.56	8.9	505	8.82	218.3	1.74	6.87	360 J	2.27	1.39	0.103 U	71900	0.97
18-Jun-24	26.42	580.79	8.9	763	11.61	137.9	0.56	6.8	389	1.13	0.978	0.103 U	20500	0.954
16-Sep-24	30.4	576.81	10	667	9.64	200.7	2.02	6.67	396	0.934	1.28	0.103 U	19700	1.04
11-Dec-24	24.96	582.25	9.8	688	5.59	196.3	2.81	6.75	408	1.51	1.28	0.0680 U	38000	1.09
26-Mar-25	18.86	588.35	9.6	713	13.91	151.9	4.8	7.00	434	2.31	1.45	0.2 U	88700	0.996

Notes:

Top of casing elevation (feet NAVD88): 607.21

Dissolved metals were analyzed at the Site until December 2020 (Q4 2020). Total metals were analyzed for Q4 2020 and will continue to be analyzed moving forward. Iron and manganese are not included in the COPCs at the Site and are not analyzed beginning in Q2 2021. Antimony and Vanadium were included as COPCs for surface water locations and shallow groundwater monitoring wells at the Site beginning in Q3 2021.

- Not measured or not available

Orange shaded values indicate parameter results above the Preliminary Cleanup Level (PCUL), except for pH, which could be above or below the PCUL.

* Dissolved Oxygen meter working incorrectly at the time of sample collection

a Preliminary Cleanup Level (PCUL) provided by Ecology 30 Sept 2022

U Data validation code; not detected at the Reporting Limit (RL)

J Data validation code; estimated value

J+ Data validation code; estimated value with positive bias

°C Degrees Celsius

Note 1 ORP measurements not available due to faulty sensor.

µmhos/cm Micromhos per centimeter

feet bmp Feet below measuring point

feet NAVD88 Feet NAVD88 Datum

mg/L Milligrams per liter

mV Millivolts

NTU Nephelometric Turbidity Unit

**Table A-2c: Summary of Lower Disposal Area - Shallow Groundwater Sampling Results - Well MW-3A
Ravensdale Site, Ravensdale, Washington**

Date Sampled	Field Parameters								Gen. Chem.	Metals (ug/L)				
	Depth to Water (feet btoc)	Groundwater Elevation (feet NAVD88)	Temperature (°C)	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction Potential (Rel mV)	Turbidity (NTU)	pH (standard units)	Total Dissolved Solids (mg/L)	Antimony	Arsenic	Lead	Potassium	Vanadium
Preliminary Cleanup Level ^a	-	-	-	-	-	-	-	6.5-8.5	-	5.6	8	2.5	-	80
15-Jul-05	6.09	683.02	13.8	1124	-	-	30.3	6.96	922	-	2.41	2 U	-	-
10-Nov-05	5.50	683.61	10.8	1518	-	-	2.32	6.88	960	-	10.5	1 U	-	-
15-Feb-06	5.31	683.80	9.52	1357	0.46	217.4	58.2	6.33	930 J	-	6.66	1 U	-	-
16-May-06	6.25	682.86	10.4	1296	0.96	91	11.4	6.91	910	-	10.1	1 U	-	-
22-Aug-06	8.85	680.26	12.84	1362	1.28	-64.8	56	6.97	900	-	12.1	1 U	-	-
13-Nov-06	5.03	684.08	11.24	1392	2.12	-74.4	234	6.89	910	-	5.73	1 U	-	-
16-Feb-07	5.55	683.56	8.99	1155	0.75	-71.3	12.3	6.96	770	-	3.74	1 U	-	-
30-May-07	6.72	682.39	11.86	1297	0.75	-25.2	12.5	7.04	790	-	5.2	1 U	-	-
27-Aug-07	8.38	680.73	12.65	1483	0.71	-96.3	15.3	6.73	1100 J	-	8.74	1 U	-	-
28-Nov-07	5.66	683.45	10.47	1363	1.05	-72.9	26.9	7.31	730	-	4.24	1 U	-	-
27-Feb-08	5.57	683.54	-	-	-	-	121	-	860	-	9.76	1 U	-	-
19-May-08	5.94	683.17	9.39	1346	0.66	-52.6	20	6.93	820 J	-	6.64	1 U	-	-
26-Aug-08	6.44	682.67	12.15	1495	0.85	-53.6	5.85	6.88	820	-	3.42	1 U	30300	-
18-Nov-08	5.50	683.61	10.5	975	1.87	-67.4	225	6.93	880 J	-	7.48	1 U	62500	-
11-Feb-09	5.62	683.49	7.67	877	0.98	-	68	7.28	810	-	5.2	1 U	50600	-
19-May-09	5.60	683.51	8.52	847	0.91	-63.4	52	8.21	750 J	-	2.51	1 U	49500	-
22-Sep-09	8.36	680.75	15.7	1149	0.1	132.1	75.1	7.05	910	-	6.6	2 U	53000	-
17-Dec-09	4.59	684.52	8.9	1300	0.4	194	401	7.08	710	-	2 U	2 U	62000	-
24-Mar-10	5.40	683.71	11.2	1010	0.12	-	226	6.76	800	-	3.8	2 U	46000	-
16-Jun-10	5.27	683.84	10.1	1123	0.2	188	6.19	8.43	570	-	13	2 U	49000	-
21-Sep-10	6.01	683.10	12.7	1314	0.19	177.7	2.97	6.91	1,000	-	6.2	0.19 J	160000	-
7-Dec-10	5.23	683.88	9.7	1183	0.23	182.7	25.3	6.86	840	-	3.2	2 U	82000	-
30-Mar-11	5.04	684.07	8.3	498	0.28	174	4.93	7.89	700	-	3.6	2 U	36000	-
22-Jun-11	6.77	682.34	9.7	895	0.43	172.2	9.18	7.01	700 J	-	5 U	2 U	34000	-
28-Sep-11	7.83	681.28	12.6	99	0.18	141.8	6.07	6.83	840	-	8.8	2 U	83000	-
15-Dec-11	5.40	683.71	9	785	0.6	179.8	24.4	6.98	760	-	4.5 J	2 U	73000	-
20-Mar-12	4.96	684.15	7.1	1092	0.16	22.6	12.1	7.11	470	-	5.2	2 U	73000	-
19-Jun-12	6.76	682.35	10.3	1077	0.11	198.6	11.3	7.07	660	-	12	0.4 U	78000	-
20-Sep-12	8.67	680.44	12.3	1235	0.15	111	1.96	6.99	710	-	11	0.05 J	100000	-
18-Dec-12	4.98	684.13	8.7	1450	0.3	-40.6	18.7	7.25	740	-	4.8	0.4 U	150000	-
26-Feb-13	5.25	683.86	7.8	1211	0.15	186.6	27.8	7.21	740	-	4.7	0.4 U	98000	-
23-May-13	6.56	682.55	9.9	1000	0.18	242.3	16.9	7.21	460	-	14	2.8	150000	-
21-Aug-13	9.01	680.10	12.1	917	0.12	-14.2	1.24	7.27	772	-	7.6	0.05 J	94000	-
19-Nov-13	6.09	683.02	9.9	697	0.07	61.8	2.93	6.77	852	-	12.3	0.2	169000	-
1-Apr-14	5.75	683.36	9	722	0.1	131.3	4.47	7.07	624	-	10.5	0.06 J	104000	-
22-May-14	5.80	683.31	9.8	580	1.08	185.3	-	6.85	494	-	5.2	0.1	66500	-
13-Aug-14	8.54	680.57	11.48	915	2.85	-67.6	8.16	7.09	740	-	6.9	0.1 U	116000	-
12-Nov-14	5.97	683.14	11.1	313.7	2.79	-85.1	15.3	6.87	744	-	6.9	0.1 U	89100	-
12-Feb-15	5.50	683.61	9.8	980	0.52	-54.5	1.28	7.04	696	-	4.2	0.1 U	73200	-
4-May-15	5.80	683.31	10.8	994	0.17	143.4	15.4	7.12	701	-	9.3	0.1 U	100000	-
5-Aug-15	10.12	678.99	12.6	881	0.13	-90.4	0.89	7.07	724	-	7.3	0.1 U	70300	-
3-Nov-15	5.30	683.81	12	865	1.23	105.5	5.06	6.97	1020	-	1.7	0.2	195000	-
9-Feb-16	5.14	683.97	9.1	954	0.55	154.6	4.82	7.03	625	-	3.4	0.1 U	92700	-
2-May-16	4.74	684.37	11.3	844	0.19	96.8	2.21	7.16	621	-	10.5	0.04 J	105000	-
23-Aug-16	9.04	680.07	13.2	946	0.03	156.2	3.48	6.97	924	-	8.19	0.09 J	148000	-
1-Nov-16	6.18	682.93	11.9	349	0.15	18.5	2.43	7.11	744	-	2.63	0.1 U	180000	-
1-Feb-17	5.91	683.20	7.5	1114	0.17	-67.4	6.05	7.08	694	-	6.4	0.1 U	100000	-
30-May-17	7.40	681.71	10.4	753	2.2	8.59	3.28	7.12	465	-	9.52	0.1 U	89300	-
17-Aug-17	9.71	679.40	12.4	1101	0.25	-60.2	3.39	7.01	737	-	8.47	0.1 U	72000	-
9-Nov-17	6.06	683.05	9.6	833	0.64	75.3	2.01	7.08	748	-	1.84	0.1 U	191000	-
27-Feb-18	5.16	683.95	7.6	791	0.21	-75.4	9.52	6.64	506	-	2.97	0.1 U	92000	-
1-May-18	5.41	683.70	10	847	0.93	-	5.82	7.36	547	-	3.81	0.1 UJ	120000	-
21-Aug-18	10.81	678.30	14.54	909	2.96	-17.2	1.67	6.92	722	-	6.48	0.1 U	101000	-
7-Nov-18	5.85	683.26	11.2	931	0.66	179	0.87	6.97	828	-	2.03	0.073 J	202000 J+	-
11-Mar-19	5.26	683.85	6.1	477.5	1.25	53.7	2.39	7.34	486	-	1.44	0.1 U	125000	-
9-May-19	5.44	683.67	10.2	678	3.72	-9.4	1.85	7.04	574	-	3.02	0.083 J	143000	-
26-Aug-19	9.30	679.81	13.96	1041	0.6	Note 1	0.02	6.83	843	-	6.15	0.1 U	142000	-
13-Nov-19	5.58	683.53	9.4	803	0.31	12.8	0.02	6.97	724	-	2.2	0.077 J	174000	-
12-Feb-20	5.10	684.01	7.8	349.3	0.37	-62.4	1.4	7.25	287	-	1.86	0.1 U	74200	-
13-Aug-20	9.33	679.78	11.8	884	0.64	-81.6	4.28	6.76	683	-	10.9	0.1 U	119000	-
10-Dec-20	5.08	684.03	8.5	688	3.06	210	0.9	7.29	566	-	2.36	0.159	128000	-

**Table A-2c: Summary of Lower Disposal Area - Shallow Groundwater Sampling Results - Well MW-3A
Ravensdale Site, Ravensdale, Washington**

Date Sampled	Field Parameters								Gen. Chem.	Metals (ug/L)				
	Depth to Water (feet btoc)	Groundwater Elevation (feet NAVD88)	Temperature (°C)	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction Potential (Rel mV)	Turbidity (NTU)	pH (standard units)	Total Dissolved Solids (mg/L)	Antimony	Arsenic	Lead	Potassium	Vanadium
Preliminary Cleanup Level ^a	-	-	-	-	-	-	-	6.5-8.5	-	5.6	8	2.5	-	80
4-Mar-21	5.26	683.85	7	364	0.59	47	1.54	7.42	319	-	1.52	0.134	74200	-
9-Jun-21	6.24	682.87	11.4	706	0.96	-50.2	4.12	7.03	540	-	6.48	0.204	124000	-
12-Oct-21	5.34	683.77	12.3	1611	2.92	133.4	5.25	6.63	1070 J-	15.6	3.31	0.4	93200	2.14
6-Jan-22	5.10	684.01	7.5	269.6	2.33	189.1	1.84	7.38	242	8.89	2.04	0.265	53400	2.61
17-Mar-22	4.97	684.14	7.5	269.6	2.33	189.1	1.84	7.38	252	3.39	1.98	0.169	53200	0.88
21-Jun-22	5.21	683.9	11.2	439.4	0.19	181.3	0.66	7.03	368	0.966	3.66	0.075 J	75400	0.39
13-Sep-22	11.25	677.86	15.3	910	4.92	85.7	9.15	6.49	689	0.973	5.42	0.137	91100	0.507
12-Dec-22	5.32	683.79	7.7	817	4.09	205.2	1.29	7.15	475	9.5	1.72	0.115 J+	99800	1.26
15-Mar-23	5.02	684.09	6.1	669.2	1.38	203.9	0.95	7.34	393	5.15	2.42	0.147	91100	1.19
26-Jun-23	7.35	681.76	11.7	802	0.65	-21.3	4.65	6.78	699	5.91	11.7	0.558	144000	1.07
6-Sep-23	13.95	675.16	13.8	1227	2.17	18	3.14	6.89	747 J-	0.717	4.08	0.126	95900	0.483
13-Dec-23	5.14	683.97	9.4	712	4.35	43.8	2.87	6.73	343	4.61	3.7	0.208	82900	0.816
5-Mar-24	5.05	684.06	7.5	620	5.62	93.3	4.58	6.74	356	1.55	4.65	0.336	66200	0.604
17-Jun-24	5.61	683.5	10.6	983	5.34	-34.5	0.58	7.06	544	1.16	9.66	0.134 J	118000	0.454
17-Sep-24	11.40	677.71	11.9	1206	6.77	199.9	9.95	6.6	779	1.09	11	0.286	90500	0.785 J
9-Dec-24	5.06	684.05	8.6	939	59.6	50.6	2.65	7.1	592	6.83	3.39	0.146	125000	0.676
24-Mar-25	4.87	684.24	9.1	1104	0.83	181	9.52	6.66	712	1.42	3.37	0.2 U	104000	0.418

Notes:

Top of casing elevation (feet NAVD88): 689.11

Dissolved metals were analyzed at the Site until December 2020 (Q4 2020). Total metals were analyzed for Q4 2020 and will continue to be analyzed moving forward. Iron and manganese are not included in the COPCs at the Site and are not analyzed beginning in Q2 2021. Antimony and Vanadium were included as COPCs for surface water locations and shallow groundwater monitoring wells at the Site beginning in Q3 2021.

- Not measured or not available

Orange shaded values indicate parameter results above the Preliminary Cleanup Level (PCUL), except for pH, which could be above or below the PCUL.

a Preliminary Cleanup Level (PCUL) provided by Ecology 30 Sept 2022

U Data validation code; not detected at the Reporting Limit (RL)

J Data validation code; estimated value

J+ Data validation code; estimated value with positive bias

°C Degrees Celsius

Note 1 ORP measurements not available due to faulty sensor.

µmhos/cm Micromhos per centimeter

mg/L Milligrams per liter

feet bmp Feet below measuring point

mV Millivolts

feet NAVD88 Feet NAVD88 Datum

NTU Nephelometric Turbidity Unit

**Table A-2d: Summary of Lower Disposal Area - Shallow Groundwater Sampling Results - Well MW-4A
Ravensdale Site, Ravensdale, Washington**

Date Sampled	Field Parameters								Gen. Chem. Total Dissolved Solids (mg/L)	Metals (ug/L)				
	Depth to Water (feet btoc)	Groundwater Elevation (feet NAVD88)	Temperature (°C)	Conductivity (umhos/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction Potential (Rel mV)	Turbidity (NTU)	pH (standard units)		Antimony	Arsenic	Lead	Potassium	Vanadium
Preliminary Cleanup Level ^a	-	-	-	-	-	-	-	6.5-8.5	-	5.6	8	2.5	-	80
15-Jul-05	4.60	700.85	12.43	629	-	-	6.07	6.45	490	-	2 U	2 U	-	-
10-Nov-05	3.70	701.75	11.98	441	-	-	7.4	6.22	290	-	1 U	1 U	-	-
19-Jan-06	3.56	701.89	8.29	319	0.42	-	1.46	6.53	290 J	-	1 U	1 U	-	-
15-Feb-06	3.82	701.63	8.32	326	0.62	99.7	3.5	7.39	220 J	-	1 U	1 U	-	-
15-Mar-06	3.79	701.66	7.58	254	0.87	201.9	0.82	6.65	210 J	-	1 U	1 U	-	-
7-Apr-06	3.87	701.58	9.36	295	0.55	157.4	0.24	6.34	220	-	1 U	1 U	-	-
16-May-06	4.92	700.53	10.8	321	0.45	142.1	0.99	6.36	220	-	1 U	1 U	-	-
23-Jun-06	4.41	701.04	12.62	316	0.57	-	2.05	6.25	200	-	1 U	2.64	-	-
20-Jul-06	6.90	698.55	13.43	347	0.23	-20.9	0.32	6.11	120	-	1 U	1 U	-	-
22-Aug-06	8.46	696.99	13.68	406	0.9	153.5	2.2	6.13	280	-	1 U	1 U	-	-
26-Sep-06	6.50	698.95	14.59	417	2.47	-35.2	2.42	6.33	290	-	1 U	1 U	-	-
26-Oct-06	5.98	699.47	12.82	434	3.3	124.1	0.82	6.12	320	-	1 U	1 U	-	-
13-Nov-06	3.02	702.43	11.7	386	5.06	187.8	2.47	6.13	280	-	1 U	1 U	-	-
20-Dec-06	3.60	701.85	9.64	379	4.3	150.5	1.03	6.07	250	-	1 U	1 U	-	-
23-Jan-07	3.68	701.77	8.37	239	3.96	58.9	0.66	6.28	220	-	1 U	1 U	-	-
14-Feb-07	3.74	701.71	8.18	325	2.85	110.8	0.53	6.25	210	-	1 U	1 U	-	-
27-Mar-07	3.32	702.13	8.27	289	2.07	61.5	0.88	6.83	210 J	-	1 U	1 U	-	-
17-Apr-07	3.89	701.56	9.59	306	1.8	102.3	2.31	6.34	190	-	1 U	1 U	-	-
30-May-07	4.70	700.75	11.27	285	1.78	101.7	1.37	6.37	180	-	1 U	1 U	-	-
20-Jun-07	4.69	700.76	12.37	350	1.67	9.3	1.25	6.9	240 J	-	1 U	1 U	-	-
31-Jul-07	6.38	699.07	14.57	402	1.15	5.5	0.6	6.37	250	-	1.29	1 U	-	-
29-Aug-07	7.44	698.01	13.78	353	1.11	128.3	1.87	6.18	280 J	-	1 U	1 U	-	-
27-Sep-07	8.25	697.20	13.6	375	0.96	142.6	0.7	6.7	300	-	1 U	1 U	-	-
26-Oct-07	4.09	701.36	12.16	343	2.27	75.9	3.93	6.1	310 J	-	1 U	1 U	-	-
29-Nov-07	3.93	701.52	10.13	428	3.17	197.3	1.63	6.32	270	-	1 U	1 U	-	-
12-Dec-07	5.82	699.63	9.51	384	3.37	185	0.8	6.06	260	-	1 U	1 U	-	-
24-Jan-08	3.86	701.59	7.74	354	3.09	109	-	6.35	250	-	1 U	1 U	-	-
28-Feb-08	4.04	701.41	-	-	-	-	1.06	-	220	-	1 U	1 U	-	-
19-May-08	4.35	701.10	9.79	329	1.38	209.2	1.2	6.08	200 J	-	1 U	1 U	-	-
26-Aug-08	7.83	697.62	12.66	431	1.38	210.5	0.28	6.19	270	-	1 U	1 U	3000 U	-
18-Nov-08	3.64	701.81	10.43	235	3.95	217.5	0.66	6.03	210	-	1 U	1 U	3000 U	-
11-Feb-09	4.09	701.36	7.24	188	2.13	-	0.12	6.54	180	-	1 U	1 U	3000 U	-
19-May-09	3.79	701.66	8.19	173	1.28	111.9	1.78	7.18	170 J	-	1 U	1 U	3000 U	-
22-Sep-09	9.70	695.75	16.5	440	0.82	383.3	12.5	6.31	370 J	-	2 U	2 U	1200 J	-
17-Dec-09	3.47	701.98	9.2	311	4.37	470	16	6.25	110	-	2 U	2 U	700 J	-
24-Mar-10	3.87	701.58	9.4	410	0.34	204.8	30.7	6.65	240	-	0.81 J	2 U	1300 J	-
16-Jun-10	3.77	701.68	10.3	298	0.99	397.8	1.11	7.4	180	-	3.6	2 U	900 J	-
21-Sep-10	5.82	699.63	13.7	350	1.01	302.5	1.04	6.25	200	-	1.4 J	0.2 J	1200 J	-
7-Dec-10	3.83	701.62	9.6	283	0.72	405.6	0.42	6.16	190	-	2 U	2 U	800 J	-
30-Mar-11	3.91	701.54	8.2	133.3	0.51	248.2	0.29	9.87	140 J	-	0.35 J	2 U	5000	-
22-Jun-11	3.99	701.46	11	219.3	0.16	222.5	0.22	6.13	160	-	5 U	2 U	700 J	-
28-Sep-11	8.54	696.91	14.3	34.5	0.26	333.9	2.45	6.3	270	-	5 U	2 U	2100 J	-
15-Dec-11	4.12	701.33	9.4	217	1.15	414.3	2.74	6.28	200	-	5 U	2 U	1200 J	-
21-Mar-12	3.35	702.10	8.4	346	0.42	438.4	0.48	6.14	220	-	4.8	0.4 U	1300 J	-
19-Jun-12	3.78	701.67	11.3	290.1	0.09	314	0.46	6.28	170 J+	-	1.3	0.4 U	3300 U	-
20-Sep-12	8.53	696.92	14.4	419	0.26	309	1.07	6.39	240	-	1.6	0.4 U	2900 J	-
18-Dec-12	3.49	701.96	9.1	491	2.56	264.4	1.38	6.63	170	-	1 U	0.4 U	1200 J	-
26-Feb-13	3.91	701.54	8.4	324	2.59	404.2	1.01	7.03	140	-	1.1	0.4 U	3400	-
23-May-13	3.76	701.69	10.6	338	1.15	465.9	0.57	6.31	190	-	1 U	0.4 U	3300 U	-
22-Aug-13	8.28	697.17	13.1	284.2	0.33	32.2	0.89	6.34	220	-	0.4	0.1 U	1260	-
19-Nov-13	3.33	702.12	10.3	323	1.7	109.2	0.64	6.27	200	-	0.2	0.1 U	750	-
1-Apr-14	3.69	701.76	8.2	243.6	0.45	180.7	0.28	6.33	173	-	0.18 J	0.1 U	710	-
22-May-14	4.52	700.93	10.8	195	0.65	75	-	7.2	152	-	0.3	0.1	600	-
13-Aug-14	7.56	697.89	12.62	269	0.44	37.7	1.12	5.89	181	-	0.8	0.1 U	890	-
12-Nov-14	3.73	701.72	11.7	230.9	1.29	108.2	1.32	6.17	191	-	0.3	0.1 U	950	-
11-Feb-15	3.50	701.95	9.2	270.4	0.53	-34.2	0.73	6.3	170	-	0.2	0.1 U	680	-
4-May-15	4.69	700.76	10.9	249.5	0.28	378.1	0.57	6.29	341	-	0.2	0.1 U	610	-
5-Aug-15	9.44	696.01	13.9	316	0.72	-38.1	1.16	6.45	262	-	0.3	0.1 U	1230	-
3-Nov-15	4.21	701.24	11.8	192.2	8.59	205.6	5.39	6.34	166	-	0.2 J	0.1 U	790	-
9-Feb-16	3.82	701.63	9.2	291.8	4.61	230.7	0.49	6.45	164	-	0.17 J	0.1 U	790	-
3-May-16	4.61	700.84	10.9	310	2.39	253	1.01	6.34	178	-	0.3	0.01 J-	940	-
24-Aug-16	8.76	696.69	13.2	286.7	1.24	490.4	1.01	6.35	177	-	0.2 J	0.1 U	840	-

**Table A-2d: Summary of Lower Disposal Area - Shallow Groundwater Sampling Results - Well MW-4A
Ravensdale Site, Ravensdale, Washington**

Date Sampled	Field Parameters								Gen. Chem.	Metals (ug/L)				
	Depth to Water (feet btoc)	Groundwater Elevation (feet NAVD88)	Temperature (°C)	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction Potential (Rel mV)	Turbidity (NTU)	pH (standard units)		Total Dissolved Solids (mg/L)	Antimony	Arsenic	Lead	Potassium
Preliminary Cleanup Level ^a	-	-	-	-	-	-	-	6.5-8.5	-	5.6	8	2.5	-	80
1-Nov-16	3.34	702.11	12.2	100	3.69	177.2	0.4	6.38	205	-	0.19 J	0.1 U	971	-
2-Feb-17	3.94	701.51	7.8	363	3.11	190	0.1	6.39	223	-	0.17 J	0.1 U	819	-
31-May-17	4.68	700.77	10.3	300	4.5	-	2.48	6.3	182	-	0.203	0.1 U	795	-
18-Aug-17	8.61	696.84	12.7	393	0.51	120.2	0.87	6.44	228	-	0.308	0.1 U	1300	-
10-Nov-17	3.58	701.87	11	264.4	3.88	56.5	0.76	6.01	217	-	0.186 J	0.1 U	669	-
27-Feb-18	3.76	701.69	8.3	302.1	3.19	221.1	0.55	6.29	238	-	0.176 J	0.1 U	875	-
2-May-18	4.02	701.43	10	343	3.02	-	0.59	6.36	215	-	0.15 J	0.1 UJ	980	-
22-Aug-18	9.35	696.10	12.17	330	1.99	142	2.31	6.27	265	-	0.315	0.1 U	1230	-
7-Nov-18	5.25	700.20	11.7	316.7	5.45	124.4	0.76	6.23	250	-	0.199 J	0.1 U	843	-
11-Mar-19	3.96	701.49	7.6	226.3	3.96	220.8	0.7	6.38	233	-	0.146 J	0.1 U	918	-
9-May-19	4.70	700.75	12.5	282.5	3.6	82.3	1.56	6.14	230	-	0.154 J	0.1 U	816	-
26-Aug-19	8.20	697.25	13.13	374	0.86	Note 1	0.02	6.3	264	-	0.3	0.1 U	928	-
14-Nov-19	4.35	701.10	10.8	309.4	3.19	109.5	0.02	6.15	240	-	0.251	0.1 U	894	-
13-Feb-20	3.70	701.75	7.9	283.7	2.98	102.2	0.91	6.18	283	-	0.176 J	0.1 U	859	-
13-Aug-20	7.73	697.72	13.5	334.3	0.62	58.3	0.51	6.19	238	-	0.711	0.1 U	921	-
10-Dec-20	3.45	702.00	9.8	364	6.11	169	1.56	6.51	297	-	0.296	0.1 U	1260	-
4-Mar-21	3.72	701.73	8.3	304	2.83	137	0.49	6.47	255	-	0.192 J	0.1 U	876	-
10-Jun-21	5.32	700.13	11.9	338.7	1.23	108.5	0.73	6.09	220	-	0.228	0.1 U	787	-
15-Oct-21	7.69	697.76	12.6	341.3	6.91	133.9	20.5	6.37	363 J-	0.18 J	0.99	0.151	1480	4.09
7-Jan-22	3.40	702.05	8.7	248.4	4.37	211.1	3.08	6.29	270	0.2 U	0.383	0.1 U	774 J	1.73
18-Mar-22	3.52	701.93	9.1	340.6	3.26	123.8	1.85	6.63	320	0.2 U	0.279	0.1 U	1140	1.53
22-Jun-22	3.83	701.62	10.1	327.8	1.36	114.5	0.46	6.36	263	0.2 U	0.201	0.1 U	666	1.16
14-Sep-22	8.9	696.55	13.4	389.4	2.46	87.6	2.53	6.02	330	0.2 U	0.385	0.1 U	1080	1.19
14-Dec-22	3.88	701.57	9.1	278	7.03	135.4	0.44	6.35	224	0.2 U	0.188 J	0.1 U	583	1.42
16-Mar-23	3.39	702.06	7.9	468.9	4.44	111.7	2.92	6.3	264	0.2 U	0.159 J	0.1 U	616	1.13
27-Jun-23	6.27	699.18	11.4	308.1	3.02	74.9	1.06	6.2	246	0.2 U	0.19 J	0.5 U	745	1.24
8-Sep-23	9.88	695.57	12.8	560.7	1.14	57.3	9.67	6.45	329 J-	0.101 U	0.317	0.0513 U	1170	1.14
14-Dec-23	3.78	701.67	9.7	497	6.6	227.1	1.2	6.37	255	0.202 U	0.218 J	0.257 U	527	1.25
7-Mar-24	3.72	701.73	8.7	576	4.82	171.9	0.66	6.37	320	0.202 U	0.4 U	0.103 U	708	1.18
17-Jun-24	4.00	701.45	10.8	451.3	6.22	77.4	0.62	6.26	226	0.202 U	0.18 J	0.103 U	452 J	0.85
17-Sep-24	8.33	697.12	12.2	576	6.2	132	1.9	6.38	304	0.202 U	0.482	0.103 U	931	2.42 J
12-Dec-24	3.67	701.78	9.5	583	0.59	153.2	0.95	6.35	341	0.150 U	0.338	0.0680 U	1180	0.864
24-Mar-25	3.42	702.03	9.3	558.7	2.28	91	6	6.39	324	0.3 U	0.3 J	0.2 U	1050	0.592

Notes:

Top of casing elevation (feet NAVD88): 705.45

Dissolved metals were analyzed at the Site until December 2020 (Q4 2020). Total metals were analyzed for Q4 2020 and will continue to be analyzed moving forward. Iron and manganese are not included in the COPCs at the Site and are not analyzed beginning in Q2 2021. Antimony and Vanadium were included as COPCs for surface water locations and shallow groundwater monitoring wells at the Site beginning in Q3 2021.

- Not measured or not available

Orange shaded values indicate parameter results above the Preliminary Cleanup Level (PCUL), except for pH, which could be above or below the PCUL.

a Preliminary Cleanup Level (PCUL) provided by Ecology 30 Sept 2022

U Data validation code; not detected at the Reporting Limit (RL)

J Data validation code; estimated value

J+ Data validation code; estimated value with positive bias

°C Degrees Celsius

Note 1 ORP measurements not available due to faulty sensor.

µmhos/cm Micromhos per centimeter

feet bmp Feet below measuring point

feet NAVD88 Feet NAVD88 Datum

mg/L Milligrams per liter

mV Millivolts

NTU Nephelometric Turbidity Unit

**Table A-2e: Summary of Lower Disposal Area - Shallow Groundwater Sampling Results - Well MW-5A
Ravensdale Site, Ravensdale, Washington**

Date Sampled	Field Parameters								Gen. Chem.	Metals (ug/L)				
	Depth to Water (feet btoc)	Groundwater Elevation (feet NAVD88)	Temperature (°C)	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction Potential (Rel mV)	Turbidity (NTU)	pH (standard units)	Total Dissolved Solids (mg/L)	Antimony	Arsenic	Lead	Potassium	Vanadium
Preliminary Cleanup Level ¹	-	-	-	-	-	-	-	6.5-8.5	-	5.6	8	2.5	-	80
15-Jul-05	33.33	577.90	12.02	956	-	-	496	7.34	600	-	2.01	2 U	-	-
10-Nov-05	29.62	581.61	11.24	1212	-	-	27.6	7.32	800	-	8.4	1 U	-	-
15-Feb-06	21.70	589.53	6.45	665	2.59	280.3	11.1	7.86	520 J	-	22.3	1 U	-	-
17-May-06	29.80	581.43	7.74	831	0.88	101.9	8.67	7.79	580	-	11	1 U	-	-
23-Aug-06	33.25	577.98	15.19	737	1.76	33.5	19.6	7.32	660	-	2.53	1 U	-	-
14-Nov-06	17.79	593.44	10.86	699	4.5	76.3	38.7	7.55	490	-	3.15	1 U	-	-
16-Feb-07	27.08	584.15	8.08	630	6.07	2.3	57.6	8.26	500	-	14.4	1 U	-	-
30-May-07	30.75	580.48	9.6	894	2.59	13.3	13.4	7.76	540	-	8.43	1 U	-	-
29-Aug-07	33.60	577.63	9.56	684	7.64	67	-	7.1	670 J	-	1.97	1 U	-	-
29-Nov-07	30.60	580.63	11	1075	3.53	151.5	23.5	8.37	560	-	5.17	1 U	-	-
27-Feb-08	25.68	585.55	-	-	-	-	29.9	-	400	-	10.7	1 U	-	-
20-May-08	29.73	581.50	7.93	768	4.27	180.7	77.8	7.39	480 J	-	5.67	1 U	-	-
27-Aug-08	33.97	577.26	10.17	862	4.07	81.2	-	7.43	540 J	-	1.17	1 U	87500	-
26-Sep-08	Test Trench Drain Line Installed													
16-Oct-08	33.55	577.68	8.89	845	5.39	86.3	852	7.53	440 J	-	1.03	1 U	90700	-
20-Nov-08	23.48	587.75	9.34	577	5.27	234.3	9.48	7.5	470	-	6.24	2 U	138000	-
30-Dec-08	20.88	590.35	8.39	510	8.89	99	44.8	8.02	430 J	-	14.2	1.11	138000	-
15-Jan-09	18.50	592.73	4.97	347	8.9	154.8	17.2	8.47	380	-	24.4	1 U	104000	-
12-Feb-09	27.90	583.33	8.47	-	10.21	-	22	7.6	420 J	-	6.11	1 U	99000	-
12-Mar-09	29.19	582.04	7.47	521	6.15	171.7	26.8	7.39	480	-	8.97	1 U	124000	-
16-Apr-09	21.70	589.53	6.99	456	7.6	151.6	72.7	8.66	470	-	28.2	1.01	126000	-
19-May-09	28.37	582.86	8.08	509	6.38	64.4	31.3	8.07	450 J	-	9.19	1 U	105000	-
23-Jun-09	31.95	579.28	8.84	551	5.97	69.1	74.3	8.28	500	-	4.3	2 U	71000	-
25-Aug-09	35.08	576.15	-	-	-	-	-	-	-	-	-	-	-	-
24-Sep-09	35.29	575.94	11.7	714	2.28	371.9	258	7.26	550 J	-	0.76 J	0.17 J	88000	-
15-Dec-09	26.11	585.12	8.6	928	2.89	544	89	7.14	450	-	1.1 J	2 U	110000	-
24-Mar-10	27.86	583.37	8.3	697	3.52	505.1	18.1	7.47	450	-	23	0.46 J	110000	-
16-Jun-10	21.35	589.88	10.7	783	2.07	379	41.4	7.73	340	-	53	0.0021	150000	-
22-Sep-10	33.88	577.35	10.4	938	4.3	467.1	7.93	7.1	620	-	5	2 U	100000	-
7-Dec-10	25.22	586.01	10.2	781	3.86	353.7	11.1	7.39	500	-	12	0.53 J	130000	-
29-Mar-11	23.59	587.64	7	354	3.47	708	22.22	9.52	440 J	-	63	1.4 J	140000	-
21-Jun-11	28.33	582.90	11.6	1000	2.22	285.3	10.6	9.06	1100 J	-	43	1.2 J	180000	-
27-Sep-11	34.70	576.53	12.7	641	1.46	307.2	12.8	7.3	680	-	5 U	0.23 J	100000	-
14-Dec-11	29.46	581.77	9.5	691	1.95	757.1	9.69	7.35	690	-	6.9	0.18 J	180000	-
20-Mar-12	19.50	591.73	6.2	841	3.98	320.2	8.52	8.25	350	-	26	1 J	140000	-
19-Jun-12	27.91	583.32	10.2	800	3.22	365.9	2.76	7.66	510	-	8.7	0.4 U	120000	-
20-Sep-12	34.53	576.70	11	859	0.73	387	46.8	7.64	530	-	2.6	0.4 U	100000	-
19-Dec-12	21.26	589.97	8.9	983	1.73	279	778	7.71	530	-	11	0.62	180000	-
25-Feb-13	27.19	584.04	7.5	682	7.61	330.5	4.36	7.85	380	-	13	0.15 J	74000	-
22-May-13	29.09	582.14	8.8	828	3.88	411.4	8.11	8.29	350	-	25	0.53	100000	-
21-Aug-13	35.15	576.08	17.1	1248	3.41	114.2	144	7.78	1060	-	1.5	0.05 J	95000	-
20-Nov-13	27.45	583.78	10	1032	4.13	196.5	31.7	7.18	699	-	14.5	1.4	202000	-
1-Apr-14	21.08	590.15	8.4	567	3.04	168.2	15.7	10.24	413	-	62.7	1.5	150000	-
21-May-14	26.11	585.12	10.3	670	0.49	198.4	-	7.45	565	-	95	1.6	166000	-
12-Aug-14	34.56	576.67	14.07	812	3.64	87.7	1519	7.51	560	-	3	0.1 U	107000	-
13-Nov-14	29.48	581.75	12.9	1135	3.5	241.7	10.46	7.69	956	-	20.8	0.1	295000	-
11-Feb-15	20.81	590.42	7.7	619	6.17	81.4	18	9.63	430	-	39.2	1.3	126000	-
4-May-15	29.80	581.43	10.5	924	2.54	361.3	8.7	9.74	623	-	42.3	0.5	192000	-
6-Aug-15	36.08	575.15	12.8	781	2.4	129.6	261	7.24	DRY	-	DRY	DRY	DRY	-
4-Nov-15	30.80	580.43	10.7	1234	4.98	205.6	11.8	7.13	1130	-	6.6	0.3	318000	-
10-Feb-16	23.56	587.67	6.4	602	1.62	197.7	11.9	10.19	451	-	132	1.4	148000	-
2-May-16	30.19	581.04	11.5	1008	0.8	110.6	9.76	10.14	751	-	171	2.7 J	232000	-
23-Aug-16	35.79	575.44	13.1	729	2	436.2	51.4	7.2	1010	-	4.01	0.1 U	137000	-
2-Nov-16	29.06	582.17	10.9	570	4.98	103.1	32.1	7.55	1180	-	11.2	0.56	372000	-
1-Feb-17	26.86	584.37	8.1	992	2.21	99.7	7.19	9.73	632	-	109	0.971	194000	-
30-May-17	26.86	584.37	10.5	814	6.12	5.83	5.74	9.73	487	-	42.5	0.36 J	168000	-
17-Aug-17	34.23	577.00	11.7	1054	5.43	125.1	5.68	7.65	731	-	6.52	0.1 U	156000	-
10-Nov-17	29.96	581.27	10	1077	4.65	85.2	10.5	7.18	953	-	5.82	0.338	308000	-
27-Feb-18	23.02	588.21	7.7	584	1.91	120.4	12.6	9.96	530	-	86.3	0.642	174000	-
1-May-18	24.85	586.38	9.1	1082	2.16	-	11.8	10.34	682	-	113	0.775 J	196000	-
21-Aug-18	35.17	576.06	14.83	1095	4.02	131	123	7.4	936	-	3.65	0.1 U	214000	-
6-Nov-18	32.00	579.23	10.3	1192	5.93	198.1	2.35	7.49	1200	-	4.87	0.077 J	163000 J	-

**Table A-2e: Summary of Lower Disposal Area - Shallow Groundwater Sampling Results - Well MW-5A
Ravensdale Site, Ravensdale, Washington**

Date Sampled	Field Parameters								Gen. Chem.	Metals (ug/L)				
	Depth to Water (feet btoc)	Groundwater Elevation (feet NAVD88)	Temperature (°C)	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction Potential (Rel mV)	Turbidity (NTU)	pH (standard units)		Total Dissolved Solids (mg/L)	Antimony	Arsenic	Lead	Potassium
Preliminary Cleanup Level ^a	-	-	-	-	-	-	-	6.5-8.5	-	5.6	8	2.5	-	80
13-Mar-19	25.12	586.11	7.4	695	2.19	189.7	15.8	9.48	632	-	44.1	0.633	200000	-
8-May-19	27.89	583.34	10.7	844	4.95	60.5	5.19	9.3	697	-	41.9	0.677	182000	-
26-Aug-19	35.02	576.21	11.89	1111	1.52	Note 1	22.9	7.26	995	-	2.46	0.1 U	177000	-
13-Nov-19	33.00	578.23	9.8	932	5.27	66.1	0.02	7.18	776	-	3.89	0.1 U	211000	-
12-Feb-20	18.23	593.00	7	533	7.58	140.4	10.6	8.32	463	-	6.31	0.145	183000	-
12-Aug-20	34.50	576.73	11.2	1381	4	125	2.75	7.52	1250	-	5.37	0.1 U	333000	-
9-Dec-20	29.90	581.33	9.8	1105	4.51	222	8.32	7.29	897	-	3.12	0.295	263000	-
3-Mar-21	24.81	586.42	9.2	899	3.04	225	3.09	7.6	792	-	3.74	0.132	247000	-
9-Jun-21	33.20	578.03	9.3	875	5.23	184	1.26	7.27	700	-	2.62	0.063 J	205000	-
13-Oct-21	31.70	579.53	9.5	1934	5.97	194	9.56	7.22	DRY	DRY	DRY	DRY	DRY	DRY
5-Jan-22	23.00	588.23	9.2	972	4.7	271.1	1.4	7.18	829	6.42	3.38	0.085 J	252000	1.8
16-Mar-22	21.48	589.75	7.8	724	7.0	187	2.65	6.6	711	6.01	4.02	0.11	223000	1.52
23-Jun-22	25.74	585.49	9.6	969	3.5	173.1	1.13	7.38	881	5.49	3.29	0.093 J	251000	1.82
23-Sep-22	35	576.23	11.5	1640	3.45	223.6	1.35	7.42	1720	4.57	3.21	0.156 J	455000	1.58
13-Dec-22	30.22	581.01	10.4	928	7.08	109.2	2.27	7.04	634	3.54	1.89	0.105 J+	173000	1.25
13-Mar-23	27.15	584.08	8.1	1685	5.49	172.5	1.43	7.47	1090	5.83	3.39	0.068 J	318000	1.64
26-Jun-23	32.57	578.66	11.1	1559	4.28	74.7	1.29	7.49	1510	6.99	4.55	0.2 U	475000	2.17
5-Sep-23	35.67	575.56	Insufficient depth of water to sample											
12-Dec-23	19.96	591.27	9.7	1260	6.44	152.6	2.92	7.07	847	4.62	2.69	0.103 U	225000	1.71
4-Mar-24	24.62	586.61	8.4	1191	6.08	237	0.63	7.35	984 J	6.37	4.28	0.103 U	294000	1.62
18-Jun-24	30.41	580.82	9.9	2586	8.65	176.1	0.88	7.51	1430	7.1	3.91	0.103 U	456000	1.81
16-Sep-24	34.45	576.78	10.8	1940	7.65	228.6	4.82	7.54	1340	6.16	4.56	0.244	986000	1.82
11-Dec-24	28.94	582.29	9.7	1717	3.17	194.8	3.04	7.15	1090	5.52	2.66	0.165	317000	1.6
26-Mar-25	22.77	588.46	8.1	1449	8.6	178.5	2.84	7.24	912	4.63	3.31	0.2 U	272000	1.43

Notes:

Top of casing elevation (feet NAVD88): 611.23

Dissolved metals were analyzed at the Site until December 2020 (Q4 2020). Total metals were analyzed for Q4 2020 and will continue to be analyzed moving forward. Iron and manganese are not included in the COPCs at the Site and are not analyzed beginning in Q2 2021. Antimony and Vanadium were included as COPCs for surface water locations and shallow groundwater monitoring wells at the Site beginning in Q3 2021.

- Not measured or not available

Orange shaded values indicate parameter results above the Preliminary Cleanup Level (PCUL), except for pH, which could be above or below the PCUL.

Dry Well went dry during sampling. Unable to collect sample.

a Preliminary Cleanup Level (PCUL) provided by Ecology 30 Sept 2022

U Data validation code; not detected at the Reporting Limit (RL)

J Data validation code; estimated value

J+ Data validation code; estimated value with positive bias

°C Degrees Celsius

Note 1 ORP measurements not available due to faulty sensor.

µmhos/cm Micromhos per centimeter

mg/L Milligrams per liter

feet bmp Feet below measuring point

mV Millivolts

feet NAVD88 Feet NAVD88 Datum

NTU Nephelometric Turbidity Unit

Table A-2f: Summary of Lower Disposal Area - Shallow Groundwater Sampling Results - Well MW-6A
Ravensdale Site, Ravensdale, Washington

Date Sampled	Field Parameters								Gen. Chem.	Metals (ug/L)					
	Depth to Water (feet btoc)	Groundwater Elevation (feet NAVD88)	Temperature (°C)	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction Potential (Rel mV)	Turbidity (NTU)	pH (standard units)		Total Dissolved Solids (mg/L)	Antimony	Arsenic	Lead	Potassium	Vanadium
Preliminary Cleanup Level ^a	-	-	-	-	-	-	-	6.5-8.5	-	5.6	8	2.5	-	80	
15-Jul-05	30.89	578.06	15.26	735	-	-	303	7.6	612	-	2 U	2 U	-	-	
10-Nov-05	27.25	581.70	11.79	700	-	-	13.7	7.51	460	-	2.16	1 U	-	-	
15-Feb-06	19.42	589.53	6.17	759	2	162.9	9.42	8.27	550 J	-	7.54	1 U	-	-	
17-May-06	27.55	581.40	11.99	835	1.31	248.3	4.16	7.46	550	-	11	1 U	-	-	
23-Aug-06	30.99	577.96	15.92	862	1.6	-26.4	15.5	7.4	810	-	1.34	1 U	-	-	
14-Nov-06	15.30	593.65	10.56	712	4.59	84.1	14.5	7.32	500	-	1.71	1 U	-	-	
16-Feb-07	24.22	584.73	8.49	581	3.64	38.6	139	7.21	420	-	1.6	1 U	-	-	
30-May-07	28.50	580.45	13.93	1092	2.72	180.7	210	7.4	740	-	16.2	1 U	-	-	
29-Aug-07	31.34	577.61	10.15	701	4.48	84.8	662	7.8	620 J	-	1.41	1 U	-	-	
29-Nov-07	28.32	580.63	11.3	731	6.23	154	-	6.26	420	-	1.78	1 U	-	-	
27-Feb-08	23.42	585.53	-	-	-	-	-	-	410	-	1.47	1 U	-	-	
20-May-08	27.49	581.46	8.14	791	3.93	176.5	-	7.64	540 J	-	8.18	1 U	-	-	
27-Aug-08	31.72	577.23	9.33	776	4.83	142	-	7.32	660 J	-	1.86	1 U	109000	-	
26-Sep-08	Test Trench Drain Line Installed														-
16-Oct-08	31.29	577.66	9.17	923	4.6	115.4	-	7.13	590 J	-	1.85	1 U	106000	-	
20-Nov-08	21.18	587.77	9.7	578	5.22	249.4	11.7	7.4	460	-	4.42	2 U	110000	-	
30-Dec-08	18.64	590.31	8.45	448	9.27	137.9	75.8	7.89	370 J	-	11.9	1.14	106000	-	
15-Jan-09	16.23	592.72	6.84	344	9.25	181.9	2.77	7.47	320	-	4.88	1 U	72900	-	
12-Feb-09	25.64	583.31	7.89	-	10.82	-	71.7	7.7	420	-	11	1 U	103000	-	
12-Mar-09	26.92	582.03	7.27	524	8.31	166.7	116	7.76	500	-	23.5	1 U	125000	-	
16-Apr-09	19.46	589.49	7.33	406	7.57	182.8	91.8	8.33	430	-	24.1	1.09	101000	-	
19-May-09	26.10	582.85	9.07	554	6.39	65.6	161	8.32	550 J	-	13.4	1 U	115000	-	
23-Jun-09	29.67	579.28	9.51	522	6.05	71.4	-	8.17	540	-	3.1	2 U	74000	-	
25-Aug-09	32.72	576.23	14.8	795	3.25	282.7	22	7.28	630 J	-	0.75 J	2 U	100000	-	
24-Sep-09	32.93	576.02	10.6	745	4.02	361.3	29.8	7.27	560 J	-	0.28 J	2 U	100000	-	
15-Dec-09	23.87	585.08	9.5	815	4.2	556	20	7.15	450	-	2 U	2 U	120000	-	
24-Mar-10	25.61	583.34	8.5	704	4.93	205.6	20.5	8.53	490	-	47	0.9 J	140000	-	
16-Jun-10	19.11	589.84	10.4	553	4.79	399.8	13.4	7.22	310	-	16	2 U	90000	-	
22-Sep-10	31.61	577.34	11.3	1019	3.89	413.8	20.3	7.1	770	-	6.2	0.24 J	130000	-	
8-Dec-10	23.10	585.85	87.9	751	6.24	437.1	9.55	8.77	520	-	43	1.3 J	130000	-	
29-Mar-11	21.32	587.63	7.1	303	4.76	809.4	13.4	9.35	350 J	-	43	0.55 J	110000	-	
21-Jun-11	26.04	582.91	11.2	840	3.24	300.2	8.5	8.4	790	-	18	0.58 J	110000	-	
28-Sep-11	32.43	576.52	10.9	66.6	3.92	415.6	8.32	7.3	590	-	5 U	0.19 J	110000	-	
14-Dec-11	27.19	581.76	9	605	1.56	329.9	21.9	7.89	570	-	11	0.79 J	150000	-	
20-Mar-12	17.23	591.72	6.7	639	5.03	362.5	59.9	7.79	200	-	17	2 U	79000	-	
19-Jun-12	25.63	583.32	9.6	681	5.24	373.2	5.94	7.43	430	-	7.4	0.4 U	76000	-	
19-Sep-12	32.12	576.83	11.7	786	3.49	290	7.36	7.38	460	-	5.7	0.4 U	81000	-	
19-Dec-12	19.00	589.95	8.9	977	4.55	308	26.9	7.98	440	-	20	1.3	150000	-	
25-Feb-13	24.93	584.02	7.1	766	7.59	306.9	6.18	8.2	450	-	34	0.73	120000	-	
22-May-13	26.84	582.11	9.1	705	3.94	412.9	5.97	9.33	430	-	43	0.52	140000	-	
21-Aug-13	32.84	576.11	11.2	879	4.54	110.2	8.28	8.28	548	-	9.5	0.1 U	106000	-	
20-Nov-13	25.21	583.74	11.1	1264	4.69	201.4	30.8	7.55	640	-	24.9	1.9	163000	-	
1-Apr-14	18.81	590.14	8.4	448	3.5	194.9	14.7	8.87	342	-	14.8	0.3	78400	-	
21-May-14	23.84	585.11	10.6	122	1.32	199.3	-	8.46	352	-	18	0.2	80400	-	
13-Aug-14	32.25	576.70	12.46	796	5.77	54	8.01	8.68	628	-	16.1	0.1 U	165000	-	
13-Nov-14	27.21	581.74	13.3	837	4.02	234.3	11.4	8.63	711	-	44.1	0.4	203000	-	
11-Feb-15	18.54	590.41	8.4	609	1.75	16	87.4	9.71	435	-	36.2	1	117000	-	
4-May-15	27.52	581.43	9.9	974	3.27	356.5	12.3	10.14	654	-	41.6	0.5	199000	-	
6-Aug-15	33.98	574.97	11.7	822	1.77	113.7	4.02	8.83	670	-	19.1	0.1 U	210000	-	
4-Nov-15	28.51	580.44	11.7	1207	4.85	206.3	21.2	7.48	1090	-	7.7	1	370000	-	
10-Feb-16	20.96	587.99	6.9	712	2.3	145.8	20.1	10.82	575	-	121	1.1	173000	-	
2-May-16	28.91	580.04	10.6	1856	0.19	111.2	15.6	11.53	1010	-	199	2.5 J	347000	-	
23-Aug-16	33.58	575.37	11.4	1241	0.43	462	8.89	9.51	1150	-	38.9	0.341	349000	-	
2-Nov-16	26.92	582.03	11.6	409	5.05	14.4	40.6	9.15	911	-	25.6	1.49	297000	-	
1-Feb-17	24.61	584.34	6.2	1757	2.34	72.1	11.7	11.97	880	-	141	0.336	283000	-	
30-May-17	24.56	584.39	10.8	1026	2.45	5.69	16.9	10.5	629	-	72.8	0.52 J	210000	-	
17-Aug-17	32.04	576.91	13.1	1019	3.94	87.3	42.7	9.36	726	-	20.3	0.15	219000	-	
10-Nov-17	27.72	581.23	11.6	1090	4.17	109.6	38.2	9.12	931	-	24.3	2.77	356000	-	
27-Feb-18	20.78	588.17	7	823	3.99	59.3	12	11.29	635	-	99.3	0.561	203000	-	
1-May-18	22.58	586.37	8.9	1442	3.52	-	17.7	11.49	817	-	119	0.831 J	250000	-	
21-Aug-18	33.09	575.86	13.18	1153	1.01	139.8	9.68	10.06	989	-	53.6	0.345	334000	-	
6-Nov-18	29.74	579.21	11.1	1719	3.85	218.4	6.49	8.13	1860	-	3.04	0.367	701000 J	-	
13-Mar-19	22.90	586.05	5.8	748	5.04	145.7	32	10.55	737	-	39.1	0.455	246000	-	
8-May-19	25.63	583.32	9.1	936	5.95	75.9	7.6	10.38	747	-	54.7	1.27	246000	-	
26-Aug-19	32.90	576.05	11.18	1622	0.88	Note 1	6.57	8.97	1510	-	18.8	0.507	478000	-	

**Table A-2f: Summary of Lower Disposal Area - Shallow Groundwater Sampling Results - Well MW-6A
Ravensdale Site, Ravensdale, Washington**

Date Sampled	Field Parameters								Gen. Chem.	Metals (ug/L)				
	Depth to Water (feet btoe)	Groundwater Elevation (feet NAVD88)	Temperature (°C)	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction Potential (Rel mV)	Turbidity (NTU)	pH (standard units)	Total Dissolved Solids (mg/L)	Antimony	Arsenic	Lead	Potassium	Vanadium
Preliminary Cleanup Level ^a	-	-	-	-	-	-	-	6.5-8.5	-	5.6	8	2.5	-	80
13-Nov-19	30.92	578.03	10.2	1320	1.45	172.7	5.1	8.33	1140	-	6.31	0.1 U	422000	-
12-Feb-20	15.95	593.00	7.7	437.7	1.4	150.6	19.7	8.13	379	-	2.12	0.1 U	122000	-
12-Aug-20	32.30	576.65	11	2360	2.25	162.9	13.4	8.16	2060	-	6.28	0.088 J	709000	-
9-Dec-20	27.60	581.35	10.8	1750	1.95	209	22	8.22	1500	-	3.14	0.984	539000	-
3-Mar-21	22.58	586.37	7.1	760	1.74	208	5.6	8.04	722	-	3.09	0.307	243000	-
9-Jun-21	31.07	577.88	9.8	2077	4.83	197.3	1.81	8.08	1900	-	5.03	0.094 J	707000	-
13-Oct-21	29.39	579.56	11.2	2509	4.77	188.6	13.1	7.64	DRY	DRY	DRY	DRY	DRY	DRY
6-Jan-22	20.72	588.23	7.3	1136	8.21	229.4	2.04	7.98	1040	7.89	2.41	0.115	333000	0.912
16-Mar-22	19.23	589.72	7.3	828	7.3	176.4	3.63	7.57	808	7.90	2.85	0.155	255000	0.935
23-Jun-22	23.49	585.46	11.2	916	3.74	163.1	0.76	7.66	836	7.00	2.09	0.073 J	265000	0.977
23-Sep-22	32.92	576.03	14.8	2281	3.73	199.3	2.05	8.05	2150	7.64	4.97	0.2 U	646000	2.52
13-Dec-22	27.98	580.97	12.4	1915	6.1	80.4	3.77	7.98	1350	12.4	5.64	0.865 J+	495000	1.26
14-Mar-23	24.91	584.04	6.8	2029	8.44	212.6	0.76	7.71	1190	6.7	1.87	0.1 U	387000	0.801
28-Jun-23	30.50	578.45	11	1640	2.57	222.4	1.22	7.78	1310	7.07	3.92	0.052 J	446000	1.73
5-Sep-23	Below Pump	-	11.6	2869	4.79	184.9	4.83	7.9	1930 J-	7.37	4.56	0.1	566000	2.33
12-Dec-23	17.75	591.2	9.4	1170	7.75	137.3	4.99	7.33	766	6.48	2.09	0.254	266000	1
4-Mar-24	22.36	586.59	7.3	1215	7.46	232.5	0.84	7.59	1070 J	7.92	2.83	0.103 U	359000	0.928
18-Jun-24	28.14	580.81	7.72	1515	11.01	176	0.49	7.72	784	5.06	1.49	0.103 U	270000	0.458
16-Sep-24	32.34	576.61	11.4	2433	8.03	235.6	2.04	7.74	1830	6.33	3.87	0.103 U	495000	1.76
11-Dec-24	26.68	582.27	10.4	2032	4.94	164.9	1.75	7.5	1360	8.89	2.23	0.176	444000	0.898
26-Mar-25	20.57	588.38	7.1	1623	9.61	181.5	9.06	7.5	977	6.55	2.1	0.2 U	328000	0.972

Notes:

Top of casing elevation (feet NAVD88): 608.95

Dissolved metals were analyzed at the Site until December 2020 (Q4 2020). Total metals were analyzed for Q4 2020 and will continue to be analyzed moving forward.

Iron and manganese are not included in the COPCs at the Site and are not analyzed beginning in Q2 2021. Antimony and Vanadium were included as COPCs for surface water locations and shallow groundwater monitoring wells at the Site beginning in Q3 2021.

- Not measured or not available

Orange shaded values indicate parameter results above the Preliminary Cleanup Level (PCUL), except for pH, which could be above or below the PCUL.

a Preliminary Cleanup Level (PCUL) provided by Ecology 30 Sept 2022

U Data validation code; not detected at the Reporting Limit (RL)

J Data validation code; estimated value

J+ Data validation code; estimated value with positive bias

°C Degrees Celsius

Note 1 ORP measurements not available due to faulty sensor.

µmhos/cm Micromhos per centimeter

feet bmp Feet below measuring point

feet NAVD88 Feet NAVD88 Datum

mg/L Milligrams per liter

mV Millivolts

NTU Nephelometric Turbidity Unit

**Table A-2g: Summary of Lower Disposal Area - Shallow Groundwater Sampling Results - Well MW-7A
Ravensdale Site, Ravensdale, Washington**

Date Sampled	Field Parameters								Gen. Chem.	Metals (ug/L)				
	Depth to Water (feet btoC)	Groundwater Elevation (feet NAVD88)	Temperature (°C)	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction Potential (Rel mV)	Turbidity (NTU)	pH (standard units)	Total Dissolved Solids (mg/L)	Antimony	Arsenic	Lead	Potassium	Vanadium
Preliminary Cleanup Level ^a	-	-	-	-	-	-	-	6.5-8.5	-	5.6	8	2.5	-	80
13-Oct-21	13.61	579.08	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
10-Jan-22	4.73	587.96	7.00	467	5.45	197.0	2.99	7.34	419	3.89	2.07	0.1 U	98000	1.04
21-Mar-22	3.21	589.48	7.3	691	6.38	66.2	1.52	7.46	632	6.23	2.88	0.071 J	179000	1.34
22-Jun-22	7.45	585.24	12	541	1.88	107.5	0.47	7.21	387	2.91	1.78	0.1 U	65500	1.19
14-Sep-22	16.9	575.79	13.6	548	4.46	141	0.5	6.31	444	1.63	1.49	0.1 U	54000	1.16
14-Dec-22	12	580.69	8	514	5.35	170.1	0.41	7.07	335	1.64	1.18	0.1 U	42700	0.798
17-Mar-23	8.90	583.79	5.3	755	2.7	205.3	0.85	7.16	412	1.51	1.45	0.1 U	55300	0.774
28-Jun-23	14.57	578.12	13	561	0.46	119.6	0.42	6.83	364	0.785	1.24	0.407	26200	1.02
7-Sep-23	17.51	575.18	12	868	4.05	44	0.47	6.87	493 J-	1.3	1.43	0.0513 U	35100	1.07
15-Dec-23	2.53	590.16	9.2	1163	6.27	354.3	4.79	7.22	577	4.03	1.95	0.103 U	113000	1.25
6-Mar-24	6.52	586.17	6.4	850	7.35	254.1	0.66	7.24	588	3.01	2.14	0.103 U	111000	0.97
17-Jun-24	12.25	580.44	11.8	810	6.53	154.4	0.35	6.83	405	0.924	1.44	0.103 U	29800	0.996
17-Sep-24	16.38	576.31	15.2	762	7.57	175.9	2.53	6.97	445	1.29	1.7	0.103 U	28100	1.31
12-Dec-24	10.61	582.08	7	667.8	1.47	117.6	3.87	7.06	397	0.628	1.43	0.2 U	23400	0.552
27-Mar-25	10.61	582.08	7	667.8	1.47	117.6	3.87	7.06	397	0.628	1.43	0.2 U	23400	0.552

Notes:

Top of casing elevation (feet NAVD88): 592.69

Dissolved metals were analyzed at the Site until December 2020 (Q4 2020). Total metals were analyzed for Q4 2020 and will continue to be analyzed moving forward. Iron and manganese are not included in the COPCs at the Site and are not analyzed beginning in Q2 2021. Antimony and Vanadium were included as COPCs for surface water locations and shallow groundwater monitoring wells at the Site beginning in Q3 2021.

- Not measured or not available

Orange shaded values indicate parameter results above the Preliminary Cleanup Level (PCUL), except for pH, which could be above or below the PCUL.

a Preliminary Cleanup Level (PCUL) provided by Ecology 30 Sept 2022

U Data validation code; not detected at the Reporting Limit (RL)

J Data validation code; estimated value

J+ Data validation code; estimated value with positive bias

°C Degrees Celsius

µmhos/cm Micromhos per centimeter

feet bmp Feet below measuring point

feet NAVD88 Feet NAVD88 Datum

mg/L Milligrams per liter

mV Millivolts

NTU Nephelometric Turbidity Unit

**Table A-2h: Summary of Lower Disposal Area - Shallow Groundwater Sampling Results - Well MW-8A
Ravensdale Site, Ravensdale, Washington**

Date Sampled	Field Parameters								Gen. Chem.	Metals (ug/L)				
	Depth to Water (feet btoC)	Groundwater Elevation (feet NAVD88)	Temperature (°C)	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction Potential (Rel mV)	Turbidity (NTU)	pH (standard units)	Total Dissolved Solids (mg/L)	Antimony	Arsenic	Lead	Potassium	Vanadium
Preliminary Cleanup Level ^a	-	-	-	-	-	-	-	6.5-8.5	-	5.6	8	2.5	-	80
13-Oct-21	23.91	577.58	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
6-Jan-22	13.55	587.94	9.5	670	3.99	239.1	4.50	7.05	595	5.21	6.64	0.1 U	169000	3.87
21-Mar-22	12.11	589.38	8.0	587	7.13	45	3.32	7.71	536	4.76	7.48	0.1 U	163000	3.84
22-Jun-22	16.4	585.09	9.4	773	2.99	96	0.94	7.22	699	5.17	8.13	0.1 U	197000	4.73
12-Sep-22	26	575.49	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
13-Dec-22	21.16	580.33	10.4	1011	6.13	122.1	1.22	7.07	721	4.53	5.37	0.1 U	205000	3.61
17-Mar-23	17.86	583.63	9.2	1216	4.6	214.5	0.8	7.19	714	4.71	7.2	0.1 U	218000	4.22
28-Jun-23	24.08	577.41	10.2	845	1.85	176.3	0.58	7.19	656	4.03	5.91	0.1 U	189000	3.62
7-Sep-23	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
15-Dec-23	11.34	590.15	9.8	1434	5.3	348.7	6.22	6.89	760	4.1	5.52	0.148 J	220000	3.64
6-Mar-24	15.41	586.08	8.3	926	8.1	304.5	0.74	7.06	622	4.93	6.67	0.103 U	159000	3.44
17-Jun-24	21.53	579.96	10.1	1378	8.54	167.8	0.83	7.14	719	4.28	5.97	0.103 U	195000	3.38
17-Sep-24	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
12-Dec-24	13.05	588.44	8.4	136.9	8.80	147.60	3.30	7.01	477	3.02	4.54	0.2 U	131000	2.25
27-Mar-25	13.05	588.44	8.4	136.9	8.80	147.60	3.30	7.01	477	3.02	4.54	0.2 U	131000	2.25

Notes:

Top of casing elevation (feet NAVD88): 601.49

Dissolved metals were analyzed at the Site until December 2020 (Q4 2020). Total metals were analyzed for Q4 2020 and will continue to be analyzed moving forward. Iron and manganese are not included in the COPCs at the Site and are not analyzed beginning in Q2 2021. Antimony and Vanadium were included as COPCs for surface water locations and shallow groundwater monitoring wells at the Site beginning in Q3 2021.

- Not measured or not available

Orange shaded values indicate parameter results above the Preliminary Cleanup Level (PCUL), except for pH, which could be above or below the PCUL.

a Preliminary Cleanup Level (PCUL) provided by Ecology 30 Sept 2022

U Data validation code; not detected at the Reporting Limit (RL)

J Data validation code; estimated value

J+ Data validation code; estimated value with positive bias

°C Degrees Celsius

µmhos/cm Micromhos per centimeter

feet bmp Feet below measuring point

feet NAVD88 Feet NAVD88 Datum

mg/L

Milligrams per liter

mV

Millivolts

NTU

Nephelometric Turbidity Unit

**Table A-2i: Summary of Lower Disposal Area - Shallow Groundwater Sampling Results - Well MW-9A
Ravensdale Site, Ravensdale, Washington**

Date Sampled	Field Parameters								Gen. Chem.	Metals (ug/L)				
	Depth to Water (feet btoc)	Groundwater Elevation (feet NAVD88)	Temperature (°C)	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction Potential (Rel mV)	Turbidity (NTU)	pH (standard units)		Total Dissolved Solids (mg/L)	Antimony	Arsenic	Lead	Potassium
Preliminary Cleanup Level ^a	-	-	-	-	-	-	-	6.5-8.5	-	5.6	8	2.5	-	80
15-Oct-21	4.38	692.91	12.20	956	1.45	-93.2	2.70	7.11	981 J-	0.659	4.79	0.139	16000	1.2
7-Jan-22	2.45	694.84	8.50	381	4.86	189.9	1.43	6.95	404	0.181 J	1.02	0.056 J	2910	1.03
18-Mar-22	2.38	694.91	8.50	423	5.19	138.3	1.17	7.16	403	0.154 J	0.788	0.1 U	2470	0.776
22-Jun-22	2.38	694.91	10.5	485.8	4.42	72.8	0.85	6.89	399	0.244	0.656	0.052 J	2130	0.916
14-Sep-22	8.7	688.59	13.5	509	3.84	130.2	1.09	6.44	441	0.154 J	1.05	0.1 U	2780	1.13
14-Dec-22	2.5	694.79	8	413.5	7.42	135.6	0.53	6.91	328	0.132 J	0.599	0.1 U	1630	0.867
16-Mar-23	2.39	694.9	6.6	556.2	5.25	120.9	1.6	6.85	337	0.119 J	0.508	0.1 U	1660	0.812
27-Jun-23	5.19	692.1	11.1	468.4	2.6	44.3	7.31	6.72	379	0.123 J	0.832	0.5 U	2120	1.3
8-Sep-23	11.47	685.82	Insufficient depth of water to sample											
13-Dec-23	2.48	694.81	9.1	623	6.85	127.8	3.2	6.4	297	0.202 U	0.47	0.103 U	1420	0.846
7-Mar-24	2.58	694.71	7.6	610	6.61	186.2	1.46	6.89	360	0.202 U	0.436	0.103 U	1790	0.64 J
17-Sep-24	7.55	689.74	13.2	593	7.28	161.8	1.02	6.96	321	0.234 J	0.54	0.103 U	2350	1
12-Dec-24	2.54	694.75	8.7	551.8	3.64	115.5	2.68	6.73	358	0.3 U	0.358 J	0.2 U	1650	0.636
24-Mar-25	2.54	694.75	8.7	551.8	3.64	115.5	2.68	6.73	358	0.3 U	0.358 J	0.2 U	1650	0.636

Notes:

Top of casing elevation (feet NAVD88): 697.29

Dissolved metals were analyzed at the Site until December 2020 (Q4 2020). Total metals were analyzed for Q4 2020 and will continue to be analyzed moving forward. Iron and manganese are not included in the COPCs at the Site and are not analyzed beginning in Q2 2021. Antimony and Vanadium were included as COPCs for surface water locations and shallow groundwater monitoring wells at the Site beginning in Q3 2021.

