Centralia Landfill

2021 Compliance Monitoring Report

Prepared for

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Introduction and Background

This report was prepared by Puget Sound Environmental PLLC on behalf of Lewis County Solid Waste Utility. This report summarizes compliance monitoring at the Centralia Landfill (Landfill) in Lewis County, Washington (Figure 1) conducted during 2021. The Landfill is a closed municipal solid waste landfill that operated between 1958 and 1994. Cleanup activities were determined necessary and were completed at the landfill in accordance with Consent Decree C91-5100 executed in 2001 between the Washington State Department of Ecology (Ecology), Lewis County, the City of Chehalis, the City of Centralia, the City of Morton, the City of Mossyrock, the Town of Pe Ell, and the City of Vader. Elements of the cleanup generally included closure activities typical in the solid waste industry intended to contain the waste in place, prevent generation of leachate, protect groundwater and surface water quality, and control landfill gas (LFG). A Site Plan showing pertinent features at the facility is included as Figure 2.

The final cleanup action requirement for the landfill includes post-closure monitoring of groundwater and surface water, operation and maintenance of the landfill gas control system, and maintenance of the final landfill cover and surface water control systems. This report summarizes the compliance monitoring data collected in 2021 pursuant to these requirements. Groundwater, surface water (if present), and landfill gas (LFG) are monitored semi-annually. In 2021, the monitoring events occurred during June to represent the wet season and September represent the dry season. This report summarizes the monitoring, presents an evaluation of the results, and provides some conclusions and recommendations for future efforts. Throughout 2021, the environmental monitoring results appear generally consistent with historical observations. Upon finalization of this report, the compliance monitoring data will be uploaded to Ecology's Environmental Information Management (EIM) database, as required by Ecology.

Monitoring Plan

The groundwater water, surface water, and LFG monitoring is conducted by Lewis County representatives in accordance with an approved Compliance Monitoring Plan (PGG 2021). This section describes the monitoring network, regulatory limits, and the points of compliance. Monitoring locations are presented on Figure 3, and monitoring result are summarized in later sections of this report.

Groundwater Monitoring Wells

Compliance groundwater monitoring at the Centralia Landfill is conducted using a network of groundwater monitoring wells shown on Figure 3. The monitoring wells are completed in two distinct water-bearing units identified at the landfill, the Upper Unit (including three wells considered to be Shallow Upper Unit), and the Lower Unit, as follows:

Upper Unit Wells:

- ***MW-1S***
- MW-2S
- B-1S
- ***MW-3S***
- B-2S
- MW-5S
- ***MW-4S***
- MW-CNE-1S

Shallow Upper Unit Wells:

- B-1SU
- B-2SU
- MW-2SU

Lower Unit Wells:

- ***MW-1D***
- B-6DR
- MW-2D
- B-8DR
- MW-3D
- MW-CNE-1D

Wells located hydraulically upgradient of the Landfill are used to determine background water quality conditions in both the upper and lower aquifer units and are noted by ***bold italic text*** in the bullet list above. Historical monitoring results in these background wells during the RI confirmed that the water quality in the upper unit background wells is very similar; therefore, only wells MW-1S and MW-3S are included in the compliance monitoring program. MW-4S provides water table elevation monitoring to better understand groundwater flow direction. MW-3D is listed above but is not included as a compliance monitoring well in either the 1999 or (recently updated) 2020 Compliance Monitoring Plan. As a result, monitoring at that location will soon be modified in subsequent monitoring years to include only hydrostatic water table elevation monitoring similar to MW-4S.

Groundwater Monitoring Parameters and Regulatory Limits

Groundwater quality is compared to the regulatory cleanup levels for groundwater and surface water established in the Cleanup Action Plan using the Model Toxics Control Act (MTCA) Method B (WAC 173-340-705), which references Applicable, Relevant, and Appropriate Requirements (ARARs) based on applicable state and federal laws, in addition to providing methods for calculating cleanup levels based on toxic or carcinogenic risk. The following discussion of cleanup levels and points of compliance summarizes information detailed in the Third Periodic Review (Ecology 2021), and the most recent, approved, update to the Compliance Monitoring Plan (PGG 2020). Additional parameters are monitored to understand environmental quality conditions that do not have regulatory limits, which are summarized later in the report.

Upper Unit

Because groundwater in the Upper Unit discharges to the Weyerhaeuser Ditch and Salzer Creek, the cleanup levels for groundwater for this unit were established considering both MTCA Method B groundwater and surface water standards. Site cleanup levels for groundwater in the Upper Unit have been established for the following:

- Dissolved mercury and nitrate based on primary drinking water standards
    - Mercury has a primary standard of 0.002 mg/L
    - Nitrate has a primary standard of 10 mg/L
- Chloride, pH, sulfate, total dissolved solids (TDS), and dissolved manganese, iron, and zinc based on secondary drinking water standards
    - Chloride has a secondary standard of 250 mg/L
    - pH has a standard acceptable range between 6.5 and 8.5 pH units
    - sulfate has a secondary standard of 250 mg/L
    - TDS has a secondary standard of 500 mg/L
    - Manganese has a secondary standard of 0.05 mg/L
    - Iron has a secondary standard of 0.3 mg/L
    - Zinc has a secondary standard of 5 mg/L
- Dissolved arsenic based on surface water ARAR
    - Arsenic has a calculated surface water standard of 0.27 µg/L, based on background concentrations. However, the practical quantitation limit of arsenic is 0.5 µg/L. In cases where the cleanup level is less than the PQL, the cleanup level may be attained if the parameter is undetected at the PQL. Therefore, the compliance level for arsenic in surface water is 0.5 µg/L.

Lower Unit

Groundwater in the Lower Unit does not discharge to surface water near the Centralia Landfill; therefore, cleanup levels in the Lower Unit are based only on groundwater ARARs and the CAP Cleanup Levels as follows:

- Dissolved arsenic has two standards:
  - A primary drinking water standard of 0.01 mg/L, and
  - A state ground water quality standard of 0.00005 mg/L
- Dissolved mercury and nitrate have primary standards
  - Mercury has a primary standard of 0.002 mg/L
  - Nitrate has a primary standard of 10 mg/L
- Chloride, pH, sulfate, (TDS), and dissolved manganese, iron, and zinc based on secondary drinking water standards
  - Chloride has a secondary standard of 250 mg/L
  - pH has a standard acceptable range between 6.5 and 8.5 pH units
  - sulfate has a secondary standard of 250 mg/L
  - TDS has a secondary standard of 500 mg/L
  - Manganese has a secondary standard of 0.05 mg/L
  - Iron has a secondary standard of 0.3 mg/L
  - Zinc has a secondary standard of 5 mg/L

Surface Water Monitoring Network

Runoff from the landfill surface collects in the Weyerhauser Ditch that discharges to Salzer Creek. In accordance with the 1999 and 2020 Compliance Monitoring Plans, the surface water monitoring network consists of a single station, SW-14. This surface water station is the regulatory point of compliance and is located in the Weyerhauser Ditch at the southwest corner of the landfill just before water in the ditch flows off the Landfill property boundary and discharges into Salzer Creek (Figure 3).

Surface Water Monitoring Parameters and Regulatory Limits

Contaminants of concern for surface water at the Centralia Landfill are arsenic, iron, and manganese (Ecology 2016). A surface water cleanup level for arsenic of 0.27 µg/L (0.00027 mg/L) was previously calculated based on background concentrations. However, this value is less than the practical quantitation limit (PQL) of 0.5 µg/L (0.0005 mg/L), which is the lowest limit that can reliably be achieved during routine laboratory operating conditions and using Ecology-approved methods. Therefore, the compliance level for arsenic in surface water established for this Site is 0.5 µg/L (0.0005 mg/L). Surface

water ARARs for iron and manganese are not established. Twenty-eight additional parameters are analyzed in the surface water samples to understand environmental quality conditions as presented later in the report. These additional parameters do not have regulatory limits.

Landfill Gas Monitoring Network

LFG, consisting primarily of carbon dioxide and methane, is generated at the Landfill as a byproduct of biological decomposition. LFG is controlled by the active extraction system which applies a vacuum to a network of extraction wells and treats the extracted gases by thermal oxidation at a flare. The flare destroys trace concentrations of contamination and oxidizes the methane to carbon dioxide.

There is low risk of lateral migration of LFG through soil surrounding the Landfill based on routine operation of the control system which removes gas and reduces pressures, because the south, west, and east sides of the area have high water tables, and because LFG generation potential for the degrading waste is continually declining. LFG control is confirmed to be sufficient to prevent offsite migration by measuring methane at a series of perimeter LFG monitoring probes, shown on Figure 3 and listed below.

- GP-1
- GP-2
- GP-3R
- GP-4A
- GP-4B
- GP-5R
- GP-6
- GP-7
- GP-8
- GP-9
- GP-10
- GP-11
- GP-12
- GP-13
- GP-14
- GP-15

Several of the probes (GP-11, GP-12, GP-13, GP-14, and GP-15) were installed during the RI. The newer probes were installed to reduce the spacing of existing probes and fill in gaps around the Landfill's perimeter. Two probes (GP-3R and GP-5R) were installed during the RI to replace older probes that were either lost, damaged during construction, or abandoned. The remaining probes at the Site were installed at various times and have been monitored regularly since completion of the Second Interim Action.

Landfill Gas Monitoring Parameters and Regulatory Limits

Landfill gas is monitored at each probe semi-annually for pressure, oxygen, and methane. The acceptable limit of methane concentration at the property boundary (point of compliance) is 5 percent by volume, which is the lower explosive limit (LEL) for methane. The pressure and oxygen data are used to inform system operations and to assess field data quality.

Monitoring Results

This section presents a summary of the groundwater monitoring results for 2021. Representatives of the County conducted the wet season water quality monitoring event on June 3 and June 4, and the dry season monitoring event on September 9 and September 10. In accordance with the approved Compliance Monitoring Plan summarized above, monitoring included measurements of the water table elevation, collection of field parameters, and the collection and laboratory analysis of representative groundwater samples from the Upper Unit and Lower Unit wells, using dedicated sampling pumps. Handheld meters were used to measure pH, specific conductivity, and temperature in the field during sampling at each well.

Analytical services were provided by Dragon Analytical Laboratory, Inc. (DAL), in Olympia, Washington. DAL subcontracted analysis of total organic carbon (TOC) to Anatek Labs, Inc. in Spokane, Washington, and subcontracted analysis of dissolved mercury to ALS Group USA Corp. in Kelso, Washington. DAL, Anatek Labs and ALS Group USA Corp are Ecology-accredited laboratories.

Groundwater samples were analyzed by the laboratories listed above for alkalinity, ammonia, total organic carbon (TOC), chemical oxygen demand (COD), chloride, hardness, nitrate+nitrite, total dissolved solids (TDS), sulfate, and nine dissolved metals (arsenic, calcium, iron, magnesium, manganese, mercury, potassium, sodium, and zinc). Samples collected for dissolved metals analysis were lab-filtered at DAL. ALS performed the mercury analyses on samples that had been lab-filtered at DAL; therefore, the results reflect dissolved mercury concentrations. The ALS results are identified “Mercury, Total” in the attached lab report because the chain-of-custody received by ALS did not document that that the samples had been filtered.

Groundwater Table Elevations

The water table elevation is estimated across the site to understand flow direction. Measurements of the depth to water from the top of the monitoring well casing are recorded at each well, and the water table elevation is determined by subtracting this measurement from the known (surveyed) elevation of the top of the well casing. Contours of the groundwater table are presented in Figures 4, 5, 6, and 7. The figures show groundwater flow direction in the upper and lower aquifer units follow similar pathways. In the wet season, flow is generally south, southwest. In the dry season, the flow takes a more westerly path through the site. These findings are consistent with historical observations.

Comparison of Water Quality Data to Cleanup Levels

Water quality data is presented in Table 1 and Table 2, for the wet and dry seasons, respectively. Results shown in red on the table indicate parameters were detected at concentrations exceeding the applicable cleanup level. The exceedances are summarized below:

- Dissolved arsenic
    - Upper Aquifer Unit (compliance level = 0.0005 mg/L):
        - Each compliance well except for MW-5s has concentrations of arsenic that exceed the cleanup level ins 2021
        - 2 out of 3 of the background wells also exceeded the arsenic cleanup level in 2021
        - The findings above are consistent with historical observations
        - Arsenic concentrations ranged from non-detectable to a maximum detection of 1.9 mg/L. The elevated detection of arsenic of 1.9 mg/L was at compliance well B-1SU and occurred during the wet season sampling event in June. Later in the year, the arsenic concentration at this same location was 0.00088 mg/L, only slightly above the cleanup level. The elevated detection in the wet season sample was anomalous for this, or any other location at the site. Preliminary statistical assessment utilizing all historical data indicates this anomaly is an outlier that could be removed from the dataset. For the purpose of this assessment, the value is retained, and further monitoring is expected to confirm it is anomalous.
    - Lower Aquifer Unit (compliance level = 0.01 mg/L):
        - No exceedances of the cleanup level in the lower aquifer
- Dissolved manganese (secondary groundwater standard = 500 mg/L)
    - Upper Aquifer Unit:
        - Dissolved manganese was observed to exceed the cleanup level in each of the Upper Aquifer Unit compliance monitoring wells at least once in 2021
        - 2 out of 3 of the background wells also exceeded the manganese cleanup level in 2021
        - The findings above are consistent with historical observations
    - Lower Aquifer Unit
        - Dissolved manganese was observed to exceed the cleanup level in each of the Lower Aquifer Unit compliance monitoring wells at least once in 2021

        - Dissolved manganese also exceeded the cleanup level in the Lower Aquifer Unit background well MW-1D
- Dissolved iron (secondary groundwater standard = 0.3 mg/L)
    - Upper Aquifer Unit:
        - No exceedances of the cleanup level in the upper aquifer
    - Lower Aquifer Unit
        - Iron was found above the cleanup level at one compliance well (MW-3D), and at one background well (MW-1D)
- pH (compliance level ranges from 6.5 to 8.5 pH units)
    - pH detections in all wells – background and compliance – were elevated above the compliance level range throughout 2021 with only minor exception

Statistical Trend Evaluation

As required by the Compliance Monitoring Plan, the groundwater monitoring data is evaluated statistically for compliance with the established cleanup levels. This includes following the procedures established in Washington Administrative Code (WAC) 173-340-720 and Model Toxics Control Act (MTCA) guidance (Ecology 1992 and 1993). Time series plots are used to visually demonstrate data observations which can show general trend behavior. These time series plots are presented in Appendix A. Additionally, once per 5 years, the facility is required to complete the additional statistical trend evaluation described below.

At least once per 5 years, the monitoring data undergoes further statistical evaluation following MTCA's 3-part statistical rule by comparing the 95-confidence limit on the mean (UCL95) or the maximum value to the cleanup levels. To demonstrate compliance, these three criteria must be met:

1. The UCL95 must be below the cleanup level
2. No single sample result value can be more than 2x the cleanup level
3. No more than 10% of the individual results can exceed the cleanup level.

To reduce the number of cases for which the statistical calculations are required, the 2nd and 3rd criteria are applied first.

Based on general trends demonstrated in the time-series plots, and as consistently observed over the last decade, there do not appear to be clear increasing trends in the concentrations of monitored parameters. As discussed further in this report, it is recommended that the data be further evaluated using the more rigorous statistical assessment described above in 2022. It appears likely that most of the monitored parameters are consistently within compliance, and it

may be advisable to reduce the monitoring parameter list in cooperation with the Lewis County Health Department and Ecology if partial sufficiency toward completion of the cleanup action can be demonstrated through the statistical evaluation.

Surface Water Monitoring

Surface water samples were not collected in 2021. Based on unusually warm weather conditions, surface water was not available for collection during the semiannual monitoring events. In 2022, further efforts will made to collect samples outside of the typical monitoring event to ensure sample availability.

Landfill Gas Monitoring

Landfill gas monitoring was conducted on June 18 and October 15, 2021. Consistent with recent historical monitoring, there were no detections of methane in monitoring probes in 2021.

Quality Assurance / Quality Control

Quality control/quality assurance (QA/QC) reviews were conducted on the reported analyses. All requested analyses were performed, and QA/QC assessments indicate that the data are considered usable for the intended purpose of the project. Notable results were not identified during the QA/QC review with the following exceptions.

Field Collected Data

- LFG monitoring data is used without qualification based on consistency with historical observations. However, it is noted that the oxygen levels reported by the meter are consistent with ambient readings and the probe static pressure readings are unitless.
- Specific conductivity is measured in the field during sample collection using handheld meters and recorded on field sheets. The specific conductivity values recorded for 2021 appear to be two to three orders of magnitude lower than expected based on historical observations and typical results. It is common that these handheld meters can automatically switch displayed units by a factor of 1,000. The specific conductivity readings presented herein should be considered approximate. The data will be used in its present form and J flags have not been applied based on this speculative explanation.

Laboratory Data

- Based on zinc detections in laboratory method blank samples, zinc results have been flagged “B1” to indicate potential sample result bias.
- Ammonia results were flagged “J” indicating the result was greater than the method detection limit but less than the method reporting limit.
- Matrix spikes (MS) and matrix spike duplicates (MSD) are QA/QC methods to assess potential analytical interferences caused by the sample matrix based on the ability of the lab to successfully recover target analytes from a field sample. The recovery of the target analytes from the MS sample demonstrates whether the sample matrix has interfered with the analyses. MS are frequently performed in duplicate as an MSD. Comparison of the MS to the MSD indicate the analytical precision in the given matrix. The MS recoveries of were within appropriate limits.

Summary and Recommendations

Monitoring was generally conducted as planned, provided data useful to understand environmental quality, and produced results that were consistent with historical records for the Landfill. Based on review of the data, the Landfill continues to show elevated levels of arsenic, manganese, and pH. It is likely that these low-level exceedances will persist, and that continued monitoring is appropriate to understand if conditions change significantly. The following recommendations are provided to continue increasing the effectiveness and efficiency of monitoring:

1. Review field equipment and procedures to ensure ongoing data reliability. Instrument calibration and well purging approaches can often be optimized to produce more reliable and representable data with lesser disturbance of the well screen

2. Consider using a different analytical laboratory that can produce electronic datasets in a more consistent manner to facilitate more efficient data evaluation and uploads to Ecology's EIM database

3. Validate LFG readings to ensure ongoing reliability using an LFG meter that can report concentrations down to 0.1 percent by volume, such as the Landtec GEM 2000 or 5000. Confirm low-pressure field at the Landfill perimeter during blower system operation

4. Consider conducting the UCL95 statistical evaluation in 2022 (ahead of 2023 monitoring) to determine which monitored parameters are already within compliance (over the last 4-year period). For these parameters, assess trends through statistical means including slope assessment and comparisons to background groundwater quality. If warranted, present the findings this evaluation to the regulatory authorities prior to 2023 monitoring, to discuss slight modifications to the monitoring program for potential cost savings, where "partial sufficiency" to attainment of cleanup standards can be demonstrated. It is likely that that several parameters could be removed from the program. It is possible that some wells could be retained for groundwater elevation surveying but may not require ongoing analyses.

5. Proactively monitor weather conditions to ensure surface water samples can be collected at least twice per year.

Use of this Report

This report has been prepared on behalf of Lewis County Solid Waste Utility by Puget Sound Environmental PLLC. This report is intended for specific application to the Centralia Landfill project. No other parties, except with regulatory authority over the project, is entitled to rely on the information, conclusions, and recommendations included in this document without the express written consent of Puget Sound Environmental, PLLC. The reuse of the content of this report for any other project, without prior review and authorization by Puget Sound Environmental PLLC shall be at the user's sole risk. Puget Sound Environmental PLLC warrants that within the limitations of scope, schedule, and budget, the services described herein have been provided in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing in the same locality under similar conditions as this project. No other warranty is made expressly or implied.

Table 1. Groundwater Analytical Results - Lower Aquifer Unit

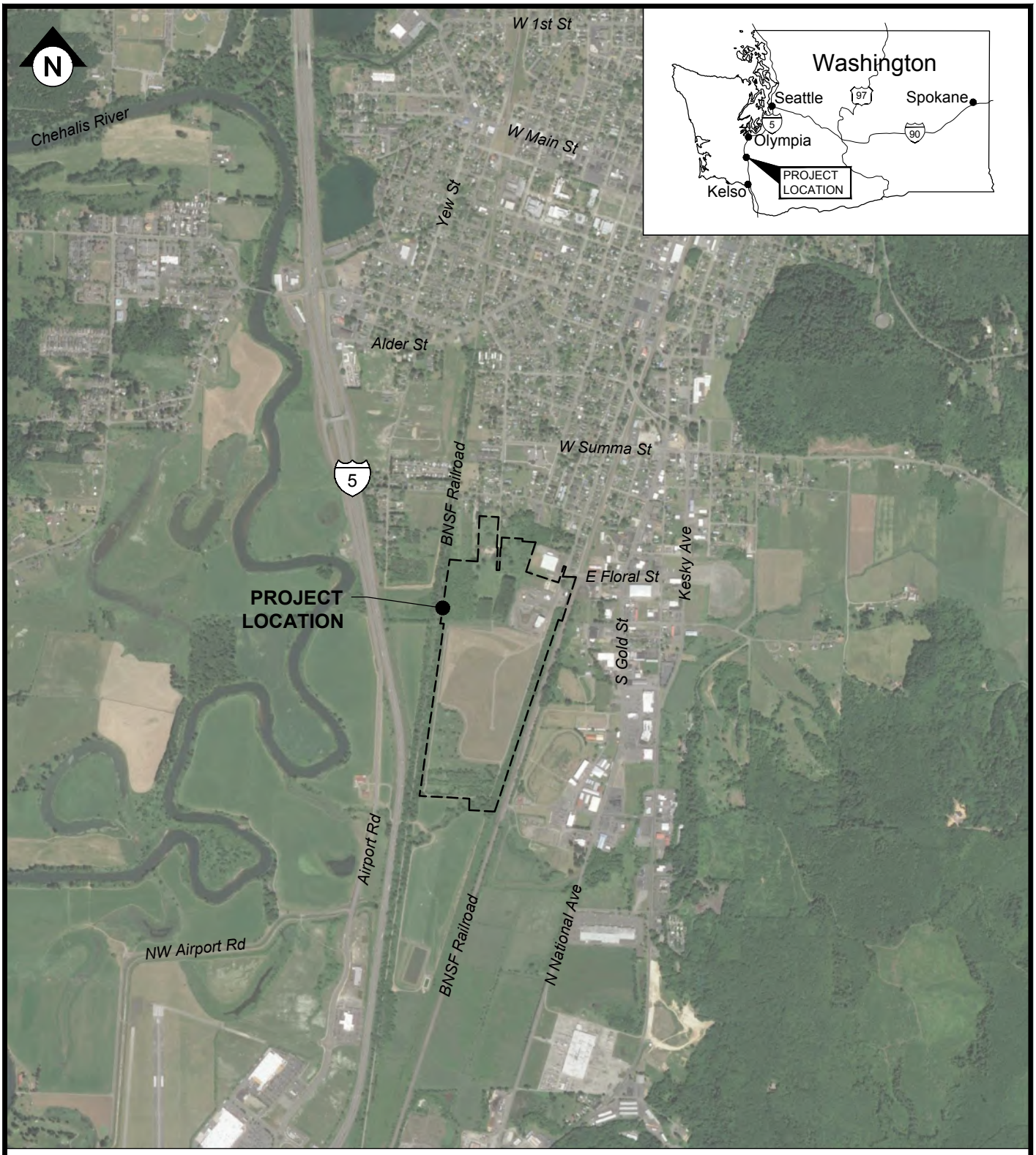
Lower Aquifer Unit			Background		Compliance Wells									
Parameter Name	Regulatory Limit		MW-1D		B-6DR		B-8DR		MW-2D		MW-3D		MW-CNE-1D	
	Value	Units	6/3/21	9/20/21	6/4/21	9/21/21	6/4/21	9/21/21	6/4/21	9/20/21	6/3/21	9/20/21	6/4/21	9/20/21
Alkalinity as Carbonate	-	mg/L	107	141	96.2	122	206	--	178.8	163	49.8	114	156	150
Ammonia (NH3) as Nitrogen (N)		mg/L	0.522	1.69	0.316	1.46	<0.3 U	--	0.655	2.05	<0.3 U	0.837	<0.3 U	0.512
Arsenic	0.01	mg/L	0.005593	0.0081	0.00231	0.00418	<0.0005 U	<0.0005 U	0.006626	0.00552	<0.0005 U	0.001	<0.0005 U	<0.0005 U
Calcium	-	mg/L	19.5	25.7	16.5	25.5	32.6	35	32.8	34.2	10.7	19.3	23.6	29.6
Chemical Oxygen Demand	-	mg/L	<10 U	12	18.8	<10 U	<10 U	--	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U
Chloride	250	mg/L	<0.1 U	5.18	7.871	12.6	3.443	--	9.552	11.5	4.001	4.8	4.84	6.26
Hardness as CaCO3	-	mg/L	76.9773	91.8	79.6174	104	160.642	148	147.622	136	54.0006	83.7	113.717	105
Iron	0.3	mg/L	0.3439	0.215	<0.05 U	0.052	<0.05 U	<0.021 U	0.05092	<0.021 U	<0.05 U	0.66	<0.05 U	<0.021 U
Magnesium	-	mg/L	3.58	6.72	6.11	9.8	13.6	14.6	10.5	12.2	3.39	8.62	7.18	7.61
Manganese	0.05	mg/L	0.3126	0.0224	0.424	0.651	0.249	0.284	0.7554	0.805	0.002	1.05	0.2331	0.151
Mercury	0.002	mg/L	-	<0.0002 U	0.0000013	<0.0002 U	0.0000097	<0.0002 U	0.0000013	<0.0002 U	-	<0.0002 U	0.0000005	<0.0002 U
Nitrate-Nitrite as N	10	mg/L	<0.1 U	<0.05 U	<0.1 U	<0.05 U	<0.1 U	<0.05 U	<0.1 U	<0.05 U	1.938	<0.05 U	<0.1 U	<0.05 U
Potassium	-	mg/L	1.42	1.81	2.35	2.92	1.79	2.08	2.31	2.5	0.567	2.6	2.05	2.17
Sodium	-	mg/L	13	22.6	9.38	14.3	44.4	47.2	15	17.7	10.8	14.1	20.8	24
Sulfate	250	mg/L	<0.2 U	<0.4 U	1.737	<0.4 U	21.922	21	0.939	<0.4 U	<0.2 U	<0.4 U	0.971	<0.4 U
Total Dissolved Solids	500	mg/L	170	187	264	174	266	278	274	221	142	180	202	183
Total Organic Carbon	-	mg/L	0.65	3.4	0.5	2.8	0.43	--	0.45	2.3	<.20	1	0.38	2.2
Zinc	5	mg/L	0.0187 B1	<0.002 U	0.0052 B1	<0.002 U	0.006 B1	0.0023	0.0117 B1	<0.002 U	0.01088 B1	<0.002 U	0.0041 B1	<0.002 U
pH	6.5-8.5	pH Units	8.83	9.14	9.63	10.1	9.58	9.42	9.52	9.19	8.17	9.38	9.66	8.92
Specific Conductivity (at 25 deg C)	-	uS/cm	0.275	0.295	0.37	0.252	0.592	0.666	0.579	0.578	0.34	0.233	0.837	0.441

Results shown in Red exceed the regulatory limit.
Results shown in Red and **Boxed** are at least twice the regulatory limit

Table 2. Groundwater Analytical Results - Upper Aquifer Unit

Upper Aquifer Unit			Background Wells						Compliance Wells					
Parameter Name	Regulatory Limits		MW-1S		MW-4S		MW-3S		B-1S		B-1SU		B-2S	
	Value	Units	6/3/21	9/20/21	6/4/21	9/21/21	6/3/21	9/20/21	6/4/21	9/21/21	6/4/21	9/21/21	6/4/21	9/21/21
Alkalinity as Carbonate	-	mg/L	52.6	45.2	70	81.3	129.4	48.9	133	141	376	241	41.2	110
Ammonia (NH3) as Nitrogen (N)	-	mg/L	<0.3 U	<0.01 U	<0.3 U	0.059	<0.3 U	<0.01 U	<0.3 U	0.952	<0.3 U	0.265	<0.3 U	0.235
Arsenic	0.0005	mg/L	<0.0005 U	<0.0005 U	<0.0005 U	0.00079	0.001697	<0.0005 U	0.01331	0.0145	1.9	0.00088	0.0007433	0.00248
Calcium	-	mg/L	10.7	10.8	11.6	15.4	15.8	13.8	27.6	29.7	47	38.4	12.7	48.1
Chemical Oxygen Demand	-	mg/L	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	<10 U	11.11	17	<10 U	<10 U
Chloride	250	mg/L	<0.1 U	1.47	1.07	3.19	<0.1 U	4.19	2.951	7.01	60.072	19.4	0.179	5.59
Hardness as CaCO3	-	mg/L	45.7053	40.8	57.6542	66.5	84.7276	49	140.876	122	296.003	215	57.0227	201
Iron	0.3	mg/L	<0.05 U	<0.021 U	<0.05 U	<0.021 U	0.1526	<0.021 U	<0.05 U	<0.021 U	<0.05 U	<0.021 U	<0.05 U	<0.021 U
Magnesium	-	mg/L	3.38	3.36	5.65	6.82	7.47	3.52	11.4	11.5	34.7	28.9	5.16	19.6
Manganese	0.05	mg/L	<0.0005 U	<0.0011 U	0.0192	0.251	1.05	0.0017	0.6304	0.841	3.27	2.63	0.003924	0.206
Mercury	0.002	mg/L	-	<0.0002 U	0.0000011	<0.0002 U	-	<0.0002 U	0.0000047	<0.0002 U	0.0000019	<0.0002 U	0.0000018	<0.0002 U
Nitrate-Nitrite as N	10	mg/L	0.884	0.754	0.614	<0.05 U	<0.1 U	2.43	1.167	<0.05 U	<0.1 U	<0.05 U	4.384	0.255
Potassium	-	mg/L	0.4937	0.54	0.864	1.23	2.31	0.81	4.33	5.21	2.27	2.75	0.4285	2.05
Sodium	-	mg/L	6.92	7.68	9.68	10.4	12.3	13.4	12	13.8	39.1	29	5.81	16.4
Sulfate	250	mg/L	0.921	9.33	6.072	4.41	<0.2 U	12.4	2.138	0.62	1.061	0.46	10.506	3.77
total dissolved solids	500	mg/L	128	109	104	119	204	121	216	191	430	308	90	186
Total Organic Carbon	-	mg/L	<.20	<0.5 U	<.2	1.2	0.29	0.6	0.23	1	0.68	3.5	0.28	1.8
Zinc	5	mg/L	0.01204 B1	<0.002 U	0.0091 B1	0.0037	0.007308 B1	<0.002 U	0.0089 B1	<0.002 U	0.0047 B1	<0.002 U	0.0257 B1	0.0035
pH	6.5-8.5	pH Units	8.72	9.64	9.89	9.41	9.1	9.06	9.12	9.69	8.94	9.32	8.95	9.26
Specific Conductivity (at 25 deg C)	-	uS/cm	0.153	0.172	0.559	0.283	0.296	0.347	0.408	0.33	0.716	0.853	0.274	0.242

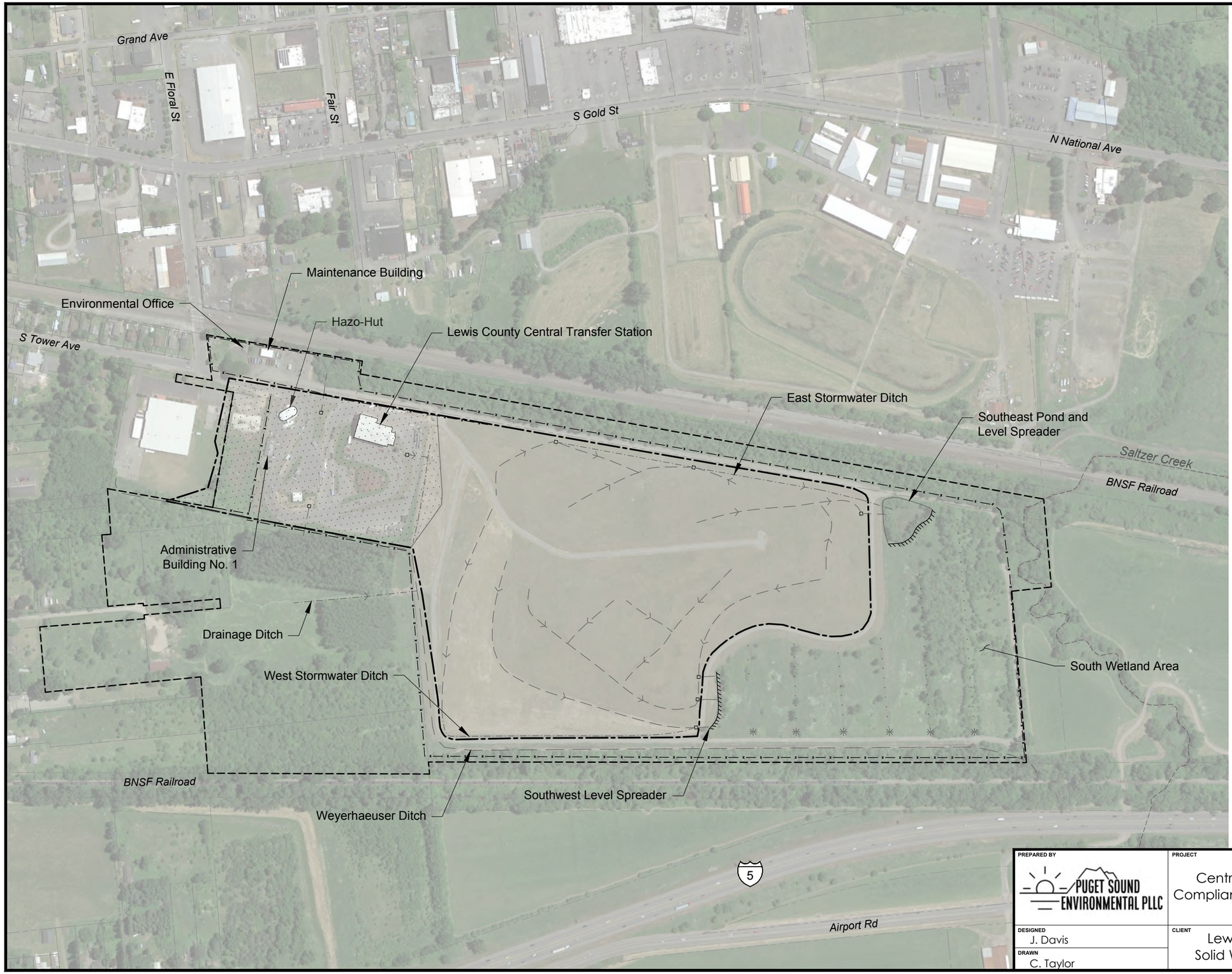
Upper Aquifer Unit			Compliance Wells									
Parameter Name	Regulatory Limits		B-2SU		MW-5S		MW-2S		MW-2SU		MW-CNE-1S	
	Value	Units	6/4/21	9/21/21	6/4/21	9/21/21	6/4/21	9/20/21	6/4/21	9/20/21	6/4/21	9/20/21
Alkalinity as Carbonate	-	mg/L	186	182	50	99.7	511.8	491	222.6	355	543	428
Ammonia (NH3) as Nitrogen (N)	-	mg/L	<0.3 U	<0.01 U	<0.3 U	0.061	<0.3 U	0.451	<0.3 U	0.235	<0.3 U	0.127
Arsenic	0.0005	mg/L	0.01545	0.00155	<0.0005 U	<0.0005 U	0.001746	0.013	0.0006163	<0.0005 U	0.0022	0.00201
Calcium	-	mg/L	179	28.5	9.23	17.9	29.5	153	49.3	109	77.3	83.6
Chemical Oxygen Demand	-	mg/L	<10 U	<10 U	<10 U	<10 U	34.18	39	14.95	24	51.49	15
Chloride	250	mg/L	0.241	2.34	2.496	8.67	220.948	214	54.104	142	58.036	48.4
Hardness as CaCO3	-	mg/L	<1 U	157	45.1235	84	669.163	746	221.827	508	477.702	458
Iron	0.3	mg/L	<0.05 U	<0.021 U	<0.05 U	<0.021 U	<0.05 U	<0.021 U	<0.05 U	<0.021 U	<0.05 U	<0.021 U
Magnesium	-	mg/L	78.3	20.8	5.31	9.54	22.2	88.4	25.1	57.2	55.9	60.6
Manganese	0.05	mg/L	9.62	0.0033	0.07781	0.379	0.002	11.4	2.74	5.99	1.92	2.2
Mercury	0.002	mg/L	0.0000018	<0.0002 U	0.0000025	<0.0002 U	0.0000006	<0.0002 U	0.0000015	<0.0002 U	0.0000018	<0.0002 U
Nitrate-Nitrite as N	10	mg/L	0.776	<0.05 U	0.849	<0.05 U	<0.1 U	<0.05 U	0.102	<0.05 U	0.125	<0.05 U
Potassium	-	mg/L	7.11	1.97	2.17	2.78	1.318	7.39	3.62	6.07	4.43	4.95
Sodium	-	mg/L	24.9	18.4	8.86	12.3	20.4	27.3	12.4	24.1	20.3	22.3
Sulfate	250	mg/L	8.459	5.83	5.219	2.96	2.913	1.67	4.859	2.69	1.282	0.48
total dissolved solids	500	mg/L	238	221	104	141	838	939	312	614	572	551
Total Organic Carbon	-	mg/L	0.21	0.6	0.32	2	0.91	12.6	0.57	7.3	0.83	8.1
Zinc	5	mg/L	0.0061 B1	0.0038	0.0118 B1	0.0064	0.0268 B1	<0.002 U	0.0105 B1	0.0105	0.0055 B1	<0.002 U
pH	6.5-8.5	pH Units	9.19	9.24	9.5	9.8	8.91	8.93	9.44	9.24	9.05	8.57
Specific Conductivity (at 25 deg C)	-	uS/cm	0.471	0.507	0.329	0.135	1.24	1.95	0.994	0.724	0.971	1.45



