Cathcart Landfill Environmental Monitoring Report

Second Semiannual and Annual Summary

2024

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1.0 INTRODUCTION

The following report presents the results of groundwater, surface water, landfill gas, and associated infrastructure monitoring for the second semiannual monitoring period (*July through December*) of 2024 and the annual 2024 summary environmental monitoring report for the Cathcart Sanitary Landfill (*Landfill, site*). The site is located at 8915 Cathcart Way, just west of the intersection of Cathcart Way and State Route 9 in south-central Snohomish County, Washington. The location of the site relative to existing municipal improvements is shown on the **Vicinity Map** (***Figure 1***).

1.1 BACKGROUND

The Cathcart Landfill was designed and permitted in the late 1970s and was operated as a solid waste landfill for 12 years and ceased accepting any new solid waste in June 1992.

The closed landfill is approximately 60 acres in area and is part of a larger County parcel. The Cathcart Landfill is bounded by private residential property to the northwest, north and east and by other Snohomish County facilities to the south and west. Existing site improvements and the site layout are shown on the **Site Map** (***Figure 2***), and existing site topography is shown on the **Site Topographic Map** (***Figure 3***). Surficial geology of the site area is shown on the **Geologic Map** (***Figure 4***).

Leachate is collected and gravity flows to a pretreatment facility, after which it is pumped to the **City of Everett's** Wastewater Treatment Plant for final treatment and discharge. Gas generated by the landfill is collected and extracted through a negatively pressurized system and discharged through an on-site gas flaring facility.

The Landfill is currently permitted for post-closure monitoring by the Snohomish Health District (*SHD*) with a Solid Waste Facility Permit (*SW-011, SHD 2024*). Monitoring results are reviewed by both the SHD and the Department of Ecology.

1.2 MONITORING PROGRAM

The site is currently monitored following the procedures outlined in the current Sampling and Analysis Plan (***SAP***, *Snohomish County, 2020*), which was approved by Ecology and SHD in their letters dated December 11 and 17, 2020, respectively. The SAP includes changes to the monitoring program that were proposed in the County's Application of Variance, which was submitted to the SHD in 2018; the changes were conditionally approved by SHD with input from Ecology in their letter dated December 6, 2018. These changes to the monitoring program are summarized as follows:

- **Groundwater Monitoring:** Sample frequency at all wells (*except for G-09S, G-09D, G-10S, and G-10D*) reduced from quarterly to semiannual; reporting for all wells will be completed on a semiannual basis. Chemical analytical suites will remain unchanged from those specified in the 2006 SAP.
    - Wells G-09S, G-09D, G-10S, and G-10D will continue to be sampled quarterly and will be reported in the semiannual monitoring reports. Due to a gap in the data

for wells G-09S, G-09D, and G-10S between the third quarter 2013 and the third quarter of 2018, eight additional quarters of monitoring will be conducted to determine if a reduction to semiannual sampling frequency is warranted at those wells. Additionally, low vinyl chloride concentrations detected in those wells historically will be further evaluated during the additional quarterly monitoring period.

As of the second quarter 2024, statistical analysis for metals in groundwater is now performed on total metals instead of dissolved metals per Ecology request. Only two dissolved metals (*iron and manganese*) remain in the statistical analysis suite.

- **Landfill Gas Monitoring:** Quarterly monitoring at all currently monitored gas probes, barholes, vaults, and lift stations will be maintained, and new soil gas probe GP-6 will be integrated into the gas probe monitoring program to monitor for landfill gas migration on the northern edge of the Cathcart property, near the closest residences. Monitoring results will be included in the semiannual monitoring reports.
- **Surface Water Sampling:** Sample frequency at all monitoring points was reduced to semiannual; two monitoring points (*CC-D1 and CC-J*) were eliminated from the surface water monitoring program based on redundancy/accessibility concerns for those locations. Monitoring results will be included in the semiannual monitoring reports. Chemical analytical suites remain unchanged.

1.2.1 Groundwater Monitoring Network

Currently, a total of 17 groundwater monitoring wells (*eight shallow wells and nine deep wells*), are monitored on a semiannual basis. Of these wells, four-(*4*) are considered upgradient, and 13 are considered to be within the landfill footprint or downgradient site wells. Well locations are shown on the **Monitoring Network Map** (***Figure 5***). Groundwater monitoring results are summarized in **Section 2.0** of this report.

1.2.2 *Surface Water Monitoring Network*

Surface water monitoring stations have been established along Garden Creek and in the site stormwater detention ponds per the **SAP**. The seven surface water sampling locations consist of one sampling location upgradient of the site and six sampling locations within and downgradient of the site. Sampling locations are shown on **Monitoring Network Map** (***Figure 5***). Semiannual surface water monitoring results are summarized in **Section 3.0** of this report.