- Not measured or not available

Orange shaded values indicate parameter results above the Preliminary Cleanup Level (PCUL), except for pH, which could be above or below the PCUL.

a Preliminary Cleanup Level (PCUL) provided by Ecology 30 Sept 2022

U Data validation code; not detected at the Reporting Limit (RL)

J Data validation code; estimated value

J+ Data validation code; estimated value with positive bias

°C Degrees Celsius

µmhos/cm Micromhos per centimeter

feet bmp Feet below measuring point

feet NAVD88 Feet NAVD88 Datum

mg/L

Milligrams per liter

mV

Millivolts

NTU

Nephelometric Turbidity Unit

**Table A-2j: Summary of Lower Disposal Area - Shallow Groundwater Sampling Results - Well MW-10A
Ravensdale Site, Ravensdale, Washington**

Date Sampled	Field Parameters								Gen. Chem.	Metals (ug/L)				
	Depth to Water (feet btoC)	Groundwater Elevation (feet NAVD88)	Temperature (°C)	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction Potential (Rel mV)	Turbidity (NTU)	pH (standard units)	Total Dissolved Solids (mg/L)	Antimony	Arsenic	Lead	Potassium	Vanadium
Preliminary Cleanup Level ^a	-	-	-	-	-	-	-	6.5-8.5	-	5.6	8	2.5	-	80
15-Oct-21	19.04	678.98	10.7	390	4.24	-115.0	27.80	7.93	383 J-	0.705	4.04	0.383	9700	2.87
6-Jan-22	5.55	692.47	9.3	168	7.06	94.6	6.90	7.50	141	0.151 J	1.13	0.109	2660	1.03
17-Mar-22	5.39	692.63	9.4	151	7.12	95.1	6.21	6.50	139	0.2 U	0.91	0.061 J	1880	0.807
21-Jun-22	5.89	692.13	11.5	114.9	7.92	191.1	4.48	6.80	116	0.2 U	0.764	0.081 J	1150	1.02
13-Sep-22	14.24	683.78	12	221.3	6.64	189.1	3.74	6.78	195	0.201	1.54	0.082 J	2350	1.56
13-Dec-22	14.93	683.09	9.8	395.9	4.71	179.4	5.19	7.34	200	0.173 J	1.3	0.1 U	2060	1.1
15-Mar-23	5.64	692.38	8.4	179.4	8.78	145.7	2.07	6.85	108	0.2 U	0.541	0.1 U	892	0.727
26-Jun-23	9.63	688.39	11.1	102.6	9.22	143.6	4.69	6.19	108	0.2 U	0.579	0.168 J	823	1
6-Sep-23	17.39	680.63	10.6	335	2.5	-26.6	4.58	7.51	205 J-	0.224	1.45	0.12	2310	1.4
13-Dec-23	6.01	692.01	10.3	247.7	9.01	154.4	4.23	6.3	111	0.202 U	0.596	0.103 U	977	0.746
5-Mar-24	5.33	692.69	8.9	180.6	9.04	162.6	5.3	6.31	106	0.202 U	0.44	0.103 U	777	0.556 U
17-Jun-24	7.15	690.87	9.8	197.4	12.65	198.6	3.18	6.4	115	0.202 U	0.548	0.104 J	883	0.806
17-Sep-24	15.56	682.46	10.7	287.2	8.25	153	0.87	6.7	182	0.202 U	1.2	0.103 U	1770	1.34
9-Dec-24	5.86	692.16	9.7	199.4	19.79	44.1	2.45	7	136	0.150 U	0.435	0.0680 U	841	0.89
24-Mar-25	5.14	692.88	9.8	183.3	8.76	104	6.03	6.48	113	0.3 U	0.39 J	0.2 U	862	0.666

Notes:

Top of casing elevation (feet NAVD88): 698.02

Dissolved metals were analyzed at the Site until December 2020 (Q4 2020). Total metals were analyzed for Q4 2020 and will continue to be analyzed moving forward. Iron and manganese are not included in the COPCs at the Site and are not analyzed beginning in Q2 2021. Antimony and Vanadium were included as COPCs for surface water locations and shallow groundwater monitoring wells at the Site beginning in Q3 2021.

- Not measured or not available

Orange shaded values indicate parameter results above the Preliminary Cleanup Level (PCUL), except for pH, which could be above or below the PCUL.

a Preliminary Cleanup Level (PCUL) provided by Ecology 30 Sept 2022

U Data validation code; not detected at the Reporting Limit (RL)

J Data validation code; estimated value

J+ Data validation code; estimated value with positive bias

°C Degrees Celsius

µmhos/cm Micromhos per centimeter

mg/L Milligrams per liter

feet bmp Feet below measuring point

mV Millivolts

feet NAVD88 Feet NAVD88 Datum

NTU Nephelometric Turbidity Unit

**Table A-2k: Summary of Lower Disposal Area - Shallow Groundwater Sampling Results - Still Well
Ravensdale Site, Ravensdale, Washington**

Date Sampled	Field Parameters						Gen-Chem	Metals (ug/L)				
	Temperature (°C)	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction Potential (Rel mV)	Turbidity (NTU)	pH (standard units)	Total Dissolved Solids (mg/L)	Antimony	Arsenic	Lead	Potassium	Vanadium
Preliminary Cleanup Level ^c	-	-	-	-	-	6.5-8.5	-	5.6	8	2.5	-	80
1-Feb-05	8.1	10658	-	-	6.59	12.87	2860	-	49.9	5.52	-	-
9-Mar-05	13.23	7393	-	-	7.42	12.51	2860	-	115	14.7	-	-
5-Apr-05	9.5	11310	-	-	10.9	12.44	2900	-	55.6	11.6	-	-
10-May-05	13.99	11871	-	-	3.6	12.53	2810	-	55.4	12.5	-	-
7-Jun-05	13.83	10888	-	-	22.6	12.54	2490	-	5 U	5 U	-	-
15-Jul-05 ^a	18.21	11331	-	-	14.8	12.5	3800	-	2.72	6.07	-	-
15-Jul-05 ^b	-	-	-	-	-	-	2540	-	39.8	7.57	-	-
9-Aug-05 ^a	21.45	12087	-	-	17.9	11.78	3500	-	120	10.9	-	-
9-Aug-05 ^b	-	-	-	-	-	-	2820	-	91.5	9.53	-	-
14-Sept-05 ^a	17.38	9507	-	-	14	12.36	3600	-	118	11.2	-	-
14-Sept-05 ^b	-	-	-	-	-	-	2830	-	115	14.4	-	-
5-Oct-05	13.31	11481	-	-	62.7	12.47	3020	-	85.2	11.9	-	-
9-Nov-05	9.58	14417	-	-	11	12.34	3400	-	74	10 U	-	-
9-Dec-05	6.18	7138	-	-	12.5	12.82	2800	-	14.5	1.07	-	-
19-Jan-06	8.66	8265	1.74	-	11.8	13.06	1900 J	-	15.2 J	1 U	-	-
16-Feb-06	8.13	9019	2.81	195.6	6.16	12.27	3200 J	-	13.4 J	1.89	-	-
15-Mar-06	7.98	9033	0.79	114.8	8.93	12.6	3300 J	-	2.36	2.5 J	-	-
7-Apr-06	9.98	10450	0.57	34.8	6.08	12.51	3400	-	15.2	2.83	-	-
16-May-06	12.79	11060	0.14	45.4	9.28	12.4	3500	-	4.04	1.59	-	-
23-Jun-06	13.29	11680	0.44	-	14.6	12.9	3600	-	52.6	16.5	-	-
20-Jul-06	16.2	12240	0.14	-217.8	10.4	12.47	4300	-	19.3	3.57	-	-
22-Aug-06	17.14	10920	1.22	-146	13.3	12.66	3800	-	144	9.14 J	-	-
26-Sep-06	15.72	9599	0.42	-263.3	61.4	12.59	3800	-	123	4.63	-	-
26-Oct-06	10.99	9955	0.88	-207.5	82.3	12.93	3600	-	161	19.5	-	-
15-Nov-06	10.58	12040	1.82	149.2	188	12.87	3400	-	30.6 J	4.5	-	-
20-Dec-06	8.85	10990	0.71	-152	32.8	13.02	2600 J	-	52.6	13	-	-
24-Jan-07	8.29	10440	0.97	-139.8	13.7	13.05	2500 J	-	58.6	13.1	-	-
12-Feb-07	8.88	10590	0.86	-125.8	56.4	13.06	3400	-	61.3	14	-	-
27-Mar-07	9.45	9163	1.25	-42.4	18.4	11.53	2900 J	-	44.1	1.81	-	-
18-Apr-07	8.9	8155	2.63	2.3	37.2	12.77	3300 J	-	29.3	1.98	-	-
31-May-07	20.12	11050	5.3	-153.9	9.31	11.59	2800 J	-	48.5	15.1 J	-	-
20-Jun-07	18.28	12000	5.41	-122.5	16.1	12.04	4300 J	-	26.8	2.33	-	-
31-Jul-07	16.53	12200	1.7	-151.6	24.8	12.48	6000	-	87.6	1.03	-	-
29-Aug-07	17	9570	1.12	-183.1	268	12.78	4600 J	-	106	9.46	-	-
27-Sep-07	14.49	8263	52.4	-183	211	12.42	2800	-	125	15.4	-	-
26-Oct-07	9.49	6144	4.88	-147.2	92.4	12.85	3300 J	-	124	24.9	-	-
30-Nov-07	5.53	7703	2.13	-122.6	127	12.67	2200	-	174	14.1	-	-
12-Dec-07	5.24	11609	3.43	-144.8	116	12.6	4100	-	110	11.3	-	-
24-Jan-08	3.73	9649	13.81	-138	-	10.74	2500	-	101	9.74	-	-
28-Feb-08	-	-	-	-	51.2	-	2900	-	58.5	12.6	-	-
25-Mar-08	7.06	8623	5.52	-11.2	17.4	11.26	3400	-	74.3	10.4	-	-
29-Apr-08	9.74	11332	4.29	-1.3	27.7	12.82	3000 J	-	76.6	13.3	-	-
20-May-08	14.53	11955	1.74	-35.8	72.7	12.82	3400	-	87.3	15.1	-	-
18-Jun-08	12.77	10267	3.34	-27	34	12.86	3200 J	-	63.2	16.9	-	-
26-Aug-08	15.86	7703	1.06	-72.8	38.3	12.67	2600 J	-	430	35	759000	-
20-Nov-08	9.59	8762	0.91	-65.6	74.1	13.32	3500	-	70	16.8	848000	-
12-Feb-09	3.25	554	14.29	-	108	13.03	550	-	47.2	13.7	551000	-
19-May-09	11.53	276	8.8	26	43.4	9.83	2500 J	-	37.8	15	689000	-
22-Sep-09	12.47	9760	1.5	159.1	625	12.47	3000	-	160	37	990000	-
15-Dec-09	5.2	11650	1.9	237	26.3	12.85	3000	-	86	21	900000 J	-

**Table A-2k: Summary of Lower Disposal Area - Shallow Groundwater Sampling Results - Still Well
Ravensdale Site, Ravensdale, Washington**

Date Sampled	Field Parameters						Gen-Chem Total Dissolved Solids (mg/L)	Metals (ug/L)				
	Temperature (°C)	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction Potential (Rel mV)	Turbidity (NTU)	pH (standard units)		Antimony	Arsenic	Lead	Potassium	Vanadium
Preliminary Cleanup Level ^c	-	-	-	-	-	6.5-8.5	-	5.6	8	2.5	-	80
22-Mar-10	9.7	1035	-	182	19.4	12.58	3000	-	73	17	870000	-
17-Jun-10	11.7	9610	0.08	-	6.59	12.48	2700	-	66	15	780000	-
21-Sep-10	15	6710	1.26	152.6	140	12.29	2400	-	300	39	570000	-
8-Dec-10	8.3	10110	1	-	5.44	12.63	2600	-	64	10	860000	-
30-Mar-11	8.6	4810	0.46	136.3	13.7	14.31	2500 J	-	65	9.6	720000	-
21-Jun-11	16.6	10420	1.63	111.9	3.4	12.36	5200	-	60	9.1	770000	-
28-Sep-11	14.8	5270	2.34	70	66.7	12.17	2200	-	220	11	1000000	-
15-Dec-11	6	7330	2.47	104.2	18.3	13.09	2800	-	83	2.9	880000	-
21-Mar-12	5.5	11040	3.15	294.2	12	12.39	2600	-	67	4.7	760000	-
19-Jun-12	5.5	11040	3.15	294.2	12	12.39	2600	-	58	6.7	690000	-
20-Sep-12	16.1	9560	3.27	76	10.7	12.35	2900	-	84	3	830000	-
19-Dec-12	4.1	1320	10.11	303.1	5.86	9.69	700	-	75	4.3	250000	-
26-Feb-13	7.3	9950	1.77	161.8	25.5	12.66	2000	-	70	0.29 J	720000	-
23-May-13	11.5	8040	2.23	266.8	22.7	12.47	2500	-	57	3.4	690000	-
22-Aug-13	17.4	8810	2.42	10.8	38.5	12.79	2590	-	57.8	1.5	863000	-
19-Nov-13	9	7090	2.47	79	62.8	12.54	2720	-	52.5	4.2	909000	-
1-Apr-14	10.3	6080	0.55	128.2	37.1	6.08	1890	-	54.6	1.1	687000	-
22-May-14	13.6	7360	1.22	34.4	-	11.75	2330	-	60.9	2	689000	-
13-Aug-14	18.26	7844	0.33	1.2	7.3	12.53	2770	-	70	2.1	849000	-
12-Nov-14	9	585	3.17	-47.8	17.5	12.93	2450	-	83.2	3.9	837000	-
12-Feb-15	10.7	7540	2.68	-18.6	9.64	12.71	2150	-	51.6	0.3	690000	-
4-May-15	12.9	9140	2.73	110.4	26.8	13.02	2520	-	54.6	0.22 J	734000	-
5-Aug-15	19.5	8060	2.58	-29.8	61.1	12.62	2980	-	63.9	1.7	898000	-
3-Nov-15	11.1	5150	0.37	38.6	171	8.93	1840	-	109	21.7	747000	-
9-Feb-16	9.7	7390	0.78	80.8	7.79	13.07	2170	-	53.6	1.2	601000	-
3-May-16	14.7	7530	1.4	358.1	2.65	12.98	2480	-	54.2	1.7 J-	711000	-
22-Aug-16	20.5	7.91	2.1	-	59	12.95	2780	-	91.3	5.87	831000	-
1-Nov-16	12.3	2884	2.66	-72.1	19.1	13.17	2620	-	46.2	9.64	841000	-
31-Jan-17	7.4	8510	2.37	-167	7.35	13.17	2050	-	52.5	1.19	582000	-
31-May-17	14.6	7500	2.44	-	4.17	12.89	1900	-	45.4	0.68 J+	615000	-
17-Aug-17	18.3	8460	3.35	-84	15.9	12.79	2680	-	56.8	2.14	750000	-
9-Nov-17	8.2	7215	3.48	90.9	18.2	12.65	2360	-	62.1	3.52	822000	-
27-Feb-18	6.6	5312	3.75	2.3	2.49	12.11	1970	-	50.2	7.53	521000	-
2-May-18	11.1	8260	1.7	-	13	12.92	2360	-	43.4	21.7 J+	552000	-
21-Aug-18	20.22	6260	4.71	-42.1	5.84	12.58	2100	-	52.2	0.138	629000	-
7-Nov-18	9.7	995	6.72	126.8	20.6	9.15	1880	-	644	80.2	502000 J+	-
11-Mar-19	10.6	1354	5.93	-18.7	7.19	10.31	1710	-	52.8	21.2	501000	-
9-May-19	13.8	6973	6.4	18.1	16.7	12.36	1980	-	41.6	13.4	521000	-
26-Aug-19	17.8	6405	3.91	Note 1	5.15	12.56	2570	-	42.5	15.4	722000	-
14-Nov-19	9.7	6065	0.41	-53.3	12	12.67	1750	-	167	23.9	563000	-
13-Feb-20	7.6	4936	0.37	-139	2.56	12.66	1630	-	48.6	6.08	490000	-
13-Aug-20	15	6817	2.55	-42.8	2.02	12.39	2620	-	41.9	0.86	659000	-
10-Dec-20	8.8	4534	0.55	-26.2	5.87	12.79	1670	-	82.7	11.1	510000	-
4-Mar-21	7.7	4728	0.05	-42	0.85	11.94	1470	-	61.8	1.49	512000	-
9-Jun-21	13.4	5213	0.89	-148.4	4.06	12.56	1600	-	91.7	5.72	471000	-
13-Oct-21	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
7-Jan-22	8.8	4103	2.53	55.4	3.04	12.88	1900	8.39	50.3	4.26	486000	3.34
17-Mar-22	9	4955	7.42	153.1	1.88	13.71	2070	8.23	51.7	5.88	517000	3.02
21-Jun-22	15.4	5090	2.53	156.3	3.4	11.96	2180	9.34	51.6	3.08	465000	3.7
14-Sep-22	16.6	6728	6	68	44.5	12.33	2480	7.82	52.3	6.96	669000	3.47

**Table A-2k: Summary of Lower Disposal Area - Shallow Groundwater Sampling Results - Still Well
Ravensdale Site, Ravensdale, Washington**

Date Sampled	Field Parameters						Gen-Chem	Metals (ug/L)				
	Temperature (°C)	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/L)	Oxidation-Reduction Potential (Rel mV)	Turbidity (NTU)	pH (standard units)	Total Dissolved Solids (mg/L)	Antimony	Arsenic	Lead	Potassium	Vanadium
Preliminary Cleanup Level ^c	-	-	-	-	-	6.5-8.5	-	5.6	8	2.5	-	80
13-Dec-22	7.7	1419	7.42	-92.9	9.97	11.6	967	71	125	9.95	309000	11.1
15-Mar-23	7.5	7393	3.03	77	42	12.72	2070	10.1	39.1	6.26	478000	3.06
28-Jun-23	15.6	6301	2.79	-109.2	3.74	12.33	2240	27.6	42.1	0.977	450000	4.49
6-Sep-23	17.2	5942	2.55	-53.7	10.5	12.46	1740 J-	271	78.5	4.35	541000	18.1
15-Dec-23	10.3	4630	9.48	81.6	6.81	12.38	1120	25.5	35.8	4.91	367000	2.87
5-Mar-24	8.3	7467	8.51	-23	9.33	12.39	1700	7.25	50.1	4.7	434000	2.9
18-Jun-24	13.4	5636	10.88	95	3.5	12.21	1700	16.8	48.5	5.82	408000	2.88
17-Sep-24	14.6	3389	8	165.4	18.6	12.49	1640	65.7	35.9	5.94	453000	4.82
9-Dec-24	8.5	6405	58.07	14.8	7.24	12.33	1310	24.2	45.7	3.47	404000	2.68
24-Mar-25	9.5	6490	0.76	212.8	9.89	12.47	1700	5.14	45.1	0.77	375000	2.11

Notes:

Dissolved metals were analyzed at the Site until December 2020 (Q4 2020). Total metals were analyzed for Q4 2020 and will continue to be analyzed moving forward. Iron and manganese are not included in the COPCs at the Site and are not analyzed beginning in Q2 2021. Antimony and Vanadium were included as COPCs for surface water locations and shallow groundwater monitoring wells at the Site beginning in Q3 2021.

- Not analyzed or not available

Orange shaded values indicate parameter results above the Preliminary Cleanup Level (PCUL), except for pH, which could be above

a North Creek Analytical, Inc.

b Severn Trent Laboratories

c Preliminary Cleanup Level (PCUL) provided by Ecology 30 Sept 2022

U Data validation code; not detected at the Reporting Limit (RL)

J Data validation code; estimated value

J+ Data validation code; estimated value with positive bias

°C Degrees Celsius

Note 1 ORP measurements not available due to faulty sensor.

µmhos/cm Micromhos per centimeter

feet bmp Feet below measuring point

feet NAVD88 Feet NAVD88 Datum

mg/L

mV

NTU

Table A-3a: Summary of Lower Disposal Area - Bedrock Groundwater Sampling Results
- Well MWB-1LDA Ravensdale Site, Ravensdale, Washington

Date Sampled	Field Parameters								Gen. Chem.	Metals (ug/L)		
	Depth to Water (feet btoc)	Groundwater Elevation (feet NAVD88)	Temperature (°C)	Conductivity (umhos/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (Rel mV)	Turbidity (NTU)	pH (standard units)	Total Dissolved Solids (mg/L)	Arsenic	Lead	Potassium
Preliminary Cleanup Level ^a	-	-	-	-	-	-	-	6.5-8.5	-	8	2.5	-
19-Dec-06	26.51	678.17	10.96	546	0.43	-115.4	1.05	7.70	310	151	1 U	-
14-Feb-07	26.08	678.60	10.62	397	1.02	-90.8	3.07	7.53	240	160	1 U	-
31-May-07	25.96	678.72	10.83	386	0.36	-172.8	4.20	8.20	220	122	1 U	-
27-Aug-07	25.66	679.02	10.97	372	0.76	-128.2	1.08	7.51	240	89.9	1 U	-
28-Nov-07	26.81	677.87	10.56	371	0.42	-121.2	1.29	8.03	220	88.3	1 U	-
27-Feb-08	25.80	678.88	10.62	371	2.01	-	1.07	-	230	80.9	1 U	3000 U
20-May-08	25.62	679.06	10.61	391	0.36	-53.0	1.11	7.28	230	64.3	1 U	-
27-Aug-08	26.14	678.54	10.58	394	0.50	-63.9	1.02	7.35	230 J	64	1 U	3000 U
19-Nov-08	25.16	679.52	10.33	269	0.45	-88.6	0.48	7.51	230	59.6	1 U	3000 U
11-Feb-09	25.08	679.60	10.04	268	0.48	-	0.97	7.89	230	56	1 U	3000 U
18-May-09	24.83	679.85	10.10	271	0.42	-50.5	1.81	8.05	230 J	46.6	1 U	3000 U
24-Sep-09	26.32	678.36	11.80	323	0.24	202.0	3.59	7.57	260	27	2 U	1100 J
17-Dec-09	25.06	679.62	10.10	370	0.94	179.0	4.16	7.77	<40	34	2 U	1200 J
23-Mar-10	24.83	679.85	10.90	344	0.21	397.4	3.17	7.57	240	25	2 U	1300 J
15-Jun-10	24.38	680.30	10.50	355	0.08	195.5	0.42	7.66	150	27	2 U	1100 J
20-Sep-10	25.74	678.94	10.50	354	0.06	192.9	0.20	7.65	200	22	2 U	1100 J
6-Dec-10	24.59	680.09	10.00	347	0.09	99.3	0.17	7.86	230	22	2 U	1000 J
28-Mar-11	24.01	680.67	10.00	173	0.16	90.6	0.88	7.58	200	22	2 U	1000 J
20-Jun-11	24.11	680.57	10.30	330	0.07	121.5	0.17	7.65	250	22	2 U	900 J
26-Sep-11	25.39	679.29	10.40	2906	0.06	123.6	0.43	7.65	280	15	2 U	1100 J
14-Dec-11	24.61	680.07	9.90	245	0.10	193.8	1.76	7.57	230	21	2 U	1200 J
21-Mar-12	23.70	680.98	10.10	392	0.07	392.0	0.22	7.47	240	23	2 U	1100 J
18-Jun-12	23.90	680.78	10.50	383	0.02	342.8	0.30	7.67	230	20	0.4 U	3300 U
19-Sep-12	25.38	679.30	10.30	402	0.01	151.0	0.44	7.63	220	19	0.4 U	1000 J
18-Dec-12	23.59	681.09	10.10	492	0.00	-45.7	0.16	7.70	92	17	0.4 U	1200 J
25-Feb-13	23.73	680.95	9.90	377	0.00	177.1	0.37	7.53	270 J	19	0.4 U	1000 J
22-May-13	23.85	680.83	9.90	398	0.00	430.4	0.44	7.73	290	17	0.4 U	3300 U
21-Aug-13	25.34	679.34	10.40	467	0.01	-31.7	0.55	7.68	238	16.8	0.08 J	1060
19-Nov-13	24.25	680.43	10.10	361	0.00	70.3	0.32	7.30	232	15.7	0.1 U	1040
31-Mar-14	22.36	682.32	10.70	286	0.01	107.4	0.21	7.79	211	13.8	0.1 U	1020
21-May-14	23.29	681.39	8.54	271	1.35	54.3	-	7.14	198	13.1	0.1 U	1000
12-Aug-14	24.87	679.81	14.79	335	0.41	-16.0	2.02	7.05	216	11.9	0.1 U	1010
11-Nov-14	24.96	679.72	10.10	262	0.79	11.1	1.51	7.49	221	13.6	0.1 U	1090
10-Feb-15	23.23	681.45	10.40	319	0.25	-114.0	0.36	7.70	240	13.3	0.1 U	960
4-May-15	23.62	681.06	10.20	370	0.05	175.1	0.16	7.70	224	11.7	0.1 U	960
4-Aug-15	25.30	679.38	11.00	279	0.06	-30.5	0.72	7.72	234	14.4	0.1 U	990
4-Nov-15	25.35	679.33	10.60	263	0.00	51.2	0.46	7.46	233	11	0.1 U	1150
8-Feb-16	23.03	681.65	10.20	319	0.03	206.5	0.20	7.77	210	12.1	0.1 U	1050
2-May-16	23.49	681.19	Monitored Semi-Annually ¹						Monitored Annually ¹			
22-Aug-16	25.00	679.68	11.10	323	0.02	-55.2	1.10	7.64	Monitored Annually ¹			
1-Nov-16	24.29	680.39	Monitored Semi-Annually ¹						Monitored Annually ¹			
31-Jan-17	23.06	681.62	10.20	391	0.05	169.3	0.13	7.66	223	11.9	0.1 U	1030
30-May-17	22.45	682.23	Monitored Semi-Annually ¹						Monitored Annually ¹			
16-Aug-17	24.27	680.41	10.70	385	0.15	123.4	0.40	7.64	Monitored Annually ¹			
9-Nov-17	34.36	680.27	Monitored Semi-Annually ¹						Monitored Annually ¹			
28-Feb-18	22.04	682.64	10.10	276	0.20	-96.4	0.25	7.44	221	10.8	0.1 U	951
1-May-18	22.11	682.57	Monitored Semi-Annually ¹						Monitored Annually ¹			
22-Aug-18	24.42	680.26	11.37	277	5.25	-59.6	0.18	7.61	Monitored Annually ¹			
6-Nov-18	24.57	680.11	Monitored Semi-Annually ¹						Monitored Annually ¹			
11-Mar-19	22.61	682.07	10.10	248	0.60	-70.8	0.68	7.60	224	8.74	0.1 U	1070
8-May-19	22.68	682.00	Monitored Semi-Annually ¹						Monitored Annually ¹			

Table A-3a: Summary of Lower Disposal Area - Bedrock Groundwater Sampling Results
- Well MWB-1LDA Ravensdale Site, Ravensdale, Washington

Date Sampled	Field Parameters								Gen. Chem.	Metals (ug/L)		
	Depth to Water (feet btoc)	Groundwater Elevation (feet NAVD88)	Temperature (°C)	Conductivity (umhos/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (Rel mV)	Turbidity (NTU)	pH (standard units)	Total Dissolved Solids (mg/L)	Arsenic	Lead	Potassium
Preliminary Cleanup Level ^a	-	-	-	-	-	-	-	6.5-8.5	-	8	2.5	-
27-Aug-19	24.54	680.14	11.45	282	0.58	Note 1	0.04	7.30	Monitored Annually ¹			
13-Nov-19	24.15	680.53	Monitored Semi-Annually ¹						Monitored Annually ¹			
13-Feb-20	22.04	682.64	10.10	280	0.34	-133.4	0.57	7.51	207	8.82	0.1 U	1050
13-Aug-20	23.92	680.76	11.00	284	0.60	-113.5	0.44	7.55	Monitored Annually ¹			
9-Dec-20	23.35	681.33	Monitored Semi-Annually ¹						Monitored Annually ¹			
5-Mar-21	22.01	682.67	10.20	266	0.04	-50.0	0.42	7.64	214	10.5	0.1 U	1120
10-Jun-21	23.17	681.51	Monitored Semi-Annually ¹						Monitored Annually ¹			
13-Oct-21	24.41	680.27	10.90	327.2	0.91	-76.1	0.33	7.48	Monitored Annually ¹			
5-Jan-22	22.00	682.68	Monitored Semi-Annually ¹						Monitored Annually ¹			
17-Mar-22	21.89	682.79	10.7	259.6	1.24	-60.4	0.22	6.52	220	8.2	0.1 U	925
21-Jun-22	21.58	683.1	Monitored Semi-Annually ¹						Monitored Annually ¹			
12-Sep-22	23.51	681.17	11.3	263.3	2.86	-7.4	0.37	6.76	Monitored Annually ¹			
12-Dec-22	23.51	681.17	Monitored Semi-Annually ¹						Monitored Annually ¹			
15-Mar-23	22.00	682.68	10.3	372.2	0.17	-86.5	0.13	7.66	221	8.35	0.1 U	864
27-Jun-23	22.85	681.83	Monitored Semi-Annually ¹						Monitored Annually ¹			
6-Sep-23	24.14	680.54	11.6	385.5	2.01	-50.9	1.44	7.73	Monitored Annually ¹			
15-Dec-23	22.74	681.94	Monitored Semi-Annually ¹						Monitored Annually ¹			
4-Mar-24	21.68	683	10.2	320.6	3.65	-29.8	0.3	7.38	243 J	9.13	0.103 U	857
18-Jun-24	22.16	682.52	Monitored Semi-Annually ¹						Monitored Annually ¹			
18-Sep-24	23.85	680.83	11	363.3	7.57	131.2	0.42	7.49	Monitored Annually ¹			
9-Dec-24	-	-	Monitored Semi-Annually ¹						Monitored Annually ¹			
26-Mar-25	21.47	683.21	11.9	369.3	0.37	62.2	3.28	7.35	222	6.55	0.2 U	933

Notes:

Top of casing elevation (feet NAVD88): 704.68

Dissolved metals were analyzed at the Site until December 2020 (Q4 2020). Total metals were analyzed for Q4 2020 and will continue to be analyzed moving forward. Iron and manganese are not included in the COPCs at the Site and are not analyzed beginning in Q2 2021.

Antimony and Vanadium were included as COPCs for surface water locations and shallow groundwater monitoring wells at the Site beginning in Q3 2021.

1 Reduction in monitoring frequency approved by Public Health – Seattle and King County in a letter to Golder Associates Inc. dated April 7, 2016. Field parameters collected semi-annually, analytical samples collected annually. Sampling schedule follows the Golder 2021 RI Work Plan starting in Q3 2021.

- Not available

Orange shaded values indicate parameter results above the Preliminary Cleanup Level (PCUL), except for pH, which could be above or below the PCUL.

a Preliminary Cleanup Level (PCUL) provided by Ecology 30 Sept 2022

U Data validation code; not detected at the Reporting Limit (RL)

J Data validation code; estimated value

J+ Data validation code; estimated value with positive bias

°C Degrees Celsius

Note 1 ORP measurements not available due to faulty sensor.

µmhos/cm Micromhos per centimeter

feet bmp Feet below measuring point

feet NAVD88 Feet NAVD88 Datum

mg/L Milligrams per liter

mV Millivolts

NTU Nephelometric Turbidity Unit

Table A-3b: Summary of Lower Disposal Area - Bedrock Groundwater Sampling Results
- Well MWB-2LDA Ravensdale Site, Ravensdale, Washington

Date Sampled	Field Parameters								Gen. Chem.	Metals (ug/L)		
	Depth to Water (feet btoc)	Groundwater Elevation (feet NAVD88)	Temperature (°C)	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (Rel mV)	Turbidity (NTU)	pH (standard units)	Total Dissolved Solids (mg/L)	Arsenic	Lead	Potassium
Preliminary Cleanup Level ^a	-	-	-	-	-	-	-	6.5-8.5	-	8	2.5	-
19-Dec-06	36.82	704.84	12.15	394	0.57	114.6	1.84	7.58	230	8.49	1 U	-
14-Feb-07	36.30	705.36	11.69	339	1.40	-85.7	2.72	7.39	200	6.09	1 U	-
31-May-07	36.93	704.73	12.13	346	0.20	-223.7	3.04	8.28	210	6.95	1 U	-
27-Aug-07	37.99	703.67	12.18	336	0.49	-169.7	0.84	7.54	210	7.49	1 U	-
28-Nov-07	37.89	703.77	11.82	338	0.28	-146.6	1.32	7.93	250	6.91	1 U	-
27-Feb-08	37.24	704.42	11.87	340	0.23	-	0.87	7.41	210	7.46	1 U	3000 U
20-May-08	37.31	704.35	11.91	359	0.23	-86.6	0.67	7.27	200	6.31	1 U	-
27-Aug-08	38.37	703.29	11.84	362	0.35	-77.6	0.70	7.21	210 J	6.36	1 U	3000 U
19-Nov-08	37.50	704.16	11.53	254	0.44	-105.9	2.08	7.45	200	5.86	1 U	3000 U
11-Feb-09	37.10	704.56	11.25	254	0.48	-	0.63	7.91	220	5.61	1 U	3000 U
18-May-09	37.00	704.66	11.42	258	0.42	-71.9	1.11	8.00	210 J	5.17	1 U	3000 U
25-Sep-09	38.88	702.78	13.10	297	0.14	140.7	3.09	7.54	230	6.5	2 U	1200 J
17-Dec-09	37.19	704.47	10.80	341	0.51	129.0	4.85	7.71	74	4.3	2 U	1100 J
23-Mar-10	36.60	705.06	12.60	323	0.27	355.0	5.28	7.54	110	7.6	2 U	1200 J
15-Jun-10	36.25	705.41	11.40	326	0.08	171.1	-	7.62	98	8.8	2 U	1100 J
20-Sep-10	37.85	703.81	11.60	324	0.08	144.0	0.16	7.61	160	6.5	2 U	1200 J
6-Dec-10	36.60	705.06	11.00	319	0.21	78.3	0.20	7.81	210	2.9	2 U	900 J
29-Mar-11	35.98	705.68	11.20	156	0.15	215.0	0.75	7.48	200	5.6	2 U	1500 J
21-Jun-11	36.34	705.32	11.80	352	0.06	101.5	0.24	7.59	220	5 U	2 U	1000 J
27-Sep-11	38.14	703.52	11.50	2484	0.06	114.4	0.45	7.60	220	5 U	2 U	1000 J
14-Dec-11	36.91	704.75	11.00	228	0.05	127.2	4.04	7.54	190	6.7	2 U	1200 J
21-Mar-12	35.68	705.98	11.00	359	0.05	93.9	0.30	7.43	210	6.9	2 U	1100 J
18-Jun-12	36.06	705.60	11.70	350	0.02	211.9	0.23	7.62	220	6.2	0.4 U	3300 U
19-Sep-12	38.07	703.59	11.60	367	0.00	102.0	0.34	7.59	200	6.5	0.4 U	1000 J
18-Dec-12	34.88	706.78	10.90	463	0.00	-97.8	0.17	7.81	68	6	0.4 U	1200 J
25-Feb-13	35.70	705.96	10.90	347	0.09	112.6	0.27	7.56	190	6.6	0.4 U	1100 J
22-May-13	36.24	705.42	11.00	412	0.00	412.5	0.43	7.71	190	6	0.4 U	3300 U
20-Aug-13	38.13	703.53	12.20	406	0.02	-41.5	0.64	7.48	211	5.5	0.1 U	1030
19-Nov-13	36.56	705.10	11.10	344	0.01	43.6	0.32	7.35	206	5.2	0.1 U	1090
31-Mar-14	35.36	706.30	11.50	285	0.00	93.1	0.31	7.71	207	5.1	0.1 U	1100
22-May-14	35.80	705.86	10.05	260	0.24	17.5	-	7.22	186	5	0.1 U	1000
13-Aug-14	37.50	704.16	13.10	294	0.57	-37.5	3.28	7.19	190	5.4	0.1 U	1110
11-Nov-14	37.06	704.60	10.10	241	0.68	-39.7	2.10	7.48	206	5.4	0.1 U	1090
10-Feb-15	35.70	705.96	11.40	295	0.11	-123.2	2.11	7.69	206	5.1	0.1 U	1020
4-May-15	36.34	705.32	11.70	336	0.05	340.2	0.72	7.73	204	4.8	0.1 U	1040
4-Aug-15	38.42	703.24	12.70	263	0.04	-81.8	0.77	7.72	204	5.8	0.1 U	1040
4-Nov-15	37.81	703.85	11.60	244	0.04	26.9	2.13	7.45	201	4.7	0.1 U	1070
8-Feb-16	35.68	705.98	11.60	307	0.00	208.4	0.74	7.68	186	5.5	0.1 U	1110
2-May-16	36.03	705.63	Monitored Semi-Annually ¹						Monitored Annually ¹			
22-Aug-16	37.92	703.74	12.20	306	0.02	-137.6	1.58	7.67	Monitored Annually ¹			
1-Nov-16	37.07	704.59	Monitored Semi-Annually ¹						Monitored Annually ¹			
31-Jan-17	36.00	705.66	10.90	348	0.10	120.5	0.86	7.67	195	5.66	0.1 U	1110
30-May-17	35.44	706.22	Monitored Semi-Annually ¹						Monitored Annually ¹			
16-Aug-17	37.69	703.97	12.30	356	0.14	-77.2	3.27	7.67	Monitored Annually ¹			
9-Nov-17	37.11	704.55	Monitored Semi-Annually ¹						Monitored Annually ¹			
28-Feb-18	34.95	706.71	10.90	261	0.21	-115.5	0.80	7.48	205	5.69	0.1 U	992
1-May-18	35.11	706.55	Monitored Semi-Annually ¹						Monitored Annually ¹			

Table A-3b: Summary of Lower Disposal Area - Bedrock Groundwater Sampling Results
- Well MWB-2LDA Ravensdale Site, Ravensdale, Washington

Date Sampled	Field Parameters								Gen. Chem.	Metals (ug/L)		
	Depth to Water (feet btoc)	Groundwater Elevation (feet NAVD88)	Temperature (°C)	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (Rel mV)	Turbidity (NTU)	pH (standard units)	Total Dissolved Solids (mg/L)	Arsenic	Lead	Potassium
Preliminary Cleanup Level ^a	-	-	-	-	-	-	-	6.5-8.5	-	8	2.5	-
22-Aug-18	37.90	703.76	12.31	262	1.64	-80.3	0.92	7.56	Monitored Annually ¹			
6-Nov-18	37.66	704.00	Monitored Semi-Annually ¹							Monitored Annually ¹		
12-Mar-19	35.68	705.98	10.70	239	0.58	-75.1	0.59	7.48	188	5.5	0.1 U	1080
8-May-19	35.86	705.80	Monitored Semi-Annually ¹							Monitored Annually ¹		
27-Aug-19	37.85	703.81	12.30	265	0.43	Note 1	0.02	7.46	Monitored Annually ¹			
13-Nov-19	37.22	704.44	Monitored Semi-Annually ¹							Monitored Annually ¹		
13-Feb-20	35.10	706.56	10.80	261	0.39	-135.9	0.96	7.50	185	5.45	0.1 U	1150
13-Aug-20	37.21	704.45	11.60	266	0.54	-118.2	1.35	7.50	Monitored Annually ¹			
9-Dec-20	36.55	705.11	Monitored Semi-Annually ¹							Monitored Annually ¹		
5-Mar-21	35.02	706.64	11.10	255	0.04	-80.0	2.29	7.65	176	5.52	0.1 U	1090
10-Jun-21	36.29	705.37	Monitored Semi-Annually ¹							Monitored Annually ¹		
13-Oct-21	37.76	703.90	11.70	308	3.66	-44.7	0.32	7.43	Monitored Annually ¹			
5-Jan-22	35.31	706.35	Monitored Semi-Annually ¹							Monitored Annually ¹		
17-Mar-22	34.52	707.14	11.6	244.3	2.84	-60.6	3.21	6.56	201	5.53	0.071 J	1060
21-Jun-22	34.7	706.96	Monitored Semi-Annually ¹							Monitored Annually ¹		
23-Sep-22	37	704.66	12.1	243.1	3.88	-17.8	0.54	7.47	Monitored Annually ¹			
12-Dec-22	36.41	705.25	Monitored Semi-Annually ¹							Monitored Annually ¹		
14-Mar-23	35.09	706.57	10.8	350.4	3.17	50.5	0.2	7.37	199	5.25	0.1 U	894
27-Jun-23	36.04	705.62	Monitored Semi-Annually ¹							Monitored Annually ¹		
6-Sep-23	37.74	703.92	12.9	354.5	1.99	-35.7	0.51	7.67	Monitored Annually ¹			
14-Dec-23	35.46	706.2	Monitored Semi-Annually ¹							Monitored Annually ¹		
6-Mar-24	34.60	707.06	10.8	320.7	5.8	84.9	0.52	7.39	218	5.24	0.103 U	952
18-Jun-24	35.20	706.46	Monitored Semi-Annually ¹							Monitored Annually ¹		
18-Sep-24	36.90	704.76	Monitored Semi-Annually ¹							Monitored Annually ¹		
9-Dec-24	-	-	Monitored Semi-Annually ¹							Monitored Annually ¹		
27-Mar-25	34.36	707.3	11.2	337.3	0.7	75.1	2.86	7.22	202	5.42	0.2 U	981

Notes:

Top of casing elevation (feet NAVD88): 741.66

Dissolved metals were analyzed at the Site until December 2020 (Q4 2020). Total metals were analyzed for Q4 2020 and will continue to be analyzed moving forward. Iron and manganese are not included in the COPCs at the Site and are not analyzed beginning in Q2 2021. Antimony and Vanadium were included as COPCs for surface water locations and shallow groundwater monitoring wells at the Site beginning in Q3 2021.

Reduction in monitoring frequency approved by Public Health – Seattle and King County in a letter to Golder Associates Inc. dated April 7, 2016. Field parameters collected semi-annually, analytical samples collected annually. Sampling schedule follows the Golder 2021 RI Work Plan starting in Q3 2021.

- Not available

Orange shaded values indicate parameter results above the Preliminary Cleanup Level (PCUL), except for pH, which could be above or below the PCUL.

a Preliminary Cleanup Level (PCUL) provided by Ecology 30 Sept 2022

U Data validation code; not detected at the Reporting Limit (RL)

J Data validation code; estimated value

J+ Data validation code; estimated value with positive bias

°C Degrees Celsius

Note 1 ORP measurements not available due to faulty sensor.

µmhos/cm Micromhos per centimeter

feet bmp Feet below measuring point

feet NAVD88 Feet NAVD88 Datum

mg/L Milligrams per liter

mV Millivolts

NTU Nephelometric Turbidity Unit

Table A-3c: Summary of Lower Disposal Area - Bedrock Groundwater Sampling Results
- Well MWB-3LDA Ravensdale Site, Ravensdale, Washington

Date Sampled	Field Parameters								Gen. Chem.	Metals (ug/L)		
	Depth to Water (feet btoc)	Groundwater Elevation (feet NAVD88)	Temperature (°C)	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (Rel mV)	Turbidity (NTU)	pH (standard units)		Total Dissolved Solids (mg/L)	Arsenic	Lead
Preliminary Cleanup Level ^a	-	-	-	-	-	-	-	6.5-8.5	-	8	2.5	-
19-Dec-06	7.08	737.11	11.37	670	0.42	-171.2	1.20	9.23	500	25.7	1 U	-
23-Jan-07	5.62	738.57	13.07	383	0.51	-275.0	1.53	8.63	270	18.4	1 U	-
14-Feb-07	5.81	738.38	12.57	328	1.09	-158.2	115.00	7.86	310	15.1	1 U	-
29-Mar-07	4.78	739.41	12.44	458	0.57	-140.8	4.25	7.78	260 J	37.9	1 U	-
17-Apr-07	4.86	739.33	12.79	389	0.27	-102.4	1.22	7.46	240	23	1 U	-
31-May-07	6.39	737.80	12.98	394	0.29	-223.8	3.32	8.14	240	21.2	1 U	-
20-Jun-07	6.86	737.33	13.41	412	6.10	-128.5	1.35	8.02	230 J	23.8	1 U	-
31-Jul-07	7.96	736.23	13.47	417	0.77	-174.1	0.92	7.64	250	18.9	1 U	-
27-Aug-07	8.50	735.69	12.84	395	0.46	-132.4	1.97	7.43	250	17.6	1 U	-
27-Sep-07	9.58	734.61	12.68	294	0.51	-133.8	0.53	7.87	250	19.3	1 U	-
26-Oct-07	9.65	734.54	12.49	288	0.84	-111.9	9.83	7.60	240 J	11	1 U	-
28-Nov-07	10.23	733.96	11.95	362	0.64	-86.1	1.58	7.87	200	17.8	1 U	-
12-Dec-07	9.66	734.53	11.83	334	0.26	-93.2	0.63	7.63	280 J	17.4	1 U	-
24-Jan-08	8.20	735.99	11.09	335	0.44	-108.3	-	7.46	220	19.2	1 U	-
26-Feb-08	7.61	736.58	12.26	337	0.48	-	2.40	7.45	210	22	1 U	3000 U
25-Mar-08	7.22	736.97	11.94	337	1.01	-48.6	2.80	7.51	210	17.8	1 U	-
29-Apr-08	6.75	737.44	12.53	332	0.77	-50.3	1.95	7.41	200 J	18.2	1 U	-
19-May-08	7.17	737.02	12.37	336	0.57	-57.2	2.19	7.34	200 J	18.7	1 U	-
18-Jun-08	7.26	736.93	12.11	323	0.48	-64.1	0.83	7.13	190 J	19.5	1 U	-
26-Aug-08	8.78	735.41	12.31	329	1.16	-36.5	2.89	7.30	200 J	17.7	1 U	3000 U
19-Nov-08	9.03	735.16	11.91	243	0.52	-93.1	1.69	7.40	190	18.2	1 U	3000 U
11-Feb-09	7.07	737.12	11.74	227	0.65	-	1.03	7.76	180	17.7	1 U	3000 U
18-May-09	6.50	737.69	12.11	225	0.67	-63.9	1.51	7.83	190 J	12.9	1 U	3000 U
25-Sep-09	10.47	733.72	13.50	260.1	0.36	215.3	4.14	7.61	220	17	0.94 J	12000
17-Dec-09	8.39	735.80	11.50	301.0	0.44	110.0	3.10	7.71	270	23	2 U	1300 J
23-Mar-10	6.46	737.73	12.20	294.8	0.43	332.5	3.52	7.57	150 J	27	2 U	1300 J
16-Jun-10	5.34	738.85	11.10	281.7	0.05	117.0	-	7.71	160	27	2 U	1300 J
21-Sep-10	7.72	736.47	11.80	276.3	0.06	169.5	0.36	7.54	140	23	2 U	1300 J
7-Dec-10	6.48	737.71	11.00	263.0	0.15	77.2	0.38	7.58	180	20	2 U	1200 J
28-Mar-11	4.42	739.77	10.80	134.0	0.44	75.6	1.06	7.46	160 J	21	2 U	1700 J
20-Jun-11	4.76	739.43	12.10	252.7	0.07	68.4	0.13	7.48	200 J	16	2 U	1000 J
27-Sep-11	7.86	736.33	11.90	2064.0	0.04	102.6	0.37	7.48	170	18	2 U	1100 J
14-Dec-11	7.17	737.02	11.00	188.2	0.03	140.8	1.87	7.50	770	22	2 U	1300 J
21-Mar-12	4.68	739.51	10.70	297.8	0.07	130.6	0.41	7.39	170	21	2 U	1100 J
18-Jun-12	4.75	739.44	11.60	289.0	0.16	271.3	0.55	7.54	150 J+	19	0.4 U	3300 U
19-Sep-12	7.65	736.54	12.60	299.9	0.10	121.0	0.42	7.50	160	18	0.4 U	1100 J
18-Dec-12	5.58	738.61	10.90	384.0	0.03	15.6	1.39	7.50	200	19	0.4 U	1300 J
25-Feb-13	4.80	739.39	10.60	284.2	0.03	140.4	0.30	7.53	150	22	0.4 U	1200 J
22-May-13	4.81	739.38	11.00	294.9	0.14	387.7	0.52	7.61	160	18	0.4 U	3300 U
20-Aug-13	7.63	736.56	12.60	383.0	0.81	-8.4	0.80	7.26	164	16.7	0.1 U	1060
19-Nov-13	7.11	737.08	11.30	218.1	0.14	54.3	0.73	7.20	169	16.6	0.1 U	1130
1-Apr-14	4.08	740.11	10.70	222.6	0.15	158.5	1.12	7.50	168	13.3	0.1 U	1070
22-May-14	4.21	739.98	9.98	206.0	1.59	27.1	-	7.17	158	11.2	0.1 U	1000
13-Aug-14	6.95	737.24	13.50	237.0	1.14	9.8	4.70	6.92	154	10.5	0.1 U	990
12-Nov-14	6.04	738.15	8.40	185.1	0.28	-10.1	3.42	7.36	162	16.1	0.1 U	1050

Table A-3c: Summary of Lower Disposal Area - Bedrock Groundwater Sampling Results
- Well MWB-3LDA Ravensdale Site, Ravensdale, Washington

Date Sampled	Field Parameters								Gen. Chem.	Metals (ug/L)		
	Depth to Water (feet btoc)	Groundwater Elevation (feet NAVD88)	Temperature (°C)	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (Rei mV)	Turbidity (NTU)	pH (standard units)	Total Dissolved Solids (mg/L)	Arsenic	Lead	Potassium
Preliminary Cleanup Level ^a	-	-	-	-	-	-	-	6.5-8.5	-	8	2.5	-
11-Feb-15	4.62	739.57	11.50	205.1	1.20	68.1	1.32	7.41	169	9	0.1 U	1100
4-May-15	4.93	739.26	12.20	262.0	1.64	190.2	0.84	7.43	168	10.9	0.1 U	1010
4-Aug-15	7.44	736.75	13.20	211.3	1.62	81.9	2.02	7.39	173	6.8	0.1 U	1020
5-Nov-15	8.14	736.05	12.50	186.0	1.49	166.9	1.87	7.10	162	3.5	0.1 U	1040
8-Feb-16	3.20	740.99	11.70	240.5	2.13	196.9	0.88	7.23	150	11.2	0.1 U	980
2-May-16	3.77	740.42	Monitored Semi-Annually ¹						Monitored Annually ¹			
22-Aug-16	6.81	737.38	13.10	238.0	2.40	168.5	2.39	7.41	Monitored Annually ¹			
1-Nov-16	6.59	737.60	Monitored Semi-Annually ¹						Monitored Annually ¹			
31-Jan-17	4.02	740.17	11.30	265.8	2.79	218.2	1.39	7.34	154	3.23	0.1 U	953
30-May-17	2.32	741.87	Monitored Semi-Annually ¹						Monitored Annually ¹			
16-Aug-17	5.48	738.71	13.20	258.4	3.54	92.2	2.50	7.41	Monitored Annually ¹			
9-Nov-17	6.00	738.19	Monitored Semi-Annually ¹						Monitored Annually ¹			
28-Feb-18	1.13	743.06	10.80	186.9	4.11	142.0	1.83	7.18	159	2.53	0.1 U	848
1-May-18	1.60	742.59	Monitored Semi-Annually ¹						Monitored Annually ¹			
22-Aug-18	5.93	738.26	13.55	194	7.63	16.9	0.77	7.11	Monitored Annually ¹			
6-Nov-18	6.78	737.41	Monitored Semi-Annually ¹						Monitored Annually ¹			
12-Mar-19	2.32	741.87	10.50	166	4.32	167.7	1.34	7.14	149	1.87	0.1 U	953
8-May-19	2.57	741.62	Monitored Semi-Annually ¹						Monitored Annually ¹			
27-Aug-19	5.76	738.43	13.62	192	3.94	Note 1	0.02	7.09	Monitored Annually ¹			
13-Nov-19	6.00	738.19	Monitored Semi-Annually ¹						Monitored Annually ¹			
13-Feb-20	1.69	742.50	10.70	180	3.20	88.5	1.21	7.11	140	1.69	0.1 U	915
13-Aug-20	4.59	739.60	13.60	188.7	4.26	50.3	1.60	7.19	Monitored Annually ¹			
9-Dec-20	4.22	739.97	Monitored Semi-Annually ¹						Monitored Annually ¹			
5-Mar-21	1.06	743.13	10.90	172.0	3.43	132	0.69	7.26	136	1.84	0.1 U	877
10-Jun-21	3.46	740.73	Monitored Semi-Annually ¹						Monitored Annually ¹			
13-Oct-21	6.17	738.02	12.90	215.1	4.10	148.3	0.96	7.05	Monitored Annually ¹			
5-Jan-22	0.80	743.39	Monitored Semi-Annually ¹						Monitored Annually ¹			
17-Mar-22	0.2	743.99	11.4	166.1	5.44	58.3	0.79	7.54	151	1.58	0.1 U	1200
21-Jun-22	0.54	743.65	Monitored Semi-Annually ¹						Monitored Annually ¹			
23-Sep-22	4	740.19	13.8	178.6	5.66	172	5.55	6.63	Monitored Annually ¹			
12-Dec-22	4.48	739.71	Monitored Semi-Annually ¹						Monitored Annually ¹			
14-Mar-23	1.11	743.08	11	254.9	0.8	-29.8	0.29	7.51	146	7.37	0.1 U	786
27-Jun-23	2.73	741.46	Monitored Semi-Annually ¹						Monitored Annually ¹			
6-Sep-23	5.21	738.98	15.1	240.1	2.85	0.7	1.57	7.22	Monitored Annually ¹			
15-Dec-23	2.74	741.45	Monitored Semi-Annually ¹						Monitored Annually ¹			
7-Mar-24	0.19	744	10.8	272.7	3.09	-27.9	1.15	6.93	138	6.36	0.174 J	796
18-Jun-24	1.35	742.84	Monitored Semi-Annually ¹						Monitored Annually ¹			
18-Sep-24	4.55	739.64	14	227	7.5	123.4	1.66	7.09	Monitored Annually ¹			
9-Dec-24	-	-	Monitored Semi-Annually ¹						Monitored Annually ¹			
27-Mar-25	0.70	743.49	11.2	215.6	3.64	65.1	3.76	6.65	143	4.52	0.2 U	892

**Table A-3c: Summary of Lower Disposal Area - Bedrock Groundwater Sampling Results
- Well MWB-3LDA Ravensdale Site, Ravensdale, Washington**

Notes:

Top of casing elevation (feet NAVD88): 744.19

Dissolved metals were analyzed at the Site until December 2020 (Q4 2020). Total metals were analyzed for Q4 2020 and will continue to be analyzed moving forward. Iron and manganese are not included in the COPCs at the Site and are not analyzed beginning in Q2 2021. Antimony and Vanadium were included as COPCs for surface water locations and shallow groundwater monitoring wells at the Site beginning in Q3 2021.

1 Reduction in monitoring frequency approved by Public Health – Seattle and King County in a letter to Golder Associates Inc. dated April 7, 2016. Field parameters collected semi-annually, analytical samples collected annually. Sampling schedule follows the Golder 2021 RI Work Plan starting in Q3 2021.

- Not available

Orange shaded values indicate parameter results above the Preliminary Cleanup Level (PCUL), except for pH, which could be above or below the PCUL.

a Preliminary Cleanup Level (PCUL) provided by Ecology 30 Sept 2022

U Data validation code; not detected at the Reporting Limit (RL)

J Data validation code; estimated value

J+ Data validation code; estimated value with positive bias

°C Degrees Celsius

Note 1 ORP measurements not available due to faulty sensor.

µmhos/cm Micromhos per centimeter

mg/L Milligrams per liter

feet bmp Feet below measuring point

mV Millivolts

feet NAVD88 Feet NAVD88 Datum

NTU Nephelometric Turbidity Unit

**Table A-4a: Summary of Dale Strip Pit - Bedrock Groundwater Sampling Results - Well MWB-1SDSP
Ravensdale Site, Ravensdale, Washington**

Date Sampled	Field Parameters								Gen. Chem.	Metals (ug/L)		
	Depth to Water (feet btoc)	Groundwater Elevation (feet NAVD88)	Temperature (°C)	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (Rel mV)	Turbidity (NTU)	pH (standard units)	Total Dissolved Solids (mg/L)	Arsenic	Lead	Potassium
Preliminary Cleanup Level ^a	-	-	-	-	-	-	-	6.5-8.5	-	8	2.5	-
2-Dec-02	69.87	866.42	9.5	1690	-	-	-	7.29	910	46.6	2.68	-
3-Mar-03	36.83	899.46	11.5	1260	-	-	24.10	7.15	860	9.73	-	-
3-May-03	34.88	901.41	12.8	1520	-	-	38.00	7.09	950	-	-	-
3-Aug-03	52.02	884.27	19.19	1460	-	-	11.40	7.01	990	-	-	-
1-Nov-03	53.61	882.68	11.60	915	-	-	8.97	7.19	1010	8.58	0.695	-
1-Feb-04	32.75	903.54	11.52	1033	-	-	7.36	6.78	1060	-	-	-
1-May-04	42.50	893.79	14.87	1126	-	-	7.53	7.23	1020	-	-	-
1-Aug-04	49.26	887.03	13.72	1234	-	-	8.07	6.98	981	-	-	-
1-Nov-04	42.81	893.48	11.88	1429	-	-	9.06	6.92	1060	10	1 U	-
1-Feb-05	33.62	902.67	13.06	1615	-	-	7.11	7.01	1020	-	-	-
1-May-05	34.88	901.41	12.91	1459	-	-	6.54	6.85	1000	-	-	-
1-Aug-05	43.80	892.49	10.40	1472	-	-	10.40	6.80	1090	-	-	-
1-Nov-05	52.80	883.49	10.40	1458	-	-	6.02	6.64	1100	10.3	1 U	-
1-Feb-06	42.70	893.59	10.40	1343	1.10	48.3	11.10	7.08	1100 J	-	-	-
1-May-06	37.81	898.48	11.52	1686	1.64	49.2	10.50	6.83	1100	-	-	-
1-Aug-06	46.11	890.18	14.10	1357	2.33	43.0	10.70	7.11	1100	-	-	-
1-Nov-06	46.47	889.82	-	-	-	-	-	-	-	-	-	-
28-Dec-06	33.20	903.09	-	-	-	-	-	-	-	-	-	-
7-Feb-07	34.50	901.79	-	-	-	-	-	-	-	-	-	-
7-May-07	36.48	899.81	15.19	1484	0.52	-83.4	6.78	7.60	1100	-	-	-
7-Aug-07	47.57	888.72	11.21	1488	8.80	107.4	9.53	6.51	1200	-	-	-
27-Nov-07	51.25	885.04	13.60	1483	1.82	-129.5	434.00	7.11	1000 J	5.72	1 U	-
8-Feb-08	35.12	901.17	14.71	1489	3.11	-	10.20	6.97	1100	-	-	-
8-May-08	37.60	898.69	14.50	1594	3.99	112.5	4.71	6.90	1200 J	-	-	-
8-Aug-08	46.98	889.31	13.27	1617	2.49	105.3	5.32	6.96	1200 J	7.82	1 U	5570
1-Nov-08	43.35	892.94	11.17	1096	7.29	127.1	47.30	7.70	1100	9.8	1 U	5610
11-Feb-09	37.00	899.29	10.28	1112	4.15	-	7.68	7.25	1100	7.52	1 U	5560
9-May-09	36.53	899.76	13.87	1209	2.93	89.0	5.45	7.41	990 J	7.57	1 U	5580
24-Sep-09	53.61	882.68	12.10	1328	1.98	331.0	3.26	6.92	1200	7.9	2 U	5700
14-Dec-09	33.72	902.57	10.20	1519	0.55	393.0	2.82	6.99	1100	3.4	2 U	5700
22-Mar-10	35.11	901.18	10.90	1463	-	508.0	3.95	6.94	1200	10	2 U	5600
15-Jun-10	33.26	903.03	11.00	1485	0.20	210.3	1.50	7.02	1100	11	2 U	5900
20-Sep-10	45.81	890.48	11.30	1484	0.06	159.7	0.91	6.98	1100	9.1	0.48 J	6000
6-Dec-10	36.20	900.09	10.70	1494	0.08	35.4	0.24	7.21	1200	6.8	0.48 J	5200
28-Mar-11	35.07	901.22	10.70	749	0.08	136.8	0.16	6.88	1100	6.8	2 U	5500
20-Jun-11	38.53	897.76	11.40	1439	0.08	-19.2	0.21	6.99	1400	4.6 J	2 U	5500
26-Sep-11	50.43	885.86	11.20	1249	0.07	38.5	0.41	7.01	1200	4.5 J	2 U	5700
13-Dec-11	51.30	884.99	10.40	1308	0.06	50.3	2.03	7.07	530	7.6	2 U	6100
22-Mar-12	43.75	892.54	10.60	1695	0.08	125.1	0.28	6.99	1200	12	2 U	5700
18-Jun-12	44.86	891.43	Monitored Semiannually ¹									
18-Sep-12	55.74	880.55	12.90	1506	0.05	99.5	0.36	7.08	1300	10	0.4 U	5800
18-Dec-12	41.94	894.35	Monitored Semiannually ¹									
21-Feb-13	37.86	898.43	10.40	1730	0.02	131.5	0.41	7.27	1200	13	0.4 U	6300
22-May-13	39.34	896.95	Monitored Semiannually ¹									
20-Aug-13	49.40	886.89	11.90	1707	0.05	-37.6	0.69	7.00	1240	10.2	0.1 U	6000
19-Nov-13	44.94	891.35	Monitored Semiannually ¹									

**Table A-4a: Summary of Dale Strip Pit - Bedrock Groundwater Sampling Results - Well MWB-1SDSP
Ravensdale Site, Ravensdale, Washington**

Date Sampled	Field Parameters								Gen. Chem.	Metals (ug/L)		
	Depth to Water (feet btoc)	Groundwater Elevation (feet NAVD88)	Temperature (°C)	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (Rel mV)	Turbidity (NTU)	pH (standard units)	Total Dissolved Solids (mg/L)	Arsenic	Lead	Potassium
Preliminary Cleanup Level ^a	-	-	-	-	-	-	-	6.5-8.5	-	8	2.5	-
31-Mar-14	33.31	902.98	11.20	1256	0.01	103.5	0.27	7.00	1200	13.1	0.1 U	6580
21-May-14	33.37	902.92	Monitored Semiannually ¹									
15-Aug-14	45.31	890.98	13.43	1467	0.71	-1.1	2.32	6.79	1150	13.4	0.1 U	6100
14-Nov-14	44.83	891.46	Monitored Semiannually ¹									
10-Feb-15	35.97	900.32	11.00	1423	0.04	-109.4	2.16	7.00	1200	13	0.1 U	6260
4-May-15	38.67	897.62	Monitored Semiannually ¹									
4-Aug-15	49.21	887.08	12.50	1253	0.04	-100.7	0.26	7.07	1230	13.9	0.1 U	6070
5-Nov-15	56.85	879.44	11.20	1159	0.02	57.4	0.91	6.75	1190	14.9	0.1 U	6990
8-Feb-16	33.02	903.27	11.60	1429	0.00	167.6	0.10	7.05	1190	19.4	0.1 U	6730
2-May-16	37.48	898.81	Monitored Semiannually ²						Monitored Annually ²			
22-Aug-16	49.78	886.51	12.10	1232	0.06	-143.8	0.77	7.00	Monitored Annually ²			
1-Nov-16	47.49	888.80	Monitored Semiannually ²						Monitored Annually ²			
31-Jan-17	35.57	900.72	11.10	1620	0.05	-241.6	0.24	6.99	1260	21.8	0.1 U	6690
30-May-17	34.70	901.59	Monitored Semiannually ²						Monitored Annually ²			
16-Aug-17	44.32	891.97	11.90	1621	0.12	-144.5	0.47	6.97	Monitored Annually ²			
9-Nov-17	44.71	891.58	Monitored Semiannually ²						Monitored Annually ²			
28-Feb-18	32.04	904.25	10.70	1278	0.16	-58.5	0.11	6.82	1244	22.4	0.1 U	6530
1-May-18	33.99	902.30	Monitored Semiannually ²						Monitored Annually ²			
22-Aug-18	47.95	888.34	11.97	1246	1.17	4.10	0.17	6.88	Monitored Annually ²			
6-Nov-18	52.94	883.35	Monitored Semiannually ²						Monitored Annually ²			
12-Mar-19	33.09	903.20	10.40	1157	0.55	-23.0	0.62	6.81	1200	20.7	0.1 U	951
8-May-19	34.37	901.92	Monitored Semiannually ²						Monitored Annually ²			
27-Aug-19	47.88	888.41	12.51	1314	0.15	Note 1	0.39	6.80	Monitored Annually ²			
13-Nov-19	47.03	889.26	Monitored Semiannually ²						Monitored Annually ²			
14-Feb-20	31.08	905.21	10.60	1249	0.38	-82.2	0.10	6.61	1230	18.3	0.1 U	6360
13-Aug-20	43.99	892.30	11.70	1176	0.56	-67.7	0.18	6.78	Monitored Annually ²			
9-Dec-20	39.67	896.62	Monitored Semiannually ²						Monitored Annually ²			
5-Mar-21	34.96	901.33	11.00	1257	0.26	-38	0.24	6.95	1200	19.5	0.1 U	6150
10-Jun-21	42.65	893.64	Monitored Semiannually ²						Monitored Annually ²			
18-Oct-21	55.97	880.32	11.7	858	0.86	-92.3	0.48	6.84	Monitored Annually ²			
5-Jan-22	33.64	902.65	Monitored Semiannually ²						Monitored Annually ²			
18-Mar-22	38.2	898.09	11.5	1096	1.17	-40.8	0.31	7.18	1260	16.6	0.1 U	6400
21-Jun-22	35.46	900.83	Monitored Semiannually ²						Monitored Annually ²			
13-Sep-22	44.37	891.92	11.8	1122	2.97	6.4	4.73	6.42	Monitored Annually ²			
12-Dec-22	42.96	893.33	Monitored Semiannually ²						Monitored Annually ²			
16-Mar-23	34.48	901.81	11.5	1633	0.21	-28.9	0.42	6.88	1200	16.5	0.1 U	5580
26-Jun-23	39.87	896.42	Monitored Semiannually ²						Monitored Annually ²			
5-Sep-23	47.77	888.52	11.9	1673	3.02	-1.4	3.03	6.99	Monitored Annually ²			
12-Dec-23	37.23	899.06	Monitored Semiannually ²						Monitored Annually ²			
8-Mar-24	33.71	902.58	11	1032	4.94	4.9	2.34	6.81	1270	16.5	0.103 U	5590
19-Jun-24	36.7	899.59	Monitored Semiannually ²						Monitored Annually ²			
18-Sep-24	46.01	890.28	11.7	1523	8.07	155.4	1.01	6.54	Monitored Annually ²			
9-Dec-24	-	-	Monitored Semiannually ²						Monitored Annually ²			
25-Mar-25	32.84	903.45	12.6	1651	0.92	69.1	1.97	6.81	1130	15.2	0.2 U	5430

**Table A-4a: Summary of Dale Strip Pit - Bedrock Groundwater Sampling Results - Well MWB-1SDSP
Ravensdale Site, Ravensdale, Washington**

Notes:

Top of casing elevation (feet NAVD88): 936.29

Dissolved metals were analyzed at the Site until December 2020 (Q4 2020). Total metals were analyzed for Q4 2020 and will continue to be analyzed moving forward. Iron and manganese are not included in the COPCs at the Site and are not analyzed beginning in Q2 2021.