0 2,000 4,000

Scale in Feet

PREPARED BY: PUGET SOUND ENVIRONMENTAL PLLC	PROJECT: Centralia Landfill Compliance Monitoring	SHEET TITLE: **Vicinity Map**
DESIGNED: J. Davis	CLIENT: Lewis County Solid Waste Utility	
DRAWN: C. Taylor		DATE: July 2022 / FIGURE: 1



LEGEND

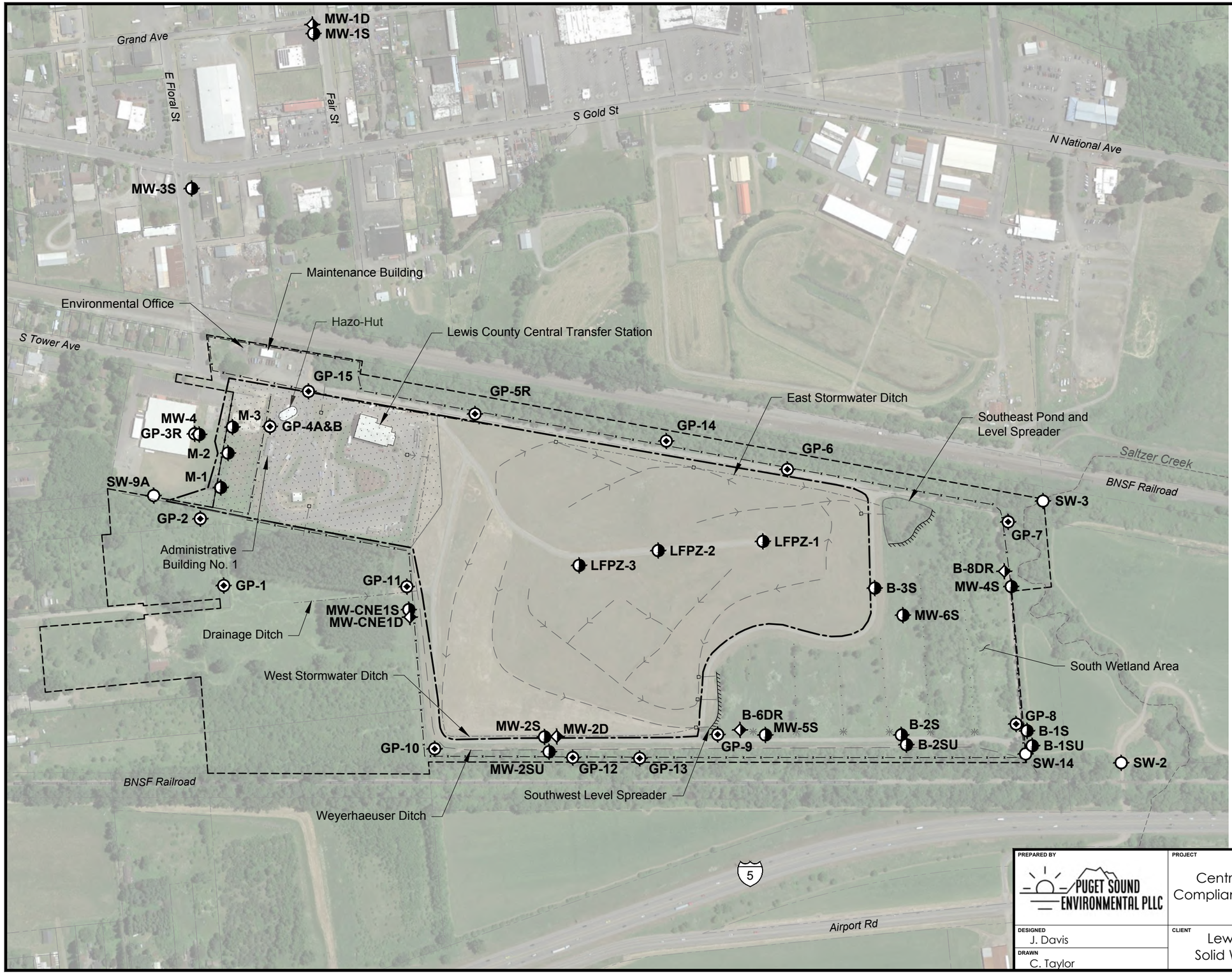
- Project Boundary
- Edge of Refuse
- Runoff Control Berm
- Ditch on Top of Final Cover System
- Fence
- Stormwater Catch Basin
- Culverts with Side Gates
- Stormwater Swales
- Stormwater Level Spreader
- Closed Northend Landfill
- Tax Parcel

N

0 400 800

Scale in Feet

PREPARED BY: PUGET SOUND ENVIRONMENTAL PLLC	PROJECT: Centralia Landfill Compliance Monitoring	SHEET TITLE: **Site Plan**
DESIGNED: J. Davis	CLIENT: Lewis County Solid Waste Utility	
DRAWN: C. Taylor		DATE: July 2022 / FIGURE: **2**



LEGEND

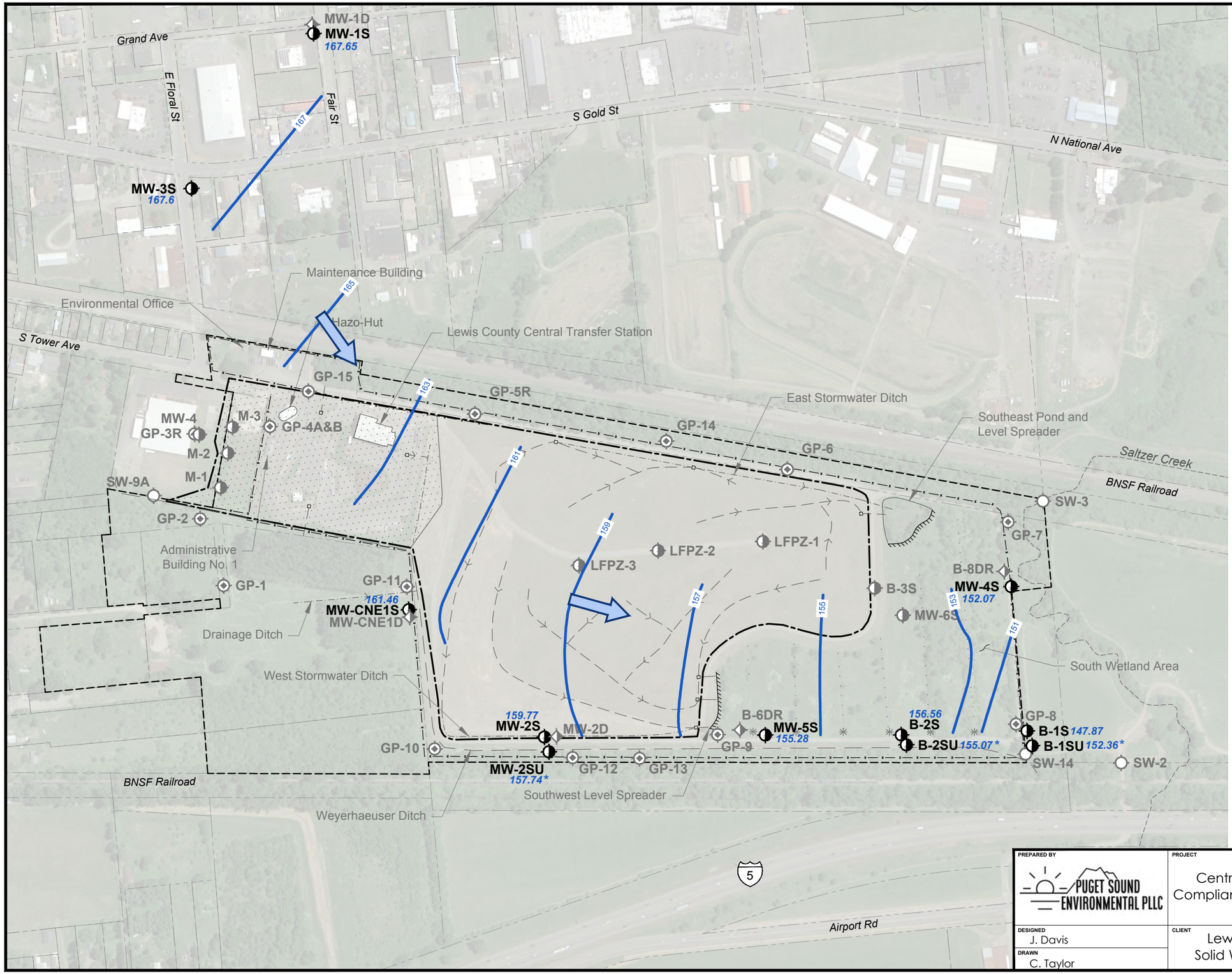
- Landfill Gas Probe
- Surface Water Monitoring Well
- Upper Unit Groundwater Monitoring Well
- Lower Unit Groundwater Monitoring Well
- Project Boundary
- Edge of Refuse
- Runoff Control Berm
- Ditch on Top of Final Cover System
- Fence
- Stormwater Catch Basin
- Culverts with Side Gates
- Stormwater Swales
- Stormwater Level Spreader
- Closed Northend Landfill
- Tax Parcel

N

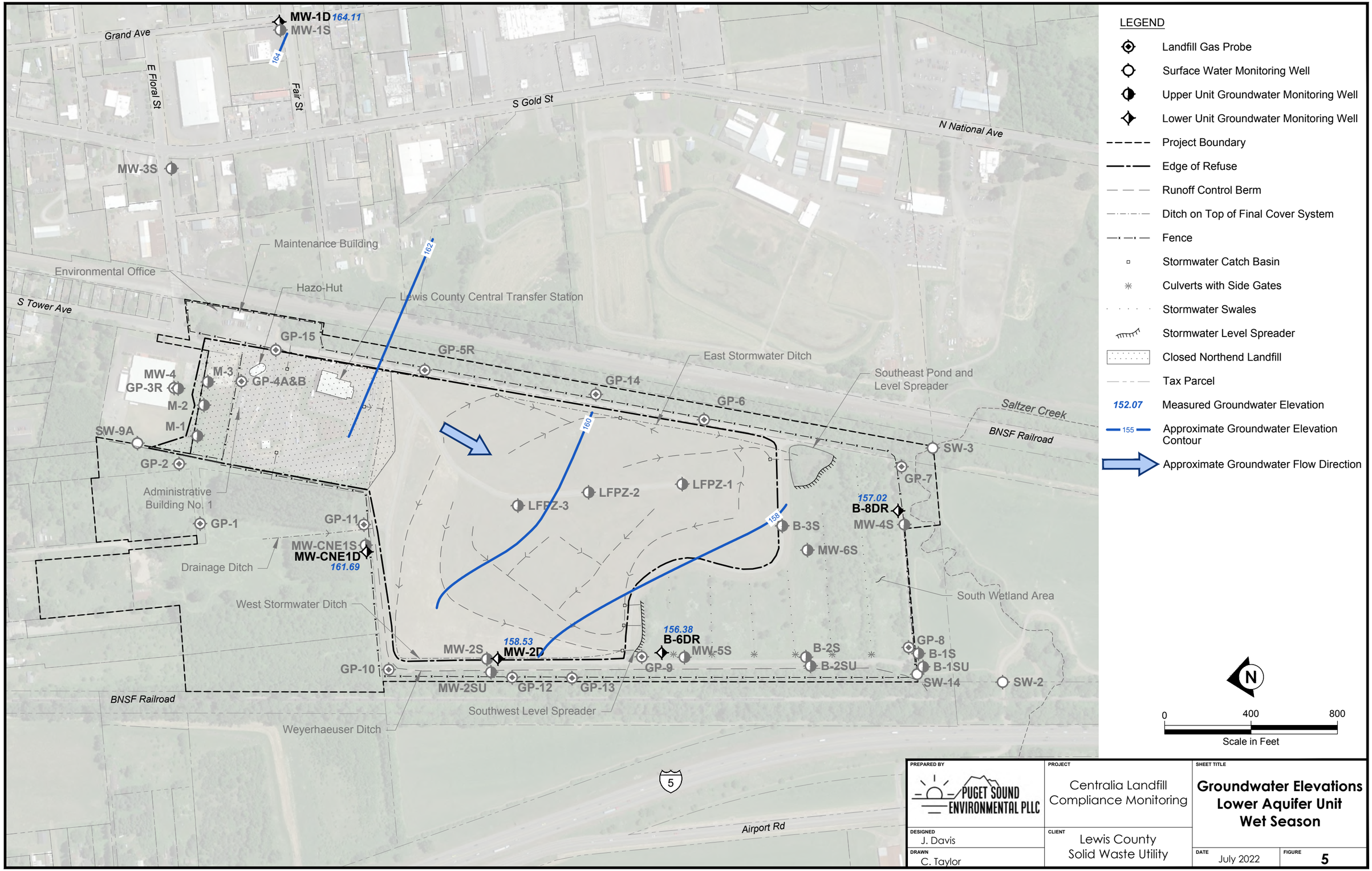
0 400 800

Scale in Feet

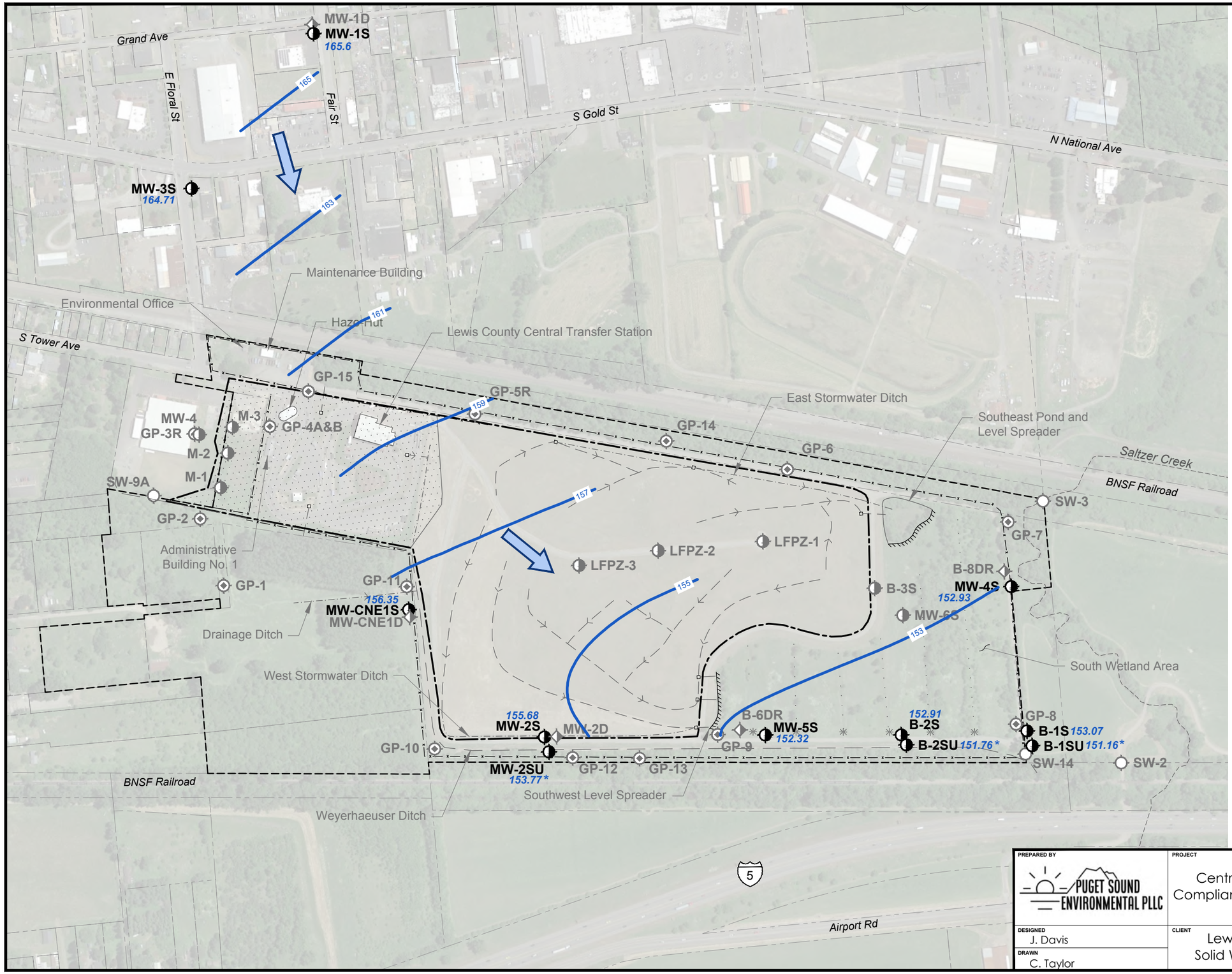
PREPARED BY: PUGET SOUND ENVIRONMENTAL PLLC	PROJECT: Centralia Landfill Compliance Monitoring	SHEET TITLE: **Monitoring Locations**
DESIGNED: J. Davis	CLIENT: Lewis County Solid Waste Utility	
DRAWN: C. Taylor		DATE: July 2022 / FIGURE: **3**



PREPARED BY: PUGET SOUND ENVIRONMENTAL PLLC	PROJECT: Centralia Landfill Compliance Monitoring	SHEET TITLE: **Groundwater Elevations Upper Aquifer Unit Wet Season**	
DESIGNED: J. Davis	CLIENT: Lewis County Solid Waste Utility		
DRAWN: C. Taylor		DATE: July 2022	FIGURE: **4**



PREPARED BY: PUGET SOUND ENVIRONMENTAL PLLC	PROJECT: Centralia Landfill Compliance Monitoring	SHEET TITLE: **Groundwater Elevations Lower Aquifer Unit Wet Season**	
DESIGNED: J. Davis	CLIENT: Lewis County Solid Waste Utility		
DRAWN: C. Taylor		DATE: July 2022	FIGURE: **5**



LEGEND

- Landfill Gas Probe
- Surface Water Monitoring Well
- Upper Unit Groundwater Monitoring Well
- Lower Unit Groundwater Monitoring Well
- Project Boundary
- Edge of Refuse
- Runoff Control Berm
- Ditch on Top of Final Cover System
- Fence
- Stormwater Catch Basin
- Culverts with Side Gates
- Stormwater Swales
- Stormwater Level Spreader
- Closed Northend Landfill
- Tax Parcel
- 152.07 Measured Groundwater Elevation
- 155 Approximate Groundwater Elevation Contour
- Approximate Groundwater Flow Direction

NOTE

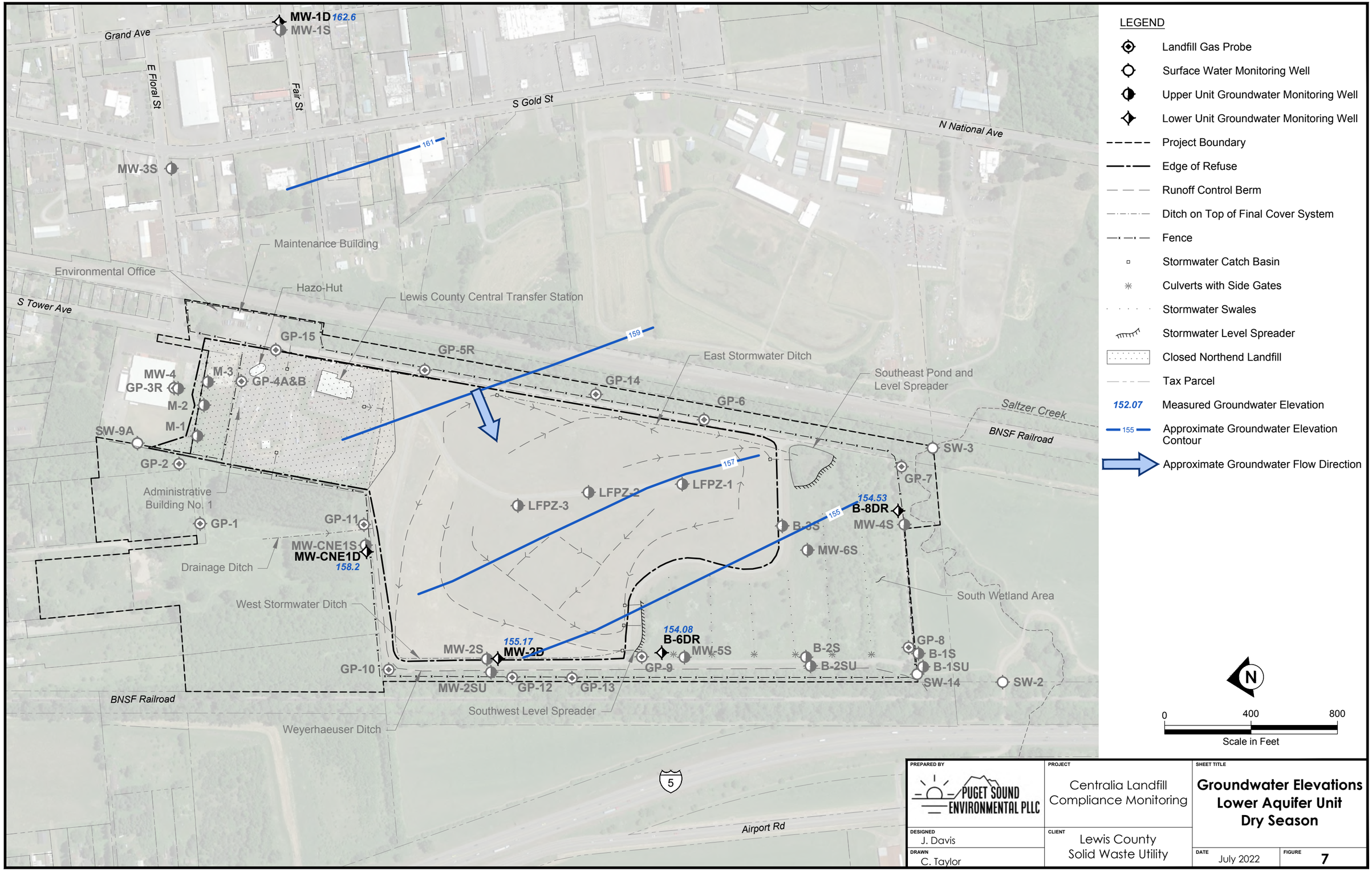
* Elevations for Shallow Upper Unit wells shown for reference but omitted from contours.

N

0 400 800

Scale in Feet

PREPARED BY: PUGET SOUND ENVIRONMENTAL PLLC	PROJECT: Centralia Landfill Compliance Monitoring	SHEET TITLE: **Groundwater Elevations Upper Aquifer Unit Dry Season**
DESIGNED: J. Davis	CLIENT: Lewis County Solid Waste Utility	
DRAWN: C. Taylor		DATE: July 2022 / FIGURE: 6



LEGEND

- Landfill Gas Probe
- Surface Water Monitoring Well
- Upper Unit Groundwater Monitoring Well
- Lower Unit Groundwater Monitoring Well
- Project Boundary
- Edge of Refuse
- Runoff Control Berm
- Ditch on Top of Final Cover System
- Fence
- Stormwater Catch Basin
- Culverts with Side Gates
- Stormwater Swales
- Stormwater Level Spreader
- Closed Northend Landfill
- Tax Parcel
- 152.07 Measured Groundwater Elevation
- 155 Approximate Groundwater Elevation Contour
- Approximate Groundwater Flow Direction

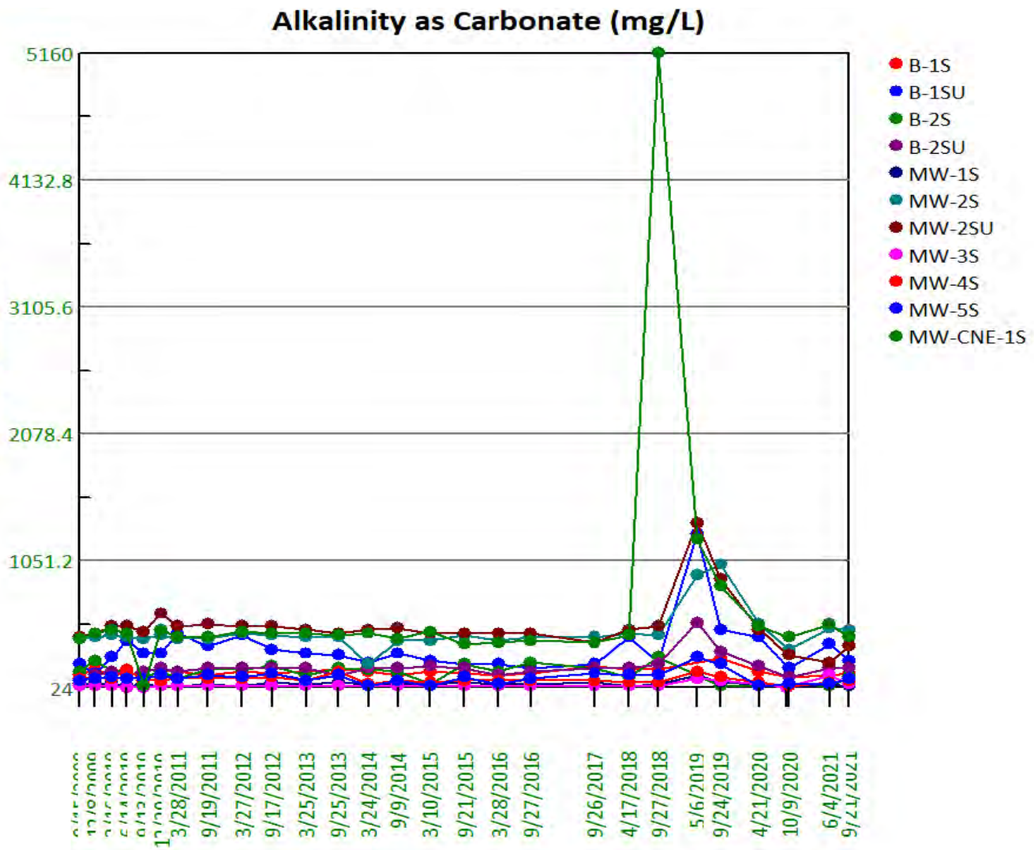
N

0 400 800

Scale in Feet

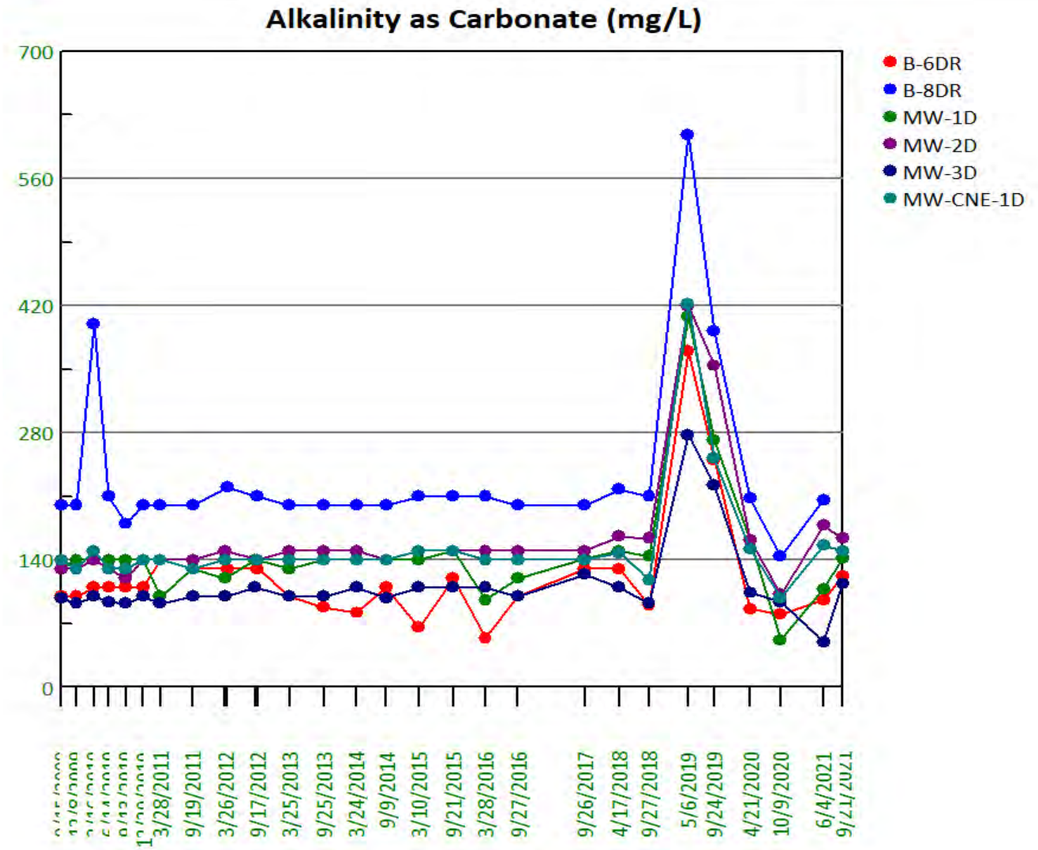
PREPARED BY: PUGET SOUND ENVIRONMENTAL PLLC	PROJECT: Centralia Landfill Compliance Monitoring	SHEET TITLE: **Groundwater Elevations Lower Aquifer Unit Dry Season**	
DESIGNED: J. Davis	CLIENT: Lewis County Solid Waste Utility		
DRAWN: C. Taylor		DATE: July 2022	FIGURE: 7

Upper Aquifer Unit



Date [9/15/2009 to 9/21/2021]

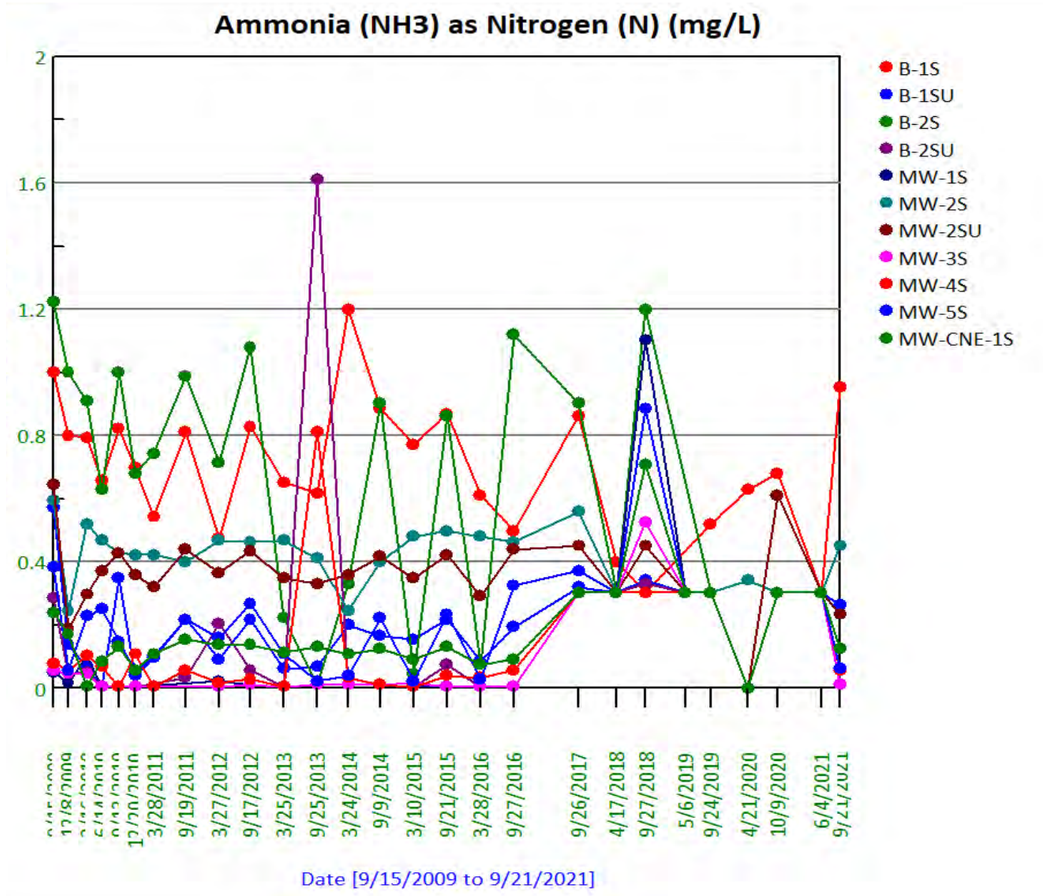
Lower Aquifer Unit



Date [9/15/2009 to 9/21/2021]

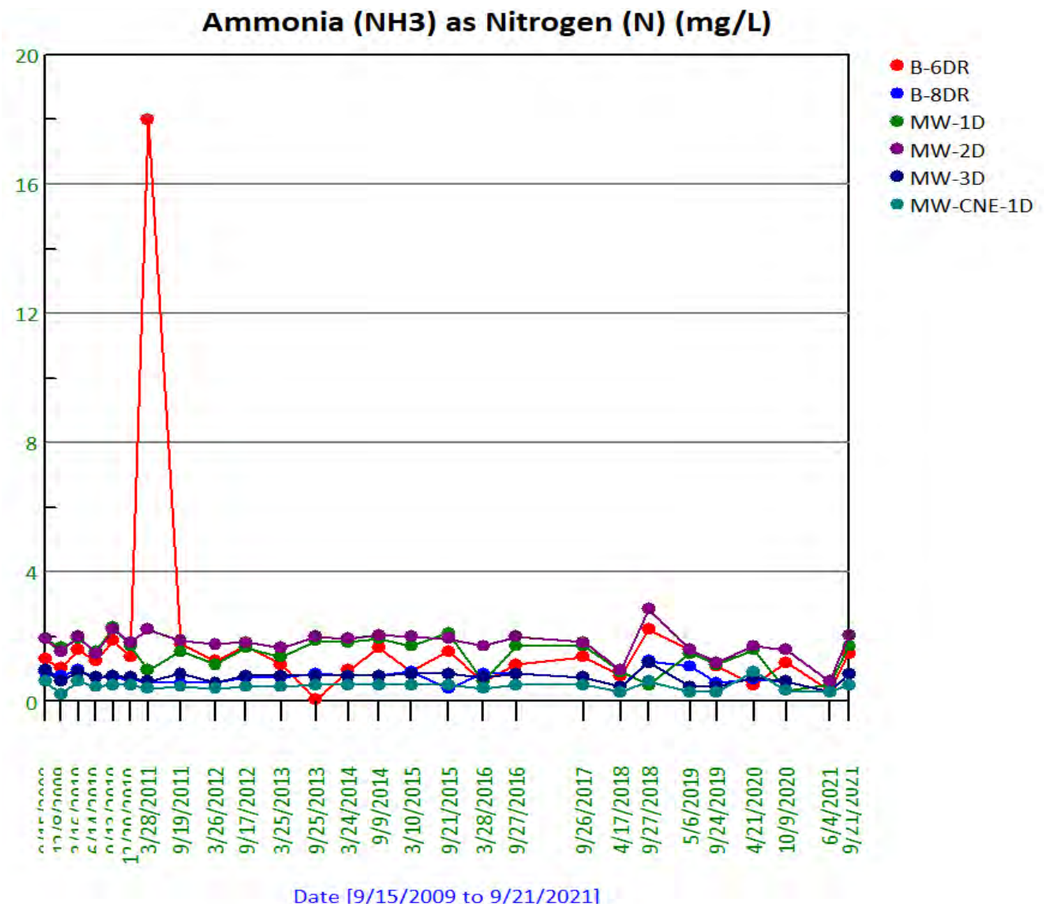
PREPARED BY: PUGET SOUND ENVIRONMENTAL PLLC	PROJECT: Centralia Landfill Compliance Monitoring	SHEET TITLE: Appendix A Time Series Plots
DESIGNED: J. Davis	CLIENT: Lewis County Solid Waste Utility	
DRAWN:		DATE: July 2022 / FIGURE: A-1