1.2.3 Landfill Gas Monitoring Network

Per the **SAP**, landfill gas monitoring is conducted quarterly and includes measurement of methane, oxygen, and carbon dioxide. The existing gas monitoring system consists of eight gas probes, six permanently-installed barhole probes, seven vaults, 19 manholes, and two lift stations, which surround the landfill. The gas monitoring locations are shown on the **Monitoring**

Network Maps (***Figures 5 and 5a***). Quarterly landfill gas monitoring results are summarized and discussed in **Section 4.0** of this report.

2.0 GROUNDWATER MONITORING

The second semiannual groundwater monitoring events for 2024 were performed by Snohomish County personnel on July 16 and October 1 and 2, 2024.

Depths to water were measured and groundwater samples were collected in accordance with the approved **SAP**. Hydrographs of the historical and current groundwater elevations and precipitation totals are included in ***Appendix A***. The **Second Semiannual 2024 Groundwater Measurements** and comparison with the previous monitoring event elevation data (*delta*) are shown in *Table 1* below.

Table 1 – Second Semiannual 2024 Groundwater Measurements

Well Number	Sample Date	Top of Casing Elevation (feet above MSL)	Water Elevation (feet above MSL)	Delta* (feet)
Shallow Wells – Third Quarter 2024				
G-09S	7/16/24	273.08	242.31	-1.07
G-10S	7/16/24	266.94	243.16	-0.57
Shallow Wells – Fourth Quarter 2024				
G-01A	10/1/24	229.00	218.39	-1.66
G-04A	10/1/24	286.52	DRY	NA
G-08D1	10/1/24	222.02	193.64	-5.83
G-09S	10/2/24	273.08	240.73	-1.58
G-10S	10/2/24	266.94	242.04	-1.12
G-11S	10/2/24	250.74	231.50	-0.93
G-14S	10/1/24	328.76	313.84	-5.67
G-24S	10/1/24	321.13	306.82	-1.18
Deep Wells – Third Quarter 2024				
G-09D	7/16/24	274.60	223.31	-0.14
G-10D	7/16/24	268.32	237.73	-0.12
Deep Wells – Fourth Quarter 2024				
G-01D	10/1/24	229.96	204.71	-1.48
G-02D	10/1/24	242.10	212.12	-0.08
G-06B	10/1/24	246.24	213.02	+1.81
G-08D2	10/1/24	221.62	212.38	-4.53
G-09D	10/2/24	274.60	220.99	-2.32
G-10D	10/2/24	268.32	237.33	-0.40
G-13D	10/2/24	232.17	220.17	-0.64
G-14D	10/1/24	329.58	297.84	-0.89
G-24D	10/1/24	320.51	301.61	-0.19

MSL = Mean sea level

* Delta = Change in groundwater elevation from previous sampling event; wells 09S/09D and 10S/10D are sampled quarterly

Groundwater Contour Maps for the shallow and deep zones during 2024 (*i.e., for the second and fourth quarter monitoring events*) are included as ***Figures 6a through 6d*** of this report.

2.2 GROUNDWATER SAMPLING

Four wells were sampled during the first and third quarters (*G-09S, G-09D, G-10S, and G-10D*); 17 wells were sampled during the second quarter, and 16 wells were sampled during the fourth

quarter in accordance with the procedures outlined in the **SAP** and the modified schedule in the approved Variance. Well performance was consistent with recent sampling events at all wells.

Samples were transported to Am Test, Inc. of Kirkland, Washington under chain-of-custody for analysis of dissolved metals, volatile organic compounds (*VOCs*), and conventional chemistry parameters. The analytical results are tabulated in ***Appendix B*** of this report and discussed below.

2.3 EVALUATION OF GROUNDWATER ANALYTICAL RESULTS

Each of the groundwater samples collected during 2024 are compared to the applicable groundwater quality standards which are summarized in ***Tables 2 and 3*** below and in ***Appendix B***. Notable observations or deviations from scope are noted below:

2.3.1 Shallow Wells

- Well G-04A did not contain sufficient water for sampling during the fourth quarter monitoring event.
- The total manganese concentration in well G-11S increased two orders of magnitude between the second and fourth quarters of 2024.
- The VOCs detected in shallow wells during the 2024 sampling events include:
    - Cis-1,2-dichloroethene – well G-10S (*third quarter*), wells G-09S and G-10S (*fourth quarter*)
    - Bromomethane – well G-08D1 (*fourth quarter*)
    - Vinyl chloride – well G-09S (*fourth quarter*)
    - The acetone and/or methylene chloride concentrations detected in multiple wells during the second, third, and fourth quarters are likely artifacts of cross-contamination during sampling or analysis based on the presence of those compounds in trip blanks and laboratory calibration blanks during those events.