Antimony and Vanadium were included as COPCs for surface water locations and shallow groundwater monitoring wells at the Site beginning in Q3 2021.

- Not measured or not available

Orange shaded values indicate parameter results above the Preliminary Cleanup Level (PCUL), except for pH, which could be above or below the PCUL.

1 Reduction in monitoring frequency approved by Public Health – Seattle and King County in a letter to Golder Associates Inc. dated May 16, 2012

2 Reduction in monitoring frequency approved by Public Health – Seattle and King County in a letter to Golder Associates Inc. dated April 7, 2016. Field parameters collected semi-annually, analytical samples collected annually. Sampling schedule follows the Golder 2021 RI Work Plan starting in Q3 2021.

a Preliminary Cleanup Level (PCUL) provided by Ecology 30 Sept 2022

U Data validation code; not detected at the Reporting Limit (RL)

J Data validation code; estimated value

J+ Data validation code; estimated value with positive bias

°C Degrees Celsius

Note 1 ORP measurements not available due to faulty sensor.

µmhos/cm Micromhos per centimeter

mg/L Milligrams per liter

feet bmp Feet below measuring point

mV Millivolts

feet NAVD88 Feet NAVD88 Datum

NTU Nephelometric Turbidity Unit

**Table A-4b: Summary of Dale Strip Pit - Bedrock Groundwater Sampling Results - Well MWB-1DDSP
Ravensdale Site, Ravensdale, Washington**

Date Sampled	Field Parameters								Gen. Chem.	Metals (ug/L)		
	Depth to Water (feet btoc)	Groundwater Elevation (feet NAVD88)	Temperature (°C)	Conductivity (umhos/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (Rel mV)	Turbidity (NTU)	pH (standard units)	Total Dissolved Solids (mg/L)	Arsenic	Lead	Potassium
Preliminary Cleanup Level ⁸	-	-	-	-	-	-	-	6.5-8.5	-	8	2.5	-
2-Dec-02	87.28	848.09	11.1	557	-	-	-	7.72	540	32.7	0.5 U	-
3-Mar-03	48.63	886.74	12.0	623	-	-	24.00	7.48	370	7.08	-	-
3-May-03	47.12	888.25	12.1	548	-	-	264.00	7.54	440	-	-	-
3-Aug-03	64.60	870.77	23.23	675	-	-	195.00	7.36	450	-	-	-
1-Nov-03	66.14	869.23	11.0	400	-	-	15.50	8.10	437	6.03	0.5 U	-
1-Feb-04	46.55	888.82	10.68	455	-	-	8.70	7.15	440	-	-	-
1-May-04	55.82	879.55	13.61	508	-	-	12.40	7.58	429	-	-	-
1-Aug-04	61.89	873.48	13.15	585	-	-	15.70	7.47	399	-	-	-
1-Nov-04	56.83	878.54	10.94	655	-	-	9.40	7.22	477	3.08	1 U	-
1-Feb-05	47.31	888.06	12.80	778	-	-	8.39	7.35	451	-	-	-
1-May-05	48.60	886.77	12.86	743	-	-	4.22	7.25	432	-	-	-
1-Aug-05	56.80	878.57	14.17	746	-	-	3.10	6.99	518	-	-	-
1-Nov-05	66.85	868.52	10.20	702	-	-	5.36	7.11	470	3.6	1 U	-
1-Feb-06	47.88	887.49	10.11	648	0.71	109.4	2.72	7.53	450 J	-	-	-
1-May-06	52.23	883.14	12.22	686	1.82	43.7	3.68	7.43	450	-	-	-
1-Aug-06	59.41	875.96	12.28	665	1.06	-74.0	14.20	7.36	480	-	-	-
1-Nov-06	61.84	873.53	-	-	-	-	-	-	-	-	-	-
28-Dec-06	48.26	887.11	-	-	-	-	-	-	-	-	-	-
7-Feb-07	49.64	885.73	-	-	-	-	-	-	-	-	-	-
7-May-07	53.24	882.13	12.44	722	0.74	-150.8	6.06	7.94	470	-	-	-
7-Aug-07	60.45	874.92	13.76	712	0.79	-50.0	4.53	7.28	500	-	-	-
27-Nov-07	63.40	871.97	14.41	711	0.45	-194.4	7.07	7.34	470 J	2.89	1 U	-
8-Feb-08	49.23	886.14	14.07	737	0.62	-	6.28	7.46	500	-	-	-
8-May-08	51.31	884.06	13.52	793	0.55	27.9	4.42	7.40	520 J	-	-	-
8-Aug-08	59.69	875.68	13.73	812	0.67	-24.7	9.33	7.37	560 J	2.26	1 U	3000 U
1-Nov-08	57.38	877.99	14.75	619	0.89	-42.5	4.40	7.45	480	2.22	1 U	3000 U
10-Feb-09	50.92	884.45	6.50	618	10.51	-	655.00	7.69 J	530	2.19	1 U	3010
9-May-09	51.25	884.12	13.95	637	2.21	39.3	5.87	7.74	540 J	2.42	1 U	3000 U
25-Sep-09	65.46	869.91	13.20	678	2.25	331.8	2.29	7.15	570	1.8 J	2 U	3300
17-Dec-09	49.40	885.97	10.60	794	0.99	224.0	3.97	7.58	440	0.7 J	2 U	3200 J
22-Mar-10	49.18	886.19	10.40	762	-	245.0	0.74	7.39	580	4.5	2 U	3200 J
15-Jun-10	46.88	888.49	12.10	762	0.05	142.1	0.47	7.50	420	5.5	2 U	3300
20-Sep-10	58.97	876.40	11.40	765	0.07	89.6	0.47	7.47	520	4.7	0.27 J	3400
6-Dec-10	50.66	884.71	10.20	763	0.19	58.9	0.32	7.72	550	1.3 J	2 U	3200 J
28-Mar-11	48.89	886.48	10.50	376	0.55	165.0	0.73	7.53	470	3.7	2 U	3000 J
20-Jun-11	52.13	883.24	13.40	718	0.45	-65.1	0.75	7.53	600 J	5 U	2 U	3500
26-Sep-11	63.02	872.35	11.80	633	1.73	-6.0	1.72	7.61	560	5 U	2 U	3500
13-Dec-11	63.88	871.49	8.60	678	0.69	-24.7	1.95	7.56	530	5.7	2 U	4100
22-Mar-12	56.96	878.41	5.60	877	1.89	-26.6	0.84	7.69	540	3.4	0.4 U	3000 J
18-Jun-12	58.01	877.36	Monitored Semiannually ¹									
18-Sep-12	67.78	867.59	26.30	838	3.62	12.4	1.27	7.70	540	3.1	0.4 U	3100 J
18-Dec-12	56.10	879.27	Monitored Semiannually ¹									
21-Feb-13	51.62	883.75	4.30	895	7.54	31.3	0.83	8.04	510	3.6	0.4 U	3600
22-May-13	53.14	882.23	Monitored Semiannually ¹									
20-Aug-13	62.35	873.02	12.30	526	0.08	-60.4	2.91	7.47	585	3.2	0.1 U	3200
19-Nov-13	58.70	876.67	Monitored Semiannually ¹									

**Table A-4b: Summary of Dale Strip Pit - Bedrock Groundwater Sampling Results - Well MWB-1DDSP
Ravensdale Site, Ravensdale, Washington**

Date Sampled	Field Parameters								Gen. Chem.	Metals (ug/L)		
	Depth to Water (feet btoc)	Groundwater Elevation (feet NAVD88)	Temperature (°C)	Conductivity (umhos/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (Rel mV)	Turbidity (NTU)	pH (standard units)	Total Dissolved Solids (mg/L)	Arsenic	Lead	Potassium
Preliminary Cleanup Level ^a	-	-	-	-	-	-	-	6.5-8.5	-	8	2.5	-
31-Mar-14	46.60	888.77	11.10	622	0.04	48.4	0.45	7.52	561	1.8	0.1 U	3340
21-May-14	46.96	888.41	Monitored Semiannually ¹									
15-Aug-14	58.62	876.75	12.48	732	0.90	-62.4	2.04	7.16	564	2	0.2	3140
14-Nov-14	59.59	875.78	Monitored Semiannually ¹									
10-Feb-15	49.61	885.76	10.90	717	0.03	-114.4	1.82	7.48	551	2.9	0.1 U	3270
4-May-15	52.25	883.12	Monitored Semiannually ¹									
4-Aug-15	61.71	873.66	12.00	618	0.04	-115.0	0.35	7.56	552	3	0.1 U	3360
5-Nov-15	68.72	866.65	11.10	625	0.05	27.5	1.26	7.21	603	1.6	0.1 U	3590
8-Feb-16	46.93	888.44	11.40	794	0.00	155.1	0.17	7.57	599	2.1	0.1 U	3800
2-May-16	50.77	884.60	Monitored Semiannually ²						Monitored Annually ²			
22-Aug-16	62.11	873.26	11.60	770	0.04	-251.0	0.86	7.50	Monitored Annually ²			
1-Nov-16	61.71	873.66	Monitored Semiannually ²						Monitored Annually ²			
31-Jan-17	49.02	886.35	10.60	916	0.13	-310.4	0.35	7.47	676	1.87	0.1 U	3410
30-May-17	48.11	887.26	Monitored Semiannually ²						Monitored Annually ²			
16-Aug-17	57.17	878.20	11.80	898	0.12	-210.9	0.22	7.42	Monitored Annually ²			
9-Nov-17	58.71	876.66	Monitored Semiannually ²						Monitored Annually ²			
28-Feb-18	45.21	890.16	10.20	758	0.19	-166.6	0.20	7.26	694	2.87	0.1 U	3340
1-May-18	47.40	887.97	Monitored Semiannually ²						Monitored Annually ²			
22-Aug-18	60.25	875.12	11.58	705	2.22	-153.0	0.14	7.37	Monitored Annually ²			
6-Nov-18	65.30	870.07	Monitored Semiannually ²						Monitored Annually ²			
12-Mar-19	46.35	889.02	9.80	707	0.58	-119.9	0.16	7.24	668	4.96	0.1 U	4210
8-May-19	47.20	888.17	Monitored Semiannually ²						Monitored Annually ²			
27-Aug-19	59.87	875.50	11.95	762	0.39	Note 1	0.02	7.20	Monitored Annually ²			
13-Nov-19	60.20	875.17	Monitored Semiannually ²						Monitored Annually ²			
14-Feb-20	44.28	891.09	10.30	760	0.30	-169.3	1.09	7.11	717	4.56	0.1 U	4070
13-Aug-20	57.57	877.80	11.10	739	0.91	-145.8	0.31	7.17	Monitored Annually ²			
9-Dec-20	54.25	881.12	Monitored Semiannually ²						Monitored Annually ²			
5-Mar-21	48.74	886.63	10.70	724	0.27	-222	0.61	7.36	592	4.06	0.1 U	3880
10-Jun-21	59.90	875.47	Monitored Semiannually ²						Monitored Annually ²			
18-Oct-21	67.32	868.05	11.60	561	0.83	-149	0.33	7.23	Monitored Annually ²			
5-Jan-22	47.77	887.60	Monitored Semiannually ²						Monitored Annually ²			
18-Mar-22	48.37	887	11.3	741	1.2	-93.4	0.39	7.52	781	4.64	0.1 U	4240
21-Jun-22	49.68	885.69	Monitored Semiannually ²						Monitored Annually ²			
13-Sep-22	57.47	877.9	11.9	778	2.5	-91	0.45	6.84	Monitored Annually ²			
12-Dec-22	57.68	877.69	Monitored Semiannually ²						Monitored Annually ²			
16-Mar-23	48.34	887.03	11.7	1110	0.29	-89.5	0.38	7.19	783	5.45	0.1 U	3870
26-Jun-23	53.28	882.09	Monitored Semiannually ²						Monitored Annually ²			
5-Sep-23	60.34	875.03	11.7	1136	2.65	-49.8	1.99	7.38	Monitored Annually ²			
12-Dec-23	52.09	883.28	Monitored Semiannually ²						Monitored Annually ²			
8-Mar-24	47.77	887.6	11	746	4.16	-99.6	1.62	7.19	767	4.74	0.132 J	3990
19-Jun-24	50.3	885.07	Monitored Semiannually ²						Monitored Annually ²			
18-Sep-24	58.65	876.72	14.8	1033	8.91	151.5	2.74	7.16	Monitored Annually ²			
9-Dec-24	-	-	Monitored Semiannually ²						Monitored Annually ²			
25-Mar-25	46.73	888.64	15.7	1194	0.65	45.3	4.53	7.1	828	5.1	0.232	4280

**Table A-4b: Summary of Dale Strip Pit - Bedrock Groundwater Sampling Results - Well MWB-1DDSP
Ravensdale Site, Ravensdale, Washington**

Notes:

Top of casing elevation (feet NAVD88): 935.37

Dissolved metals were analyzed at the Site until December 2020 (Q4 2020). Total metals were analyzed for Q4 2020 and will continue to be analyzed moving forward. Iron and manganese are not included in the COPCs at the Site and are not analyzed beginning in Q2 2021.

Antimony and Vanadium were included as COPCs for surface water locations and shallow groundwater monitoring wells at the Site beginning in Q3 2021.

- Not measured or not available

Orange shaded values indicate parameter results above the Preliminary Cleanup Level (PCUL), except for pH, which could be above or below the PCUL.

1 Reduction in monitoring frequency approved by Public Health – Seattle and King County in a letter to Golder Associates Inc. dated May 16, 2012

2 Reduction in monitoring frequency approved by Public Health – Seattle and King County in a letter to Golder Associates Inc. dated April 7, 2016. Field parameters collected semi-annually, analytical samples collected annually. Sampling schedule follows the Golder 2021 RI Work Plan starting in Q3 2021.

a Preliminary Cleanup Level (PCUL) provided by Ecology 30 Sept 2022

U Data validation code; not detected at the Reporting Limit (RL)

J Data validation code; estimated value

J+ Data validation code; estimated value with positive bias

°C Degrees Celsius

Note 1 ORP measurements not available due to faulty sensor.

µmhos/cm Micromhos per centimeter

feet bmp Feet below measuring point

feet NAVD88 Feet NAVD88 Datum

mg/L Milligrams per liter

mV Millivolts

NTU Nephelometric Turbidity Unit

**Table A-4c: Summary of Dale Strip Pit - Bedrock Groundwater Sampling Results - Well MWB-5DSP
Ravensdale Site, Ravensdale, Washington**

Date Sampled	Field Parameters								Gen. Chem.	Metals (ug/L)		
	Depth to Water (feet btoc)	Groundwater Elevation (feet NAVD88)	Temperature (°C)	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (Rel mV)	Turbidity (NTU)	pH (standard units)	Total Dissolved Solids (mg/L)	Arsenic	Lead	Potassium
Preliminary Cleanup Level ^a	-	-	-	-	-	-	-	6.5-8.5	-	8	2.5	-
18-Dec-06	20.56	914.49	11.30	1054	0.59	-10.5	6.76	7.01	630	4.46	1 U	-
7-Jan-07	18.48	916.57	12.53	700	0.61	-70.6	33.50	7.11	540	5.19	1 U	-
7-Feb-07	21.53	913.52	11.59	557	0.57	-59.1	33.50	6.88	530	5.19	1 U	-
7-Mar-07	15.34	919.71	11.71	817	0.45	-2.4	91.20	6.52	550 J	4.91	1 U	-
7-Apr-07	17.97	917.08	11.96	909	0.25	0.2	121.00	6.91	560	4.75	1 U	-
1-May-07	26.92	908.13	12.55	880	4.20	-14.3	63.70	7.13	540	4.9	1 U	-
7-Jun-07	29.94	905.11	13.12	1016	3.20	-5.6	3.58	7.52	600 J	4.37	1 U	-
7-Jul-07	35.27	899.78	13.00	910	1.74	-27.4	9.97	7.24	550	4.91	1 U	-
7-Aug-07	39.55	895.50	12.40	1065	0.92	-14.6	4.62	6.99	590	4.46	1 U	-
7-Sep-07	44.69	890.36	12.36	696	0.68	-33.3	3.22	7.29	590	4.92	1 U	-
26-Oct-07	38.90	896.15	11.46	667	0.56	-18.3	22.60	6.98	620 J	4.43	1 U	-
27-Nov-07	38.79	896.26	11.71	914	0.56	-46.7	3.32	6.91	560 J	4.9	1 U	-
12-Dec-07	35.33	899.72	12.61	909	0.53	-27.3	4.28	6.87	820	4.09	1 U	-
24-Jan-08	28.97	906.08	10.72	872	0.78	-49.1	-	7.14	550	4.72	1 U	-
8-Feb-08	26.00	909.05	11.25	888	0.44	-	4.18	6.85	550	4.5	1 U	-
8-Mar-08	26.03	909.02	10.94	915	0.59	-95.6	3.19	6.89	550	5.21	1 U	-
8-Apr-08	25.03	910.02	11.27	931	0.61	-20.1	3.44	6.89	550 J	4.88	1 U	-
8-May-08	27.33	907.72	11.68	949	0.68	-6.7	5.37	6.62	580 J	5.34	1 U	-
8-Jun-08	28.38	906.67	11.40	948	0.75	-50.4	1.59	6.68	580 J	4.45	1 U	-
8-Aug-08	39.80	895.25	11.80	970	0.68	-78.6	1.72	6.84	610 J	4.64	1 U	3000 U
1-Nov-08	33.96	901.09	11.20	682	0.63	-115.4	0.95	6.82	540	4.8	1 U	3000 U
10-Feb-09	25.56	909.49	10.54	671	0.71	-71.7	0.98	7.05	610	4.73	1 U	3000 U
9-May-09	25.79	909.26	11.23	682	0.55	-5.8	0.86	7.68	560 J	3.4	1 U	3000 U
22-Sep-09	46.68	888.37	18.70	737	0.64	214.5	0.99	6.91	580 J	3.9	2 U	2700 J
14-Dec-09	30.45	904.60	9.80	901	0.18	200.0	0.70	6.96	450	1.7 J	2 U	2500 J
23-Mar-10	19.92	915.13	11.30	773	0.25	148.0	4.40	6.86	510	5.6	2 U	2600 J
15-Jun-10	16.74	918.31	11.00	838	0.10	202.3	2.89	7.01	860 J	8.2	2 U	2800 J
20-Sep-10	33.31	901.74	11.20	852	0.09	174.7	0.60	6.97	540	6.2	2 U	2700 J
6-Dec-10	19.81	915.24	10.80	838	0.10	30.5	0.47	7.17	530	3.8	2 U	2300 J
28-Mar-11	17.16	917.89	10.80	403	0.15	48.4	1.13	6.89	500 J	2.3	2 U	2300 J
20-Jun-11	18.95	916.10	11.10	775	0.05	-29.1	0.37	7.01	610 J	5 U	2 U	2400 J
26-Sep-11	33.71	901.34	11.20	690	0.03	-8.7	0.54	7	560	4.1 J	2 U	2800 J
13-Dec-11	24.48	910.57	10.50	730	0.05	93.6	1.92	7.07	520	6.1	2 U	2800 J
21-Mar-12	15.54	919.51	10.70	883	0.06	106.9	0.34	6.9	500	6.5	2 U	2400 J
19-Jun-12	17.01	918.04	Monitored Semiannually ¹									
19-Sep-12	29.82	905.23	11.90	877	0.00	122.0	0.47	7.08	490	6.9	0.4 U	2600 J
18-Dec-12	17.39	917.66	Monitored Semiannually ¹									
21-Feb-13	18.84	916.21	10.60	875	0.05	103.3	0.40	7.32	510	5.9	0.4 U	2600 J
22-May-13	20.25	914.80	Monitored Semiannually ¹									
20-Aug-13	30.15	904.90	12.10	530	0.06	-50.3	0.75	6.98	510	5.6	0.1 U	2500
19-Nov-13	22.73	912.32	Monitored Semiannually ¹									
31-Mar-14	15.50	919.55	11.30	574	0.06	95.7	0.53	7.15	447	5.6	0.1 U	2720
21-May-14	14.83	920.22	Monitored Semiannually ¹									
15-Aug-14	25.16	909.89	14.49	741	0.48	-24.0	2.92	6.87	477	5.9	0.1 U	2550
14-Nov-14	22.25	912.80	Monitored Semiannually ¹									

**Table A-4c: Summary of Dale Strip Pit - Bedrock Groundwater Sampling Results - Well MWB-5DSP
Ravensdale Site, Ravensdale, Washington**

Date Sampled	Field Parameters								Gen. Chem.	Metals (ug/L)		
	Depth to Water (feet btoc)	Groundwater Elevation (feet NAVD88)	Temperature (°C)	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (Rel mV)	Turbidity (NTU)	pH (standard units)	Total Dissolved Solids (mg/L)	Arsenic	Lead	Potassium
Preliminary Cleanup Level ^a	-	-	-	-	-	-	-	6.5-8.5	-	8	2.5	-
10-Feb-15	15.98	919.07	11.40	693	0.04	-117.5	0.80	7.13	503	5.9	0.1 U	2560
4-May-15	20.05	915.00	Monitored Semiannually ¹									
4-Aug-15	31.90	903.15	11.90	620	0.16	-71.1	0.47	7.13	517	6.4	0.1 U	2670
5-Nov-15	32.00	903.05	11.40	605	0.00	37.5	1.16	6.84	511	5.3	0.1 U	3060
8-Feb-16	17.13	917.92	11.80	720	0.00	160.4	0.08	7.34	480	6	0.1 U	3020
2-May-16	23.31	911.74	Monitored Semiannually ²						Monitored Annually ²			
22-Aug-16	34.07	900.98	12.50	571	0.00	-	0.66	7.11	Monitored Annually ²			
1-Nov-16	26.04	909.01	Monitored Semiannually ²						Monitored Annually ²			
31-Jan-17	19.36	915.69	12.20	808	0.07	-219.2	0.30	7.21	509	6.76	0.1 U	2840
30-May-17	17.31	917.74	Monitored Semiannually ²						Monitored Annually ²			
16-Aug-17	28.13	906.92	12.40	826	0.12	-71.9	0.66	7.10	Monitored Annually ²			
9-Nov-17	27.17	907.88	Monitored Semiannually ²						Monitored Annually ²			
28-Feb-18	16.55	918.50	10.90	657	0.15	-97.6	0.35	7.02	528	5.39	0.1 U	2550
1-May-18	17.69	917.36	Monitored Semiannually ²						Monitored Annually ²			
22-Aug-18	32.63	902.42	12.46	655	0.81	-46.4	0.26	7.01	Monitored Annually ²			
6-Nov-18	32.44	902.61	Monitored Semiannually ²						Monitored Annually ²			
12-Mar-19	18.84	916.21	10.90	597	0.56	-28.1	0.86	6.96	512	4.51	0.1 U	2890
8-May-19	19.75	915.30	Monitored Semiannually ²						Monitored Annually ²			
27-Aug-19	33.26	901.79	13.08	688	0.26	Note 1	0.02	6.89	Monitored Annually ²			
13-Nov-19	33.03	902.02	Monitored Semiannually ²						Monitored Annually ²			
14-Feb-20	16.70	918.35	10.90	626	0.34	-99.8	0.33	6.88	524	4.31	0.1 U	2650
13-Aug-20	27.37	907.68	11.80	619	0.55	-70.6	0.40	6.89	Monitored Annually ²			
9-Dec-20	24.68	910.37	Monitored Semiannually ²						Monitored Annually ²			
5-Mar-21	16.91	918.14	11.30	641	0.19	-77.0	0.45	7.09	473	4.84	0.1 U	2450
10-Jun-21	24.68	910.37	Monitored Semiannually ²						Monitored Annually ²			
18-Oct-21	29.11	905.94	11.9	440.1	0.87	-86.2	0.35	6.96	Monitored Annually ²			
5-Jan-22	16.88	918.17	Monitored Semiannually ²						Monitored Annually ²			
21-Mar-22	17.14	917.91	11.3	601	1.28	-42.9	0.82	6.26	513	4.79	0.1 U	2560
21-Jun-22	17.25	917.8	Monitored Semiannually ²						Monitored Annually ²			
13-Sep-22	27.19	907.86	12.3	606	2.54	-3.7	1.49	6.74	Monitored Annually ²			
12-Dec-22	24.31	910.74	Monitored Semiannually ²						Monitored Annually ²			
16-Mar-23	18.62	916.43	11.7	846	0.21	-19.7	0.41	7.03	497	4.56	0.1 U	2570
26-Jun-23	22.23	912.82	Monitored Semiannually ²						Monitored Annually ²			
7-Sep-23	28.89	906.16	13.7	904	1.36	-54.9	0.76	7.03	Monitored Annually ²			
12-Dec-23	20.99	914.06	Monitored Semiannually ²						Monitored Annually ²			
8-Mar-24	17.79	917.26	11.1	711	4.7	10.8	0.35	6.97	500	4.95	0.103 U	2400
19-Jun-24	18.95	916.1	Monitored Semiannually ²						Monitored Annually ²			
18-Sep-24	27.07	907.98	13	778	7.82	143.3	2.96	7.09	Monitored Annually ²			
9-Dec-24	-	-	Monitored Semiannually ²						Monitored Annually ²			
25-Mar-25	17.73	917.32	14.8	890	1.2	31.5	3.2	7	502	5.43	0.2 U	2700

**Table A-4c: Summary of Dale Strip Pit - Bedrock Groundwater Sampling Results - Well MWB-5DSP
Ravensdale Site, Ravensdale, Washington**

Notes:

Top of casing elevation (feet NAVD88): 935.05

Dissolved metals were analyzed at the Site until December 2020 (Q4 2020). Total metals were analyzed for Q4 2020 and will continue to be analyzed moving forward. Iron and manganese are not included in the COPCs at the Site and are not analyzed beginning in Q2 2021.

Antimony and Vanadium were included as COPCs for surface water locations and shallow groundwater monitoring wells at the Site beginning in Q3 2021.

- Not measured or not available

Orange shaded values indicate parameter results above the Preliminary Cleanup Level (PCUL), except for pH, which could be above or below the PCUL.

1 Reduction in monitoring frequency approved by Public Health – Seattle and King County in a letter to Golder Associates Inc. dated May 16, 2012

2 Reduction in monitoring frequency approved by Public Health – Seattle and King County in a letter to Golder Associates Inc. dated April 7, 2016. Field parameters collected semi-annually, analytical samples collected annually. Sampling schedule follows the Golder 2021 RI Work Plan starting in Q3 2021.

a Preliminary Cleanup Level (PCUL) provided by Ecology 30 Sept 2022

U Data validation code; not detected at the Reporting Limit (RL)

J Data validation code; estimated value

J+ Data validation code; estimated value with positive bias

°C Degrees Celsius

Note 1 ORP measurements not available due to faulty sensor.

µmhos/cm Micromhos per centimeter

feet bmp Feet below measuring point

feet NAVD88 Feet NAVD88 Datum

mg/L Milligrams per liter

mV Millivolts

NTU Nephelometric Turbidity Unit

**Table A-4d: Summary of Dale Strip Pit - Bedrock Groundwater Sampling Results - Well MWB-6DSP
Ravensdale Site, Ravensdale, Washington**

Date Sampled	Field Parameters								Gen. Chem.	Metals (ug/L)		
	Depth to Water (feet btoe)	Groundwater Elevation (feet NAVD88)	Temperature (°C)	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (Rel mV)	Turbidity (NTU)	pH (standard units)	Total Dissolved Solids (mg/L)	Arsenic	Lead	Potassium
Preliminary Cleanup Level ^a	-	-	-	-	-	-	-	6.5-8.5	-	8	2.5	-
18-Dec-06	8.13	897.82	9.93	525	0.54	-54.5	0.61	7.78	300	5.37	1 U	-
7-Feb-07	9.40	896.55	11.79	479	1.19	-30.0	7.40	7.41	330	6.01	1 U	-
7-May-07	10.73	895.22	12.26	729	2.83	-103.6	16.40	7.63	480	10.1	1 U	-
7-Aug-07	15.14	890.81	11.42	882	0.75	-11.5	1.82	7.10	470	3.25	1 U	-
27-Nov-07	16.16	889.79	10.98	748	0.37	-47.9	0.83	6.99	440 J	2.82	1 U	-
8-Feb-08	9.66	896.29	11.01	645	0.31	-	0.90	7.05	380	2.68	1 U	-
8-May-08	10.34	895.61	11.27	665	0.64	13.4	1.52	6.93	380 J	2.40	1 U	-
8-Aug-08	14.17	891.78	11.23	683	0.72	-8.2	2.49	7.05	390 J	2.18	1 U	3000 U
1-Nov-08	12.98	892.97	10.61	488	0.60	-45.6	1.35	6.80	380	2.04	1 U	3000 U
10-Feb-09	9.64	896.31	10.32	398	0.52	-57.0	1.20	7.31	350	2.00	1 U	3000 U
9-May-09	9.91	896.04	10.50	405	0.73	-4.0	1.26	7.77	320 J	1.69	1 U	3000 U
23-Sep-09	17.16	888.79	12.50	541	0.25	216.2	5.38	7.14	400 J	0.91 J	2 U	1300 J
14-Dec-09	12.73	893.22	9.10	580	0.47	231.0	2.70	7.23	270	2 U	2 U	1300 J
22-Mar-10	9.62	896.33	10.90	504	-	321.7	3.50	7.22	320	2.00	2 U	1200 J
15-Jun-10	8.30	897.65	11.00	495	0.11	205.1	1.41	7.29	320	4.20	2 U	1300 J
20-Sep-10	14.90	891.05	10.90	560	0.10	187.2	0.28	7.29	270	3.00	2 U	1400 J
6-Dec-10	10.47	895.48	10.50	515	0.12	87.8	0.14	7.47	300	2 U	2 U	1100 J
28-Mar-11	8.71	897.24	10.30	241	0.19	58.9	1.86	7.19	300	2 U	2 U	1100 J
20-Jun-11	9.87	896.08	10.80	477	0.06	141.2	0.20	7.27	340	5 U	2 U	1100 J
26-Sep-11	14.82	891.13	10.80	467	0.05	114.8	0.92	7.26	380	5 U	2 U	1500 J
13-Dec-11	13.02	892.93	10.20	491	0.06	131.3	1.69	7.29	340	5 U	2 U	1600 J
21-Mar-12	8.13	897.82	10.20	550	0.09	160.0	0.07	7.14	310	2.50	0.4 U	1200 J
18-Jun-12	-	-	-	-	-	-	-	-	-	-	-	-
18-Sep-12	14.76	891.19	12.50	587	0.00	122.0	0.35	7.31	370	2.80	0.4 U	1300 J
18-Dec-12	8.16	897.79	-	-	-	-	-	-	-	-	-	-
21-Feb-13	8.45	897.50	10.10	594	0.02	152.7	0.28	7.49	300	1.90	0.4 U	1300 J
22-May-13	9.36	896.59	-	-	-	-	-	-	-	-	-	-
20-Aug-13	13.28	892.67	11.70	478	0.01	-43.8	0.54	7.22	349 J	1.60	0.1 U	1300
19-Nov-13	9.71	896.24	-	-	-	-	-	-	-	-	-	-
31-Mar-14	8.42	897.53	10.70	455	0.06	166.1	0.27	7.35	315	1.40	0.1 U	1290
21-May-14	5.99	899.96	-	-	-	-	-	-	-	-	-	-
14-Aug-14	12.03	893.92	13.45	512	0.56	-21.4	1.99	6.95	317	1.70	0.1 U	1270
14-Nov-14	10.68	895.27	-	-	-	-	-	-	-	-	-	-
10-Feb-15	7.39	898.56	10.90	482	0.03	-86.2	0.59	7.32	337	1.40	0.1 U	1230
4-May-15	9.17	896.78	-	-	-	-	-	-	-	-	-	-
4-Aug-15	13.64	892.31	12.40	449	0.18	-81.7	0.27	7.33	385	1.70	0.1 U	1280
5-Nov-15	13.98	891.97	11.50	435	2.23	85.2	1.09	7.04	354	1.30	0.1 U	1470
8-Feb-16	6.74	899.21	11.50	495	0.03	187.2	0.25	7.39	297	1.40	0.1 U	1350
2-May-16	8.64	897.31	-	-	-	-	-	-	-	-	-	-
22-Aug-16	13.27	892.68	12.20	559	0.03	-52.7	0.80	7.28	-	-	-	-
1-Nov-16	11.36	894.59	-	-	-	-	-	-	-	-	-	-
31-Jan-17	7.91	898.04	10.90	539	0.08	124.4	0.18	7.31	321	1.48	0.1 U	1300
30-May-17	2.65	903.30	-	-	-	-	-	-	-	-	-	-
16-Aug-17	12.08	893.87	12.10	573	0.12	-46.9	1.39	7.26	-	-	-	-
9-Nov-17	11.70	894.25	-	-	-	-	-	-	-	-	-	-
28-Feb-18	6.50	899.45	11.00	423	0.19	-61.0	0.18	7.12	138	1.56	0.1 U	1200
1-May-18	6.80	899.15	-	-	-	-	-	-	-	-	-	-
22-Aug-18	13.47	892.48	11.61	441	7.44	26.6	0.21	7.11	-	-	-	-
6-Nov-18	13.96	891.99	-	-	-	-	-	-	-	-	-	-

**Table A-4d: Summary of Dale Strip Pit - Bedrock Groundwater Sampling Results - Well MWB-6DSP
Ravensdale Site, Ravensdale, Washington**

Date Sampled	Field Parameters								Gen. Chem.	Metals (ug/L)		
	Depth to Water (feet btoc)	Groundwater Elevation (feet NAVD88)	Temperature (°C)	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (Rel mV)	Turbidity (NTU)	pH (standard units)	Total Dissolved Solids (mg/L)	Arsenic	Lead	Potassium
Preliminary Cleanup Level ^a	-	-	-	-	-	-	-	6.5-8.5	-	8	2.5	-
12-Mar-19	7.30	898.65	10.30	363	0.56	-25.1	0.27	7.16	294	1.47	0.1 U	1340
8-May-19	7.77	898.18	Monitored Semiannually ²						Monitored Annually ²			
27-Aug-19	13.16	892.79	12.19	454	0.45	Note 1	0.02	7.05	Monitored Annually ²			
13-Nov-19	26.35	894.30	Monitored Semiannually ²						Monitored Annually ²			
13-Feb-20	20.79	899.86	10.60	387	0.39	-76.5	1.05	7.13	313	1.40	0.1 U	1330
13-Aug-20	25.94	894.71	11.70	403	0.65	-64.3	0.60	7.07	Monitored Annually ²			
9-Dec-20	24.06	896.59	Monitored Semiannually ²						Monitored Annually ²			
4-Mar-21	21.56	899.09	10.80	363	0.16	-9.0	1.29	7.30	280	1.10	0.1 U	1240
10-Jun-21	24.55	896.10	Monitored Semiannually ²						Monitored Annually ²			
18-Oct-21	28.08	892.57	11.6	273.8	0.96	-73.8	1.38	7.15	Monitored Annually ²			
5-Jan-22	21.36	899.29	Monitored Semiannually ²						Monitored Annually ²			
21-Mar-22	20.7	899.95	10.9	348.2	1.41	102.1	1.4	6.42	297	1.06	0.1 U	1090
21-Jun-22	21.51	899.14	Monitored Semiannually ²						Monitored Annually ²			
13-Sep-22	Well Damaged - Unable to Sample ³											
12-Dec-22	Well Damaged - Unable to Sample ³											
15-Mar-23	15.98	905.92	10.9	444.1	1.06	16.4	1.17	7.11	251	1.05	0.1 U	1110
26-Jun-23	21.56	900.24	Monitored Semiannually ²						Monitored Annually ²			
5-Sep-23	24.52	897.097	11.6	479	2.98	25.8	0.7	7.37	Monitored Annually ²			
12-Dec-23	19.65	902.467	Monitored Semiannually ²						Monitored Annually ²			
8-Mar-24	18.03	902.467	11	370.3	4.37	40	0.34	7.24	264	0.966	0.103 U	1070
18-Jun-24	18.60	903.24	Monitored Semiannually ²						Monitored Annually ²			
19-Sep-24	23.55	898.08	11.5	454.9	8.03	136.9	0.71	6.74	Monitored Annually ²			
9-Dec-24	-	-	Monitored Semiannually ²						Monitored Annually ²			
25-Mar-25	17.4	901.27	12.1	456.3	0.76	67.3	3.19	7.15	259	1.18	0.2 U	1110

Notes:

Top of casing elevation (feet NAVD88) prior to raising casing: 905.95
 Top of casing elevation (feet NAVD88) after raising casing (post-Q3 2019): 920.65
 Top of casing elevation (feet NAVD88) repair (post-Q1 2023): 918.67

Dissolved metals were analyzed at the Site until December 2020 (Q4 2020). Total metals were analyzed for Q4 2020 and will continue to be analyzed moving forward. Iron and manganese are not included in the COPCs at the Site and are not analyzed beginning in Q2 2021. Antimony and Vanadium were included as COPCs for surface water locations and shallow groundwater monitoring wells at the Site beginning in Q3 2021.

- Not measured or not available

Orange shaded values indicate parameter results above the Preliminary Cleanup Level (PCUL), except for pH, which could be above or below the PCUL.

1 Reduction in monitoring frequency approved by Public Health – Seattle and King County in a letter to Golder Associates Inc. dated May 16, 2012

2 Reduction in monitoring frequency approved by Public Health – Seattle and King County in a letter to Golder Associates Inc. dated April 7, 2016. Field parameters collected semi-annually, analytical samples collected annually. Sampling schedule follows the Golder 2021 RI Work Plan starting in Q3 2021.

3 MWB-6DSP was found damaged in July 2022. The well was repaired by late December 2022.

a Preliminary Cleanup Level (PCUL) provided by Ecology 30 Sept 2022

U Data validation code; not detected at the Reporting Limit (RL)

J Data validation code; estimated value

J+ Data validation code; estimated value with positive bias

°C Degrees Celsius

Note 1 ORP measurements not available due to faulty sensor.

µmhos/cm Micromhos per centimeter

feet bmp Feet below measuring point

feet NAVD88 Feet NAVD88 Datum

mg/L Milligrams per liter

mV Millivolts

NTU Nephelometric Turbidity Unit

Table A-4e: Summary of Dale Strip Pit - Bedrock Groundwater Sampling Results - Portal Ravensdale Site, Ravensdale, Washington

Date Sampled	Field Parameters								Gen. Chem.	Metals (ug/L)		
	Depth to Water (feet btoC)	Groundwater Elevation (feet msl)	Temperature (°C)	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (Rel mV)	Turbidity (NTU)	pH (standard units)	Total Dissolved Solids (mg/L)	Arsenic	Lead	Potassium
Preliminary Cleanup Level ^a	-	-	-	-	-	-	-	6.5-8.5	-	8	2.5	-
1-Mar-02	-	-	-	653	-	-	-	7.29	586	-	-	-
1-Jun-02	-	-	12	920	-	-	-	7.20	583	-	-	-
1-Sep-02	-	-	11	920	-	-	-	7.10	651	-	-	-
2-Dec-02	-	-	9.1	900	-	-	-	7.03	570	4.44	0.5 U	-
3-Mar-03	-	-	10.1	873	-	-	-	7.09	530	-	-	-
3-May-03	-	-	11.2	981	-	-	10.00	6.94	590	-	-	-
3-Aug-03	-	-	12.78	1030	-	-	13.00	7.17	630	-	-	-
1-Nov-03	-	-	10.2	569	-	-	4.65	7.53	592	3.33	0.5 U	-
1-Feb-04	-	-	9.31	568	-	-	5.41	6.85	560	-	-	-
1-May-04	-	-	10.93	952	-	-	5.98	7.12	615	-	-	-
1-Aug-04	-	-	12.10	835	-	-	6.29	7.11	601	-	-	-
1-Nov-04	-	-	10.20	941	-	-	6.58	6.94	656	3.41	1 U	-
1-Feb-05	-	-	10.52	889	-	-	8.72	7.41	541	-	-	-
1-May-05	-	-	13.08	953	-	-	8.15	7.31	548	-	-	-
1-Aug-05	-	-	11.08	988	-	-	7.40	7.23	644	-	-	-
1-Nov-05	-	-	9.53	958	-	-	8.58	7.61	640	3.15	1 U	-
1-Feb-06	-	-	9.23	669	7.88	*	7.93	6.78	450 J	-	-	-
1-May-06	-	-	11.49	947	7.60	38.5	10.40	7.01	570	-	-	-
1-Aug-06	-	-	10.52	835	8.82	-39.8	14.10	7.26	640	-	-	-
1-Nov-06	-	-	9.41	740	9.57	-32.2	12.50	7.23	510	2.45	1 U	-
7-Feb-07	-	-	9.90	815	10.99	-6.2	27.80	7.74	510	-	-	-
7-May-07	-	-	18.39	810	11.05	-6.2	11.80	7.61	510	-	-	-
7-Aug-07	-	-	10.42	870	8.72	-44.9	25.20	7.42	560	-	-	-
30-Nov-07	-	-	9.41	783	9.56	-18.7	48.30	-	520	3.17	1 U	-
8-Feb-08	-	-	10.02	708	10.04	-	50.00	7.20	420	-	-	-
8-May-08	-	-	10.83	815	12.13	0.1	7.28	7.29	480 J	-	-	-
8-Aug-08	-	-	10.63	906	11.05	-5.6	11.00	7.05	560 J	3.69	1 U	41600
1-Nov-08	-	-	9.79	553	10.70	-21.1	16.90	7.40	460	3.2	1 U	35500
11-Feb-09	-	-	9.16	488	6.99	-	15.40	7.52	430	2.97	1 U	34200
9-May-09	-	-	9.64	522	10.56	13.4	9.77	7.39	440 J	2.01	1 U	32400
23-Sep-09	-	-	10.70	745	8.95	271.7	14.70	6.88	570	2 U	2 U	40000
15-Dec-09	-	-	8.60	713	5.20	279.0	12.50	6.67	350	2 U	2 U	30000
24-Mar-10	-	-	9.90	681	6.14	370.7	-	6.57	470	4.2	2 U	39000
17-Jun-10	-	-	10.00	623	9.58	-	26.30	7.50	380	5.9	2 U	28000
22-Sep-10	-	-	10.00	783	9.02	225.9	17.40	7.00	510	5.2	2 U	42000
7-Dec-10	-	-	9.90	662	9.15	186.0	13.60	6.95	450	2 U	2 U	32000
29-Mar-11	-	-	9.90	292	5.90	370.8	4.44	6.73	360 J	4.1	2 U	25000
20-Jun-11	-	-	10.50	591	6.42	219.1	4.44	7.01	420	5 U	2 U	26000
26-Sep-11	-	-	10.70	623	5.76	240.5	11.90	6.83	520	5 U	2 U	39000
15-Dec-11	-	-	8.80	472	4.92	310.4	7.32	6.78	430	4.7 J	2 U	32000
21-Mar-12	-	-	8.90	611	5.24	313.3	9.16	6.49	330	4.8	0.4 U	20000
18-Jun-12	Monitored Semiannually ¹											
18-Sep-12	-	-	14.20	652	9.70	148.0	20.80	7.48	450	5	0.4 U	29000
18-Dec-12	Monitored Semiannually ¹											
25-Feb-13	-	-	9.20	648	10.10	209.6	4.12	7.58	300	5	0.4 U	25000
25-Feb-13	Monitored Semiannually ¹											
21-Feb-13	-	-	9.20	648	10.10	209.6	4.12	7.58	300	5	0.4 U	25000
22-May-13	Monitored Semiannually ¹											
20-Aug-13	-	-	10.80	635	9.31	170.1	8.46	7.11	458	3.9	0.1 U	32300
19-Nov-13	Monitored Semiannually ¹											

Table A-4e: Summary of Dale Strip Pit - Bedrock Groundwater Sampling Results - Portal Ravensdale Site, Ravensdale, Washington

Date Sampled	Field Parameters								Gen. Chem.	Metals (ug/L)		
	Depth to Water (feet btoc)	Groundwater Elevation (feet msl)	Temperature (°C)	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (Rel mV)	Turbidity (NTU)	pH (standard units)	Total Dissolved Solids (mg/L)	Arsenic	Lead	Potassium
Preliminary Cleanup Level ^a	-	-	-	-	-	-	-	6.5-8.5	-	8	2.5	-
31-Mar-14	-	-	10.60	448	9.29	213.5	87.20	7.30	321	3.7	0.18 J	21100
21-May-14	Monitored Semiannually ¹											
15-Aug-14	-	-	10.01	595	10.01	-35.2	6.43	6.99	427	3.5	0.1 U	31500
14-Nov-14	Monitored Semiannually ¹											
10-Feb-15	-	-	10.60	515	9.88	183.5	6.84	7.26	363	2.8	0.07 J	27200
4-May-15	Monitored Semiannually ¹											
4-Aug-15	-	-	10.90	554	9.98	95.8	8.68	7.48	438	2.6	0.1 U	34700
5-Nov-15	-	-	10.30	503	10.24	177.6	13.40	7.46	449	2.8	0.1 U	31800
8-Feb-16	-	-	9.30	541	11.30	215.0	5.12	7.30	293	3.2	0.1 U	23100
-	Monitored Semiannually ²								Monitored Annually ²			
24-Aug-16	-	-	13.40	585	9.32	410.0	8.50	7.23	Monitored Annually ²			
1-Nov-16	-	-	10.90	242	9.13	51.4	7.57	7.41	Monitored Annually ²			
31-Jan-17	-	-	8.90	663	10.87	-57.4	6.23	7.50	3390	3.97	0.1 U	29200
-	Monitored Semiannually ²								Monitored Annually ²			
17-Aug-17	-	-	11.40	712	9.67	-12.4	9.87	7.30	Monitored Annually ²			
9-Nov-17	Monitored Semiannually ²								Monitored Annually ²			
27-Feb-18	-	-	9.50	427	9.94	-46.4	16.70	7.72	354	4.11	0.1 U	20400
1-May-18	Monitored Semiannually ²								Monitored Annually ²			
21-Aug-18	-	-	13.13	582	12.46	-23.0	23.10	7.24	Monitored Annually ²			
6-Nov-18	Monitored Semiannually ²								Monitored Annually ²			
12-Mar-19	-	-	8.00	406	11.35	-2.8	10.70	7.97	388	1.56	0.1 U	24700
8-May-19	Monitored Semiannually ²								Monitored Annually ²			
27-Aug-19	-	-	10.55	576	11.80	Note 1	154.00	6.78	Monitored Annually ²			
13-Nov-19	Monitored Semiannually ²								Monitored Annually ²			
13-Feb-20	-	-	9.20	382	9.19	-1.3	13.40	6.93	259	3.65	0.1 U	16700
13-Aug-20	-	-	10.10	569	10.01	-27.0	12.20	7.12	Monitored Annually ²			
9-Dec-20	Monitored Semiannually ²								Monitored Annually ²			
4-Mar-21	-	-	9.30	416	5.80	33.0	17.1	6.89	364	4.14	0.1 U	20000
10-Jun-21	Monitored Semiannually ²								Monitored Annually ²			
18-Oct-21	-	-	10.9	386.7	5.11	-28.4	86.1	6.45	Monitored Annually ²			
5-Jan-22	Monitored Semiannually ²								Monitored Annually ²			
16-Mar-22	-	-	12	402.9	6.78	70.7	19.8	5.81	348	5.32	0.1 U	18800
21-Jun-22	Monitored Semiannually ²								Monitored Annually ²			
14-Sep-22	-	-	12	521	7.29	39.1	93.8	6.7	Monitored Annually ²			
14-Dec-22	Monitored Semiannually ²								Monitored Annually ²			
16-Mar-23	-	-	10.8	667.5	6.16	76.1	8.99	6.86	383	5.08	0.1 U	27100
26-Jun-23	Monitored Semiannually ²								Monitored Annually ²			
7-Sep-23	-	-	10.5	769	7.66	-33.9	6.94	6.79	Monitored Annually ²			
15-Dec-23	Monitored Semiannually ²								Monitored Annually ²			
8-Mar-24	-	-	10.5	470.6	8.59	84	7.64	6.83	359	5.51	0.103 U	22800
19-Jun-24	-	-	Monitored Semiannually ²						Monitored Annually ²			
17-Sep-24	-	-	10.6	714	8.59	187.8	55.5	7.18	Monitored Annually ²			
9-Dec-24	-	-	Monitored Semiannually ²						Monitored Annually ²			
26-Mar-25	-	-	12.2	735	5.65	124.8	54	6.38	369	5.11	0.2 U	23800

Table A-4e: Summary of Dale Strip Pit - Bedrock Groundwater Sampling Results - Portal Ravensdale Site, Ravensdale, Washington

Notes:

Dissolved metals were analyzed at the Site until December 2020 (Q4 2020). Total metals were analyzed for Q4 2020 and will continue to be analyzed moving forward. Iron and manganese are not included in the COPCs at the Site and are not analyzed beginning in Q2 2021. Antimony and Vanadium were included as COPCs for surface water locations and shallow groundwater monitoring wells at the Site beginning in Q3 2021.

-	Not measured or not available		
	Orange shaded values indicate parameter results above the Preliminary Cleanup Level (PCUL), except for pH, which could be above or below the PCUL.		
*	Measurement invalid and not shown		
1	Reduction in monitoring frequency approved by Public Health – Seattle and King County in a letter to Golder Associates Inc. dated May 16, 2012		
2	Reduction in monitoring frequency approved by Public Health – Seattle and King County in a letter to Golder Associates Inc. dated April 7, 2016. Field parameters collected semi-annually, analytical samples collected annually. Sampling schedule follows the Golder 2021 RI Work Plan starting in Q3 2021.		
a	Preliminary Cleanup Level (PCUL) provided by Ecology 30 Sept 2022		
U	Data validation code; not detected at the Reporting Limit (RL)		
J	Data validation code; estimated value		
J+	Data validation code; estimated value with positive bias		
°C	Degrees Celsius		
Note 1	ORP measurements not available due to faulty sensor.		
µmhos/cm	Micromhos per centimeter	mg/L	Milligrams per liter
feet bmp	Feet below measuring point	mV	Millivolts
feet NAVD88	Feet NAVD88 Datum	NTU	Nephelometric Turbidity Unit

**Table A-4f: Summary of Dale Strip Pit - Bedrock Groundwater Sampling Results - Well MWB-2DSP
Ravensdale Site, Ravensdale, Washington**

Date Sampled	Field Parameters								Gen. Chem.	Metals (ug/L)		
	Depth to Water (feet btoc)	Groundwater Elevation (feet NAVD88)	Temperature (°C)	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (Rel mV)	Turbidity (NTU)	pH (standard units)	Total Dissolved Solids (mg/L)	Arsenic	Lead	Potassium
Preliminary Cleanup Level ^a	-	-	-	-	-	-	-	6.5-8.5	-	8	2.5	-
1-Mar-02	-	-	-	542	-	-	-	7.22	467	-	-	-
1-Jun-02	197.34	735.48	12.00	750	-	-	-	7.10	459	-	-	-
1-Sep-02	199.29	733.53	14.00	660	-	-	-	6.90	499	-	-	-
2-Dec-02	200.09	732.73	10.80	675	-	-	-	6.89	440	1 U	0.5 U	-
3-Mar-03	190.21	742.61	11.90	763	-	-	-	6.98	450	-	-	-
3-May-03	191.78	741.04	12.30	730	-	-	233.00	6.98	550	-	-	-
3-Aug-03	199.82	733.00	16.50	848	-	-	17.00	6.92	520	-	-	-
1-Nov-03	199.97	732.85	11.60	559	-	-	9.20	7.04	522	0.98	0.5 U	-
1-Feb-04	188.78	744.04	11.96	608	-	-	4.86	6.68	560	-	-	-
1-May-04	198.45	734.37	13.69	614	-	-	6.17	6.80	478	-	-	-
1-Aug-04	199.17	733.65	14.38	731	-	-	5.48	6.71	460	-	-	-
1-Nov-04	197.92	734.90	11.62	785	-	-	12.30	6.75	512	1 U	1 U	-
1-Feb-05	186.36	746.46	11.64	806	-	-	1.47	6.94	487	-	-	-
1-May-05	-	-	12.87	790	-	-	15.80	6.89	338	-	-	-
1-Aug-05	196.10	736.72	15.01	603	-	-	45.70	6.44	388	-	-	-
1-Nov-05	196.78	736.04	9.91	549	-	-	13.30	6.66	350	1 U	1 U	-
1-Feb-06	193.93	738.89	8.10	641	2.11	269.2	35.70	6.82	400 J	-	-	-
1-May-06	197.90	734.92	10.88	798	1.67	27.3	5.38	6.50	380	-	-	-
1-Aug-06	198.80	734.02	11.44	534	2.52	205.7	8.74	6.67	360	-	-	-
1-Nov-06	187.36	745.46	10.77	680	2.12	-19.9	18.90	7.06	430	1 U	1 U	-
28-Dec-06	192.37	740.45	-	-	-	-	-	-	-	-	-	-
7-Feb-07	197.46	735.36	10.24	621	0.64	-16.7	27.80	6.89	420	-	-	-
7-May-07	198.49	734.33	-	-	-	-	-	-	-	-	-	-
1-Aug-07	198.45	734.37	-	-	-	-	-	-	-	-	-	-
27-Nov-07	196.48	736.34	-	-	-	-	-	-	-	-	-	-
8-Feb-08	191.30	741.52	-	-	-	-	-	-	-	-	-	-
8-May-08	193.95	738.87	-	-	-	-	-	-	-	-	-	-
27-Sep-11	197.32	735.50	-	-	-	-	-	-	-	-	-	-
13-Dec-11	192.15	740.67	9.6	421	2.10	313.0	16.10	7.49	-	-	-	-
22-Mar-12	183.35	751.47	8.9	546	12.83	166.3	0.56	7.47	-	-	-	-
18-Jun-12	192.54	742.28	-	-	-	-	-	-	-	-	-	-
18-Sep-12	199.51	735.31	16.2	508	2.21	120.0	1.27	7.58	-	-	-	-
18-Dec-12	184.52	750.30	-	-	-	-	-	-	-	-	-	-
21-Feb-13	190.65	744.17	7.6	678	5.33	342.6	6.61	8.02	-	-	-	-
22-May-13	198.05	736.77	-	-	-	-	-	-	-	-	-	-
20-Aug-13	200.47	734.35	13.0	488	3.26	90.2	8.47	7.42	-	-	-	-
19-Nov-13	196.59	738.23	-	-	-	-	-	-	-	-	-	-
31-Mar-14	186.78	748.04	11.4	421	7.28	195.1	1.70	7.47	-	-	-	-
21-May-14	192.27	742.55	-	-	-	-	-	-	-	-	-	-
15-Aug-14	199.97	734.85	18.9	492	0.97	1.4	52.50	7.01	-	-	-	-
14-Nov-14	196.60	738.22	-	-	-	-	-	-	-	-	-	-
10-Feb-15	183.97	750.85	10.2	450	7.65	121.4	1.02	7.34	-	-	-	-
4-May-15	194.19	740.63	-	-	-	-	-	-	-	-	-	-
4-Aug-15	198.35	736.47	13.6	432	3.07	18.6	0.27	7.47	-	-	-	-
3-Nov-15	198.25	736.57	10.3	405	2.57	106.2	7.07	7.35	-	-	-	-
8-Feb-16	188.43	746.39	12.5	536	2.77	189.8	0.25	7.78	-	-	-	-
2-May-16	195.72	739.10	Monitored Semiannually ¹						-	-	-	-
22-Aug-16	197.89	736.93	14.0	418	1.27	-123.1	4.36	7.32	-	-	-	-
1-Nov-16	195.49	739.33	Monitored Semiannually ¹						-	-	-	-

**Table A-4f: Summary of Dale Strip Pit - Bedrock Groundwater Sampling Results - Well MWB-2DSP
Ravensdale Site, Ravensdale, Washington**

Date Sampled	Field Parameters								Gen. Chem.	Metals (ug/L)		
	Depth to Water (feet btoc)	Groundwater Elevation (feet NAVD88)	Temperature (°C)	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (Rel mV)	Turbidity (NTU)	pH (standard units)	Total Dissolved Solids (mg/L)	Arsenic	Lead	Potassium
Preliminary Cleanup Level ^a	-	-	-	-	-	-	-	6.5-8.5	-	8	2.5	-
31-Jan-17	186.94	747.88	9.2	506	5.26	-45.4	0.38	7.45	-	-	-	-
30-May-17	190.62	744.20	Monitored Semiannually ¹						-	-	-	-
16-Aug-17	197.55	737.27	13.3	540	2.31	37.3	3.42	7.37	-	-	-	-
9-Nov-17	197.11	737.71	Monitored Semiannually ¹						-	-	-	-
28-Feb-18	185.96	748.86	10.1	390	5.95	204.7	1.62	7.15	-	-	-	-
1-May-18	184.95	749.87	Monitored Semiannually ¹						-	-	-	-
22-Aug-18	197.40	737.42	13.7	412	3.10	85.5	1.66	7.27	-	-	-	-
6-Nov-18	197.94	736.88	Monitored Semiannually ¹						-	-	-	-
12-Mar-19	182.84	751.98	8.7	332	6.25	148.4	1.93	7.28	-	-	-	-
8-May-19	185.36	749.46	Monitored Semiannually ¹						-	-	-	-
27-Aug-19	196.56	738.26	11.92	411	8.82	Note 1	0.02	7.28	-	-	-	-
13-Nov-19	196.74	738.08	Monitored Semiannually ¹						-	-	-	-
13-Feb-20	177.10	757.72	9.3	453	3.03	91.0	2.31	7.56	-	-	-	-
13-Aug-20	200.97	733.85	12.2	422	3.04	35.0	0.96	7.42	-	-	-	-
9-Dec-20	197.86	736.96	Monitored Semiannually ¹						-	-	-	-
5-Mar-21	197.42	737.40	10.0	398	3.79	112.0	1.17	7.37	-	-	-	-
10-Jun-21	199.94	734.88	Monitored Semiannually ¹						-	-	-	-
18-Oct-21	200.24	734.58	12.6	307.7	6.06	161.4	12.3	7.35	-	-	-	-
5-Jan-22	192.66	742.16	Monitored Semiannually ¹						-	-	-	-
21-Mar-22	193.68	741.14	9.6	369	7.04	125.6	5.95	6.63	-	-	-	-
21-Jun-22	191.33	743.49	Monitored Semiannually ¹						-	-	-	-
13-Sep-22	200.03	734.79	12.6	404.7	8.66	252.7	10.5	6.91	-	-	-	-
12-Dec-22	197.99	736.83	Monitored Semiannually ¹						-	-	-	-
15-Mar-23	192.63	742.19	11.4	591.7	2.44	41.8	5.56	7.53	-	-	-	-
26-Jun-23	198.92	735.9	Monitored Semiannually ¹						-	-	-	-
5-Sep-23	200.21	734.61	12.1	571.3	3.59	8.3	10.5	7.36	-	-	-	-
13-Dec-23	183.09	751.73	Monitored Semiannually ¹						-	-	-	-
6-Mar-24	192.55	742.27	9.1	577	8.66	35.4	4.3	7.75	-	-	-	-
19-Jun-24	194.6	740.22	Monitored Semiannually ¹						-	-	-	-
19-Sep-24	199.64	735.18	11.9	540	9.23	162.1	1.07	6.96	-	-	-	-
9-Dec-24	-	-	Monitored Semiannually ¹						-	-	-	-
26-Mar-25	184	750.82	12.9	554.4	6.4	75.4	6.98	7.16	-	-	-	-

**Table A-4f: Summary of Dale Strip Pit - Bedrock Groundwater Sampling Results - Well MWB-2DSP
Ravensdale Site, Ravensdale, Washington**

Notes:

Top of casing elevation (feet NAVD88) prior to raising casing: 932.82

Top of casing elevation (feet NAVD88) after raising casing (December 14, 2011): 934.82

Dissolved metals were analyzed at the Site until December 2020 (Q4 2020). Total metals were analyzed for Q4 2020 and will continue to be analyzed moving forward. Iron and manganese are not included in the COPCs at the Site and are not analyzed beginning in Q2 2021.

Antimony and Vanadium were included as COPCs for surface water locations and shallow groundwater monitoring wells at the Site beginning in Q3 2021.

1 Reduction in monitoring frequency approved by Public Health – Seattle and King County in a letter to Golder Associates Inc. dated April 7, 2016. Field parameters collected semi-annually, analytical samples collected annually. Sampling schedule follows the Golder 2021 RI Work Plan starting in Q3 2021.

- Not measured or not available

Orange shaded values indicate parameter results above the Preliminary Cleanup Level (PCUL), except for pH, which could be above or below the PCUL.

a Preliminary Cleanup Level (PCUL) provided by Ecology 30 Sept 2022

U Data validation code; not detected at the Reporting Limit (RL)

J Data validation code; estimated value

J+ Data validation code; estimated value with positive bias

°C Degrees Celsius

Note 1 ORP measurements not available due to faulty sensor.

µmhos/cm Micromhos per centimeter

mg/L Milligrams per liter

feet bmp Feet below measuring point

mV Millivolts

feet NAVD88 Feet NAVD88 Datum

NTU Nephelometric Turbidity Unit

**Table A-4g: Summary of Dale Strip Pit - Bedrock Groundwater Sampling Results - Well MWB-4SDSP
Ravensdale Site, Ravensdale, Washington**

Date Sampled	Field Parameters								Gen. Chem.	Metals (ug/L)		
	Depth to Water (feet btoc)	Groundwater Elevation (feet NAVD88)	Temperature (°C)	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (Rel mV)	Turbidity (NTU)	pH (standard units)	Total Dissolved Solids (mg/L)	Arsenic	Lead	Potassium
Preliminary Cleanup Level ^a	-	-	-	-	-	-	-	6.5-8.5	-	8	2.5	-
26-Sep-11	25.77	906.64	11.40	553	0.86	197.2	-	7.21	-	-	-	-
13-Dec-11	24.94	907.47	9.70	625	1.73	658.0	22.70	7.68	-	-	-	-
22-Mar-12	23.80	908.61	9.60	785	3.71	242.6	8.14	7.30	-	-	-	-
19-Jun-12	24.09	908.32	-	-	-	-	-	-	-	-	-	-
18-Sep-12	25.68	906.73	16.50	664	2.37	150.0	19.20	7.34	-	-	-	-
18-Dec-12	23.02	909.39	-	-	-	-	-	-	-	-	-	-
21-Feb-13	23.50	908.91	10.00	840	6.55	352.4	3.42	7.42	-	-	-	-
22-May-13	23.84	908.57	-	-	-	-	-	-	-	-	-	-
20-Aug-13	25.08	907.33	13.50	539	2.91	45.1	1.87	7.22	-	-	-	-
19-Nov-13	22.76	909.65	-	-	-	-	-	-	-	-	-	-
31-Mar-14	21.39	911.02	12.20	511	6.31	197.3	1.38	7.58	-	-	-	-
21-May-14	19.82	912.59	-	-	-	-	-	-	-	-	-	-
15-Aug-14	24.00	908.41	12.81	647	0.82	7.5	5.42	6.62	-	-	-	-
14-Nov-14	22.28	910.13	-	-	-	-	-	-	-	-	-	-
10-Feb-15	21.10	911.31	12.30	636	2.56	-71.9	1.11	7.11	-	-	-	-
4-May-15	22.65	909.76	-	-	-	-	-	-	-	-	-	-
5-Aug-15	24.65	907.76	13.50	563	3.21	116.4	55.20	7.42	-	-	-	-
3-Nov-15	23.87	908.54	12.20	493	4.65	114.4	5.78	7.52	-	-	-	-
8-Feb-16	19.39	913.02	15.80	670	3.92	163.5	5.06	7.59	-	-	-	-
2-May-16	20.99	911.42	Monitored Semiannually ¹						-	-	-	-
22-Aug-16	24.42	907.99	17.60	527	5.01	106.0	1.39	7.44	-	-	-	-
1-Nov-16	21.31	911.10	Monitored Semiannually ¹						-	-	-	-
31-Jan-17	21.11	911.30	12.10	680	2.75	-146.1	1.48	7.35	-	-	-	-
30-May-17	18.49	913.92	Monitored Semiannually ¹						-	-	-	-
17-Aug-17	22.58	909.83	12.60	673	5.22	177.8	1.97	7.15	-	-	-	-
9-Nov-17	20.72	911.69	Monitored Semiannually ¹						-	-	-	-
28-Feb-18	17.09	915.32	11.10	509	8.34	29.0	0.72	7.37	-	-	-	-
1-May-18	17.76	914.65	Monitored Semiannually ¹						-	-	-	-
22-Aug-18	Could not be safely accessed due to wasp nests.								-	-	-	-
6-Nov-18	21.70	910.71	Monitored Semiannually ¹						-	-	-	-
12-Mar-19	18.30	914.11	10.10	215	9.65	18.9	0.39	7.86	-	-	-	-
8-May-19	19.09	913.32	Monitored Semiannually ¹						-	-	-	-
27-Aug-19	22.85	909.56	14.79	562	8.59	Note 1	3.60	7.80	-	-	-	-
13-Nov-19	21.95	910.46	Monitored Semiannually ¹						-	-	-	-
13-Feb-20	16.60	915.81	10.80	458	8.74	68.0	1.98	7.83	-	-	-	-
13-Aug-20	21.96	910.45	12.60	503	8.74	-39.8	1.89	7.83	-	-	-	-
9-Dec-20	20.58	911.83	Monitored Semiannually ¹						-	-	-	-
5-Mar-21	17.69	914.72	11.30	497	6.84	90.0	1.46	7.91	-	-	-	-
10-Jun-21	21.47	910.94	Monitored Semiannually ¹						-	-	-	-
18-Oct-21	23.22	909.19	13.5	368.9	8.47	130.8	1.36	7.63	-	-	-	-
5-Jan-22	17.66	914.75	Monitored Semiannually ¹						-	-	-	-
21-Mar-22	16.7	915.71	10.7	456.3	9.94	115.5	2.79	7.05	-	-	-	-
21-Jun-22	17.95	914.46	Monitored Semiannually ¹						-	-	-	-
13-Sep-22	21.6	910.81	15.3	531	7.87	90.3	1.45	7.53	-	-	-	-
12-Dec-22	19.02	913.39	Monitored Semiannually ¹						-	-	-	-
15-Mar-23	17.46	914.95	12.3	668	8.07	57.4	2.67	7.85	-	-	-	-
26-Jun-23	19.98	912.43	Monitored Semiannually ¹						-	-	-	-

**Table A-4g: Summary of Dale Strip Pit - Bedrock Groundwater Sampling Results - Well MWB-4SDSP
Ravensdale Site, Ravensdale, Washington**

Date Sampled	Field Parameters								Gen. Chem.	Metals (ug/L)		
	Depth to Water (feet btoc)	Groundwater Elevation (feet NAVD88)	Temperature (°C)	Conductivity (µmhos/cm)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (Rel mV)	Turbidity (NTU)	pH (standard units)	Total Dissolved Solids (mg/L)	Arsenic	Lead	Potassium
Preliminary Cleanup Level ^a	-	-	-	-	-	-	-	6.5-8.5	-	8	2.5	-
5-Sep-23	Could not be safely accessed due to wasp nests.								-	-	-	-
13-Dec-23	16.91	915.5	Monitored Semiannually ¹						-	-	-	-
8-Mar-24	15.77	916.64	10.9	558	8.79	90.8	0.74	7.82	-	-	-	-
19-Jun-24	18.55	913.86	Monitored Semiannually ¹						-	-	-	-
16-Sep-24	Could not be safely accessed due to wasp nests.								-	-	-	-
9-Dec-24	-	-	Monitored Semiannually ¹						-	-	-	-
26-Mar-25	15.10	917.31	12.8	649	10.58	76.9	2.71	7.8	-	-	-	-

Notes:

Top of casing elevation (feet NAVD88) prior to DSP Cover Upgrade: 939.42

Top of casing elevation (feet NAVD88) after DSP Cover Upgrade (completed July 2011): 932.41

Dissolved metals were analyzed at the Site until December 2020 (Q4 2020). Total metals were analyzed for Q4 2020 and will continue to be analyzed moving forward. Iron and manganese are not included in the COPCs at the Site and are not analyzed beginning in Q2 2021.