Upper Aquifer Unit



Date [9/15/2009 to 9/21/2021]

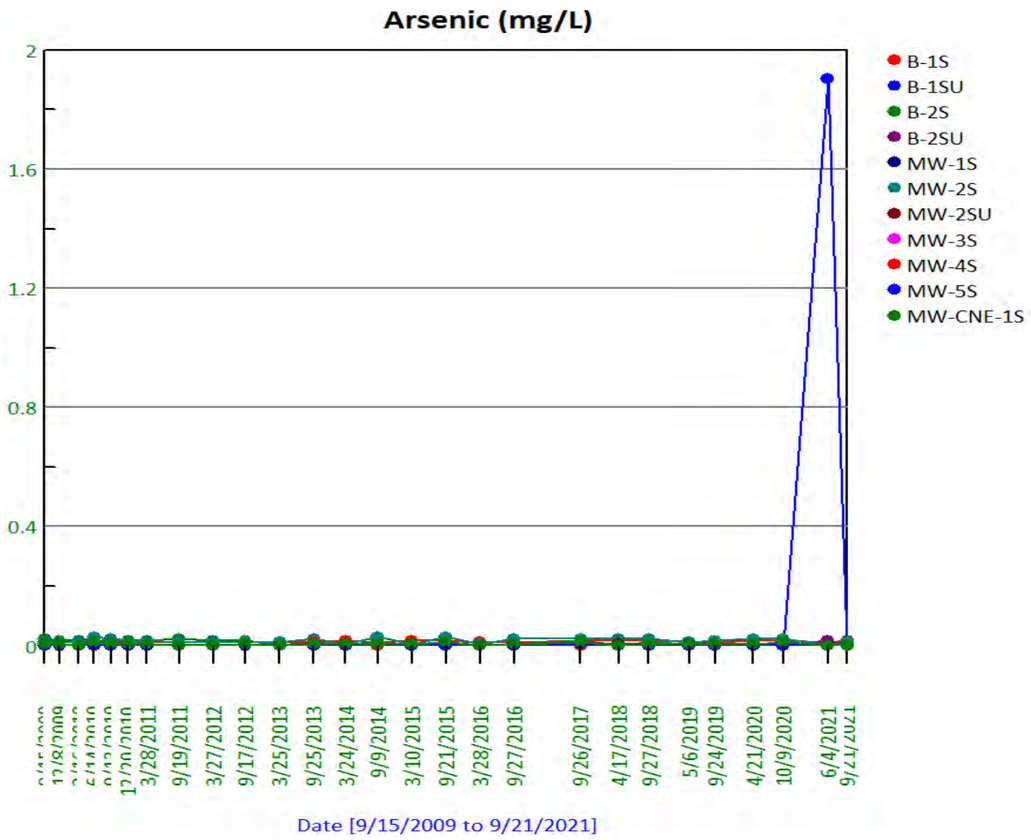
Lower Aquifer Unit



Date [9/15/2009 to 9/21/2021]

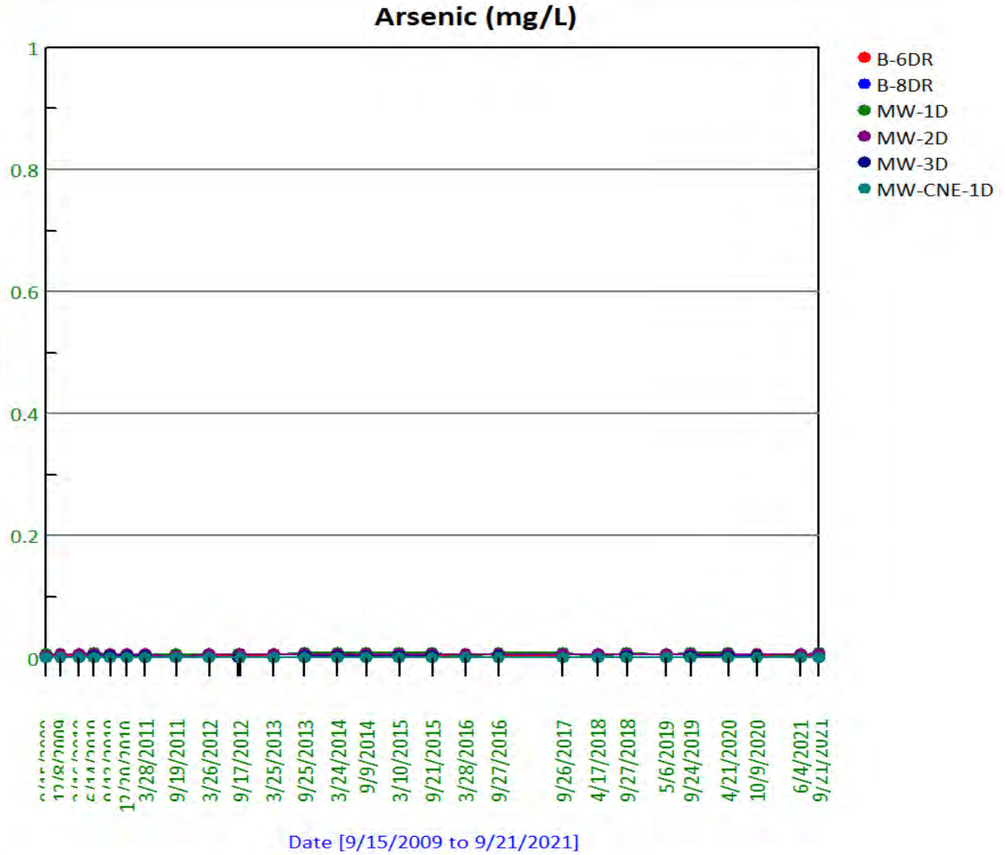
PREPARED BY: PUGET SOUND ENVIRONMENTAL PLLC	PROJECT: Centralia Landfill Compliance Monitoring	SHEET TITLE: Appendix A Time Series Plots
DESIGNED: J. Davis	CLIENT: Lewis County Solid Waste Utility	
DRAWN:		DATE: July 2022 / FIGURE: A-2

Upper Aquifer Unit



Date [9/15/2009 to 9/21/2021]

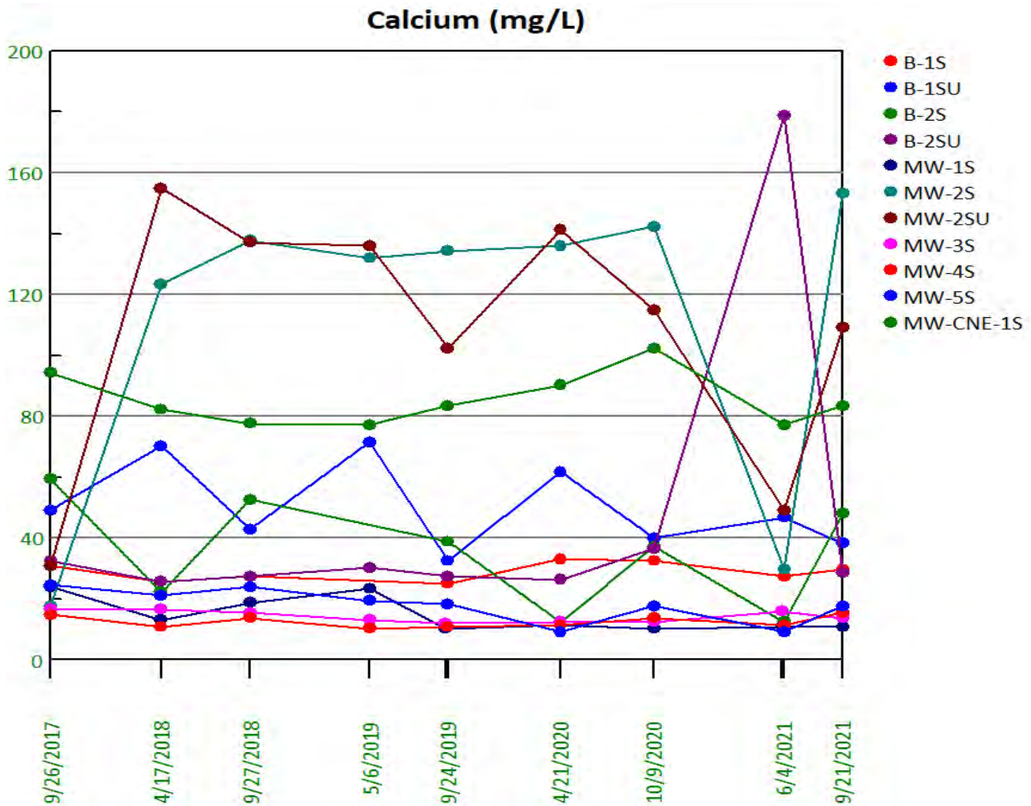
Lower Aquifer Unit



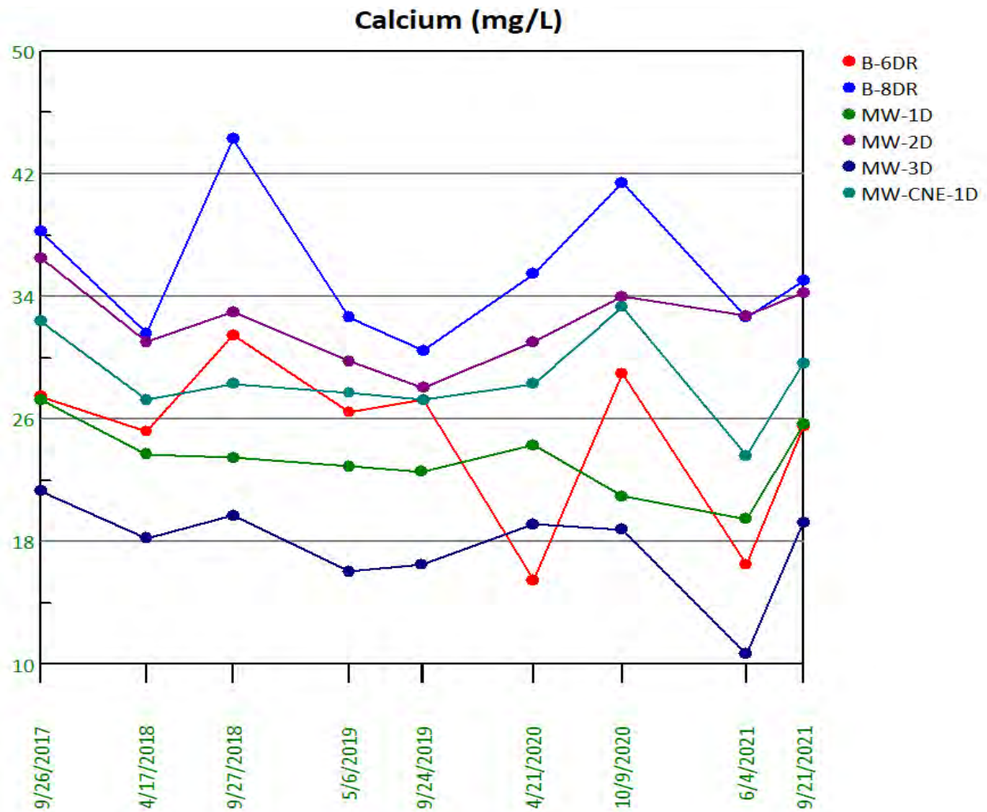
Date [9/15/2009 to 9/21/2021]

PREPARED BY: PUGET SOUND ENVIRONMENTAL PLLC	PROJECT: Centralia Landfill Compliance Monitoring	SHEET TITLE: Appendix A Time Series Plots
DESIGNED: J. Davis	CLIENT: Lewis County Solid Waste Utility	
DRAWN:		DATE: July 2022 / FIGURE: A-3

Upper Aquifer Unit

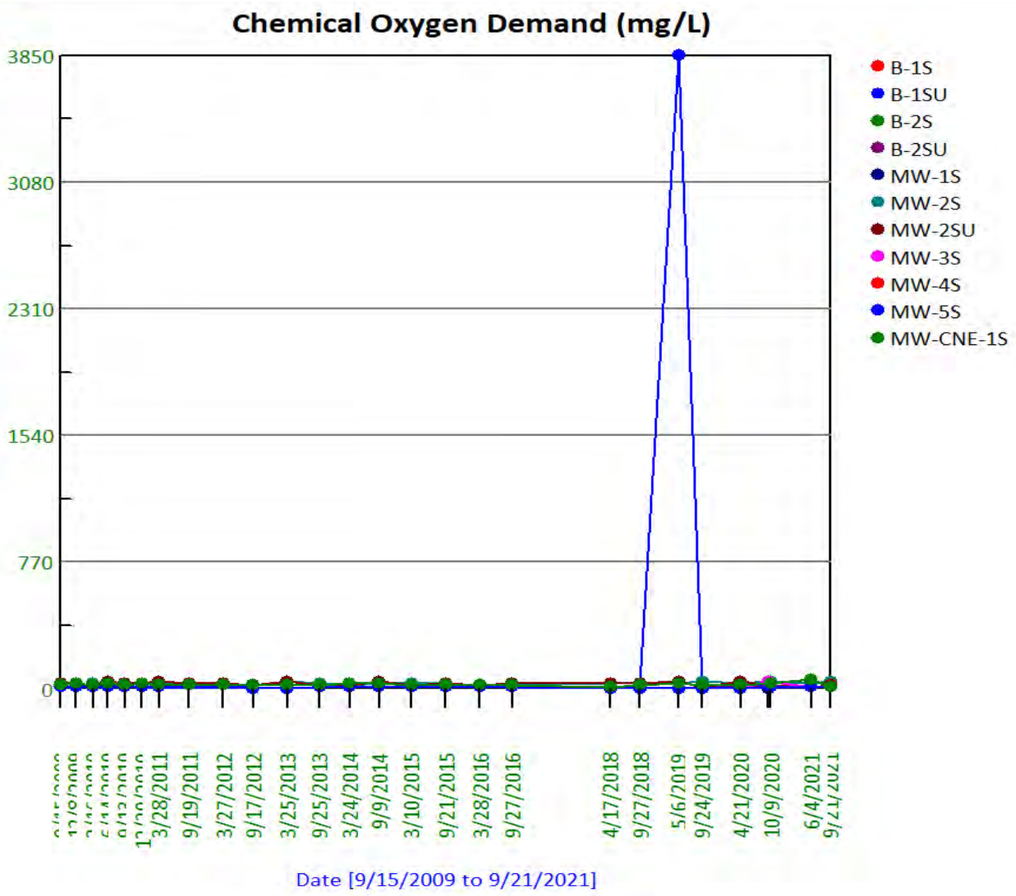


Lower Aquifer Unit

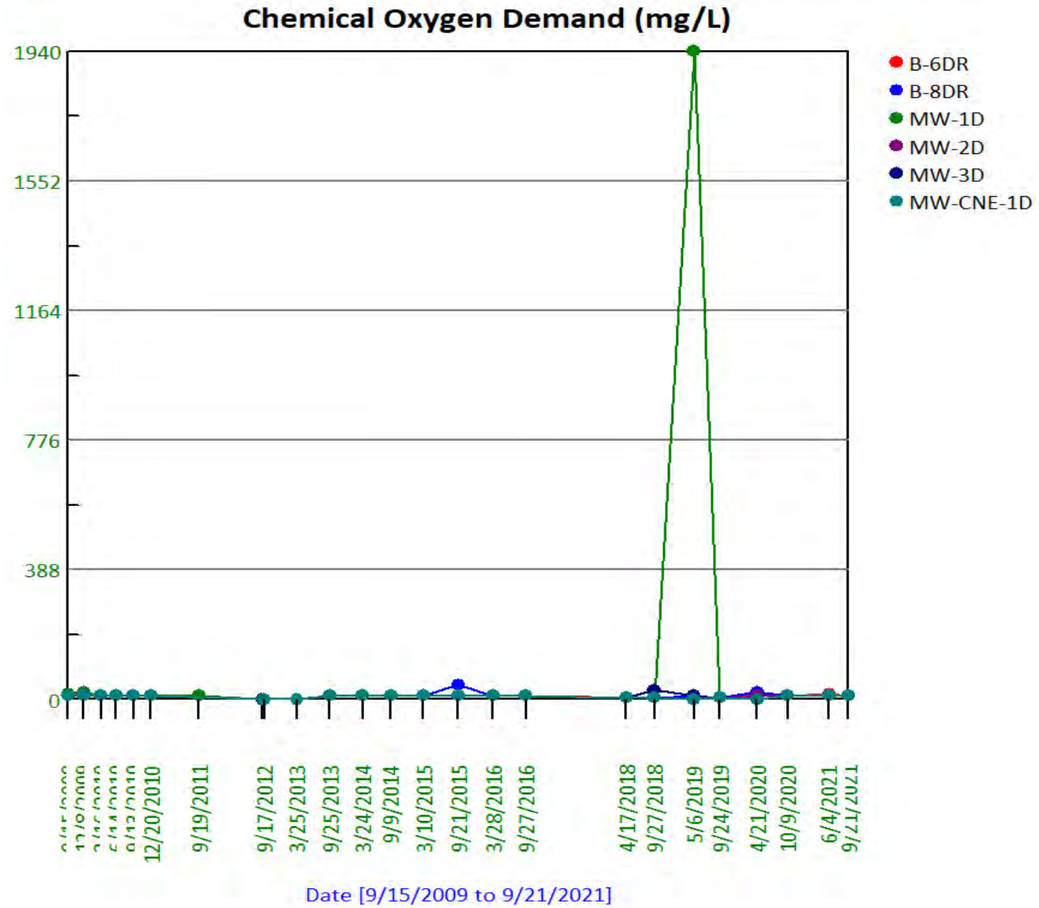


PREPARED BY: PUGET SOUND ENVIRONMENTAL PLLC	PROJECT: Centralia Landfill Compliance Monitoring	SHEET TITLE: Appendix A Time Series Plots
DESIGNED: J. Davis	CLIENT: Lewis County Solid Waste Utility	
DRAWN:		DATE: July 2022 / FIGURE: A-4

Upper Aquifer Unit

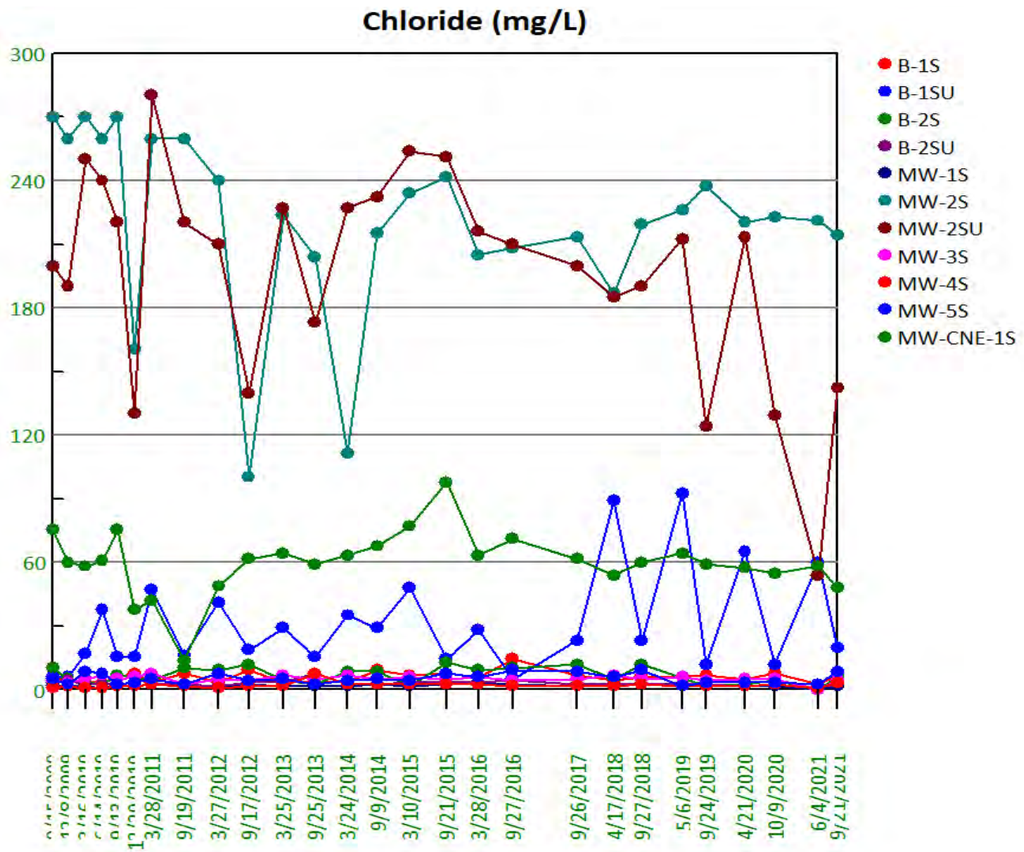


Lower Aquifer Unit



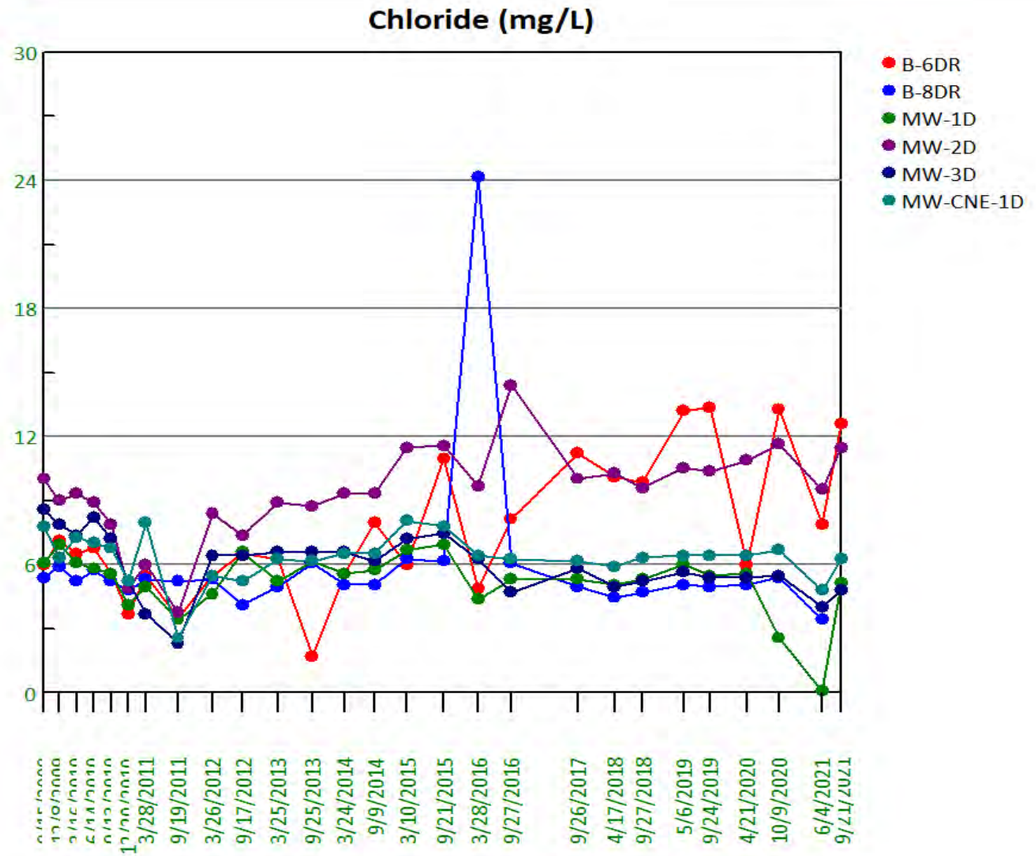
PREPARED BY: PUGET SOUND ENVIRONMENTAL PLLC	PROJECT: Centralia Landfill Compliance Monitoring	SHEET TITLE: Appendix A Time Series Plots
DESIGNED: J. Davis	CLIENT: Lewis County Solid Waste Utility	
DRAWN:		DATE: July 2022 / FIGURE: A-5

Upper Aquifer Unit



Date [9/15/2009 to 9/21/2021]

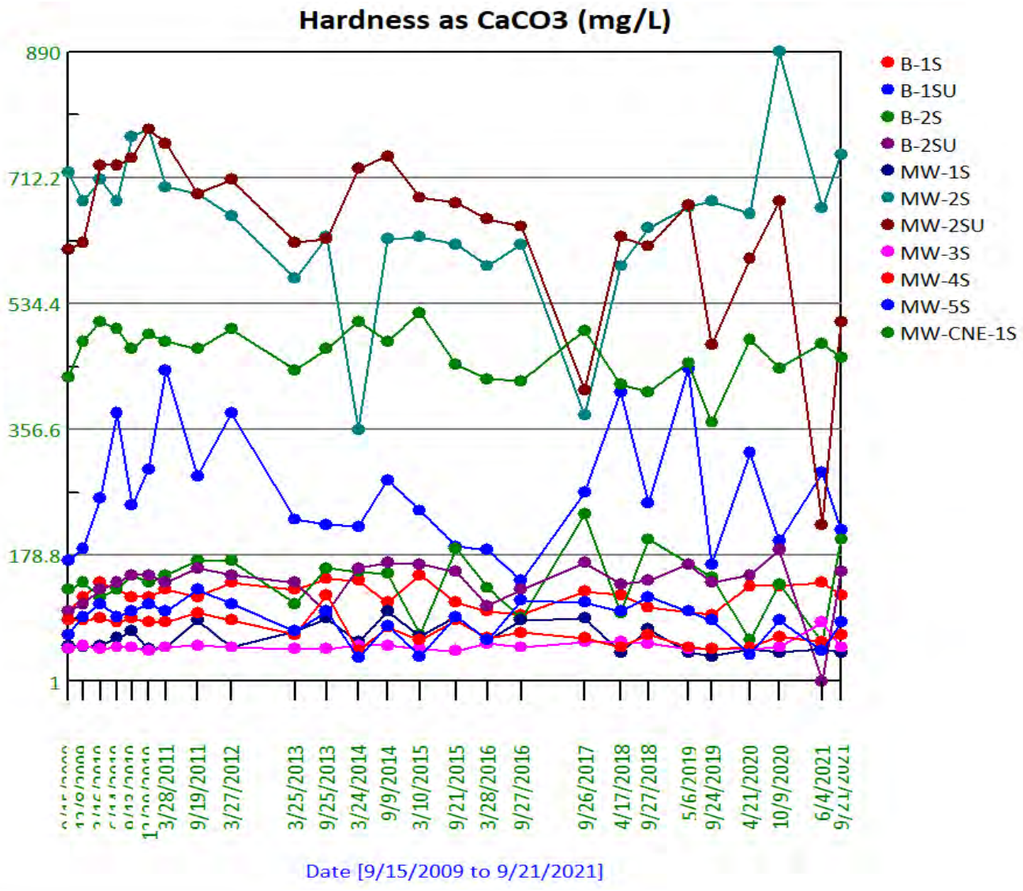
Lower Aquifer Unit



Date [9/15/2009 to 9/21/2021]

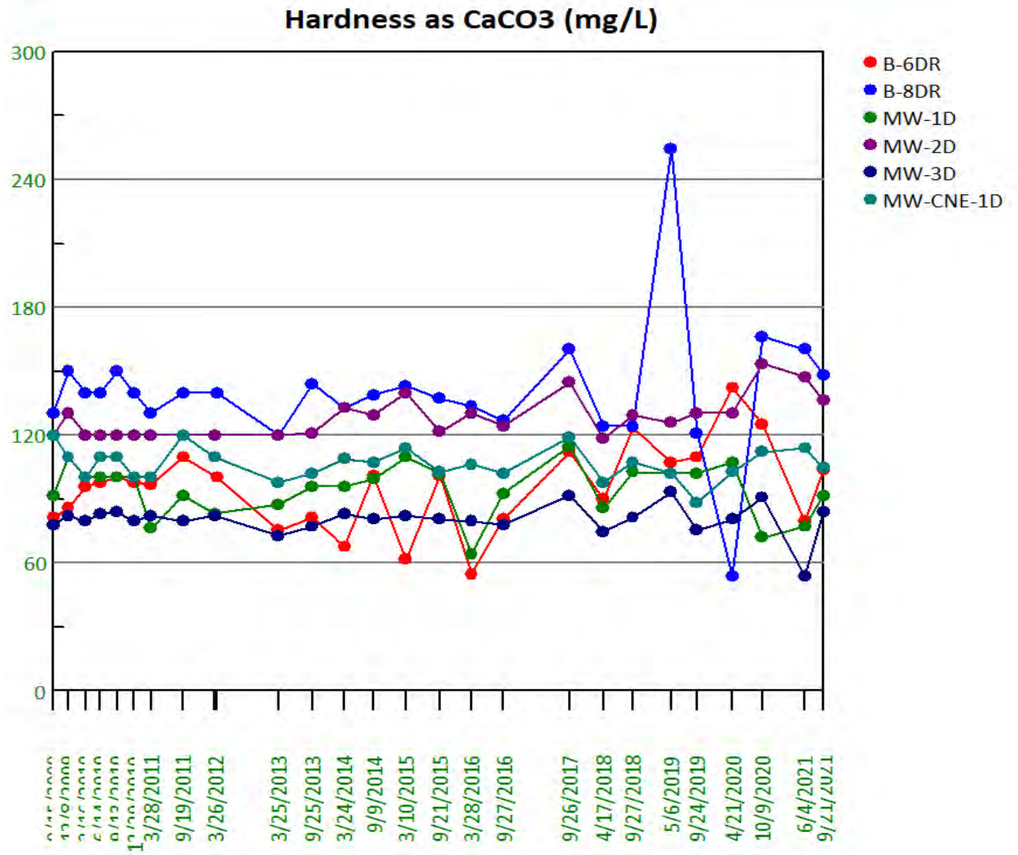
PREPARED BY: PUGET SOUND ENVIRONMENTAL PLLC	PROJECT: Centralia Landfill Compliance Monitoring	SHEET TITLE: Appendix A Time Series Plots
DESIGNED: J. Davis	CLIENT: Lewis County Solid Waste Utility	
DRAWN:		DATE: July 2022 / FIGURE: A-6

Upper Aquifer Unit



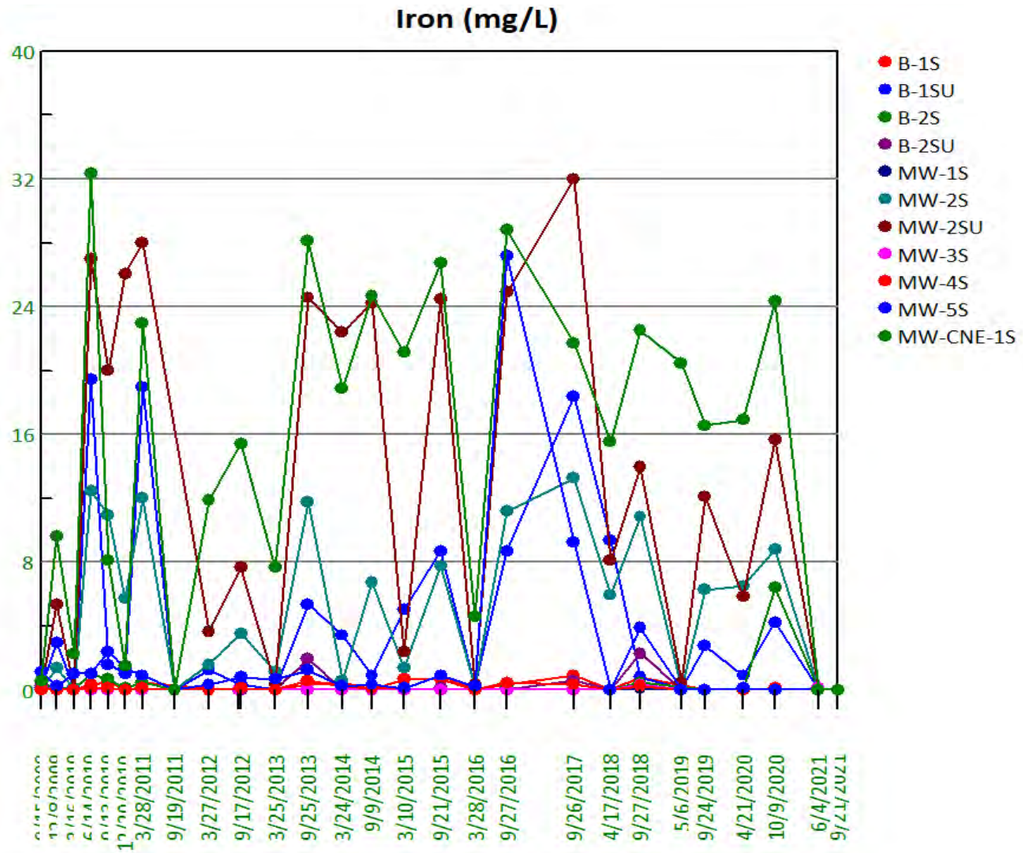
Date [9/15/2009 to 9/21/2021]

Lower Aquifer Unit

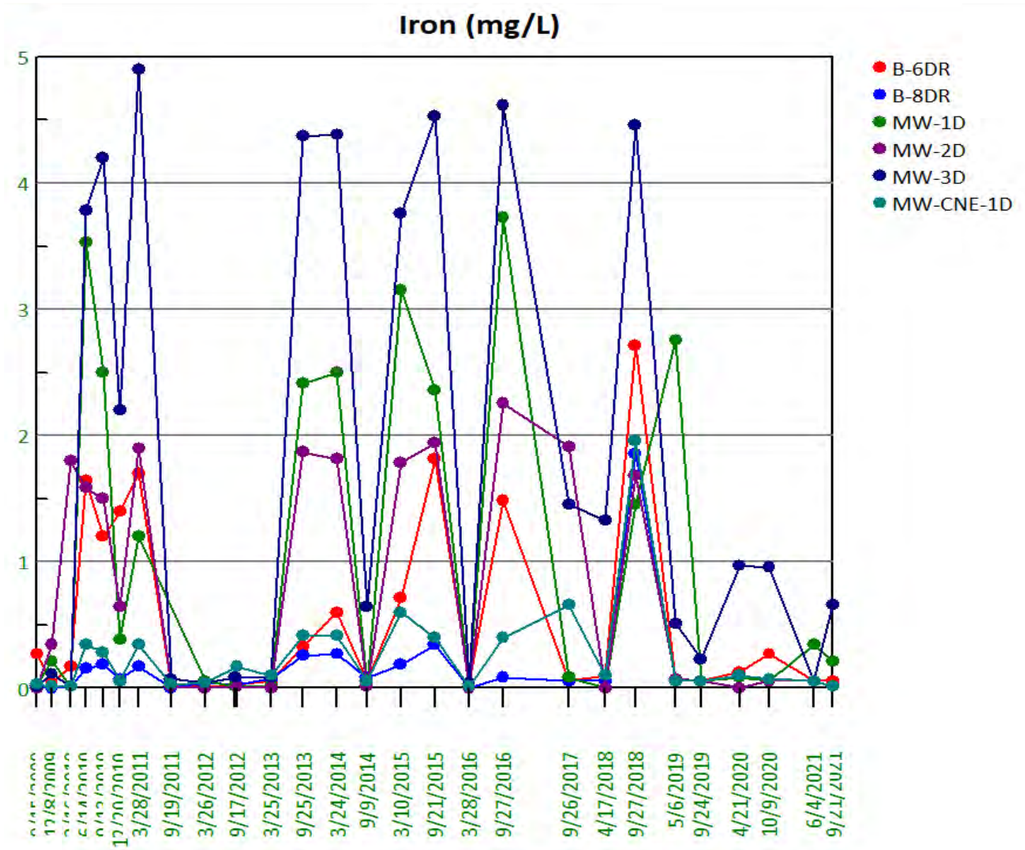


PREPARED BY: PUGET SOUND ENVIRONMENTAL PLLC	PROJECT: Centralia Landfill Compliance Monitoring	SHEET TITLE: Appendix A Time Series Plots
DESIGNED: J. Davis	CLIENT: Lewis County Solid Waste Utility	
DRAWN:		DATE: July 2022 / FIGURE: A-7