Table 2 – Summary of Annual 2024 Shallow Well Standard Exceedances

Well Type	Well ID	Sample Date	Parameter	Units	Result	Groundwater Standard
Downgradient	G-01A	4/16/24	pH Total arsenic	std units mg/L	5.95 0.000164	6.5-8.5 0.00005
		10/1/24	pH Total arsenic Dissolved arsenic	std units µg/L µg/L	5.14 0.28 0.321	6.5-8.5 0.00005
	G-04A	4/17/24	pH Total arsenic Total iron Total manganese Dissolved iron Dissolved manganese	std units mg/L mg/L mg/L mg/L mg/L	5.82 0.002414 20.5 7.0 25.3 7.59	6.5-8.5 0.00005 0.3 0.05 0.3 0.05
		10/1/24	Insufficient water for sampling			
	G-08D1	4/16/24	pH Dissolved sodium Total arsenic Total iron Total manganese	std units mg/L mg/L mg/L mg/L	8.96 104 0.001231 4.98 0.069	6.5-8.5 20 0.00005 0.3 0.05

Table 2 – Summary of Annual 2024 Shallow Well Standard Exceedances

Well Type	Well ID	Sample Date	Parameter	Units	Result	Groundwater Standard
Downgradient	G-08D1 (cont.)	10/1/24	pH	std units	8.81	6.5-8.5
			Dissolved sodium	mg/L	94.2	20
			Total arsenic	µg/L	1.367	0.05
			Total iron	µg/L	2450	300
			Dissolved arsenic	µg/L	2.225	0.05
	G-09S	1/10/24	Conductivity	µmhos/cm	920	700
			pH	std units	5.75	6.5-8.5
			Dissolved sodium	mg/L	80.6	20
			TDS	mg/L	640	500
			Total arsenic	mg/L	0.00062	0.00005
			Total iron	mg/L	0.435	0.3
			Total manganese	mg/L	0.075	0.05
		4/17/24	Conductivity	µmhos/cm	1070	700
			pH	std units	6.03	6.5-8.5
			Dissolved sodium	mg/L	100	20
			TDS	mg/L	649	500
			Total arsenic	mg/L	0.000557	0.00005
			Total iron	mg/L	0.498	0.3
			Total manganese	mg/L	0.114	0.05
			Dissolved manganese	mg/L	0.059	0.05
		7/16/24	Conductivity	µmhos/cm	1010	700
			pH	std units	6.20	6.5-8.5
			Dissolved sodium	mg/L	85.8	20
			TDS	mg/L	662	500
			Total arsenic	µg/L	0.661	0.05
			Total iron	µg/L	363	300
			Total manganese	µg/L	80	50
			Dissolved arsenic	µg/L	0.866	0.05
		10/2/24	pH	std units	5.88	6.5-8.5
			Dissolved sodium	mg/L	154	20
			Total arsenic	µg/L	2.403	0.05
			Total iron	µg/L	1510	300
			Total manganese	µg/L	78	50
			Dissolved arsenic	µg/L	3.128	0.05
	G-10S	1/10/24	Conductivity	µmhos/cm	1300	700
			pH	std units	6.47	6.5-8.5
			Dissolved sodium	mg/L	179	20
			Sulfate	mg/L	270	250
			TDS	mg/L	820	500
			Total arsenic	mg/L	0.00556	0.00005
			Total iron	mg/L	10.4	0.3
			Total manganese	mg/L	3.18	0.05
			Dissolved iron	mg/L	2.89	0.3
			Dissolved manganese	mg/L	2.98	0.05
		4/17/24	Conductivity	µmhos/cm	1250	700
			pH	std units	6.45	6.5-8.5
			Dissolved sodium	mg/L	171	20
			TDS	mg/L	1120	500
			Total arsenic	mg/L	0.004497	0.00005
			Total iron	mg/L	10.1	0.3
			Total manganese	mg/L	2.7	0.05
			Dissolved iron	mg/L	9.41	0.3
			Dissolved manganese	mg/L	2.89	0.05

Table 2 – Summary of Annual 2024 Shallow Well Standard Exceedances

Well Type	Well ID	Sample Date	Parameter	Units	Result	Groundwater Standard
Downgradient	G-10S (cont.)	7/16/24	Conductivity	µmhos/cm	1260	700
			Dissolved sodium	mg/L	142	20
			Sulfate	mg/L	260	250
			TDS	mg/L	827	500
			Total arsenic	µg/L	5.048	0.05
			Total iron	µg/L	9120	300
			Total manganese	µg/L	2420	50
			Dissolved arsenic	µg/L	4.816	0.05
			Dissolved iron	µg/L	6610	300
			Dissolved manganese	µg/L	2200	50
		10/2/24	pH	std units	6.16	6.5-8.5
			Dissolved sodium	mg/L	159	20
			TDS	mg/L	837	500
			Total arsenic	µg/L	5.006	0.05
			Total iron	µg/L	9840	300
			Total manganese	µg/L	3060	50
			Dissolved arsenic	µg/L	4.794	0.05
			Dissolved iron	µg/L	4830	300
			Dissolved manganese	µg/L	2730	50
	G-11S	4/17/24	pH	std units	6.39	6.5-8.5
			Dissolved sodium	mg/L	30.3	20
			Total arsenic	mg/L	0.000504	0.00005
			Dissolved manganese	mg/L	0.134	0.05
		10/2/24	pH	std units	5.92	6.5-8.5
			Dissolved sodium	mg/L	35.3	20
			Total arsenic	µg/L	0.656	0.05
			Total manganese	µg/L	1620	50
			Dissolved arsenic	µg/L	0.578	0.05
			Dissolved manganese	µg/L	87	50
Upgradient	G-14S	4/16/24	pH	std units	8.61	6.5-8.5
			Dissolved sodium	mg/L	93.0	20
			Total arsenic	mg/L	0.001593	0.00005
			Total iron	mg/L	6.1	0.3
			Total manganese	mg/L	0.138	0.05
		10/1/24	Dissolved sodium	mg/L	88.3	20
			Total arsenic	µg/L	2.692	0.05
			Total iron	µg/L	5920	300
			Total manganese	µg/L	147	50
			Dissolved arsenic	µg/L	4.097	0.05
	G-24S	4/16/24	Dissolved sodium	mg/L	76.9	20
			Total arsenic	mg/L	0.000523	0.00005
			Total iron	mg/L	0.526	0.3
		10/1/24	pH	std units	5.85	6.5-8.5
			Dissolved sodium	mg/L	78.6	20
			Total arsenic	µg/L	0.695	0.05
			Total iron	µg/L	397	300
			Dissolved arsenic	µg/L	0.75	0.05