Antimony and Vanadium were included as COPCs for surface water locations and shallow groundwater monitoring wells at the Site beginning in Q3 2021.

1 Reduction in monitoring frequency approved by Public Health – Seattle and King County in a letter to Golder Associates Inc. dated April 7, 2016, extended October 10, 2019. Field parameters collected semi-annually, analytical samples collected annually. Sampling schedule follows the Golder 2021 RI Work Plan starting in Q3 2021.

- Not measured or not available

Orange shaded values indicate parameter results above the Preliminary Cleanup Level (PCUL), except for pH, which could be above or below the PCUL.

a Preliminary Cleanup Level (PCUL) provided by Ecology 30 Sept 2022

°C Degrees Celsius

Note 1 ORP measurements not available due to faulty sensor.

µmhos/cm Micromhos per centimeter

feet bmp Feet below measuring point

feet NAVD88 Feet NAVD88 Datum

mg/L Milligrams per liter

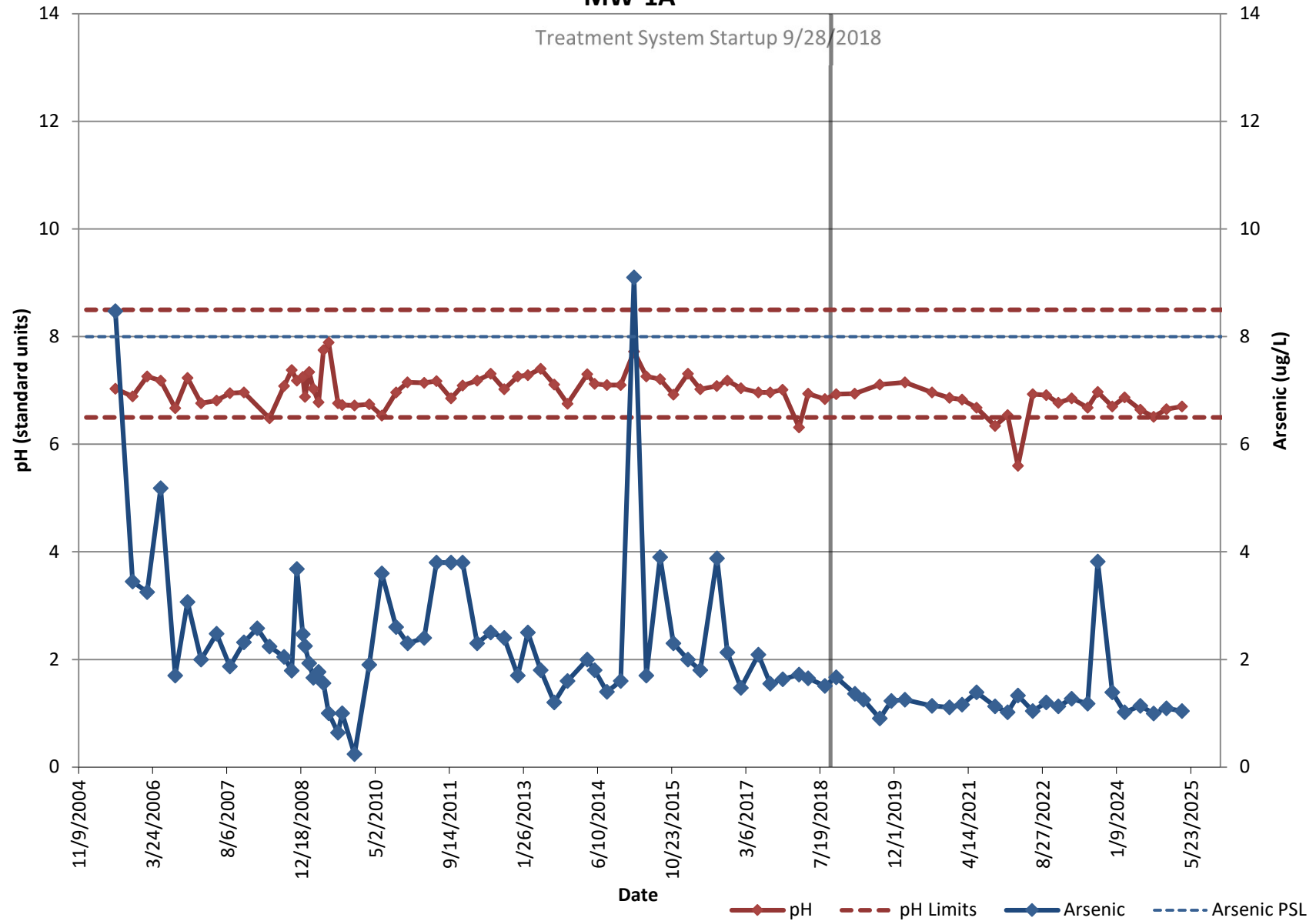
mV Millivolts

NTU Nephelometric Turbidity Unit

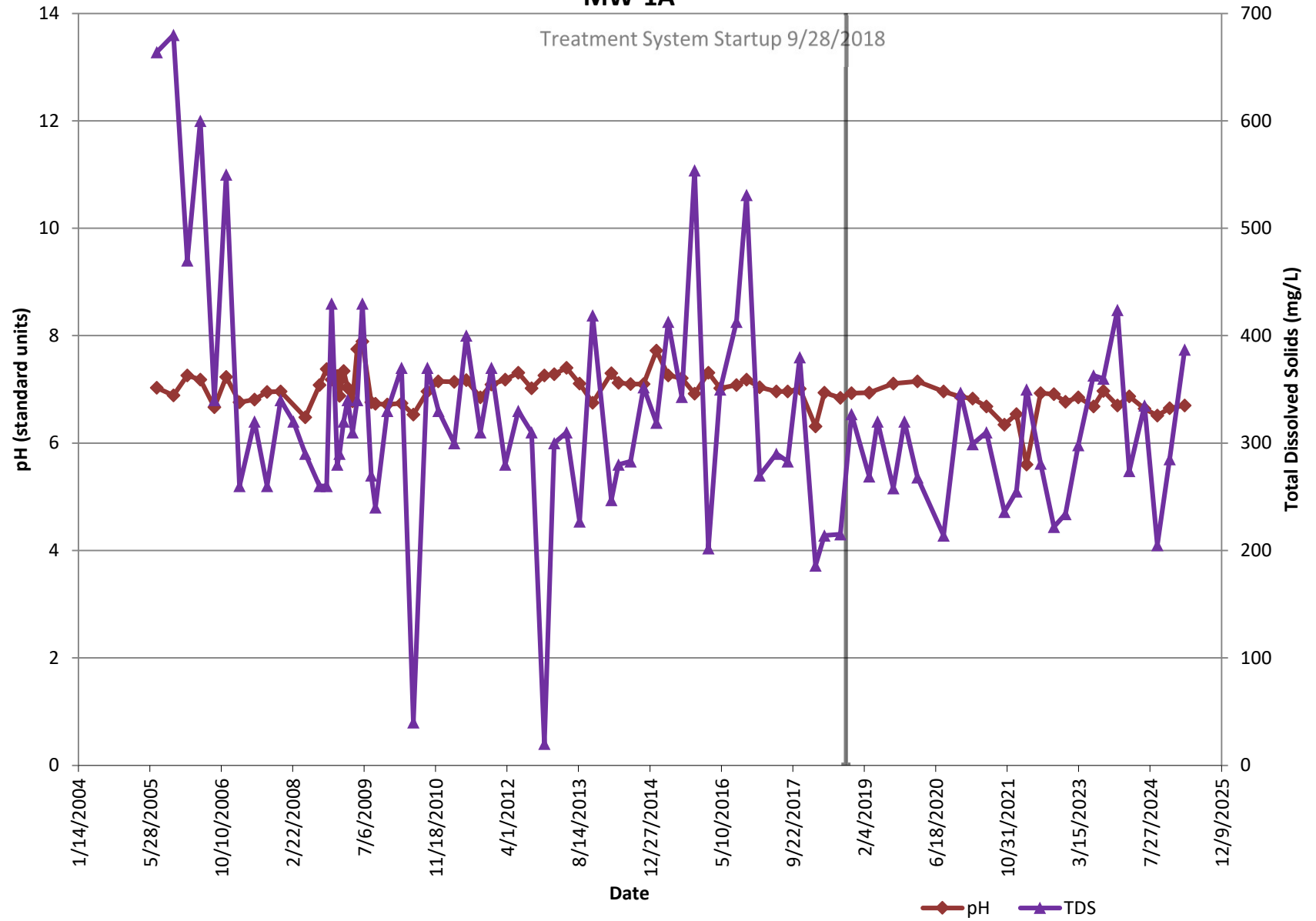
APPENDIX B

**LDA Shallow Monitoring Wells Data
Graphs**

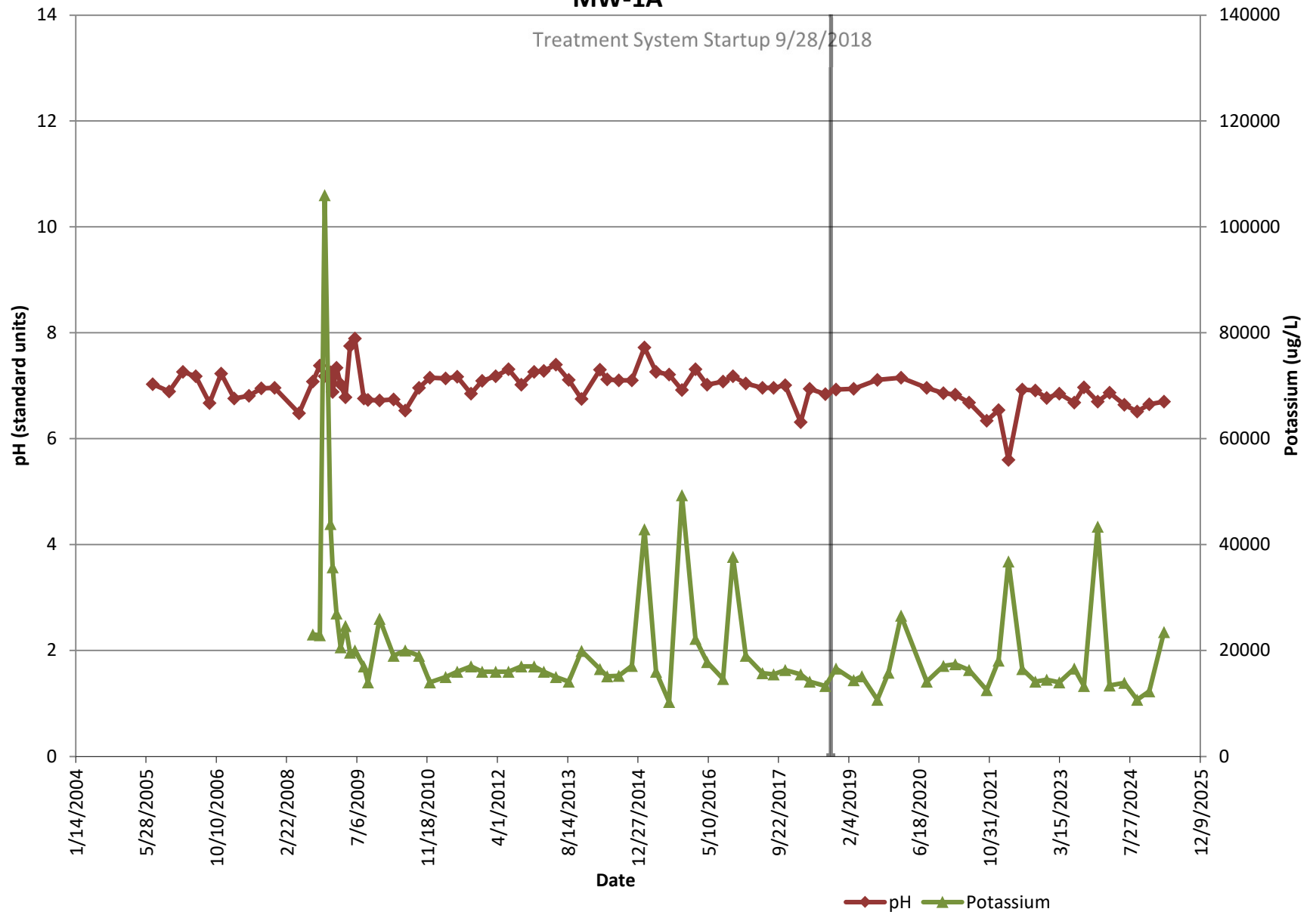
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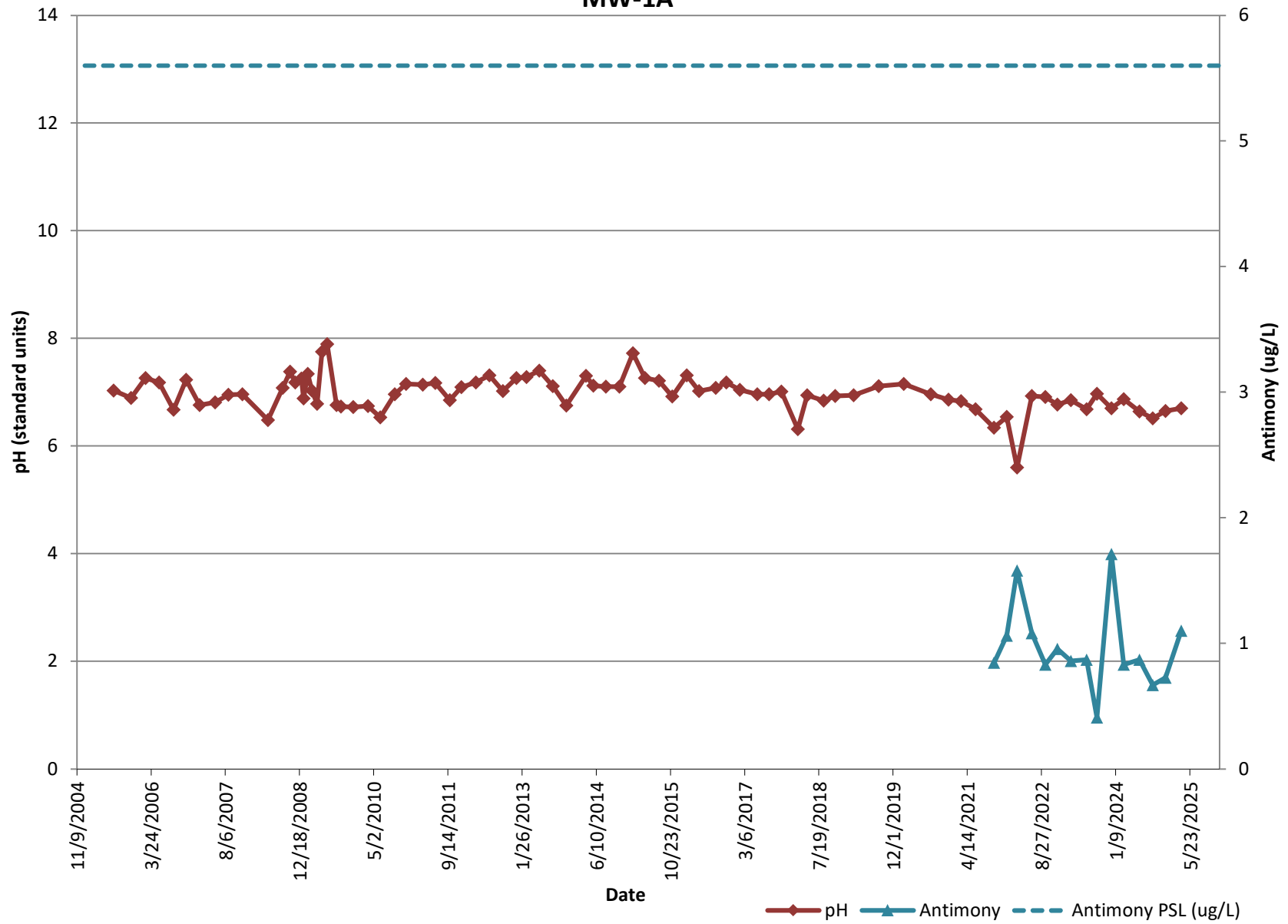
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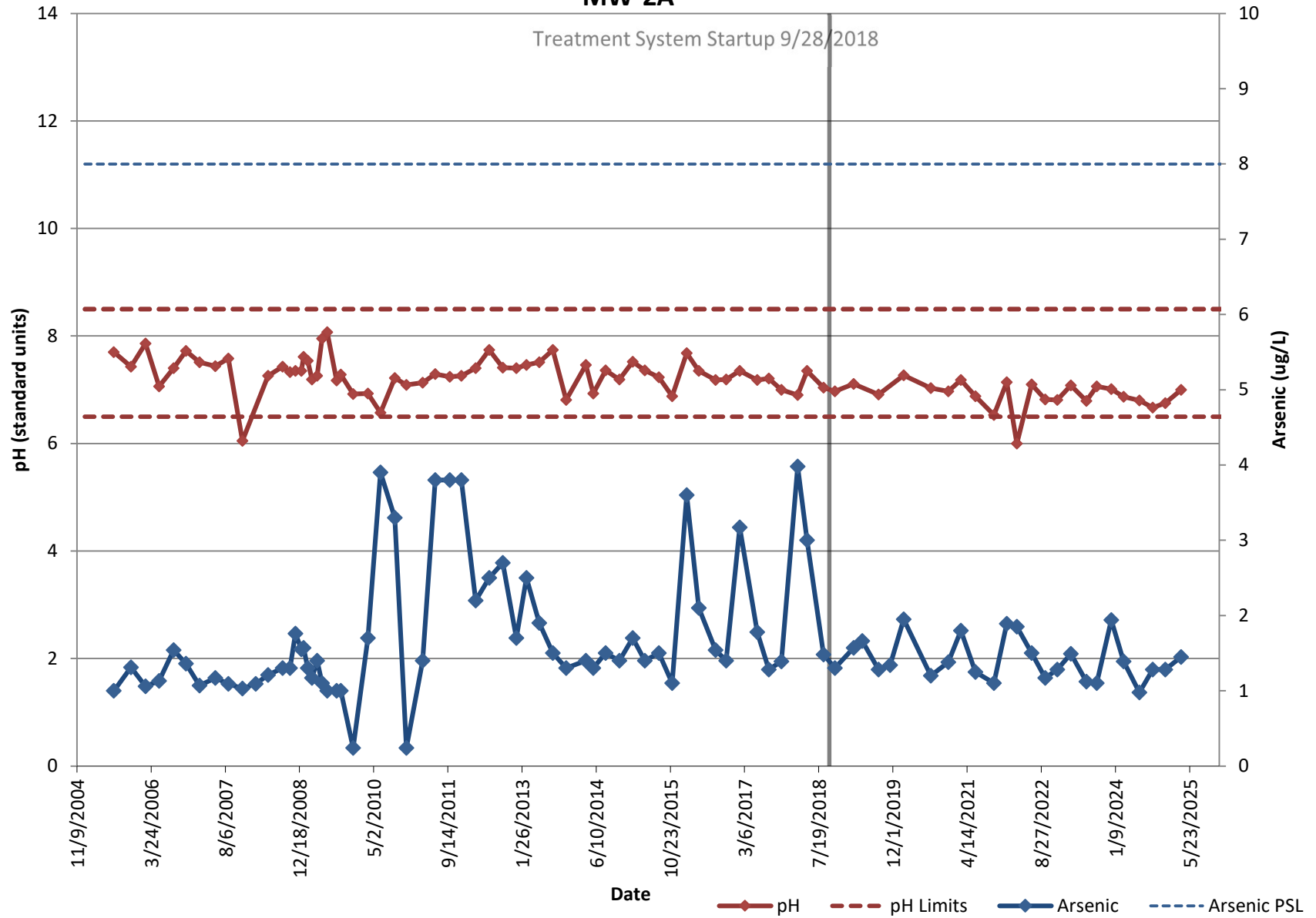
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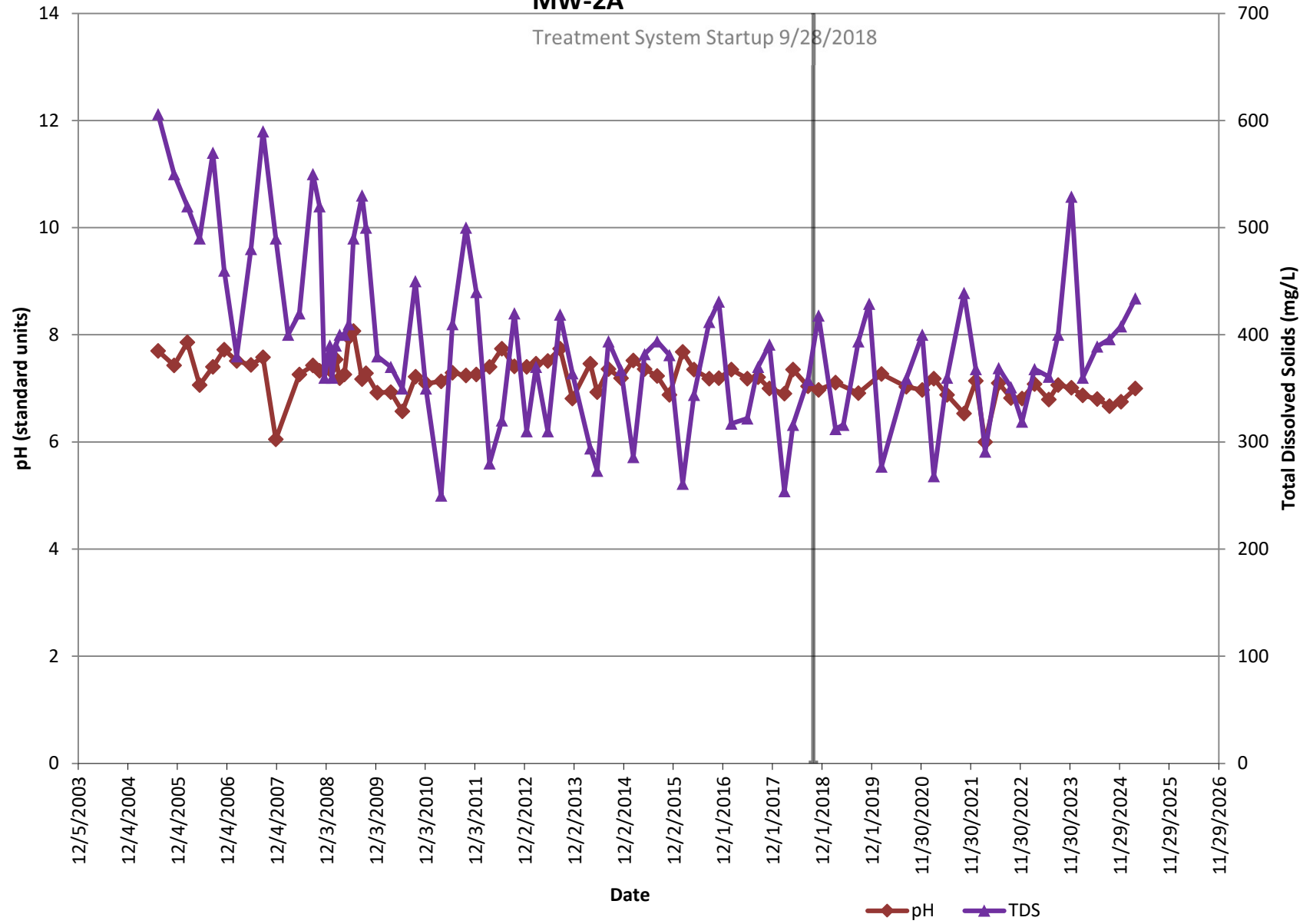
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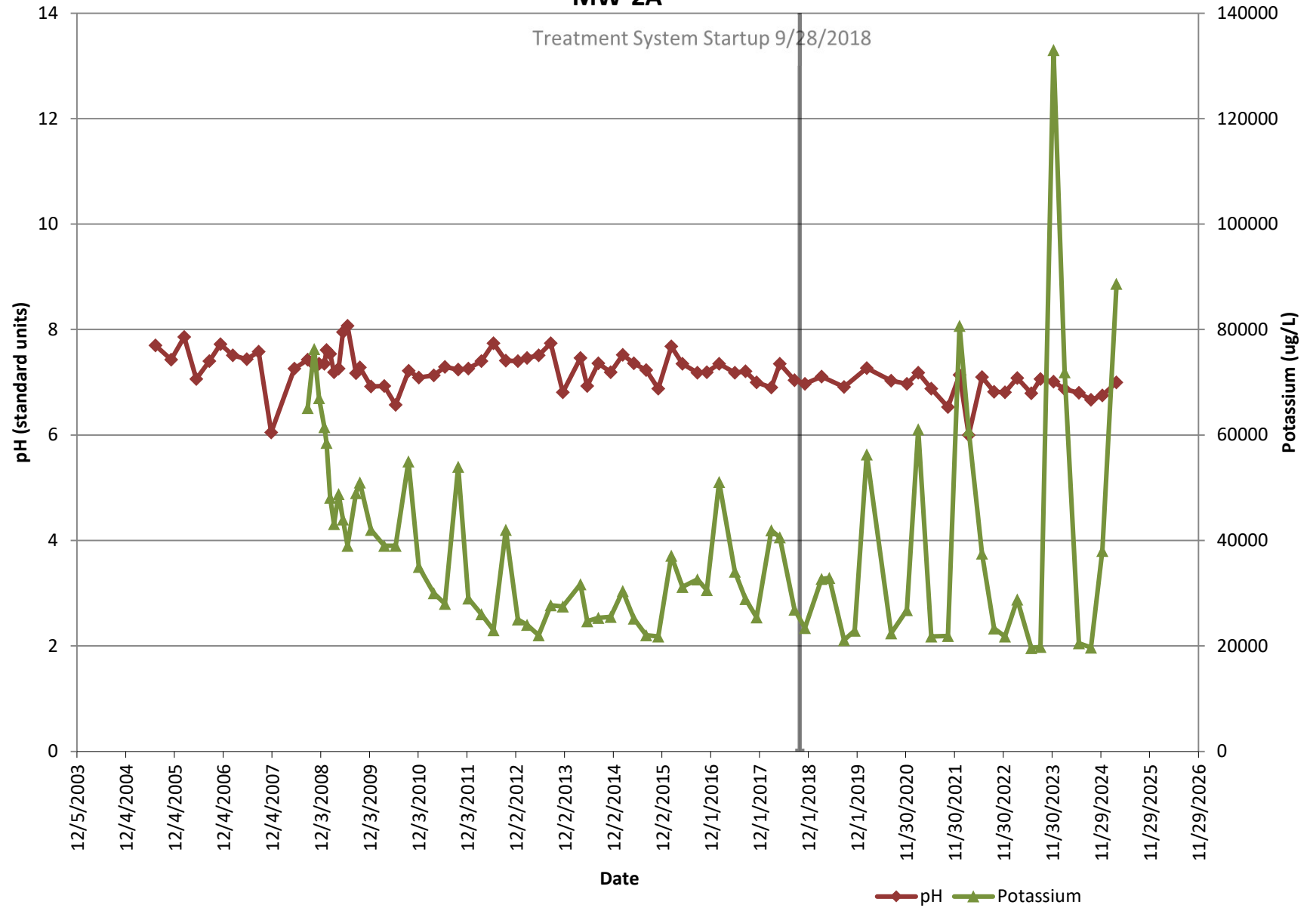
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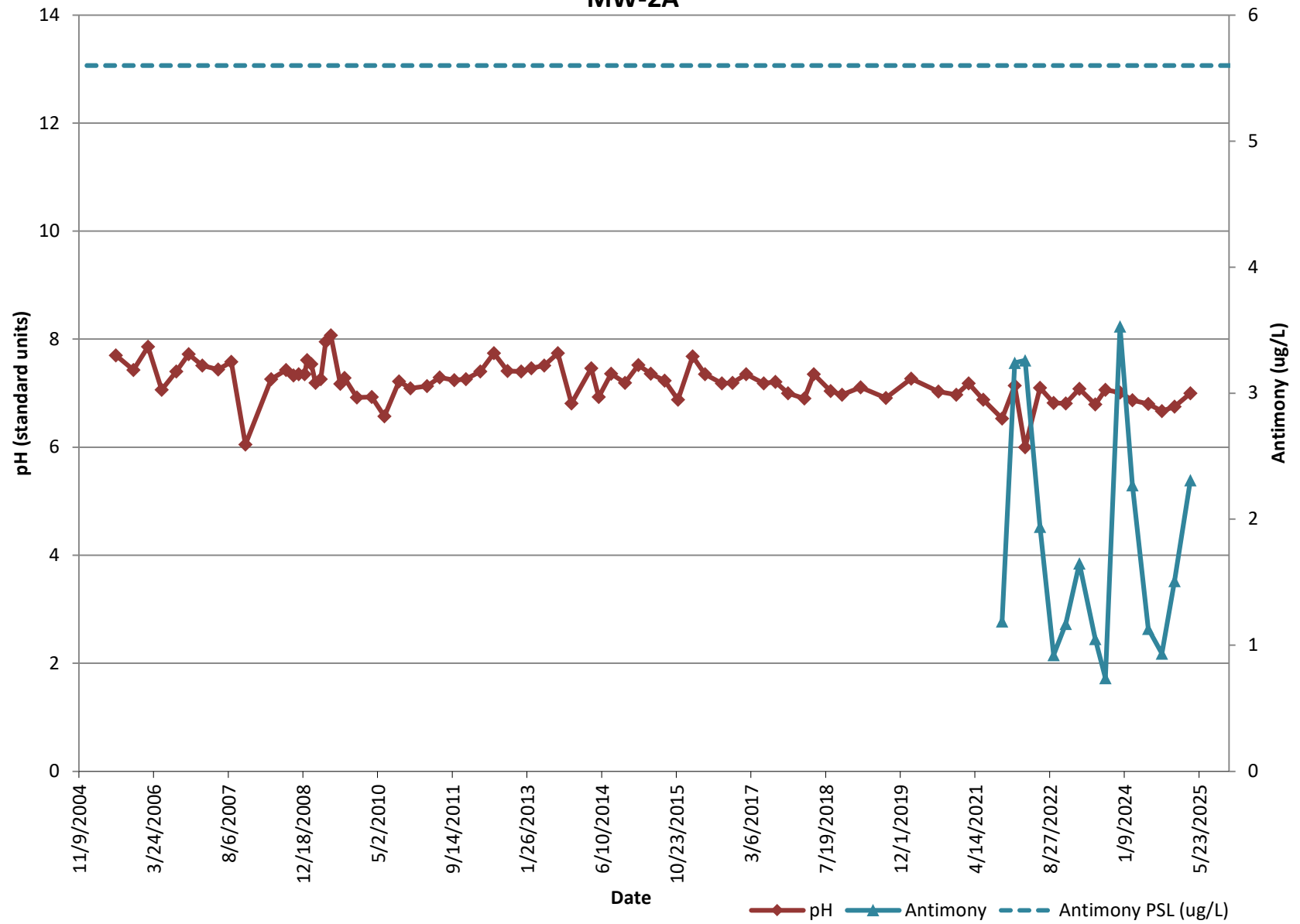
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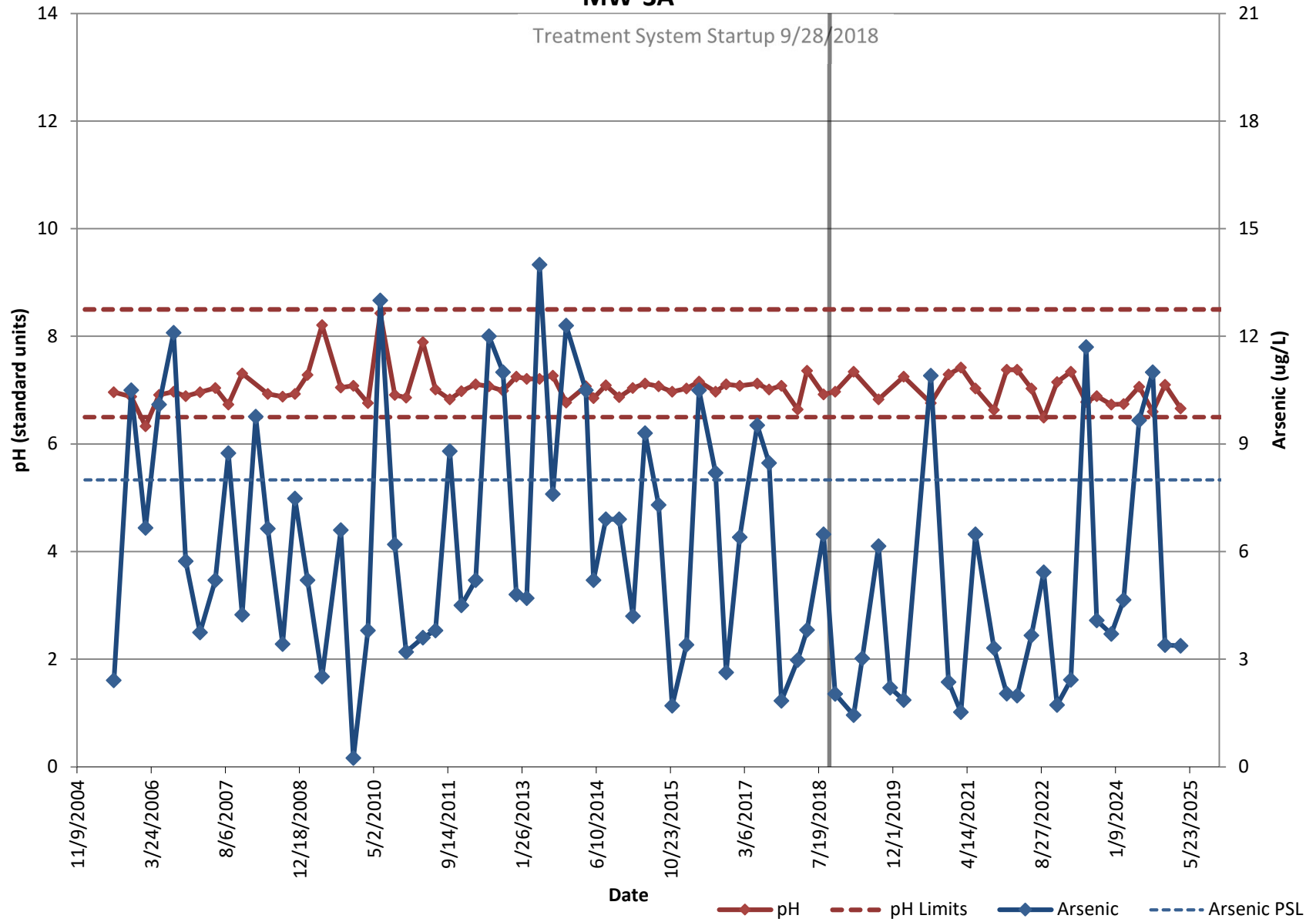
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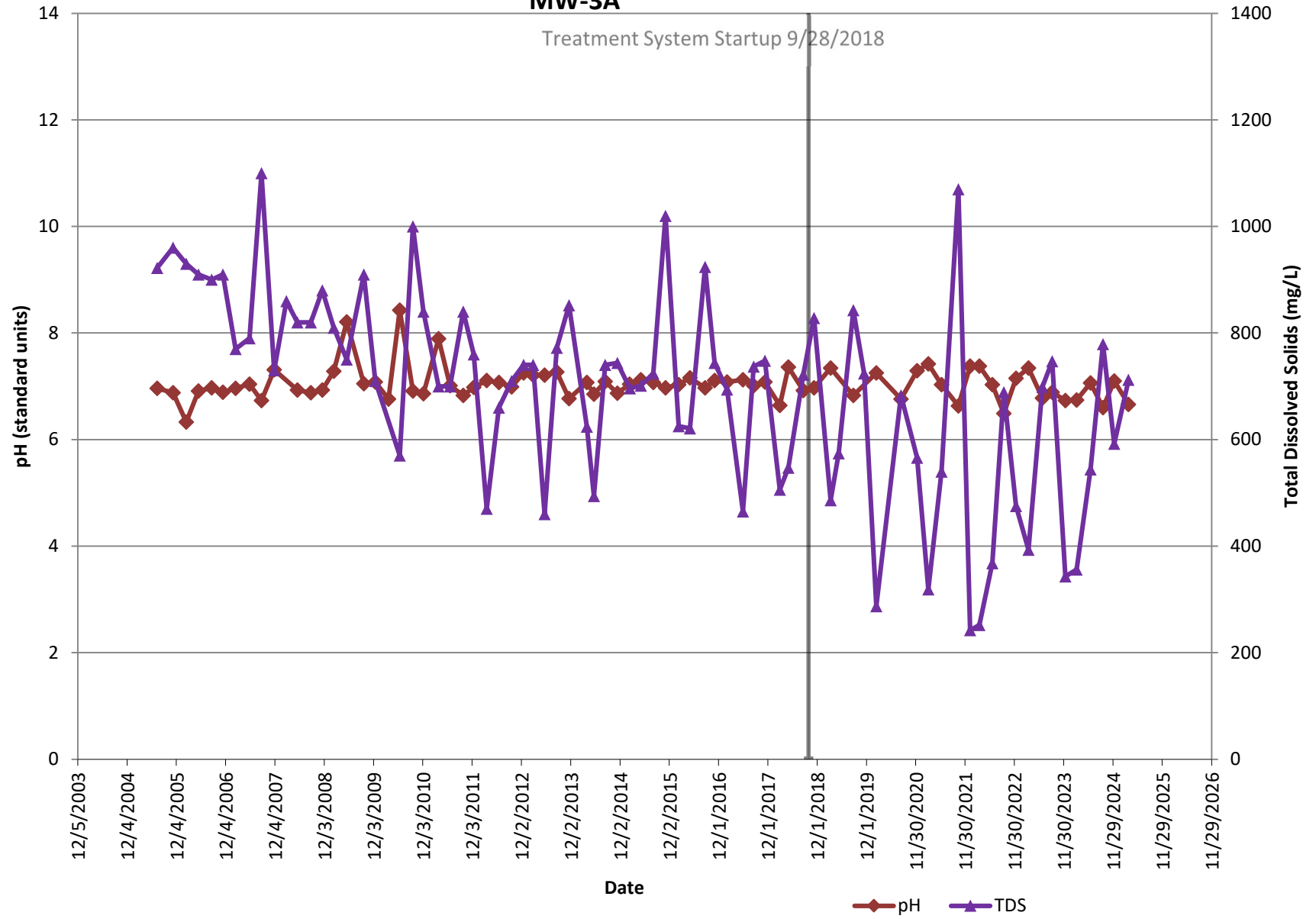
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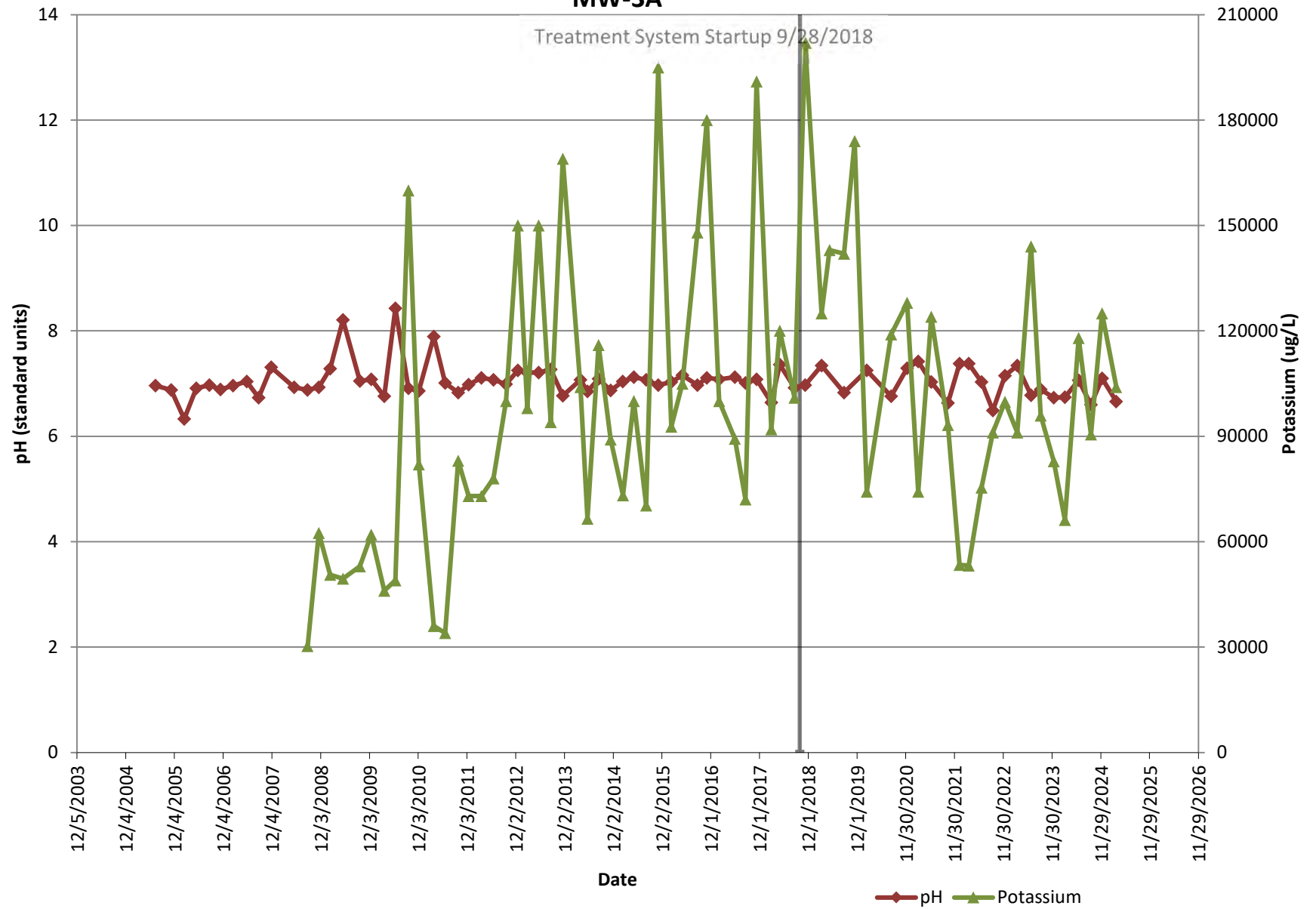
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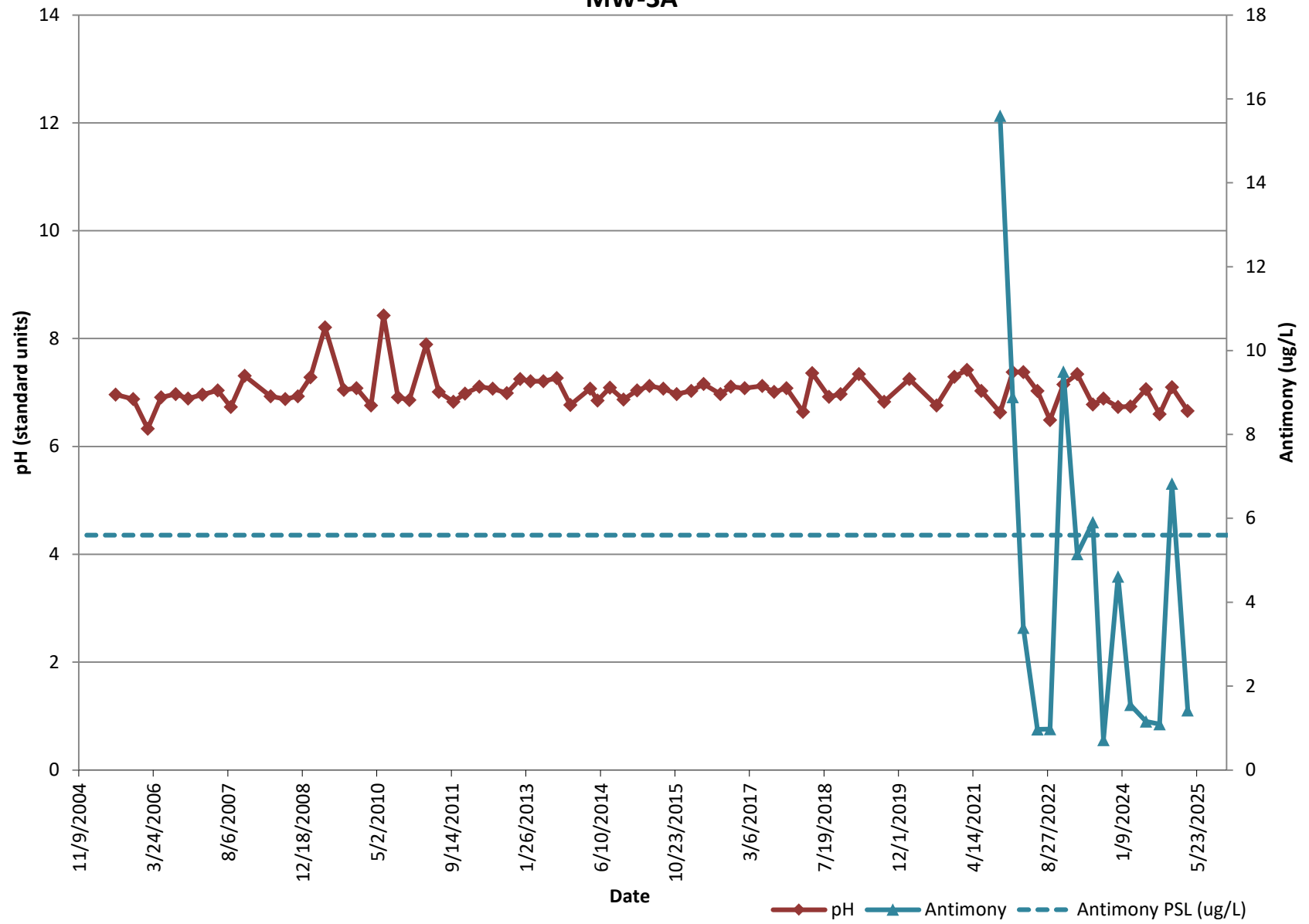
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LDA Shallow Monitoring Wells MW-3A

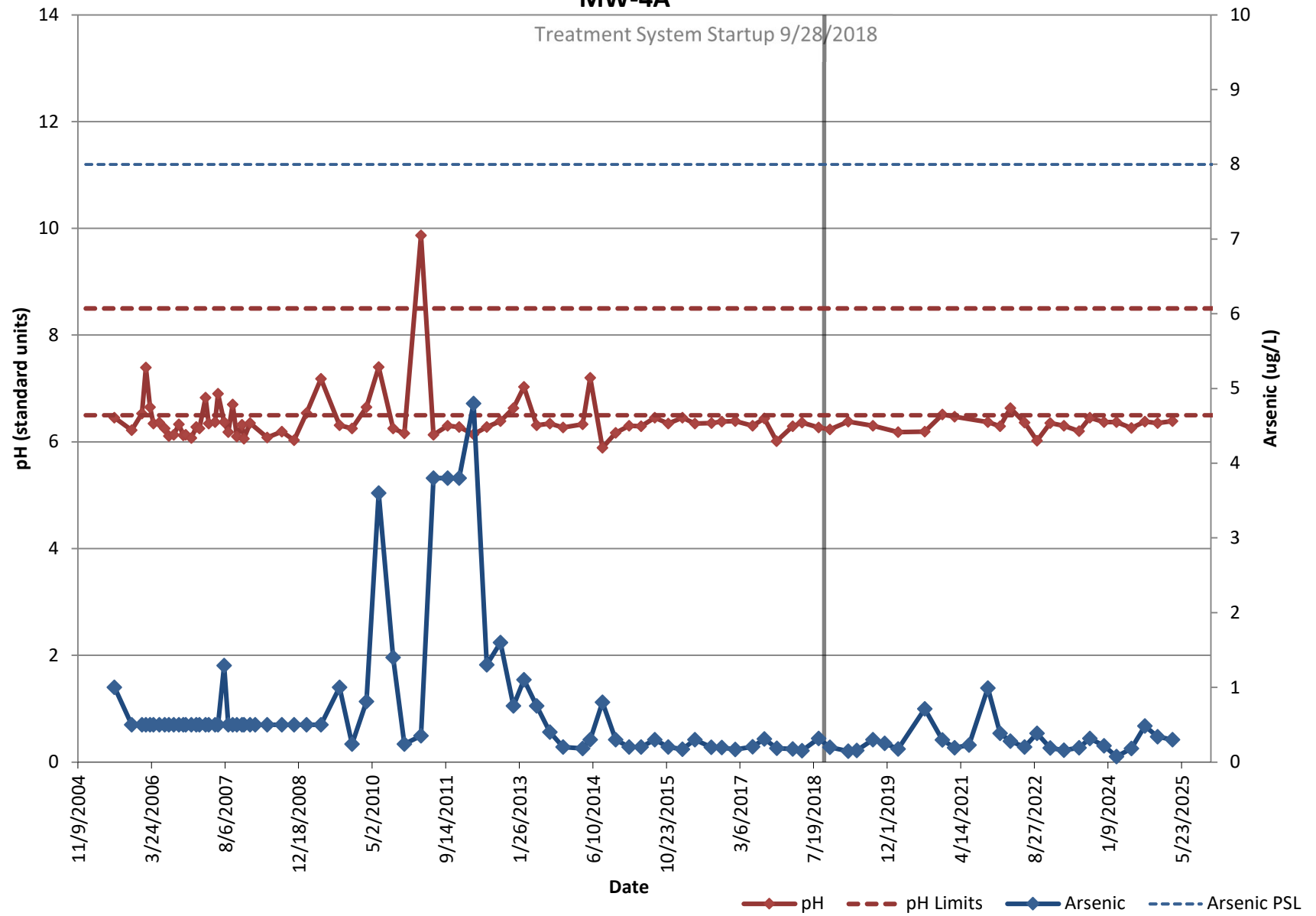


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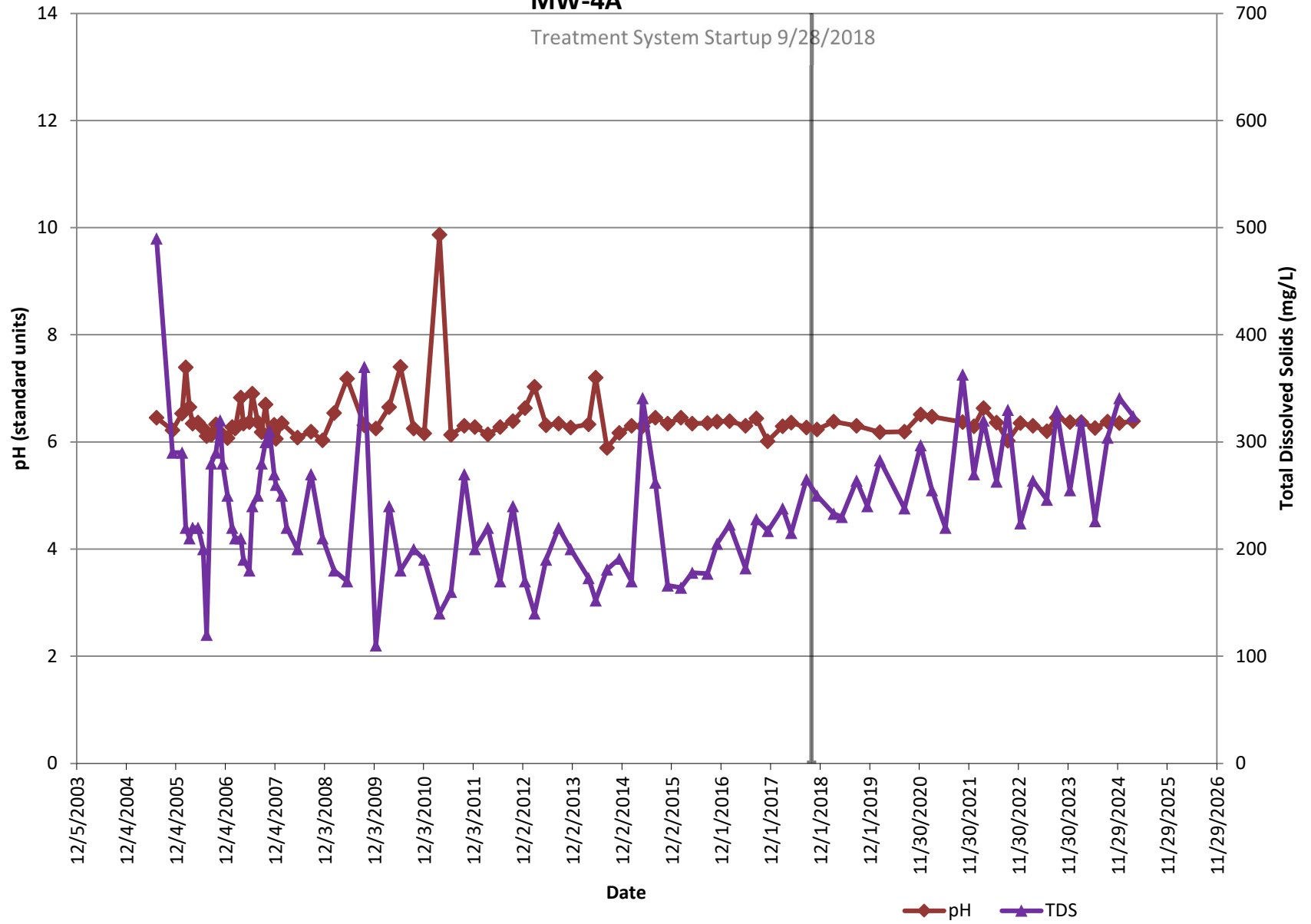
LDA Shallow Monitoring Wells

MW-4A



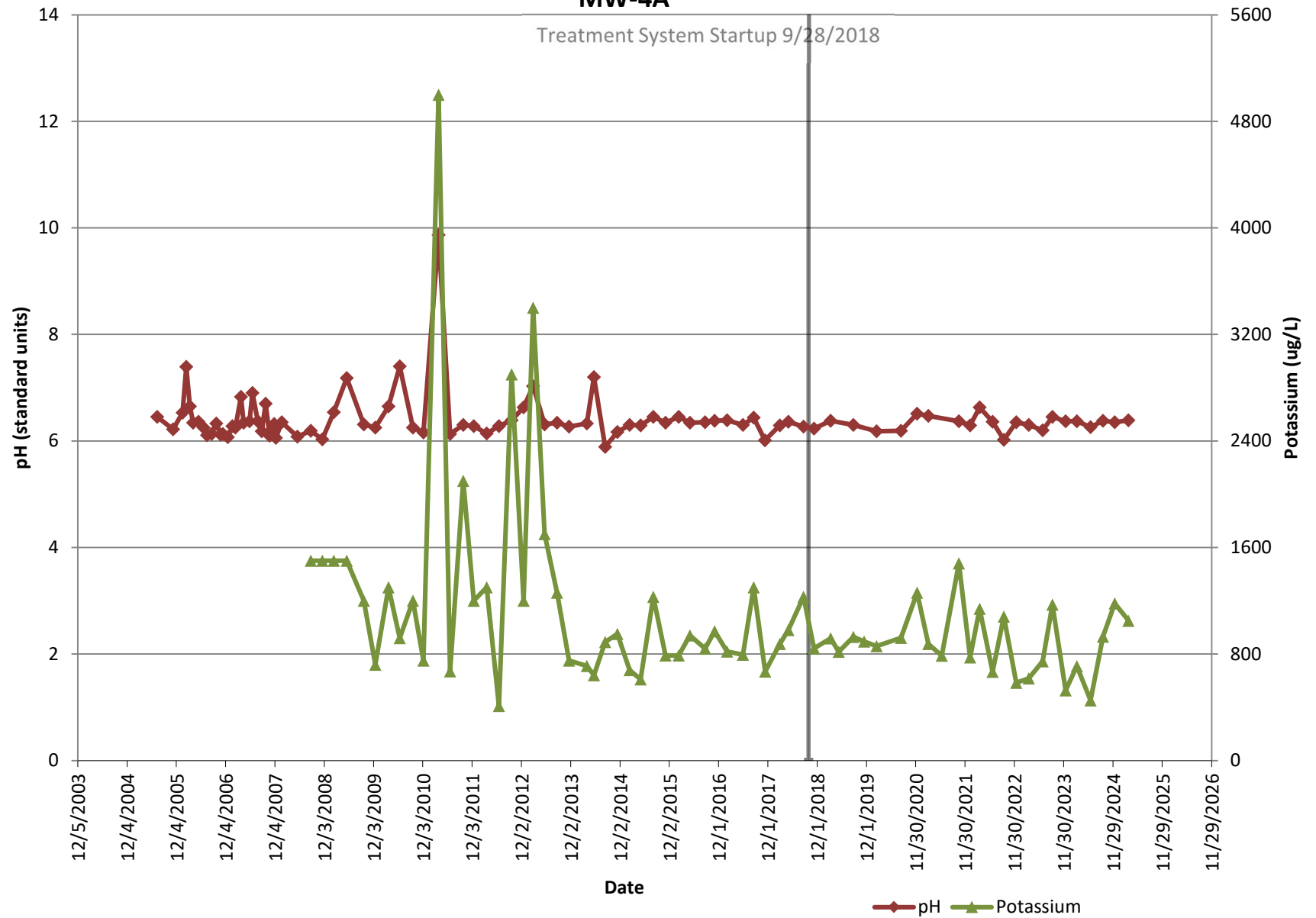
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MW-4A

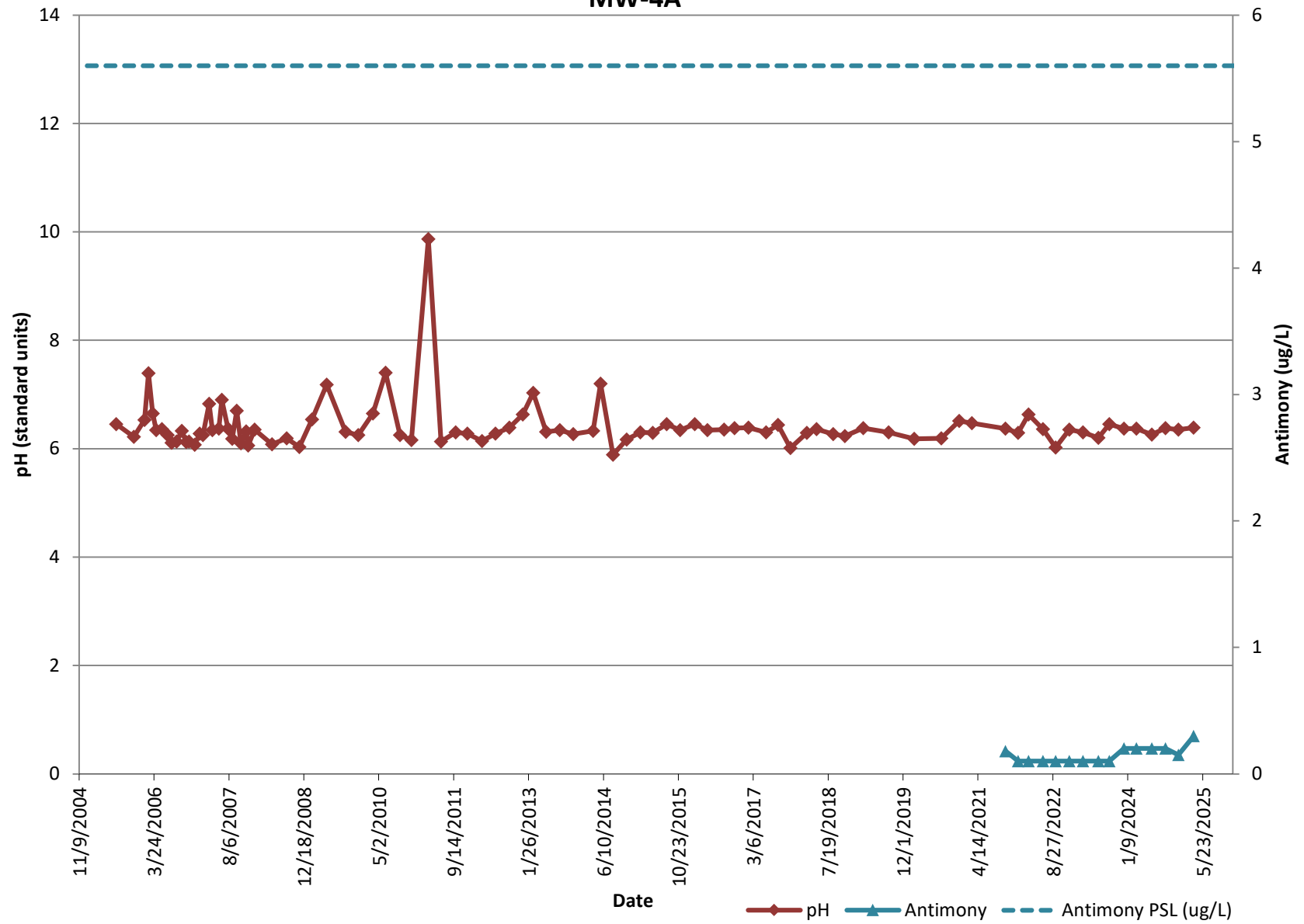


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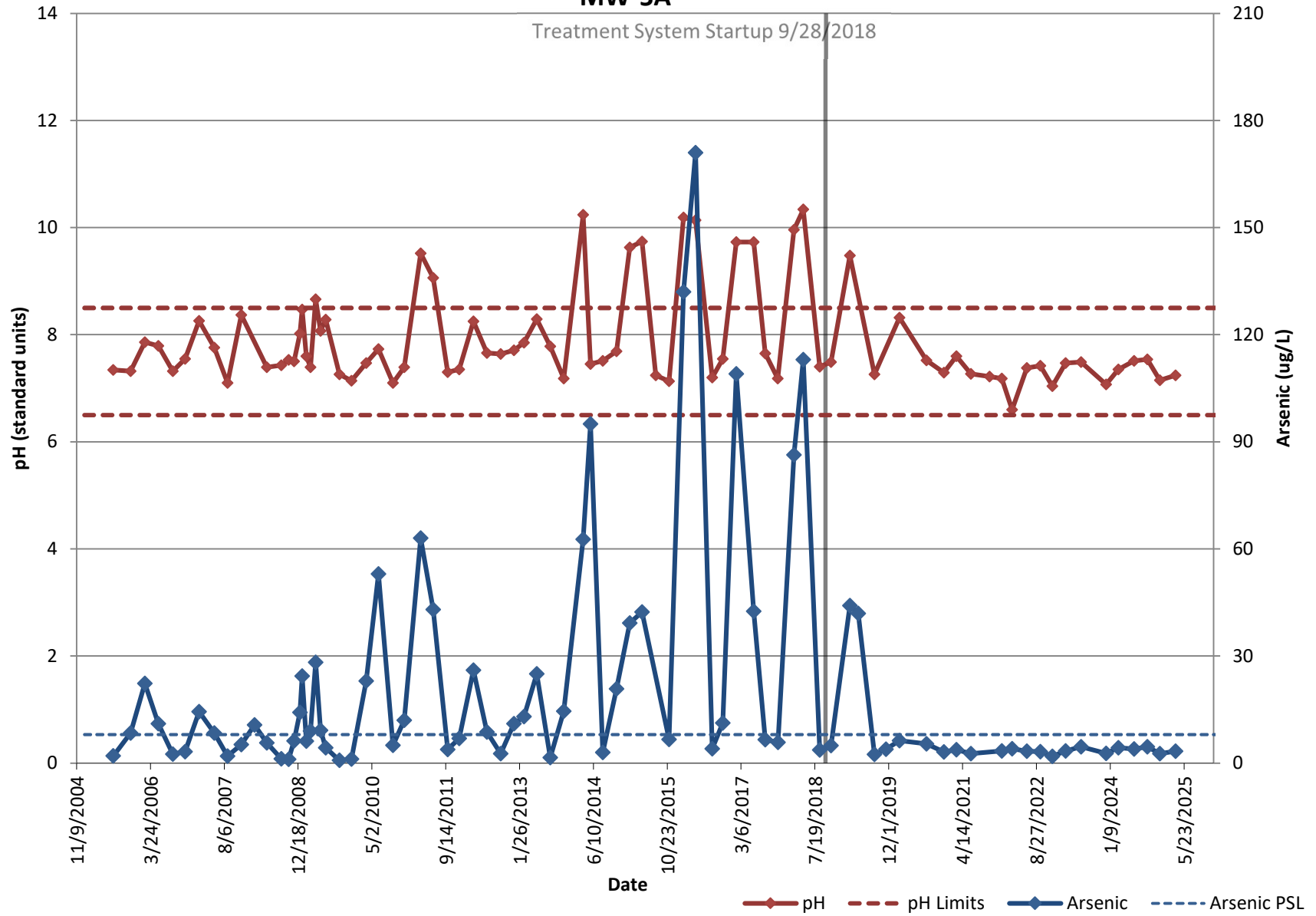
MW-4A