Upper Aquifer Unit

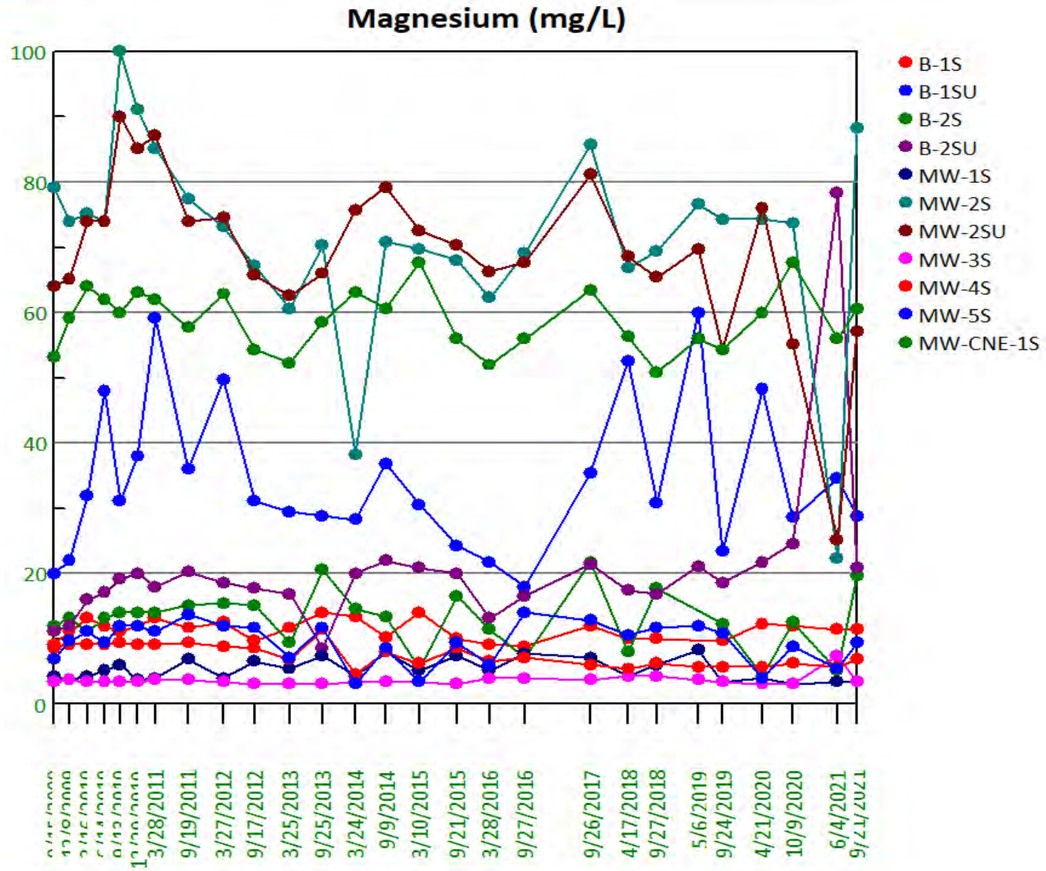


Lower Aquifer Unit



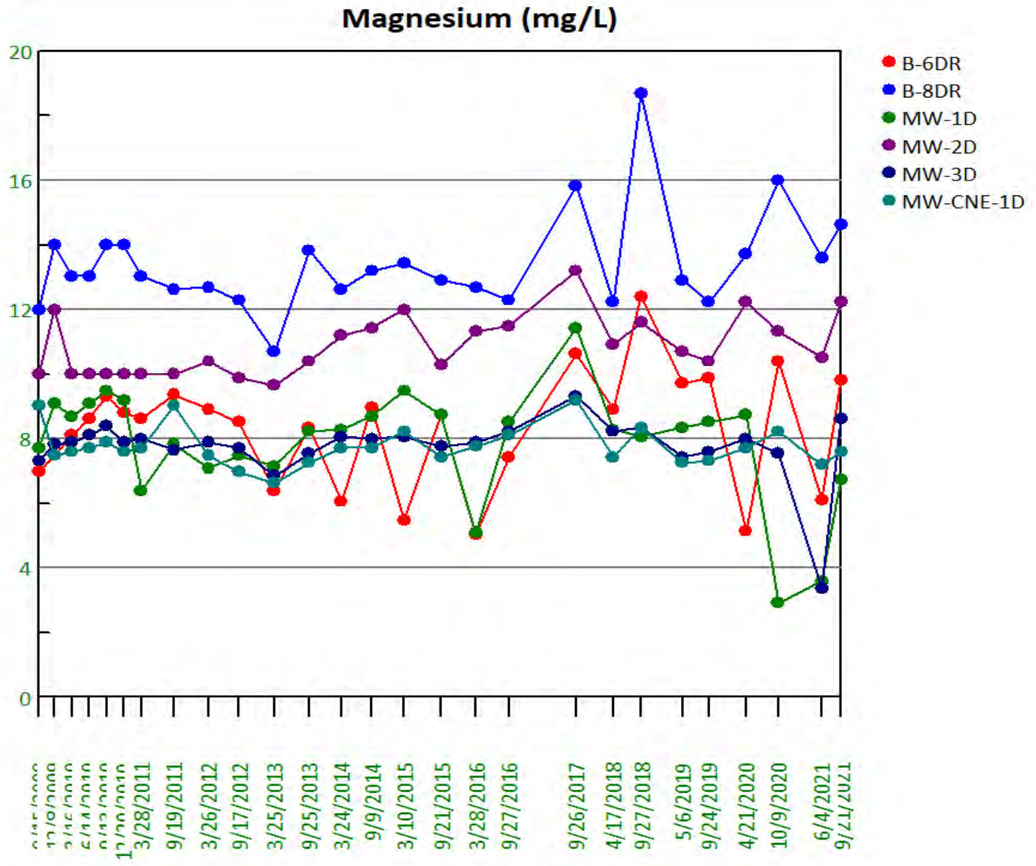
PREPARED BY: PUGET SOUND ENVIRONMENTAL PLLC	PROJECT: Centralia Landfill Compliance Monitoring	SHEET TITLE: Appendix A Time Series Plots
DESIGNED: J. Davis	CLIENT: Lewis County Solid Waste Utility	
DRAWN:		DATE: July 2022 / FIGURE: A-8

Upper Aquifer Unit



Date [9/15/2009 to 9/21/2021]

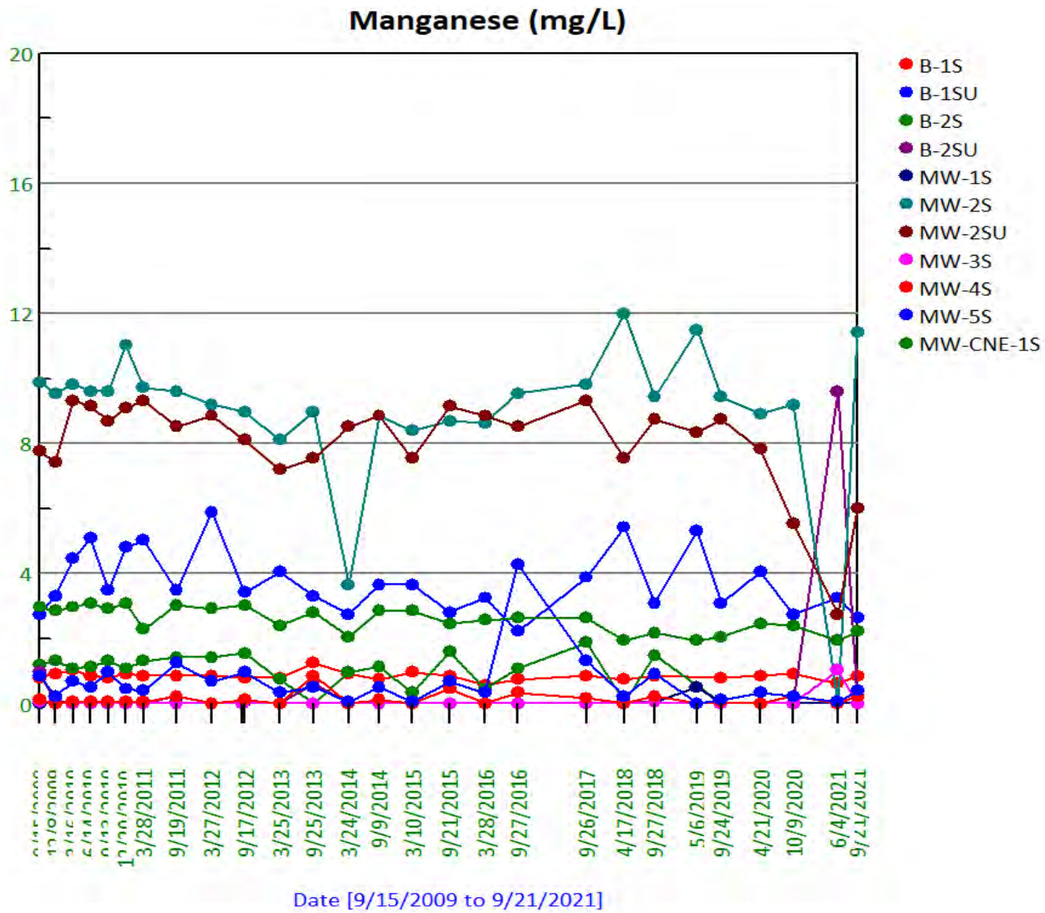
Lower Aquifer Unit



Date [9/15/2009 to 9/21/2021]

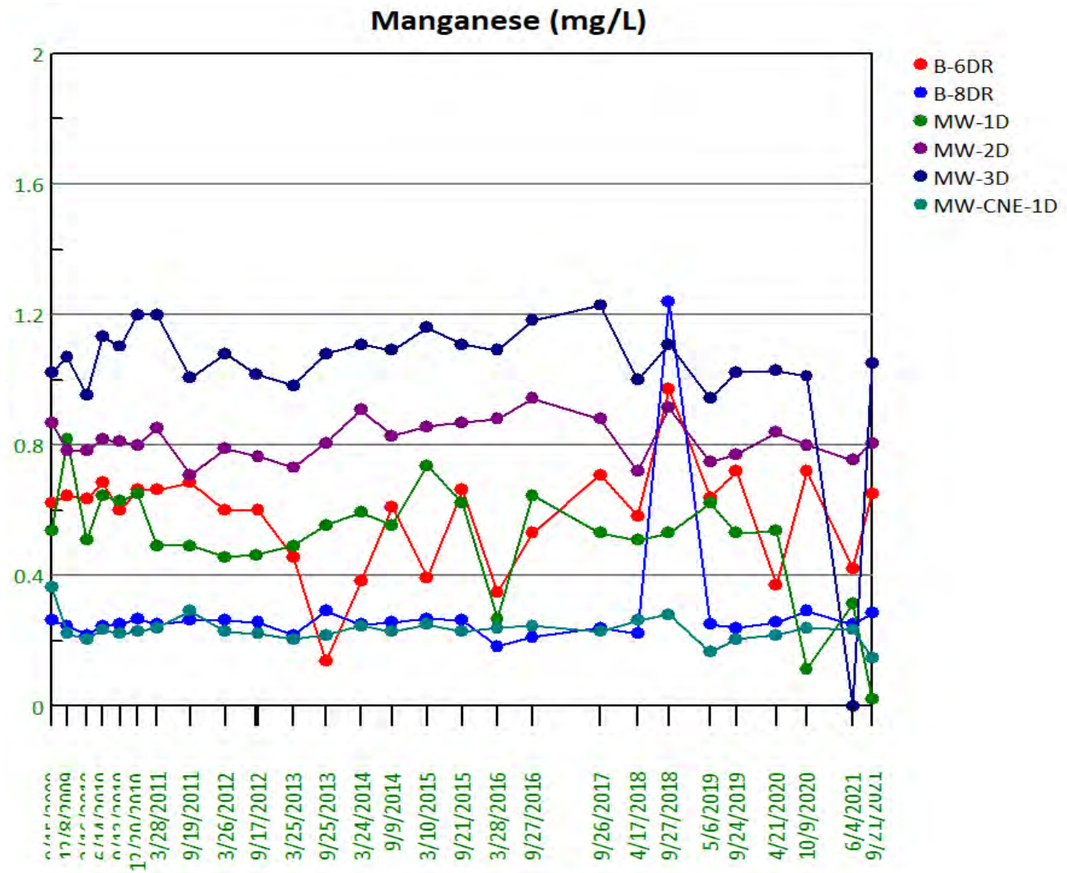
PREPARED BY: PUGET SOUND ENVIRONMENTAL PLLC	PROJECT: Centralia Landfill Compliance Monitoring	SHEET TITLE: Appendix A Time Series Plots
DESIGNED: J. Davis	CLIENT: Lewis County Solid Waste Utility	
DRAWN:		DATE: July 2022 / FIGURE: A-9

Upper Aquifer Unit



Date [9/15/2009 to 9/21/2021]

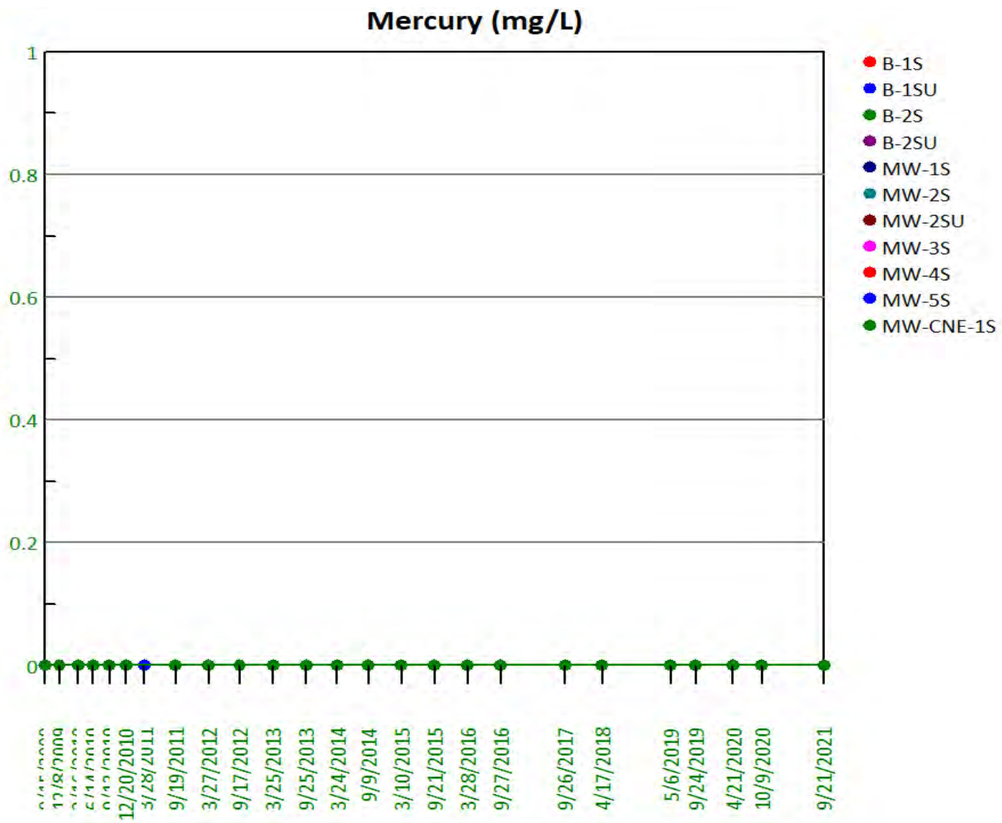
Lower Aquifer Unit



Date [9/15/2009 to 9/21/2021]

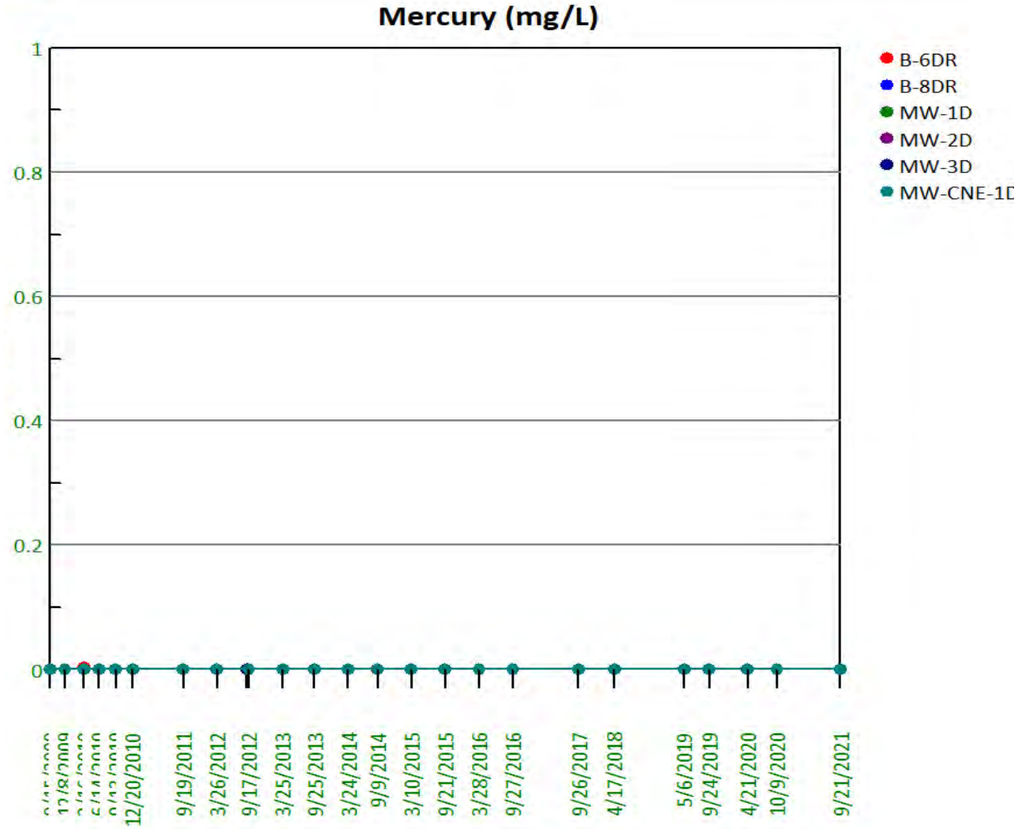
PREPARED BY: PUGET SOUND ENVIRONMENTAL PLLC	PROJECT: Centralia Landfill Compliance Monitoring	SHEET TITLE: Appendix A Time Series Plots
DESIGNED: J. Davis	CLIENT: Lewis County Solid Waste Utility	
DRAWN:		DATE: July 2022 / FIGURE: A-10

Upper Aquifer Unit



Date [9/15/2009 to 9/21/2021]

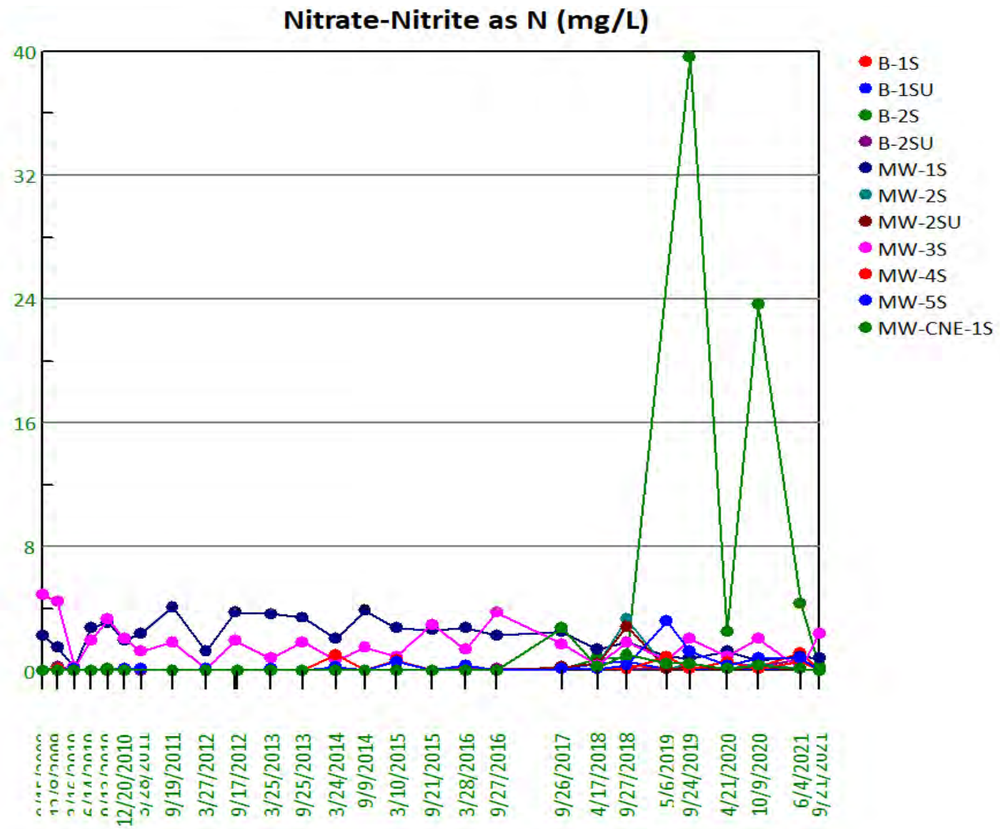
Lower Aquifer Unit



Date [9/15/2009 to 9/21/2021]

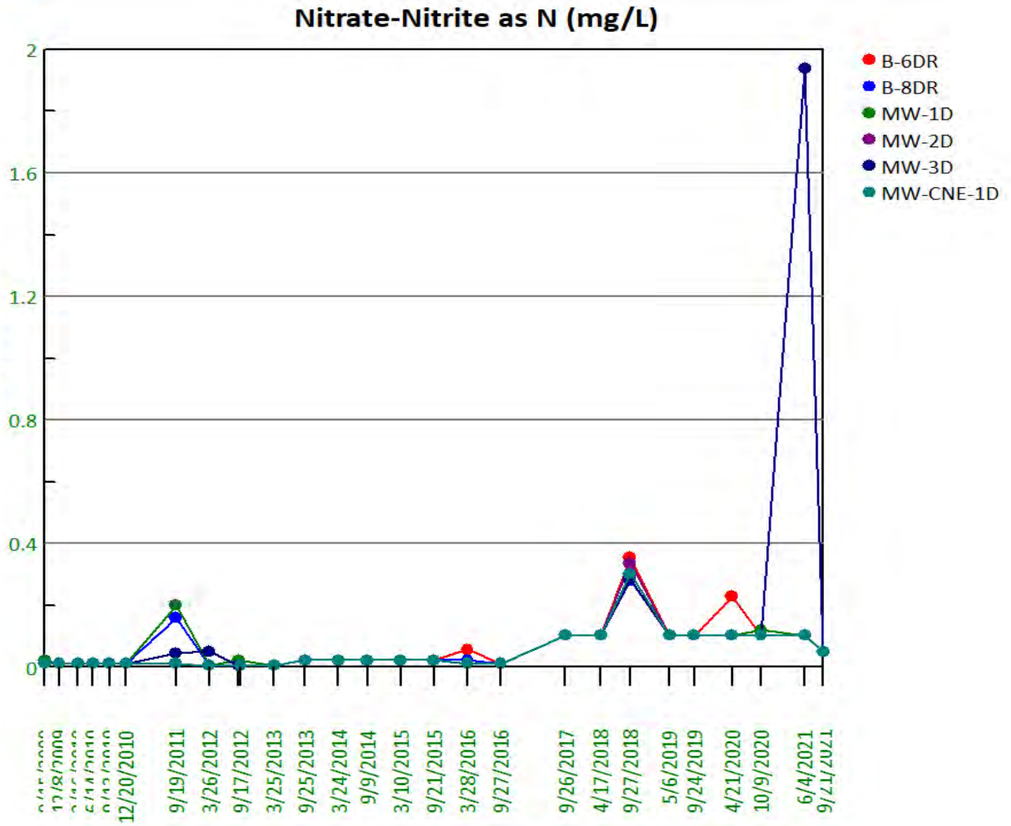
PREPARED BY: PUGET SOUND ENVIRONMENTAL PLLC	PROJECT: Centralia Landfill Compliance Monitoring	SHEET TITLE: Appendix A Time Series Plots
DESIGNED: J. Davis	CLIENT: Lewis County Solid Waste Utility	
DRAWN:		DATE: July 2022 / FIGURE: A-11

Upper Aquifer Unit



Date [9/15/2009 to 9/21/2021]

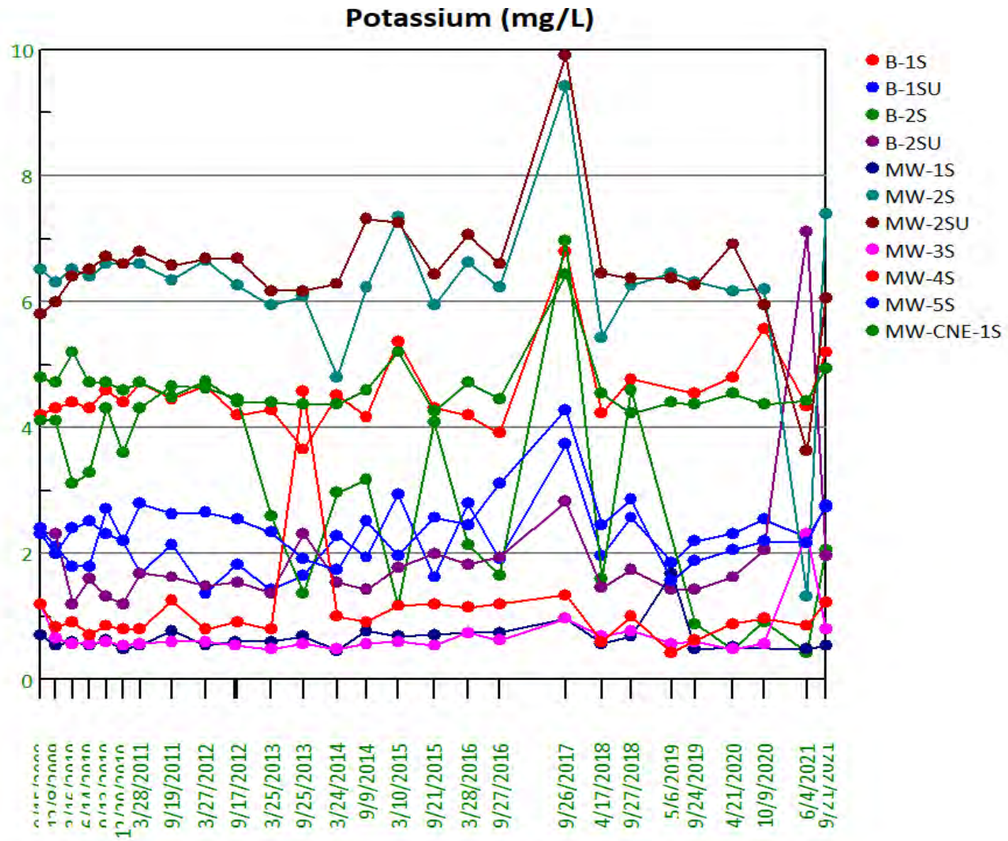
Lower Aquifer Unit



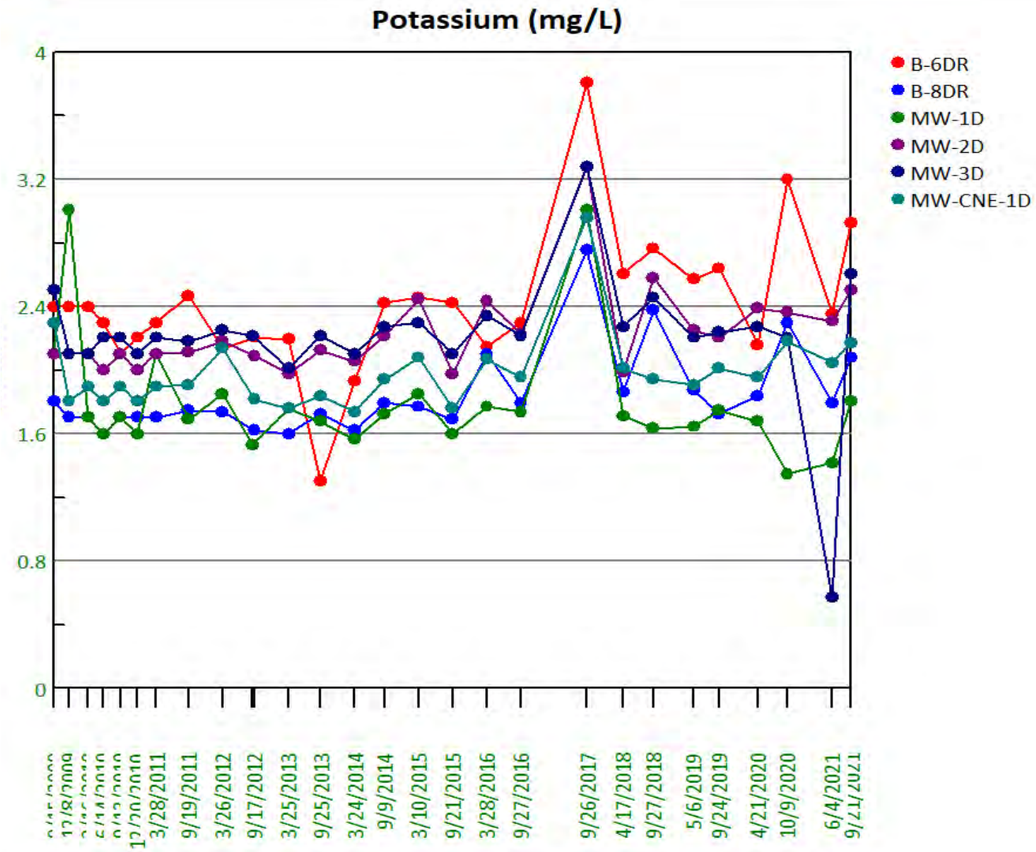
Date [9/15/2009 to 9/21/2021]

PREPARED BY PUGET SOUND ENVIRONMENTAL PLLC	PROJECT Centralia Landfill Compliance Monitoring	SHEET TITLE Appendix A Time Series Plots
DESIGNED J. Davis	CLIENT Lewis County Solid Waste Utility	
DRAWN		DATE July 2022 / FIGURE A-12

Upper Aquifer Unit

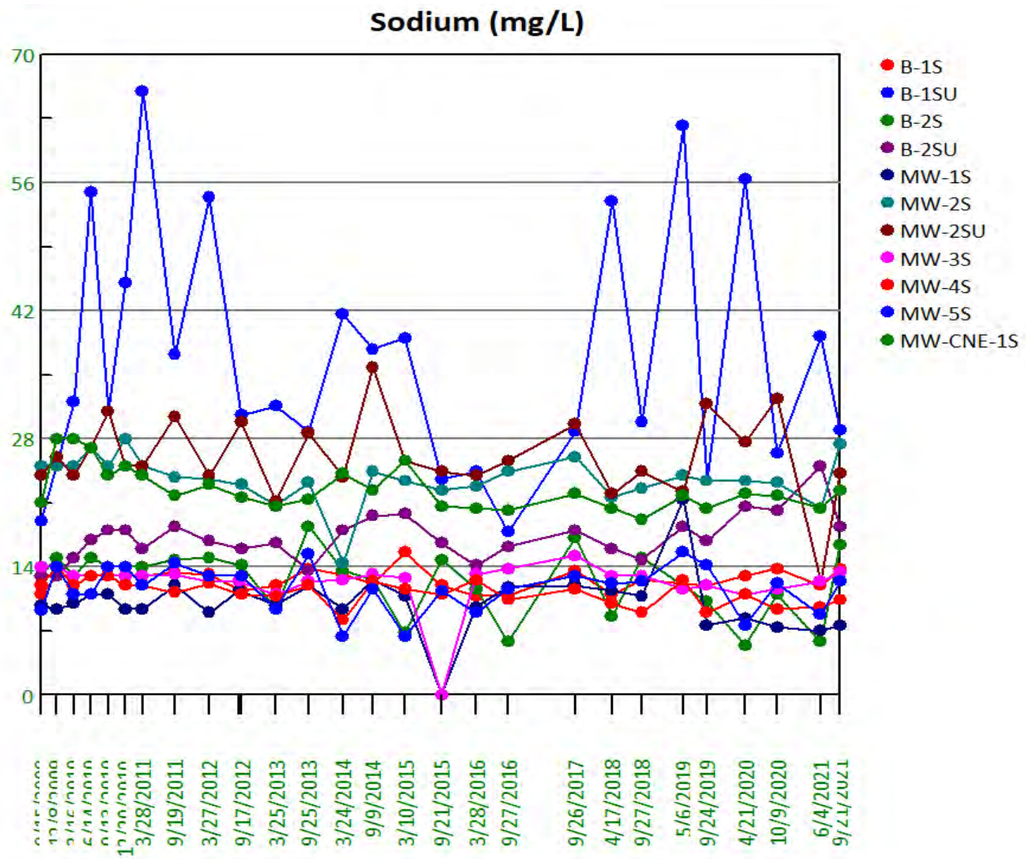


Lower Aquifer Unit

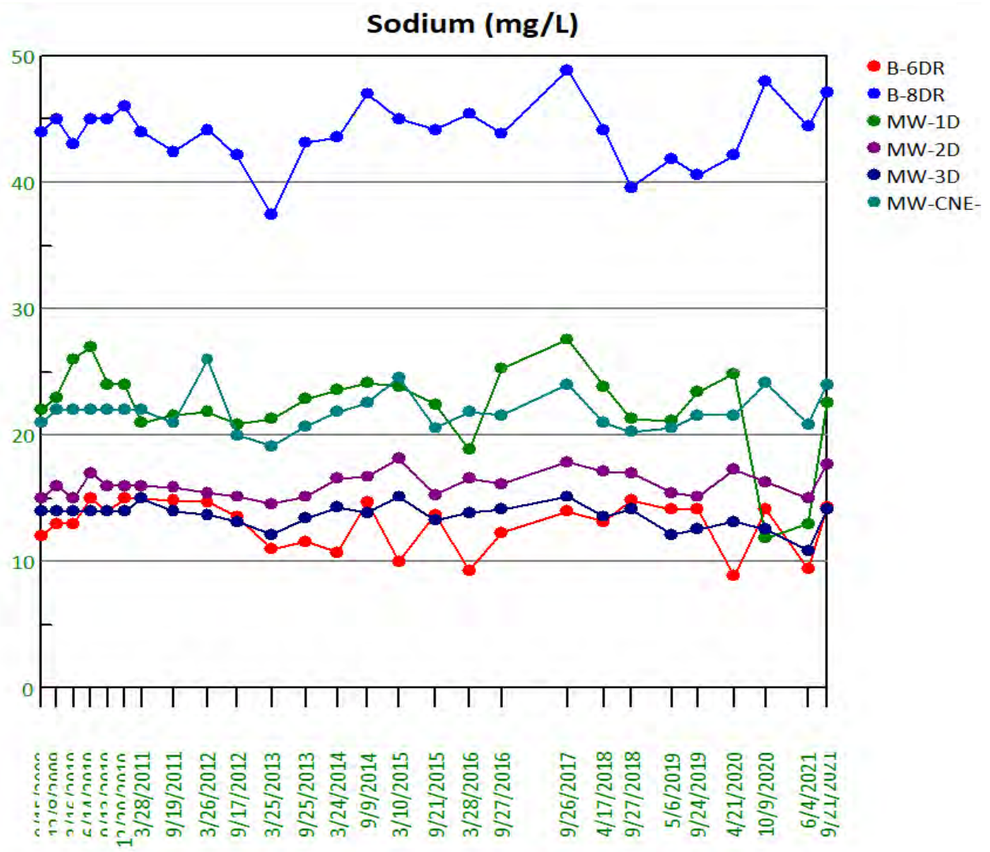


PREPARED BY: PUGET SOUND ENVIRONMENTAL PLLC	PROJECT: Centralia Landfill Compliance Monitoring	SHEET TITLE: Appendix A Time Series Plots
DESIGNED: J. Davis	CLIENT: Lewis County Solid Waste Utility	
DRAWN:		DATE: July 2022 / FIGURE: A-13