2.3.2 Deep Wells

- The dissolved iron concentrations detected in well G-10D during the third and fourth quarters were an order of magnitude lower than recently measured at that well.
- The VOCs detected in deep wells during the 2024 sampling events include:

- 1,2-dichloropropane (*1,2-DCP*) cis-1,2-dichloroethene (*cis-1,2-DCE*) and/or vinyl chloride were detected in deep zone well G-09D during the first, third, and fourth quarter 2024 monitoring events. Only the vinyl chloride concentrations exceeded the groundwater standard.
- Carbon tetrachloride (*0.28 µg/L*) was detected in the second quarter sample from well G-13D.
- Acetone was detected in six of eight deep zone wells during the second quarter, and methylene chloride was detected in all deep zone samples collected during the third and fourth quarters. These detections appear to be artifacts of contamination imparted during the sampling or analysis process.

Table 3 – Summary of Annual 2024 Deep Well Standard Exceedances

Well Type	Well ID	Sample Date	Parameter	Units	Result	Groundwater Standard
Downgradient	G-01D	4/16/24	pH	std units	8.87	6.5-8.5
			Dissolved sodium	mg/L	134	20
			Total arsenic	mg/L	0.000307	0.00005
			Total iron	mg/L	1.99	0.3
		10/1/24	pH	std units	8.81	6.5-8.5
			Dissolved sodium	mg/L	118	20
			Total arsenic	µg/L	1.032	0.05
			Total iron	µg/L	1850	300
			Dissolved arsenic	µg/L	1.231	0.05
	G-02D	4/16/24	Dissolved sodium	mg/L	79.7	20
			Total arsenic	mg/L	0.005068	0.00005
			Total iron	mg/L	1.09	0.3
		10/1/24	Dissolved sodium	mg/L	68.8	20
			Total arsenic	µg/L	3.372	0.05
			Total iron	µg/L	1300	300
			Dissolved arsenic	µg/L	3.367	0.05
	G-06B	4/16/24	Dissolved sodium	mg/L	161	20
			Total arsenic	mg/L	0.001897	0.00005
			Total iron	mg/L	0.677	0.3
		10/1/24	Dissolved sodium	mg/L	150	20
			Total arsenic	µg/L	2.754	0.05
			Total iron	µg/L	2330	300
			Total manganese	µg/L	107	50
			Dissolved arsenic	µg/L	4.399	0.05
	G-08D2	4/16/24	pH	std units	9.23	6.5-8.5
			Dissolved sodium	mg/L	103	20
			Total arsenic	mg/L	0.000849	0.00005
			Total iron	mg/L	9.16	0.3
			Total manganese	mg/L	0.171	0.05
		10/1/24	pH	std units	9.06	6.5-8.5
			Dissolved sodium	mg/L	89.7	20
			Total arsenic	µg/L	0.758	0.05
			Total iron	µg/L	7330	300
			Total manganese	µg/L	159	50
			Dissolved arsenic	µg/L	0.819	0.05