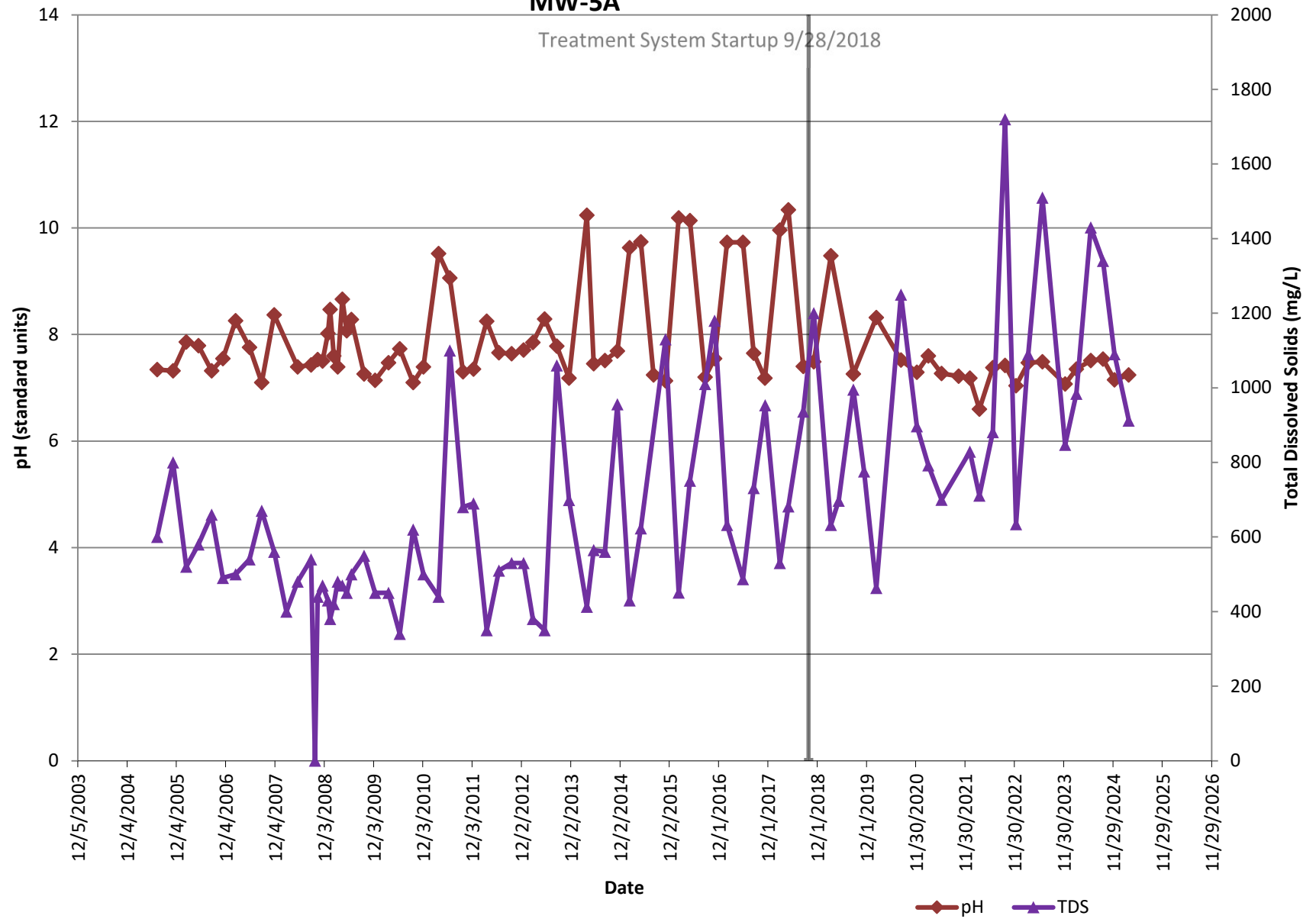
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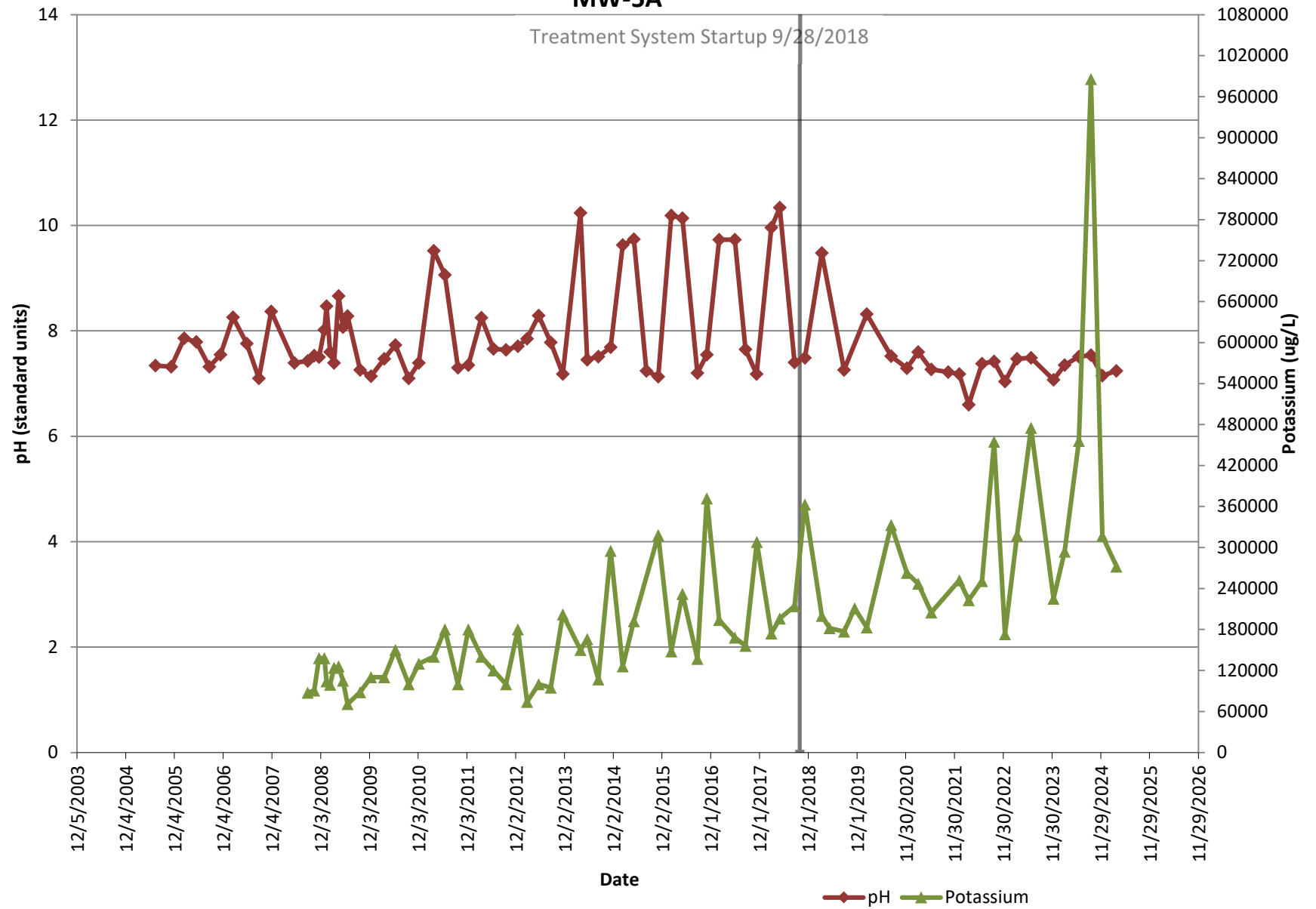
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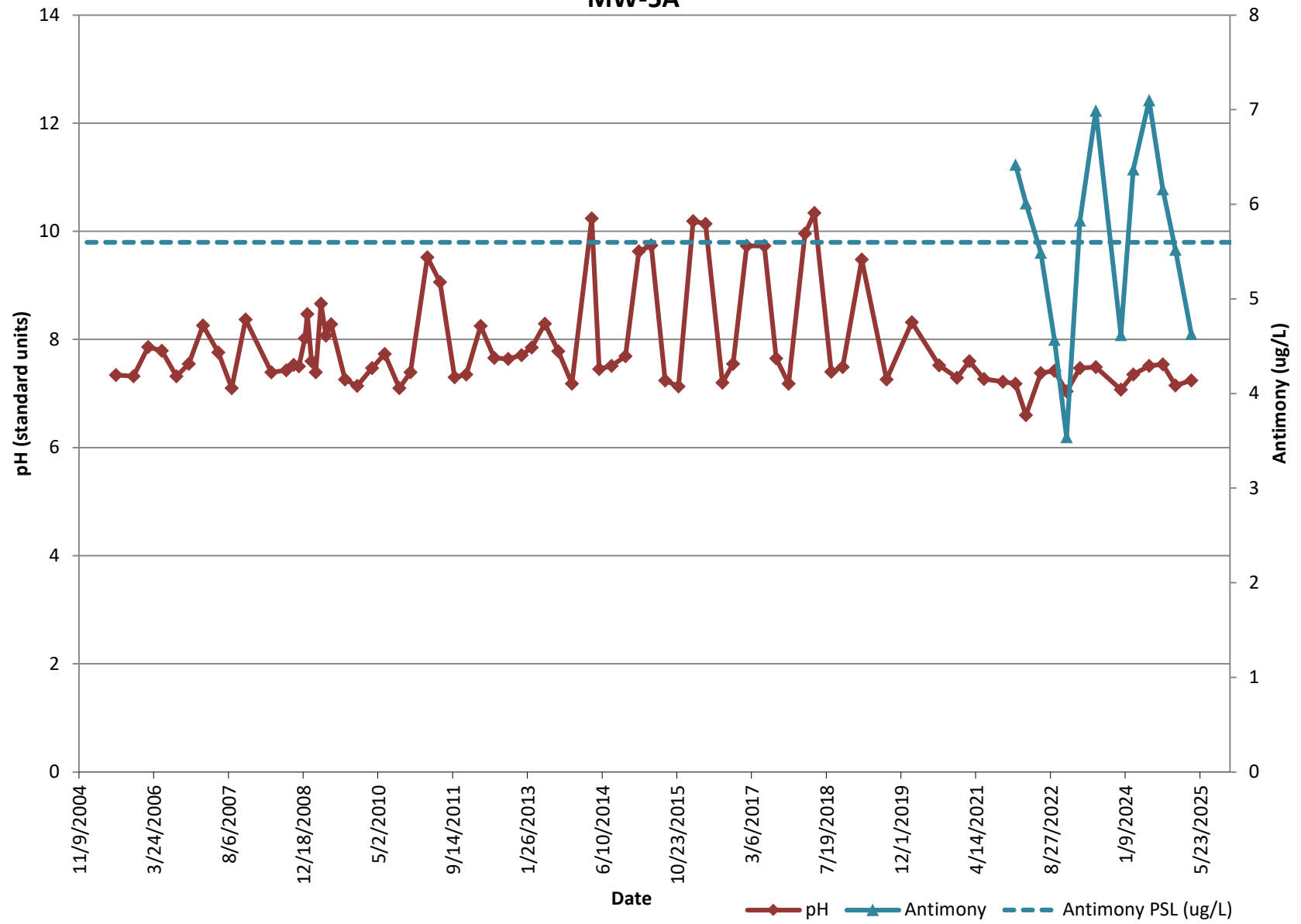
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LDA Shallow Monitoring Wells MW-5A

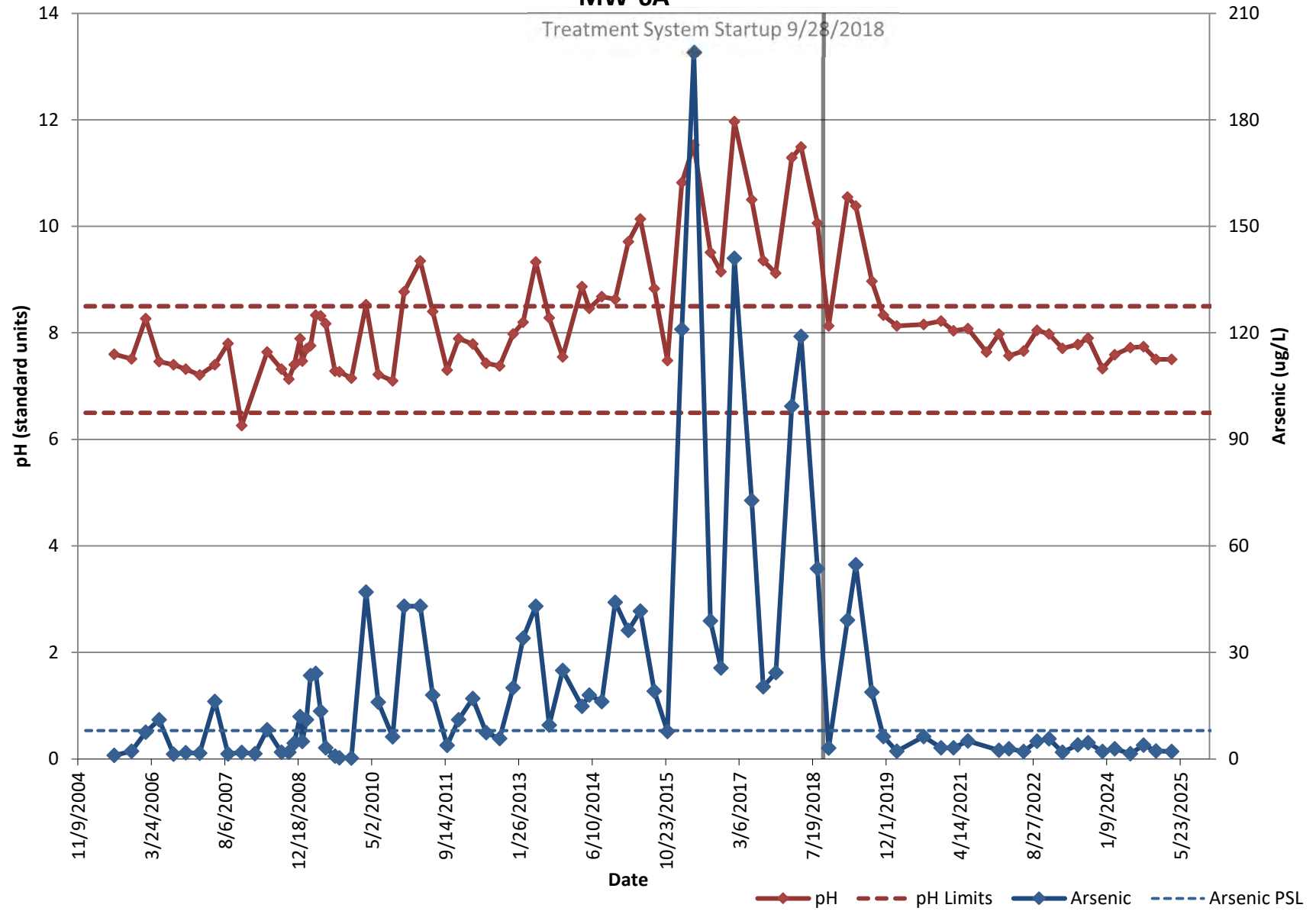


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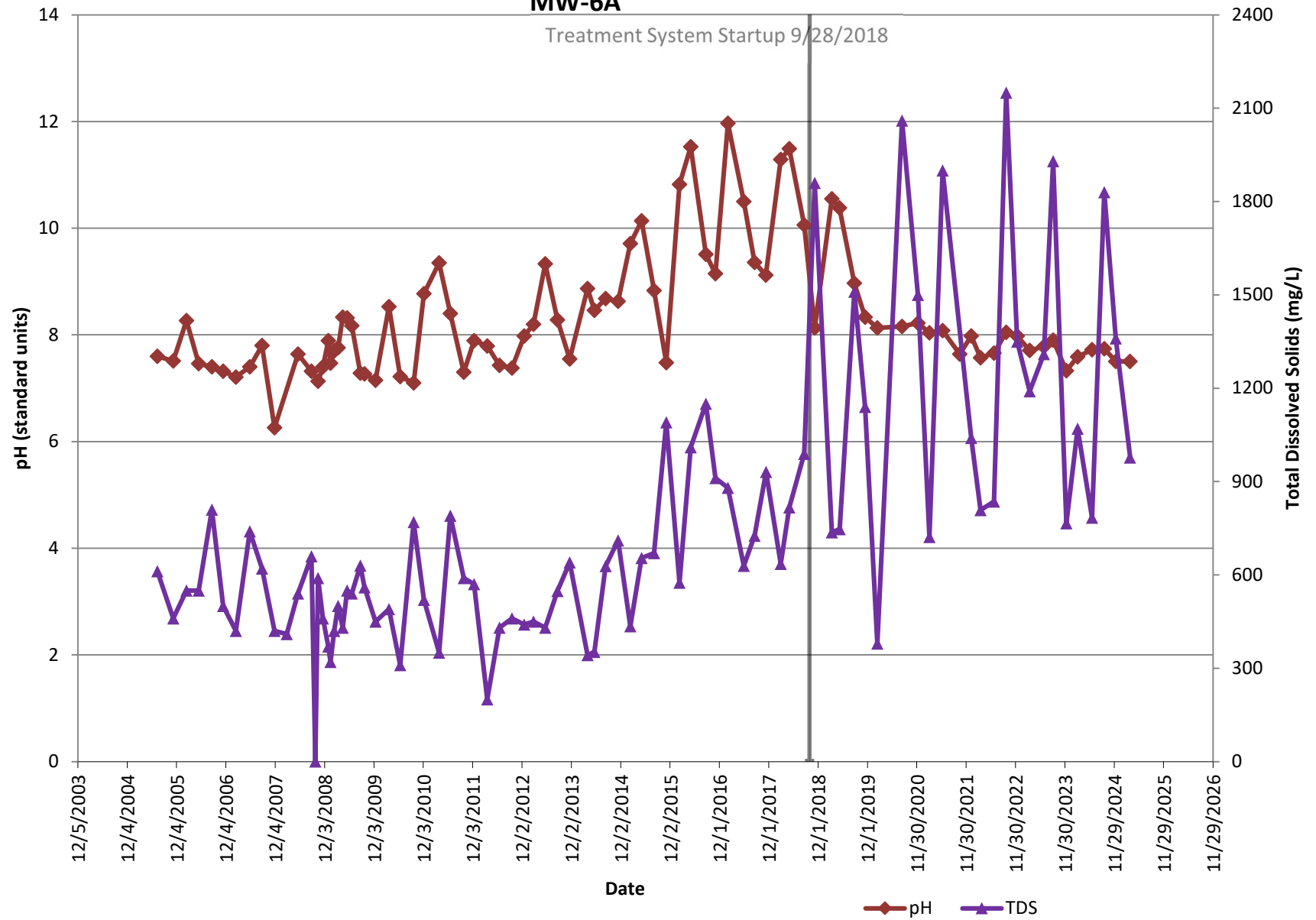


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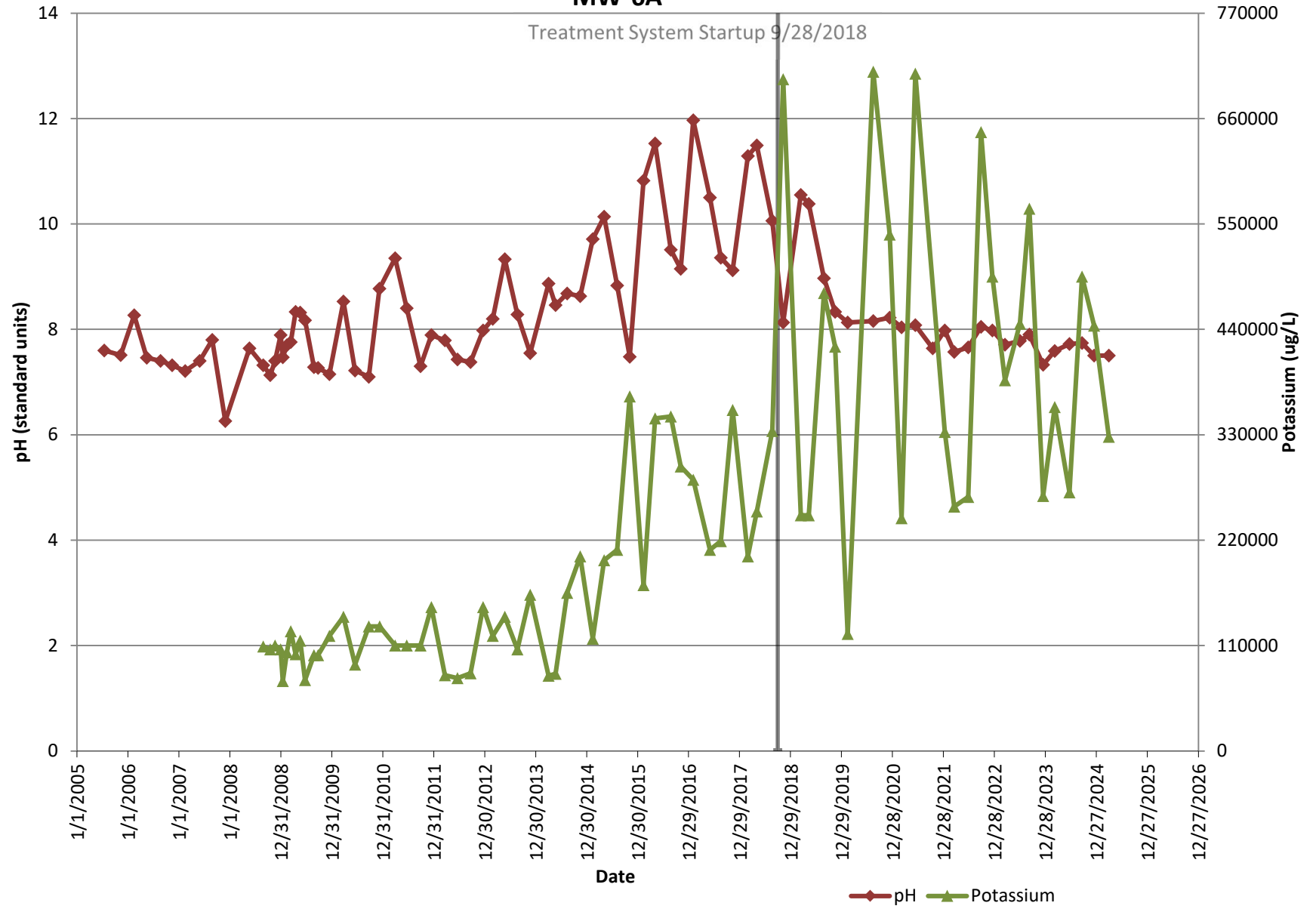
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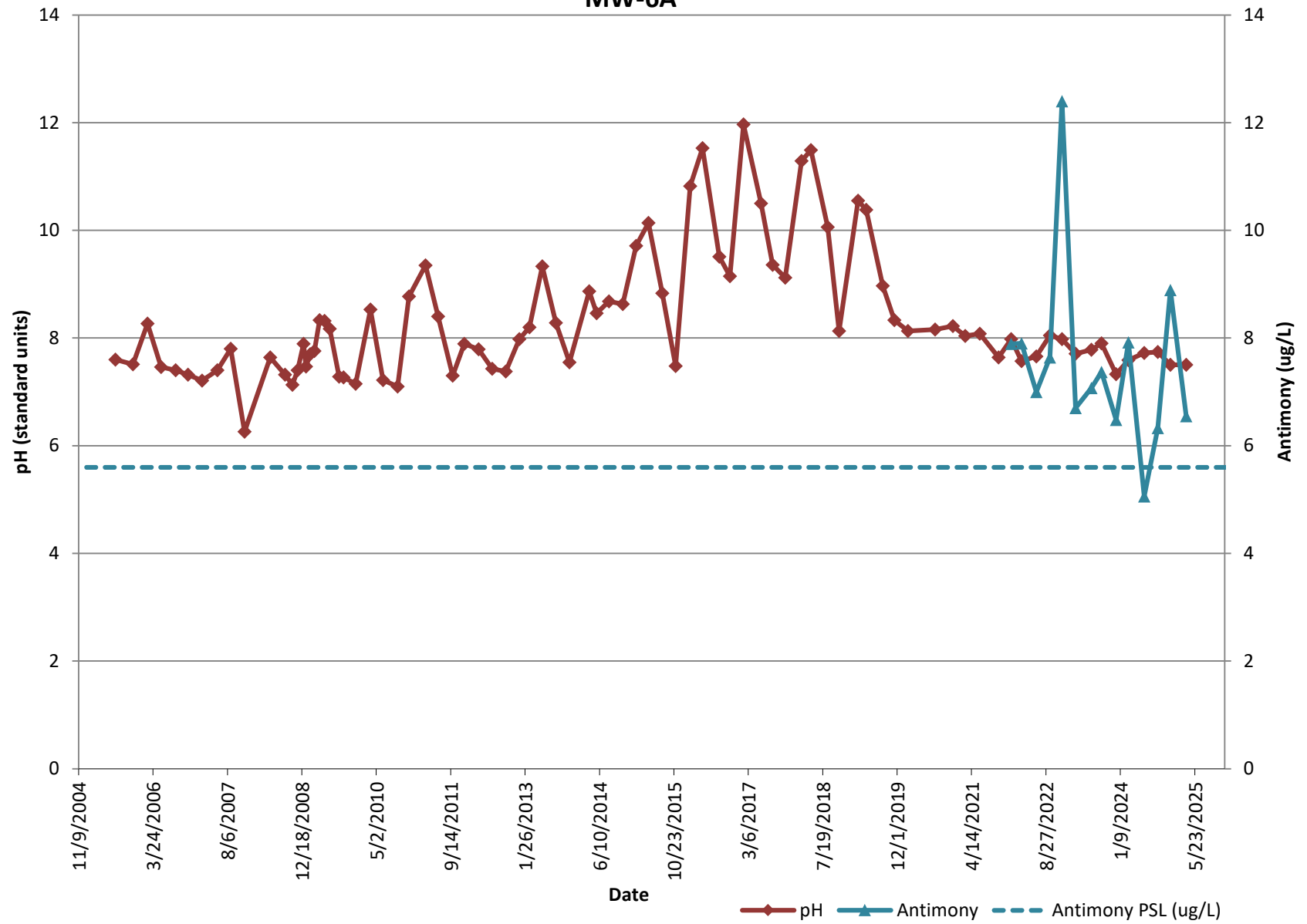
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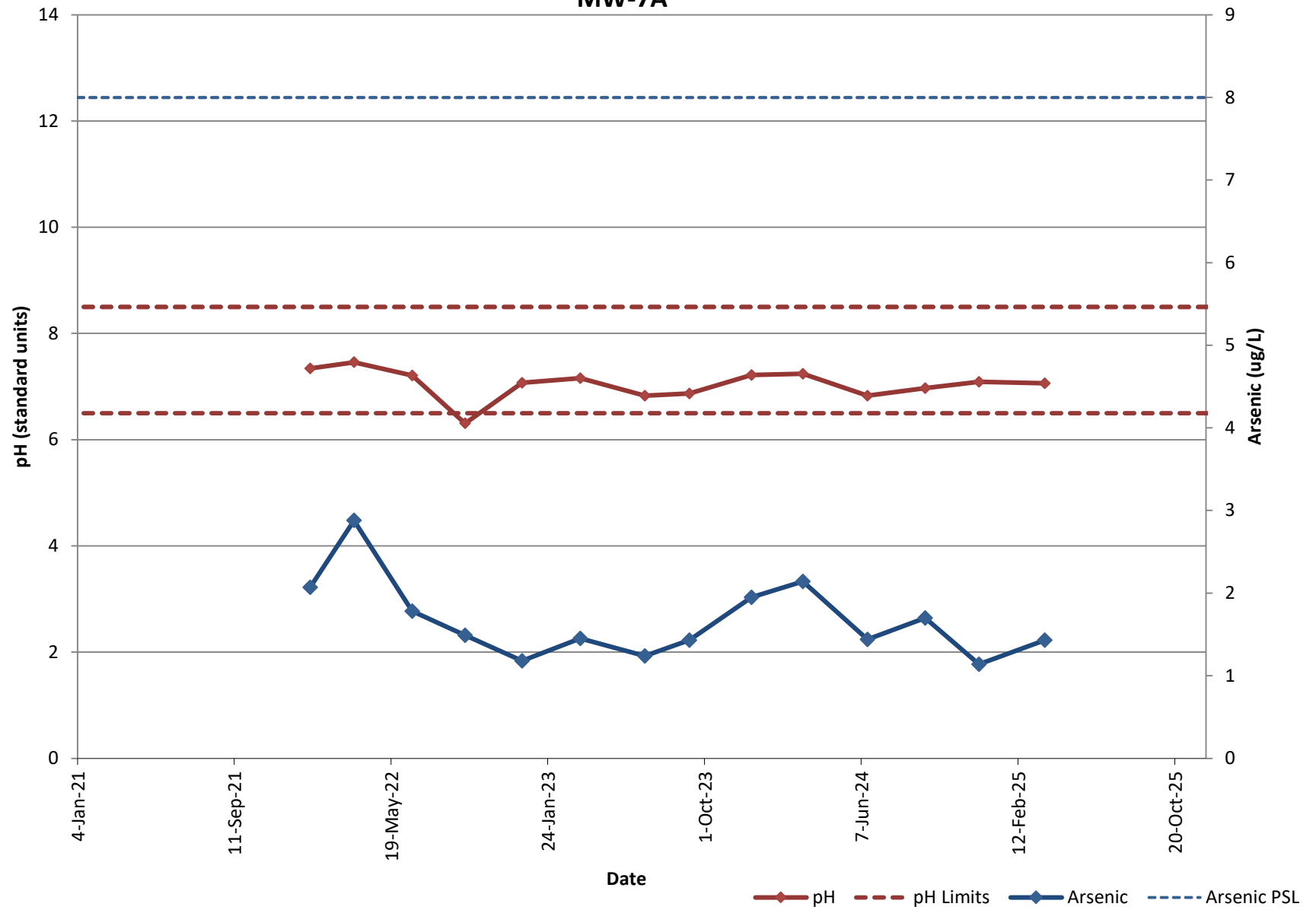
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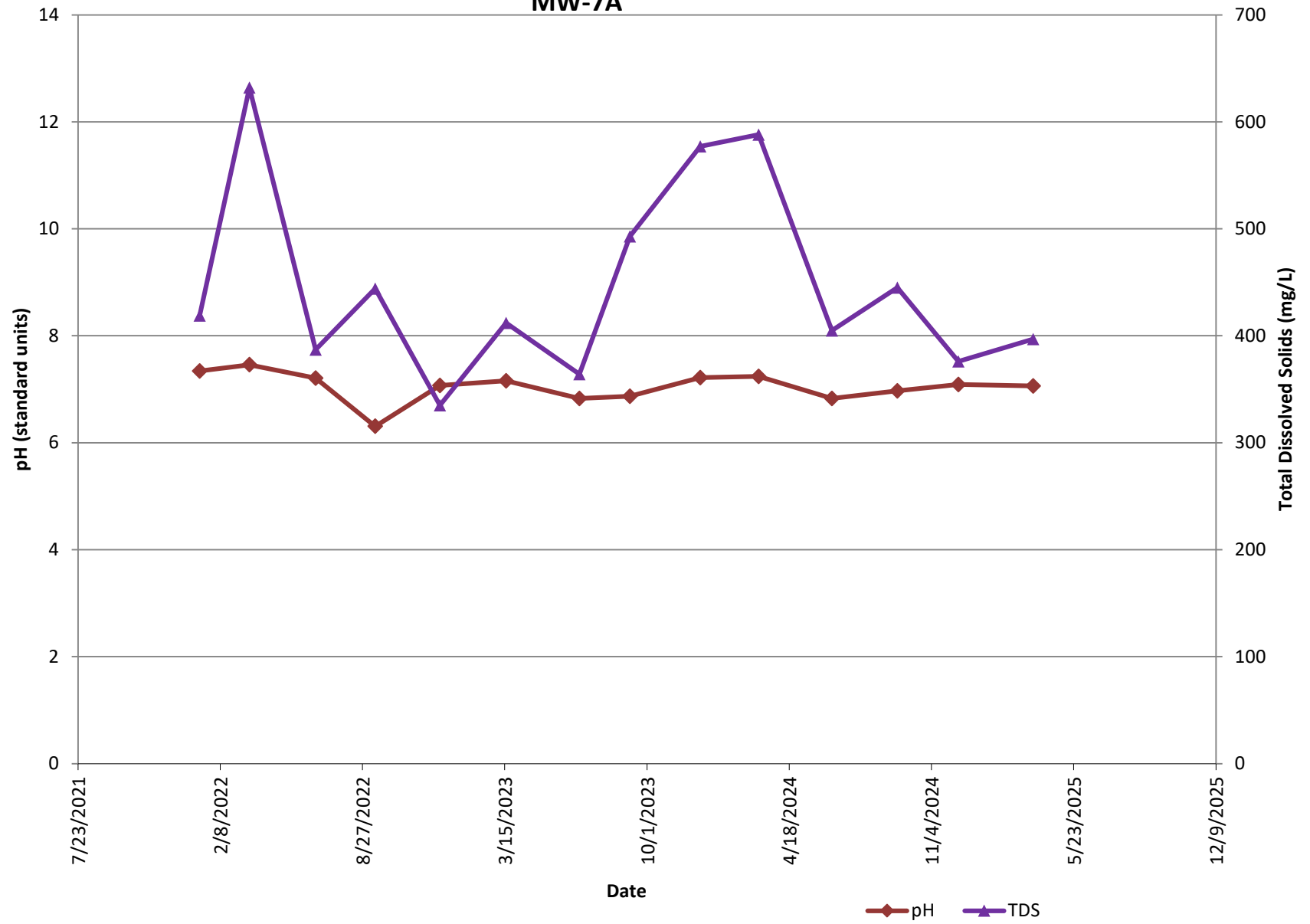
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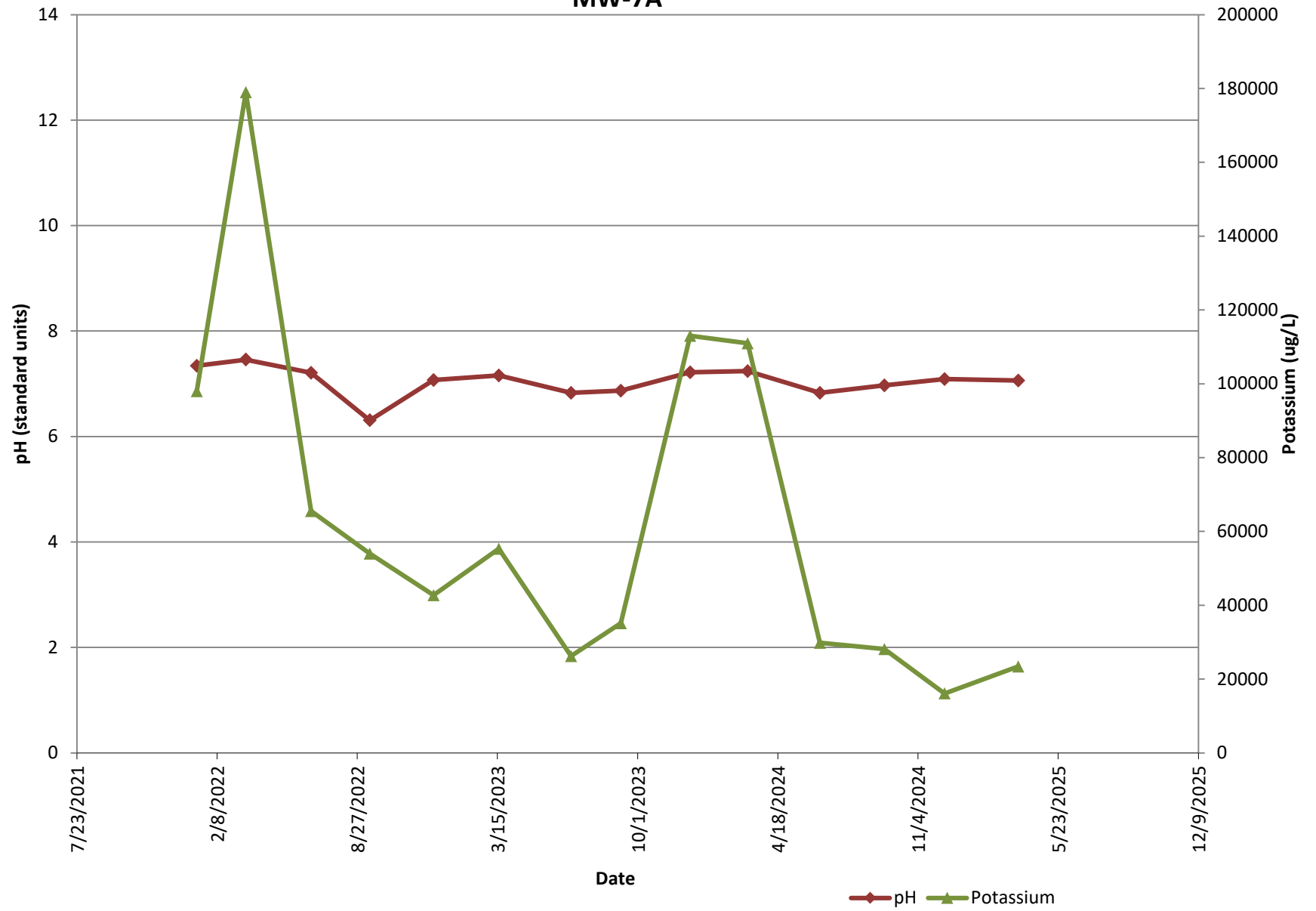
LDA Shallow Monitoring Wells MW-7A



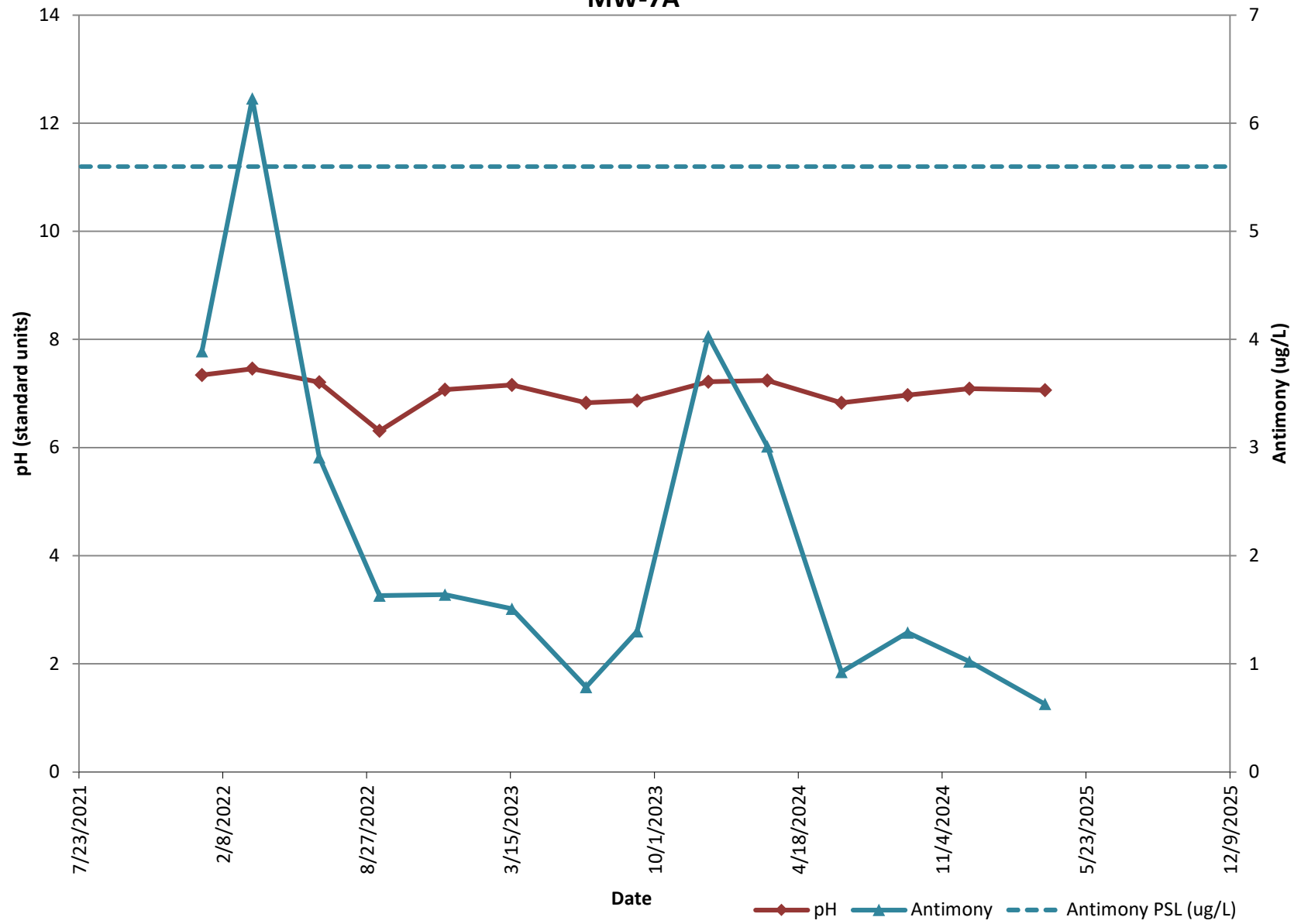
LDA Shallow Monitoring Wells MW-7A



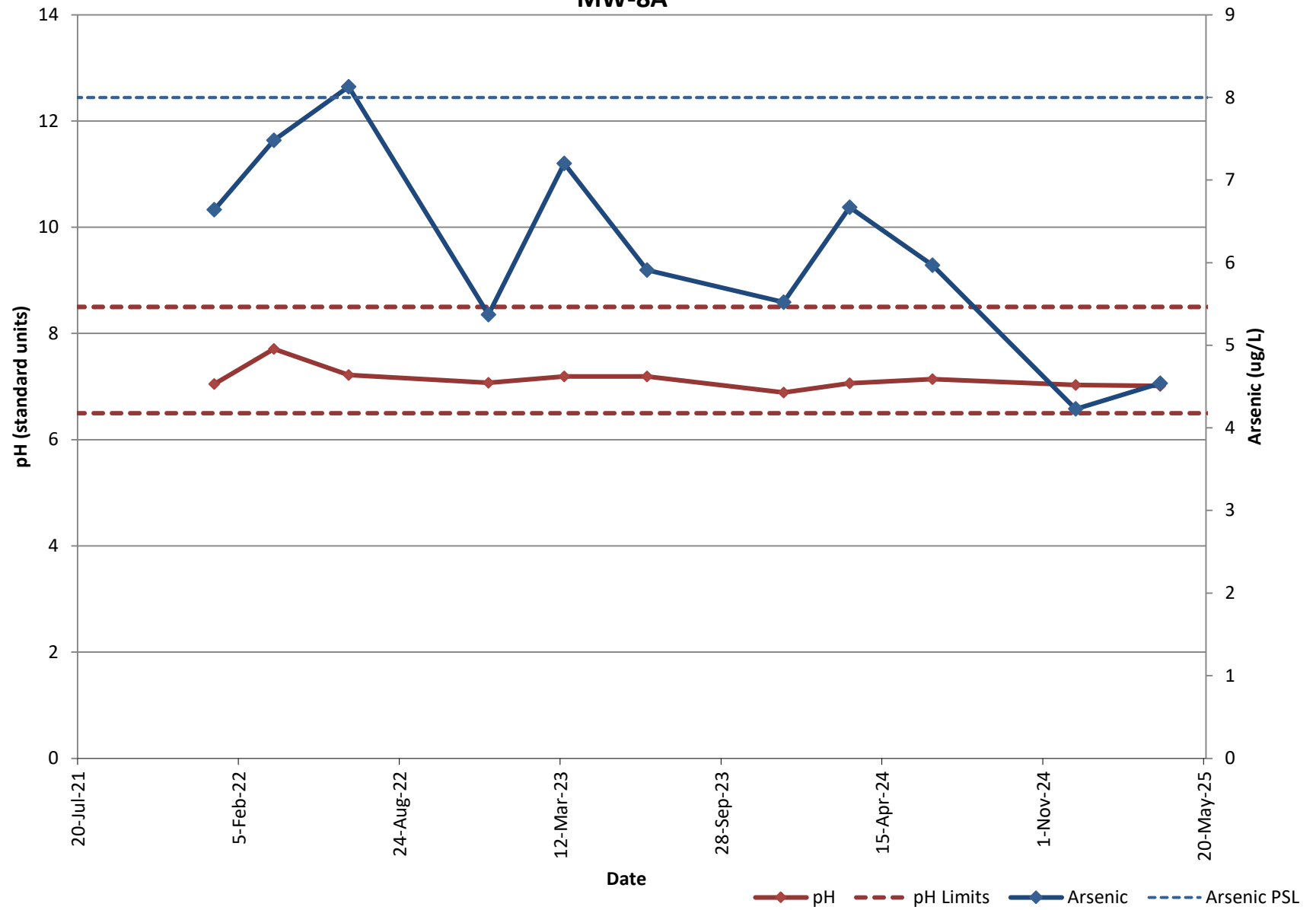
LDA Shallow Monitoring Wells MW-7A



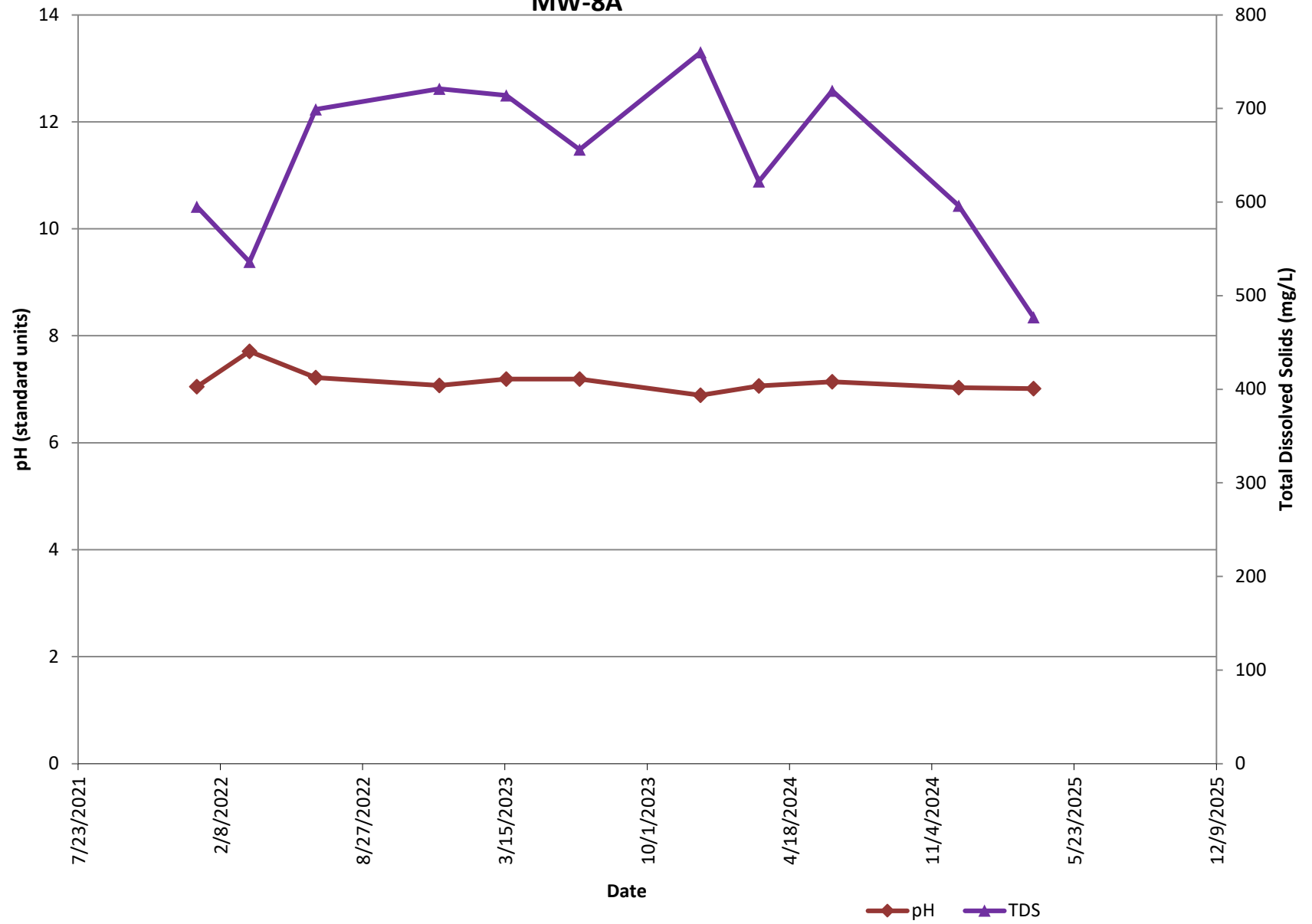
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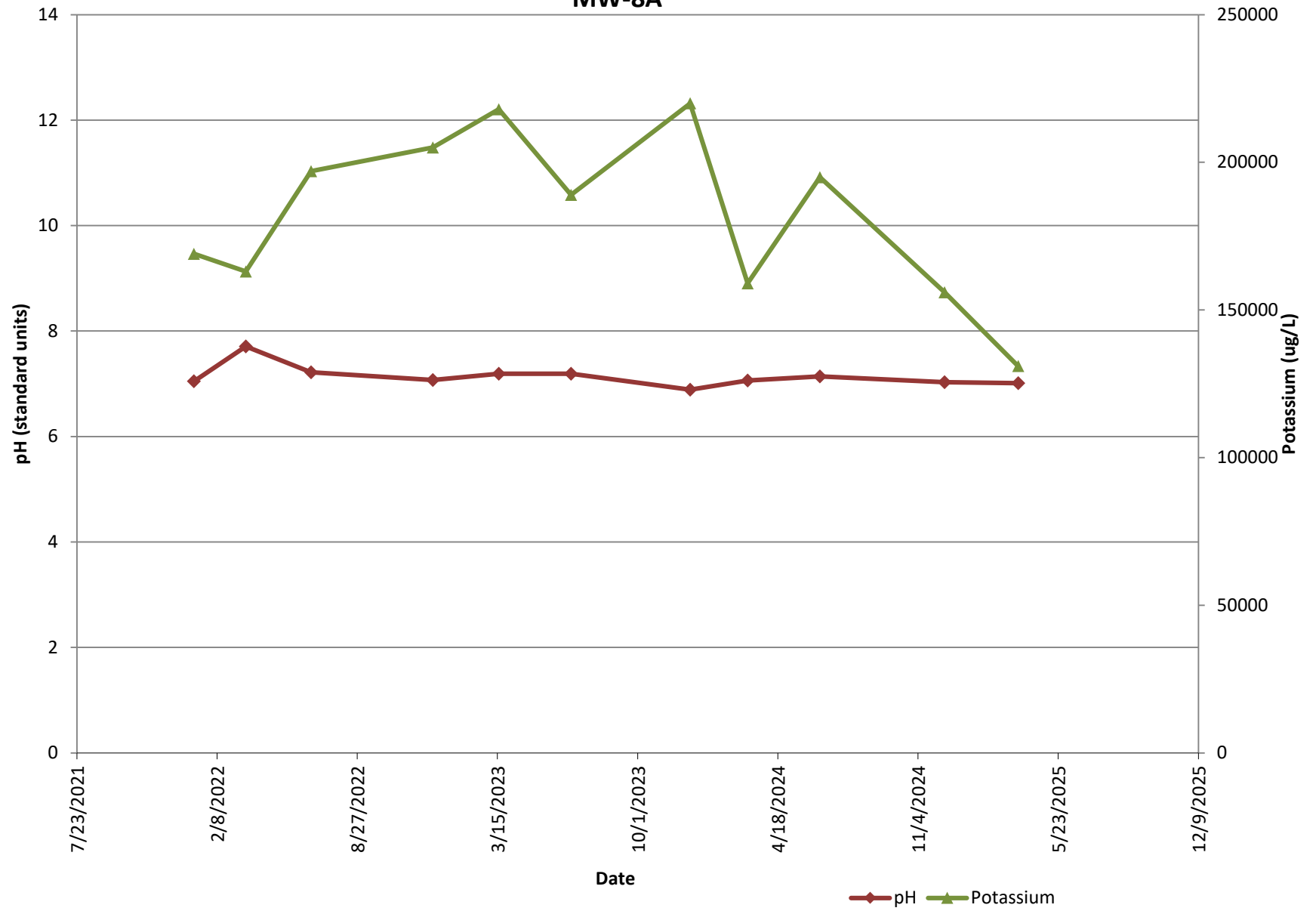
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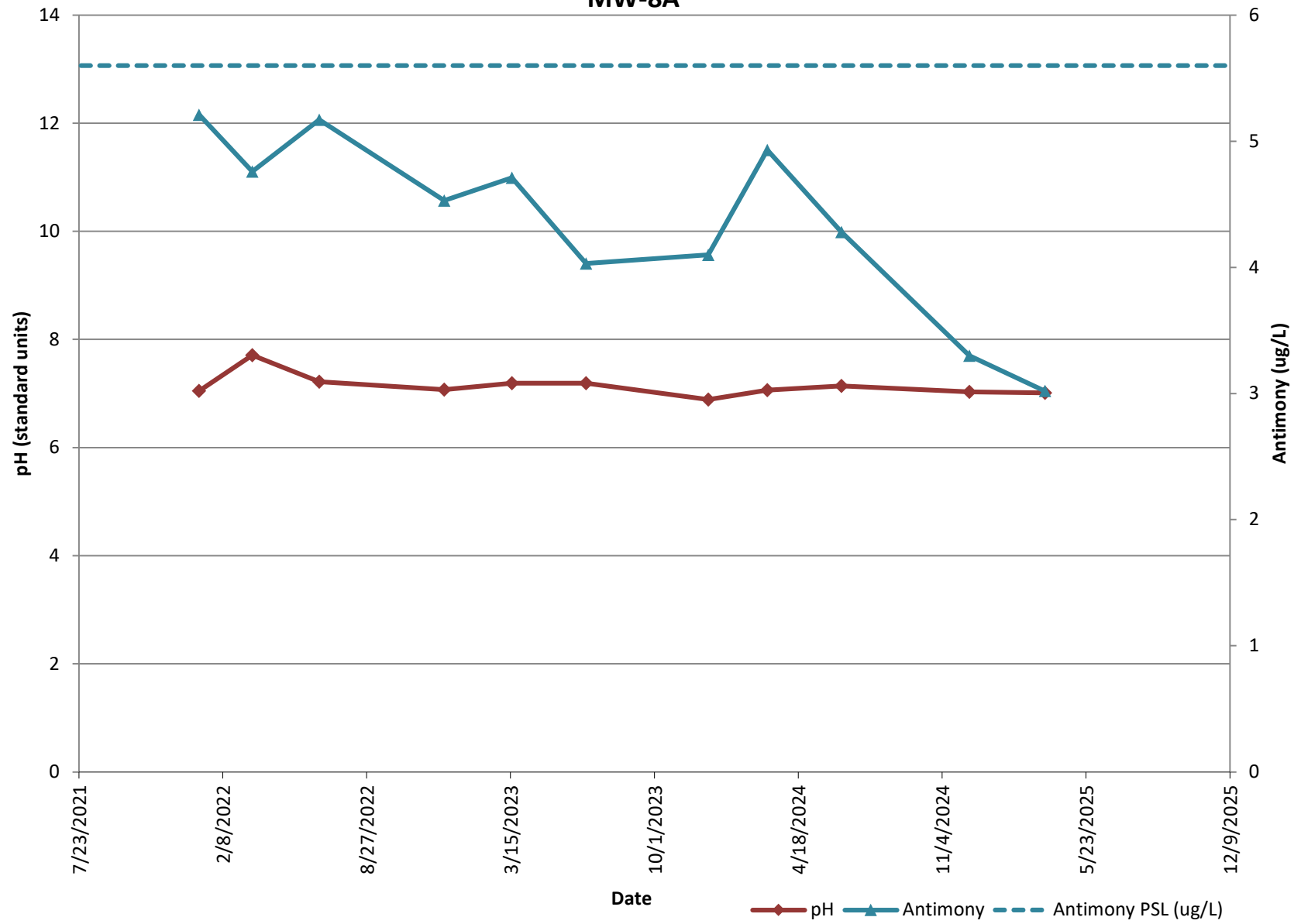
LDA Shallow Monitoring Wells MW-8A