Upper Aquifer Unit

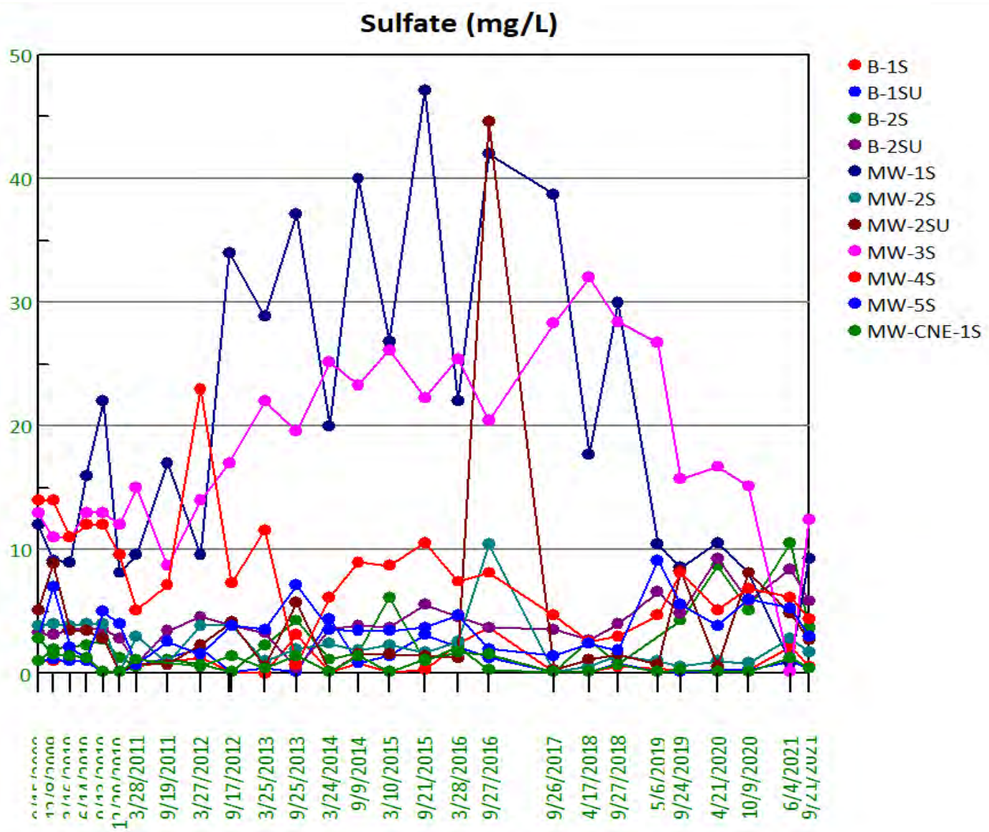


Lower Aquifer Unit



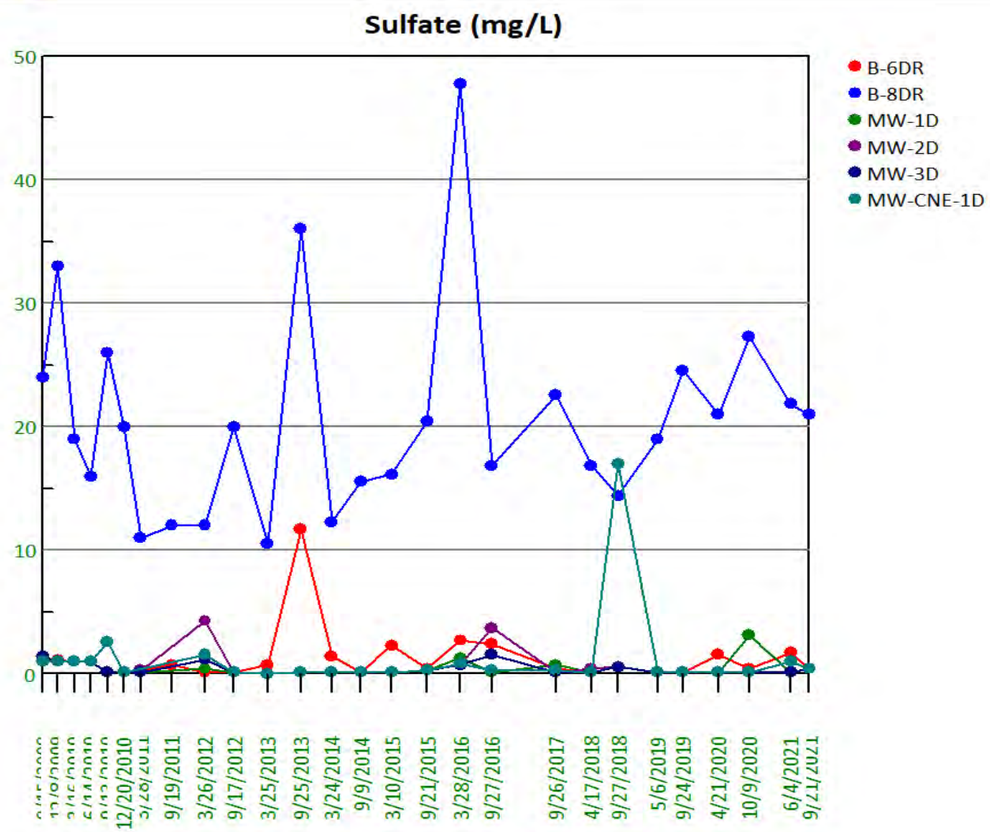
PREPARED BY: PUGET SOUND ENVIRONMENTAL PLLC	PROJECT: Centralia Landfill Compliance Monitoring	SHEET TITLE: Appendix A Time Series Plots
DESIGNED: J. Davis	CLIENT: Lewis County Solid Waste Utility	
DRAWN:		DATE: July 2022 / FIGURE: A-14

Upper Aquifer Unit



Date [9/15/2009 to 9/21/2021]

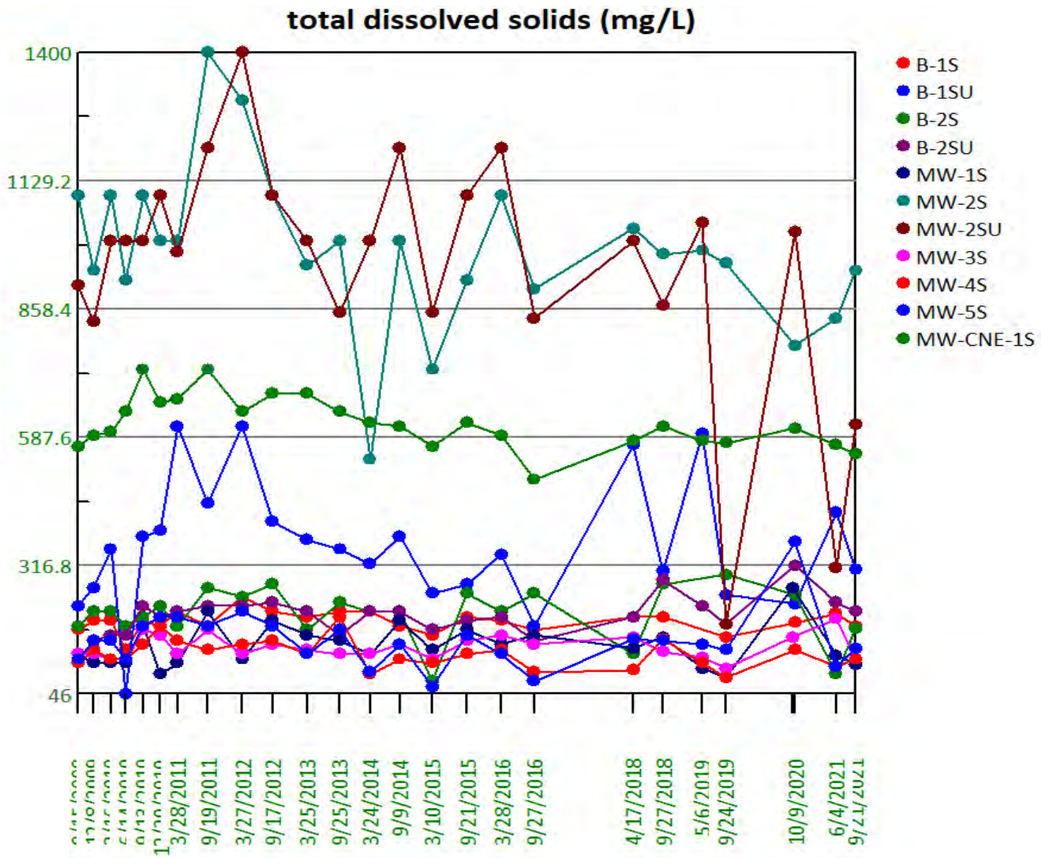
Lower Aquifer Unit



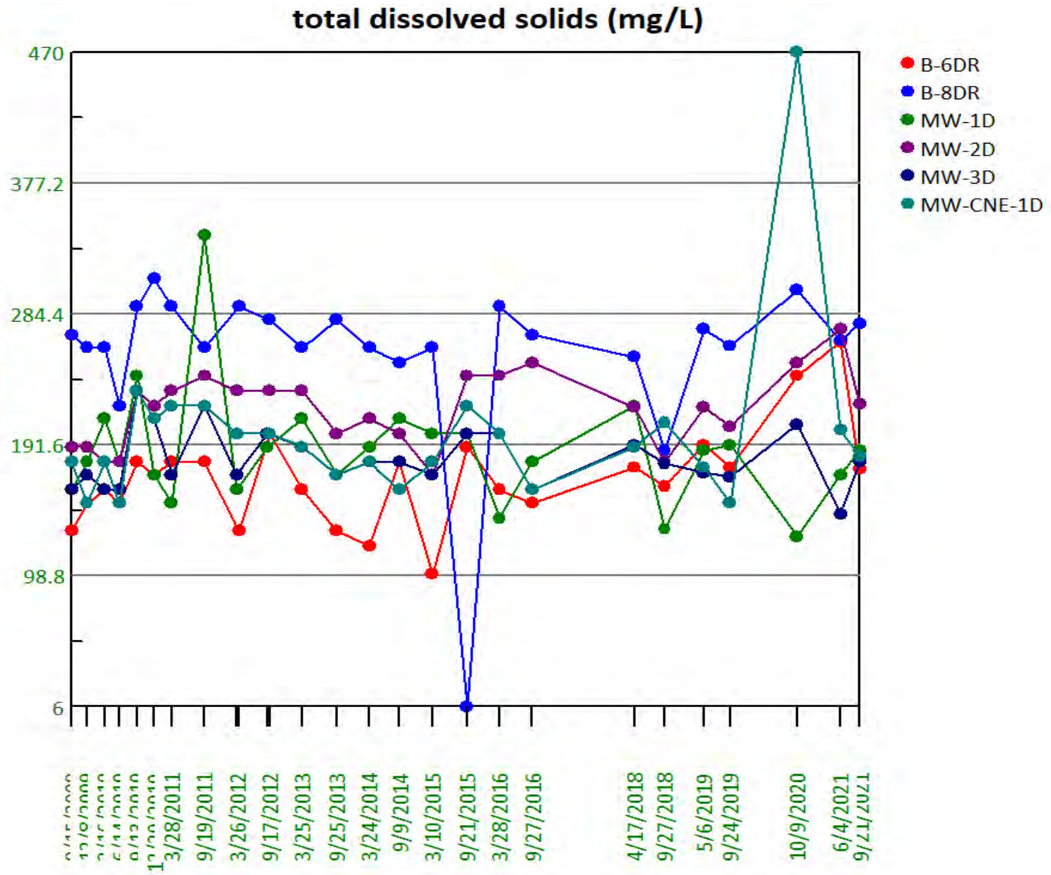
Date [9/15/2009 to 9/21/2021]

PREPARED BY PUGET SOUND ENVIRONMENTAL PLLC	PROJECT Centralia Landfill Compliance Monitoring	SHEET TITLE Appendix A Time Series Plots
DESIGNED J. Davis	CLIENT Lewis County Solid Waste Utility	
DRAWN		DATE July 2022 / FIGURE A-15

Upper Aquifer Unit

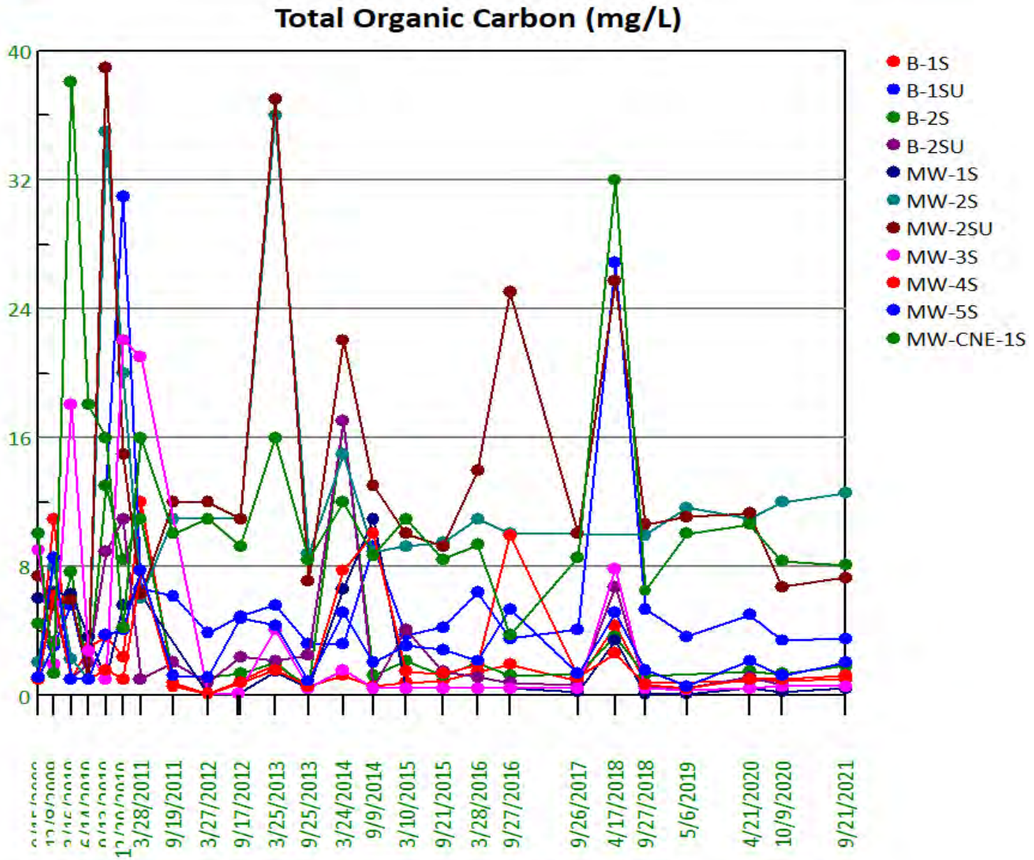


Lower Aquifer Unit



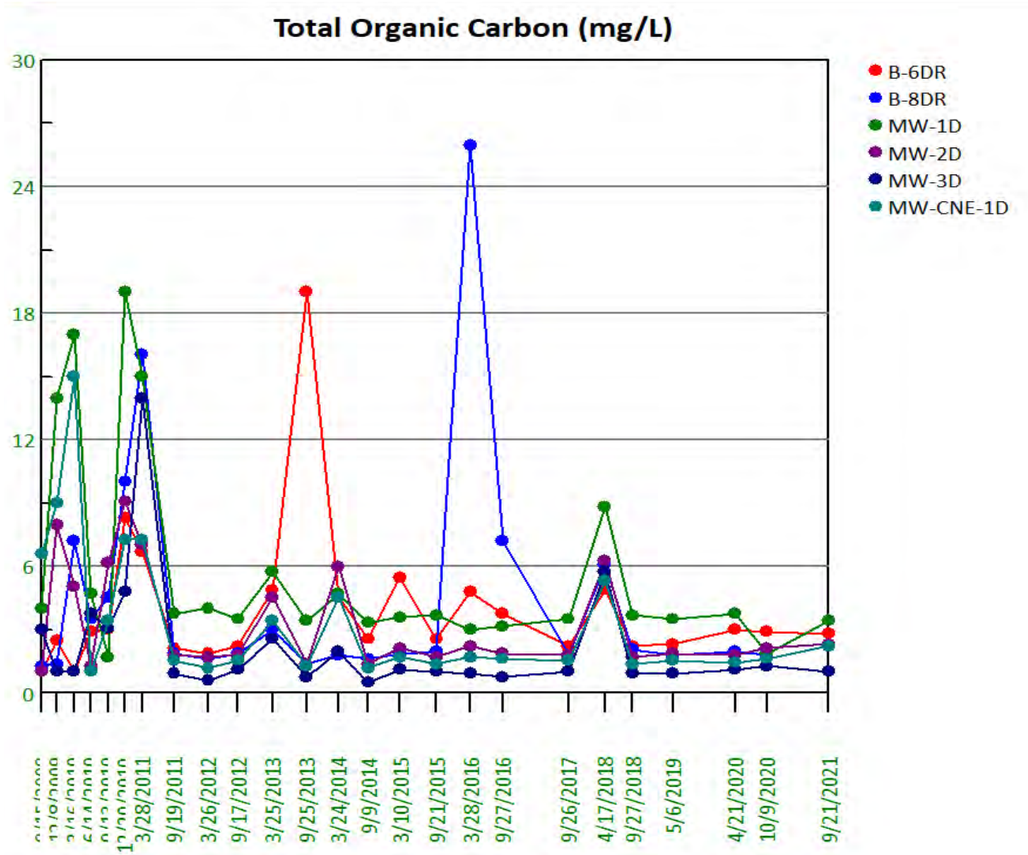
PREPARED BY: PUGET SOUND ENVIRONMENTAL PLLC	PROJECT: Centralia Landfill Compliance Monitoring	SHEET TITLE: Appendix A Time Series Plots
DESIGNED: J. Davis	CLIENT: Lewis County Solid Waste Utility	
DRAWN:		DATE: July 2022 / FIGURE: A-16

Upper Aquifer Unit



Date [9/15/2009 to 9/21/2021]

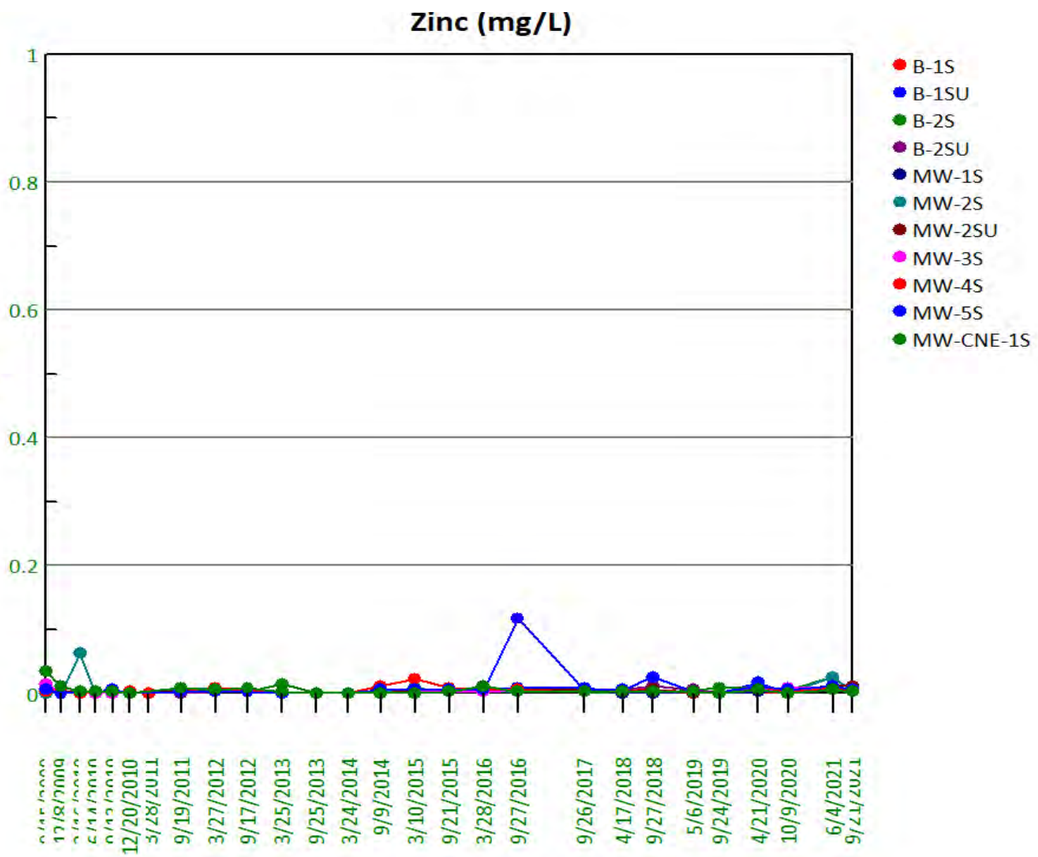
Lower Aquifer Unit



Date [9/15/2009 to 9/21/2021]

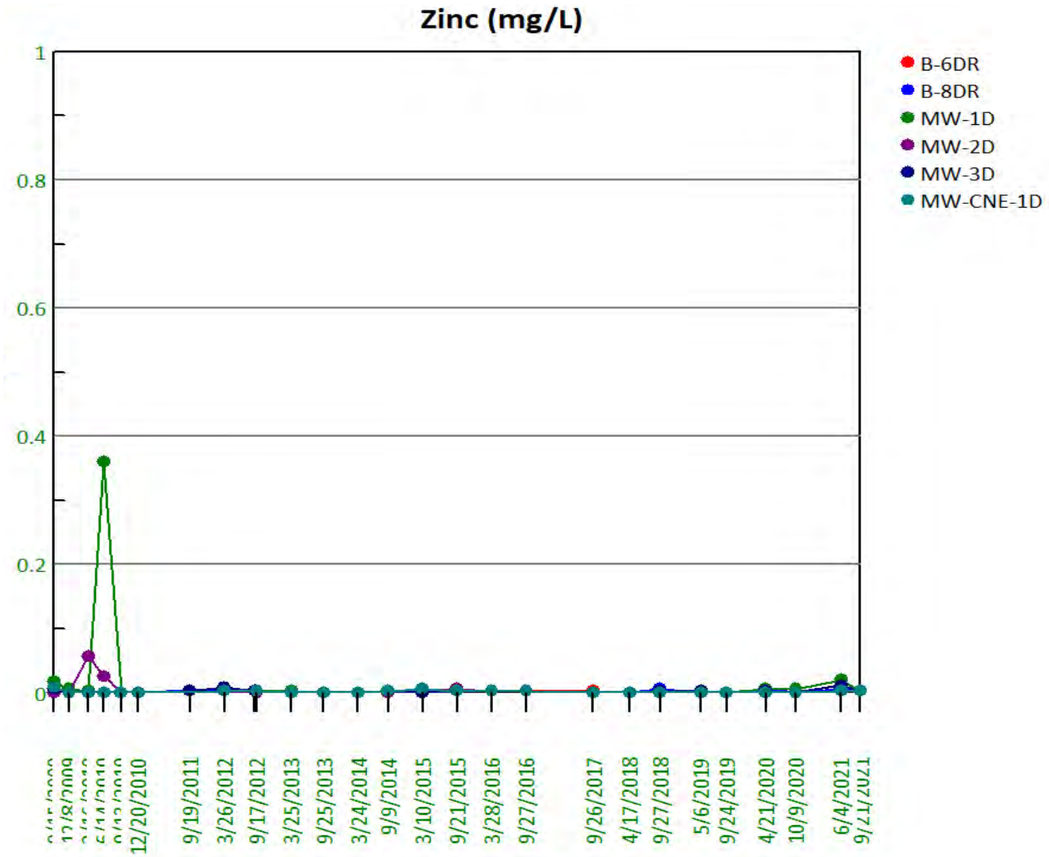
PREPARED BY: PUGET SOUND ENVIRONMENTAL PLLC	PROJECT: Centralia Landfill Compliance Monitoring	SHEET TITLE: Appendix A Time Series Plots
DESIGNED: J. Davis	CLIENT: Lewis County Solid Waste Utility	
DRAWN:		DATE: July 2022 / FIGURE: A-17

Upper Aquifer Unit



Date [9/15/2009 to 9/21/2021]

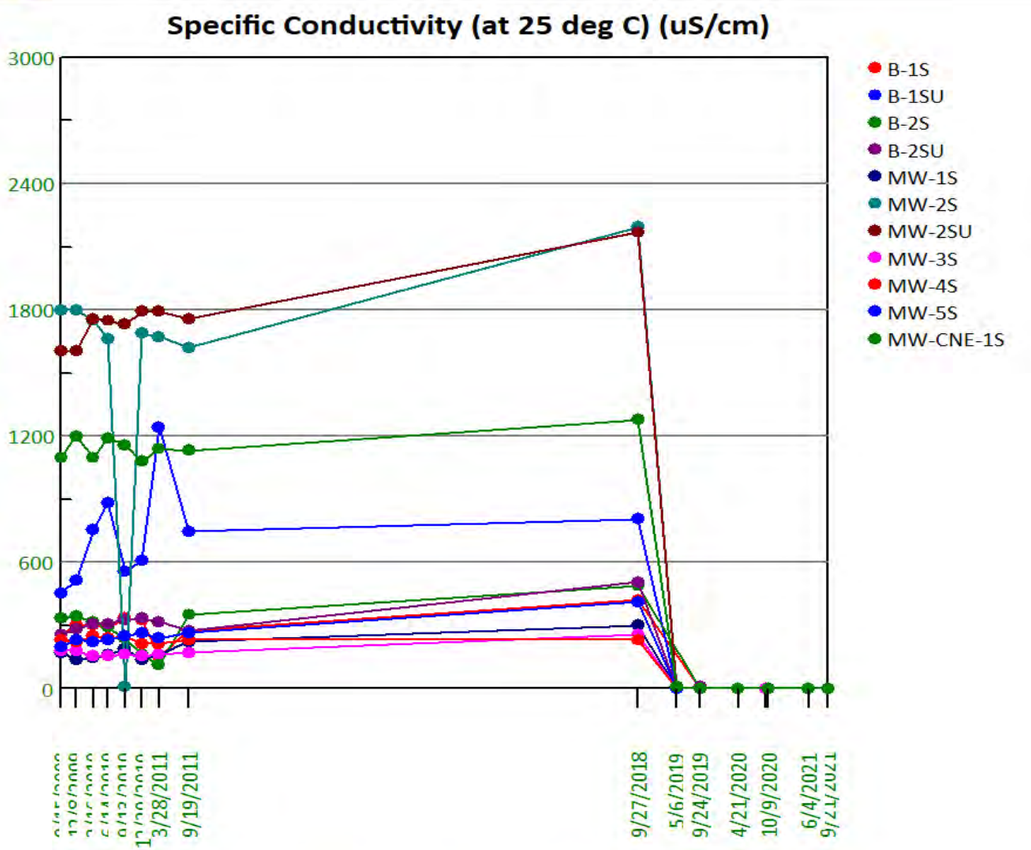
Lower Aquifer Unit



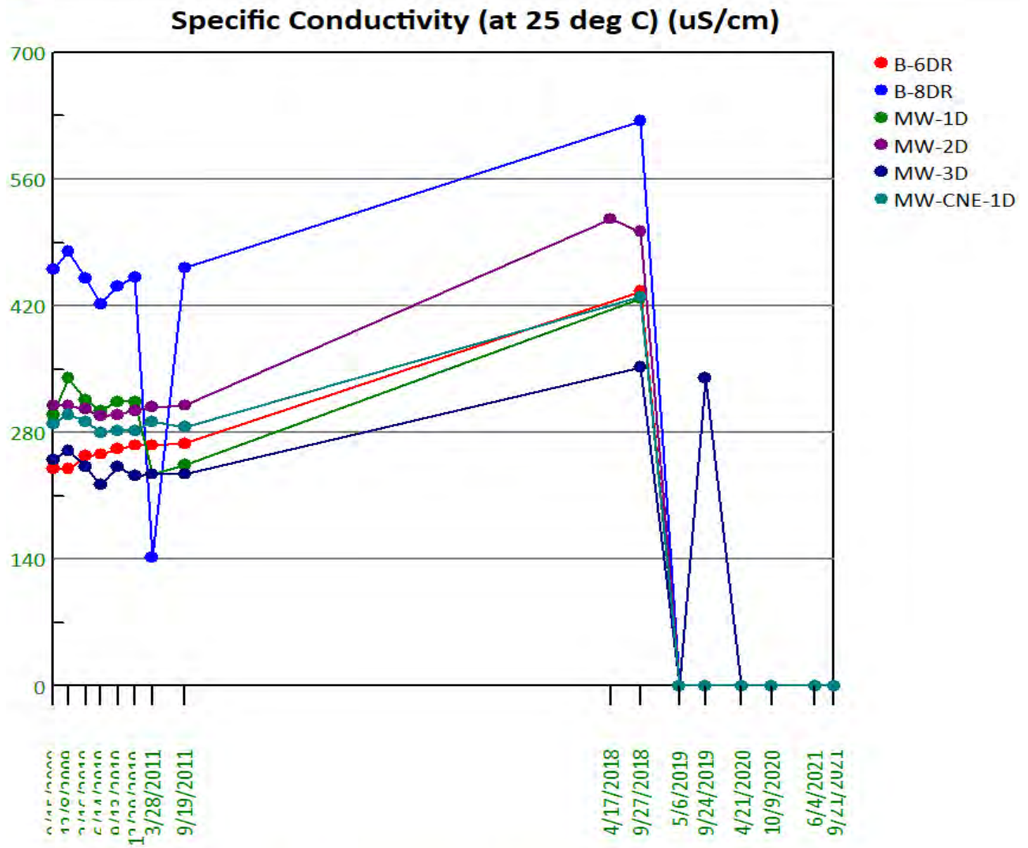
Date [9/15/2009 to 9/21/2021]

PREPARED BY: PUGET SOUND ENVIRONMENTAL PLLC	PROJECT: Centralia Landfill Compliance Monitoring	SHEET TITLE: Appendix A Time Series Plots
DESIGNED: J. Davis	CLIENT: Lewis County Solid Waste Utility	
DRAWN:		DATE: July 2022 / FIGURE: A-18

Upper Aquifer Unit



Lower Aquifer Unit



PREPARED BY: PUGET SOUND ENVIRONMENTAL PLLC	PROJECT: Centralia Landfill Compliance Monitoring	SHEET TITLE: Appendix A Time Series Plots
DESIGNED: J. Davis	CLIENT: Lewis County Solid Waste Utility	
DRAWN:		DATE: July 2022 / FIGURE: A-19

DRAGON
Analytical Laboratory, Inc.

CWA CHAIN OF CUSTODY RECORD

627 Durell Road SE, Suite B105, Tumwater, WA 98501
Phone: (360) 866-0543
Email: customerservice@dragonlaboratory.com
Website: www.dragonlaboratory.com

Page 1 of 1

Samples Collected By: Bill

Contact Number: 360-740-1221

Client:	Lewis County Landfill	Phone:	360-740-1221	Project Name:	Landfill wet season	Project PO:	
Address:	1411 S. Tower Ave	Fax:		Project Location:	Centralia Landfill	Contact :	
	Centrailia, WA 98531	E-mail:		Project Number:		DAL Project #:	210604-69

Matrix Code: **SW**=storm/surface water
WW = wastewater **GW** =ground water **O** =other
SL = sludge **V** = vapor **S** = soil or solid

Sample Identification	Sample Matrix	Date Sampled	Time Sampled	Container Type	Hardness	Dissolved: As, Ca, Fe, Mg, Mn, K, Na, Zn	~~Total: As, Ca, Fe, Mg, Mn, K, Na, Zn~~	COD, NH3	Alkalinity, Total Disolved Solids	Chloride, N+N, Sulfate	Disolved Low Level Hg	~~TO dissolved Hg~~	TOC
CNE 1s		8:40			X	X		X	X	X	X		X
CNE 1D		9:00											
DUP		9:00											
MW 2sv		8:20											
MW 2s		9:35											
MW 2D		9:42											
BG DR		9:55											
MW 5s		10:44											
BZsv		~~9:54~~ 10:18											
BZs		10:30											
BIs		10:55											
BIsv		11:05											
BBDR		11:12											
MW4s		11:20											

Relinquished By (Signature): [signature] Date/Time: 6-4-21 11:50
Received By (Signature): [signature] Date/Time: 12:30 6-4-21
Relinquished By (Signature) Date/Time
Received By (Signature) Date/Time

Note: Records will only be retained for 7 years

Sample Disposal Instructions : ☐ DAL Disposal @$2.50 per container ☐ Return ☐ Pick Up

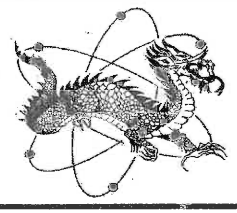
Turn Around Time

- ☐ 1 Day
- ☐ 2 Day
- ☐ 5 Business Days
- ☒ 10 Business Days (approx)
- ☐ Other_____

Metals: Please circle the desired analytes.
Total:
Ag Al As Ba Be Ca Cd Cr Cu Fe Hg K Mg Mn Mo Na Ni Pb Sb Se Sn Tl Zn
Dissolved:
Ag Al As Ba Be Ca Cd Cr Cu Fe Hg K Mg Mn Mo Na Ni Pb Sb Se Sn Tl Zn

Sample Temp: 14 Cooler Temp:

DRAGON
Analytical Laboratory, Inc.



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Email: customerservice@dragonlaboratory.com
Website: www.dragonlaboratory.com

Page 1 of 1

Samples Collected By: BW / KK

Contact Number: 360 740-1221

Client: Lewis County Landfill | Phone: 360-740-1221 | Project Name: Landfill wet season | Project PO:

Address: 1411 S. Tower Ave | Fax: | Project Location: Centralia Landfill | Contact : Bill Norwood, Kal Kerrsavage

Centrailia, WA 98531 | E-mail: | Project Number: | DAL Project #: 210603-13

Matrix Code: **SW**=storm/surface water
WW = wastewater **GW** =ground water **O** =other
SL = sludge **V** = vapor **S** = soil or solid

Sample Identification	Sample Matrix	Date Sampled	Time Sampled	Container Type	Hardness	Disolved: As, Ca, Fe, Mg, Mn, K, Na, Zn	~~Total: As, Ca, Fe, Mg, Mn, K, Na, Zn~~ NO	COD, NH3	Alkalinity, Total Disolved Solids	Chloride, N+N, Sulfate	Disiolved Low Level Hg	~~Total Low Level Hg~~ NO	TOC
MW1S	GW	6-3-21	11:15am										
MW1D	GW	6-3-21	11:15am										
MW3S	GW	6-3-21	11:50										
MW3D	GW	6-3-21	11:50										
							NO					NO	

Relinquished By (Signature) — Date/Time 12:50pm 6-3-21
Received By (Signature) — Date/Time 12:01 6.3.21

Relinquished By (Signature) — Date/Time
Received By (Signature) — Date/Time

Turn Around Time

- ☐ 1 Day
- ☐ 2 Day
- ☐ 5 Business Days
- ☒ 10 Business Days (approx)
- ☐ Other_____

Metals: Please circle the desired analytes.
Total:
Ag Al As Ba Be Ca Cd Cr Cu Fe Hg K Mg Mn Mo Na Ni Pb Sb Se Sn Tl Zn
Dissolved:
Ag Al As Ba Be Ca Cd Cr Cu Fe Hg K Mg Mn Mo Na Ni Pb Sb Se Sn Tl Zn

Sample Temp: 12 Cooler Temp:

Note: Records will only be retained for 7 years

Sample Disposal Instructions : ☐ DAL Disposal @$2.50 per container ☐ Return ☐ Pick Up

DRAGON ANALYTICAL LABORATORY

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Hazardous Waste, Microbiology, NPDES, Potable and Non-potable Water
Mobile Environmental Laboratory

Lewis County Solid Waste
P.O. Box 180
Centralia, WA 98531

Sampled By: Bill

DAL Project No.: 210604-09

Project Name: Landfill Wet Season
Project No.: n/a
PO No.: n/a
Date Collected: 6/4/2021; 08:40 - 11:20
Date Received: 6/4/2021; 12:30
Temperature Received (°C): 14
Report Date: 7/15/2021

Preparation Method: US EPA 200.8 Dissolved
Analytical Method: US EPA 200.8
Date Prepared: 6/21/2021
Date Analyzed: 6/22/2021
Analyst: TM

Units: ug/L
Matrix: Non-Potable Water
Reporting Limits: Standard
Instrument ID: Agilent 7500
Lab Data File: 21F22I00

DISSOLVED HEAVY METALS
ANALYTICAL RESULTS

Analyte	CAS No.	MRL	Method Blank	CNE1S	CNE1D	DUP	MW2SU	MW2S	MW2D	B6DR	MW5S	B2SU	B2S
Arsenic (As)	7440-38-2	1.0	nd	**2.2**	nd	nd	nd	**1.7**	**6.6**	**2.3**	nd	**15.5**	nd
Calcium (Ca)	7440-70-2	100	nd	**77,300**	**23,600**	**28,570**	**49,300**	**29,500**	**32,800**	**16,500**	**9,230**	**179,000**	**12,700**
Iron (Fe)	7439-89-6	50.0	nd	nd	nd	nd	nd	nd	**50.9**	nd	nd	nd	nd
Magnesium (Mg)	7439-95-4	25.0	nd	**55,900**	**7,180**	**7,310**	**25,100**	**22,200**	**10,500**	**6,110**	**5,310**	**78,300**	**5,160**
Manganese (Mn)	7439-96-5	0.25	nd	**1,920**	**233**	**227**	**2,740**	**1.8**	**755**	**424**	**77.8**	**9,620** (1)(3)	**3.9**
Potassium (K)	7440-09-7	50.0	nd	**4,430**	**2,050**	**2,030**	**3,620**	**1,318**	**2,310**	**2,350**	**2,170**	**7,110**	**429**
Sodium (Na)	7440-23-5	100	nd	**20,300**	**20,800**	**20,800**	**12,400**	**20,400**	**15,000**	**9,380**	**8,860**	**24,900**	**5,810**
Zinc (Zn)	7440-66-6	2.5	44.6	**5.5** B1	**4.1** B1	**6.8** B1	**10.5** B1	**26.8** B1	**11.7** B1	**5.2** B1	**11.8** B1	**6.1** B1	**25.7** B1
Dilution Factor				1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

Comments and Explanations: A (1) indicates sample was analyzed on 6/30/2021; Batch ID 21F30m00. A (3) indicates sample was analyzed at a dilution factor of 100. A "B1" Denotes the analyte was detected in the associated method blank. The analyte concentration was determined not to be significantly higher than in the associated method blank (greater than ten times the concentration reported in the blank).