Table 3 – Summary of Annual 2024 Deep Well Standard Exceedances

Well Type	Well ID	Sample Date	Parameter	Units	Result	Groundwater Standard
Downgradient	G-09D	1/10/24	Conductivity	µmhos/cm	760	700
			pH	std units	8.75	6.5-8.5
			Dissolved sodium	mg/L	167	20
			Total arsenic	mg/L	0.00256	0.00005
			Total iron	mg/L	2.32	0.3
			Total manganese	mg/L	0.102	0.05
			Vinyl chloride	µg/L	0.27	0.02
		4/17/24	Conductivity	µmhos/cm	701	700
			pH	std units	8.99	6.5-8.5
			Dissolved sodium	mg/L	167	20
			Total arsenic	mg/L	0.002185	0.00005
			Total iron	mg/L	1.8	0.3
			Total manganese	mg/L	0.077	0.05
		7/16/24	pH	std units	8.63	6.5-8.5
			Dissolved sodium	mg/L	138	20
			Total arsenic	µg/L	2.201	0.05
			Total iron	µg/L	1360	300
			Dissolved arsenic	µg/L	2.854	0.05
		10/2/24	Conductivity	µmhos/cm	954	700
			pH	std units	8.71	6.5-8.5
			Dissolved sodium	mg/L	87.8	20
			TDS	mg/L	622	500
			Total arsenic	µg/L	0.906	0.05
			Total iron	µg/L	591	300
			Total manganese	µg/L	82	50
			Dissolved arsenic	µg/L	0.923	0.05
			Vinyl chloride	µg/L	0.04	0.02
	G-10D	1/10/24	Conductivity	µmhos/cm	1500	700
			Dissolved sodium	mg/L	326	20
			Sulfate	mg/L	257	250
			TDS	mg/L	1000	500
			Total arsenic	mg/L	0.00108	0.00005
			Total iron	mg/L	0.51	0.3
			Total manganese	mg/L	0.32	0.05
			Dissolved iron	mg/L	0.33	0.3
			Dissolved manganese	mg/L	0.257	0.05
		4/17/24	Conductivity	µmhos/cm	1470	700
			Dissolved sodium	mg/L	329	20
			TDS	mg/L	979	500
			Total arsenic	mg/L	0.001167	0.00005
			Total iron	mg/L	0.491	0.3
			Total manganese	mg/L	0.266	0.05
			Dissolved iron	mg/L	0.451	0.3
			Dissolved manganese	mg/L	0.285	0.05
		7/16/24	Conductivity	µmhos/cm	1500	700
			Dissolved sodium	mg/L	281	20
			TDS	mg/L	957	500
			Total arsenic	µg/L	1.314	0.05
			Total iron	µg/L	356	300
			Total manganese	µg/L	196	50
			Dissolved arsenic	µg/L	1.293	0.05
			Dissolved manganese	µg/L	178	50

Table 3 – Summary of Annual 2024 Deep Well Standard Exceedances

Well Type	Well ID	Sample Date	Parameter	Units	Result	Groundwater Standard
Downgradient	G-10D (cont.)	10/2/24	Dissolved sodium	mg/L	333	20
			TDS	mg/L	957	500
			Total arsenic	µg/L	1.615	0.05
			Total iron	µg/L	377	300
			Total manganese	µg/L	269	50
			Dissolved arsenic	µg/L	1.726	0.05
			Dissolved manganese	µg/L	246	50
	G-13D	4/17/24	pH	std units	8.83	6.5-8.5
			Dissolved sodium	mg/L	102	20
			Total arsenic	mg/L	0.000248	0.00005
			Total iron	mg/L	0.905	0.3
		10/2/24	pH	std units	8.63	6.5-8.5
			Dissolved sodium	mg/L	95.8	20
			Total arsenic	µg/L	0.362	0.05
			Total iron	µg/L	382	300
			Dissolved arsenic	µg/L	0.412	0.05
Upgradient	G-14D	4/16/24	pH	std units	9.06	6.5-8.5
			Dissolved sodium	mg/L	112	20
			Total arsenic	mg/L	0.000517	0.00005
			Total iron	mg/L	5.1	0.3
			Total manganese	mg/L	0.066	0.05
		10/1/24	pH	std units	8.80	6.5-8.5
			Dissolved sodium	mg/L	99.6	20
			Total arsenic	µg/L	0.821	0.05
			Total iron	µg/L	5950	300
			Total manganese	µg/L	88	50
			Dissolved arsenic	µg/L	0.985	0.05
	G-24D	4/16/24	Sodium	mg/L	114	20
		10/1/24	Sodium	mg/L	99.8	20
			Total arsenic	µg/L	0.171	0.05
			Dissolved arsenic	µg/L	0.08	0.05

2.4 STATISTICAL EVALUATION

Where exceedances to the WAC groundwater standards occur, statistical analysis is performed as specified in the **SAP** using **DUMPStat Statistical Software** (*Version 3.0 by Robert D. Gibbons Ltd., 2018*) to determine the significance of the change.

Details regarding the statistical analyses are found in the SAP and in monitoring reports submitted prior to 2019. Per **Ecology** and **Snohomish Health District** request, the statistical prediction limits for each groundwater zone were previously updated in the first quarter of the year and subsequent data sets were compared against that prediction limit. However, since the first semiannual monitoring event for all wells does not occur until the second quarter, the prediction limits are updated annually following the second quarter sampling event.

2.4.1 Shallow Groundwater Well Statistical Results

Analytes that exceeded the calculated prediction limits in the shallow zone wells and the observed concentration trends are summarized in ***Tables 4 and 5*** below and ***Appendix B***. Plots of the shallow zone groundwater statistical analyses are included in ***Appendix C***.