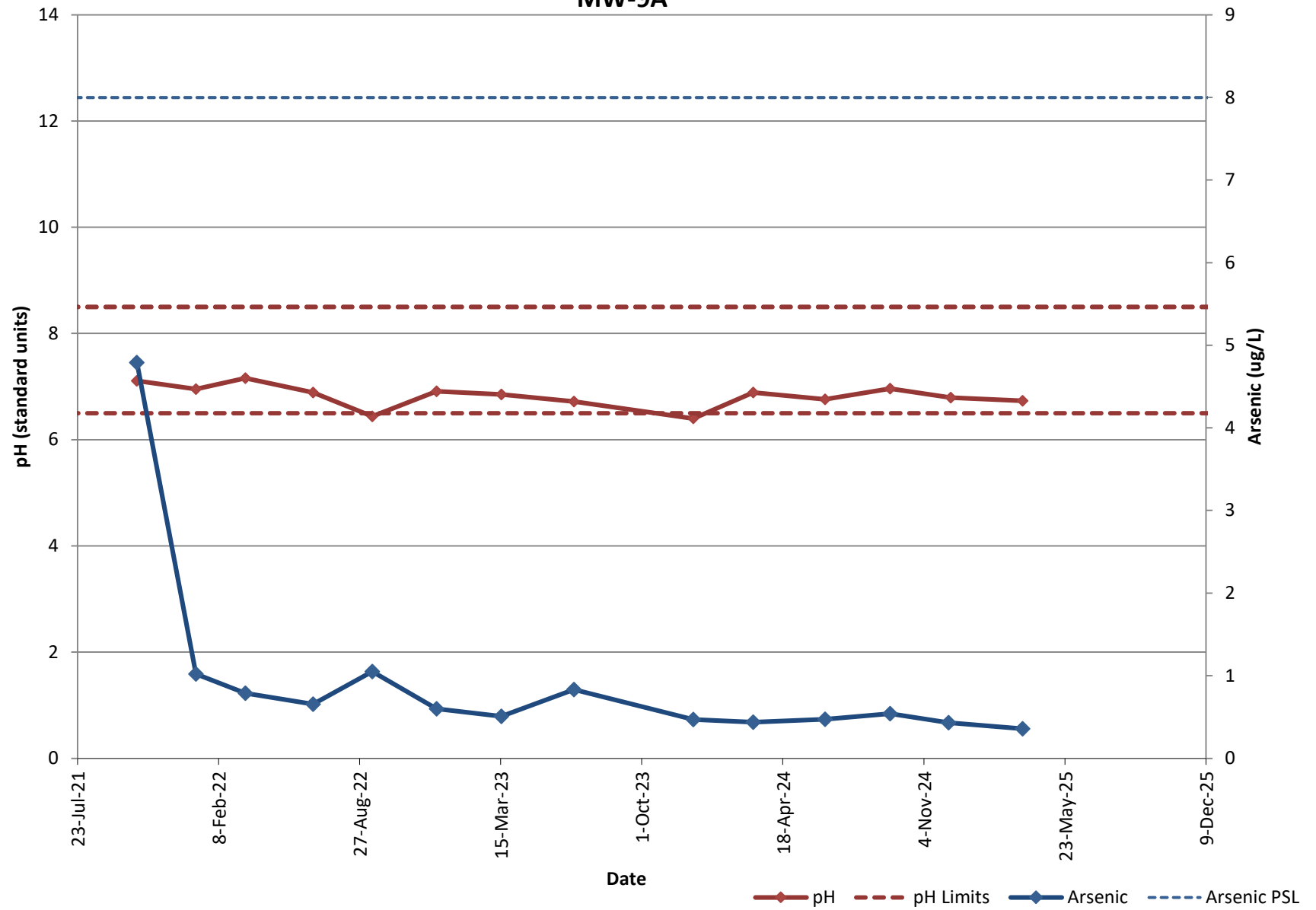
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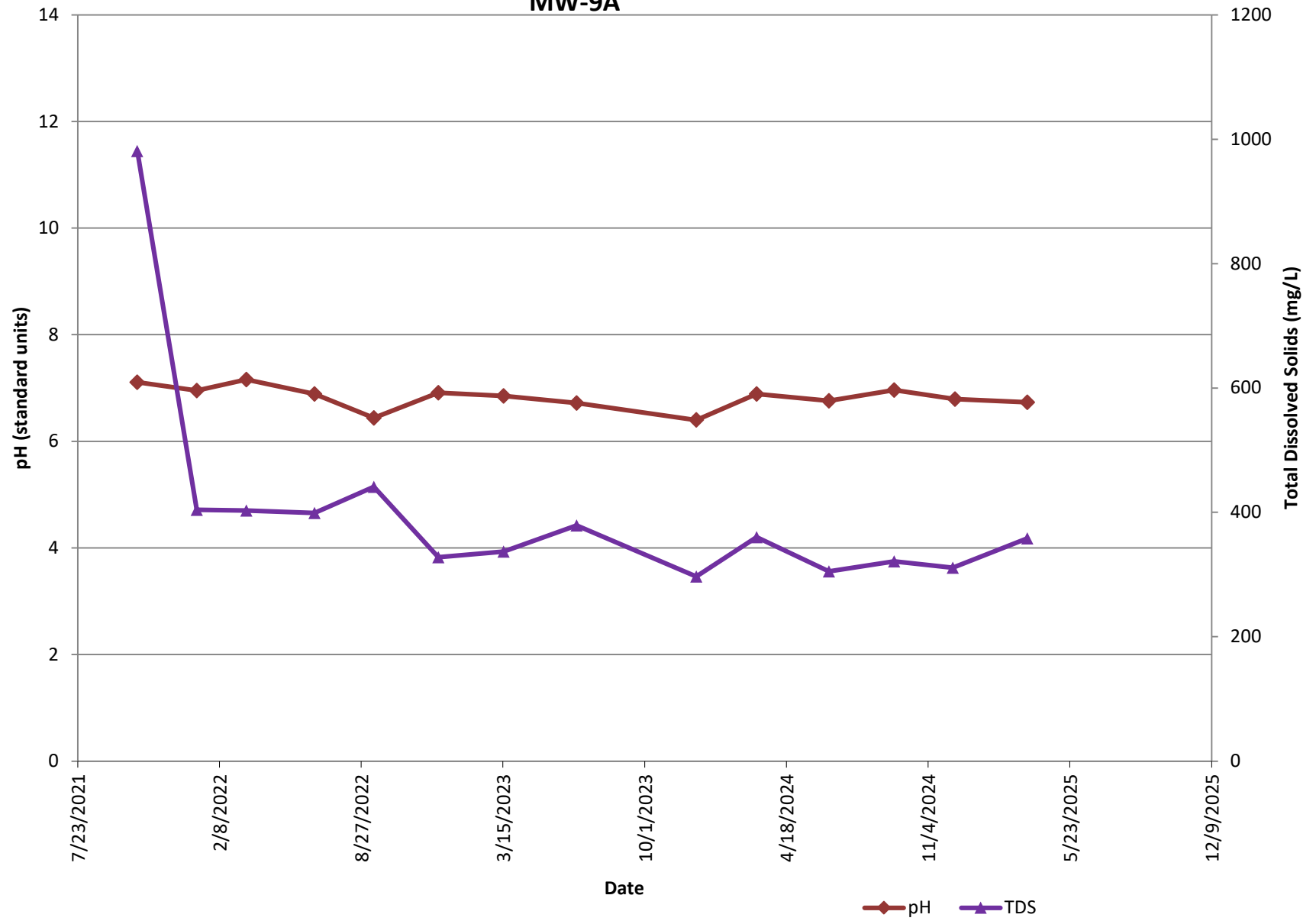
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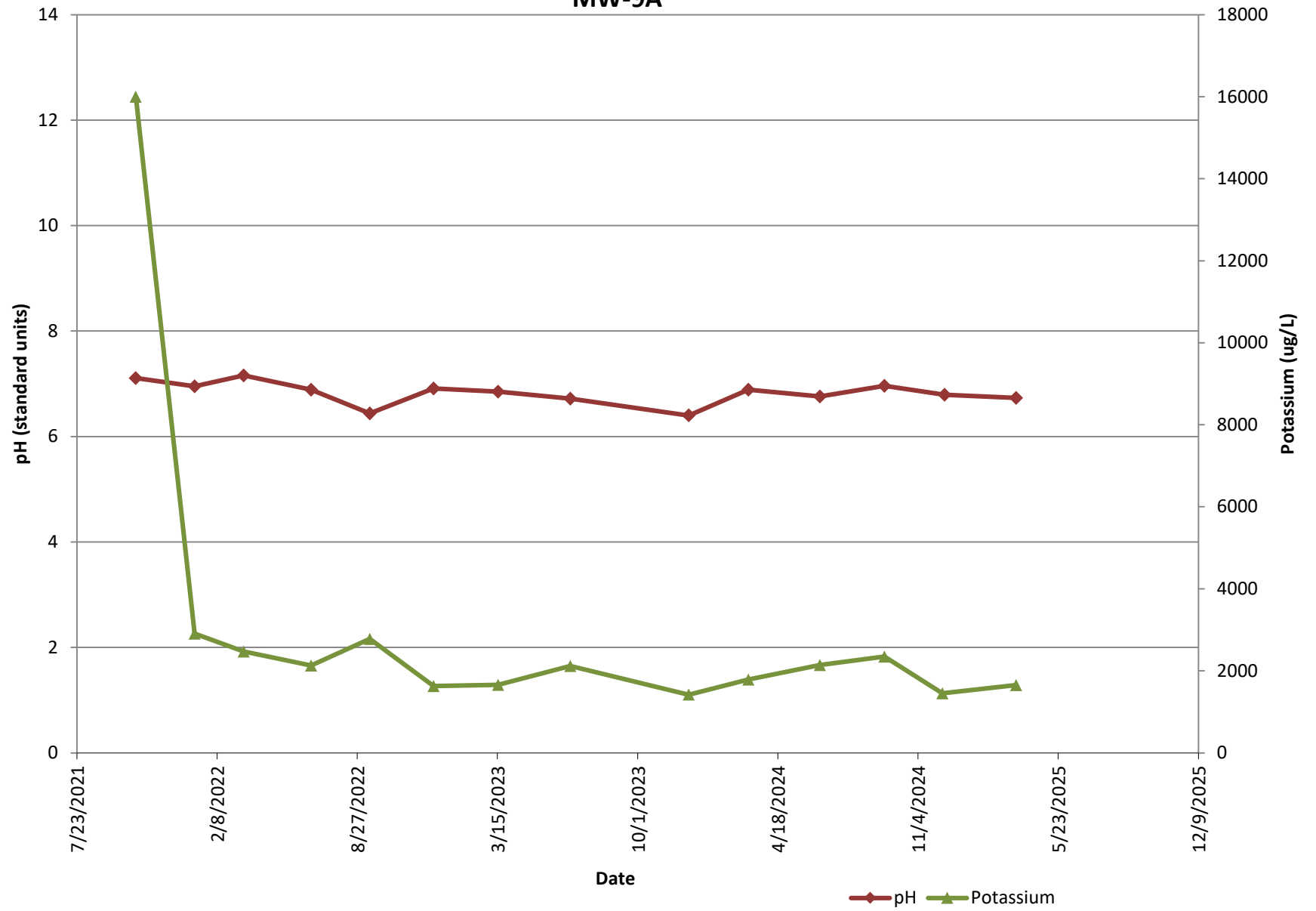
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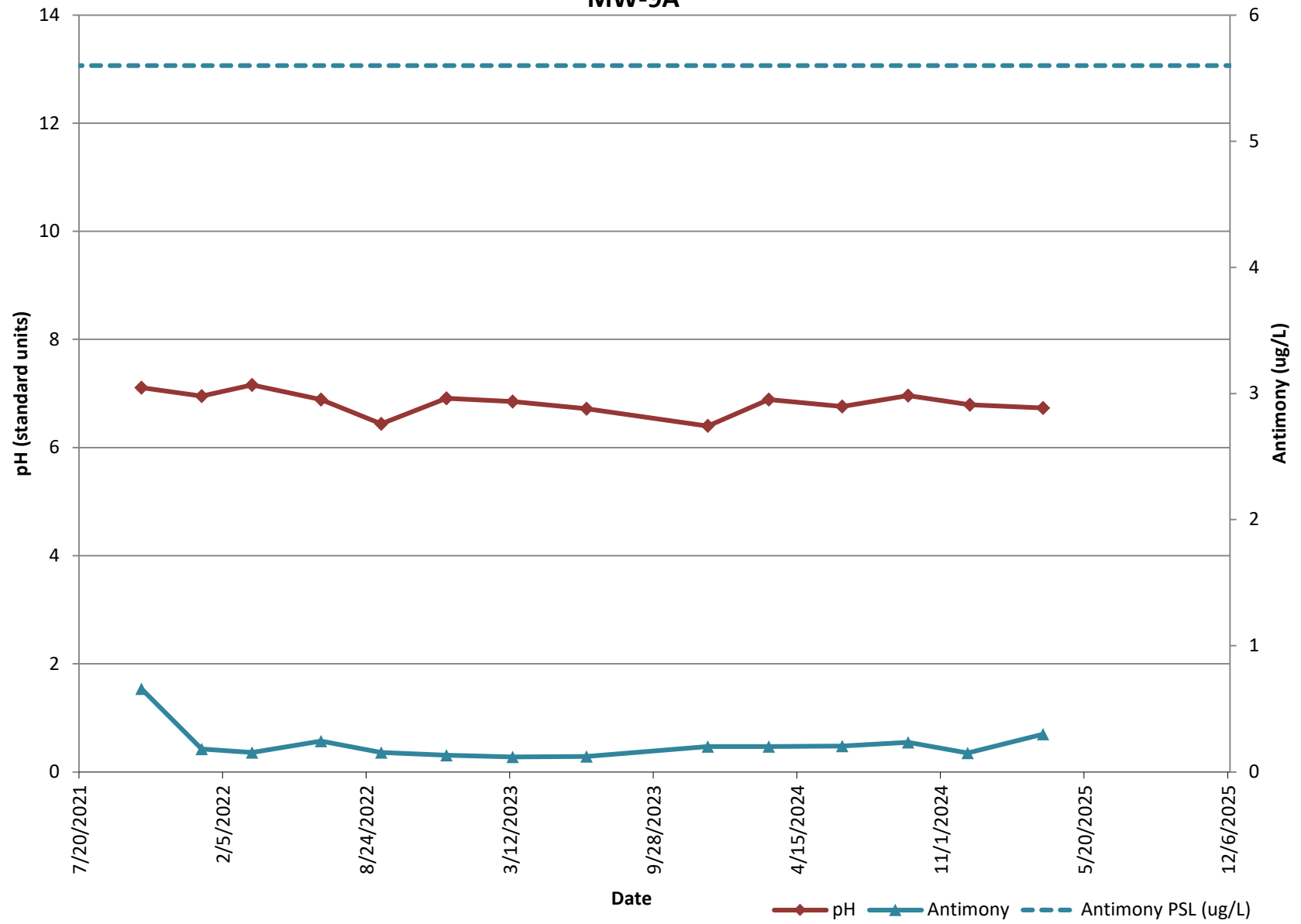
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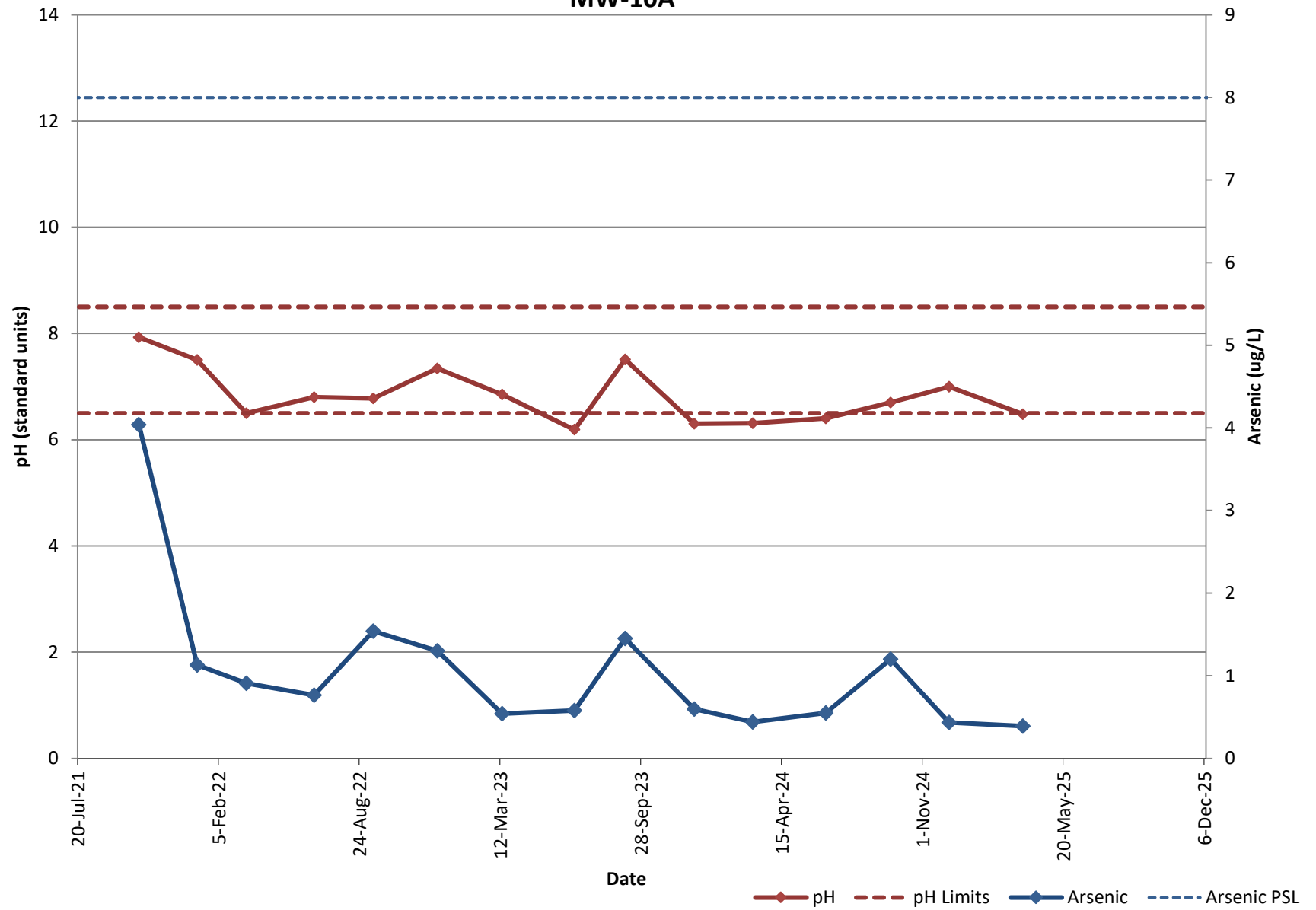
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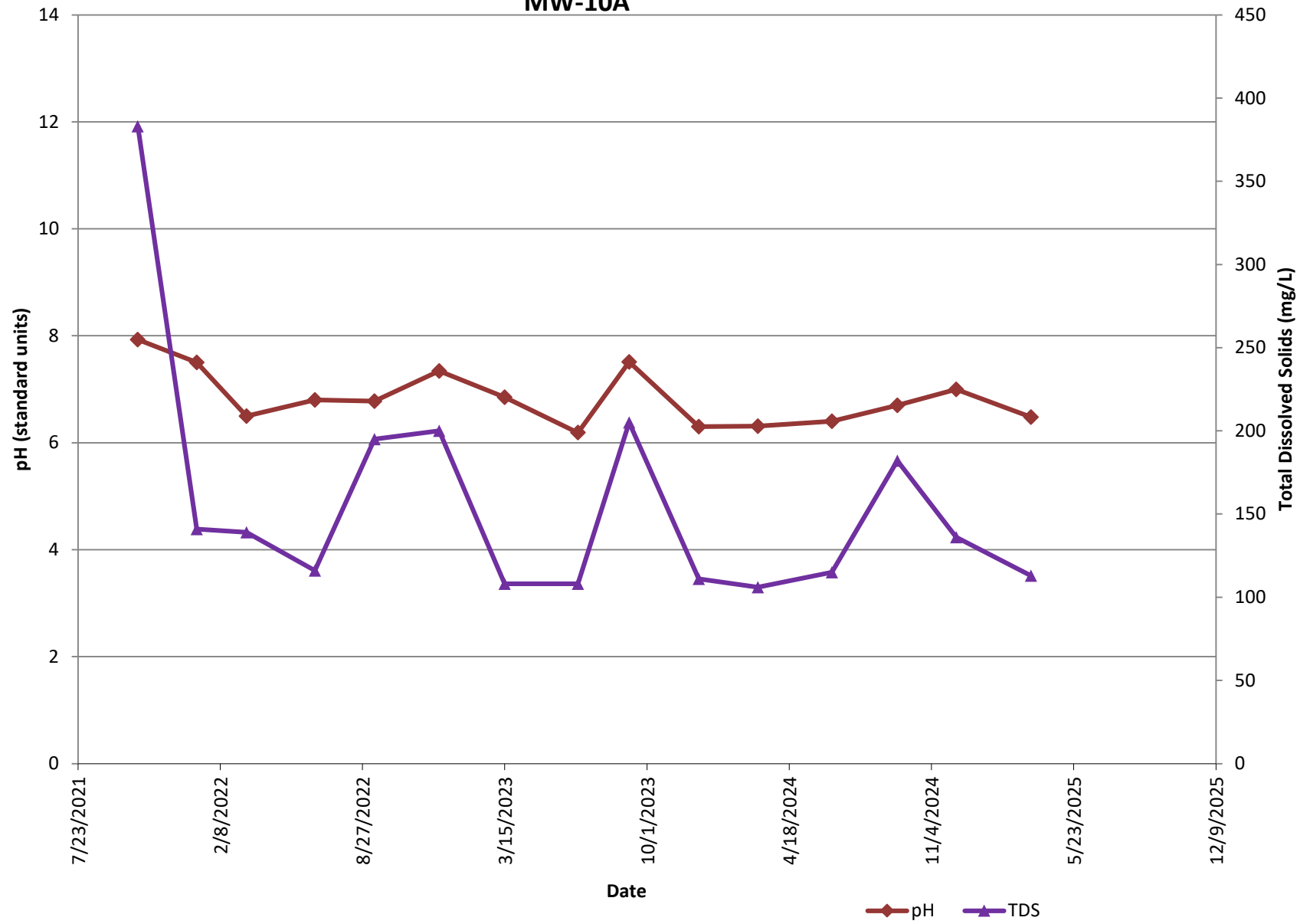
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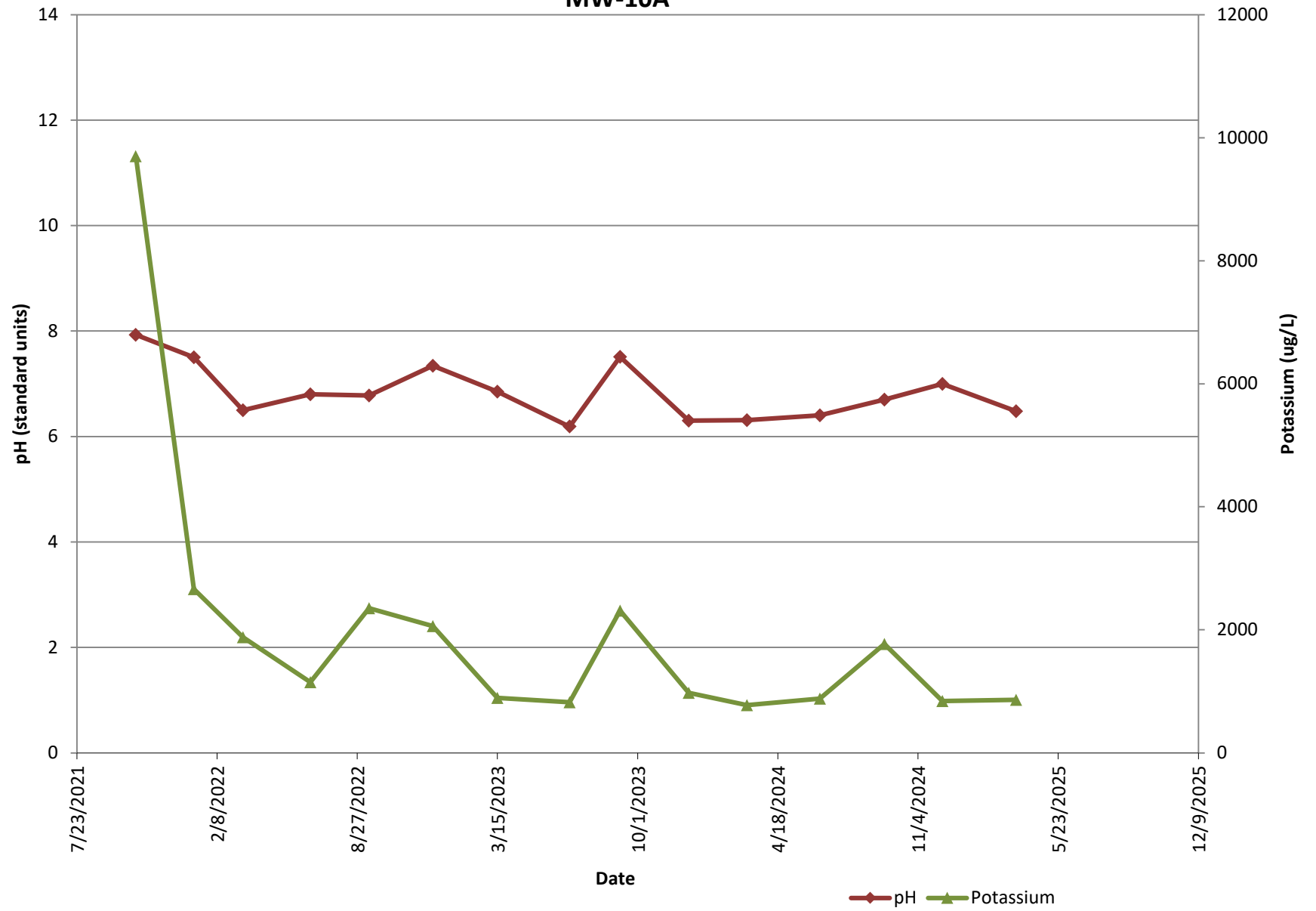
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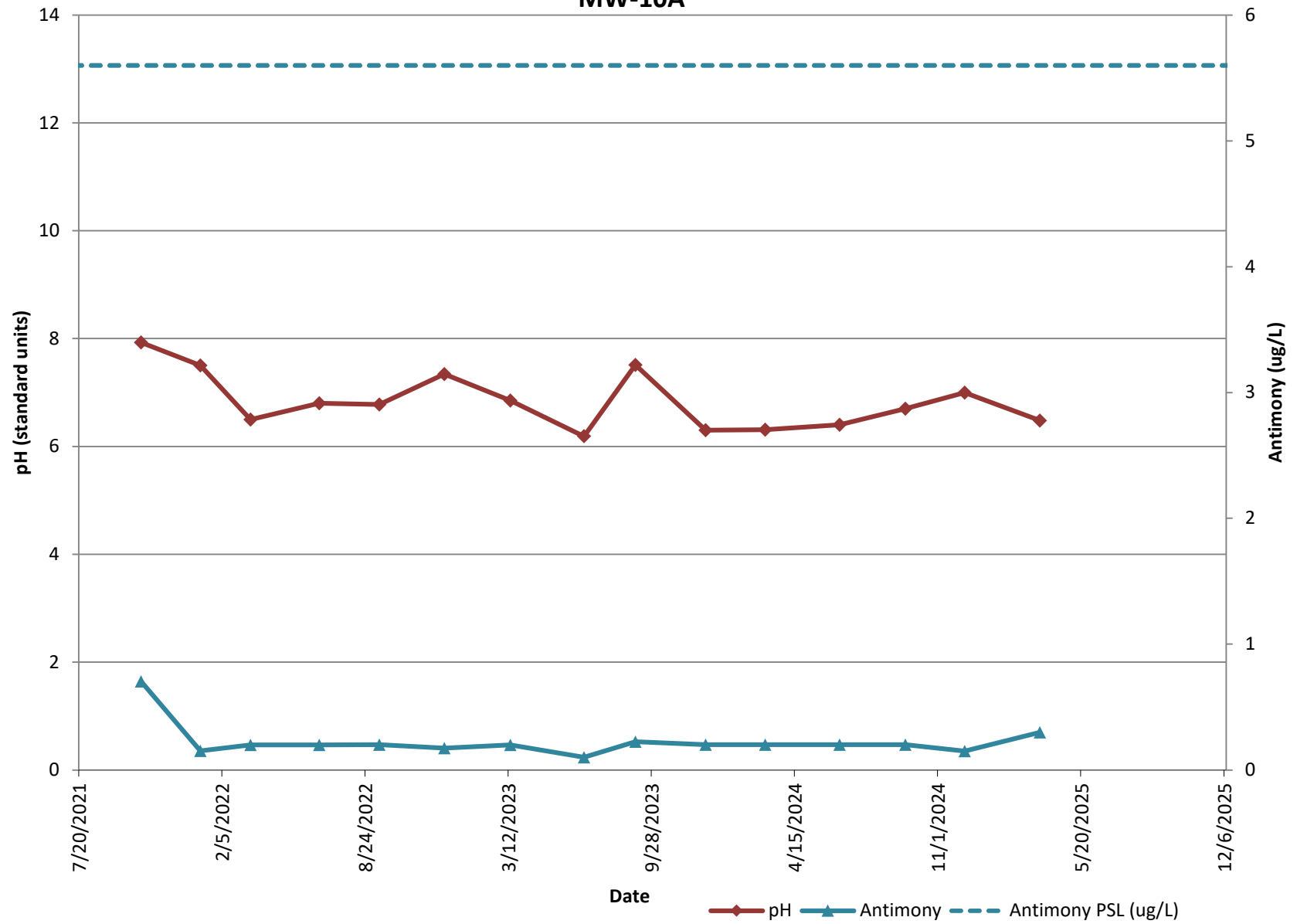
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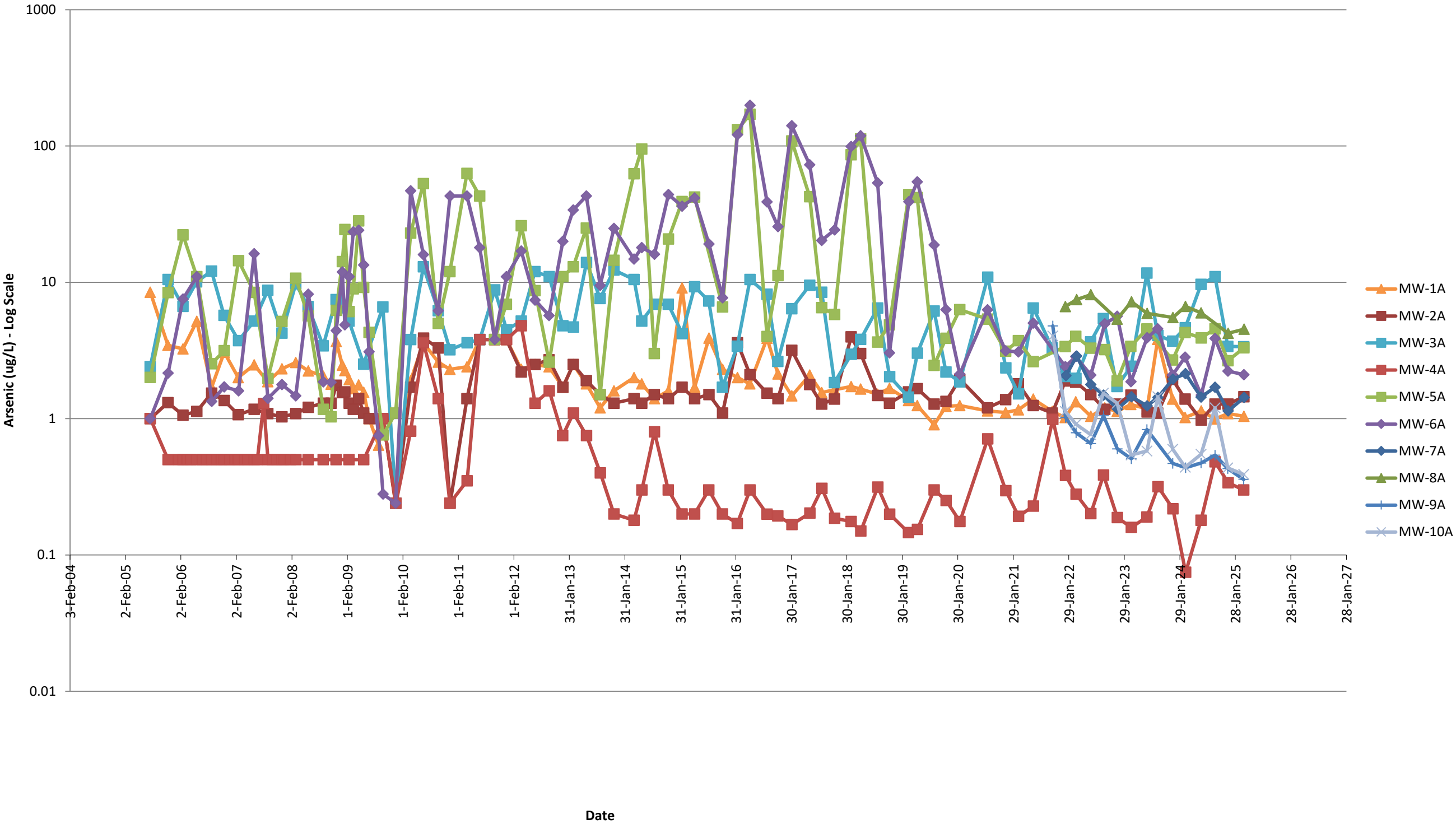
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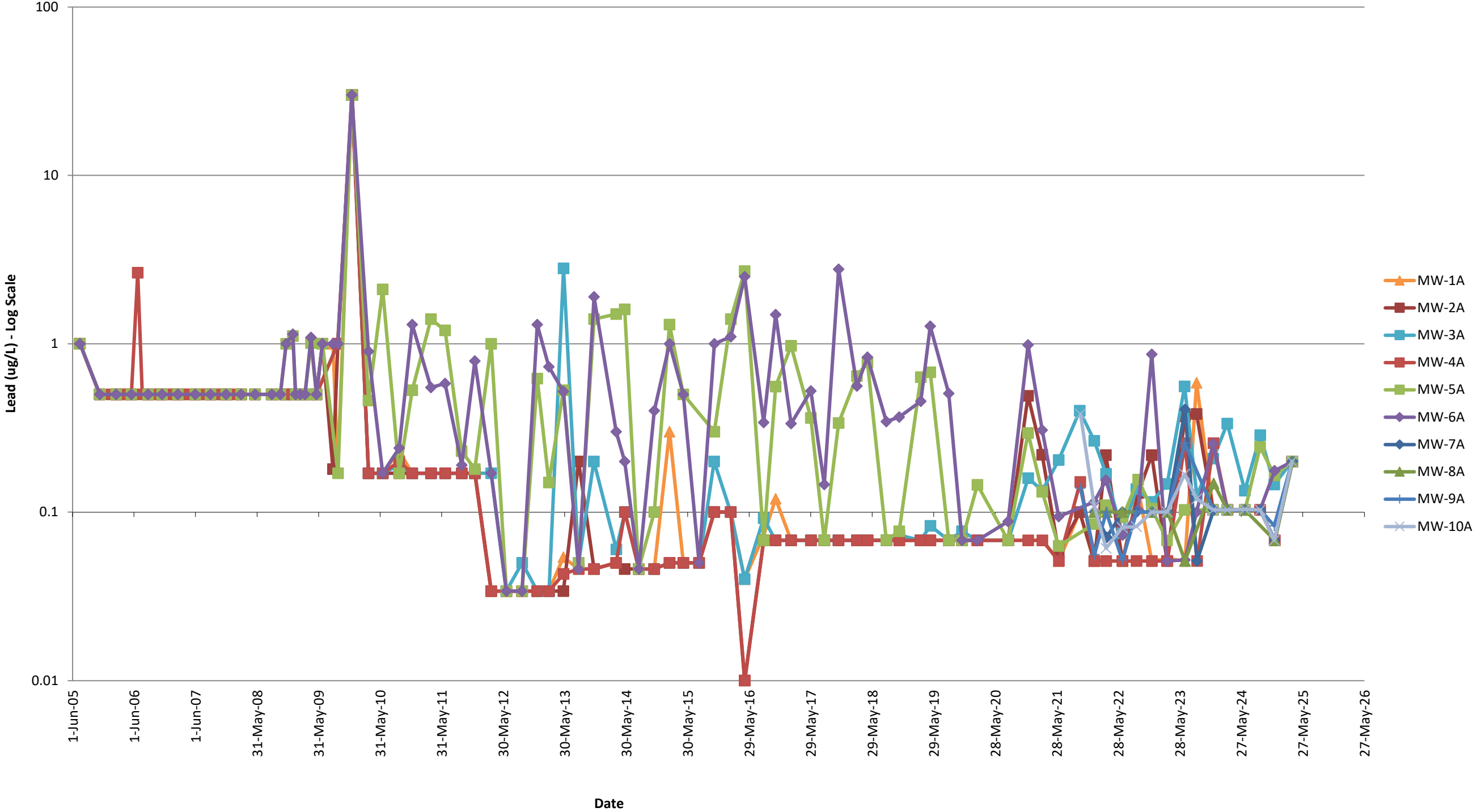
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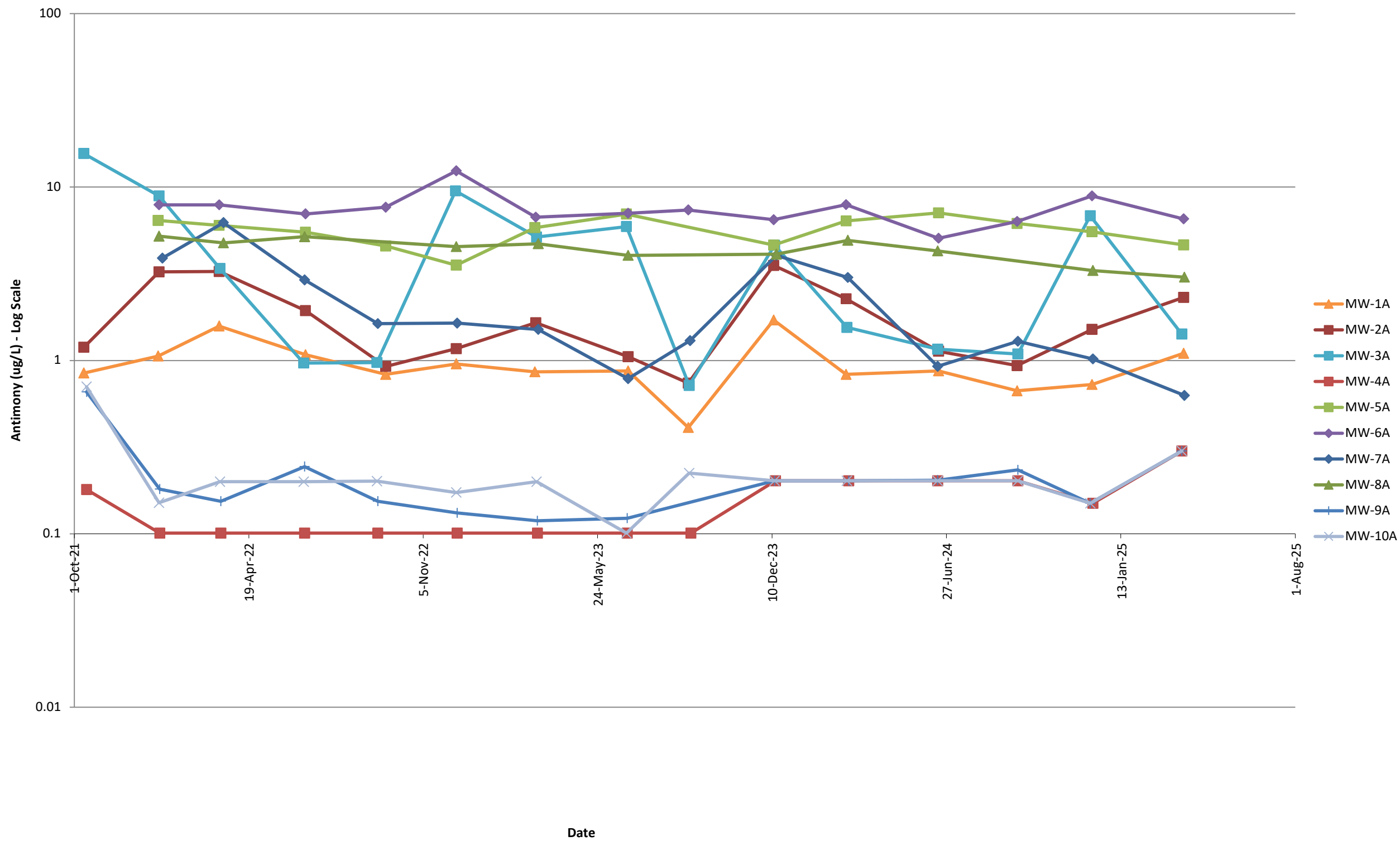
LDA Shallow Monitoring Wells



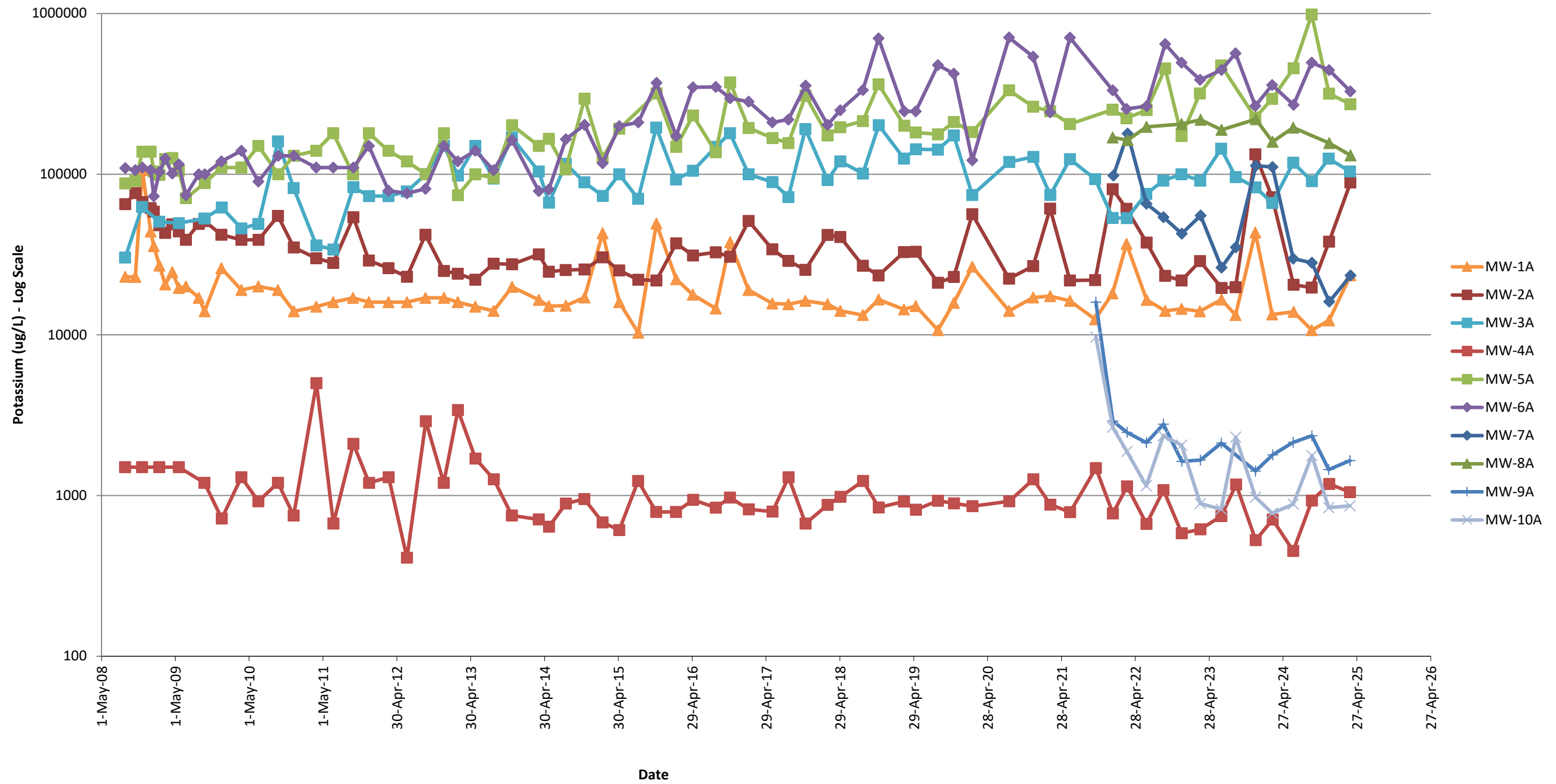
A Shallow Monitoring Wells



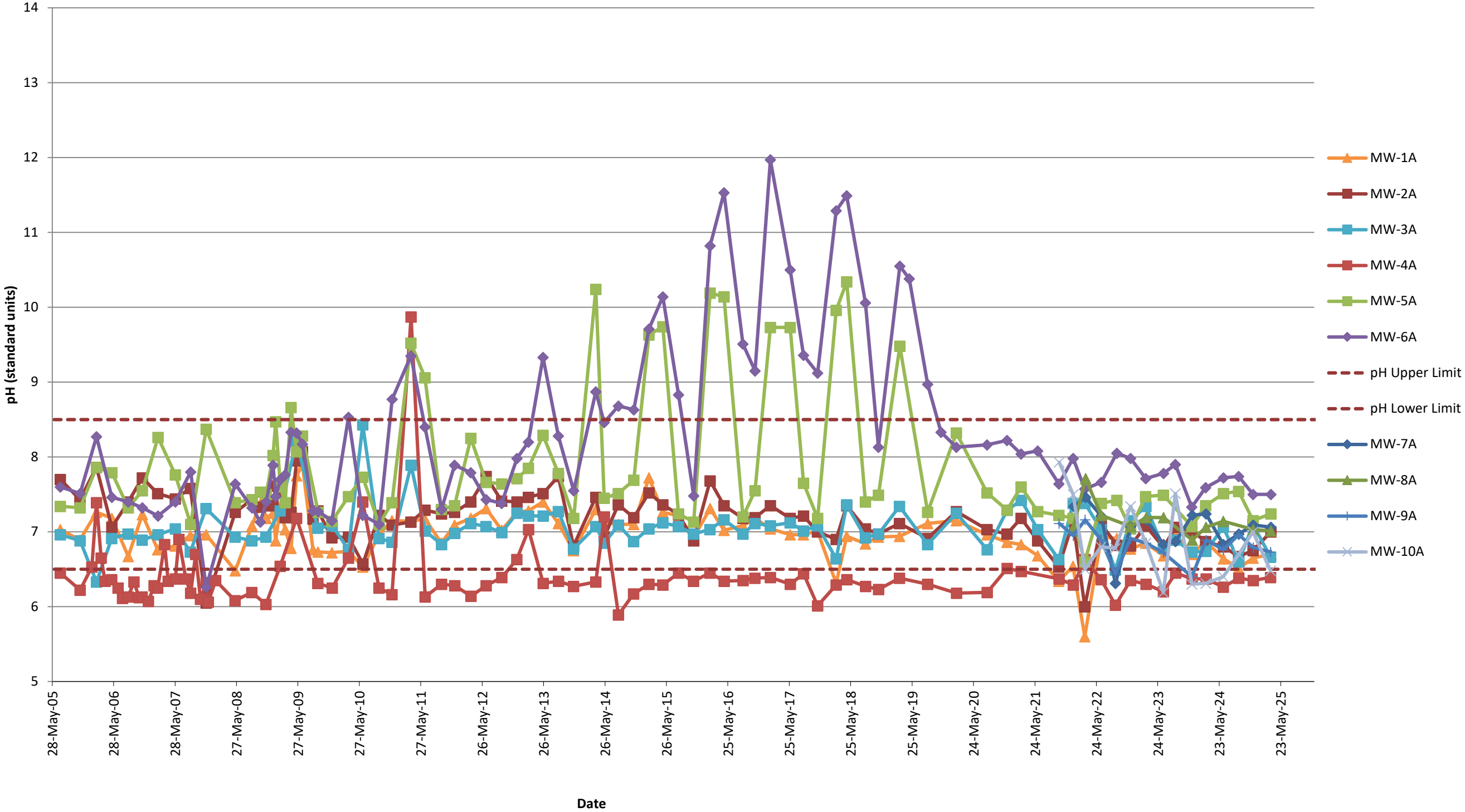
LDA Shallow Monitoring Wells



LDA Shallow Monitoring Wells



LDA ShallowMonitoring Wells



APPENDIX C

**Data Validation Report and
Laboratory Analytical Results**

Data Validation Checklist

Project Name:	Ravensdale Project
Project Number:	US-WSP-31406578.8318/300
Sample Identification(s):	MW-1A-0325, MW-2A-0325, MW-3A-0325, MW-4A-0325, MW-5A-0325, MW-6A-0325, MW-7A-0325, MW-8A-0325, MW-9A-0325, MW-10A-0325, MWB-1LDA-0325, MWB-2LDA-0325, MWB-3LDA-0325, MWB-15DSP-0325, MWB-10DSP-0325, MWB-5DSP-0325, MWB-6DSP-0325, MW-45A-0325 (field duplicate), MW-55A-0325 (field duplicate), MW-99-1-0325 (field blank), MW-99-2-0325 (field blank), Infiltration Ponds-0325, Weir-0325 (MS/MSD), South Pond-0325, Still Well-0325, Interceptor Trench-0325, MW-35A-0325 (field duplicate), Mine Portal-0325, Tank-Influent, Sand-Effluent, As-Effluent
Sample Date(s):	3/24/25, 3/25/25, 3/26/25, 3/27/25
Sample Team:	Andrew Waser, WSP
Sample Matrix:	Aqueous
Analyzing Laboratory:	Analytical Resources, Inc. – Tukwila, WA
Analyses:	TDS (SM2540C); Total Metals: K, Pb, Sb, V (SW6010D, E200.8); As (E200.8 UCT-KED), Dissolved Metals: K, Pb, Sb, V (SW6010D, E200.8); As (E200.8 UCT-KED)
Laboratory Report No.:	25C0667, 25C0666

Field Data Package Documentation

Field Sampling Logs:	Reported		Performance Acceptable		Not Required
	NO	YES	NO	YES	
1. Sampling dates noted		X		X	
2. Sampling team indicated		X		X	
3. Sampling identification traceable to location collected		X		X	
4. Sample location		X		X	
5. Collection technique (bailer, pump, etc.)		X		X	
6. Sample container type		X		X	
7. Preservation methods		X		X	
8. Chain-of-custody form completed		X		X	
9. Required analytical methods requested		X		X	
10. Field sample logs completed properly and signed		X		X	
11. Number and type of field QC samples collected		X		X	
12. Field equipment calibration		X		X	
13. Field equipment decontamination		X		X	

QC – quality control

Comments:

Analytical Data Package Documentation

General Information

	Reported		Performance Acceptable		Not Required
	NO	YES	NO	YES	
1. Sample results		X		X	
2. Parameters analyzed		X		X	
3. Method of analysis		X		X	
4. Reporting limits of analysis		X		X	
5. Sample collection date		X		X	
6. Laboratory sample received date		X		X	
7. Sample preparation/extraction date		X		X	
8. Sample analysis date		X		X	
9. Copy of chain-of-custody form signed by lab sample custodian		X		X	
10. Narrative summary of QA or sample problems provided		X	X		

QA – quality assurance

Comments:

- An extra sample was received that was not listed on the chain of custody: sample ID Mine Portal-0325 sampled at 3/26/25 at 2:30PM. This sample was logged in and analyzed. No further action is required other than to note.
- Samples Tank-Influent, Sand-Effluent, and As-Effluent failed preservation requirements for total metals upon receipt, however it was confirmed by the lab that the samples were filtered and adjusted to a pH <2. It was also noted that for sample As-Effluent was subsampled and filtered and preserved. No further action is required other than to note.

Inorganic Analyses

Metals (EPA 6010/200.8) (E200.8 UCT-KED)	Reported		Performance Acceptable		Not Required
	NO	YES	NO	YES	
1. Holding times		X		X	
2. Reporting limits		X		X	
3. Blanks		X		X	
a. Method blanks		X		X	
b. Equipment /Rinsate blanks		X		X	
4. Laboratory control sample (LCS) %R		X		X	
5. Matrix spike (MS) %R		X	X		
6. LCS duplicate (LCSD) %R		X		X	
7. MS duplicate (MSD) %R		X		X	
8. MS / MSD RPD		X		X	
9. LCS / LCSD RPD		X		X	
10. Laboratory Duplicate RPD		X		X	
11. Field duplicate comparison		X		X	

%R – percent recovery

RPD – relative percent difference

Comments:

Performance was acceptable, with the following exceptions and/or notes:

- The MSD recovery from project sample Infiltration Ponds-0325 recovered below the QC criteria (75-125%) for dissolved potassium (121/57%). The native sample concentration was four times greater than the spiking concentration and therefore no qualifications were required. There is no other action than to note.
- Field duplicates are as follows: MW-35A-0325 is a duplicate of Infiltration Ponds-0325, MW-45A-0325 is a duplicate of MW-2A-0325 and MW-55A-0325 is a duplicate of MWB-6DSP-0325. All were within QC limits; no qualifications were required.
- Certain samples were analyzed at dilutions to bring sample concentrations within the instrument calibration range. Reporting limits were elevated proportional to the dilution when undiluted results were not provided by the laboratory. The National Functional Guidelines do not require qualification based on dilution, but the end user is alerted that the sensitivity of non-detect results should be considered as part of determining data usability.

General Wet Chemistry

TDS (SM 2540C)	Reported		Performance Acceptable		Not Required
	NO	YES	NO	YES	
1. Holding times		X		X	
2. Reporting limits		X		X	
3. Blanks		X		X	
a. Method blanks		X		X	
b. Equipment rinsate blanks		X		X	
4. Laboratory control sample (LCS) %R		X		X	
5. Matrix spike (MS) %R		X		X	
6. LCS duplicate (LCSD) %R		X		X	
7. MS duplicate (MSD) %R		X		X	
8. MS/MSD RPD		X		X	
9. LCS/LCSD RPD		X		X	
10. Laboratory Duplicate RPD		X		X	
11. Field duplicate comparison		X		X	

%R – percent recovery

RPD – relative percent difference

Comments:

Field duplicates are as follows: MW-35A-0325 is a duplicate of Infiltration Ponds-0325, MW-45A-0325 is a duplicate of MW-2A-0325 and MW-55A-0325 is a duplicate of MWB-6DSP-0325. All were within QC limits; no qualifications were required.

Data Validation Checklist
Summary and Data Qualifier Codes

Project Name:	Ravensdale Project
Project Number:	US-WSP-31406578.8318/300
Sample Identification(s):	MW-1A-0325, MW-2A-0325, MW-3A-0325, MW-4A-0325, MW-5A-0325, MW-6A-0325, MW-7A-0325, MW-8A-0325, MW-9A-0325, MW-10A-0325, MWB-1LDA-0325, MWB-2LDA-0325, MWB-3LDA-0325, MWB-15DSP-0325, MWB-10DSP-0325, MWB-5DSP-0325, MWB-6DSP-0325, MW-45A-0325 (field duplicate), MW-55A-0325 (field duplicate), MW-99-1-0325 (field blank), MW-99-2-0325 (field blank), Infiltration Ponds-0325, Weir-0325 (MS/MSD), South Pond-0325, Still Well-0325, Interceptor Trench-0325, MW-35A-0325 (field duplicate), Mine Portal-0325, Tank-Influent, Sand-Effluent, As-Effluent
Sample Date(s):	3/24/25, 3/25/25, 3/26/25, 3/27/25
Sample Team:	Andrew Waser, WSP
Sample Matrix:	Aqueous
Analyzing Laboratory:	Analytical Resources, Inc. – Tukwila, WA
Analyses:	TDS (SM2540C); Total Metals: K, Pb, Sb, V (SW6010D, E200.8); As (E200.8 UCT-KED), Dissolved Metals: K, Pb, Sb, V (SW6010D, E200.8); As (E200.8 UCT-KED)
Laboratory Report No.:	25C0667, 25C0666

Sample ID	Analyte(s)	Old Result	Old Qualifier	New Result	New Qualifier	Reason(s)
No Qualifications Required						

Validation Performed By:	Julia Campbell, WSP
Date:	4/29/25
Peer Review Performed By:	Michael Shadle, WSP
Date:	4/30/2025

Infiltration Ponds		MW-35A Duplicate					
Analyte	Result	Result	RPD	Unit	Qualifier	RL	MDL
Antimony	12.6	12.7	1%	ug/L		0.4	0.3
Arsenic	17.3	16.3	6%	ug/L		0.4	0.2
Potassium	457	446	2%	mg/L		2.5	1.25
Lead	23.4	23.6	1%	ug/L		0.4	0.2
Vanadium	1.94	1.9	2%	ug/L		0.4	0.2
Total Dissolved Solids	1250	1250	0%	mg/L		13	13
Antimony, dissolved	12.2	12.7	4%	ug/L		0.4	0.3
Arsenic, dissolved	15.5	15.5	0%	ug/L		0.4	0.2
Potassium, dissolved	468	459	2%	mg/L		2.5	1.25
Vanadium, dissolved	2.12	1.97	7%	ug/L		0.4	0.2
Lead, dissolved	1.65	1.73	5%	ug/L		0.4	0.2

MW-2A		MW-45A Duplicate					
Analyte	Result	Result	RPD	Unit	Qualifier	RL	MDL
Antimony	2.31	2.35	2%	ug/L		0.4	0.3
Arsenic	1.45	1.47	1%	ug/L		0.4	0.2
Potassium	88.7	85.6	4%	mg/L		0.5	0.25
Lead	0.2	0.2	0%	ug/L		0.4	0.2
Vanadium	0.996	1.02	2%	ug/L		0.4	0.2
Total Dissolved Solids	434	429	1%	mg/L		10	10

MWB-6DSP		MW-55A Duplicate					
Analyte	Result	Result	RPD	Unit	Qualifier	RL	MDL
Arsenic	1.18	1.17	1%	ug/L		0.400	0.200
Potassium	1.11	1.09	2%	mg/L		0.500	0.250
Total Dissolved Solids	259	259	0%	ug/L		5	5



Analytical Resources, LLC
Analytical Chemists and Consultants
Tukwila, WA

28 April 2025

Accounts Payable
WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER, BRITISH COLUMBIA V6Z 2M1

RE: Ravensdale (31406578.8318)

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

Associated Work Order(s)
25C0667

Associated SDG ID(s)
N/A

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclose Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the requirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Analytical Resources, LLC

Kelly Bottem, Client Services Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 25C0667	Turn-around Requested:	Page: 1 of 3
ARI Client Company: WSP	Phone: 425-883-0777	Date: 3/27/25 Ice Present?
Client Contact: Gary Zimmerman	No. of Coolers:	Cooler Temps:



Analytical Resources, LLC
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)

Client Project Name: Ravensdale 2025 Q1 Sampling					Analysis Requested								Notes/Comments
Client Project #: 31406578.8318		Samplers: A. Waser, N. Mannix			Total Metals As, Pb, Sb, V, K	TDS	Dissolved Metals (As, Pb, Sb, V, K)						
Sample ID	Date	Time	Matrix	No. Containers									
MW-1A-032S	3/26/25	1320	W	2	X	X							
MW-2A-032S	3/26/25	1205	W	2	X	X							
MW-3A-032S	3/24/25	1035	W	2	X	X							
MW-4A-032S	3/24/25	1405	W	2	X	X							
MW-5A-032S	3/26/25	0925	W	2	X	X							
MW-6A-032S	3/26/25	1020	W	2	X	X							
MW-7A-032S	3/27/25	1235	W	2	X	X							
MW-8A-032S	3/27/25	1130	W	2	X	X							
MW-9A-032S	3/24/25	1440	W	2	X	X							
MW-10A-032S	3/24/25	1122	W	2	X	X							

Comments/Special Instructions	Relinquished by: (Signature) <i>A. Waser</i>	Received by: (Signature) <i>Sydney Acevedo</i>	Relinquished by: (Signature)	Received by: (Signature)
	Printed Name: Andrew Waser	Printed Name: Sydney Acevedo	Printed Name:	Printed Name:
	Company: WSP	Company: AR LLC	Company:	Company:
	Date & Time: 3/27/25 1411	Date & Time: 3/27/25 1411	Date & Time:	Date & Time:

Limits of Liability: ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 25C0667	Turn-around Requested: Standard	Page: 2 of 3
ARI Client Company: WSP	Phone: 425-883-0777	Date: 3/27/25 Ice Present?
Client Contact: Gary Zimmerman	No. of Coolers:	Cooler Temps:



Analytical Resources, LLC
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)

Client Project Name: Ravensdale 2025 Q1 Sampling					Analysis Requested								Notes/Comments
Client Project #: 31406578.8318		Samplers: A. Waser, N. Mammix			Total Metals As, Pb, Sb, V, K	TDS	Dissolved Metals (As, Pb, Sb, V, U)						
Sample ID	Date	Time	Matrix	No. Containers									
MWB-1LDA-0325	3/24/25	1520	W	2	X	X							
MWB-2LDA-0325	3/27/25	0945	W	2	X	X							
MWB-3LDA-0325	3/27/25	1030	W	2	X	X							
MWB-1SDSP-0325	3/25/25	1245	W	2	X	X							
MWB-1ODSP-0325	3/25/25	1400	W	2	X	X							
MWB-5ODSP-0325	3/25/25	1520	W	2	X	X							
MWB-6ODSP-0325	3/25/25	1110	W	2	X	X							
MW-4SA-0325	3/26/25	1200	W	2	X	X							
MW-5SA-0325	3/25/25	1200	W	2	X	X							
MW-99-1-0325	3/25/25	1405	W	2	X	X							

Comments/Special Instructions	Relinquished by: (Signature) <i>[Signature]</i>	Received by: (Signature) <i>[Signature]</i>	Relinquished by: (Signature)	Received by: (Signature)
	Printed Name: Andrew Waser	Printed Name: Sydney Acevedo	Printed Name:	Printed Name:
	Company: WSP	Company: AR LLC	Company:	Company:
	Date & Time: 3/27/25	Date & Time: 3/27/25 1411	Date & Time:	Date & Time:

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Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 25C0667	Turn-around Requested: standard	Page: 3 of 3	
ARI Client Company: WSP	Phone: 425-883-0777	Date: 3/27/25	Ice Present?
Client Contact: Gary Zimmerman		No. of Coolers:	Cooler Temps:



Analytical Resources, LLC
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)

Client Project Name: Ravensdale 2025 Q1 Sampling					Analysis Requested								Notes/Comments
Client Project #: 31406578.8318		Samplers: A. Waser, N. Mannix			Total Metals As, Pb, Sb, V, Cr	TDS	Dissolved Metals As, Pb, Sb, V, Cr						
Sample ID	Date	Time	Matrix	No. Containers									
MU-99-2-032S	3/27/25	0920	W	2	X	X							
Inter. Itation Ponds-032S	3/26/25	1355	W	3	X	X	X						
Weir-032S	3/24/25	1200	W	6	X	X							MS/MSD
South Pond-032S	3/24/25	1140	W	2	X	X							
Still Well-032S	3/24/25	1230	W	2	X	X							
Interceptor Trench-032S	3/24/25	1305	W	1		X							
MU-35A-032S	3/26/25	1200	W	3	X	X	X						

Comments/Special Instructions	Relinquished by: (Signature) <i>[Signature]</i>	Received by: (Signature) <i>[Signature]</i>	Relinquished by: (Signature)	Received by: (Signature)
	Printed Name: Andrew Waser	Printed Name: Sydney Acevedo	Printed Name:	Printed Name:
	Company: WSP	Company: AR LLC	Company:	Company:
	Date & Time: 3/27/25 1411	Date & Time: 3/27/25 1411	Date & Time:	Date & Time:

Limits of Liability: ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, notwithstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.



WSP USA, Inc.

840 HOWE STREET, #1000

VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale

Project Number: 31406578.8318

Project Manager: Accounts Payable

Reported:

28-Apr-2025 11:32

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-1A-0325	25C0667-01	Water	26-Mar-2025 13:20	27-Mar-2025 14:11
MW-2A-0325	25C0667-02	Water	26-Mar-2025 12:05	27-Mar-2025 14:11
MW-3A-0325	25C0667-03	Water	24-Mar-2025 10:35	27-Mar-2025 14:11
MW-4A-0325	25C0667-04	Water	24-Mar-2025 14:05	27-Mar-2025 14:11
MW-5A-0325	25C0667-05	Water	26-Mar-2025 09:25	27-Mar-2025 14:11
MW-6A-0325	25C0667-06	Water	26-Mar-2025 10:20	27-Mar-2025 14:11
MW-7A-0325	25C0667-07	Water	27-Mar-2025 12:35	27-Mar-2025 14:11
MW-8A-0325	25C0667-08	Water	27-Mar-2025 11:30	27-Mar-2025 14:11
MW-9A-0325	25C0667-09	Water	24-Mar-2025 14:40	27-Mar-2025 14:11
MW-10A-0325	25C0667-10	Water	24-Mar-2025 11:22	27-Mar-2025 14:11
MWB-1LDA-0325	25C0667-11	Water	26-Mar-2025 15:20	27-Mar-2025 14:11
MWB-2LDA-0325	25C0667-12	Water	27-Mar-2025 09:45	27-Mar-2025 14:11
MWB-3LDA-0325	25C0667-13	Water	27-Mar-2025 10:30	27-Mar-2025 14:11
MWB-15DSP-0325	25C0667-14	Water	25-Mar-2025 12:45	27-Mar-2025 14:11
MWB-10DSP-0325	25C0667-15	Water	25-Mar-2025 14:00	27-Mar-2025 14:11
MWB-5DSP-0325	25C0667-16	Water	25-Mar-2025 15:20	27-Mar-2025 14:11
MWB-6DSP-0325	25C0667-17	Water	25-Mar-2025 11:10	27-Mar-2025 14:11
MW-45A-0325	25C0667-18	Water	26-Mar-2025 12:00	27-Mar-2025 14:11
MW-55A-0325	25C0667-19	Water	25-Mar-2025 12:00	27-Mar-2025 14:11
MW-99-1-0325	25C0667-20	Water	25-Mar-2025 14:05	27-Mar-2025 14:11
MW-99-2-0325	25C0667-21	Water	27-Mar-2025 09:20	27-Mar-2025 14:11
Infiltration Ponds-0325	25C0667-22	Water	26-Mar-2025 13:55	27-Mar-2025 14:11
Infiltration Ponds-0325	25C0667-23	Water	26-Mar-2025 13:55	27-Mar-2025 14:11
Weir-0325	25C0667-24	Water	24-Mar-2025 12:00	27-Mar-2025 14:11
South Pond-0325	25C0667-25	Water	24-Mar-2025 11:40	27-Mar-2025 14:11
Still Well-0325	25C0667-26	Water	24-Mar-2025 12:30	27-Mar-2025 14:11
Interceptor Trench-0325	25C0667-27	Water	24-Mar-2025 13:05	27-Mar-2025 14:11
MW-35A-0325	25C0667-28	Water	26-Mar-2025 12:00	27-Mar-2025 14:11
MW-35A-0325	25C0667-29	Water	26-Mar-2025 12:00	27-Mar-2025 14:11
Mine Portal-0325	25C0667-30	Water	26-Mar-2025 14:30	27-Mar-2025 14:11



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

Work Order Case Narrative

Total and Dissolved Metals - EPA Method 200.8 and 6010D

The sample(s) were digested and analyzed within the recommended holding times.

Initial and continuing calibrations including interference checks were within method requirements for reported elements.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

The matrix spike (MS) percent recoveries and the duplicate (DUP) relative percent difference (RPD) were within advisory control limits.

Wet Chemistry

The sample(s) were prepared and analyzed within the recommended holding times.

Initial and continuing calibrations were within method requirements.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

The sample duplicate (DUP) relative percent difference (RPD) were within advisory control limits.



WORK ORDER

25C0667

Client: WSP USA, Inc.

Project Manager: Kelly Bottem

Project: Ravensdale

Project Number: 31406578.8318

Preservation Confirmation

Container ID	Container Type	pH	pH Paper Lot#: <u>N000119</u>
25C0667-01 A	HDPE NM, 1000 mL		
25C0667-01 B	HDPE NM, 500 mL, 1:1 HNO3	<u>L2p</u>	
25C0667-02 A	HDPE NM, 1000 mL		
25C0667-02 B	HDPE NM, 500 mL, 1:1 HNO3	<u>L2p</u>	
25C0667-03 A	HDPE NM, 1000 mL		
25C0667-03 B	HDPE NM, 500 mL, 1:1 HNO3	<u>L2p</u>	
25C0667-04 A	HDPE NM, 1000 mL		
25C0667-04 B	HDPE NM, 500 mL, 1:1 HNO3	<u>L2p</u>	
25C0667-05 A	HDPE NM, 1000 mL		
25C0667-05 B	HDPE NM, 500 mL, 1:1 HNO3	<u>L2p</u>	
25C0667-06 A	HDPE NM, 1000 mL		
25C0667-06 B	HDPE NM, 500 mL, 1:1 HNO3	<u>L2p</u>	
25C0667-07 A	HDPE NM, 1000 mL		
25C0667-07 B	HDPE NM, 500 mL, 1:1 HNO3	<u>L2p</u>	
25C0667-08 A	HDPE NM, 1000 mL		
25C0667-08 B	HDPE NM, 500 mL, 1:1 HNO3	<u>L2p</u>	
25C0667-09 A	HDPE NM, 1000 mL		
25C0667-09 B	HDPE NM, 500 mL, 1:1 HNO3	<u>L2p</u>	
25C0667-10 A	HDPE NM, 1000 mL		
25C0667-10 B	HDPE NM, 500 mL, 1:1 HNO3	<u>L2p</u>	
25C0667-11 A	HDPE NM, 1000 mL		
25C0667-11 B	HDPE NM, 500 mL, 1:1 HNO3	<u>L2p</u>	
25C0667-12 A	HDPE NM, 1000 mL		
25C0667-12 B	HDPE NM, 500 mL, 1:1 HNO3	<u>L2p</u>	
25C0667-13 A	HDPE NM, 1000 mL		
25C0667-13 B	HDPE NM, 500 mL, 1:1 HNO3	<u>L2p</u>	
25C0667-14 A	HDPE NM, 1000 mL		
25C0667-14 B	HDPE NM, 500 mL, 1:1 HNO3	<u>L2p</u>	
25C0667-15 A	HDPE NM, 1000 mL		
25C0667-15 B	HDPE NM, 500 mL, 1:1 HNO3	<u>L2p</u>	
25C0667-16 A	HDPE NM, 1000 mL		
25C0667-16 B	HDPE NM, 500 mL, 1:1 HNO3	<u>L2p</u>	



WORK ORDER

25C0667

Client: WSP USA, Inc.

Project Manager: Kelly Bottem

Project: Ravensdale

Project Number: 31406578.8318

25C0667-17 A	HDPE NM, 1000 mL	
25C0667-17 B	HDPE NM, 500 mL, 1:1 HNO3	L2p
25C0667-18 A	HDPE NM, 1000 mL	
25C0667-18 B	HDPE NM, 500 mL, 1:1 HNO3	L2p
25C0667-19 A	HDPE NM, 1000 mL	
25C0667-19 B	HDPE NM, 500 mL, 1:1 HNO3	L2p
25C0667-20 A	HDPE NM, 1000 mL	
25C0667-20 B	HDPE NM, 500 mL, 1:1 HNO3	L2p
25C0667-21 A	HDPE NM, 1000 mL	
25C0667-21 B	HDPE NM, 500 mL, 1:1 HNO3	L2p
25C0667-22 A	HDPE NM, 1000 mL	
25C0667-22 B	HDPE NM, 500 mL, 1:1 HNO3	L2p
25C0667-23 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	L2p
25C0667-24 A	HDPE NM, 1000 mL	
25C0667-24 B	HDPE NM, 1000 mL	
25C0667-24 C	HDPE NM, 1000 mL	
25C0667-24 D	HDPE NM, 500 mL, 1:1 HNO3	L2p
25C0667-24 E	HDPE NM, 500 mL, 1:1 HNO3	L2p
25C0667-24 F	HDPE NM, 500 mL, 1:1 HNO3	L2p
25C0667-25 A	HDPE NM, 1000 mL	
25C0667-25 B	HDPE NM, 500 mL, 1:1 HNO3	L2p
25C0667-26 A	HDPE NM, 1000 mL	
25C0667-26 B	HDPE NM, 500 mL, 1:1 HNO3	L2p
25C0667-27 A	HDPE NM, 1000 mL	
25C0667-28 A	HDPE NM, 1000 mL	
25C0667-28 B	HDPE NM, 500 mL, 1:1 HNO3	L2p
25C0667-29 A	HDPE NM, 500 mL, 1:1 HNO3 (FF)	L2p
25C0667-30 A	HDPE NM, 1000 mL	
25C0667-30 B	HDPE NM, 500 mL, 1:1 HNO3	L2p

SA

Preservation Confirmed By

3/28/25

Date



Cooler Receipt Form

ARI Client: WSP

Project Name: Ravensdale

COC No(s): _____ (NA)

Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Assigned ARI Job No: 25C0667

Tracking No: _____ (NA)

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of the cooler? _____

YES NO

Were custody papers included with the cooler? _____

YES NO

Were custody papers properly filled out (ink, signed, etc.) _____

YES NO

Temperature of Cooler(s) (°C) Time 1411 0.9 3.7 0.6 0.7 _____

Temp Gun ID#: 9708

Was a temperature blank included in the cooler? _____

YES NO

Were coolers received between 0° - 6° (°C) _____

YES NO

Was sufficient ice used (if appropriate)? _____

NA YES NO

Cooler Accepted by: SA Date: 3/27/25 Time: 1411

Complete custody forms and attach all shipping documents

Log-In Phase:

What kind of packing material was used? _____

Bubble Wrap Wet Ice Gel Packs Baggies Foam Block N/A Other: _____

Are any samples that were out of temperature compliance documented in LIMS? _____

YES NO

How were bottles sealed in plastic bags? _____

Individually Grouped Not

Did all bottles arrive in good condition (unbroken)? _____

YES NO

Were all bottle labels complete and legible? _____

YES NO

Did the number of containers listed on COC match with the number of containers received? _____

YES NO

Did all bottle labels and tags agree with custody papers? _____

YES NO

Were all bottles used correct for the requested analyses? _____

YES NO

Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs) ...

NA YES NO

Were all VOC vials free of air bubbles? _____

NA YES NO

Was sufficient amount of sample sent in each bottle? _____

YES NO

Date VOC Trip Blank was made at ARI: _____

NA

Were the sample(s) split by ARI? NA YES

Date/Time: _____

Equipment: _____

Split by: _____

Samples Logged by: SA Date: 3/27/25 Time: 1658 Labels checked by: SA

**** Notify Project Manager of discrepancies or concerns ****

Additional Notes, Discrepancies, & Resolutions:

Extra sample volume received, sample ID: Mine Portal-0325
Sampled 3/26/25 at 1430. Logged at end of workorder.

By: SA

Date: 3/28/25



WSP USA, Inc.

840 HOWE STREET, #1000

VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale

Project Number: 31406578.8318

Project Manager: Accounts Payable

Reported:

28-Apr-2025 11:32

MW-1A-0325

25C0667-01 (Water)

Metals and Metallic Compounds

Method: EPA 200.8

Sampled: 03/26/2025 13:20

Instrument: ICPMS1 Analyst: HAL

Analyzed: 04/16/2025 03:43

Sample Preparation:

Preparation Method: REN - EPA 3010A M

Extract ID: 25C0667-01 B 01

Preparation Batch: BND0202

Sample Size: 25 mL

Prepared: 04/08/2025

Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection	Reporting	Result	Units	Notes
			Limit	Limit			
Antimony	7440-36-0	2	0.300	0.400	1.10	ug/L	D
Arsenic UCT	7440-38-2	2	0.200	0.400	1.04	ug/L	D
Lead	7439-92-1	2	0.200	0.400	ND	ug/L	U
Vanadium	7440-62-2	2	0.200	0.400	0.634	ug/L	D



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

MW-1A-0325
25C0667-01 (Water)

Metals and Metallic Compounds

Method: EPA 6010D	Sampled: 03/26/2025 13:20
Instrument: ICP3 Analyst: SH	Analyzed: 04/16/2025 06:41
Sample Preparation:	Preparation Method: TWC EPA 3010A
	Preparation Batch: BND0001
	Prepared: 04/01/2025
	Sample Size: 25 mL
	Final Volume: 25 mL
	Extract ID: 25C0667-01 B 01

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Potassium	7440-09-7	1	0.250	0.500	23.5	mg/L	



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

MW-1A-0325
25C0667-01 (Water)

Wet Chemistry

Method: SM 2540 C-11
Instrument: BAL2 Analyst: AG

Sampled: 03/26/2025 13:20

Analyzed: 03/31/2025 10:30

Sample Preparation: Preparation Method: No Prep Wet Chem
Preparation Batch: BNC0775 Sample Size: 100 mL
Prepared: 03/31/2025 Final Volume: 200 mL

Extract ID: 25C0667-01

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Dissolved Solids		1	10	10	387	mg/L	



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

MW-2A-0325
25C0667-02 (Water)

Metals and Metallic Compounds

Method: EPA 200.8
Instrument: ICPMS1 Analyst: HAL

Sampled: 03/26/2025 12:05

Analyzed: 04/16/2025 03:33

Sample Preparation: Preparation Method: REN - EPA 3010A M
Preparation Batch: BND0202 Sample Size: 25 mL
Prepared: 04/08/2025 Final Volume: 25 mL

Extract ID: 25C0667-02 B 01

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Antimony	7440-36-0	2	0.300	0.400	2.31	ug/L	D
Arsenic UCT	7440-38-2	2	0.200	0.400	1.45	ug/L	D
Lead	7439-92-1	2	0.200	0.400	ND	ug/L	U
Vanadium	7440-62-2	2	0.200	0.400	0.996	ug/L	D



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

MW-2A-0325
25C0667-02 (Water)

Metals and Metallic Compounds

Method: EPA 6010D	Sampled: 03/26/2025 12:05
Instrument: ICP3 Analyst: SH	Analyzed: 04/16/2025 07:15
Sample Preparation:	Preparation Method: TWC EPA 3010A
	Preparation Batch: BND0001
	Prepared: 04/01/2025
	Sample Size: 25 mL
	Final Volume: 25 mL
	Extract ID: 25C0667-02 B 01

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Potassium	7440-09-7	1	0.250	0.500	88.7	mg/L	



WSP USA, Inc.