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Hazardous Waste, Microbiology, NPDES, Potable and Non-potable Water
Mobile Environmental Laboratory

Lewis County Solid Waste
P.O. Box 180
Centralia, WA 98531

Sampled By: Bill

DAL Project No.: 210604-09

Project Name: Landfill Wet Season
Project No.: n/a
P.O. No.: n/a
Date Collected: 6/4/2021; 08:40 - 11:20
Date Received: 6/4/2021; 12:30
Temperature Received (°C): 14
Report Date: 7/15/2021

Preparation Method: US EPA 200.8 Dissolved
Analytical Method: US EPA 200.8
Date Prepared: 6/21/2021
Date Analyzed: 6/22/2021
Analyst: TM

Units: ug/L
Matrix: Non-Potable Water
Reporting Limits: Standard
Instrument ID: Agilent 7500
Lab Data File: 21F22I00

DISSOLVED HEAVY METALS
ANALYTICAL RESULTS

Sample Identification	CAS No.	MRL	B1S	B1SU	B8DR	MW4S
Arsenic (As)	7440-38-2	1.0	**13.3**	**1.9** (1)	nd (2)	nd (2)
Calcium (Ca)	7440-70-2	100	**27,600**	**47,000** (1)	**32,600** (2)	**11,600** (2)
Iron (Fe)	7439-89-6	50.0	**nd**	nd (1)	nd (2)	nd (2)
Magnesium (Mg)	7439-95-4	25.0	**11,400**	**34,700** (1)	**13,600** (2)	**5,650** (2)
Manganese (Mn)	7439-96-5	0.25	**630**	**3,270** (1)	**249** (2)	**19.2** (2)
Potassium (K)	7440-09-7	50.0	**4,330**	**2,270** (1)	**1,790** (2)	**864** (2)
Sodium (Na)	7440-23-5	100	**12,000**	**39,100** (1)	**44,400** (2)	**9,680** (2)
Zinc (Zn)	7440-66-6	2.5	**8.9** B1	**4.7** (1) B1	**6.0** (2) B1	**9.1** (2) B1
Dilution Factor			1.0	1.0	1.0	1.0

Comments and Explanations: A (1) indicates sample was analyzed on 6/30/2021; Batch ID 21F30m00. A (2) indicates sample was analyzed on 6/23/2021; Batch ID 21F23k00. A "B1" Denotes the analyte was detected in the associated method blank. The analyte concentration was determined not to be significantly higher than in the associated method blank (greater than ten times the concentration reported in the blank).

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Hazardous Waste, Microbiology, NPDES, Potable and Non-potable Water
Mobile Environmental Laboratory

Lewis County Solid Waste
DAL Project No.: 210604-09

Project Name: Landfill Wet Season
Project No.: n/a

DISSOLVED HEAVY METALS
QUALITY CONTROL RESULTS

LABORATORY CONTROL SAMPLE AND MATRIX SPIKE

QC Batch ID: 210621-Metals | MS/MSD Sample ID: 210621-Metals MS/MSD | LCS Sample ID: 210621-Metals LCS

Analyte	MS/MSD Level (ug/L)	Sample Conc. (ug/L)	MS Recovery (ug/L)	MS Percent Recovery	MSD Recovery (ug/L)	MSD Percent Recovery	MS/MSD Limits (%)	RPD	MS/MSD RPD Limits		LCS Level (ug/L)	LCS Recovery (ug/L)	LCS Percent Recovery	LCS Limits (%)
Arsenic (As)	50	0.21	49.0	97.6%	49.8	99.2%	70-130	1.6	≤ 25%		50	49.0	97.9%	85-115
Calcium (Ca)	5000	12230	18780	131%	18790	131%	70-130	0.15	≤ 25%		5000	5256	105%	85-115
Iron (Fe)	5000	198	5416	104%	5630	109%	70-130	4.0	≤ 25%		5000	5420	108%	85-115
Magnesium (Mg)	5000	2277	6675	88.0%	7023	94.9%	70-130	7.6	≤ 25%		5000	4998	100%	85-115
Manganese (Mn)	50	6.1	54.9	97.6%	57.1	102%	70-130	4.4	≤ 25%		50	55.7	111%	85-115
Potassium (K)	2500	207	2650	97.7%	2857	106%	70-130	8.1	≤ 25%		2500	2708	108%	85-115
Sodium (Na)	5000	7085	11050	79.3%	11440	87.1%	70-130	9.4	≤ 25%		5000	4991	99.8%	85-115
Zinc (Zn)	MI	MI	MI	MI	MI	MI	MI	MI	MI		50	49.6	99.3%	85-115

WA-DOE-Laboratory Certification No.: C890 "nd" indicates the analyte was not detected at or above the listed Method Reporting Limit. n/a indicates not applicable
"MI" indicates matrix interference with matrix spike recovery.
Comments and Explanations: None.

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Hazardous Waste, Microbiology, NPDES, Potable and Non-potable Water
Mobile Environmental Laboratory

Lewis County Solid Waste
P.O. Box 180
Centralia, WA 98531

Sampled by: Bill

DAL Project No.: 210604-09

Project Name: Landfill Wet Season
Project No.: n/a
P.O. No.: n/a
Sample Name: CNE1S
Matrix: Non-Potable Water
Temperature Received (°C): 14
Collected: 6/4/2021; 08:40
Received: 6/4/2021; 12:30
Report Date: 7/15/2021

ANALYTICAL RESULTS

PARAMETER	RESULTS	MDL	MRL	UNITS	METHOD	DF	PREPARATION DATE	ANALYSIS DATE	ANALYSIS TIME	ANALYST	DATA FLAGS
Alkalinity ($CaCO_3$)	**543**	n/a	5.0	mg/L	SM 2320 B	1	6/8/2021	6/8/2021	n/a	EW	
Chloride	**58.0**	0.0024	0.10	mg/L	EPA 300.0	10	6/7/2021	6/7/2021	n/a	AK	
COD	**51.5**	2.5	10.0	mg/L	SM 5220 D	1	6/4/2021	6/4/2021	n/a	BS	
Hardness	**478**	n/a	1.0	mg/L	SM 2340 B	1	6/11/2021	6/11/2021	n/a	TM	
Nitrogen, Ammonia	**0.049**	0.029	0.30	mg/L	SM 4500-NH_3 D	1	6/7/2021	6/7/2021	n/a	BS	J
Nitrogen, Nitrate + Nitrite	**0.13**	0.0015	0.10	mg/L	EPA 300.0	10	6/16/2021	6/16/2021	n/a	FW/SR	
Solids, Total Dissolved	**572**	n/a	20.0	mg/L	SM 2540 C	1	6/9/2021	6/9/2021	n/a	SR	
Sulfate	**1.3**	0.046	0.20	mg/L	EPA 300.0	10	6/7/2021	6/7/2021	n/a	AK	

WA-DOE-Laboratory Certification No.: C890
"MDL" indicates Method Detection Limit
"MRL" indicates Method Reporting Limit
"DF" indicates Dilution Factor
"nd" indicates the analyte was not detected at or above the listed Method Reporting Limit.
"n/a" indicates not applicable

Comments and Explanations: A "J" flag indicates an estimated value that is greater than the MDL but less than the MRL.

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Hazardous Waste, Microbiology, NPDES, Potable and Non-potable Water
Mobile Environmental Laboratory

Lewis County Solid Waste
P.O. Box 180
Centralia, WA 98531

Sampled by: Bill

DAL Project No.: 210604-09

Project Name: Landfill Wet Season
Project No.: n/a
P.O. No.: n/a
Sample Name: CNE1D
Matrix: Non-Potable Water
Temperature Received (°C): 14
Collected: 6/4/2021; 09:00
Received: 6/4/2021; 12:30
Report Date: 7/15/2021

ANALYTICAL RESULTS

PARAMETER	RESULTS	MDL	MRL	UNITS	METHOD	DF	PREPARATION DATE	ANALYSIS DATE	ANALYSIS TIME	ANALYST	DATA FLAGS
Alkalinity ($CaCO_3$)	**156**	n/a	5.0	mg/L	SM 2320 B	1	6/8/2021	6/8/2021	n/a	EW	
Chloride	**4.8**	0.0024	0.10	mg/L	EPA 300.0	10	6/7/2021	6/7/2021	n/a	AK	
COD	**nd**	2.5	10.0	mg/L	SM 5220 D	1	6/4/2021	6/4/2021	n/a	BS	
Hardness	**114**	n/a	1.0	mg/L	SM 2340 B	1	6/11/2021	6/11/2021	n/a	TM	
Nitrogen, Ammonia	**0.14**	0.029	0.30	mg/L	SM 4500-NH_3 D	1	6/7/2021	6/7/2021	n/a	BS	J
Nitrogen, Nitrate + Nitrite	**nd**	0.0015	0.10	mg/L	EPA 300.0	10	6/7/2021	6/7/2021	n/a	AK	
Solids, Total Dissolved	**202**	n/a	20.0	mg/L	SM 2540 C	1	6/9/2021	6/9/2021	n/a	SR	
Sulfate	**0.97**	0.046	0.20	mg/L	EPA 300.0	10	6/7/2021	6/7/2021	n/a	AK	

WA-DOE-Laboratory Certification No.: C890
"MDL" indicates Method Detection Limit
"MRL" indicates Method Reporting Limit
"DF" indicates Dilution Factor
"nd" indicates the analyte was not detected at or above the listed Method Reporting Limit.
"n/a" indicates not applicable

Comments and Explanations: A "J" flag indicates an estimated value that is greater than the MDL but less than the MRL.

DRAGON ANALYTICAL LABORATORY

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Customerservice@DragonLaboratory.com

Hazardous Waste, Microbiology, NPDES, Potable and Non-potable Water
Mobile Environmental Laboratory

Lewis County Solid Waste
P.O. Box 180
Centralia, WA 98531

Sampled by: Bill

DAL Project No.: 210604-09

Project Name: Landfill Wet Season
Project No.: n/a
P.O. No.: n/a
Sample Name: DUP
Matrix: Non-Potable Water
Temperature Received (°C): 14
Collected: 6/4/2021; 09:00
Received: 6/4/2021; 12:30
Report Date: 7/15/2021

ANALYTICAL RESULTS

PARAMETER	RESULTS	MDL	MRL	UNITS	METHOD	DF	PREPARATION DATE	ANALYSIS DATE	ANALYSIS TIME	ANALYST	DATA FLAGS
Alkalinity ($CaCO_3$)	**157**	n/a	5.0	mg/L	SM 2320 B	1	6/8/2021	6/8/2021	n/a	EW	
Chloride	**4.8**	0.0024	0.10	mg/L	EPA 300.0	10	6/7/2021	6/7/2021	n/a	AK	
COD	**nd**	2.5	10.0	mg/L	SM 5220 D	1	6/4/2021	6/4/2021	n/a	BS	
Hardness	**114**	n/a	1.0	mg/L	SM 2340 B	1	6/11/2021	6/11/2021	n/a	TM	
Nitrogen, Ammonia	**0.23**	0.029	0.30	mg/L	SM 4500-NH_3 D	1	6/7/2021	6/7/2021	n/a	BS	J
Nitrogen, Nitrate + Nitrite	**nd**	0.0015	0.10	mg/L	EPA 300.0	10	6/7/2021	6/7/2021	n/a	AK	
Solids, Total Dissolved	**204**	n/a	20.0	mg/L	SM 2540 C	1	6/9/2021	6/9/2021	n/a	SR	
Sulfate	**0.96**	0.046	0.20	mg/L	EPA 300.0	10	6/7/2021	6/7/2021	n/a	AK	

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Sampled by: Bill

DAL Project No.: 210604-09

Project Name: Landfill Wet Season
Project No.: n/a
P.O. No.: n/a
Sample Name: MW2SU
Matrix: Non-Potable Water
Temperature Received (°C): 14
Collected: 6/4/2021; 09:20
Received: 6/4/2021; 12:30
Report Date: 7/15/2021

ANALYTICAL RESULTS

PARAMETER	RESULTS	MDL	MRL	UNITS	METHOD	DF	PREPARATION DATE	ANALYSIS DATE	ANALYSIS TIME	ANALYST	DATA FLAGS
Alkalinity ($CaCO_3$)	**223**	n/a	5.0	mg/L	SM 2320 B	1	6/8/2021	6/8/2021	n/a	EW	
Chloride	**54.1**	0.0024	0.10	mg/L	EPA 300.0	10	6/7/2021	6/7/2021	n/a	AK	
COD	**15.0**	2.5	10.0	mg/L	SM 5220 D	1	6/4/2021	6/4/2021	n/a	BS	
Hardness	**222**	n/a	1.0	mg/L	SM 2340 B	1	6/11/2021	6/11/2021	n/a	TM	
Nitrogen, Ammonia	**0.093**	0.029	0.30	mg/L	SM 4500-NH_3 D	1	6/7/2021	6/7/2021	n/a	BS	J
Nitrogen, Nitrate + Nitrite	**0.10**	0.0015	0.10	mg/L	EPA 300.0	10	6/16/2021	6/16/2021	n/a	FW/SR	
Solids, Total Dissolved	**312**	n/a	20.0	mg/L	SM 2540 C	1	6/9/2021	6/9/2021	n/a	SR	
Sulfate	**4.9**	0.046	0.20	mg/L	EPA 300.0	10	6/7/2021	6/7/2021	n/a	AK	

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Sampled by: Bill

DAL Project No.: 210604-09

Project Name: Landfill Wet Season
Project No.: n/a
P.O. No.: n/a
Sample Name: MW2S
Matrix: Non-Potable Water
Temperature Received (°C): 14
Collected: 6/4/2021; 09:35
Received: 6/4/2021; 12:30
Report Date: 7/15/2021

ANALYTICAL RESULTS

PARAMETER	RESULTS	MDL	MRL	UNITS	METHOD	DF	PREPARATION DATE	ANALYSIS DATE	ANALYSIS TIME	ANALYST	DATA FLAGS
Alkalinity ($CaCO_3$)	**512**	n/a	5.0	mg/L	SM 2320 B	1	6/8/2021	6/8/2021	n/a	EW	
Chloride	**221**	0.0024	0.10	mg/L	EPA 300.0	10	6/7/2021	6/7/2021	n/a	AK	
COD	**34.2**	2.5	10.0	mg/L	SM 5220 D	1	6/4/2021	6/4/2021	n/a	BS	
Hardness	**669**	n/a	1.0	mg/L	SM 2340 B	1	6/11/2021	6/11/2021	n/a	TM	
Nitrogen, Ammonia	**0.093**	0.029	0.30	mg/L	SM 4500-NH_3 D	1	6/7/2021	6/7/2021	n/a	BS	J
Nitrogen, Nitrate + Nitrite	**nd**	0.0015	0.10	mg/L	EPA 300.0	10	6/16/2021	6/16/2021	n/a	FW/SR	
Solids, Total Dissolved	**838**	n/a	20.0	mg/L	SM 2540 C	1	6/9/2021	6/9/2021	n/a	SR	
Sulfate	**2.9**	0.046	0.20	mg/L	EPA 300.0	10	6/7/2021	6/7/2021	n/a	AK	

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Sampled by: Bill

DAL Project No.: 210604-09

Project Name: Landfill Wet Season
Project No.: n/a
P.O. No.: n/a
Sample Name: MW2D
Matrix: Non-Potable Water
Temperature Received (°C): 14
Collected: 6/4/2021; 09:42
Received: 6/4/2021; 12:30
Report Date: 7/15/2021

ANALYTICAL RESULTS

PARAMETER	RESULTS	MDL	MRL	UNITS	METHOD	DF	PREPARATION DATE	ANALYSIS DATE	ANALYSIS TIME	ANALYST	DATA FLAGS
Alkalinity ($CaCO_3$)	**179**	n/a	5.0	mg/L	SM 2320 B	1	6/8/2021	6/8/2021	n/a	EW	
Chloride	**9.6**	0.0024	0.10	mg/L	EPA 300.0	10	6/7/2021	6/7/2021	n/a	AK	
COD	**nd**	2.5	10.0	mg/L	SM 5220 D	1	6/4/2021	6/4/2021	n/a	BS	
Hardness	**148**	n/a	1.0	mg/L	SM 2340 B	1	6/11/2021	6/11/2021	n/a	TM	
Nitrogen, Ammonia	**0.66**	0.029	0.30	mg/L	SM 4500-NH_3 D	1	6/7/2021	6/7/2021	n/a	BS	
Nitrogen, Nitrate + Nitrite	**nd**	0.0015	0.10	mg/L	EPA 300.0	10	6/16/2021	6/16/2021	n/a	FW/SR	
Solids, Total Dissolved	**274**	n/a	20.0	mg/L	SM 2540 C	1	6/9/2021	6/9/2021	n/a	SR	
Sulfate	**0.94**	0.046	0.20	mg/L	EPA 300.0	10	6/7/2021	6/7/2021	n/a	AK	

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Comments and Explanations: None

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Sampled by: Bill

DAL Project No.: 210604-09

Project Name: Landfill Wet Season
Project No.: n/a
P.O. No.: n/a
Sample Name: B6DR
Matrix: Non-Potable Water
Temperature Received (°C): 14
Collected: 6/4/2021; 09:55
Received: 6/4/2021; 12:30
Report Date: 7/15/2021

ANALYTICAL RESULTS

PARAMETER	RESULTS	MDL	MRL	UNITS	METHOD	DF	PREPARATION DATE	ANALYSIS DATE	ANALYSIS TIME	ANALYST	DATA FLAGS
Alkalinity ($CaCO_3$)	**96.2**	n/a	5.0	mg/L	SM 2320 B	1	6/8/2021	6/8/2021	n/a	EW	
Chloride	**7.9**	0.0024	0.10	mg/L	EPA 300.0	10	6/7/2021	6/7/2021	n/a	AK	
COD	**18.8**	2.5	10.0	mg/L	SM 5220 D	1	6/4/2021	6/4/2021	n/a	BS	
Hardness	**79.6**	n/a	1.0	mg/L	SM 2340 B	1	6/11/2021	6/11/2021	n/a	TM	
Nitrogen, Ammonia	**0.32**	0.029	0.30	mg/L	SM 4500-NH_3 D	1	6/7/2021	6/7/2021	n/a	BS	
Nitrogen, Nitrate + Nitrite	**0.093**	0.0015	0.10	mg/L	EPA 300.0	10	6/16/2021	6/16/2021	n/a	FW/SR	J
Solids, Total Dissolved	**264**	n/a	20.0	mg/L	SM 2540 C	1	6/9/2021	6/9/2021	n/a	SR	
Sulfate	**1.7**	0.046	0.20	mg/L	EPA 300.0	10	6/7/2021	6/7/2021	n/a	AK	

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Sampled by: Bill

DAL Project No.: 210604-09

Project Name: Landfill Wet Season
Project No.: n/a
P.O. No.: n/a
Sample Name: MW5S
Matrix: Non-Potable Water
Temperature Received (°C): 14
Collected: 6/4/2021; 10:44
Received: 6/4/2021; 12:30
Report Date: 7/15/2021

ANALYTICAL RESULTS

PARAMETER	RESULTS	MDL	MRL	UNITS	METHOD	DF	PREPARATION DATE	ANALYSIS DATE	ANALYSIS TIME	ANALYST	DATA FLAGS
Alkalinity ($CaCO_3$)	**50.0**	n/a	5.0	mg/L	SM 2320 B	1	6/8/2021	6/8/2021	n/a	EW	
Chloride	**2.5**	0.0024	0.10	mg/L	EPA 300.0	10	6/7/2021	6/7/2021	n/a	AK	
COD	**nd**	2.5	10.0	mg/L	SM 5220 D	1	6/4/2021	6/4/2021	n/a	BS	
Hardness	**45.1**	n/a	1.0	mg/L	SM 2340 B	1	6/11/2021	6/11/2021	n/a	TM	
Nitrogen, Ammonia	**nd**	0.029	0.30	mg/L	SM 4500-NH_3 D	1	6/7/2021	6/7/2021	n/a	BS	
Nitrogen, Nitrate + Nitrite	**0.85**	0.0015	0.10	mg/L	EPA 300.0	10	6/16/2021	6/16/2021	n/a	FW/SR	
Solids, Total Dissolved	**104**	n/a	20.0	mg/L	SM 2540 C	1	6/9/2021	6/9/2021	n/a	SR	
Sulfate	**5.2**	0.046	0.20	mg/L	EPA 300.0	10	6/7/2021	6/7/2021	n/a	AK	

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Comments and Explanations: None

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Sampled by: Bill

DAL Project No.: 210604-09

Project Name: Landfill Wet Season
Project No.: n/a
P.O. No.: n/a
Sample Name: B2SU
Matrix: Non-Potable Water
Temperature Received (°C): 14
Collected: 6/4/2021; 10:18
Received: 6/4/2021; 12:30
Report Date: 7/15/2021

ANALYTICAL RESULTS

PARAMETER	RESULTS	MDL	MRL	UNITS	METHOD	DF	PREPARATION DATE	ANALYSIS DATE	ANALYSIS TIME	ANALYST	DATA FLAGS
Alkalinity ($CaCO_3$)	**186**	n/a	5.0	mg/L	SM 2320 B	1	6/8/2021	6/8/2021	n/a	EW	
Chloride	**0.24**	0.0024	0.10	mg/L	EPA 300.0	10	6/7/2021	6/7/2021	n/a	AK	
COD	**nd**	2.5	10.0	mg/L	SM 5220 D	1	6/4/2021	6/4/2021	n/a	BS	
Hardness	**183**	n/a	1.0	mg/L	SM 2340 B	1	6/11/2021	6/11/2021	n/a	TM	
Nitrogen, Ammonia	**nd**	0.029	0.30	mg/L	SM 4500-NH_3 D	1	6/7/2021	6/7/2021	n/a	BS	
Nitrogen, Nitrate + Nitrite	**0.78**	0.0015	0.10	mg/L	EPA 300.0	10	6/16/2021	6/16/2021	n/a	FW/SR	
Solids, Total Dissolved	**238**	n/a	20.0	mg/L	SM 2540 C	1	6/9/2021	6/9/2021	n/a	SR	
Sulfate	**8.5**	0.046	0.20	mg/L	EPA 300.0	10	6/7/2021	6/7/2021	n/a	AK	

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Sampled by: Bill

DAL Project No.: 210604-09

Project Name: Landfill Wet Season
Project No.: n/a
P.O. No.: n/a
Sample Name: B2S
Matrix: Non-Potable Water
Temperature Received (°C): 14
Collected: 6/4/2021; 10:30
Received: 6/4/2021; 12:30
Report Date: 7/15/2021

ANALYTICAL RESULTS

PARAMETER	RESULTS	MDL	MRL	UNITS	METHOD	DF	PREPARATION DATE	ANALYSIS DATE	ANALYSIS TIME	ANALYST	DATA FLAGS
Alkalinity ($CaCO_3$)	**41.2**	n/a	5.0	mg/L	SM 2320 B	1	6/8/2021	6/8/2021	n/a	EW	
Chloride	**0.18**	0.0024	0.10	mg/L	EPA 300.0	10	6/7/2021	6/7/2021	n/a	AK	
COD	**5.3**	2.5	10.0	mg/L	SM 5220 D	1	6/4/2021	6/4/2021	n/a	BS	J
Hardness	**57.0**	n/a	1.0	mg/L	SM 2340 B	1	6/11/2021	6/11/2021	n/a	TM	
Nitrogen, Ammonia	**0.049**	0.029	0.30	mg/L	SM 4500-NH_3 D	1	6/7/2021	6/7/2021	n/a	BS	J
Nitrogen, Nitrate + Nitrite	**4.4**	0.0015	0.10	mg/L	EPA 300.0	10	6/16/2021	6/16/2021	n/a	FW/SR	
Solids, Total Dissolved	**90.0**	n/a	20.0	mg/L	SM 2540 C	1	6/9/2021	6/9/2021	n/a	SR	
Sulfate	**10.5**	0.046	0.20	mg/L	EPA 300.0	10	6/7/2021	6/7/2021	n/a	AK	

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Sampled by: Bill

DAL Project No.: 210604-09

Project Name: Landfill Wet Season
Project No.: n/a
P.O. No.: n/a
Sample Name: B1S
Matrix: Non-Potable Water
Temperature Received (°C): 14
Collected: 6/4/2021; 10:55
Received: 6/4/2021; 12:30
Report Date: 7/15/2021

ANALYTICAL RESULTS

PARAMETER	RESULTS	MDL	MRL	UNITS	METHOD	DF	PREPARATION DATE	ANALYSIS DATE	ANALYSIS TIME	ANALYST	DATA FLAGS
Alkalinity ($CaCO_3$)	**133**	n/a	5.0	mg/L	SM 2320 B	1	6/8/2021	6/8/2021	n/a	EW	
Chloride	**3.0**	0.0024	0.10	mg/L	EPA 300.0	10	6/7/2021	6/7/2021	n/a	AK	
COD	**3.4**	2.5	10.0	mg/L	SM 5220 D	1	6/4/2021	6/4/2021	n/a	BS	J
Hardness	**141**	n/a	1.0	mg/L	SM 2340 B	1	6/11/2021	6/11/2021	n/a	TM	
Nitrogen, Ammonia	**0.23**	0.029	0.30	mg/L	SM 4500-NH_3 D	1	6/7/2021	6/7/2021	n/a	BS	J
Nitrogen, Nitrate + Nitrite	**1.2**	0.0015	0.10	mg/L	EPA 300.0	10	6/16/2021	6/16/2021	n/a	FW/SR	
Solids, Total Dissolved	**216**	n/a	20.0	mg/L	SM 2540 C	1	6/9/2021	6/9/2021	n/a	SR	
Sulfate	**2.1**	0.046	0.20	mg/L	EPA 300.0	10	6/7/2021	6/7/2021	n/a	AK	

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Sampled by: Bill

DAL Project No.: 210604-09

Project Name: Landfill Wet Season
Project No.: n/a
P.O. No.: n/a
Sample Name: B1SU
Matrix: Non-Potable Water
Temperature Received (°C): 14
Collected: 6/4/2021; 11:05
Received: 6/4/2021; 12:30
Report Date: 7/15/2021

ANALYTICAL RESULTS

PARAMETER	RESULTS	MDL	MRL	UNITS	METHOD	DF	PREPARATION DATE	ANALYSIS DATE	ANALYSIS TIME	ANALYST	DATA FLAGS
Alkalinity ($CaCO_3$)	**376**	n/a	5.0	mg/L	SM 2320 B	1	6/8/2021	6/8/2021	n/a	EW	
Chloride	**60.1**	0.0024	0.10	mg/L	EPA 300.0	10	6/7/2021	6/7/2021	n/a	AK	
COD	**11.1**	2.5	10.0	mg/L	SM 5220 D	1	6/4/2021	6/4/2021	n/a	BS	
Hardness	**296**	n/a	1.0	mg/L	SM 2340 B	1	6/11/2021	6/11/2021	n/a	TM	
Nitrogen, Ammonia	**0.035**	0.029	0.30	mg/L	SM 4500-NH_3 D	1	6/7/2021	6/7/2021	n/a	BS	J
Nitrogen, Nitrate + Nitrite	**nd**	0.0015	0.10	mg/L	EPA 300.0	10	6/16/2021	6/16/2021	n/a	FW/SR	
Solids, Total Dissolved	**430**	n/a	20.0	mg/L	SM 2540 C	1	6/9/2021	6/9/2021	n/a	SR	
Sulfate	**1.1**	0.046	0.20	mg/L	EPA 300.0	10	6/7/2021	6/7/2021	n/a	AK	

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Sampled by: Bill

DAL Project No.: 210604-09

Project Name: Landfill Wet Season
Project No.: n/a
P.O. No.: n/a
Sample Name: B8DR
Matrix: Non-Potable Water
Temperature Received (°C): 14
Collected: 6/4/2021; 11:12
Received: 6/4/2021; 12:30
Report Date: 7/15/2021

ANALYTICAL RESULTS

PARAMETER	RESULTS	MDL	MRL	UNITS	METHOD	DF	PREPARATION DATE	ANALYSIS DATE	ANALYSIS TIME	ANALYST	DATA FLAGS
Alkalinity ($CaCO_3$)	**206**	n/a	5.0	mg/L	SM 2320 B	1	6/8/2021	6/8/2021	n/a	EW	
Chloride	**3.4**	0.0024	0.10	mg/L	EPA 300.0	10	6/7/2021	6/7/2021	n/a	AK	
COD	**nd**	2.5	10.0	mg/L	SM 5220 D	1	6/4/2021	6/4/2021	n/a	BS	
Hardness	**161**	n/a	1.0	mg/L	SM 2340 B	1	6/11/2021	6/11/2021	n/a	TM	
Nitrogen, Ammonia	**0.23**	0.029	0.30	mg/L	SM 4500-NH_3 D	1	6/7/2021	6/7/2021	n/a	BS	J
Nitrogen, Nitrate + Nitrite	**0.041**	0.0015	0.10	mg/L	EPA 300.0	10	6/16/2021	6/16/2021	n/a	FW/SR	J
Solids, Total Dissolved	**266**	n/a	20.0	mg/L	SM 2540 C	1	6/9/2021	6/9/2021	n/a	SR	
Sulfate	**21.9**	0.046	0.20	mg/L	EPA 300.0	10	6/7/2021	6/7/2021	n/a	AK	

WA-DOE-Laboratory Certification No.: C890
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"DF" indicates Dilution Factor
"nd" indicates the analyte was not detected at or above the listed Method Reporting Limit.
"n/a" indicates not applicable

Comments and Explanations: A "J" flag indicates an estimated value that is greater than the MDL but less than the MRL.