Table 4 – Summary of Annual 2024 Shallow Well Prediction Limit Exceedances

Well Type	Well ID	Sample Date	Parameter	Units	Result	Prediction Limit
Downgradient	G-01A	4/16/24	pH	std units	5.95	6.60-9.34
		10/1/24	pH	std units	5.14	6.60-9.34
	G-04A	4/17/24	Bicarbonate	mg/L	220	210
			Dissolved calcium	mg/L	53.6	20.0173
			Chloride	mg/L	30.1	16.4022
			Conductivity	µmhos/cm	572	540
			Dissolved magnesium	mg/L	31.2	28.2158
			pH	std units	5.82	6.60-9.34
			Dissolved potassium	mg/L	2.72	1.5082
			TDS	mg/L	390	364.0196
			Total cobalt	mg/L	0.021	0.007
			Total manganese	mg/L	7.0	0.487
			Dissolved iron	mg/L	25.3	9.1501
		10/1/24	Not sampled due to insufficient water			
	G-08D1	4/16/24	None	--	--	--
		10/1/24	None	--	--	--
	G-09S	1/10/24	Alkalinity	mg/L	350	230
			Bicarbonate	mg/L	350	210
			Dissolved calcium	mg/L	71.1	20.0173
			Conductivity	µmhos/cm	920	540
			pH	std units	5.75	6.60-9.34
			Dissolved potassium	mg/L	4.81	1.5082
			TDS	mg/L	640	364.0196
			Dissolved selenium	mg/L	0.0012	0.0004
		4/17/24	Alkalinity	mg/L	360	230
			Bicarbonate	mg/L	360	210
			Dissolved calcium	mg/L	89.4	20.0173
			Conductivity	µmhos/cm	1070	540
			Dissolved magnesium	mg/L	34.3	28.2158
			pH	std units	6.03	6.60-9.34
			Dissolved potassium	mg/L	7.53	1.5082
			TDS	mg/L	649	364.0196
			Total silver	mg/L	0.001527	0.0006
		7/16/24	Alkalinity	mg/L	361	230
			Bicarbonate	mg/L	361	210
			Dissolved calcium	mg/L	65.7	20.0173
			Conductivity	µmhos/cm	1010	540
			pH	std units	6.20	6.60-9.34
			Dissolved potassium	mg/L	5.06	1.5082
			TDS	mg/L	662	364.0196
			Total silver	µg/L	1.647	0.6
		10/2/24	Conductivity	µmhos/cm	648	540
			pH	std units	5.88	6.60-9.34
			Dissolved sodium	mg/L	154	114
			TDS	mg/L	410	364.0196

Table 4 – Summary of Annual 2024 Shallow Well Prediction Limit Exceedances

Well Type	Well ID	Sample Date	Parameter	Units	Result	Prediction Limit
Downgradient	G-10S	1/10/24	Alkalinity	mg/L	430	230
			Bicarbonate	mg/L	430	210
			Dissolved calcium	mg/L	94.7	21.056
			Conductivity	µmhos/cm	1300	540
			Nitrite	mg/L	0.01	0.0093
			pH	std units	6.47	6.60-9.39
			Dissolved potassium	mg/L	4.28	2.64
			Dissolved sodium	mg/L	179	120.347
			TDS	mg/L	820	373.9926
			Dissolved arsenic	mg/L	0.00489	0.0045
		4/17/24	Alkalinity	mg/L	428	230
			Bicarbonate	mg/L	428	210
			Dissolved calcium	mg/L	92.8	20.0173
			Conductivity	µmhos/cm	1250	540
			pH	std units	6.45	6.60-9.34
			Dissolved potassium	mg/L	5.48	1.5082
			Dissolved sodium	mg/L	171	114
			TDS	mg/L	1120	364.0196
			Total manganese	mg/L	2.7	0.487
			Dissolved iron	mg/L	9.41	9.1501
		7/16/24	Alkalinity	mg/L	423	230
			Bicarbonate	mg/L	423	210
			Dissolved calcium	mg/L	69.7	20.0173
			Conductivity	µmhos/cm	1260	540
			Dissolved potassium	mg/L	3.52	1.5082
			Dissolved sodium	mg/L	142	114
			TDS	mg/L	827	364.0196
			Total arsenic	µg/L	5.048	4.9
			Total manganese	µg/L	2420	487
		10/2/24	Alkalinity	mg/L	451	230
			Bicarbonate	mg/L	451	210
			Dissolved calcium	mg/L	79.8	20.0173
			pH	std units	6.16	6.60-9.34
			Dissolved potassium	mg/L	3.36	1.5082
			Dissolved sodium	mg/L	159	114
			TDS	mg/L	837	364.0196
			Total arsenic	µg/L	5.006	4.9
			Total manganese	µg/L	3060	487
	G-11S	4/17/24	pH	std units	6.39	6.60-9.34
		10/2/24	pH	std units	5.92	6.60-9.34
			Total manganese	µg/L	1620	487
Upgradient	G-14S	4/16/24	None	--	--	--
		10/1/24	None	--	--	--
	G-24S	4/16/24	None	--	--	--
		10/1/24	pH	std units	5.85	6.60-9.34

Significant increasing and decreasing concentration trends for the second semiannual 2024 monitoring events and for 2024 overall were noted in shallow groundwater, as summarized in ***Table 5*** below.