840 HOWE STREET, #1000

VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale

Project Number: 31406578.8318

Project Manager: Accounts Payable

Reported:

28-Apr-2025 11:32

MW-2A-0325

25C0667-02 (Water)

Wet Chemistry

Method: SM 2540 C-11

Sampled: 03/26/2025 12:05

Instrument: BAL2 Analyst: AG

Analyzed: 03/31/2025 10:30

Sample Preparation:

Preparation Method: No Prep Wet Chem

Extract ID: 25C0667-02

Preparation Batch: BNC0775

Sample Size: 100 mL

Prepared: 03/31/2025

Final Volume: 200 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Dissolved Solids		1	10	10	434	mg/L	



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

MW-3A-0325
25C0667-03 (Water)

Metals and Metallic Compounds

Method: EPA 200.8	Sampled: 03/24/2025 10:35
Instrument: ICPMS1 Analyst: HAL	Analyzed: 04/16/2025 03:38
Sample Preparation:	Preparation Method: REN - EPA 3010A M
	Preparation Batch: BND0202
	Prepared: 04/08/2025
	Sample Size: 25 mL
	Final Volume: 25 mL
	Extract ID: 25C0667-03 B 01

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Antimony	7440-36-0	2	0.300	0.400	1.42	ug/L	D
Arsenic UCT	7440-38-2	2	0.200	0.400	3.37	ug/L	D
Lead	7439-92-1	2	0.200	0.400	ND	ug/L	U
Vanadium	7440-62-2	2	0.200	0.400	0.418	ug/L	D



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

MW-3A-0325
25C0667-03 (Water)

Metals and Metallic Compounds

Method: EPA 6010D	Sampled: 03/24/2025 10:35
Instrument: ICP3 Analyst: SH	Analyzed: 04/16/2025 07:18
Sample Preparation:	Preparation Method: TWC EPA 3010A
	Preparation Batch: BND0001
	Prepared: 04/01/2025
	Sample Size: 25 mL
	Final Volume: 25 mL
	Extract ID: 25C0667-03 B 01

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Potassium	7440-09-7	1	0.250	0.500	104	mg/L	



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

MW-3A-0325
25C0667-03 (Water)

Wet Chemistry

Method: SM 2540 C-11
Instrument: BAL2 Analyst: AG

Sampled: 03/24/2025 10:35

Analyzed: 03/31/2025 10:30

Sample Preparation: Preparation Method: No Prep Wet Chem
Preparation Batch: BNC0775
Prepared: 03/31/2025

Sample Size: 100 mL

Final Volume: 200 mL

Extract ID: 25C0667-03

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Dissolved Solids		1	10	10	712	mg/L	



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

MW-4A-0325
25C0667-04 (Water)

Metals and Metallic Compounds

Method: EPA 200.8
Instrument: ICPMS1 Analyst: HAL

Sampled: 03/24/2025 14:05

Analyzed: 04/16/2025 04:37

Sample Preparation: Preparation Method: REN - EPA 3010A M
Preparation Batch: BND0202 Sample Size: 25 mL
Prepared: 04/08/2025 Final Volume: 25 mL

Extract ID: 25C0667-04 B 01

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Antimony	7440-36-0	2	0.300	0.400	ND	ug/L	U
Arsenic UCT	7440-38-2	2	0.200	0.400	0.300	ug/L	J, D
Lead	7439-92-1	2	0.200	0.400	ND	ug/L	U
Vanadium	7440-62-2	2	0.200	0.400	0.592	ug/L	D



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

MW-4A-0325
25C0667-04 (Water)

Metals and Metallic Compounds

Method: EPA 6010D	Sampled: 03/24/2025 14:05
Instrument: ICP3 Analyst: SH	Analyzed: 04/16/2025 07:20
Sample Preparation:	Preparation Method: TWC EPA 3010A
	Preparation Batch: BND0001
	Prepared: 04/01/2025
	Sample Size: 25 mL
	Final Volume: 25 mL
	Extract ID: 25C0667-04 B 01

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Potassium	7440-09-7	1	0.250	0.500	1.05	mg/L	



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

MW-4A-0325
25C0667-04 (Water)

Wet Chemistry

Method: SM 2540 C-11
Instrument: BAL2 Analyst: AG

Sampled: 03/24/2025 14:05

Analyzed: 03/31/2025 10:30

Sample Preparation: Preparation Method: No Prep Wet Chem
Preparation Batch: BNC0775
Prepared: 03/31/2025

Sample Size: 100 mL

Final Volume: 200 mL

Extract ID: 25C0667-04

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Dissolved Solids		1	10	10	324	mg/L	



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

MW-5A-0325
25C0667-05 (Water)

Metals and Metallic Compounds

Method: EPA 200.8	Sampled: 03/26/2025 09:25
Instrument: ICPMS1 Analyst: HAL	Analyzed: 04/16/2025 04:42
Sample Preparation:	Preparation Method: REN - EPA 3010A M
	Preparation Batch: BND0202
	Prepared: 04/08/2025
	Sample Size: 25 mL
	Final Volume: 25 mL
	Extract ID: 25C0667-05 B 01

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Antimony	7440-36-0	2	0.300	0.400	4.63	ug/L	D
Arsenic UCT	7440-38-2	2	0.200	0.400	3.31	ug/L	D
Lead	7439-92-1	2	0.200	0.400	ND	ug/L	U
Vanadium	7440-62-2	2	0.200	0.400	1.43	ug/L	D



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

MW-5A-0325
25C0667-05 (Water)

Metals and Metallic Compounds

Method: EPA 6010D	Sampled: 03/26/2025 09:25
Instrument: ICP3 Analyst: SH	Analyzed: 04/16/2025 07:24
Sample Preparation:	Preparation Method: TWC EPA 3010A
	Preparation Batch: BND0001
	Prepared: 04/01/2025
	Sample Size: 25 mL
	Final Volume: 25 mL
	Extract ID: 25C0667-05 B 01

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Potassium	7440-09-7	1	0.250	0.500	272	mg/L	



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

MW-5A-0325
25C0667-05 (Water)

Wet Chemistry

Method: SM 2540 C-11
Instrument: BAL2 Analyst: AG

Sampled: 03/26/2025 09:25

Analyzed: 03/31/2025 10:30

Sample Preparation: Preparation Method: No Prep Wet Chem
Preparation Batch: BNC0775 Sample Size: 75 mL
Prepared: 03/31/2025 Final Volume: 200 mL

Extract ID: 25C0667-05

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Dissolved Solids		1	13	13	912	mg/L	



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

MW-6A-0325
25C0667-06 (Water)

Metals and Metallic Compounds

Method: EPA 200.8	Sampled: 03/26/2025 10:20
Instrument: ICPMS1 Analyst: HAL	Analyzed: 04/16/2025 04:47
Sample Preparation:	Preparation Method: REN - EPA 3010A M
	Preparation Batch: BND0202
	Prepared: 04/08/2025
	Sample Size: 25 mL
	Final Volume: 25 mL
	Extract ID: 25C0667-06 B 01

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Antimony	7440-36-0	2	0.300	0.400	6.55	ug/L	D
Arsenic UCT	7440-38-2	2	0.200	0.400	2.10	ug/L	D
Lead	7439-92-1	2	0.200	0.400	ND	ug/L	U
Vanadium	7440-62-2	2	0.200	0.400	0.972	ug/L	D



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VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

MW-6A-0325
25C0667-06 (Water)

Metals and Metallic Compounds

Method: EPA 6010D	Sampled: 03/26/2025 10:20
Instrument: ICP3 Analyst: SH	Analyzed: 04/16/2025 07:27
Sample Preparation:	Preparation Method: TWC EPA 3010A
	Preparation Batch: BND0001
	Prepared: 04/01/2025
	Sample Size: 25 mL
	Final Volume: 25 mL
	Extract ID: 25C0667-06 B 01

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Potassium	7440-09-7	1	0.250	0.500	328	mg/L	



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VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

MW-6A-0325
25C0667-06 (Water)

Wet Chemistry

Method: SM 2540 C-11

Sampled: 03/26/2025 10:20

Instrument: BAL2 Analyst: AG

Analyzed: 03/31/2025 10:30

Sample Preparation:

Preparation Method: No Prep Wet Chem

Extract ID: 25C0667-06

Preparation Batch: BNC0775

Sample Size: 75 mL

Prepared: 03/31/2025

Final Volume: 200 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Dissolved Solids		1	13	13	977	mg/L	



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VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

MW-7A-0325
25C0667-07 (Water)

Metals and Metallic Compounds

Method: EPA 200.8	Sampled: 03/27/2025 12:35
Instrument: ICPMS1 Analyst: HAL	Analyzed: 04/16/2025 04:52
Sample Preparation:	Preparation Method: REN - EPA 3010A M
	Preparation Batch: BND0202
	Prepared: 04/08/2025
	Sample Size: 25 mL
	Final Volume: 25 mL
	Extract ID: 25C0667-07 B 01

Analyte	CAS Number	Dilution	Detection	Reporting	Result	Units	Notes
			Limit	Limit			
Antimony	7440-36-0	2	0.300	0.400	0.628	ug/L	D
Arsenic UCT	7440-38-2	2	0.200	0.400	1.43	ug/L	D
Lead	7439-92-1	2	0.200	0.400	ND	ug/L	U
Vanadium	7440-62-2	2	0.200	0.400	0.552	ug/L	D



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VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

MW-7A-0325
25C0667-07 (Water)

Metals and Metallic Compounds

Method: EPA 6010D
Instrument: ICP3 Analyst: SH

Sampled: 03/27/2025 12:35

Analyzed: 04/16/2025 07:41

Sample Preparation: Preparation Method: TWC EPA 3010A
Preparation Batch: BND0001
Prepared: 04/01/2025

Sample Size: 25 mL

Final Volume: 25 mL

Extract ID: 25C0667-07 B 01

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Potassium	7440-09-7	1	0.250	0.500	23.4	mg/L	



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VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

MW-7A-0325
25C0667-07 (Water)

Wet Chemistry

Method: SM 2540 C-11
Instrument: BAL2 Analyst: AG

Sampled: 03/27/2025 12:35

Analyzed: 03/31/2025 10:30

Sample Preparation: Preparation Method: No Prep Wet Chem
Preparation Batch: BNC0775 Sample Size: 100 mL
Prepared: 03/31/2025 Final Volume: 200 mL

Extract ID: 25C0667-07

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Dissolved Solids		1	10	10	397	mg/L	



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VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

MW-8A-0325
25C0667-08 (Water)

Metals and Metallic Compounds

Method: EPA 200.8	Sampled: 03/27/2025 11:30
Instrument: ICPMS1 Analyst: HAL	Analyzed: 04/16/2025 04:56
Sample Preparation:	Preparation Method: REN - EPA 3010A M
	Preparation Batch: BND0202
	Prepared: 04/08/2025
	Sample Size: 25 mL
	Final Volume: 25 mL
	Extract ID: 25C0667-08 B 01

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Antimony	7440-36-0	2	0.300	0.400	3.02	ug/L	D
Arsenic UCT	7440-38-2	2	0.200	0.400	4.54	ug/L	D
Lead	7439-92-1	2	0.200	0.400	ND	ug/L	U
Vanadium	7440-62-2	2	0.200	0.400	2.25	ug/L	D



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VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

MW-8A-0325
25C0667-08 (Water)

Metals and Metallic Compounds

Method: EPA 6010D
Instrument: ICP3 Analyst: SH

Sampled: 03/27/2025 11:30

Analyzed: 04/20/2025 22:30

Sample Preparation: Preparation Method: TWC EPA 3010A
Preparation Batch: BND0113
Prepared: 04/04/2025

Sample Size: 25 mL
Final Volume: 25 mL

Extract ID: 25C0667-08 B 01

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Potassium	7440-09-7	1	0.250	0.500	131	mg/L	



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VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale

Project Number: 31406578.8318

Project Manager: Accounts Payable

Reported:

28-Apr-2025 11:32

MW-8A-0325

25C0667-08 (Water)

Wet Chemistry

Method: SM 2540 C-11

Sampled: 03/27/2025 11:30

Instrument: BAL2 Analyst: AG

Analyzed: 03/31/2025 10:30

Sample Preparation:

Preparation Method: No Prep Wet Chem

Extract ID: 25C0667-08

Preparation Batch: BNC0775

Sample Size: 100 mL

Prepared: 03/31/2025

Final Volume: 200 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Dissolved Solids		1	10	10	477	mg/L	



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VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

MW-9A-0325
25C0667-09 (Water)

Metals and Metallic Compounds

Method: EPA 200.8

Sampled: 03/24/2025 14:40

Instrument: ICPMS1 Analyst: HAL

Analyzed: 04/16/2025 05:01

Sample Preparation:

Preparation Method: REN - EPA 3010A M

Extract ID: 25C0667-09 B 02

Preparation Batch: BND0202

Sample Size: 25 mL

Prepared: 04/08/2025

Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Antimony	7440-36-0	2	0.300	0.400	ND	ug/L	U
Arsenic UCT	7440-38-2	2	0.200	0.400	0.358	ug/L	J, D
Lead	7439-92-1	2	0.200	0.400	ND	ug/L	U
Vanadium	7440-62-2	2	0.200	0.400	0.636	ug/L	D



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VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

MW-9A-0325
25C0667-09 (Water)

Metals and Metallic Compounds

Method: EPA 6010D	Sampled: 03/24/2025 14:40
Instrument: ICP3 Analyst: SH	Analyzed: 04/20/2025 22:38
Sample Preparation:	Preparation Method: TWC EPA 3010A
	Preparation Batch: BND0113
	Prepared: 04/04/2025
	Sample Size: 25 mL
	Final Volume: 25 mL
	Extract ID: 25C0667-09 B 01

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Potassium	7440-09-7	1	0.250	0.500	1.65	mg/L	



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VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale

Project Number: 31406578.8318

Project Manager: Accounts Payable

Reported:

28-Apr-2025 11:32

MW-9A-0325

25C0667-09 (Water)

Wet Chemistry

Method: SM 2540 C-11

Sampled: 03/24/2025 14:40

Instrument: BAL2 Analyst: AG

Analyzed: 03/31/2025 12:35

Sample Preparation:

Preparation Method: No Prep Wet Chem

Extract ID: 25C0667-09

Preparation Batch: BNC0779

Sample Size: 100 mL

Prepared: 03/31/2025

Final Volume: 200 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Dissolved Solids		1	10	10	358	mg/L	



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VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

MW-10A-0325
25C0667-10 (Water)

Metals and Metallic Compounds

Method: EPA 200.8

Sampled: 03/24/2025 11:22

Instrument: ICPMS1 Analyst: HAL

Analyzed: 04/16/2025 05:38

Sample Preparation:

Preparation Method: REN - EPA 3010A M

Extract ID: 25C0667-10 B 02

Preparation Batch: BND0202

Sample Size: 25 mL

Prepared: 04/08/2025

Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection	Reporting	Result	Units	Notes
			Limit	Limit			
Antimony	7440-36-0	2	0.300	0.400	ND	ug/L	U
Arsenic UCT	7440-38-2	2	0.200	0.400	0.390	ug/L	J, D
Lead	7439-92-1	2	0.200	0.400	ND	ug/L	U
Vanadium	7440-62-2	2	0.200	0.400	0.666	ug/L	D



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VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

MW-10A-0325
25C0667-10 (Water)

Metals and Metallic Compounds

Method: EPA 6010D
Instrument: ICP3 Analyst: SH

Sampled: 03/24/2025 11:22

Analyzed: 04/20/2025 22:41

Sample Preparation: Preparation Method: TWC EPA 3010A
Preparation Batch: BND0113
Prepared: 04/04/2025

Sample Size: 25 mL
Final Volume: 25 mL

Extract ID: 25C0667-10 B 01

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Potassium	7440-09-7	1	0.250	0.500	0.862	mg/L	



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VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale

Project Number: 31406578.8318

Project Manager: Accounts Payable

Reported:

28-Apr-2025 11:32

MW-10A-0325
25C0667-10 (Water)

Wet Chemistry

Method: SM 2540 C-11

Sampled: 03/24/2025 11:22

Instrument: BAL2 Analyst: AG

Analyzed: 03/31/2025 12:35

Sample Preparation:

Preparation Method: No Prep Wet Chem

Extract ID: 25C0667-10

Preparation Batch: BNC0779

Sample Size: 200 mL

Prepared: 03/31/2025

Final Volume: 200 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Dissolved Solids		1	5	5	113	mg/L	



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VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

MWB-1LDA-0325
25C0667-11 (Water)

Metals and Metallic Compounds

Method: EPA 200.8	Sampled: 03/26/2025 15:20
Instrument: ICPMS1 Analyst: HAL	Analyzed: 04/16/2025 05:43
Sample Preparation:	Preparation Method: REN - EPA 3010A M
	Preparation Batch: BND0202
	Prepared: 04/08/2025
	Sample Size: 25 mL
	Final Volume: 25 mL
	Extract ID: 25C0667-11 B 02

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Antimony	7440-36-0	2	0.300	0.400	ND	ug/L	U
Arsenic UCT	7440-38-2	2	0.200	0.400	6.55	ug/L	D
Lead	7439-92-1	2	0.200	0.400	ND	ug/L	U
Vanadium	7440-62-2	2	0.200	0.400	ND	ug/L	U



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VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

MWB-1LDA-0325
25C0667-11 (Water)

Metals and Metallic Compounds

Method: EPA 6010D
Instrument: ICP3 Analyst: SH

Sampled: 03/26/2025 15:20

Analyzed: 04/20/2025 23:14

Sample Preparation: Preparation Method: TWC EPA 3010A
Preparation Batch: BND0113
Prepared: 04/04/2025

Sample Size: 25 mL
Final Volume: 25 mL

Extract ID: 25C0667-11 B 01

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Potassium	7440-09-7	1	0.250	0.500	0.933	mg/L	



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VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

MWB-1LDA-0325
25C0667-11 (Water)

Wet Chemistry

Method: SM 2540 C-11
Instrument: BAL2 Analyst: AG

Sampled: 03/26/2025 15:20

Analyzed: 03/31/2025 12:35

Sample Preparation: Preparation Method: No Prep Wet Chem
Preparation Batch: BNC0779 Sample Size: 200 mL
Prepared: 03/31/2025 Final Volume: 200 mL

Extract ID: 25C0667-11

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Dissolved Solids		1	5	5	222	mg/L	



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VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

MWB-2LDA-0325
25C0667-12 (Water)

Metals and Metallic Compounds

Method: EPA 200.8

Sampled: 03/27/2025 09:45

Instrument: ICPMS1 Analyst: HAL

Analyzed: 04/16/2025 05:48

Sample Preparation:

Preparation Method: REN - EPA 3010A M

Extract ID: 25C0667-12 B 02

Preparation Batch: BND0202

Sample Size: 25 mL

Prepared: 04/08/2025

Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection	Reporting	Result	Units	Notes
			Limit	Limit			
Antimony	7440-36-0	2	0.300	0.400	ND	ug/L	U
Arsenic UCT	7440-38-2	2	0.200	0.400	5.42	ug/L	D
Lead	7439-92-1	2	0.200	0.400	ND	ug/L	U
Vanadium	7440-62-2	2	0.200	0.400	ND	ug/L	U



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

MWB-2LDA-0325
25C0667-12 (Water)

Metals and Metallic Compounds

Method: EPA 6010D	Sampled: 03/27/2025 09:45
Instrument: ICP3 Analyst: SH	Analyzed: 04/20/2025 23:17
Sample Preparation:	Preparation Method: TWC EPA 3010A
	Preparation Batch: BND0113
	Prepared: 04/04/2025
	Sample Size: 25 mL
	Final Volume: 25 mL
	Extract ID: 25C0667-12 B 01

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Potassium	7440-09-7	1	0.250	0.500	0.981	mg/L	



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840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

MWB-2LDA-0325
25C0667-12 (Water)

Wet Chemistry

Method: SM 2540 C-11
Instrument: BAL2 Analyst: AG

Sampled: 03/27/2025 09:45

Analyzed: 03/31/2025 12:35

Sample Preparation: Preparation Method: No Prep Wet Chem
Preparation Batch: BNC0779 Sample Size: 200 mL
Prepared: 03/31/2025 Final Volume: 200 mL

Extract ID: 25C0667-12

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Dissolved Solids		1	5	5	202	mg/L	



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VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

MWB-3LDA-0325
25C0667-13 (Water)

Metals and Metallic Compounds

Method: EPA 200.8	Sampled: 03/27/2025 10:30
Instrument: ICPMS1 Analyst: HAL	Analyzed: 04/16/2025 05:53
Sample Preparation:	Preparation Method: REN - EPA 3010A M
	Preparation Batch: BND0202
	Prepared: 04/08/2025
	Sample Size: 25 mL
	Final Volume: 25 mL
	Extract ID: 25C0667-13 B 02

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Antimony	7440-36-0	2	0.300	0.400	ND	ug/L	U
Arsenic UCT	7440-38-2	2	0.200	0.400	4.52	ug/L	D
Lead	7439-92-1	2	0.200	0.400	ND	ug/L	U
Vanadium	7440-62-2	2	0.200	0.400	ND	ug/L	U



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

MWB-3LDA-0325
25C0667-13 (Water)

Metals and Metallic Compounds

Method: EPA 6010D	Sampled: 03/27/2025 10:30
Instrument: ICP3 Analyst: SH	Analyzed: 04/20/2025 23:20
Sample Preparation:	Preparation Method: TWC EPA 3010A
	Preparation Batch: BND0113
	Prepared: 04/04/2025
	Sample Size: 25 mL
	Final Volume: 25 mL
	Extract ID: 25C0667-13 B 01

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Potassium	7440-09-7	1	0.250	0.500	0.892	mg/L	



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

MWB-3LDA-0325
25C0667-13 (Water)

Wet Chemistry

Method: SM 2540 C-11

Sampled: 03/27/2025 10:30

Instrument: BAL2 Analyst: AG

Analyzed: 03/31/2025 12:35

Sample Preparation:

Preparation Method: No Prep Wet Chem

Extract ID: 25C0667-13

Preparation Batch: BNC0779

Sample Size: 200 mL

Prepared: 03/31/2025

Final Volume: 200 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Dissolved Solids		1	5	5	143	mg/L	



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

MWB-15DSP-0325
25C0667-14 (Water)

Metals and Metallic Compounds

Method: EPA 200.8

Sampled: 03/25/2025 12:45

Instrument: ICPMS1 Analyst: HAL

Analyzed: 04/16/2025 05:58

Sample Preparation:

Preparation Method: REN - EPA 3010A M

Extract ID: 25C0667-14 B 02

Preparation Batch: BND0202

Sample Size: 25 mL

Prepared: 04/08/2025

Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection	Reporting	Result	Units	Notes
			Limit	Limit			
Antimony	7440-36-0	2	0.300	0.400	ND	ug/L	U
Arsenic UCT	7440-38-2	2	0.200	0.400	15.2	ug/L	D
Lead	7439-92-1	2	0.200	0.400	ND	ug/L	U
Vanadium	7440-62-2	2	0.200	0.400	ND	ug/L	U



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

MWB-15DSP-0325
25C0667-14 (Water)

Metals and Metallic Compounds

Method: EPA 6010D	Sampled: 03/25/2025 12:45
Instrument: ICP3 Analyst: SH	Analyzed: 04/20/2025 23:23
Sample Preparation:	Preparation Method: TWC EPA 3010A
	Preparation Batch: BND0113
	Prepared: 04/04/2025
	Sample Size: 25 mL
	Final Volume: 25 mL
	Extract ID: 25C0667-14 B 01

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Potassium	7440-09-7	1	0.250	0.500	5.43	mg/L	



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

MWB-15DSP-0325
25C0667-14 (Water)

Wet Chemistry

Method: SM 2540 C-11

Sampled: 03/25/2025 12:45

Instrument: BAL2 Analyst: AG

Analyzed: 03/31/2025 12:35

Sample Preparation:

Preparation Method: No Prep Wet Chem

Extract ID: 25C0667-14

Preparation Batch: BNC0779

Sample Size: 75 mL

Prepared: 03/31/2025

Final Volume: 200 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Dissolved Solids		1	13	13	1130	mg/L	



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

MWB-10DSP-0325
25C0667-15 (Water)

Metals and Metallic Compounds

Method: EPA 200.8	Sampled: 03/25/2025 14:00
Instrument: ICPMS1 Analyst: HAL	Analyzed: 04/16/2025 06:40
Sample Preparation:	Preparation Method: REN - EPA 3010A M
	Preparation Batch: BND0202
	Prepared: 04/08/2025
	Sample Size: 25 mL
	Final Volume: 25 mL
	Extract ID: 25C0667-15 B 02

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Antimony	7440-36-0	2	0.300	0.400	ND	ug/L	U
Arsenic UCT	7440-38-2	2	0.200	0.400	5.10	ug/L	D
Lead	7439-92-1	2	0.200	0.400	0.232	ug/L	J, D
Vanadium	7440-62-2	2	0.200	0.400	ND	ug/L	U



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

MWB-10DSP-0325
25C0667-15 (Water)

Metals and Metallic Compounds

Method: EPA 6010D	Sampled: 03/25/2025 14:00
Instrument: ICP3 Analyst: SH	Analyzed: 04/20/2025 23:26
Sample Preparation:	Preparation Method: TWC EPA 3010A
	Preparation Batch: BND0113
	Prepared: 04/04/2025
	Sample Size: 25 mL
	Final Volume: 25 mL
	Extract ID: 25C0667-15 B 01

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Potassium	7440-09-7	1	0.250	0.500	4.28	mg/L	



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

MWB-10DSP-0325
25C0667-15 (Water)

Wet Chemistry

Method: SM 2540 C-11

Sampled: 03/25/2025 14:00

Instrument: BAL2 Analyst: AG

Analyzed: 03/31/2025 12:35

Sample Preparation:

Preparation Method: No Prep Wet Chem

Extract ID: 25C0667-15

Preparation Batch: BNC0779

Sample Size: 100 mL

Prepared: 03/31/2025

Final Volume: 200 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Dissolved Solids		1	10	10	828	mg/L	



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

MWB-5DSP-0325
25C0667-16 (Water)

Metals and Metallic Compounds

Method: EPA 200.8	Sampled: 03/25/2025 15:20
Instrument: ICPMS1 Analyst: HAL	Analyzed: 04/16/2025 06:44
Sample Preparation:	Preparation Method: REN - EPA 3010A M
	Preparation Batch: BND0233
	Prepared: 04/09/2025
	Sample Size: 25 mL
	Final Volume: 25 mL
	Extract ID: 25C0667-16 B 02

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Antimony	7440-36-0	2	0.300	0.400	ND	ug/L	U
Arsenic UCT	7440-38-2	2	0.200	0.400	5.43	ug/L	D
Lead	7439-92-1	2	0.200	0.400	ND	ug/L	U
Vanadium	7440-62-2	2	0.200	0.400	ND	ug/L	U



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

MWB-5DSP-0325
25C0667-16 (Water)

Metals and Metallic Compounds

Method: EPA 6010D	Sampled: 03/25/2025 15:20
Instrument: ICP3 Analyst: SH	Analyzed: 04/20/2025 23:29
Sample Preparation:	Preparation Method: TWC EPA 3010A
	Preparation Batch: BND0113
	Prepared: 04/04/2025
	Sample Size: 25 mL
	Final Volume: 25 mL
	Extract ID: 25C0667-16 B 01

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Potassium	7440-09-7	1	0.250	0.500	2.70	mg/L	



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

MWB-5DSP-0325
25C0667-16 (Water)

Wet Chemistry

Method: SM 2540 C-11

Sampled: 03/25/2025 15:20

Instrument: BAL2 Analyst: AG

Analyzed: 03/31/2025 12:35

Sample Preparation:

Preparation Method: No Prep Wet Chem

Extract ID: 25C0667-16

Preparation Batch: BNC0779

Sample Size: 100 mL

Prepared: 03/31/2025

Final Volume: 200 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Dissolved Solids		1	10	10	502	mg/L	



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

MWB-6DSP-0325
25C0667-17 (Water)

Metals and Metallic Compounds

Method: EPA 200.8	Sampled: 03/25/2025 11:10
Instrument: ICPMS1 Analyst: HAL	Analyzed: 04/16/2025 06:49
Sample Preparation:	Preparation Method: REN - EPA 3010A M
	Preparation Batch: BND0233
	Prepared: 04/09/2025
	Sample Size: 25 mL
	Final Volume: 25 mL
	Extract ID: 25C0667-17 B 02

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Antimony	7440-36-0	2	0.300	0.400	ND	ug/L	U
Arsenic UCT	7440-38-2	2	0.200	0.400	1.18	ug/L	D
Lead	7439-92-1	2	0.200	0.400	ND	ug/L	U
Vanadium	7440-62-2	2	0.200	0.400	ND	ug/L	U



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

MWB-6DSP-0325
25C0667-17 (Water)

Metals and Metallic Compounds

Method: EPA 6010D
Instrument: ICP3 Analyst: SH

Sampled: 03/25/2025 11:10

Analyzed: 04/20/2025 23:32

Sample Preparation: Preparation Method: TWC EPA 3010A
Preparation Batch: BND0113
Prepared: 04/04/2025

Sample Size: 25 mL
Final Volume: 25 mL

Extract ID: 25C0667-17 B 01

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Potassium	7440-09-7	1	0.250	0.500	1.11	mg/L	



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

MWB-6DSP-0325
25C0667-17 (Water)

Wet Chemistry

Method: SM 2540 C-11

Sampled: 03/25/2025 11:10

Instrument: BAL2 Analyst: AG

Analyzed: 03/31/2025 12:35

Sample Preparation:

Preparation Method: No Prep Wet Chem

Extract ID: 25C0667-17

Preparation Batch: BNC0779

Sample Size: 200 mL

Prepared: 03/31/2025

Final Volume: 200 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Dissolved Solids		1	5	5	259	mg/L	



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

MW-45A-0325
25C0667-18 (Water)

Metals and Metallic Compounds

Method: EPA 200.8	Sampled: 03/26/2025 12:00
Instrument: ICPMS1 Analyst: HAL	Analyzed: 04/16/2025 06:54
Sample Preparation:	Preparation Method: REN - EPA 3010A M
	Preparation Batch: BND0233
	Prepared: 04/09/2025
	Sample Size: 25 mL
	Final Volume: 25 mL
	Extract ID: 25C0667-18 B 02

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Antimony	7440-36-0	2	0.300	0.400	2.35	ug/L	D
Arsenic UCT	7440-38-2	2	0.200	0.400	1.47	ug/L	D
Lead	7439-92-1	2	0.200	0.400	ND	ug/L	U
Vanadium	7440-62-2	2	0.200	0.400	1.02	ug/L	D



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

MW-45A-0325
25C0667-18 (Water)

Metals and Metallic Compounds

Method: EPA 6010D	Sampled: 03/26/2025 12:00
Instrument: ICP3 Analyst: SH	Analyzed: 04/20/2025 23:35
Sample Preparation:	Preparation Method: TWC EPA 3010A
	Preparation Batch: BND0113
	Prepared: 04/04/2025
	Sample Size: 25 mL
	Final Volume: 25 mL
	Extract ID: 25C0667-18 B 01

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Potassium	7440-09-7	1	0.250	0.500	85.6	mg/L	



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840 HOWE STREET, #1000

VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale

Project Number: 31406578.8318

Project Manager: Accounts Payable

Reported:

28-Apr-2025 11:32

MW-45A-0325
25C0667-18 (Water)

Wet Chemistry

Method: SM 2540 C-11

Sampled: 03/26/2025 12:00

Instrument: BAL2 Analyst: AG

Analyzed: 03/31/2025 12:35

Sample Preparation:

Preparation Method: No Prep Wet Chem

Extract ID: 25C0667-18

Preparation Batch: BNC0779

Sample Size: 100 mL

Prepared: 03/31/2025

Final Volume: 200 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Dissolved Solids		1	10	10	429	mg/L	



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

MW-55A-0325
25C0667-19 (Water)

Metals and Metallic Compounds

Method: EPA 200.8

Sampled: 03/25/2025 12:00

Instrument: ICPMS1 Analyst: HAL

Analyzed: 04/16/2025 06:59

Sample Preparation:

Preparation Method: REN - EPA 3010A M

Extract ID: 25C0667-19 B 02

Preparation Batch: BND0233

Sample Size: 25 mL

Prepared: 04/09/2025

Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Antimony	7440-36-0	2	0.300	0.400	ND	ug/L	U
Arsenic UCT	7440-38-2	2	0.200	0.400	1.17	ug/L	D
Lead	7439-92-1	2	0.200	0.400	ND	ug/L	U
Vanadium	7440-62-2	2	0.200	0.400	ND	ug/L	U



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

MW-55A-0325
25C0667-19 (Water)

Metals and Metallic Compounds

Method: EPA 6010D
Instrument: ICP3 Analyst: SH

Sampled: 03/25/2025 12:00

Analyzed: 04/20/2025 23:38

Sample Preparation: Preparation Method: TWC EPA 3010A
Preparation Batch: BND0113
Prepared: 04/04/2025

Sample Size: 25 mL
Final Volume: 25 mL

Extract ID: 25C0667-19 B 01

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Potassium	7440-09-7	1	0.250	0.500	1.09	mg/L	



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

MW-55A-0325
25C0667-19 (Water)

Wet Chemistry

Method: SM 2540 C-11
Instrument: BAL2 Analyst: AG

Sampled: 03/25/2025 12:00

Analyzed: 03/31/2025 12:35

Sample Preparation: Preparation Method: No Prep Wet Chem
Preparation Batch: BNC0779
Prepared: 03/31/2025

Sample Size: 200 mL

Final Volume: 200 mL

Extract ID: 25C0667-19

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Dissolved Solids		1	5	5	259	mg/L	



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

MW-99-1-0325
25C0667-20 (Water)

Metals and Metallic Compounds

Method: EPA 200.8

Sampled: 03/25/2025 14:05

Instrument: ICPMS1 Analyst: HAL

Analyzed: 04/16/2025 07:58

Sample Preparation:

Preparation Method: REN - EPA 3010A M

Extract ID: 25C0667-20 B 02

Preparation Batch: BND0233

Sample Size: 25 mL

Prepared: 04/09/2025

Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection	Reporting	Result	Units	Notes
			Limit	Limit			
Antimony	7440-36-0	2	0.300	0.400	ND	ug/L	U
Arsenic UCT	7440-38-2	2	0.200	0.400	ND	ug/L	U
Lead	7439-92-1	2	0.200	0.400	ND	ug/L	U
Vanadium	7440-62-2	2	0.200	0.400	ND	ug/L	U



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

MW-99-1-0325
25C0667-20 (Water)

Metals and Metallic Compounds

Method: EPA 6010D	Sampled: 03/25/2025 14:05
Instrument: ICP3 Analyst: SH	Analyzed: 04/20/2025 23:41
Sample Preparation:	Preparation Method: TWC EPA 3010A
	Preparation Batch: BND0113
	Prepared: 04/04/2025
	Sample Size: 25 mL
	Final Volume: 25 mL
	Extract ID: 25C0667-20 B 01

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Potassium	7440-09-7	1	0.250	0.500	ND	mg/L	U



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840 HOWE STREET, #1000

VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale

Project Number: 31406578.8318

Project Manager: Accounts Payable

Reported:

28-Apr-2025 11:32

MW-99-1-0325
25C0667-20 (Water)

Wet Chemistry

Method: SM 2540 C-11

Sampled: 03/25/2025 14:05

Instrument: BAL2 Analyst: AG

Analyzed: 03/31/2025 12:35

Sample Preparation:

Preparation Method: No Prep Wet Chem

Extract ID: 25C0667-20

Preparation Batch: BNC0779

Sample Size: 200 mL

Prepared: 03/31/2025

Final Volume: 200 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Dissolved Solids		1	5	5	ND	mg/L	U



WSP USA, Inc.
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VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

MW-99-2-0325
25C0667-21 (Water)

Metals and Metallic Compounds

Method: EPA 200.8

Sampled: 03/27/2025 09:20

Instrument: ICPMS1 Analyst: HAL

Analyzed: 04/16/2025 08:03

Sample Preparation:

Preparation Method: REN - EPA 3010A M

Extract ID: 25C0667-21 B 02

Preparation Batch: BND0233

Sample Size: 25 mL

Prepared: 04/09/2025

Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Antimony	7440-36-0	2	0.300	0.400	ND	ug/L	U
Arsenic UCT	7440-38-2	2	0.200	0.400	ND	ug/L	U
Lead	7439-92-1	2	0.200	0.400	ND	ug/L	U
Vanadium	7440-62-2	2	0.200	0.400	ND	ug/L	U



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

MW-99-2-0325
25C0667-21 (Water)

Metals and Metallic Compounds

Method: EPA 6010D	Sampled: 03/27/2025 09:20
Instrument: ICP3 Analyst: SH	Analyzed: 04/20/2025 23:49
Sample Preparation:	Preparation Method: TWC EPA 3010A
	Preparation Batch: BND0113
	Prepared: 04/04/2025
	Sample Size: 25 mL
	Final Volume: 25 mL
	Extract ID: 25C0667-21 B 01

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Potassium	7440-09-7	1	0.250	0.500	ND	mg/L	U



WSP USA, Inc.

840 HOWE STREET, #1000

VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale

Project Number: 31406578.8318

Project Manager: Accounts Payable

Reported:

28-Apr-2025 11:32

MW-99-2-0325
25C0667-21 (Water)

Wet Chemistry

Method: SM 2540 C-11

Sampled: 03/27/2025 09:20

Instrument: BAL2 Analyst: AG

Analyzed: 03/31/2025 12:35

Sample Preparation:

Preparation Method: No Prep Wet Chem

Extract ID: 25C0667-21

Preparation Batch: BNC0779

Sample Size: 200 mL

Prepared: 03/31/2025

Final Volume: 200 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Dissolved Solids		1	5	5	ND	mg/L	U



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

Infiltration Ponds-0325
25C0667-22 (Water)

Metals and Metallic Compounds

Method: EPA 200.8

Sampled: 03/26/2025 13:55

Instrument: ICPMS1 Analyst: HAL

Analyzed: 04/16/2025 08:08

Sample Preparation:

Preparation Method: REN - EPA 3010A M

Extract ID: 25C0667-22 B 02

Preparation Batch: BND0233

Sample Size: 25 mL

Prepared: 04/09/2025

Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Antimony	7440-36-0	2	0.300	0.400	12.6	ug/L	D
Arsenic UCT	7440-38-2	2	0.200	0.400	17.3	ug/L	D
Lead	7439-92-1	2	0.200	0.400	23.4	ug/L	D
Vanadium	7440-62-2	2	0.200	0.400	1.94	ug/L	D



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

Infiltration Ponds-0325
25C0667-22 (Water)

Metals and Metallic Compounds

Method: EPA 6010D	Sampled: 03/26/2025 13:55
Instrument: ICP3 Analyst: SH	Analyzed: 04/23/2025 20:01
Sample Preparation:	Preparation Method: TWC EPA 3010A
	Preparation Batch: BND0113
	Prepared: 04/04/2025
	Sample Size: 25 mL
	Final Volume: 25 mL
	Extract ID: 25C0667-22 B 01

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Potassium	7440-09-7	5	1.25	2.50	457	mg/L	D



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

Infiltration Ponds-0325
25C0667-22 (Water)

Wet Chemistry

Method: SM 2540 C-11

Sampled: 03/26/2025 13:55

Instrument: BAL2 Analyst: AG

Analyzed: 03/31/2025 12:35

Sample Preparation:

Preparation Method: No Prep Wet Chem

Extract ID: 25C0667-22

Preparation Batch: BNC0779

Sample Size: 75 mL

Prepared: 03/31/2025

Final Volume: 200 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Dissolved Solids		1	13	13	1250	mg/L	



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

Infiltration Ponds-0325
25C0667-23 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8
Instrument: ICPMS1 Analyst: HAL

Sampled: 03/26/2025 13:55

Analyzed: 04/16/2025 06:02

Sample Preparation: Preparation Method: REN - EPA 3010A M
Preparation Batch: BND0235 Sample Size: 25 mL
Prepared: 04/09/2025 Final Volume: 25 mL

Extract ID: 25C0667-23 A 01

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Antimony, Dissolved	7440-36-0	2	0.300	0.400	12.2	ug/L	D
Arsenic UCT, Dissolved	7440-38-2	2	0.200	0.400	15.5	ug/L	D
Lead, Dissolved	7439-92-1	2	0.200	0.400	2.12	ug/L	D
Vanadium, Dissolved	7440-62-2	2	0.200	0.400	1.65	ug/L	D



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

Infiltration Ponds-0325
25C0667-23 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 6010D	Sampled: 03/26/2025 13:55
Instrument: ICP3 Analyst: SH	Analyzed: 04/23/2025 20:09
Sample Preparation:	Preparation Method: WMN (No Prep)
	Preparation Batch: BND0158
	Prepared: 04/06/2025
	Sample Size: 25 mL
	Final Volume: 25 mL
	Extract ID: 25C0667-23 A 01

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Potassium, Dissolved	7440-09-7	5	1.25	2.50	468	mg/L	D



WSP USA, Inc.
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Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

Weir-0325
25C0667-24 (Water)

Metals and Metallic Compounds

Method: EPA 200.8	Sampled: 03/24/2025 12:00
Instrument: ICPMS1 Analyst: HAL	Analyzed: 04/16/2025 07:04
Sample Preparation:	Preparation Method: REN - EPA 3010A M
	Preparation Batch: BND0233
	Prepared: 04/09/2025
	Sample Size: 25 mL
	Final Volume: 25 mL
	Extract ID: 25C0667-24 F 02

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Antimony	7440-36-0	2	0.300	0.400	4.35	ug/L	D
Arsenic UCT	7440-38-2	2	0.200	0.400	2.89	ug/L	D
Lead	7439-92-1	2	0.200	0.400	ND	ug/L	U
Vanadium	7440-62-2	2	0.200	0.400	0.668	ug/L	D



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Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

Weir-0325
25C0667-24 (Water)

Metals and Metallic Compounds

Method: EPA 6010D
Instrument: ICP3 Analyst: SH

Sampled: 03/24/2025 12:00

Analyzed: 04/21/2025 00:07

Sample Preparation: Preparation Method: TWC EPA 3010A
Preparation Batch: BND0113
Prepared: 04/04/2025

Sample Size: 25 mL

Final Volume: 25 mL

Extract ID: 25C0667-24 F 01

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Potassium	7440-09-7	1	0.250	0.500	87.4	mg/L	



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Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

Weir-0325
25C0667-24 (Water)

Wet Chemistry

Method: SM 2540 C-11
Instrument: BAL2 Analyst: AG

Sampled: 03/24/2025 12:00

Analyzed: 03/31/2025 12:35

Sample Preparation: Preparation Method: No Prep Wet Chem
Preparation Batch: BNC0779 Sample Size: 100 mL
Prepared: 03/31/2025 Final Volume: 200 mL

Extract ID: 25C0667-24

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Dissolved Solids		1	10	10	449	mg/L	



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Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

South Pond-0325
25C0667-25 (Water)

Metals and Metallic Compounds

Method: EPA 200.8

Sampled: 03/24/2025 11:40

Instrument: ICPMS1 Analyst: HAL

Analyzed: 04/16/2025 08:12

Sample Preparation:

Preparation Method: REN - EPA 3010A M

Extract ID: 25C0667-25 B 02

Preparation Batch: BND0233

Sample Size: 25 mL

Prepared: 04/09/2025

Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Antimony	7440-36-0	5	0.750	1.00	2.05	ug/L	D
Arsenic UCT	7440-38-2	5	0.500	1.00	7.63	ug/L	D
Lead	7439-92-1	5	0.500	1.00	4.12	ug/L	D
Vanadium	7440-62-2	5	0.500	1.00	12.6	ug/L	D



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Project: Ravensdale
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Reported:
28-Apr-2025 11:32

South Pond-0325
25C0667-25 (Water)

Metals and Metallic Compounds

Method: EPA 6010D
Instrument: ICP3 Analyst: SH

Sampled: 03/24/2025 11:40

Analyzed: 04/20/2025 23:55

Sample Preparation: Preparation Method: TWC EPA 3010A
Preparation Batch: BND0113
Prepared: 04/04/2025

Sample Size: 25 mL
Final Volume: 25 mL

Extract ID: 25C0667-25 B 01

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Potassium	7440-09-7	1	0.250	0.500	207	mg/L	



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Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

South Pond-0325
25C0667-25 (Water)

Wet Chemistry

Method: SM 2540 C-11

Sampled: 03/24/2025 11:40

Instrument: BAL2 Analyst: AG

Analyzed: 03/31/2025 12:35

Sample Preparation:

Preparation Method: No Prep Wet Chem

Extract ID: 25C0667-25

Preparation Batch: BNC0779

Sample Size: 100 mL

Prepared: 03/31/2025

Final Volume: 200 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Dissolved Solids		1	10	10	638	mg/L	



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VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

Still Well-0325
25C0667-26 (Water)

Metals and Metallic Compounds

Method: EPA 200.8

Sampled: 03/24/2025 12:30

Instrument: ICPMS1 Analyst: HAL

Analyzed: 04/16/2025 08:17

Sample Preparation:

Preparation Method: REN - EPA 3010A M

Extract ID: 25C0667-26 B 02

Preparation Batch: BND0233

Sample Size: 25 mL

Prepared: 04/09/2025

Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Antimony	7440-36-0	2	0.300	0.400	5.14	ug/L	D
Arsenic UCT	7440-38-2	2	0.200	0.400	45.1	ug/L	D
Lead	7439-92-1	2	0.200	0.400	0.770	ug/L	D
Vanadium	7440-62-2	2	0.200	0.400	2.11	ug/L	D



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Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

Still Well-0325
25C0667-26 (Water)

Metals and Metallic Compounds

Method: EPA 6010D	Sampled: 03/24/2025 12:30
Instrument: ICP3 Analyst: SH	Analyzed: 04/23/2025 20:04
Sample Preparation:	Preparation Method: TWC EPA 3010A
	Preparation Batch: BND0113
	Prepared: 04/04/2025
	Sample Size: 25 mL
	Final Volume: 25 mL
	Extract ID: 25C0667-26 B 01

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Potassium	7440-09-7	5	1.25	2.50	375	mg/L	D



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Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

Still Well-0325
25C0667-26 (Water)

Wet Chemistry

Method: SM 2540 C-11
Instrument: BAL2 Analyst: AG

Sampled: 03/24/2025 12:30

Analyzed: 03/31/2025 12:35

Sample Preparation: Preparation Method: No Prep Wet Chem
Preparation Batch: BNC0779 Sample Size: 20 mL
Prepared: 03/31/2025 Final Volume: 200 mL
Extract ID: 25C0667-26

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Dissolved Solids		1	50	50	1700	mg/L	



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Project: Ravensdale
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Reported:
28-Apr-2025 11:32

Interceptor Trench-0325
25C0667-27 (Water)

Wet Chemistry

Method: SM 2540 C-11

Sampled: 03/24/2025 13:05

Instrument: BAL2 Analyst: AG

Analyzed: 03/31/2025 12:35

Sample Preparation:

Preparation Method: No Prep Wet Chem

Extract ID: 25C0667-27

Preparation Batch: BNC0779

Sample Size: 100 mL

Prepared: 03/31/2025

Final Volume: 200 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Dissolved Solids		1	10	10	309	mg/L	



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Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

MW-35A-0325
25C0667-28 (Water)

Metals and Metallic Compounds

Method: EPA 200.8	Sampled: 03/26/2025 12:00
Instrument: ICPMS1 Analyst: HAL	Analyzed: 04/16/2025 08:22
Sample Preparation:	Preparation Method: REN - EPA 3010A M
	Preparation Batch: BND0233
	Prepared: 04/09/2025
	Sample Size: 25 mL
	Final Volume: 25 mL
	Extract ID: 25C0667-28 B 02

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Antimony	7440-36-0	2	0.300	0.400	12.7	ug/L	D
Arsenic UCT	7440-38-2	2	0.200	0.400	16.3	ug/L	D
Lead	7439-92-1	2	0.200	0.400	23.6	ug/L	D
Vanadium	7440-62-2	2	0.200	0.400	1.90	ug/L	D



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Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

MW-35A-0325
25C0667-28 (Water)

Metals and Metallic Compounds

Method: EPA 6010D	Sampled: 03/26/2025 12:00
Instrument: ICP3 Analyst: SH	Analyzed: 04/23/2025 20:07
Sample Preparation:	Preparation Method: TWC EPA 3010A
	Preparation Batch: BND0113
	Prepared: 04/04/2025
	Sample Size: 25 mL
	Final Volume: 25 mL
	Extract ID: 25C0667-28 B 01

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Potassium	7440-09-7	5	1.25	2.50	446	mg/L	D



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Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

MW-35A-0325
25C0667-28 (Water)

Wet Chemistry

Method: SM 2540 C-11
Instrument: BAL2 Analyst: AG

Sampled: 03/26/2025 12:00

Analyzed: 03/31/2025 12:35

Sample Preparation: Preparation Method: No Prep Wet Chem
Preparation Batch: BNC0779 Sample Size: 75 mL
Prepared: 03/31/2025 Final Volume: 200 mL

Extract ID: 25C0667-28

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Dissolved Solids		1	13	13	1250	mg/L	



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Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

MW-35A-0325
25C0667-29 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8	Sampled: 03/26/2025 12:00
Instrument: ICPMS1 Analyst: HAL	Analyzed: 04/16/2025 08:27
Sample Preparation:	Preparation Method: REN - EPA 3010A M
	Preparation Batch: BND0235
	Prepared: 04/09/2025
	Sample Size: 25 mL
	Final Volume: 25 mL
	Extract ID: 25C0667-29 A 02

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Antimony, Dissolved	7440-36-0	2	0.300	0.400	12.7	ug/L	D
Arsenic UCT, Dissolved	7440-38-2	2	0.200	0.400	15.5	ug/L	D
Lead, Dissolved	7439-92-1	2	0.200	0.400	1.97	ug/L	D
Vanadium, Dissolved	7440-62-2	2	0.200	0.400	1.73	ug/L	D



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VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

MW-35A-0325
25C0667-29 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 6010D	Sampled: 03/26/2025 12:00
Instrument: ICP3 Analyst: SH	Analyzed: 04/23/2025 19:52
Sample Preparation:	Preparation Method: WMN (No Prep)
	Preparation Batch: BND0158
	Prepared: 04/06/2025
	Sample Size: 25 mL
	Final Volume: 25 mL
	Extract ID: 25C0667-29 A 01

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Potassium, Dissolved	7440-09-7	5	1.25	2.50	459	mg/L	D



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Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

Mine Portal-0325
25C0667-30 (Water)

Metals and Metallic Compounds

Method: EPA 200.8

Sampled: 03/26/2025 14:30

Instrument: ICPMS1 Analyst: HAL

Analyzed: 04/16/2025 08:31

Sample Preparation:

Preparation Method: REN - EPA 3010A M

Extract ID: 25C0667-30 B 02

Preparation Batch: BND0233

Sample Size: 25 mL

Prepared: 04/09/2025

Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Antimony	7440-36-0	2	0.300	0.400	ND	ug/L	U
Arsenic UCT	7440-38-2	2	0.200	0.400	5.11	ug/L	D
Lead	7439-92-1	2	0.200	0.400	ND	ug/L	U
Vanadium	7440-62-2	2	0.200	0.400	ND	ug/L	U



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Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

Mine Portal-0325
25C0667-30 (Water)

Metals and Metallic Compounds

Method: EPA 6010D	Sampled: 03/26/2025 14:30
Instrument: ICP3 Analyst: SH	Analyzed: 04/21/2025 00:04
Sample Preparation:	Preparation Method: TWC EPA 3010A
	Preparation Batch: BND0113
	Prepared: 04/04/2025
	Sample Size: 25 mL
	Final Volume: 25 mL
	Extract ID: 25C0667-30 B 01

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Potassium	7440-09-7	1	0.250	0.500	23.8	mg/L	



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Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

Mine Portal-0325
25C0667-30 (Water)

Wet Chemistry

Method: SM 2540 C-11
Instrument: BAL2 Analyst: AG

Sampled: 03/26/2025 14:30

Analyzed: 03/31/2025 12:35

Sample Preparation: Preparation Method: No Prep Wet Chem
Preparation Batch: BNC0779
Prepared: 03/31/2025

Sample Size: 100 mL

Final Volume: 200 mL

Extract ID: 25C0667-30

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Dissolved Solids		1	10	10	369	mg/L	



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Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds - Quality Control

Batch BND0001 - EPA 6010D in Water

Instrument: ICP3 Analyst: SH

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BND0001-BLK1)						Prepared: 01-Apr-2025 Analyzed: 12-Apr-2025 00:43					
Potassium	ND	0.250	0.500	mg/L							U
LCS (BND0001-BS1)						Prepared: 01-Apr-2025 Analyzed: 12-Apr-2025 00:46					
Potassium	11.2	0.250	0.500	mg/L	10.0		112	80-120			
Duplicate (BND0001-DUP1)						Source: 25C0667-01 Prepared: 01-Apr-2025 Analyzed: 16-Apr-2025 06:44					
Potassium	24.1	0.250	0.500	mg/L		23.5			2.47	20	
Matrix Spike (BND0001-MS1)						Source: 25C0667-01 Prepared: 01-Apr-2025 Analyzed: 16-Apr-2025 06:47					
Potassium	35.3	0.250	0.500	mg/L	10.0	23.5	118	75-125			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											
Matrix Spike Dup (BND0001-MSD1)						Source: 25C0667-01 Prepared: 01-Apr-2025 Analyzed: 16-Apr-2025 06:51					
Potassium	34.6	0.250	0.500	mg/L	10.0	23.5	110	75-125	2.23	20	
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds - Quality Control

Batch BND0113 - EPA 6010D in Water

Instrument: ICP3 Analyst: SH

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BND0113-BLK1)						Prepared: 04-Apr-2025 Analyzed: 20-Apr-2025 22:15					
Potassium	ND	0.250	0.500	mg/L							U
LCS (BND0113-BS1)						Prepared: 04-Apr-2025 Analyzed: 20-Apr-2025 22:18					
Potassium	11.9	0.250	0.500	mg/L	10.0		119	80-120			
Duplicate (BND0113-DUP1)						Source: 25C0667-24 Prepared: 04-Apr-2025 Analyzed: 21-Apr-2025 00:10					
Potassium	85.5	0.250	0.500	mg/L		87.4			2.18	20	
Matrix Spike (BND0113-MS1)						Source: 25C0667-24 Prepared: 04-Apr-2025 Analyzed: 21-Apr-2025 00:13					
Potassium	97.1	0.250	0.500	mg/L	10.0	87.4	96.6	75-125			
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											
Matrix Spike Dup (BND0113-MSD1)						Source: 25C0667-24 Prepared: 04-Apr-2025 Analyzed: 21-Apr-2025 00:16					
Potassium	97.3	0.250	0.500	mg/L	10.0	87.4	98.9	75-125	0.24	20	
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											



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VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds - Quality Control

Batch BND0202 - EPA 200.8 in Water

Instrument: ICPMS1 Analyst: HAL

QC Sample/Analyte	Isotope	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BND0202-BLK1)			Prepared: 08-Apr-2025 Analyzed: 08-Apr-2025 17:01									
Antimony	121	ND	0.150	0.200	ug/L							U
Arsenic UCT	75a UCT	ND	0.100	0.200	ug/L							U
Lead	208	ND	0.100	0.200	ug/L							U
Vanadium	51a	ND	0.100	0.200	ug/L							U
LCS (BND0202-BS1)			Prepared: 08-Apr-2025 Analyzed: 08-Apr-2025 17:23									
Antimony	121	24.2	0.150	0.200	ug/L	25.0		96.8	85-115			
Arsenic UCT	75a UCT	24.7	0.100	0.200	ug/L	25.0		98.6	85-115			
Lead	208	26.1	0.100	0.200	ug/L	25.0		104	85-115			
Vanadium	51a	24.3	0.100	0.200	ug/L	25.0		97.1	85-115			
Duplicate (BND0202-DUP1)			Source: 25C0667-01		Prepared: 08-Apr-2025 Analyzed: 16-Apr-2025 03:48							
Antimony	121	1.14	0.300	0.400	ug/L		1.10			3.40	20	D
Arsenic UCT	75a UCT	1.08	0.200	0.400	ug/L		1.04			3.57	20	D
Lead	208	ND	0.200	0.400	ug/L		ND				20	U
Vanadium	51a	0.680	0.200	0.400	ug/L		0.634			7.00	20	D
Matrix Spike (BND0202-MS1)			Source: 25C0667-01		Prepared: 08-Apr-2025 Analyzed: 16-Apr-2025 03:52							
Antimony	121	24.3	0.300	0.400	ug/L	25.0	1.10	92.8	75-125			D
Arsenic UCT	75a UCT	27.2	0.200	0.400	ug/L	25.0	1.04	105	75-125			D
Lead	208	24.6	0.200	0.400	ug/L	25.0	ND	98.5	75-125			D
Vanadium	51a	21.9	0.200	0.400	ug/L	25.0	0.634	84.9	75-125			D
Recovery limits for target analytes in MS/MSD QC samples are advisory only.												
Matrix Spike Dup (BND0202-MSD1)			Source: 25C0667-01		Prepared: 08-Apr-2025 Analyzed: 16-Apr-2025 03:57							
Antimony	121	24.4	0.300	0.400	ug/L	25.0	1.10	93.2	75-125	0.42	20	D
Arsenic UCT	75a UCT	26.7	0.200	0.400	ug/L	25.0	1.04	102	75-125	2.05	20	D
Lead	208	24.1	0.200	0.400	ug/L	25.0	ND	96.5	75-125	2.09	20	D
Vanadium	51a	21.8	0.200	0.400	ug/L	25.0	0.634	84.7	75-125	0.21	20	D
Recovery limits for target analytes in MS/MSD QC samples are advisory only.												



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds - Quality Control

Batch BND0233 - EPA 200.8 in Water

Instrument: ICPMS1 Analyst: HAL

QC Sample/Analyte	Isotope	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BND0233-BLK1)						Prepared: 09-Apr-2025 Analyzed: 09-Apr-2025 18:31						
Antimony	121	ND	0.150	0.200	ug/L							U
Arsenic UCT	75a UCT	ND	0.100	0.200	ug/L							U
Lead	208	ND	0.100	0.200	ug/L							U
Vanadium	51a	ND	0.100	0.200	ug/L							U

LCS (BND0233-BS1)						Prepared: 09-Apr-2025 Analyzed: 09-Apr-2025 18:41						
Antimony	121	25.4	0.150	0.200	ug/L	25.0		102	85-115			
Arsenic UCT	75a UCT	25.8	0.100	0.200	ug/L	25.0		103	85-115			
Lead	208	24.9	0.100	0.200	ug/L	25.0		99.4	85-115			
Vanadium	51a	22.4	0.100	0.200	ug/L	25.0		89.6	85-115			

Duplicate (BND0233-DUP1)						Source: 25C0667-24 Prepared: 09-Apr-2025 Analyzed: 16-Apr-2025 07:08						
Arsenic UCT	75a UCT	2.92	0.200	0.400	ug/L		2.89			1.10	20	D
Lead	208	ND	0.200	0.400	ug/L		ND				20	U

Matrix Spike (BND0233-MS1)						Source: 25C0667-24 Prepared: 09-Apr-2025 Analyzed: 16-Apr-2025 07:13						
Arsenic UCT	75a UCT	28.6	0.200	0.400	ug/L	25.0	2.89	103	75-125			D
Lead	208	24.4	0.200	0.400	ug/L	25.0	ND	97.8	75-125			D

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

Matrix Spike Dup (BND0233-MSD1)						Source: 25C0667-24 Prepared: 09-Apr-2025 Analyzed: 16-Apr-2025 07:18						
Arsenic UCT	75a UCT	29.4	0.200	0.400	ug/L	25.0	2.89	106	75-125	2.50	20	D
Lead	208	24.1	0.200	0.400	ug/L	25.0	ND	96.2	75-125	1.61	20	D

Recovery limits for target analytes in MS/MSD QC samples are advisory only.

Instrument: ICPMS2 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BND0233-BLK2)						Prepared: 09-Apr-2025 Analyzed: 10-Apr-2025 18:54						
Antimony	121	ND	0.150	0.200	ug/L							U
Lead	208	ND	0.100	0.200	ug/L							U
Vanadium	51a	ND	0.100	0.200	ug/L							U

LCS (BND0233-BS2)						Prepared: 09-Apr-2025 Analyzed: 10-Apr-2025 19:02						
Antimony	121	25.1	0.150	0.200	ug/L	25.0		101	85-115			
Lead	208	26.7	0.100	0.200	ug/L	25.0		107	85-115			



WSP USA, Inc.

840 HOWE STREET, #1000

VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale

Project Number: 31406578.8318

Project Manager: Accounts Payable

Reported:

28-Apr-2025 11:32

Instrument: ICPMS2 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
LCS (BND0233-BS2)						Prepared: 09-Apr-2025 Analyzed: 10-Apr-2025 19:02						
Vanadium	51a	25.9	0.100	0.200	ug/L	25.0		104	85-115			



WSP USA, Inc.

840 HOWE STREET, #1000

VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale

Project Number: 31406578.8318

Project Manager: Accounts Payable

Reported:

28-Apr-2025 11:32

Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds (dissolved) - Quality Control

Batch BND0158 - EPA 6010D in Water

Instrument: ICP3 Analyst: SH

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BND0158-BLK1)						Prepared: 06-Apr-2025 Analyzed: 20-Apr-2025 22:10					
Potassium, Dissolved	ND	0.250	0.500	mg/L							U
LCS (BND0158-BS1)						Prepared: 06-Apr-2025 Analyzed: 20-Apr-2025 22:13					
Potassium, Dissolved	10.8	0.253	0.505	mg/L	10.0		108	80-120			
Duplicate (BND0158-DUP1)						Source: 25C0667-23 Prepared: 06-Apr-2025 Analyzed: 23-Apr-2025 20:12					
Potassium, Dissolved	456	1.25	2.50	mg/L		468			2.57	20	D
Matrix Spike (BND0158-MS1)						Source: 25C0667-23 Prepared: 06-Apr-2025 Analyzed: 23-Apr-2025 20:15					
Potassium, Dissolved	480	1.26	2.53	mg/L	10.0	468	121	75-125			D
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											
Matrix Spike Dup (BND0158-MSD1)						Source: 25C0667-23 Prepared: 06-Apr-2025 Analyzed: 23-Apr-2025 20:18					
Potassium, Dissolved	474	1.26	2.53	mg/L	10.0	468	57.0	75-125	1.33	20	HC, D
Recovery limits for target analytes in MS/MSD QC samples are advisory only.											



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds (dissolved) - Quality Control

Batch BND0235 - EPA 200.8 in Water

Instrument: ICPMS1 Analyst: HAL

QC Sample/Analyte	Isotope	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BND0235-BLK1)			Prepared: 09-Apr-2025 Analyzed: 16-Apr-2025 02:27									
Antimony, Dissolved	121	ND	0.150	0.200	ug/L							U
Arsenic UCT, Dissolved	75a UCT	ND	0.100	0.200	ug/L							U
Lead, Dissolved	208	ND	0.100	0.200	ug/L							U
Vanadium, Dissolved	51a	ND	0.100	0.200	ug/L							U
LCS (BND0235-BS1)			Prepared: 09-Apr-2025 Analyzed: 16-Apr-2025 02:32									
Antimony, Dissolved	121	23.3	0.150	0.200	ug/L	25.0		93.2	85-115			
Arsenic UCT, Dissolved	75a UCT	24.6	0.100	0.200	ug/L	25.0		98.4	85-115			
Lead, Dissolved	208	25.6	0.100	0.200	ug/L	25.0		102	85-115			
Vanadium, Dissolved	51a	21.5	0.100	0.200	ug/L	25.0		86.0	85-115			
Duplicate (BND0235-DUP1)			Source: 25C0667-23		Prepared: 09-Apr-2025 Analyzed: 16-Apr-2025 06:07							
Arsenic UCT, Dissolved	75a UCT	15.4	0.200	0.400	ug/L		15.5			0.50	20	D
Lead, Dissolved	208	2.11	0.200	0.400	ug/L		2.12			0.19	20	D
Matrix Spike (BND0235-MS1)			Source: 25C0667-23		Prepared: 09-Apr-2025 Analyzed: 16-Apr-2025 06:12							
Arsenic UCT, Dissolved	75a UCT	41.9	0.200	0.400	ug/L	25.0	15.5	106	75-125			D
Lead, Dissolved	208	25.4	0.200	0.400	ug/L	25.0	2.12	93.2	75-125			D
Recovery limits for target analytes in MS/MSD QC samples are advisory only.												
Matrix Spike Dup (BND0235-MSD1)			Source: 25C0667-23		Prepared: 09-Apr-2025 Analyzed: 16-Apr-2025 06:17							
Arsenic UCT, Dissolved	75a UCT	41.9	0.200	0.400	ug/L	25.0	15.5	106	75-125	0.13	20	D
Lead, Dissolved	208	24.8	0.200	0.400	ug/L	25.0	2.12	90.8	75-125	2.34	20	D
Recovery limits for target analytes in MS/MSD QC samples are advisory only.												



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

Analysis by: Analytical Resources, LLC

Wet Chemistry - Quality Control

Batch BNC0775 - SM 2540 C-11 in Water

Instrument: BAL2 Analyst: AG

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
Blank (BNC0775-BLK1)					Prepared: 31-Mar-2025 Analyzed: 31-Mar-2025 10:30					
Dissolved Solids	ND	5	5	mg/L						U
LCS (BNC0775-BS1)					Prepared: 31-Mar-2025 Analyzed: 31-Mar-2025 10:30					
Dissolved Solids	496	10	10	mg/L	500	99.2	90-110			



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578.8318
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:32

Analysis by: Analytical Resources, LLC

Wet Chemistry - Quality Control

Batch BNC0779 - SM 2540 C-11 in Water

Instrument: BAL2 Analyst: AG

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
Blank (BNC0779-BLK1)					Prepared: 31-Mar-2025 Analyzed: 31-Mar-2025 12:35					
Dissolved Solids	ND	5	5	mg/L						U
LCS (BNC0779-BS1)					Prepared: 31-Mar-2025 Analyzed: 31-Mar-2025 12:35					
Dissolved Solids	510	10	10	mg/L	500	102	90-110			
Duplicate (BNC0779-DUP1)					Source: 25C0667-24 Prepared: 31-Mar-2025 Analyzed: 31-Mar-2025 12:35					
Dissolved Solids	448	10	10	mg/L		449		0.22	20	



WSP USA, Inc.

840 HOWE STREET, #1000

VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale

Project Number: 31406578.8318

Project Manager: Accounts Payable

Reported:

28-Apr-2025 11:32

Uncertified Analytes included in this Report

Analysis Matrix & Analyte

None

Certified Analyses included in this Report

Analysis Matrix & Analyte

Certification Codes

EPA 200.8 in Water

Antimony-121	DoD-ELAP,NELAP,WADOE,WA-DW
Arsenic-75a UCT	DoD-ELAP,NELAP,WADOE,WA-DW
Lead-208	DoD-ELAP,NELAP,WADOE,WA-DW
Vanadium-51a	DoD-ELAP,NELAP,WADOE,WA-DW
Antimony-121	DoD-ELAP,NELAP,WADOE
Arsenic-75a UCT	DoD-ELAP,NELAP,WADOE
Lead-208	DoD-ELAP,NELAP,WADOE
Vanadium-51a	DoD-ELAP,NELAP,WADOE

EPA 6010D in Water

Potassium	DoD-ELAP,NELAP,WADOE
Potassium	DoD-ELAP,NELAP,WADOE

SM 2540 C-11 in Water

Dissolved Solids	DoD-ELAP,WADOE,NELAP,WA-DW
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Certifications

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	17-015	02/28/2026
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program, PJLA Testing	66169	01/31/2026
NELAP	ORELAP - Oregon Laboratory Accreditation Program	WA100006-012	05/12/2025
WADOE	WA Dept of Ecology	C558	06/30/2025
WA-DW	Ecology - Drinking Water	C558	06/30/2025



WSP USA, Inc.

840 HOWE STREET, #1000

VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale

Project Number: 31406578.8318

Project Manager: Accounts Payable

Reported:

28-Apr-2025 11:32

Notes and Definitions

*	Flagged value is not within established control limits.
B	This analyte was detected in the method blank.
D	The reported value is from a dilution
HC	The natural concentration of the spiked analyte is so much greater than the concentration spiked that an accurate determination of spike recovery is not possible
J	Estimated concentration value detected below the reporting limit.
L	Analyte concentration is ≤ 5 times the reporting limit and the replicate control limit defaults to $\pm$ RL instead of 20% RPD
U	This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
[2C]	Indicates this result was quantified on the second column on a dual column analysis.
!	Indicates that ARL is NOT ACCREDITED for this parameter in samples logged as 'Drinking Water'
#	Indicates that ARL is NOT ACCREDITED for this parameter in this analysis and matrix.