DRAGON ANALYTICAL LABORATORY

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Hazardous Waste, Microbiology, NPDES, Potable and Non-potable Water
Mobile Environmental Laboratory

Lewis County Solid Waste
P.O. Box 180
Centralia, WA 98531

Sampled by: Bill

DAL Project No.: 210604-09

Project Name: Landfill Wet Season
Project No.: n/a
P.O. No.: n/a
Sample Name: MW4S
Matrix: Non-Potable Water
Temperature Received (°C): 14
Collected: 6/4/2021; 11:20
Received: 6/4/2021; 12:30
Report Date: 7/15/2021

ANALYTICAL RESULTS

PARAMETER	RESULTS	MDL	MRL	UNITS	METHOD	DF	PREPARATION DATE	ANALYSIS DATE	ANALYSIS TIME	ANALYST	DATA FLAGS
Alkalinity ($CaCO_3$)	**70.0**	n/a	5.0	mg/L	SM 2320 B	1	6/8/2021	6/8/2021	n/a	EW	
Chloride	**1.1**	0.0024	0.10	mg/L	EPA 300.0	10	6/7/2021	6/7/2021	n/a	AK	
COD	**nd**	2.5	10.0	mg/L	SM 5220 D	1	6/4/2021	6/4/2021	n/a	BS	
Hardness	**57.7**	n/a	1.0	mg/L	SM 2340 B	1	6/11/2021	6/11/2021	n/a	TM	
Nitrogen, Ammonia	**nd**	0.029	0.30	mg/L	SM 4500-NH_3 D	1	6/7/2021	6/7/2021	n/a	BS	
Nitrogen, Nitrate + Nitrite	**0.61**	0.0015	0.10	mg/L	EPA 300.0	10	6/16/2021	6/16/2021	n/a	FW/SR	
Solids, Total Dissolved	**104**	n/a	20.0	mg/L	SM 2540 C	1	6/9/2021	6/9/2021	n/a	SR	
Sulfate	**6.1**	0.046	0.20	mg/L	EPA 300.0	10	6/7/2021	6/7/2021	n/a	AK	

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"nd" indicates the analyte was not detected at or above the listed Method Reporting Limit.
"n/a" indicates not applicable

Comments and Explanations: None

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Lewis County Solid Waste
DAL Project No.: 210604-09

Project Name: Landfill Wet Season
Project No.: n/a

QUALITY CONTROL RESULTS
Method Blank

PARAMETER	SAMPLE BATCH	RESULT	MRL	UNITS	ANALYTICAL METHOD	ANALYSIS DATE	ANALYST	DATA FLAGS
Alkalinity ($CaCO_3$)	210608-Alkalinity (CaCO3)	nd	5.0	mg/L	SM 2320 B	6/8/2021	EW	
Chloride	210607-Chloride	nd	0.10	mg/L	EPA 300.0	6/7/2021	AK	
COD	210604-COD	nd	10.0	mg/L	SM 5220 D	6/4/2021	BS	
Hardness	210611-Hardness	nd	1.0	mg/L	SM 2340 B	6/11/2021	TM	
Nitrogen, Ammonia	210607-NH_3	nd	0.30	mg/L	SM 4500-NH_3 D	6/7/2021	BS	
Nitrogen, Nitrate + Nitrite	210616-N+N	nd	0.10	mg/L	EPA 300.0	6/16/2021	FW/SR	
Solids, Total Dissolved	210609-TDS	nd	20.0	mg/L	SM 2540 C	6/9/2021	SR	
Sulfate	210607-Sulfate	nd	0.20	mg/L	EPA 300.0	6/7/2021	AK	

QUALITY CONTROL RESULTS
Duplicate Sample

PARAMETER	SAMPLE BATCH	RESULT	DUP. RESULT	UNITS	ANALYTICAL METHOD	RPD(%)	LIMITS(%)	ANALYSIS DATE	ANALYST	DATA FLAGS
Alkalinity ($CaCO_3$)	210608-Alkalinity (CaCO3)	156	157	mg/L	SM 2320 B	0.89	±35	6/8/2021	EW	
Chloride	210607-Chloride	5.9	5.9	mg/L	EPA 300.0	0.34	±35	6/7/2021	AK	
COD	210604-COD	242	238	mg/L	SM 5220 D	1.6	±35	6/4/2021	BS	
Hardness	210611-Hardness	79.0	71.2	mg/L	SM 2340 B	10.4	±35	6/11/2021	TM	
Nitrogen, Ammonia	210607-NH_3	6.7	6.6	mg/L	SM 4500-NH_3 D	1.1	±35	6/7/2021	BS	
Nitrogen, Nitrate + Nitrite	210616-N+N	nd	nd	mg/L	EPA 300.0	0.00	±35	6/16/2021	FW/SR	
Solids, Total Dissolved	210609-TDS	500	484	mg/L	SM 2540 C	3.3	±35	6/9/2021	SR	
Sulfate	210607-Sulfate	nd	nd	mg/L	EPA 300.0	0.00	±35	6/7/2021	AK	

WA-DOE-Laboratory Certification No.: C890
"MRL" indicates Method Reporting Limit
"RPD" indicates Relative Percent Difference
"nd" indicates the analyte was not detected at or above the listed Method Reporting Limit.
"n/a" indicates not applicable

Comments and Explanations: None

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Lewis County Solid Waste
DAL Project No.: 210604-09

Project Name: Landfill Wet Season
Project No.: n/a

QUALITY CONTROL RESULTS
Laboratory Fortified Blank

PARAMETER	SAMPLE BATCH	LFB RESULT	TRUE VALUE	UNITS	ANALYTICAL METHOD	RECOVERY (%)	LIMITS (%)	ANALYSIS DATE	ANALYST	DATA FLAGS
Alkalinity ($CaCO_3$)	210608-Alkalinity (CaCO3)	199	200	mg/L	SM 2320 B	99.3	65.0-135	6/7/2021	EW	
Chloride	210607-Chloride	5.0	5.0	mg/L	EPA 300.0	99.5	65.0-135	6/7/2021	AK	
COD	210604-COD	103	100	mg/L	SM 5220 D	103	65.0-135	6/4/2021	BS	
Hardness	210611-Hardness	36.3	33.1	mg/L	SM 2340 B	110	65.0-135	6/11/2021	TM	
Nitrogen, Ammonia	210607-NH_3	1.0	1.0	mg/L	SM 4500-NH_3 D	99.8	65.0-135	6/7/2021	BS	
Nitrogen, Nitrate + Nitrite	210616-N+N	2.7	2.65	mg/L	EPA 300.0	100	65.0-135	6/16/2021	FW/SR	
Solids, Total Dissolved	210609-TDS	500	500	mg/L	SM 2540 C	100	65.0-135	6/9/2021	SR	
Sulfate	210607-Sulfate	5.2	5.0	mg/L	EPA 300.0	104	65.0-135	6/7/2021	AK	

QUALITY CONTROL RESULTS
Matrix Spike/Matrix Spike Duplicate

PARAMETER	SAMPLE BATCH	MS RESULT	MSD RESULT	TRUE VALUE	UNITS	ANALYTICAL METHOD	RPD (%)	LIMITS(%)	ANALYSIS DATE	ANALYST	DATA FLAGS
Alkalinity ($CaCO_3$)	210608-Alkalinity (CaCO3)	n/a	n/a	n/a	mg/L	SM 2320 B	n/a	n/a	n/a	n/a	
Chloride	210607-Chloride	5.1	5.3	5.0	mg/L	EPA 300.0	3.9	±35	6/7/2021	AK	
COD	210604-COD	110	119	100	mg/L	SM 5220 D	8.4	±35	6/4/2021	BS	
Hardness	210611-Hardness	n/a	n/a	n/a	mg/L	SM 2340 B	n/a	n/a	n/a	n/a	
Nitrogen, Ammonia	210607-NH_3	1.1	0.99	1.0	mg/L	SM 4500-NH_3 D	5.9	±35	6/7/2021	BS	
Nitrogen, Nitrate + Nitrite	210616-N+N	2.7	2.7	2.65	mg/L	EPA 300.0	2.6	±35	6/16/2021	FW/SR	
Solids, Total Dissolved	210609-TDS	n/a	n/a	n/a	mg/L	SM 2540 C	n/a	n/a	n/a	n/a	
Sulfate	210607-Sulfate	5.0	5.1	5.0	mg/L	EPA 300.0	1.3	±35	6/7/2021	AK	

WA-DOE-Laboratory Certification No.: C890
"RPD" indicates Relative Percent Difference
"nd" indicates the analyte was not detected at or above the listed Method Reporting Limit.
"n/a" indicates not applicable

Comments and Explanations: None

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Lewis County Solid Waste
P.O. Box 180
Centralia, WA 98531

Sampled By: BW/KK

DAL Project No.: 210603-13

Project Name: Landfill Wet Season
Project No.: n/a
PO No.: n/a
Date Collected: 6/3/2021; 11:15 - 11:50
Date Received: 6/3/2021; 13:01
Temperature Received (°C): 12
Report Date: 6/24/2021

Preparation Method: US EPA 200.8 Digested
Analytical Method: US EPA 200.8
Date Prepared: 6/21/2021
Date Analyzed: 6/22/2021
Analyst: TM

Units: ug/L
Matrix: Non-Potable Water
Reporting Limits: Standard
Instrument ID: Agilent 7500
Lab Data File: 21F22100

DISSOLVED HEAVY METALS
ANALYTICAL RESULTS

Analyte	CAS No.	MRL	Method Blank	MW1S	MW1D	MW3S	MW3D
Arsenic (As)	7440-38-2	1.0	nd	nd	**5.6**	**1.7**	nd
Calcium (Ca)	7440-70-2	10.0	**76.5**	**10,700**	**19,500**	**15,800**	**10,700**
Iron (Fe)	7439-89-6	50.0	nd	nd	**344**	**153**	nd
Magnesium (Mg)	7439-95-4	25.0	nd	**3,380**	**3,580**	**7,470**	**3,390**
Manganese (Mn)	7439-96-5	0.25	nd	**0.35**	**313**	**1,050**	**1.8**
Potassium (K)	7440-09-7	50.0	nd	**494**	**1,420**	**2,310**	**567**
Sodium (Na)	7440-23-5	25.0	**58.3**	**6,920**	**13,000**	**12,300**	**10,800**
Zinc (Zn)	7440-66-6	2.5	**44.6**	**12.0**	**18.7**	**7.3**	**10.9**
Dilution Factor			1.0	1.0	1.0	1.0	1.0

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Lewis County Solid Waste
DAL Project No.: 210603-13

Project Name: Landfill Wet Season
Project No.: n/a

DISSOLVED HEAVY METALS
QUALITY CONTROL RESULTS

LABORATORY CONTROL SAMPLE AND MATRIX SPIKE

QC Batch ID: 210622-Metals | MS/MSD Sample ID: 210622-Metals MS/MSD | LCS Sample ID: 210622-Metals LCS

Analyte	MS/MSD Level (ug/L)	Sample Conc. (ug/L)	MS Recovery (ug/L)	MS Percent Recovery	MSD Recovery (ug/L)	MSD Percent Recovery	MS/MSD Limits (%)	RPD	MS/MSD RPD Limits	LCS Level (ug/L)	LCS Recovery (ug/L)	LCS Percent Recovery	LCS Limits (%)
Arsenic (As)	50	8.9	51.6	85.4%	52.1	86.3%	70-130	1.1	≤ 25%	50	48.6	97.1%	85-115
Calcium (Ca)	MI	MI	MI	MI	MI	MI	MI	MI	MI	5000	5036	101%	85-115
Iron (Fe)	MI	MI	MI	MI	MI	MI	MI	MI	MI	5000	4864	97.3%	85-115
Magnesium (Mg)	5000	3281	8379	102%	8617	107%	70-130	4.6	≤ 25%	5000	5572	111%	85-115
Manganese (Mn)	50	232	272	80.0%	281	96.8%	70-130	19.0	≤ 25%	50	46.4	92.8%	85-115
Potassium (K)	MI	MI	MI	MI	MI	MI	MI	MI	MI	5000	4920	98.4%	85-115
Sodium (Na)	5000	16920	21980	101%	22540	112%	70-130	10.5	≤ 25%	5000	5456	109%	85-115
Zinc (Zn)	50	27.5	70.5	86.2%	69.9	84.9%	70-130	1.4	≤ 25%	50	50.2	100%	85-115

WA-DOE-Laboratory Certification No.: C890 "nd" indicates the analyte was not detected at or above the listed Method Reporting Limit. n/a indicates not applicable
Comments and Explanations: None.

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Lewis County Solid Waste
P.O. Box 180
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Sampled by: BW/KK

DAL Project No.: 210603-13

Project Name: Landfill Wet Season
Project No.: n/a
P.O. No.: n/a
Sample Name: MW1S
Matrix: Non-Potable Water
Temperature Received (°C): 12
Collected: 6/3/2021; 11:15
Received: 6/3/2021; 13:01
Report Date: 6/24/2021

ANALYTICAL RESULTS

PARAMETER	RESULTS	MDL	MRL	UNITS	METHOD	DF	PREPARATION DATE	ANALYSIS DATE	ANALYSIS TIME	ANALYST	DATA FLAGS
Alkalinity ($CaCO_3$)	**52.6**	n/a	5.0	mg/L	SM 2320 B	1	6/4/2021	6/4/2021	n/a	EW	
Chloride	**nd**	0.0024	0.10	mg/L	EPA 300.0	10	6/3/2021	6/3/2021	n/a	SR	
COD	**5.3**	2.5	10.0	mg/L	SM 5220 D	1	6/4/2021	6/4/2021	n/a	BS	J
Hardness	**45.7**	n/a	1.0	mg/L	SM 2340 B	1	6/12/2021	6/12/2021	n/a	TM	
Nitrogen, Ammonia	**nd**	0.029	0.30	mg/L	SM 4500-NH_3 D	1	6/7/2021	6/7/2021	n/a	BS	
Nitrogen, Nitrate + Nitrite	**0.88**	0.0015	0.10	mg/L	EPA 300.0	10	6/3/2021	6/3/2021	n/a	SR	
Solids, Total Dissolved	**128**	n/a	20.0	mg/L	SM 2540 C	1	6/4/2021	6/4/2021	n/a	EW	
Sulfate	**0.92**	0.046	0.20	mg/L	EPA 300.0	10	6/3/2021	6/3/2021	n/a	SR	

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Comments and Explanations: A "J" flag indicates an estimated value that is greater than the MDL but less than the MRL.

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Sampled by: BW/KK

DAL Project No.: 210603-13

Project Name: Landfill Wet Season
Project No.: n/a
P.O. No.: n/a
Sample Name: MW1D
Matrix: Non-Potable Water
Temperature Received (°C): 12
Collected: 6/3/2021; 11:15
Received: 6/3/2021; 13:01
Report Date: 6/24/2021

ANALYTICAL RESULTS

PARAMETER	RESULTS	MDL	MRL	UNITS	METHOD	DF	PREPARATION DATE	ANALYSIS DATE	ANALYSIS TIME	ANALYST	DATA FLAGS
Alkalinity ($CaCO_3$)	**107**	n/a	5.0	mg/L	SM 2320 B	1	6/4/2021	6/4/2021	n/a	EW	
Chloride	**nd**	0.0024	0.10	mg/L	EPA 300.0	10	6/3/2021	6/3/2021	n/a	SR	
COD	**9.2**	2.5	10.0	mg/L	SM 5220 D	1	6/4/2021	6/4/2021	n/a	BS	J
Hardness	**77.0**	n/a	1.0	mg/L	SM 2340 B	1	6/12/2021	6/12/2021	n/a	TM	
Nitrogen, Ammonia	**0.52**	0.029	0.30	mg/L	SM 4500-NH_3 D	1	6/7/2021	6/7/2021	n/a	BS	
Nitrogen, Nitrate + Nitrite	**nd**	0.0015	0.10	mg/L	EPA 300.0	10	6/3/2021	6/3/2021	n/a	SR	
Solids, Total Dissolved	**170**	n/a	20.0	mg/L	SM 2540 C	1	6/4/2021	6/4/2021	n/a	EW	
Sulfate	**nd**	0.046	0.20	mg/L	EPA 300.0	10	6/3/2021	6/3/2021	n/a	SR	

WA-DOE-Laboratory Certification No.: C890
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"DF" indicates Dilution Factor
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"n/a" indicates not applicable

Comments and Explanations: A "J" flag indicates an estimated value that is greater than the MDL but less than the MRL.

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Sampled by: BW/KK

DAL Project No.: 210603-13

Project Name: Landfill Wet Season
Project No.: n/a
P.O. No.: n/a
Sample Name: MW3S
Matrix: Non-Potable Water
Temperature Received (°C): 12
Collected: 6/3/2021; 11:50
Received: 6/3/2021; 13:01
Report Date: 6/24/2021

ANALYTICAL RESULTS

PARAMETER	RESULTS	MDL	MRL	UNITS	METHOD	DF	PREPARATION DATE	ANALYSIS DATE	ANALYSIS TIME	ANALYST	DATA FLAGS
Alkalinity ($CaCO_3$)	**129**	n/a	5.0	mg/L	SM 2320 B	1	6/4/2021	6/4/2021	n/a	EW	
Chloride	**nd**	0.0024	0.10	mg/L	EPA 300.0	10	6/3/2021	6/3/2021	n/a	SR	
COD	**5**	2.5	10.0	mg/L	SM 5220 D	1	6/4/2021	6/4/2021	n/a	BS	J
Hardness	**84.7**	n/a	1.0	mg/L	SM 2340 B	1	6/12/2021	6/12/2021	n/a	TM	
Nitrogen, Ammonia	**0.27**	0.029	0.30	mg/L	SM 4500-NH_3 D	1	6/7/2021	6/7/2021	n/a	BS	J
Nitrogen, Nitrate + Nitrite	**nd**	0.0015	0.10	mg/L	EPA 300.0	10	6/3/2021	6/3/2021	n/a	SR	
Solids, Total Dissolved	**204**	n/a	20.0	mg/L	SM 2540 C	1	6/4/2021	6/4/2021	n/a	EW	
Sulfate	**nd**	0.046	0.20	mg/L	EPA 300.0	10	6/3/2021	6/3/2021	n/a	SR	

WA-DOE-Laboratory Certification No.: C890
"MDL" indicates Method Detection Limit
"MRL" indicates Method Reporting Limit
"DF" indicates Dilution Factor
"nd" indicates the analyte was not detected at or above the listed Method Reporting Limit.
"n/a" indicates not applicable

Comments and Explanations: A "J" flag indicates an estimated value that is greater than the MDL but less than the MRL.

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P.O. Box 180
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Sampled by: BW/KK

DAL Project No.: 210603-13

Project Name: Landfill Wet Season
Project No.: n/a
P.O. No.: n/a
Sample Name: MW3D
Matrix: Non-Potable Water
Temperature Received (°C): 12
Collected: 6/3/2021; 11:50
Received: 6/3/2021; 13:01
Report Date: 6/24/2021

ANALYTICAL RESULTS

PARAMETER	RESULTS	MDL	MRL	UNITS	METHOD	DF	PREPARATION DATE	ANALYSIS DATE	ANALYSIS TIME	ANALYST	DATA FLAGS
Alkalinity ($CaCO_3$)	**49.8**	n/a	5.0	mg/L	SM 2320 B	1	6/4/2021	6/4/2021	n/a	EW	
Chloride	**4.0**	0.0024	0.10	mg/L	EPA 300.0	10	6/3/2021	6/3/2021	n/a	SR	
COD	**nd**	2.5	10.0	mg/L	SM 5220 D	1	6/4/2021	6/4/2021	n/a	BS	
Hardness	**54.0**	n/a	1.0	mg/L	SM 2340 B	1	6/12/2021	6/12/2021	n/a	TM	
Nitrogen, Ammonia	**nd**	0.029	0.30	mg/L	SM 4500-NH_3 D	1	6/7/2021	6/7/2021	n/a	BS	
Nitrogen, Nitrate + Nitrite	**1.9**	0.0015	0.10	mg/L	EPA 300.0	10	6/3/2021	6/3/2021	n/a	SR	
Solids, Total Dissolved	**142**	n/a	20.0	mg/L	SM 2540 C	1	6/4/2021	6/4/2021	n/a	EW	
Sulfate	**nd**	0.046	0.20	mg/L	EPA 300.0	10	6/3/2021	6/3/2021	n/a	SR	

WA-DOE-Laboratory Certification No.: C890
"MDL" indicates Method Detection Limit
"MRL" indicates Method Reporting Limit
"DF" indicates Dilution Factor
"nd" indicates the analyte was not detected at or above the listed Method Reporting Limit.
"n/a" indicates not applicable

Comments and Explanations: None

DRAGON ANALYTICAL LABORATORY

627 Durell Road SE, STE B105, Tumwater, WA 98501 (360)866-0543
Customerservice@DragonLaboratory.com

Hazardous Waste, Microbiology, NPDES, Potable and Non-potable Water
Mobile Environmental Laboratory

Lewis County Solid Waste
DAL Project No.: 210603-13

Project Name: Landfill Wet Season
Project No.: n/a

QUALITY CONTROL RESULTS
Method Blank

PARAMETER	SAMPLE BATCH	RESULT	MRL	UNITS	ANALYTICAL METHOD	ANALYSIS DATE	ANALYST	DATA FLAGS
Alkalinity ($CaCO_3$)	210604-Alkalinity (CaCO3)	nd	5.0	mg/L	SM 2320 B	6/4/2021	EW	
Chloride	210603-Chloride	nd	0.10	mg/L	EPA 300.0	6/3/2021	SR	
COD	210604-COD	nd	10.0	mg/L	SM 5220 D	6/4/2021	BS	
Hardness	210612-Hardness	nd	1.0	mg/L	SM 2340 B	6/12/2021	TM	
Nitrogen, Ammonia	210607-NH_3	nd	0.30	mg/L	SM 4500-NH_3 D	6/7/2021	BS	
Nitrogen, Nitrate + Nitrite	210603-N+N	nd	0.10	mg/L	EPA 300.0	6/3/2021	SR	
Solids, Total Dissolved	210604-TDS	nd	20.0	mg/L	SM 2540 C	6/4/2021	EW	
Sulfate	210603-Sulfate	nd	0.20	mg/L	EPA 300.0	6/3/2021	SR	

QUALITY CONTROL RESULTS
Duplicate Sample

PARAMETER	SAMPLE BATCH	RESULT	DUP. RESULT	UNITS	ANALYTICAL METHOD	RPD(%)	LIMITS(%)	ANALYSIS DATE	ANALYST	DATA FLAGS
Alkalinity ($CaCO_3$)	210604-Alkalinity (CaCO3)	107	116	mg/L	SM 2320 B	7.7	±35	6/4/2021	EW	
Chloride	210603-Chloride	3.4	3.4	mg/L	EPA 300.0	0.15	±35	6/3/2021	SR	
COD	210604-COD	242	238	mg/L	SM 5220 D	1.6	±35	6/4/2021	BS	
Hardness	210612-Hardness	79.0	71.2	mg/L	SM 2340 B	10.4	±35	6/12/2021	TM	
Nitrogen, Ammonia	210607-NH_3	6.7	6.6	mg/L	SM 4500-NH_3 D	1.1	±35	6/7/2021	BS	
Nitrogen, Nitrate + Nitrite	210603-N+N	nd	nd	mg/L	EPA 300.0	0.00	±35	6/3/2021	SR	
Solids, Total Dissolved	210604-TDS	508	562	mg/L	SM 2540 C	10.1	±35	6/4/2021	EW	
Sulfate	210603-Sulfate	nd	nd	mg/L	EPA 300.0	0.00	±35	6/3/2021	SR	

WA-DOE-Laboratory Certification No.: C890
"MRL" indicates Method Reporting Limit
"RPD" indicates Relative Percent Difference
"nd" indicates the analyte was not detected at or above the listed Method Reporting Limit.
"n/a" indicates not applicable

Comments and Explanations: None

DRAGON ANALYTICAL LABORATORY

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Hazardous Waste, Microbiology, NPDES, Potable and Non-potable Water
Mobile Environmental Laboratory

Lewis County Solid Waste
DAL Project No.: 210603-13

Project Name: Landfill Wet Season
Project No.: n/a

QUALITY CONTROL RESULTS
Laboratory Fortified Blank

PARAMETER	SAMPLE BATCH	LFB RESULT	TRUE VALUE	UNITS	ANALYTICAL METHOD	RECOVERY (%)	LIMITS (%)	ANALYSIS DATE	ANALYST	DATA FLAGS
Alkalinity ($CaCO_3$)	210604-Alkalinity (CaCO3)	n/a	n/a	mg/L	SM 2320 B	n/a	n/a	n/a	n/a	
Chloride	210603-Chloride	4.7	5.0	mg/L	EPA 300.0	94.1	65.0-135	6/3/2021	SR	
COD	210604-COD	103	100	mg/L	SM 5220 D	103	65.0-135	6/4/2021	BS	
Hardness	210612-Hardness	36.0	33.1	mg/L	SM 2340 B	109	65.0-135	6/12/2021	TM	
Nitrogen, Ammonia	210607-NH_3	1.0	1.0	mg/L	SM 4500-NH_3 D	99.8	65.0-135	6/7/2021	BS	
Nitrogen, Nitrate + Nitrite	210603-N+N	2.7	2.65	mg/L	EPA 300.0	102	65.0-135	6/3/2021	SR	
Solids, Total Dissolved	210604-TDS	508	500	mg/L	SM 2540 C	102	65.0-135	6/4/2021	EW	
Sulfate	210603-Sulfate	4.6	5.0	mg/L	EPA 300.0	91.6	65.0-135	6/3/2021	SR	

QUALITY CONTROL RESULTS
Matrix Spike/Matrix Spike Duplicate

PARAMETER	SAMPLE BATCH	MS RESULT	MSD RESULT	TRUE VALUE	UNITS	ANALYTICAL METHOD	RPD (%)	LIMITS(%)	ANALYSIS DATE	ANALYST	DATA FLAGS
Alkalinity ($CaCO_3$)	210604-Alkalinity (CaCO3)	n/a	n/a	n/a	mg/L	SM 2320 B	n/a	n/a	n/a	n/a	
Chloride	210603-Chloride	5.4	5.2	5.0	mg/L	EPA 300.0	2.2	±35	6/3/2021	SR	
COD	210604-COD	110	119	100	mg/L	SM 5220 D	8.4	±35	6/4/2021	BS	
Hardness	210612-Hardness	n/a	n/a	n/a	mg/L	SM 2340 B	n/a	n/a	n/a	n/a	
Nitrogen, Ammonia	210607-NH_3	1.1	0.99	1.0	mg/L	SM 4500-NH_3 D	5.9	±35	6/7/2021	BS	
Nitrogen, Nitrate + Nitrite	210603-N+N	2.8	2.7	2.65	mg/L	EPA 300.0	2.0	±35	6/3/2021	SR	
Solids, Total Dissolved	210604-TDS	n/a	n/a	n/a	mg/L	SM 2540 C	n/a	n/a	n/a	n/a	
Sulfate	210603-Sulfate	5.0	5.2	5.0	mg/L	EPA 300.0	3.3	±35	6/3/2021	SR	

WA-DOE-Laboratory Certification No.: C890
"RPD" indicates Relative Percent Difference
"nd" indicates the analyte was not detected at or above the listed Method Reporting Limit.
"n/a" indicates not applicable

Comments and Explanations: None

WATER MANAGEMENT LABORATORIES INC.

1515 80th St. E.
Tacoma, WA 98404
(253) 531-3121

Chemistry - Report of Analysis

Lab Number / Sample Number: 089 / 03148 **Project Name:** 210604-09, Landfill Wet Season **Permit #:**	**Date Collected:** 06-04-2021 **Time Collected:** 11:12 AM
Sample Matrix: Wastewater **Sample Identification:** B8DR	**Sample Collected:** Bill **Contact Number:** 360-866-0543
Date Received: 06-09-2021 **Time Received:** 2:00 PM **Date Reported:** 06-29-2021	**Approval Signature:**
Send Report & Bill to: Dragon Analytical 627 Durell Rd SE, Suite B105 Tumwater WA 98501	**Comments:** Sample temperature exceeded 6.0 °C upon receipt.

ANALYTICAL RESULTS

ANALYTE	RESULT	UNITS	REPORTING LEVEL	METHOD	DATE ANALYZED	INITIALS
Total Organic Carbon	0.43	mg/L	0.7	5310C	06-14-2021	SS

LAB COMMENTS

--No exisiting value.
µg/L:micrograms per liter or parts per billion.
ANALYTE:The name of an analyte being tested for.
METHOD/INITIALS:Analytical method used. / Initials of the analyst that performed the analysis.
mg/L:milligrams per liter or parts per million.
NTU:Nephelometric turbidity units.
REPORTING LEVEL:Indicates the minimum reporting level determined by the laboratory.
RESULT:The laboratory reported result.

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(253) 531-3121

Chemistry - Report of Analysis

Lab Number / Sample Number: 089 / 03147 **Project Name:** 210604-09, Landfill Wet Season **Permit #:**	**Date Collected:** 06-04-2021 **Time Collected:** 11:05 AM
Sample Matrix: Wastewater **Sample Identification:** B1SU	**Sample Collected:** Bill **Contact Number:** 360-866-0543
Date Received: 06-09-2021 **Time Received:** 2:00 PM **Date Reported:** 06-29-2021	**Approval Signature:**
Send Report & Bill to: Dragon Analytical 627 Durell Rd SE, Suite B105 Tumwater WA 98501	**Comments:** Sample temperature exceeded 6.0 °C upon receipt.

ANALYTICAL RESULTS

ANALYTE	RESULT	UNITS	REPORTING LEVEL	METHOD	DATE ANALYZED	INITIALS
Total Organic Carbon	0.68	mg/L	0.7	5310C	06-14-2021	SS

LAB COMMENTS

--No exisiting value.
µg/L:micrograms per liter or parts per billion.
ANALYTE:The name of an analyte being tested for.
METHOD/INITIALS:Analytical method used. / Initials of the analyst that performed the analysis.
mg/L:milligrams per liter or parts per million.
NTU:Nephelometric turbidity units.
REPORTING LEVEL:Indicates the minimum reporting level determined by the laboratory.
RESULT:The laboratory reported result.

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(253) 531-3121

Chemistry - Report of Analysis

Lab Number / Sample Number: 089 / 03144 **Project Name:** 210604-09, Landfill Wet Season **Permit #:**	**Date Collected:** 06-04-2021 **Time Collected:** 10:30 AM
Sample Matrix: Wastewater **Sample Identification:** B2S	**Sample Collected:** Bill **Contact Number:** 360-866-0543
Date Received: 06-09-2021 **Time Received:** 2:00 PM **Date Reported:** 06-29-2021	**Approval Signature:**
Send Report & Bill to: Dragon Analytical 627 Durell Rd SE, Suite B105 Tumwater WA 98501	**Comments:** Sample temperature exceeded 6.0 °C upon receipt.

ANALYTICAL RESULTS

ANALYTE	RESULT	UNITS	REPORTING LEVEL	METHOD	DATE ANALYZED	INITIALS
Total Organic Carbon	0.28	mg/L	0.7	5310C	06-14-2021	SS

LAB COMMENTS

--No exisiting value.
µg/L:micrograms per liter or parts per billion.
ANALYTE:The name of an analyte being tested for.
METHOD/INITIALS:Analytical method used. / Initials of the analyst that performed the analysis.
mg/L:milligrams per liter or parts per million.
NTU:Nephelometric turbidity units.
REPORTING LEVEL:Indicates the minimum reporting level determined by the laboratory.
RESULT:The laboratory reported result.

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Chemistry - Report of Analysis

Lab Number / Sample Number: 089 / 03142 **Project Name:** 210604-09, Landfill Wet Season **Permit #:**	**Date Collected:** 06-04-2021 **Time Collected:** 10:44 AM
Sample Matrix: Wastewater **Sample Identification:** MW5S	**Sample Collected:** Bill **Contact Number:** 360-866-0543
Date Received: 06-09-2021 **Time Received:** 2:00 PM **Date Reported:** 06-29-2021	**Approval Signature:**
Send Report & Bill to: Dragon Analytical 627 Durell Rd SE, Suite B105 Tumwater WA 98501	**Comments:** Sample temperature exceeded 6.0 °C upon receipt.

ANALYTICAL RESULTS

ANALYTE	RESULT	UNITS	REPORTING LEVEL	METHOD	DATE ANALYZED	INITIALS
Total Organic Carbon	0.32	mg/L	0.7	5310C	06-14-2021	SS

LAB COMMENTS

--No exisiting value.
µg/L:micrograms per liter or parts per billion.
ANALYTE:The name of an analyte being tested for.
METHOD/INITIALS:Analytical method used. / Initials of the analyst that performed the analysis.
mg/L:milligrams per liter or parts per million.
NTU:Nephelometric turbidity units.
REPORTING LEVEL:Indicates the minimum reporting level determined by the laboratory.
RESULT:The laboratory reported result.

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Chemistry - Report of Analysis

Lab Number / Sample Number: 089 / 03140 **Project Name:** 210604-09, Landfill Wet Season **Permit #:**	**Date Collected:** 06-04-2021 **Time Collected:** 9:42 AM
Sample Matrix: Wastewater **Sample Identification:** MW2D	**Sample Collected:** Bill **Contact Number:** 360-866-0543
Date Received: 06-09-2021 **Time Received:** 2:00 PM **Date Reported:** 06-29-2021	**Approval Signature:**
Send Report & Bill to: Dragon Analytical 627 Durell Rd SE, Suite B105 Tumwater WA 98501	**Comments:** Sample temperature exceeded 6.0 °C upon receipt.

ANALYTICAL RESULTS

ANALYTE	RESULT	UNITS	REPORTING LEVEL	METHOD	DATE ANALYZED	INITIALS
Total Organic Carbon	0.45	mg/L	0.7	5310C	06-14-2021	SS

LAB COMMENTS

--No exisiting value.
µg/L:micrograms per liter or parts per billion.
ANALYTE:The name of an analyte being tested for.
METHOD/INITIALS:Analytical method used. / Initials of the analyst that performed the analysis.
mg/L:milligrams per liter or parts per million.
NTU:Nephelometric turbidity units.
REPORTING LEVEL:Indicates the minimum reporting level determined by the laboratory.
RESULT:The laboratory reported result.

WATER MANAGEMENT LABORATORIES INC.

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(253) 531-3121

Chemistry - Report of Analysis

Lab Number / Sample Number: 089 / 03138 **Project Name:** 210604-09, Landfill Wet Season **Permit #:**	**Date Collected:** 06-04-2021 **Time Collected:** 9:20 AM
Sample Matrix: Wastewater **Sample Identification:** MW2SU	**Sample Collected:** Bill **Contact Number:** 360-866-0543
Date Received: 06-09-2021 **Time Received:** 2:00 PM **Date Reported:** 06-29-2021	**Approval Signature:**
Send Report & Bill to: Dragon Analytical 627 Durell Rd SE, Suite B105 Tumwater WA 98501	**Comments:** Sample temperature exceeded 6.0 °C upon receipt.

ANALYTICAL RESULTS

ANALYTE	RESULT	UNITS	REPORTING LEVEL	METHOD	DATE ANALYZED	INITIALS
Total Organic Carbon	0.57	mg/L	0.7	5310C	06-14-2021	SS

LAB COMMENTS

--No exisiting value.
µg/L:micrograms per liter or parts per billion.
ANALYTE:The name of an analyte being tested for.
METHOD/INITIALS:Analytical method used. / Initials of the analyst that performed the analysis.
mg/L:milligrams per liter or parts per million.
NTU:Nephelometric turbidity units.
REPORTING LEVEL:Indicates the minimum reporting level determined by the laboratory.
RESULT:The laboratory reported result.

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(253) 531-3121

Chemistry - Report of Analysis

Lab Number / Sample Number: 089 / 03136 **Project Name:** 210604-09, Landfill Wet Season **Permit #:**	**Date Collected:** 06-04-2021 **Time Collected:** 9:00 AM
Sample Matrix: Wastewater **Sample Identification:** CNE1D	**Sample Collected:** Bill **Contact Number:** 360-866-0543
Date Received: 06-09-2021 **Time Received:** 2:00 PM **Date Reported:** 06-29-2021	**Approval Signature:**
Send Report & Bill to: Dragon Analytical 627 Durell Rd SE, Suite B105 Tumwater WA 98501	**Comments:** Sample temperature exceeded 6.0 °C upon receipt.

ANALYTICAL RESULTS

ANALYTE	RESULT	UNITS	REPORTING LEVEL	METHOD	DATE ANALYZED	INITIALS
Total Organic Carbon	0.38	mg/L	0.7	5310C	06-14-2021	SS

LAB COMMENTS

--No exisiting value.
µg/L:micrograms per liter or parts per billion.
ANALYTE:The name of an analyte being tested for.
METHOD/INITIALS:Analytical method used. / Initials of the analyst that performed the analysis.
mg/L:milligrams per liter or parts per million.
NTU:Nephelometric turbidity units.
REPORTING LEVEL:Indicates the minimum reporting level determined by the laboratory.
RESULT:The laboratory reported result.

WATER MANAGEMENT LABORATORIES INC.

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Tacoma, WA 98404
(253) 531-3121

Chemistry - Report of Analysis

Lab Number / Sample Number: 089 / 03156 **Project Name:** 210603-13, Landfill Wet Season **Permit #:**	**Date Collected:** 06-03-2021 **Time Collected:** 11:50 AM
Sample Matrix: Wastewater **Sample Identification:** MW3D	**Sample Collected:** Bill **Contact Number:** 360-866-0543
Date Received: 06-09-2021 **Time Received:** 2:00 PM **Date Reported:** 06-29-2021	**Approval Signature:**
Send Report & Bill to: Dragon Analytical 627 Durell Rd SE, Suite B105 Tumwater WA 98501	**Comments:** Sample temperature exceeded 6.0 °C upon receipt.

ANALYTICAL RESULTS

ANALYTE	RESULT	UNITS	REPORTING LEVEL	METHOD	DATE ANALYZED	INITIALS
Total Organic Carbon	<0.20	mg/L	0.7	5310C	06-22-2021	SS

LAB COMMENTS

--No exisiting value.
µg/L:micrograms per liter or parts per billion.
ANALYTE: The name of an analyte being tested for.
METHOD/INITIALS: Analytical method used. / Initials of the analyst that performed the analysis.
mg/L:milligrams per liter or parts per million.
NTU: Nephelometric turbidity units.
REPORTING LEVEL: Indicates the minimum reporting level determined by the laboratory.
RESULT: The laboratory reported result.

WATER MANAGEMENT LABORATORIES INC.

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Chemistry - Report of Analysis

Lab Number / Sample Number: 089 / 03154 **Project Name:** 210603-13, Landfill Wet Season **Permit #:**	**Date Collected:** 06-03-2021 **Time Collected:** 11:15 AM
Sample Matrix: Wastewater **Sample Identification:** MW1D	**Sample Collected:** Bill **Contact Number:** 360-866-0543
Date Received: 06-09-2021 **Time Received:** 2:00 PM **Date Reported:** 06-29-2021	**Approval Signature:**
Send Report & Bill to: Dragon Analytical 627 Durell Rd SE, Suite B105 Tumwater WA 98501	**Comments:** Sample temperature exceeded 6.0 °C upon receipt.

ANALYTICAL RESULTS

ANALYTE	RESULT	UNITS	REPORTING LEVEL	METHOD	DATE ANALYZED	INITIALS
Total Organic Carbon	0.65	mg/L	0.7	5310C	06-14-2021	SS

LAB COMMENTS

--No exisiting value.
µg/L:micrograms per liter or parts per billion.
ANALYTE: The name of an analyte being tested for.
METHOD/INITIALS: Analytical method used. / Initials of the analyst that performed the analysis.
mg/L:milligrams per liter or parts per million.
NTU: Nephelometric turbidity units.
REPORTING LEVEL: Indicates the minimum reporting level determined by the laboratory.
RESULT: The laboratory reported result.

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Chemistry - Report of Analysis

Lab Number / Sample Number: 089 / 03153 **Project Name:** 210603-13, Landfill Wet Season **Permit #:**	**Date Collected:** 06-03-2021 **Time Collected:** 11:15 AM
Sample Matrix: Wastewater **Sample Identification:** MW1S	**Sample Collected:** Bill **Contact Number:** 360-866-0543
Date Received: 06-09-2021 **Time Received:** 2:00 PM **Date Reported:** 06-29-2021	**Approval Signature:**
Send Report & Bill to: Dragon Analytical 627 Durell Rd SE, Suite B105 Tumwater WA 98501	**Comments:** Sample temperature exceeded 6.0 °C upon receipt.

ANALYTICAL RESULTS

ANALYTE	RESULT	UNITS	REPORTING LEVEL	METHOD	DATE ANALYZED	INITIALS
Total Organic Carbon	<0.20	mg/L	0.7	5310C	06-22-2021	SS

LAB COMMENTS

--No exisiting value.
µg/L:micrograms per liter or parts per billion.
ANALYTE:The name of an analyte being tested for.
METHOD/INITIALS:Analytical method used. / Initials of the analyst that performed the analysis.
mg/L:milligrams per liter or parts per million.
NTU:Nephelometric turbidity units.
REPORTING LEVEL:Indicates the minimum reporting level determined by the laboratory.
RESULT:The laboratory reported result.