Table 5 – Significant Trends, Shallow Wells 2024

Well	Date	Significant Trends			
		Second Semiannual 2024		2024 Overall	
		Increasing	Decreasing	Increasing	Decreasing
Downgradient Wells					
G-01A	10/1/24	None	None	None	None
G-04A	10/1/24	NS	NS	Alkalinity, bicarbonate, dissolved calcium, conductivity, dissolved magnesium, dissolved potassium, dissolved sodium, total manganese, dissolved manganese	None
G-08D1	10/1/24	None	Chloride, **pH**, **sulfate**	Dissolved sodium	Chloride, pH, sulfate
G-09S	7/16/24	None	Sulfate, total iron, total lead, total manganese	None	pH, sulfate, total iron, total lead, total manganese, dissolved manganese
G-09S	10/2/24	None	**pH**, sulfate, total lead, total manganese, **dissolved manganese**		
G-10S	7/16/24	None	Chloride, **dissolved magnesium**, sulfate, dissolved iron, dissolved manganese	None	Calcium, chloride, dissolved magnesium, sulfate, dissolved iron, dissolved manganese
G-10S	10/2/24	None	**Calcium**, chloride, dissolved magnesium, sulfate, dissolved iron, dissolved manganese		
G-11S	10/2/24	Dissolved calcium, dissolved magnesium, total manganese, dissolved manganese	Dissolved sodium	Dissolved calcium, dissolved magnesium, total manganese, dissolved manganese	Alkalinity, bicarbonate, dissolved sodium, sulfate
Upgradient Wells					
G-14S	10/1/24	None	Chloride, sulfate	None	Chloride, nitrate, sulfate
G-24S	10/1/24	None	Dissolved calcium, chloride, dissolved potassium, sulfate	None	Dissolved calcium, chloride, dissolved magnesium, dissolved potassium, sulfate

Constituents in **bold** (if any) indicate a new trend noted since the previous monitoring period
NS = Not sampled due to insufficient water

Decreasing trends in the shallow wells outnumbered increasing trends during all four 2024 sampling events, including the first quarter sampling event (*6 decreasing/0 increasing*), second quarter sampling event (*20 decreasing/14 increasing*), third quarter sampling event (*9 decreasing/0 increasing*), and fourth quarter sampling event (*21 decreasing/4 increasing*).

Increasing trends were limited to downgradient wells during the 2024 sampling events, primarily wells G-04A and G-11S.

2.4.2 Deep Groundwater Well Statistical Results

Analytes that exceeded the calculated prediction limits in the deep zone wells and the observed concentration trends for the second semiannual 2024 events are summarized in ***Tables 6 and 7*** below and in ***Appendix B***. Plots of the deep zone groundwater statistical analyses are included in ***Appendix C***.

Table 6 – Summary of Annual 2024 Deep Well Prediction Limit Exceedances

Well Type	Well ID	Sample Date	Parameter	Units	Result	Prediction Limit
Downgradient	G-01D	4/16/24	Conductivity	µmhos/cm	605	530
		10/1/24	Chloride	mg/L	7.67	6.86
			Conductivity	µmhos/cm	567	530
	G-02D	4/16/24	None	--	--	--
		10/1/24	Ammonia	mg/L	0.281	0.2465
			pH	std units	6.56	7.42-9.88
			Total copper	µg/L	63	15
			Total lead	µg/L	1.959	1.9
	G-06B	4/16/24	Conductivity	µmhos/cm	666	530
			Dissolved sodium	mg/L	161	137.2145
		10/1/24	Chloride	mg/L	7.43	6.86
			Conductivity	µmhos/cm	662	530
			Nitrate	mg/L	0.448	0.28
			pH	std units	7.29	7.42-9.88
			Dissolved sodium	mg/L	150	137.2145
			TDS	mg/L	400	355
			Total copper	µg/L	37	15
	G-08D2	4/16/24	Total barium	mg/L	0.047	0.043
			Total manganese	mg/L	0.171	0.152
		10/1/24	Total manganese	µg/L	159	152
	G-09D	1/10/24	Dissolved calcium	mg/L	1.68	1.59
			Chloride	mg/L	9.48	6.86
			Conductivity	µmhos/cm	760	530
			Nitrate	mg/L	1.3	0.28
			Dissolved sodium	mg/L	167	137.1404
			Sulfate	mg/L	152	66.05
			TDS	mg/L	440	355
			Dissolved arsenic	mg/L	0.00249	0.0015
		4/17/24	Conductivity	µmhos/cm	701	530
			Dissolved sodium	mg/L	167	137.2145
			Sulfate	mg/L	429	355
			Total arsenic	mg/L	0.001932	0.0019
		7/16/24	Conductivity	µmhos/cm	664	530
			Dissolved sodium	mg/L	138	137.2145
			Sulfate	mg/L	110	66.05
			TDS	mg/L	400	355