Analytical Resources, LLC
Analytical Chemists and Consultants
Tukwila, WA

28 April 2025

Accounts Payable
WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER, BRITISH COLUMBIA V6Z 2M1

RE: Ravensdale (31406578-0957)

Please find enclosed sample receipt documentation and analytical results for samples from the project referenced above.

Sample analyses were performed according to ARI's Quality Assurance Plan and any provided project specific Quality Assurance Plan. Each analytical section of this report has been approved and reviewed by an analytical peer, the appropriate Laboratory Supervisor or qualified substitute, and a technical reviewer.

Should you have any questions or problems, please feel free to contact us at your convenience.

Associated Work Order(s)
25C0666

Associated SDG ID(s)
N/A

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the enclose Narrative. ARI, an accredited laboratory, certifies that the report results for which ARI is accredited meets all the requirements of the accrediting body. A list of certified analyses, accreditations, and expiration dates is included in this report.

Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Analytical Resources, LLC

Kelly Bottem, Client Services Manager

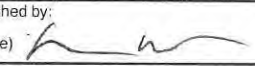
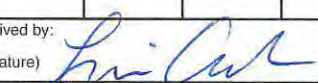
The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number: 25C0666		Turn-around Requested: Standard		Page: 1 of 1		 Analytical Resources, LLC Analytical Chemists and Consultants 4611 South 134th Place, Suite 100 Tukwila, WA 98168 206-695-6200 206-695-6201 (fax)																											
ARI Client Company: WSP		Phone: 425-883-0777		Date: 3/27/25				Ice Present?																									
Client Contact: Gary Zimmerman				No. of Coolers:				Cooler Temps:																									
Client Project Name: Ravensdale Treatment Facility				<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th colspan="8">Analysis Requested</th> <th colspan="2">Notes/Comments</th> </tr> <tr> <td rowspan="2" style="writing-mode: vertical-rl; transform: rotate(180deg);">Total Metals As, Pb, Sb, V, K</td> <td rowspan="2" style="writing-mode: vertical-rl; transform: rotate(180deg);">Dissolved Metals As, Pb, Sb, V, K</td> <td></td><td></td><td></td><td></td><td></td><td></td> <td colspan="2" rowspan="2"> Please include PO, PN, and Task ID on invoices PO: P120025US001 PN: US-WSP-31406578.0057 Task: 01 </td> </tr> <tr> <td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table>				Analysis Requested								Notes/Comments		Total Metals As, Pb, Sb, V, K	Dissolved Metals As, Pb, Sb, V, K							Please include PO, PN, and Task ID on invoices PO: P120025US001 PN: US-WSP-31406578.0057 Task: 01							
Analysis Requested								Notes/Comments																									
Total Metals As, Pb, Sb, V, K	Dissolved Metals As, Pb, Sb, V, K							Please include PO, PN, and Task ID on invoices PO: P120025US001 PN: US-WSP-31406578.0057 Task: 01																									
Client Project #: 31406578-0957		Samplers: A. Waser, N. Mannix																															

Sample ID	Date	Time	Matrix	No. Containers	Total Metals As, Pb, Sb, V, K	Dissolved Metals As, Pb, Sb, V, K							
Tank - Influent	3/27/25	0825	W	2	X	X							
Sand - Effluent	3/27/25	0830	W	2	X	X							
As - Effluent	3/27/25	0835	W	2	X	X							

Comments/Special Instructions	Relinquished by: (Signature) 		Received by: 		Relinquished by:		Received by:	
	Printed Name: Andrew Waser		Printed Name: Sydni Acevedo		Printed Name:		Printed Name:	
	Company: WSP		Company: AR LLC		Company:		Company:	
	Date & Time: 3/27/25 1411		Date & Time: 3/27/25 1411		Date & Time:		Date & Time:	

Limits of Liability: ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, notwithstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.



WSP USA, Inc.

840 HOWE STREET, #1000

VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale

Project Number: 31406578-0957

Project Manager: Accounts Payable

Reported:

28-Apr-2025 11:54

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Tank-Influent	25C0666-01	Water	27-Mar-2025 08:25	27-Mar-2025 14:11
Tank-Influent	25C0666-02	Water	27-Mar-2025 08:25	27-Mar-2025 14:11
Sand-Effluent	25C0666-03	Water	27-Mar-2025 08:30	27-Mar-2025 14:11
Sand-Effluent	25C0666-04	Water	27-Mar-2025 08:30	27-Mar-2025 14:11
As-Effluent	25C0666-05	Water	27-Mar-2025 08:35	27-Mar-2025 14:11
As-Effluent	25C0666-06	Water	27-Mar-2025 08:35	27-Mar-2025 14:11



WSP USA, Inc.

840 HOWE STREET, #1000

VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale

Project Number: 31406578-0957

Project Manager: Accounts Payable

Reported:

28-Apr-2025 11:54

Work Order Case Narrative

Total and Dissolved Metals - EPA Method 200.8 and 6010D

The sample(s) were digested and analyzed within the recommended holding times.

Initial and continuing calibrations including interference checks were within method requirements for reported elements.

The method blank(s) were clean at the reporting limits.

The blank spike (BS/LCS) percent recoveries were within control limits.

The matrix spike (MS) percent recoveries and the duplicate (DUP) relative percent difference (RPD) were within advisory control limits.



WORK ORDER

25C0666

Client: WSP USA, Inc.

Project Manager: Kelly Bottem

Project: Ravensdale

Project Number: 31406578-0957

Preservation Confirmation

Container ID	Container Type	pH	pH Paper Lot#: <u>N000119</u>
25C0666-01 A	HDPE NM, 500 mL, 1:1 HNO ₃	<u>5.2</u>	<u>pass</u>
25C0666-02 A	HDPE NM, 1000 mL	<u><2</u>	<u>fail</u>
25C0666-03 A	HDPE NM, 500 mL, 1:1 HNO ₃	<u>5.2</u>	<u>pass</u>
25C0666-04 A	HDPE NM, 1000 mL	<u><2</u>	<u>fail</u>
25C0666-05 A	HDPE NM, 500 mL, 1:1 HNO ₃	<u>5.2</u>	<u>pass</u>
25C0666-06 A	HDPE NM, 1000 mL	<u><2</u>	<u>fail</u>

JWC
Preservation Confirmed By

3/27/25
Date



Cooler Receipt Form

ARI Client: WSP

Project Name: 3/27/25
St. Rensselaer

COC No(s): _____ (NA)

Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Assigned ARI Job No: 25C0666

Tracking No: _____ (NA)

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of the cooler? _____

YES (NO)

Were custody papers included with the cooler? _____

(YES) NO

Were custody papers properly filled out (ink, signed, etc.) _____

(YES) NO

Temperature of Cooler(s) (°C) Time 1411 0.9 (3.7) 0.6 0.7

Temp Gun ID#: 9708

Was a temperature blank included in the cooler? _____

YES (NO)

Were coolers received between 0°- 6° (°C) _____

(YES) NO

Was sufficient ice used (if appropriate)? _____

NA (YES) NO

Cooler Accepted by: SA Date: 3/27/25 Time: 1411

Complete custody forms and attach all shipping documents

Log-In Phase:

What kind of packing material was used? Bubble Wrap Wet Ice Gel Packs Baggies Foam Block N/A Other: _____

Are any samples that were out of temperature compliance documented in LIMS? _____

YES (NO)

How were bottles sealed in plastic bags? _____

Individually (Grouped) Not

Did all bottles arrive in good condition (unbroken)? _____

(YES) NO

Were all bottle labels complete and legible? _____

(YES) NO

Did the number of containers listed on COC match with the number of containers received? _____

(YES) NO

Did all bottle labels and tags agree with custody papers? _____

(YES) NO

Were all bottles used correct for the requested analyses? _____

(YES) NO

Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs) ...

NA (YES) NO

Were all VOC vials free of air bubbles? _____

(NA) YES NO

Was sufficient amount of sample sent in each bottle? _____

(YES) NO

Date VOC Trip Blank was made at ARI: _____

NA

Were the sample(s) split by ARI? _____

(NA)

YES

Date/Time: _____

Equipment: _____

Split by: _____

Samples Logged by: JWL Date: 3/27/25 Time: 16:36 Labels checked by: AK

**** Notify Project Manager of discrepancies or concerns ****

Additional Notes, Discrepancies, & Resolutions:

By: _____

Date: _____



WORK ORDER

25C0666

Client: WSP USA, Inc.

Project Manager: Kelly Bottem

Project: Ravensdale

Project Number: 31406578-0957

Preservation Confirmation

Container ID	Container Type	pH	pH Paper Lot#: <u>N000119</u>
25C0666-01 A	HDPE NM, 500 mL, 1:1 HNO ₃	<u><2</u>	<u>pass</u>
25C0666-02 A	HDPE NM, 1000 mL	<u><2</u>	<u>fail</u> ①
25C0666-03 A	HDPE NM, 500 mL, 1:1 HNO ₃	<u><2</u>	<u>pass</u>
25C0666-04 A	HDPE NM, 1000 mL	<u><2</u>	<u>fail</u> ①
25C0666-05 A	HDPE NM, 500 mL, 1:1 HNO ₃	<u><2</u>	<u>pass</u>
25C0666-06 A	HDPE NM, 1000 mL	<u><2</u>	<u>fail</u> ①

JWC
Preservation Confirmed By

3/27/25
Date

① Filtered at 0.45µm
and preserved to pH 2.0
with 0.75% conc. HNO₃
(M41838). M 03/28/25 1200



WORK ORDER

25C0666

Client: WSP USA, Inc.

Project Manager: Kelly Bottem

Project: Ravensdale

Project Number: 31406578-0957

Preservation Confirmation

Container ID	Container Type	pH	pH Paper Lot#: <u>N020119</u>
25C0666-01 A	HDPE NM, 500 mL, 1:1 HNO ₃	<2	pass
25C0666-02 A	HDPE NM, 1000 mL	<2	fail
25C0666-03 A	HDPE NM, 500 mL, 1:1 HNO ₃	<2	pass
25C0666-04 A	HDPE NM, 1000 mL	<2	fail
25C0666-05 A	HDPE NM, 500 mL, 1:1 HNO ₃	<2	pass
25C0666-06 A	HDPE NM, 1000 mL	<2	fail (1)

JWC
Preservation Confirmed By

3/27/25
Date

① Made 100ml subsample
to use for 6010 total metals.
preserved to pH<2 with
0.5ml concentrated HNO₃
(M11838) 4/1/26

AS @ 0620.

① checked preservation
and pH<2.

AS 4/2/25 AS

@ 1100



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578-0957
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:54

Tank-Influent
25C0666-01 (Water)

Metals and Metallic Compounds

Method: EPA 200.8
Instrument: ICPMS1 Analyst: HAL

Sampled: 03/27/2025 08:25

Analyzed: 04/16/2025 02:37

Sample Preparation: Preparation Method: REN - EPA 3010A M
Preparation Batch: BND0233 Sample Size: 25 mL
Prepared: 04/09/2025 Final Volume: 25 mL

Extract ID: 25C0666-01 A 01

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Antimony	7440-36-0	5	0.750	1.00	13.6	ug/L	D
Arsenic UCT	7440-38-2	5	0.500	1.00	29.3	ug/L	D
Lead	7439-92-1	5	0.500	1.00	53.9	ug/L	D
Vanadium	7440-62-2	5	0.500	1.00	3.02	ug/L	D



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578-0957
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:54

Tank-Influent
25C0666-01 (Water)

Metals and Metallic Compounds

Method: EPA 6010D	Sampled: 03/27/2025 08:25
Instrument: ICP3 Analyst: SH	Analyzed: 04/20/2025 22:47
Sample Preparation:	Preparation Method: TWC EPA 3010A
	Preparation Batch: BND0001
	Prepared: 04/01/2025
	Sample Size: 25 mL
	Final Volume: 25 mL
	Extract ID: 25C0666-01 A 02

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Potassium	7440-09-7	2	0.500	1.00	437	mg/L	D



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578-0957
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:54

Tank-Influent
25C0666-02 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8	Sampled: 03/27/2025 08:25
Instrument: ICPMS1 Analyst: HAL	Analyzed: 04/16/2025 02:42
Sample Preparation:	Preparation Method: REN - EPA 3010A M
	Preparation Batch: BND0262
	Prepared: 04/10/2025
	Sample Size: 25 mL
	Final Volume: 25 mL
	Extract ID: 25C0666-02 A 02

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Antimony, Dissolved	7440-36-0	5	0.750	1.00	13.7	ug/L	D
Arsenic UCT, Dissolved	7440-38-2	5	0.500	1.00	10.1	ug/L	D
Lead, Dissolved	7439-92-1	5	0.500	1.00	28.1	ug/L	D
Vanadium, Dissolved	7440-62-2	5	0.500	1.00	2.50	ug/L	D



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578-0957
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:54

Tank-Influent
25C0666-02 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 6010D	Sampled: 03/27/2025 08:25
Instrument: ICP3 Analyst: SH	Analyzed: 04/23/2025 19:55
Sample Preparation:	Preparation Method: WMN (No Prep)
	Preparation Batch: BND0154
	Prepared: 04/06/2025
	Sample Size: 25 mL
	Final Volume: 25 mL
	Extract ID: 25C0666-02 A 02

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Potassium, Dissolved	7440-09-7	5	1.25	2.50	437	mg/L	D



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578-0957
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:54

Sand-Effluent
25C0666-03 (Water)

Metals and Metallic Compounds

Method: EPA 200.8	Sampled: 03/27/2025 08:30
Instrument: ICPMS1 Analyst: HAL	Analyzed: 04/16/2025 03:19
Sample Preparation:	Preparation Method: REN - EPA 3010A M
	Preparation Batch: BND0233
	Prepared: 04/09/2025
	Sample Size: 25 mL
	Final Volume: 25 mL
	Extract ID: 25C0666-03 A 02

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Antimony	7440-36-0	5	0.750	1.00	14.6	ug/L	D
Arsenic UCT	7440-38-2	5	0.500	1.00	25.3	ug/L	D
Lead	7439-92-1	5	0.500	1.00	30.3	ug/L	D
Vanadium	7440-62-2	5	0.500	1.00	3.08	ug/L	D



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578-0957
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:54

Sand-Effluent
25C0666-03 (Water)

Metals and Metallic Compounds

Method: EPA 6010D	Sampled: 03/27/2025 08:30
Instrument: ICP3 Analyst: SH	Analyzed: 04/20/2025 22:50
Sample Preparation:	Preparation Method: TWC EPA 3010A
	Preparation Batch: BND0001
	Prepared: 04/01/2025
	Sample Size: 25 mL
	Final Volume: 25 mL
	Extract ID: 25C0666-03 A 02

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Potassium	7440-09-7	2	0.500	1.00	408	mg/L	D



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578-0957
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:54

Sand-Effluent
25C0666-04 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8	Sampled: 03/27/2025 08:30
Instrument: ICPMS1 Analyst: HAL	Analyzed: 04/16/2025 03:24
Sample Preparation:	Preparation Method: REN - EPA 3010A M
	Preparation Batch: BND0262
	Prepared: 04/10/2025
	Sample Size: 25 mL
	Final Volume: 25 mL
	Extract ID: 25C0666-04 A 02

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Antimony, Dissolved	7440-36-0	5	0.750	1.00	14.1	ug/L	D
Arsenic UCT, Dissolved	7440-38-2	5	0.500	1.00	24.5	ug/L	D
Lead, Dissolved	7439-92-1	5	0.500	1.00	0.735	ug/L	J, D
Vanadium, Dissolved	7440-62-2	5	0.500	1.00	3.16	ug/L	D



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578-0957
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:54

Sand-Effluent
25C0666-04 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 6010D	Sampled: 03/27/2025 08:30
Instrument: ICP3 Analyst: SH	Analyzed: 04/23/2025 19:58
Sample Preparation:	Preparation Method: WMN (No Prep)
	Preparation Batch: BND0154
	Prepared: 04/06/2025
	Sample Size: 25 mL
	Final Volume: 25 mL
	Extract ID: 25C0666-04 A 02

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Potassium, Dissolved	7440-09-7	5	1.25	2.50	406	mg/L	D



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578-0957
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:54

As-Effluent
25C0666-05 (Water)

Metals and Metallic Compounds

Method: EPA 200.8

Sampled: 03/27/2025 08:35

Instrument: ICPMS1 Analyst: HAL

Analyzed: 04/16/2025 03:28

Sample Preparation:

Preparation Method: REN - EPA 3010A M

Extract ID: 25C0666-05 A 02

Preparation Batch: BND0233

Sample Size: 25 mL

Prepared: 04/09/2025

Final Volume: 25 mL

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Antimony	7440-36-0	5	0.750	1.00	13.7	ug/L	D
Arsenic UCT	7440-38-2	5	0.500	1.00	23.3	ug/L	D
Lead	7439-92-1	5	0.500	1.00	26.1	ug/L	D
Vanadium	7440-62-2	5	0.500	1.00	3.57	ug/L	D



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578-0957
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:54

As-Effluent
25C0666-05 (Water)

Metals and Metallic Compounds

Method: EPA 6010D	Sampled: 03/27/2025 08:35
Instrument: ICP3 Analyst: SH	Analyzed: 04/20/2025 22:53
Sample Preparation:	Preparation Method: TWC EPA 3010A
	Preparation Batch: BND0001
	Prepared: 04/01/2025
	Sample Size: 25 mL
	Final Volume: 25 mL
	Extract ID: 25C0666-05 A 02

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Potassium	7440-09-7	2	0.500	1.00	371	mg/L	D



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578-0957
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:54

As-Effluent
25C0666-06 (Water)

Metals and Metallic Compounds

Method: EPA 6010D	Sampled: 03/27/2025 08:35
Instrument: ICP3 Analyst: SH	Analyzed: 04/16/2025 07:11
Sample Preparation:	Preparation Method: TWC EPA 3010A
	Preparation Batch: BND0001
	Prepared: 04/01/2025
	Sample Size: 25 mL
	Final Volume: 25 mL
	Extract ID: 25C0666-06 A 02

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Potassium	7440-09-7	1	0.250	0.500	359	mg/L	



WSP USA, Inc.
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VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578-0957
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:54

As-Effluent
25C0666-06 (Water)

Metals and Metallic Compounds (dissolved)

Method: EPA 200.8	Sampled: 03/27/2025 08:35
Instrument: ICPMS1 Analyst: HAL	Analyzed: 04/16/2025 05:06
Sample Preparation:	Preparation Method: REN - EPA 3010A M
	Preparation Batch: BND0262
	Prepared: 04/10/2025
	Sample Size: 25 mL
	Final Volume: 25 mL
	Extract ID: 25C0666-06 A 02

Analyte	CAS Number	Dilution	Detection Limit	Reporting Limit	Result	Units	Notes
Antimony, Dissolved	7440-36-0	5	0.750	1.00	13.3	ug/L	D
Arsenic UCT, Dissolved	7440-38-2	5	0.500	1.00	21.7	ug/L	D
Lead, Dissolved	7439-92-1	5	0.500	1.00	4.44	ug/L	D
Vanadium, Dissolved	7440-62-2	5	0.500	1.00	2.75	ug/L	D



WSP USA, Inc.

840 HOWE STREET, #1000

VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale

Project Number: 31406578-0957

Project Manager: Accounts Payable

Reported:

28-Apr-2025 11:54

Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds - Quality Control

Batch BND0001 - EPA 6010D in Water

Instrument: ICP3 Analyst: SH

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
Blank (BND0001-BLK1)										
						Prepared: 01-Apr-2025 Analyzed: 12-Apr-2025 00:43				
Potassium	ND	0.250	0.500	mg/L						U
LCS (BND0001-BS1)										
						Prepared: 01-Apr-2025 Analyzed: 12-Apr-2025 00:46				
Potassium	11.2	0.250	0.500	mg/L	10.0	112	80-120			



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578-0957
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:54

Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds - Quality Control

Batch BND0233 - EPA 200.8 in Water

Instrument: ICPMS1 Analyst: HAL

QC Sample/Analyte	Isotope	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BND0233-BLK1)						Prepared: 09-Apr-2025 Analyzed: 09-Apr-2025 18:31						
Antimony	121	ND	0.150	0.200	ug/L							U
Arsenic UCT	75a UCT	ND	0.100	0.200	ug/L							U
Lead	208	ND	0.100	0.200	ug/L							U
Vanadium	51a	ND	0.100	0.200	ug/L							U

LCS (BND0233-BS1)						Prepared: 09-Apr-2025 Analyzed: 09-Apr-2025 18:41						
Antimony	121	25.4	0.150	0.200	ug/L	25.0		102	85-115			
Arsenic UCT	75a UCT	25.8	0.100	0.200	ug/L	25.0		103	85-115			
Lead	208	24.9	0.100	0.200	ug/L	25.0		99.4	85-115			
Vanadium	51a	22.4	0.100	0.200	ug/L	25.0		89.6	85-115			

Instrument: ICPMS2 Analyst: MCB

QC Sample/Analyte	Isotope	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BND0233-BLK2)						Prepared: 09-Apr-2025 Analyzed: 10-Apr-2025 18:54						
Antimony	121	ND	0.150	0.200	ug/L							U
Lead	208	ND	0.100	0.200	ug/L							U
Vanadium	51a	ND	0.100	0.200	ug/L							U

LCS (BND0233-BS2)						Prepared: 09-Apr-2025 Analyzed: 10-Apr-2025 19:02						
Antimony	121	25.1	0.150	0.200	ug/L	25.0		101	85-115			
Lead	208	26.7	0.100	0.200	ug/L	25.0		107	85-115			
Vanadium	51a	25.9	0.100	0.200	ug/L	25.0		104	85-115			



WSP USA, Inc.

840 HOWE STREET, #1000

VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale

Project Number: 31406578-0957

Project Manager: Accounts Payable

Reported:

28-Apr-2025 11:54

Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds (dissolved) - Quality Control

Batch BND0154 - EPA 6010D in Water

Instrument: ICP3 Analyst: SH

QC Sample/Analyte	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
Blank (BND0154-BLK1)					Prepared: 06-Apr-2025 Analyzed: 20-Apr-2025 22:04					
Potassium, Dissolved	ND	0.250	0.500	mg/L						U
LCS (BND0154-BS1)					Prepared: 06-Apr-2025 Analyzed: 20-Apr-2025 22:07					
Potassium, Dissolved	11.2	0.253	0.505	mg/L	10.0	112	80-120			



WSP USA, Inc.
840 HOWE STREET, #1000
VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale
Project Number: 31406578-0957
Project Manager: Accounts Payable

Reported:
28-Apr-2025 11:54

Analysis by: Analytical Resources, LLC

Metals and Metallic Compounds (dissolved) - Quality Control

Batch BND0262 - EPA 200.8 in Water

Instrument: ICPMS1 Analyst: HAL

QC Sample/Analyte	Isotope	Result	Detection Limit	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (BND0262-BLK1)			Prepared: 10-Apr-2025 Analyzed: 16-Apr-2025 02:18									
Antimony, Dissolved	121	ND	0.150	0.200	ug/L							U
Arsenic UCT, Dissolved	75a UCT	ND	0.100	0.200	ug/L							U
Lead, Dissolved	208	ND	0.100	0.200	ug/L							U
Vanadium, Dissolved	51a	ND	0.100	0.200	ug/L							U
LCS (BND0262-BS1)			Prepared: 10-Apr-2025 Analyzed: 16-Apr-2025 02:22									
Antimony, Dissolved	121	23.2	0.150	0.200	ug/L	25.0		92.6	85-115			
Arsenic UCT, Dissolved	75a UCT	24.7	0.100	0.200	ug/L	25.0		98.6	85-115			
Lead, Dissolved	208	25.9	0.100	0.200	ug/L	25.0		104	85-115			
Vanadium, Dissolved	51a	22.0	0.100	0.200	ug/L	25.0		88.2	85-115			
Duplicate (BND0262-DUP1)			Source: 25C0666-06		Prepared: 10-Apr-2025 Analyzed: 16-Apr-2025 05:11							
Antimony, Dissolved	121	13.3	0.750	1.00	ug/L		13.3			0.30	20	D
Arsenic UCT, Dissolved	75a UCT	21.5	0.500	1.00	ug/L		21.7			1.32	20	D
Lead, Dissolved	208	4.43	0.500	1.00	ug/L		4.44			0.23	20	D
Vanadium, Dissolved	51a	2.73	0.500	1.00	ug/L		2.75			0.73	20	D
Matrix Spike (BND0262-MS1)			Source: 25C0666-06		Prepared: 10-Apr-2025 Analyzed: 16-Apr-2025 05:15							
Antimony, Dissolved	121	38.2	0.750	1.00	ug/L	25.0	13.3	99.6	75-125			D
Arsenic UCT, Dissolved	75a UCT	48.8	0.500	1.00	ug/L	25.0	21.7	108	75-125			D
Lead, Dissolved	208	28.8	0.500	1.00	ug/L	25.0	4.44	97.5	75-125			D
Vanadium, Dissolved	51a	24.3	0.500	1.00	ug/L	25.0	2.75	86.2	75-125			D

Recovery limits for target analytes in MS/MSD QC samples are advisory only.



WSP USA, Inc.

840 HOWE STREET, #1000

VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale

Project Number: 31406578-0957

Project Manager: Accounts Payable

Reported:

28-Apr-2025 11:54

Uncertified Analytes included in this Report

Analysis Matrix & Analyte

None

Certified Analyses included in this Report

Analysis Matrix & Analyte

Certification Codes

EPA 200.8 in Water

Antimony-121	DoD-ELAP,NELAP,WADOE,WA-DW
Arsenic-75a UCT	DoD-ELAP,NELAP,WADOE,WA-DW
Lead-208	DoD-ELAP,NELAP,WADOE,WA-DW
Vanadium-51a	DoD-ELAP,NELAP,WADOE,WA-DW
Antimony-121	DoD-ELAP,NELAP,WADOE
Arsenic-75a UCT	DoD-ELAP,NELAP,WADOE
Lead-208	DoD-ELAP,NELAP,WADOE
Vanadium-51a	DoD-ELAP,NELAP,WADOE

EPA 6010D in Water

Potassium	DoD-ELAP,NELAP,WADOE
Potassium	DoD-ELAP,NELAP,WADOE

Certifications

Code	Description	Number	Expires
ADEC	Alaska Dept of Environmental Conservation	17-015	02/28/2026
DoD-ELAP	DoD-Environmental Laboratory Accreditation Program, PJLA Testing	66169	01/31/2026
NELAP	ORELAP - Oregon Laboratory Accreditation Program	WA100006-012	05/12/2025
WADOE	WA Dept of Ecology	C558	06/30/2025
WA-DW	Ecology - Drinking Water	C558	06/30/2025



WSP USA, Inc.

840 HOWE STREET, #1000

VANCOUVER BRITISH COLUMBIA, V6Z 2M1

Project: Ravensdale

Project Number: 31406578-0957

Project Manager: Accounts Payable

Reported:

28-Apr-2025 11:54

Notes and Definitions

*	Flagged value is not within established control limits.
B	This analyte was detected in the method blank.
D	The reported value is from a dilution
HC	The natural concentration of the spiked analyte is so much greater than the concentration spiked that an accurate determination of spike recovery is not possible
J	Estimated concentration value detected below the reporting limit.
L	Analyte concentration is ≤ 5 times the reporting limit and the replicate control limit defaults to $\pm$ RL instead of 20% RPD
U	This analyte is not detected above the reporting limit (RL) or if noted, not detected above the limit of detection (LOD).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
[2C]	Indicates this result was quantified on the second column on a dual column analysis.
!	Indicates that ARL is NOT ACCREDITED for this parameter in samples logged as 'Drinking Water'
#	Indicates that ARL is NOT ACCREDITED for this parameter in this analysis and matrix.

APPENDIX D

Sample Integrity Data Sheets

SAMPLE INTEGRITY DATA SHEET

Plant/Site Ravensdale **Project No.** 152030402

Site Location Ravensdale, WA

Sample ID MW-7A - 0325

Sampling Location Monitoring Well

Technical Procedure Reference(s) Golder, Sampling and Analysis Plan; Quality Assurance Project Plan 2020

Type of Sampler Peristaltic Pump

Date March 27, 2025 **Time** 00:35

Media Groundwater **Station** MW-7A

Sample Type: grab time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

SWL: Depth to water at 4.19 ft BTOC (March 27, 2025 11:55 AM); Well total depth at 20' BGS

Screen Interval: 10' - 20' BGS

Pump Intake: ~ 17' BGS

Sample Description _____

Field Measurements on Sample (pH, conductivity, etc.) SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analysis	Container	Preservation
1-500 mL	Total Metals	HDPE	HNO3
1-1000 mL	Total Dissolved Solids	HDPE	N/A

SAMPLE INTEGRITY DATA SHEET

Well ID MW-7A

Date 03/27/2025

Time Begin Purge 11:56

Time Collect Sample 00:35

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
4.19	12:00	7.02	607.3	7	1.06	111.7	14.0
4.19	12:05	7.05	616.9	7.1	1.03	111.4	83.0
4.19	12:10	7.05	625.6	7	1.44	111.8	5.40
4.19	12:15	7.05	638.4	7	1.54	114.9	4.43
4.19	12:20	7.05	652	7	1.49	115.8	5.51
4.19	12:25	7.06	657.5	6.9	1.49	116.8	3.17
4.19	12:30	7.06	667.8	7	1.47	117.6	3.87

Comments:

Flow Rate: 200 mL/min

Sampler 

Date March 27, 2025

Supervisor _____

Date _____

SAMPLE INTEGRITY DATA SHEET

Plant/Site Ravensdale **Project No.** 152030402

Site Location Ravensdale, WA

Sample ID MW-8A - 0325

Sampling Location Monitoring Well

Technical Procedure Reference(s) Golder, Sampling and Analysis Plan; Quality Assurance Project Plan 2020

Type of Sampler Peristaltic Pump, Grab

Date March 27, 2025 **Time** 11:30

Media Groundwater **Station** MW-8A

Sample Type: grab time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

SWL: Depth to water at 13.05 ft BTOC (March 27, 2025 11:05 AM); Well total depth at 26' BGS

Screen Interval: 16' - 26' BGS

Pump Intake: ~ 22' BGS

Sample Description _____

Field Measurements on Sample (pH, conductivity, etc.) SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analysis	Container	Preservation
1-1000 mL	Total Dissolved Solids	HDPE	N/A
1-500 mL	Total Metals	HDPE	HNO3

SAMPLE INTEGRITY DATA SHEET

Well ID	MW-8A
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Date 03/27/2025Time Begin Purge 11:08Time Collect Sample 11:30

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
13.05	11:10	7.01	736.8	8.4	8.91	146.5	4.66
13.05	11:15	7.02	736.8	8.3	8.83	147.0	2.74
13.05	11:20	7.01	736.8	8.3	8.75	147.3	3.04
13.05	11:25	7.01	136.9	8.4	8.8	147.6	3.30

Comments:

Flow Rate: 200 mL/min

Sampler A. H. **Date** March 27, 2025

Supervisor _____ **Date** _____

SAMPLE INTEGRITY DATA SHEET

Plant/Site Ravensdale **Project No.** 152030402

Site Location Ravensdale, WA

Sample ID MWB-3LDA - 0325

Sampling Location Monitoring Well

Technical Procedure Reference(s) Golder, Sampling and Analysis Plan; Quality Assurance Project Plan 2020

Type of Sampler Bladder Pump (dedicated)

Date March 27, 2025 **Time** 10:30

Media Groundwater **Station** MWB-3LDA

Sample Type: grab time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

SWL: Depth to water at 0.7 ft BTOC (March 27, 2025 10:03 AM); Well total depth at 145' BGS

Screen Interval: 125'- 145' BGS

Pump Intake: ~ 135' BGS

Sample Description _____

Field Measurements on Sample (pH, conductivity, etc.) SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analysis	Container	Preservation
1-1000 mL	Total Dissolved Solids	HDPE	N/A
1-500 mL	Total Metals	HDPE	HNO3

SAMPLE INTEGRITY DATA SHEET

Well ID MWB-3LDA

Date 03/27/2025

Time Begin Purge 10:10

Time Collect Sample 10:30

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
3.71	10:10	6.75	210.3	10.9	3.71	76.2	4.82
5.24	10:15	6.69	216.5	10.8	3.68	74.7	4.75
7.11	10:20	6.64	218.6	11.1	3.37	68.7	3.26
8.64	10:25	6.65	215.6	11.2	3.64	65.1	3.76

Comments:

Flow Rate: 250 mL/min

Sampler 

Date March 27, 2025

Supervisor _____

Date _____

SAMPLE INTEGRITY DATA SHEET

Plant/Site Ravensdale **Project No.** 152030402

Site Location Ravensdale, WA

Sample ID MWB-2LDA - 0325

Sampling Location Monitoring Well

Technical Procedure Reference(s) Golder, Sampling and Analysis Plan; Quality Assurance Project Plan 2020

Type of Sampler Bladder Pump (dedicated)

Date March 27, 2025 **Time** 09:45

Media Groundwater **Station** MWB-2LDA

Sample Type: grab time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

SWL: Depth to water at 34.36 ft BTOC (March 27, 2025 9:10 AM); Well total depth at 125' BGS

Screen Interval: 110'- 125' BGS

Pump Intake: ~ 120' BGS

Sample Description _____

Field Measurements on Sample (pH, conductivity, etc.) SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analysis	Container	Preservation
1-1000 mL	Total Dissolved Solids	HDPE	N/A
1-500 mL	Total Metals	HDPE	HNO3

SAMPLE INTEGRITY DATA SHEET

Well ID MWB-2LDA

Date 03/27/2025

Time Begin Purge 09:15

Time Collect Sample 09:45

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
34.65	09:20	7.32	342.2	11.1	8.86	94.2	3.79
34.65	09:25	7.21	339.2	11.2	2.47	86.0	3.34
34.8	09:30	7.2	337.9	11.1	1.12	81.9	3.02
34.83	09:35	7.21	337.4	11.2	0.85	78.1	2.79
34.92	09:40	7.22	337.3	11.2	0.7	75.1	2.86

Comments:

Flow Rate: 200 mL/min

Sampler 

Date March 27, 2025

Supervisor _____

Date _____

SAMPLE INTEGRITY DATA SHEET

Plant/Site Ravensdale **Project No.** 152030402

Site Location Ravensdale, WA

Sample ID Portal - 0325

Sampling Location Surface Water Monitoring Point

Technical Procedure Reference(s) Golder, Sampling and Analysis Plan; Quality Assurance Project Plan 2020

Type of Sampler Peristaltic Pump, Grab

Date March 26, 2025 **Time** 14:30

Media Surface Water **Station** Mine Portal

Sample Type: grab time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

SWL: Depth to water at ft BTOC (); Well total depth at N/A

Screen Interval: N/A

Pump Intake: N/A

Sample Description _____

Field Measurements on Sample (pH, conductivity, etc.) SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analysis	Container	Preservation
1-1000 mL	Total Dissolved Solids	HDPE	N/A
1-500 mL	Total Metals	HDPE	HNO3

SAMPLE INTEGRITY DATA SHEET

Well ID _____ Mine Portal _____

Date 03/26/2025

Time Begin Purge _____

Time Collect Sample 14:30

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
	14:27	6.38	735	12.2	5.65	124.8	54

Comments:

Flow Rate: _____ mL/min

Sampler 

Date March 26, 2025

Supervisor _____

Date _____

SAMPLE INTEGRITY DATA SHEET

Plant/Site Ravensdale **Project No.** 152030402

Site Location Ravensdale, WA

Sample ID Infiltration Ponds / MW-35A - 0325

Sampling Location Surface Water Monitoring Point

Technical Procedure Reference(s) Golder, Sampling and Analysis Plan; Quality Assurance Project Plan 2020

Type of Sampler Peristaltic Pump, Grab

Date March 26, 2025 **Time** 13:55

Media Surface Water **Station** Infiltration Ponds / MW-35A

Sample Type: grab time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

SWL: Depth to water at ft BTOC (); Well total depth at N/A

Screen Interval: N/A

Pump Intake: N/A

Sample Description _____

Field Measurements on Sample (pH, conductivity, etc.) SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analysis	Container	Preservation
2-1000 mL	Total Dissolved Solids	HDPE	N/A
4-500 mL	Total Metals	HDPE	HNO3

SAMPLE INTEGRITY DATA SHEET

Well ID Infiltration Ponds / MW-35A

Date 03/26/2025

Time Begin Purge 13:49

Time Collect Sample 13:55

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
	13:50	8.31	1,839	16.6	10.48	181.6	150

Comments:

Flow Rate: _____ mL/min

Duplicate MW-35A-0325 Sampled at 1200

Sampler 

Date March 26, 2025

Supervisor _____

Date _____

SAMPLE INTEGRITY DATA SHEET

Plant/Site Ravensdale **Project No.** 152030402

Site Location Ravensdale, WA

Sample ID MW-1A - 0325

Sampling Location Monitoring Well

Technical Procedure Reference(s) Golder, Sampling and Analysis Plan; Quality Assurance Project Plan 2020

Type of Sampler Bladder Pump (dedicated)

Date March 26, 2025 **Time** 13:20

Media Groundwater **Station** MW-1A

Sample Type: grab time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

SWL: Depth to water at 25 ft BTOC (March 26, 2025 12:32 PM); Well total depth at 44' BGS

Screen Interval: 28' - 43' BGS

Pump Intake: ~ 39' BGS

Sample Description _____

Field Measurements on Sample (pH, conductivity, etc.) SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analysis	Container	Preservation
1-1000 mL	Total Dissolved Solids	HDPE	N/A
1-500 mL	Total Metals	HDPE	HNO3

SAMPLE INTEGRITY DATA SHEET

Well ID	MW-1A
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Date 03/26/2025

Time Begin Purge 12:34

Time Collect Sample 13:20

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
25	12:35	6.9	499.9	10.7	15.35	117.3	5.92
25	12:40	6.76	792	10.1	6.08	135.8	5.36
25	12:45	6.77	800	10.3	5.93	134.3	4.38
25	12:50	6.76	799	10.4	6.95	134.1	3.35
25	12:55	6.74	757	10.3	8.82	133.1	3.48
25	13:00	6.72	716	10.1	9.6	132.0	2.30
25	13:05	6.71	694.8	10.1	9.52	131.4	3.61
25	13:10	6.7	683.5	10.2	9.73	131.3	2.34
25	13:15	6.7	675.8	70.2	9.71	130.9	2.35

Comments:

Flow Rate: 200 mL/min

Sampler

Date March 26, 2025

Supervisor _____

Date _____

SAMPLE INTEGRITY DATA SHEET

Plant/Site Ravensdale **Project No.** 152030402

Site Location Ravensdale, WA

Sample ID MW-2A / MW-45A - 0325

Sampling Location Monitoring Well

Technical Procedure Reference(s) Golder, Sampling and Analysis Plan; Quality Assurance Project Plan 2020

Type of Sampler Bladder Pump (dedicated)

Date March 26, 2025 **Time** 12:05

Media Groundwater **Station** MW-2A

Sample Type: grab time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

SWL: Depth to water at 18.88 ft BTOC (March 26, 2025 11:39 AM); Well total depth at 40' BGS

Screen Interval: 24'- 40' BGS

Pump Intake: ~ 30' BGS

Sample Description Duplicate MW-45A taken at 1200

Field Measurements on Sample (pH, conductivity, etc.) SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analysis	Container	Preservation
2-1000 mL	Total Dissolved Solids	HDPE	N/A
2-500 mL	Total Alkalinity	HDPE	N/A

SAMPLE INTEGRITY DATA SHEET

Well ID MW-2A / MW-45A

Date 03/26/2025

Time Begin Purge 11:41

Time Collect Sample 12:05

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
18.88	11:45	7.01	739	9.6	14.48	153.2	9.16
18.88	11:50	7.01	732	9.6	14.03	152.9	6.34
18.88	11:55	7	718	9.6	13.86	152.4	5.54
18.88	12:00	7	713	9.6	13.91	151.9	4.80

Comments:

Flow Rate: 200 mL/min

Sampler 

Date March 26, 2025

Supervisor _____

Date _____

SAMPLE INTEGRITY DATA SHEET

Plant/Site Ravensdale **Project No.** 152030402

Site Location Ravensdale, WA

Sample ID MW-5A - 0325

Sampling Location Monitoring Well

Technical Procedure Reference(s) Golder, Sampling and Analysis Plan; Quality Assurance Project Plan 2020

Type of Sampler Bladder Pump (dedicated)

Date March 26, 2025 **Time** 09:25

Media Groundwater **Station** MW-5A

Sample Type: grab time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

SWL: Depth to water at 22.77 ft BTOC (March 26, 2025 8:32 AM); Well total depth at 40' BGS

Screen Interval: 25'- 40' BGS

Pump Intake: ~ 38' BGS

Sample Description _____

Field Measurements on Sample (pH, conductivity, etc.) SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analysis	Container	Preservation
1-1000 mL	Total Dissolved Solids	HDPE	N/A
1-500 mL	Total Metals	HDPE	HNO3

SAMPLE INTEGRITY DATA SHEET

Well ID	MW-5A
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Date 03/26/2025

Time Begin Purge 08:35

Time Collect Sample 09:25

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
22.78	08:40	7.25	1,995	8.5	2.76	184.6	11.4
22.78	08:45	7.26	1,995	8.4	2.25	184.1	4.91
22.78	08:50	7.3	1,958	8.3	2.94	184.2	4.29
22.78	08:55	7.28	1,753	8.2	5.09	182.7	3.67
22.76	09:00	7.22	1,630	8.2	5.86	181.3	4.05
22.76	09:05	7.22	1,530	8.1	7.16	179.9	2.39
22.76	09:10	7.22	1,448	8.1	7.7	179.3	2.55
22.76	09:15	7.24	1,464	8.1	8.48	178.8	3.47
22.76	09:20	7.24	1,449	8.1	8.6	178.5	2.84

Comments:

Flow Rate: 200 mL/min

Sampler AH

Date March 26, 2025

Supervisor _____

Date _____

SAMPLE INTEGRITY DATA SHEET

Plant/Site Ravensdale **Project No.** 152030402

Site Location Ravensdale, WA

Sample ID MWB-5DSP - 0325

Sampling Location Monitoring Well

Technical Procedure Reference(s) Golder, Sampling and Analysis Plan; Quality Assurance Project Plan 2020

Type of Sampler Bladder Pump (dedicated)

Date March 25, 2025 **Time** 15:20

Media Groundwater **Station** MWB-5DSP

Sample Type: grab time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

SWL: Depth to water at 17.73 ft BTOC (March 25, 2025 2:41 PM); Well total depth at 83' BGS

Screen Interval: 73'- 83' BGS

Pump Intake: ~ 80' BGS

Sample Description _____

Field Measurements on Sample (pH, conductivity, etc.) SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analysis	Container	Preservation
1-1000 mL	Total Dissolved Solids	HDPE	N/A
1-500 mL	Total Metals	HDPE	HNO3

SAMPLE INTEGRITY DATA SHEET

Well ID MWB-5DSP

Date 03/25/2025

Time Begin Purge 14:42

Time Collect Sample 15:20

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
18.61	14:50	7.06	874	14.6	6.55	35.9	3.31
18.97	14:55	6.99	888	14.7	2.95	36.9	3.61
19.41	15:00	7	887	14.5	2.3	35.7	7.05
19.93	15:05	7	890	14.5	1.44	34.5	3.17
20.25	15:10	7	882	14.8	1.26	33.8	2.17
20.45	15:15	7	890	14.8	1.2	31.5	3.20

Comments:

Flow Rate: 200 mL/min

Sampler 

Date March 25, 2025

Supervisor _____

Date _____

SAMPLE INTEGRITY DATA SHEET

Plant/Site Ravensdale **Project No.** 152030402

Site Location Ravensdale, WA

Sample ID MW-99-1 - 0325

Sampling Location QA/QC Blank

Technical Procedure Reference(s) Golder, Sampling and Analysis Plan; Quality Assurance Project Plan 2020

Type of Sampler Grab

Date March 25, 2025 **Time** 14:05

Media **Station** MWB-1DDSP

Sample Type: grab time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

SWL: Depth to water at ft BTOC (); Well total depth at

Screen Interval:

Pump Intake:

Sample Description

Field Measurements on Sample (pH, conductivity, etc.) SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analysis	Container	Preservation
1-1000 mL	Total Dissolved Solids	HDPE	N/A
1-500 mL	Total Metals	HDPE	HNO3

SAMPLE INTEGRITY DATA SHEET

Well ID	MW-99-1
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Date 03/25/2025

Time Begin Purge _____

Time Collect Sample 14:05

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
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Comments:

Flow Rate: mL/min

Sampler AH

Date March 25, 2025

Supervisor _____

Date _____

SAMPLE INTEGRITY DATA SHEET

Plant/Site Ravensdale **Project No.** 152030402

Site Location Ravensdale, WA

Sample ID MWB-1DDSP - 0325

Sampling Location Monitoring Well

Technical Procedure Reference(s) Golder, Sampling and Analysis Plan; Quality Assurance Project Plan 2020

Type of Sampler Bladder Pump (dedicated)

Date March 25, 2025 **Time** 14:00

Media Groundwater **Station** MWB-1DDSP

Sample Type: grab time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

SWL: Depth to water at 46.73 ft BTOC (March 25, 2025 12:55 PM); Well total depth at 265' BGS

Screen Interval: 255'- 265' BGS

Pump Intake: ~ 260' BGS

Sample Description _____

Field Measurements on Sample (pH, conductivity, etc.) SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analysis	Container	Preservation
1-1000 mL	Total Dissolved Solids	HDPE	N/A
1-500 mL	Total Metals	HDPE	HNO3

SAMPLE INTEGRITY DATA SHEET

Well ID MWB-1DDSP

Date 03/25/2025

Time Begin Purge 12:55

Time Collect Sample 14:00

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
47.59	13:20	7.64	1,020	17.9	12.75	55.4	15.1
47.92	13:25	7.21	1,085	17.9	7.35	57.1	8.41
48.27	13:30	7.1	1,125	17.6	3.24	57.8	5.51
48.8	13:35	7.08	1,139	17.5	1.87	56.8	3.32
49.58	13:40	7.09	1,164	15.8	1.36	54.9	5.23
50.28	13:45	7.1	1,179	15.7	0.78	50.4	4.77
50.85	13:50	7.11	1,192	15.8	0.73	47.1	4.32
51.38	13:55	7.1	1,194	15.7	0.65	45.3	4.53

Comments:

Flow Rate: 100 mL/min

Sampler 

Date March 25, 2025

Supervisor _____

Date _____

SAMPLE INTEGRITY DATA SHEET

Plant/Site Ravensdale **Project No.** 152030402

Site Location Ravensdale, WA

Sample ID MWB-1SDSP - 0325

Sampling Location Monitoring Well

Technical Procedure Reference(s) Golder, Sampling and Analysis Plan; Quality Assurance Project Plan 2020

Type of Sampler Bladder Pump (dedicated)

Date March 25, 2025 **Time** 12:45

Media Groundwater **Station** MWB-1SDSP

Sample Type: grab time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

SWL: Depth to water at 32.84 ft BTOC (March 25, 2025 11:56 AM); Well total depth at 160' BGS

Screen Interval: 73'- 83' BGS

Pump Intake: ~ 80' BGS

Sample Description _____

Field Measurements on Sample (pH, conductivity, etc.) SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analysis	Container	Preservation
1-1000 mL	Total Dissolved Solids	HDPE	N/A
1-500 mL	Dissolved Metals	HDPE	HNO3

SAMPLE INTEGRITY DATA SHEET

Well ID MWB-1SDSP

Date 03/25/2025

Time Begin Purge 12:06

Time Collect Sample 12:45

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
34.39	12:10	6.89	1,542	13.5	8.5	96.6	3.32
35.32	12:15	6.77	1,656	13.4	4.4	90.5	4.77
37.31	12:20	6.78	1,663	12.7	2.81	84.1	3.71
39.67	12:25	6.8	1,653	12.5	1.11	78.2	14.8
42.84	12:30	6.8	1,658	12.4	0.94	74.2	2.93
43.89	12:35	6.8	1,653	12.3	0.9	71.7	2.68
46.14	12:40	6.81	1,651	12.6	0.92	69.1	1.97

Comments:

Flow Rate: 200 mL/min

Sampler 

Date March 25, 2025

Supervisor _____

Date _____

SAMPLE INTEGRITY DATA SHEET

Plant/Site Ravensdale **Project No.** 152030402

Site Location Ravensdale, WA

Sample ID MWB-6DSP / MW-55A - 0325

Sampling Location Monitoring Well

Technical Procedure Reference(s) Golder, Sampling and Analysis Plan; Quality Assurance Project Plan 2020

Type of Sampler Bladder Pump (dedicated)

Date March 25, 2025 **Time** 11:10

Media Groundwater **Station** MWB-6DSP / MW-55A

Sample Type: grab time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

SWL: Depth to water at 17.4 ft BTOC (March 25, 2025 10:34 AM); Well total depth at 195' BGS

Screen Interval: 120'- 195' BGS

Pump Intake: ~ 170' BGS

Sample Description No color, odor, sheen

Field Measurements on Sample (pH, conductivity, etc.) SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analysis	Container	Preservation
2-1000 mL	Total Dissolved Solids	HDPE	N/A
2-500 mL	Total Metals	HDPE	HNO3

SAMPLE INTEGRITY DATA SHEET

Well ID MWB-6DSP / MW-55A

Date 03/25/2025

Time Begin Purge 10:37

Time Collect Sample 11:10

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
18.69	10:40	7.17	464	11.9	7.35	80.6	2.49
19.62	10:45	7.14	466.2	12	2.3	72.6	3.57
19.89	10:50	7.14	458.2	12.2	1.32	70.1	3.21
20.21	10:55	7.18	457.1	12	0.83	68.6	3.61
20.41	11:00	7.15	456	12.01	0.76	67.9	3.23
20.68	11:05	7.15	456.3	12.1	0.76	67.3	3.19

Comments:

Flow Rate: 200 mL/min

Sampler 

Date March 25, 2025

Supervisor _____

Date _____

SAMPLE INTEGRITY DATA SHEET

Plant/Site Ravensdale **Project No.** 152030402

Site Location Ravensdale, WA

Sample ID MWB-4DSP - 0325

Sampling Location Monitoring Well

Technical Procedure Reference(s) Golder, Sampling and Analysis Plan; Quality Assurance Project Plan 2020

Type of Sampler Disposable Bailer

Date March 26, 2025 **Time** 15:55

Media Groundwater **Station** MWB-4DSP

Sample Type: grab time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

SWL: Depth to water at 15.1 ft BTOC (March 26, 2025 3:55 PM); Well total depth at 42.8' BGS

Screen Interval: 25'- 36' BGS

Pump Intake: N/A

Sample Description _____

Field Measurements on Sample (pH, conductivity, etc.) SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analysis	Container	Preservation
-		HDPE	

SAMPLE INTEGRITY DATA SHEET

Well ID MWB-4DSP

Date 03/26/2025

Time Begin Purge 15:55

Time Collect Sample 15:55

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
15.1	15:55	7.8	649	12.8	10.58	76.9	2.71

Comments:

Flow Rate: _____ mL/min

Sampler 

Date March 26, 2025

Supervisor _____

Date _____

SAMPLE INTEGRITY DATA SHEET

Plant/Site Ravensdale **Project No.** 152030402

Site Location Ravensdale, WA

Sample ID MWB-2DSP - 0325

Sampling Location Monitoring Well

Technical Procedure Reference(s) Golder, Sampling and Analysis Plan; Quality Assurance Project Plan 2020

Type of Sampler Grab

Date March 26, 2025 **Time** _____

Media Groundwater **Station** MWB-2DSP

Sample Type: grab time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

SWL: Depth to water at 184 ft BTOC (March 26, 2025 3:40 PM); Well total depth at 258' BGS

Screen Interval: 236'- 256' BGS

Pump Intake: N/A

Sample Description _____

Field Measurements on Sample (pH, conductivity, etc.) SEE FIELD PARAMETERS SHEET

Aliquot Amount

Analysis

Container

Preservation

-

HDPE

SAMPLE INTEGRITY DATA SHEET

Well ID MWB-2DSP

Date _____

Time Begin Purge _____

Time Collect Sample _____

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
	15:45	7.16	554.4	12.9	6.4	75.4	6.98

Comments:

Flow Rate: _____ mL/min

Sampler 

Date March 26, 2025

Supervisor _____

Date _____

SAMPLE INTEGRITY DATA SHEET

Plant/Site Ravensdale **Project No.** 152030402

Site Location Ravensdale, WA

Sample ID MWB-1LDA - 0325

Sampling Location Surface Water Monitoring Point

Technical Procedure Reference(s) Golder, Sampling and Analysis Plan; Quality Assurance Project Plan 2020

Type of Sampler Bladder Pump (dedicated)

Date March 26, 2025 **Time** 15:20

Media Groundwater **Station** MWB-1LDA

Sample Type: grab time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

SWL: Depth to water at 21.47 ft BTOC (March 26, 2025 2:47 PM); Well total depth at 135' BGS

Screen Interval: 115'- 135' BGS

Pump Intake: ~ 125' BGS

Sample Description _____

Field Measurements on Sample (pH, conductivity, etc.) SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analysis	Container	Preservation
1-1000 mL	Total Dissolved Solids	HDPE	N/A
1-500 mL	Total Metals	HDPE	HNO3

SAMPLE INTEGRITY DATA SHEET

Well ID MWB-1LDA

Date 03/26/2025

Time Begin Purge 14:50

Time Collect Sample 15:20

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
21.82	14:55	7.71	367	13.2	9.55	72.5	16.1
22.29	15:00	7.34	369.3	12.3	0.76	66.8	10.2
22.45	15:05	7.34	368.8	12.1	0.53	66.2	4.42
22.7	15:10	7.35	368.4	12	0.47	64.3	3.66
22.8	15:15	7.35	369.3	11.9	0.37	62.2	3.28

Comments:

Flow Rate: 200 mL/min

Sampler 

Date March 26, 2025

Supervisor _____

Date _____

SAMPLE INTEGRITY DATA SHEET

Plant/Site Ravensdale **Project No.** 152030402

Site Location Ravensdale, WA

Sample ID MW-6A - 0325

Sampling Location Monitoring Well

Technical Procedure Reference(s) Golder, Sampling and Analysis Plan; Quality Assurance Project Plan 2020

Type of Sampler Bladder Pump (dedicated)

Date March 26, 2025 **Time** 10:20

Media Groundwater **Station** MW-6A

Sample Type: grab time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

SWL: Depth to water at 20.57 ft BTOC (March 26, 2025 9:41 AM); Well total depth at 39' BGS

Screen Interval: 24'- 39' BGS

Pump Intake: ~ 36' BGS

Sample Description _____

Field Measurements on Sample (pH, conductivity, etc.) SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analysis	Container	Preservation
1-1000 mL	Total Dissolved Solids	HDPE	N/A
1-500 mL	Total Metals	HDPE	HNO3

SAMPLE INTEGRITY DATA SHEET

Well ID MW-6A

Date 03/26/2025

Time Begin Purge 09:43

Time Collect Sample 10:20

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
20.58	09:45	7.59	1,832	7.6	18.2	182.9	17.6
20.57	09:50	7.62	1,747	7.3	10.05	182.7	32.7
20.57	21:55	7.64	1,740	7.5	9.61	182.9	24.6
20.57	10:00	7.64	1,721	7.2	9.66	182.7	14.7
20.57	10:05	7.63	1,694	7.2	9.67	182.5	9.35
20.57	10:10	7.61	1,669	7.1	9.72	182.3	8.33
20.57	10:15	7.5	1,623	7.1	9.61	181.5	9.06

Comments:

Flow Rate: 200 mL/min

Sampler 

Date March 26, 2025

Supervisor _____

Date _____

SAMPLE INTEGRITY DATA SHEET

Plant/Site Ravensdale **Project No.** 152030402

Site Location Ravensdale, WA

Sample ID MW-9A - 0325

Sampling Location Monitoring Well

Technical Procedure Reference(s) Golder, Sampling and Analysis Plan; Quality Assurance Project Plan 2020

Type of Sampler Peristaltic Pump, Grab

Date March 24, 2025 **Time** 14:40

Media Groundwater **Station** MW-9A

Sample Type: grab time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

SWL: Depth to water at 2.54 ft BTOC (March 24, 2025 2:19 PM); Well total depth at 13' BGS

Screen Interval: 8' - 13' BGS

Pump Intake: ~ 10' BGS

Sample Description No color, odor, sheen

Field Measurements on Sample (pH, conductivity, etc.) SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analysis	Container	Preservation
1-1000 mL	Total Dissolved Solids	HDPE	N/A
1-250 mL	Total Metals	HDPE	HNO3

SAMPLE INTEGRITY DATA SHEET

Well ID MW-9A

Date 03/24/2025

Time Begin Purge 14:22

Time Collect Sample 14:40

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
4.02	14:25	6.77	550.3	8.7	4.23	118.8	3.28
4.55	14:30	6.76	551.6	8.7	3.9	117.6	2.6
5.16	14:35	6.74	552	8.8	3.72	116.4	4.02
5.6	14:40	6.73	551.8	8.7	3.64	115.5	2.68

Comments:

Flow Rate: 200 mL/min

Sampler 

Date March 24, 2025

Supervisor _____

Date _____

SAMPLE INTEGRITY DATA SHEET

Plant/Site Ravensdale **Project No.** 152030402

Site Location Ravensdale, WA

Sample ID MW-4A - 0325

Sampling Location Monitoring Well

Technical Procedure Reference(s) Golder, Sampling and Analysis Plan; Quality Assurance Project Plan 2020

Type of Sampler Peristaltic Pump, Grab

Date March 24, 2025 **Time** 14:05

Media Groundwater **Station** MW-4A

Sample Type: grab time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

SWL: Depth to water at 3.42 ft BTOC (March 24, 2025 1:28 PM); Well total depth at 20' BGS

Screen Interval: 5' - 20' BGS

Pump Intake: ~ 12' BGS

Sample Description No color, odor, sheen

Field Measurements on Sample (pH, conductivity, etc.) SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analysis	Container	Preservation
1-1000 mL	Total Dissolved Solids	HDPE	N/A
1-500 mL	Total Metals	HDPE	HNO3

SAMPLE INTEGRITY DATA SHEET

Well ID MW-4A

Date 03/24/2025

Time Begin Purge 13:28

Time Collect Sample 14:05

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
3.6	13:30	6.41	586.3	9.6	1.22	106.4	12.6
3.63	13:35	6.41	584.3	9.4	0.69	96.6	10.0
3.63	13:40	6.42	580.5	9.4	0.64	94.1	11.1
3.63	13:45	6.41	576	9.3	4	93.1	9.86
3.63	13:55	6.4	567.3	9.1	2.3	91.7	6.63
3.63	14:00	6.39	562.6	9.3	1.97	91.3	7.44
3.63	14:05	6.39	558.7	9.3	2.28	91.0	6.00

Comments:

Flow Rate: 200 mL/min

Sampler 

Date March 24, 2025

Supervisor _____

Date _____

SAMPLE INTEGRITY DATA SHEET

Plant/Site Ravensdale **Project No.** 152030402

Site Location Ravensdale, WA

Sample ID Interceptor Trench - 0325

Sampling Location Surface Water Monitoring Point

Technical Procedure Reference(s) Golder, Sampling and Analysis Plan; Quality Assurance Project Plan 2020

Type of Sampler Grab

Date March 24, 2025 **Time** 13:05

Media Surface Water **Station** Interceptor Trench

Sample Type: grab time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

SWL: Depth to water at ft BTOC (March 24, 2025 1:05 PM); Well total depth at N/A

Screen Interval: N/A

Pump Intake: N/A

Sample Description No color, odor, sheen

Field Measurements on Sample (pH, conductivity, etc.) SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analysis	Container	Preservation
1-500 mL	Total Metals	HDPE	HNO3

SAMPLE INTEGRITY DATA SHEET

Well ID _____ Interceptor Trench _____

Date 03/24/2025

Time Begin Purge 13:05

Time Collect Sample 13:05

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
	13:04	7.14	551.9	9.5	9.22	121.9	5.85

Comments:

Flow Rate: 10000 mL/min

Sampler 

Date March 24, 2025

Supervisor _____

Date _____

SAMPLE INTEGRITY DATA SHEET

Plant/Site Ravensdale **Project No.** 152030402

Site Location Ravensdale, WA

Sample ID Still Well - 0325

Sampling Location Monitoring Well

Technical Procedure Reference(s) Golder, Sampling and Analysis Plan; Quality Assurance Project Plan 2020

Type of Sampler Peristaltic Pump, Grab

Date March 24, 2025 **Time** 12:30

Media Groundwater **Station** Still Well

Sample Type: grab time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

SWL: Depth to water at 0 ft BTOC (March 24, 2025 12:30 PM); Well total depth at N/A

Screen Interval: N/A

Pump Intake: N/A

Sample Description _____

Field Measurements on Sample (pH, conductivity, etc.) SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analysis	Container	Preservation
1-1000 mL	Total Dissolved Solids	HDPE	N/A
1-500 mL	Total Metals	HDPE	HNO3

SAMPLE INTEGRITY DATA SHEET

Well ID Still Well

Date 03/24/2025

Time Begin Purge 12:30

Time Collect Sample 12:30

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
0	12:30	12.47	6,490	9.5	0.76	212.8	9.89

Comments:

Flow Rate: _____ mL/min

Sampler 

Date March 24, 2025

Supervisor _____

Date _____

SAMPLE INTEGRITY DATA SHEET

Plant/Site Ravensdale **Project No.** 152030402

Site Location Ravensdale, WA

Sample ID Weir or Constructed Wetlands - 0325

Sampling Location Surface Water Monitoring Point

Technical Procedure Reference(s) Golder, Sampling and Analysis Plan; Quality Assurance Project Plan 2020

Type of Sampler Peristaltic Pump, Grab

Date March 24, 2025 **Time** 00:00

Media Surface Water **Station** Weir or Constructed Wetlands

Sample Type: grab time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

SWL: Depth to water at ft BTOC (March 24, 2025 11:55 AM); Well total depth at N/A

Screen Interval: N/A

Pump Intake: N/A

Sample Description _____

Field Measurements on Sample (pH, conductivity, etc.) SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analysis	Container	Preservation
3-1000 mL	Dissolved Metals	HDPE	HNO3
3-500 mL	Total Metals	HDPE	HNO3

SAMPLE INTEGRITY DATA SHEET

Well ID _____ Weir or Constructed Wetlands _____

Date 03/24/2025

Time Begin Purge 00:00

Time Collect Sample 00:00

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
	12:00	7.41	680.7	10.2	802	175.7	7.31

Comments:

Flow Rate: _____ mL/min

MS/MSD taken

Sampler 

Date March 24, 2025

Supervisor _____

Date _____

SAMPLE INTEGRITY DATA SHEET

Plant/Site Ravensdale **Project No.** 152030402

Site Location Ravensdale, WA

Sample ID South Pond - 0325

Sampling Location Surface Water Monitoring Point

Technical Procedure Reference(s) Golder, Sampling and Analysis Plan; Quality Assurance Project Plan 2020

Type of Sampler Peristaltic Pump

Date March 24, 2025 **Time** 11:40

Media Surface Water **Station** South Pond

Sample Type: grab time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

SWL: Depth to water at ft BTOC (March 24, 2025 11:28 AM); Well total depth at N/A

Screen Interval: N/A

Pump Intake: N/A

Sample Description No odor, no sheen, slight orange color

Field Measurements on Sample (pH, conductivity, etc.) SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analysis	Container	Preservation
1-1000 mL	Total Dissolved Solids	HDPE	N/A
1-500 mL	Total Metals	HDPE	HNO3

SAMPLE INTEGRITY DATA SHEET

Well ID South Pond

Date 03/24/2025

Time Begin Purge 11:38

Time Collect Sample 11:40

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
	11:35	8.97	914	12.6	8.5	185.5	5.23

Comments:

Flow Rate: _____ mL/min

Sampler 

Date March 24, 2025

Supervisor _____

Date _____

SAMPLE INTEGRITY DATA SHEET

Plant/Site Ravensdale **Project No.** 152030402

Site Location Ravensdale, WA

Sample ID MW-10A - 0325

Sampling Location Monitoring Well

Technical Procedure Reference(s) Golder, Sampling and Analysis Plan; Quality Assurance Project Plan 2020

Type of Sampler Peristaltic Pump

Date March 24, 2025 **Time** 11:22

Media Groundwater **Station** MW-10A

Sample Type: grab time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

SWL: Depth to water at 5.14 ft BTOC (March 24, 2025 10:54 AM); Well total depth at 29' BGS

Screen Interval: 9' - 29' BGS

Pump Intake: ~ 25' BGS

Sample Description No color, odor, sheen

Field Measurements on Sample (pH, conductivity, etc.) SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analysis	Container	Preservation
1-1000 mL	Total Dissolved Solids	HDPE	N/A
1-500 mL	Total Metals	HDPE	HNO3

SAMPLE INTEGRITY DATA SHEET

Well ID MW-10A

Date 03/24/2025

Time Begin Purge 10:55

Time Collect Sample 11:22

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
6.46	11:00	6.57	196	9.8	9.18	104.9	11.8
8.05	11:05	6.5	191.3	9.8	8.9	104.5	7.24
9.29	11:10	6.49	183.1	9.8	8.95	104.3	6.00
9.83	11:15	6.48	184.9	9.8	8.86	104.2	6.95
10.76	11:20	6.48	183.3	9.8	8.76	104.0	6.03

Comments:

Flow Rate: 200 mL/min

Sampler 

Date March 24, 2025

Supervisor _____

Date _____

SAMPLE INTEGRITY DATA SHEET

Plant/Site Ravensdale **Project No.** 152030402

Site Location Ravensdale, WA

Sample ID MW-3A - 0325

Sampling Location Monitoring Well

Technical Procedure Reference(s) Golder, Sampling and Analysis Plan; Quality Assurance Project Plan 2020

Type of Sampler Peristaltic Pump

Date March 24, 2025 **Time** 10:35

Media Groundwater **Station** MW-3A

Sample Type: grab time composite space composite

Sample Acquisition Measurements (depth, volume of static well water and purged water, etc.)

SWL: Depth to water at 4.87 ft BTOC (March 24, 2025 10:00 AM); Well total depth at 20' BGS

Screen Interval: 4' - 20' BGS

Pump Intake: ~ 12' BGS

Sample Description No color, odor, sheen

Field Measurements on Sample (pH, conductivity, etc.) SEE FIELD PARAMETERS SHEET

Aliquot Amount	Analysis	Container	Preservation
1-1000 mL	Total Dissolved Solids	HDPE	
1-500 mL	Total Metals	HDPE	HNO3

SAMPLE INTEGRITY DATA SHEET

Well ID MW-3A

Date 03/24/2025

Time Begin Purge 10:08

Time Collect Sample 10:35

Water Level (ft bmp)	Time	pH	Cond. (uS/cm)	Temp (°C)	DO (mg/L)	ORP (rel mV)	Turbidity (NTU)
4.95	10:10	6.56	1,109	9.4	1.05	187.5	28.2
4.95	10:15	6.6	1,111	9.3	0.58	184.7	14.2
4.95	10:20	6.63	1,110	9.2	0.51	183.1	14.1
4.95	10:25	6.65	1,108	9.2	0.54	182.1	12.1
4.95	10:30	6.66	1,104	9.1	0.83	181.0	9.52

Comments:

Flow Rate: 250 mL/min

Sampler 

Date March 24, 2025

Supervisor _____

Date March 24, 2025