WATER MANAGEMENT LABORATORIES INC.

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Chemistry - Report of Analysis

Lab Number / Sample Number: 089 / 03155 **Project Name:** 210603-13, Landfill Wet Season **Permit #:**	**Date Collected:** 06-03-2021 **Time Collected:** 11:50 AM
Sample Matrix: Wastewater **Sample Identification:** MW3S	**Sample Collected:** Bill **Contact Number:** 360-866-0543
Date Received: 06-09-2021 **Time Received:** 2:00 PM **Date Reported:** 06-29-2021	**Approval Signature:**
Send Report & Bill to: Dragon Analytical 627 Durell Rd SE, Suite B105 Tumwater WA 98501	**Comments:** Sample temperature exceeded 6.0 °C upon receipt.

ANALYTICAL RESULTS

ANALYTE	RESULT	UNITS	REPORTING LEVEL	METHOD	DATE ANALYZED	INITIALS
Total Organic Carbon	0.29	mg/L	0.7	5310C	06-14-2021	SS

LAB COMMENTS

--No exisiting value.
µg/L:micrograms per liter or parts per billion.
ANALYTE:The name of an analyte being tested for.
METHOD/INITIALS:Analytical method used. / Initials of the analyst that performed the analysis.
mg/L:milligrams per liter or parts per million.
NTU:Nephelometric turbidity units.
REPORTING LEVEL:Indicates the minimum reporting level determined by the laboratory.
RESULT:The laboratory reported result.

WATER MANAGEMENT LABORATORIES INC.

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Tacoma, WA 98404
(253) 531-3121

Chemistry - Report of Analysis

Lab Number / Sample Number: 089 / 03135 **Project Name:** 210604-09, Landfill Wet Season **Permit #:**	**Date Collected:** 06-04-2021 **Time Collected:** 8:40 AM
Sample Matrix: Wastewater **Sample Identification:** CNE1S	**Sample Collected:** Bill **Contact Number:** 360-866-0543
Date Received: 06-09-2021 **Time Received:** 2:00 PM **Date Reported:** 06-29-2021	**Approval Signature:**
Send Report & Bill to: Dragon Analytical 627 Durell Rd SE, Suite B105 Tumwater WA 98501	**Comments:** Sample temperature exceeded 6.0 °C upon receipt.

ANALYTICAL RESULTS

ANALYTE	RESULT	UNITS	REPORTING LEVEL	METHOD	DATE ANALYZED	INITIALS
Total Organic Carbon	0.83	mg/L	0.7	5310C	06-22-2021	SS

LAB COMMENTS

--No exisiting value.
µg/L:micrograms per liter or parts per billion.
ANALYTE: The name of an analyte being tested for.
METHOD/INITIALS: Analytical method used. / Initials of the analyst that performed the analysis.
mg/L:milligrams per liter or parts per million.
NTU: Nephelometric turbidity units.
REPORTING LEVEL: Indicates the minimum reporting level determined by the laboratory.
RESULT: The laboratory reported result.

WATER MANAGEMENT LABORATORIES INC.
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Tacoma, WA 98404
(253) 531-3121

Chemistry - Report of Analysis

Lab Number / Sample Number: 089 / 03137 **Project Name:** 210604-09, Landfill Wet Season **Permit #:**	**Date Collected:** 06-04-2021 **Time Collected:** 9:00 AM
Sample Matrix: Wastewater **Sample Identification:** DUP	**Sample Collected:** Bill **Contact Number:** 360-866-0543
Date Received: 06-09-2021 **Time Received:** 2:00 PM **Date Reported:** 06-29-2021	**Approval Signature:**
Send Report & Bill to: Dragon Analytical 627 Durell Rd SE, Suite B105 Tumwater WA 98501	**Comments:** Sample temperature exceeded 6.0 °C upon receipt.

ANALYTICAL RESULTS

ANALYTE	RESULT	UNITS	REPORTING LEVEL	METHOD	DATE ANALYZED	INITIALS
Total Organic Carbon	0.37	mg/L	0.7	5310C	06-14-2021	SS

LAB COMMENTS

--No exisiting value.
µg/L: micrograms per liter or parts per billion.
ANALYTE: The name of an analyte being tested for.
METHOD/INITIALS: Analytical method used. / Initials of the analyst that performed the analysis.
mg/L: milligrams per liter or parts per million.
NTU: Nephelometric turbidity units.
REPORTING LEVEL: Indicates the minimum reporting level determined by the laboratory.
RESULT: The laboratory reported result.

WATER MANAGEMENT LABORATORIES INC.

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(253) 531-3121

Chemistry - Report of Analysis

Lab Number / Sample Number: 089 / 03139 **Project Name:** 210604-09, Landfill Wet Season **Permit #:**	**Date Collected:** 06-04-2021 **Time Collected:** 9:35 AM
Sample Matrix: Wastewater **Sample Identification:** MW2S	**Sample Collected:** Bill **Contact Number:** 360-866-0543
Date Received: 06-09-2021 **Time Received:** 2:00 PM **Date Reported:** 06-29-2021	**Approval Signature:**
Send Report & Bill to: Dragon Analytical 627 Durell Rd SE, Suite B105 Tumwater WA 98501	**Comments:** Sample temperature exceeded 6.0 °C upon receipt.

ANALYTICAL RESULTS

ANALYTE	RESULT	UNITS	REPORTING LEVEL	METHOD	DATE ANALYZED	INITIALS
Total Organic Carbon	0.91	mg/L	0.7	5310C	06-22-2021	SS

LAB COMMENTS

--No exisiting value.
µg/L: micrograms per liter or parts per billion.
ANALYTE: The name of an analyte being tested for.
METHOD/INITIALS: Analytical method used. / Initials of the analyst that performed the analysis.
mg/L: milligrams per liter or parts per million.
NTU: Nephelometric turbidity units.
REPORTING LEVEL: Indicates the minimum reporting level determined by the laboratory.
RESULT: The laboratory reported result.

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(253) 531-3121

Chemistry - Report of Analysis

Lab Number / Sample Number: 089 / 03141 **Project Name:** 210604-09, Landfill Wet Season **Permit #:**	**Date Collected:** 06-04-2021 **Time Collected:** 9:55 AM
Sample Matrix: Wastewater **Sample Identification:** BGDR	**Sample Collected:** Bill **Contact Number:** 360-866-0543
Date Received: 06-09-2021 **Time Received:** 2:00 PM **Date Reported:** 06-29-2021	**Approval Signature:**
Send Report & Bill to: Dragon Analytical 627 Durell Rd SE, Suite B105 Tumwater WA 98501	**Comments:** Sample temperature exceeded 6.0 °C upon receipt.

ANALYTICAL RESULTS

ANALYTE	RESULT	UNITS	REPORTING LEVEL	METHOD	DATE ANALYZED	INITIALS
Total Organic Carbon	0.50	mg/L	0.7	5310C	06-14-2021	SS

LAB COMMENTS

--No exisiting value.
µg/L: micrograms per liter or parts per billion.
ANALYTE: The name of an analyte being tested for.
METHOD/INITIALS: Analytical method used. / Initials of the analyst that performed the analysis.
mg/L: milligrams per liter or parts per million.
NTU: Nephelometric turbidity units.
REPORTING LEVEL: Indicates the minimum reporting level determined by the laboratory.
RESULT: The laboratory reported result.

WATER MANAGEMENT LABORATORIES INC.

1515 80th St. E.
Tacoma, WA 98404
(253) 531-3121

Chemistry - Report of Analysis

Lab Number / Sample Number: 089 / 03143 **Project Name:** 210604-09, Landfill Wet Season **Permit #:**	**Date Collected:** 06-04-2021 **Time Collected:** 10:18 AM
Sample Matrix: Wastewater **Sample Identification:** B2SU	**Sample Collected:** Bill **Contact Number:** 360-866-0543
Date Received: 06-09-2021 **Time Received:** 2:00 PM **Date Reported:** 06-29-2021	**Approval Signature:**
Send Report & Bill to: Dragon Analytical 627 Durell Rd SE, Suite B105 Tumwater WA 98501	**Comments:** Sample temperature exceeded 6.0 °C upon receipt.

ANALYTICAL RESULTS

ANALYTE	RESULT	UNITS	REPORTING LEVEL	METHOD	DATE ANALYZED	INITIALS
Total Organic Carbon	0.21	mg/L	0.7	5310C	06-22-2021	SS

LAB COMMENTS

--No exisiting value.
µg/L:micrograms per liter or parts per billion.
ANALYTE: The name of an analyte being tested for.
METHOD/INITIALS: Analytical method used. / Initials of the analyst that performed the analysis.
mg/L:milligrams per liter or parts per million.
NTU: Nephelometric turbidity units.
REPORTING LEVEL: Indicates the minimum reporting level determined by the laboratory.
RESULT: The laboratory reported result.

WATER MANAGEMENT LABORATORIES INC.
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Tacoma, WA 98404
(253) 531-3121

Chemistry - Report of Analysis

Lab Number / Sample Number: 089 / 03146 **Project Name:** 210604-09, Landfill Wet Season **Permit #:**	**Date Collected:** 06-04-2021 **Time Collected:** 10:55 AM
Sample Matrix: Wastewater **Sample Identification:** B1S	**Sample Collected:** Bill **Contact Number:** 360-866-0543
Date Received: 06-09-2021 **Time Received:** 2:00 PM **Date Reported:** 06-29-2021	**Approval Signature:**
Send Report & Bill to: Dragon Analytical 627 Durell Rd SE, Suite B105 Tumwater WA 98501	**Comments:** Sample temperature exceeded 6.0 °C upon receipt.

ANALYTICAL RESULTS

ANALYTE	RESULT	UNITS	REPORTING LEVEL	METHOD	DATE ANALYZED	INITIALS
Total Organic Carbon	0.23	mg/L	0.7	5310C	06-22-2021	SS

LAB COMMENTS

--No exisiting value.
µg/L: micrograms per liter or parts per billion.
ANALYTE: The name of an analyte being tested for.
METHOD/INITIALS: Analytical method used. / Initials of the analyst that performed the analysis.
mg/L: milligrams per liter or parts per million.
NTU: Nephelometric turbidity units.
REPORTING LEVEL: Indicates the minimum reporting level determined by the laboratory.
RESULT: The laboratory reported result.

WATER MANAGEMENT LABORATORIES INC.

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Tacoma, WA 98404
(253) 531-3121

Chemistry - Report of Analysis

Lab Number / Sample Number: 089 / 03148 **Project Name:** 210604-09, Landfill Wet Season **Permit #:**	**Date Collected:** 06-04-2021 **Time Collected:** 11:12 AM
Sample Matrix: Wastewater **Sample Identification:** B8DR	**Sample Collected:** Bill **Contact Number:** 360-866-0543
Date Received: 06-09-2021 **Time Received:** 2:00 PM **Date Reported:** 06-29-2021	**Approval Signature:**
Send Report & Bill to: Dragon Analytical 627 Durell Rd SE, Suite B105 Tumwater WA 98501	**Comments:** Sample temperature exceeded 6.0 °C upon receipt.

ANALYTICAL RESULTS

ANALYTE	RESULT	UNITS	REPORTING LEVEL	METHOD	DATE ANALYZED	INITIALS
Total Organic Carbon	0.43	mg/L	0.7	5310C	06-14-2021	SS

LAB COMMENTS

--No exisiting value.
µg/L:micrograms per liter or parts per billion.
ANALYTE: The name of an analyte being tested for.
METHOD/INITIALS: Analytical method used. / Initials of the analyst that performed the analysis.
mg/L:milligrams per liter or parts per million.
NTU: Nephelometric turbidity units.
REPORTING LEVEL: Indicates the minimum reporting level determined by the laboratory.
RESULT: The laboratory reported result.

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(253) 531-3121

Chemistry - Report of Analysis

Lab Number / Sample Number: 089 / 03135
Project Name: 210604-09, Landfill Wet Season
Permit #:

Date Collected: 06-04-2021
Time Collected: 8:40 AM

Sample Matrix: Wastewater
Sample Identification: CNE1S

Sample Collected: Bill
Contact Number: 360-866-0543

Date Received: 06-09-2021
Time Received: 2:00 PM
Date Reported: 06-29-2021

Approval Signature:

Send Report & Bill to: Dragon Analytical
627 Durell Rd SE, Suite B105
Tumwater WA 98501

Comments: Sample temperature exceeded 6.0 °C upon receipt.

ANALYTICAL RESULTS

ANALYTE	RESULT	UNITS	REPORTING LEVEL	METHOD	DATE ANALYZED	INITIALS
Total Organic Carbon	0.83	mg/L	0.7	5310C	06-22-2021	SS

LAB COMMENTS

--No exisiting value.
µg/L: micrograms per liter or parts per billion.
ANALYTE: The name of an analyte being tested for.
METHOD/INITIALS: Analytical method used. / Initials of the analyst that performed the analysis.
mg/L: milligrams per liter or parts per million.
NTU: Nephelometric turbidity units.
REPORTING LEVEL: Indicates the minimum reporting level determined by the laboratory.
RESULT: The laboratory reported result.

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Tacoma, WA 98404
(253) 531-3121

Chemistry - Report of Analysis

Lab Number / Sample Number: 089 / 03136 **Project Name:** 210604-09, Landfill Wet Season **Permit #:**	**Date Collected:** 06-04-2021 **Time Collected:** 9:00 AM
Sample Matrix: Wastewater **Sample Identification:** CNE1D	**Sample Collected:** Bill **Contact Number:** 360-866-0543
Date Received: 06-09-2021 **Time Received:** 2:00 PM **Date Reported:** 06-29-2021	**Approval Signature:**
Send Report & Bill to: Dragon Analytical 627 Durell Rd SE, Suite B105 Tumwater WA 98501	**Comments:** Sample temperature exceeded 6.0 °C upon receipt.

ANALYTICAL RESULTS

ANALYTE	RESULT	UNITS	REPORTING LEVEL	METHOD	DATE ANALYZED	INITIALS
Total Organic Carbon	0.38	mg/L	0.7	5310C	06-14-2021	SS

LAB COMMENTS

--No exisiting value.
µg/L: micrograms per liter or parts per billion.
ANALYTE: The name of an analyte being tested for.
METHOD/INITIALS: Analytical method used. / Initials of the analyst that performed the analysis.
mg/L: milligrams per liter or parts per million.
NTU: Nephelometric turbidity units.
REPORTING LEVEL: Indicates the minimum reporting level determined by the laboratory.
RESULT: The laboratory reported result.

WATER MANAGEMENT LABORATORIES INC.

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(253) 531-3121

Chemistry - Report of Analysis

Lab Number / Sample Number: 089 / 03137 **Project Name:** 210604-09, Landfill Wet Season **Permit #:**	**Date Collected:** 06-04-2021 **Time Collected:** 9:00 AM
Sample Matrix: Wastewater **Sample Identification:** DUP	**Sample Collected:** Bill **Contact Number:** 360-866-0543
Date Received: 06-09-2021 **Time Received:** 2:00 PM **Date Reported:** 06-29-2021	**Approval Signature:**
Send Report & Bill to: Dragon Analytical 627 Durell Rd SE, Suite B105 Tumwater WA 98501	**Comments:** Sample temperature exceeded 6.0 °C upon receipt.

ANALYTICAL RESULTS

ANALYTE	RESULT	UNITS	REPORTING LEVEL	METHOD	DATE ANALYZED	INITIALS
Total Organic Carbon	0.37	mg/L	0.7	5310C	06-14-2021	SS

LAB COMMENTS

--No exisiting value.
µg/L: micrograms per liter or parts per billion.
ANALYTE: The name of an analyte being tested for.
METHOD/INITIALS: Analytical method used. / Initials of the analyst that performed the analysis.
mg/L: milligrams per liter or parts per million.
NTU: Nephelometric turbidity units.
REPORTING LEVEL: Indicates the minimum reporting level determined by the laboratory.
RESULT: The laboratory reported result.

WATER MANAGEMENT LABORATORIES INC.

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Tacoma, WA 98404
(253) 531-3121

Chemistry - Report of Analysis

Lab Number / Sample Number: 089 / 03138
Project Name: 210604-09, Landfill Wet Season
Permit #:

Date Collected: 06-04-2021
Time Collected: 9:20 AM

Sample Matrix: Wastewater
Sample Identification: MW2SU

Sample Collected: Bill
Contact Number: 360-866-0543

Date Received: 06-09-2021
Time Received: 2:00 PM
Date Reported: 06-29-2021

Approval Signature:

Send Report & Bill to: Dragon Analytical
627 Durell Rd SE, Suite B105
Tumwater WA 98501

Comments: Sample temperature exceeded 6.0 °C upon receipt.

ANALYTICAL RESULTS

ANALYTE	RESULT	UNITS	REPORTING LEVEL	METHOD	DATE ANALYZED	INITIALS
Total Organic Carbon	0.57	mg/L	0.7	5310C	06-14-2021	SS

LAB COMMENTS

--No exisiting value.
µg/L: micrograms per liter or parts per billion.
ANALYTE: The name of an analyte being tested for.
METHOD/INITIALS: Analytical method used. / Initials of the analyst that performed the analysis.
mg/L: milligrams per liter or parts per million.
NTU: Nephelometric turbidity units.
REPORTING LEVEL: Indicates the minimum reporting level determined by the laboratory.
RESULT: The laboratory reported result.

WATER MANAGEMENT LABORATORIES INC.

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(253) 531-3121

Chemistry - Report of Analysis

Lab Number / Sample Number: 089 / 03139
Project Name: 210604-09, Landfill Wet Season
Permit #:

Date Collected: 06-04-2021
Time Collected: 9:35 AM

Sample Matrix: Wastewater
Sample Identification: MW2S

Sample Collected: Bill
Contact Number: 360-866-0543

Date Received: 06-09-2021
Time Received: 2:00 PM
Date Reported: 06-29-2021

Approval Signature:

Send Report & Bill to: Dragon Analytical
627 Durell Rd SE, Suite B105
Tumwater WA 98501

Comments: Sample temperature exceeded 6.0 °C upon receipt.

ANALYTICAL RESULTS

ANALYTE	RESULT	UNITS	REPORTING LEVEL	METHOD	DATE ANALYZED	INITIALS
Total Organic Carbon	0.91	mg/L	0.7	5310C	06-22-2021	SS

LAB COMMENTS

--No exisiting value.
µg/L: micrograms per liter or parts per billion.
ANALYTE: The name of an analyte being tested for.
METHOD/INITIALS: Analytical method used. / Initials of the analyst that performed the analysis.
mg/L: milligrams per liter or parts per million.
NTU: Nephelometric turbidity units.
REPORTING LEVEL: Indicates the minimum reporting level determined by the laboratory.
RESULT: The laboratory reported result.

WATER MANAGEMENT LABORATORIES INC.

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Chemistry - Report of Analysis

Lab Number / Sample Number: 089 / 03140
Project Name: 210604-09, Landfill Wet Season
Permit #:

Date Collected: 06-04-2021
Time Collected: 9:42 AM

Sample Matrix: Wastewater
Sample Identification: MW2D

Sample Collected: Bill
Contact Number: 360-866-0543

Date Received: 06-09-2021
Time Received: 2:00 PM
Date Reported: 06-29-2021

Approval Signature:

Send Report & Bill to: Dragon Analytical
627 Durell Rd SE, Suite B105
Tumwater WA 98501

Comments: Sample temperature exceeded 6.0 °C upon receipt.

ANALYTICAL RESULTS

ANALYTE	RESULT	UNITS	REPORTING LEVEL	METHOD	DATE ANALYZED	INITIALS
Total Organic Carbon	0.45	mg/L	0.7	5310C	06-14-2021	SS

LAB COMMENTS

--No exisiting value.
µg/L: micrograms per liter or parts per billion.
ANALYTE: The name of an analyte being tested for.
METHOD/INITIALS: Analytical method used. / Initials of the analyst that performed the analysis.
mg/L: milligrams per liter or parts per million.
NTU: Nephelometric turbidity units.
REPORTING LEVEL: Indicates the minimum reporting level determined by the laboratory.
RESULT: The laboratory reported result.

WATER MANAGEMENT LABORATORIES INC.

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Tacoma, WA 98404
(253) 531-3121

Chemistry - Report of Analysis

Lab Number / Sample Number: 089 / 03141 **Project Name:** 210604-09, Landfill Wet Season **Permit #:**	**Date Collected:** 06-04-2021 **Time Collected:** 9:55 AM
Sample Matrix: Wastewater **Sample Identification:** BGDR	**Sample Collected:** Bill **Contact Number:** 360-866-0543
Date Received: 06-09-2021 **Time Received:** 2:00 PM **Date Reported:** 06-29-2021	**Approval Signature:**
Send Report & Bill to: Dragon Analytical 627 Durell Rd SE, Suite B105 Tumwater WA 98501	**Comments:** Sample temperature exceeded 6.0 °C upon receipt.

ANALYTICAL RESULTS

ANALYTE	RESULT	UNITS	REPORTING LEVEL	METHOD	DATE ANALYZED	INITIALS
Total Organic Carbon	0.50	mg/L	0.7	5310C	06-14-2021	SS

LAB COMMENTS

--No exisiting value.
µg/L: micrograms per liter or parts per billion.
ANALYTE: The name of an analyte being tested for.
METHOD/INITIALS: Analytical method used. / Initials of the analyst that performed the analysis.
mg/L: milligrams per liter or parts per million.
NTU: Nephelometric turbidity units.
REPORTING LEVEL: Indicates the minimum reporting level determined by the laboratory.
RESULT: The laboratory reported result.

WATER MANAGEMENT LABORATORIES INC.

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(253) 531-3121

Chemistry - Report of Analysis

Lab Number / Sample Number: 089 / 03142
Project Name: 210604-09, Landfill Wet Season
Permit #:

Date Collected: 06-04-2021
Time Collected: 10:44 AM

Sample Matrix: Wastewater
Sample Identification: MW5S

Sample Collected: Bill
Contact Number: 360-866-0543

Date Received: 06-09-2021
Time Received: 2:00 PM
Date Reported: 06-29-2021

Approval Signature:

Send Report & Bill to: Dragon Analytical
627 Durell Rd SE, Suite B105
Tumwater WA 98501

Comments: Sample temperature exceeded 6.0 °C upon receipt.

ANALYTICAL RESULTS

ANALYTE	RESULT	UNITS	REPORTING LEVEL	METHOD	DATE ANALYZED	INITIALS
Total Organic Carbon	0.32	mg/L	0.7	5310C	06-14-2021	SS

LAB COMMENTS

--No exisiting value.
µg/L: micrograms per liter or parts per billion.
ANALYTE: The name of an analyte being tested for.
METHOD/INITIALS: Analytical method used. / Initials of the analyst that performed the analysis.
mg/L: milligrams per liter or parts per million.
NTU: Nephelometric turbidity units.
REPORTING LEVEL: Indicates the minimum reporting level determined by the laboratory.
RESULT: The laboratory reported result.

WATER MANAGEMENT LABORATORIES INC.

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Tacoma, WA 98404
(253) 531-3121

Chemistry - Report of Analysis

Lab Number / Sample Number: 089 / 03143 **Project Name:** 210604-09, Landfill Wet Season **Permit #:**	**Date Collected:** 06-04-2021 **Time Collected:** 10:18 AM
Sample Matrix: Wastewater **Sample Identification:** B2SU	**Sample Collected:** Bill **Contact Number:** 360-866-0543
Date Received: 06-09-2021 **Time Received:** 2:00 PM **Date Reported:** 06-29-2021	**Approval Signature:**
Send Report & Bill to: Dragon Analytical 627 Durell Rd SE, Suite B105 Tumwater WA 98501	**Comments:** Sample temperature exceeded 6.0 °C upon receipt.

ANALYTICAL RESULTS

ANALYTE	RESULT	UNITS	REPORTING LEVEL	METHOD	DATE ANALYZED	INITIALS
Total Organic Carbon	0.21	mg/L	0.7	5310C	06-22-2021	SS

LAB COMMENTS

--No exisiting value.
µg/L:micrograms per liter or parts per billion.
ANALYTE: The name of an analyte being tested for.
METHOD/INITIALS: Analytical method used. / Initials of the analyst that performed the analysis.
mg/L:milligrams per liter or parts per million.
NTU: Nephelometric turbidity units.
REPORTING LEVEL: Indicates the minimum reporting level determined by the laboratory.
RESULT: The laboratory reported result.

WATER MANAGEMENT LABORATORIES INC.

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(253) 531-3121

Chemistry - Report of Analysis

Lab Number / Sample Number: 089 / 03144
Project Name: 210604-09, Landfill Wet Season
Permit #:

Date Collected: 06-04-2021
Time Collected: 10:30 AM

Sample Matrix: Wastewater
Sample Identification: B2S

Sample Collected: Bill
Contact Number: 360-866-0543

Date Received: 06-09-2021
Time Received: 2:00 PM
Date Reported: 06-29-2021

Approval Signature:

Send Report & Bill to: Dragon Analytical
627 Durell Rd SE, Suite B105
Tumwater WA 98501

Comments: Sample temperature exceeded 6.0 °C upon receipt.

ANALYTICAL RESULTS

ANALYTE	RESULT	UNITS	REPORTING LEVEL	METHOD	DATE ANALYZED	INITIALS
Total Organic Carbon	0.28	mg/L	0.7	5310C	06-14-2021	SS

LAB COMMENTS

--No exisiting value.
µg/L: micrograms per liter or parts per billion.
ANALYTE: The name of an analyte being tested for.
METHOD/INITIALS: Analytical method used. / Initials of the analyst that performed the analysis.
mg/L: milligrams per liter or parts per million.
NTU: Nephelometric turbidity units.
REPORTING LEVEL: Indicates the minimum reporting level determined by the laboratory.
RESULT: The laboratory reported result.

WATER MANAGEMENT LABORATORIES INC.

1515 80th St. E.
Tacoma, WA 98404
(253) 531-3121

Chemistry - Report of Analysis

Lab Number / Sample Number: 089 / 03146 **Project Name:** 210604-09, Landfill Wet Season **Permit #:**	**Date Collected:** 06-04-2021 **Time Collected:** 10:55 AM
Sample Matrix: Wastewater **Sample Identification:** B1S	**Sample Collected:** Bill **Contact Number:** 360-866-0543
Date Received: 06-09-2021 **Time Received:** 2:00 PM **Date Reported:** 06-29-2021	**Approval Signature:**
Send Report & Bill to: Dragon Analytical 627 Durell Rd SE, Suite B105 Tumwater WA 98501	**Comments:** Sample temperature exceeded 6.0 °C upon receipt.

ANALYTICAL RESULTS

ANALYTE	RESULT	UNITS	REPORTING LEVEL	METHOD	DATE ANALYZED	INITIALS
Total Organic Carbon	0.23	mg/L	0.7	5310C	06-22-2021	SS

LAB COMMENTS

--No exisiting value.
µg/L: micrograms per liter or parts per billion.
ANALYTE: The name of an analyte being tested for.
METHOD/INITIALS: Analytical method used. / Initials of the analyst that performed the analysis.
mg/L: milligrams per liter or parts per million.
NTU: Nephelometric turbidity units.
REPORTING LEVEL: Indicates the minimum reporting level determined by the laboratory.
RESULT: The laboratory reported result.

WATER MANAGEMENT LABORATORIES INC.

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Tacoma, WA 98404
(253) 531-3121

Chemistry - Report of Analysis

Lab Number / Sample Number: 089 / 03147
Project Name: 210604-09, Landfill Wet Season
Permit #:

Date Collected: 06-04-2021
Time Collected: 11:05 AM

Sample Matrix: Wastewater
Sample Identification: B1SU

Sample Collected: Bill
Contact Number: 360-866-0543

Date Received: 06-09-2021
Time Received: 2:00 PM
Date Reported: 06-29-2021

Approval Signature:

Send Report & Bill to: Dragon Analytical
627 Durell Rd SE, Suite B105
Tumwater WA 98501

Comments: Sample temperature exceeded 6.0 °C upon receipt.

ANALYTICAL RESULTS

ANALYTE	RESULT	UNITS	REPORTING LEVEL	METHOD	DATE ANALYZED	INITIALS
Total Organic Carbon	0.68	mg/L	0.7	5310C	06-14-2021	SS

LAB COMMENTS

--No exisiting value.
µg/L: micrograms per liter or parts per billion.
ANALYTE: The name of an analyte being tested for.
METHOD/INITIALS: Analytical method used. / Initials of the analyst that performed the analysis.
mg/L: milligrams per liter or parts per million.
NTU: Nephelometric turbidity units.
REPORTING LEVEL: Indicates the minimum reporting level determined by the laboratory.
RESULT: The laboratory reported result.

WATER MANAGEMENT LABORATORIES INC.

1515 80th St. E.
Tacoma, WA 98404
(253) 531-3121

Chemistry - Report of Analysis

Lab Number / Sample Number: 089 / 03148 **Project Name:** 210604-09, Landfill Wet Season **Permit #:**	**Date Collected:** 06-04-2021 **Time Collected:** 11:12 AM
Sample Matrix: Wastewater **Sample Identification:** B8DR	**Sample Collected:** Bill **Contact Number:** 360-866-0543
Date Received: 06-09-2021 **Time Received:** 2:00 PM **Date Reported:** 06-29-2021	**Approval Signature:**
Send Report & Bill to: Dragon Analytical 627 Durell Rd SE, Suite B105 Tumwater WA 98501	**Comments:** Sample temperature exceeded 6.0 °C upon receipt.

ANALYTICAL RESULTS

ANALYTE	RESULT	UNITS	REPORTING LEVEL	METHOD	DATE ANALYZED	INITIALS
Total Organic Carbon	0.43	mg/L	0.7	5310C	06-14-2021	SS

LAB COMMENTS

--No exisiting value.
µg/L: micrograms per liter or parts per billion.
ANALYTE: The name of an analyte being tested for.
METHOD/INITIALS: Analytical method used. / Initials of the analyst that performed the analysis.
mg/L: milligrams per liter or parts per million.
NTU: Nephelometric turbidity units.
REPORTING LEVEL: Indicates the minimum reporting level determined by the laboratory.
RESULT: The laboratory reported result.

WATER MANAGEMENT LABORATORIES INC.

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Tacoma, WA 98404
(253) 531-3121

Chemistry - Report of Analysis

Lab Number / Sample Number: 089 / 03149 **Project Name:** 210604-09, Landfill Wet Season **Permit #:**	**Date Collected:** 06-04-2021 **Time Collected:** 11:20 AM
Sample Matrix: Wastewater **Sample Identification:** MW4S	**Sample Collected:** Bill **Contact Number:** 360-866-0543
Date Received: 06-09-2021 **Time Received:** 2:00 PM **Date Reported:** 06-29-2021	**Approval Signature:**
Send Report & Bill to: Dragon Analytical 627 Durell Rd SE, Suite B105 Tumwater WA 98501	**Comments:** Sample temperature exceeded 6.0 °C upon receipt.

ANALYTICAL RESULTS

ANALYTE	RESULT	UNITS	REPORTING LEVEL	METHOD	DATE ANALYZED	INITIALS
Total Organic Carbon	<0.20	mg/L	0.7	5310C	06-14-2021	SS

LAB COMMENTS

--No exisiting value.
µg/L: micrograms per liter or parts per billion.
ANALYTE: The name of an analyte being tested for.
METHOD/INITIALS: Analytical method used. / Initials of the analyst that performed the analysis.
mg/L: milligrams per liter or parts per million.
NTU: Nephelometric turbidity units.
REPORTING LEVEL: Indicates the minimum reporting level determined by the laboratory.
RESULT: The laboratory reported result.

ALS Group USA, Corp.
dba ALS Environmental
Analytical Report

Client:	Dragon Analytical Laboratory	**Service Request:**	K2106687
Project:	Landfill Wet Season/210604-09	**Date Collected:**	06/04/21
Sample Matrix:	Wastewater	**Date Received:**	06/10/21

Mercury, Total

Prep Method:	METHOD	Units:	ng/L
Analysis Method:	1631E	Basis:	NA
Test Notes:			

Sample Name	Lab Code	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
CNE1S	K2106687-001	0.5	1	06/10/21	06/11/21	1.8	
CNE1D	K2106687-002	0.5	1	06/10/21	06/11/21	ND	
DUP	K2106687-003	0.5	1	06/10/21	06/11/21	0.9	
MW2SU	K2106687-004	0.5	1	06/10/21	06/11/21	1.5	
MW2S	K2106687-005	0.5	1	06/10/21	06/11/21	0.6	
MW2D	K2106687-006	0.5	1	06/10/21	06/11/21	1.3	
BGDR	K2106687-007	0.5	1	06/10/21	06/11/21	1.3	
MW5S	K2106687-008	0.5	1	06/10/21	06/11/21	2.5	
B2SU	K2106687-009	0.5	1	06/10/21	06/11/21	1.8	
B2S	K2106687-010	0.5	1	06/10/21	06/11/21	1.8	
B1S	K2106687-011	0.5	1	06/10/21	06/11/21	4.7	
B1SU	K2106687-012	0.5	1	06/10/21	06/11/21	1.9	
B8DR	K2106687-013	0.5	1	06/10/21	06/11/21	9.7	
MW4S	K2106687-014	0.5	1	06/10/21	06/11/21	1.1	
Method Blank 1	K2106687-MB1	0.5	1	06/10/21	06/11/21	ND	
Method Blank 2	K2106687-MB2	0.5	1	06/10/21	06/11/21	ND	
Method Blank 3	K2106687-MB3	0.5	1	06/10/21	06/11/21	ND	

ALS Group USA, Corp.
dba ALS Environmental
QA/QC Report

Client:	Dragon Analytical Laboratory	**Service Request:**	K2106687
Project:	Landfill Wet Season/210604-09	**Date Collected:**	06/04/21
Sample Matrix:	Wastewater	**Date Received:**	06/10/21
		Date Extracted:	06/10/21
		Date Analyzed:	06/11/21

Matrix Spike/Duplicate Matrix Spike Summary
Total Metals

Sample Name:	CNE1S	Units:	ng/L
Lab Code:	K2106687-001MS, K2106687-001DMS	Basis:	NA
Test Notes:			

Analyte	Prep Method	Analysis Method	MRL	Spike Level MS	Spike Level DMS	Sample Result	Spike Result MS	Spike Result DMS	Percent Recovery MS	Percent Recovery DMS	ALS Acceptance Limits	Relative Percent Difference	Result Notes
Mercury	METHOD	1631E	0.5	50	50	1.8	54.6	54.8	106	106	71-125	<1	

ALS Group USA, Corp.
dba ALS Environmental
QA/QC Report

Client:	Dragon Analytical Laboratory	**Service Request:**	K2106687
Project:	Landfill Wet Season/210604-09	**Date Collected:**	NA
LCS Matrix:	Water	**Date Received:**	NA
		Date Extracted:	NA
		Date Analyzed:	06/11/21

Ongoing Precision and Recovery (OPR) Sample Summary
Total Metals

Sample Name: Ongoing Precision and Recovery (Initial)

Units: ng/L
Basis: NA

Test Notes:

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	ALS Percent Recovery Acceptance Limits	Result Notes
Mercury	METHOD	1631E	5.00	5.18	104	77-123	

ALS Group USA, Corp.
dba ALS Environmental
QA/QC Report

Client:	Dragon Analytical Laboratory	**Service Request:**	K2106687
Project:	Landfill Wet Season/210604-09	**Date Collected:**	NA
LCS Matrix:	Water	**Date Received:**	NA
		Date Extracted:	NA
		Date Analyzed:	06/11/21

Ongoing Precision and Recovery (OPR) Sample Summary
Total Metals

Sample Name: Ongoing Precision and Recovery (Final)

Units: ng/L
Basis: NA

Test Notes:

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	ALS Percent Recovery Acceptance Limits	Result Notes
Mercury	METHOD	1631E	5.00	5.16	103	77-123	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	Dragon Analytical Laboratory	**Service Request:**	K2106687
Project:	Landfill Wet Season/210604-09	**Date Collected:**	NA
LCS Matrix:	Water	**Date Received:**	NA
		Date Extracted:	6/10/2021
		Date Analyzed:	06/11/21

Quality Control Sample (QCS) Summary
Total Metals

Sample Name: Quality Control Sample

Units: ng/L
Basis: NA

Test Notes:

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	ALS Percent Recovery Acceptance Limits	Result Notes
Mercury	METHOD	1631E	5.00	4.67	93	77-123	

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value.
J	The result is an estimated value.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.