Table 6 – Summary of Annual 2024 Deep Well Prediction Limit Exceedances

Well Type	Well ID	Sample Date	Parameter	Units	Result	Prediction Limit
Downgradient	G-09D (cont.)	10/2/24	Alkalinity	mg/L	367	280
			Bicarbonate	mg/L	367	280
			Dissolved calcium	mg/L	71.8	1.59
			Conductivity	µmhos/cm	954	530
			Dissolved magnesium	mg/L	28.9	2.33
			Dissolved potassium	mg/L	4.69	1.45
			Sulfate	mg/L	164	66.05
			TDS	mg/L	622	355
			Total silver	µg/L	1.443	0.6
			Dissolved manganese	µg/L	23	19
	G-10D	1/10/24	Alkalinity	mg/L	520	280
			Ammonia	mg/L	0.321	0.249
			Bicarbonate	mg/L	520	280
			Dissolved calcium	mg/L	17.2	1.59
			Chloride	mg/L	13.8	6.86
			Conductivity	µmhos/cm	1500	530
			pH	std units	6.67	7.42-9.88
			Dissolved sodium	mg/L	326	137.1404
			Sulfate	mg/L	257	66.05
			TDS	mg/L	1000	355
			Dissolved manganese	mg/L	0.257	0.012
		4/17/24	Alkalinity	mg/L	503	280
			Ammonia	mg/L	0.315	0.2465
			Bicarbonate	mg/L	503	280
			Dissolved calcium	mg/L	17.4	1.59
			Chloride	mg/L	8.28	6.86
			Conductivity	µmhos/cm	1470	530
			pH	std units	7.00	7.42-9.88
			Dissolved potassium	mg/L	2.9	1.45
			Dissolved sodium	mg/L	329	137.2145
			Sulfate	mg/L	229	66.05
			TDS	mg/L	979	355
			Dissolved manganese	mg/L	0.266	0.152
			Total manganese	mg/L	0.285	0.019
		7/16/24	Alkalinity	mg/L	518	280
			Ammonia	mg/L	0.308	0.2465
			Bicarbonate	mg/L	518	280
			Dissolved calcium	mg/L	11.7	1.59
			Chloride	mg/L	16.2	6.86
			Conductivity	µmhos/cm	1500	530
			pH	std units	7.01	7.42-9.88
			Dissolved potassium	mg/L	1.74	1.45
			Dissolved sodium	mg/L	281	137.2145
			Sulfate	mg/L	248	66.05
			TDS	mg/L	957	355
			Total manganese	µg/L	196	152
			Dissolved manganese	µg/L	178	19

Table 6 – Summary of Annual 2024 Deep Well Prediction Limit Exceedances

Well Type	Well ID	Sample Date	Parameter	Units	Result	Prediction Limit
Downgradient	G-10D (cont.)	10/2/24	Alkalinity	mg/L	507	280
			Ammonia	mg/L	0.326	0.2465
			Bicarbonate	mg/L	507	280
			Dissolved calcium	mg/L	15.2	1.59
			Chloride	mg/L	17.3	6.86
			pH	std units	6.84	7.42-9.88
			Dissolved potassium	mg/L	1.78	1.45
			Dissolved sodium	mg/L	333	137.2145
			Sulfate	mg/L	248	66.05
			TDS	mg/L	957	355
			Total manganese	µg/L	269	152
			Dissolved manganese	µg/L	246	19
	G-13D	4/17/24	None	--	--	--
		10/2/24	Chloride	mg/L	12.3	6.86
Upgradient	G-14D	4/16/24	None	--	--	--
		10/1/24	None	--	--	--
	G-24D	4/16/24	None	--	--	--
		10/1/24	None	--	--	--

The trends noted in deep wells during the first semiannual event are summarized in ***Table 7*** below and in ***Appendix B***. Decreasing trends in the deep wells outnumbered increasing trends during all four 2024 sampling events, including the first quarter sampling event (*8 decreasing/2 increasing*), second quarter event (*29 decreasing/5 increasing*), third quarter sampling event (*9 decreasing/0 increasing*), and fourth quarter sampling event (*30 decreasing/2 increasing*). Only one of the increasing trends during 2024 was noted in an upgradient well during the second quarter event (*sodium, well G-24D*).

Table 7 – Significant Trends, Deep Wells 2024

Well	Date	Significant Trends			
		Second Semiannual 2024		2024 Overall	
		Increasing	Decreasing	Increasing	Decreasing
Downgradient Wells					
G-01D	10/1/24	None	Alkalinity, bicarbonate, dissolved calcium, conductivity, dissolved sodium, TDS	None	Alkalinity, bicarbonate, dissolved calcium, conductivity, dissolved sodium, TDS
G-02D	10/1/24	Total arsenic	Dissolved calcium, chloride, conductivity, nitrate, pH, Dissolved sodium, sulfate, TDS	Total arsenic	Dissolved calcium, chloride, conductivity, nitrate, pH, Dissolved sodium, sulfate, TDS

Table 7 – Significant Trends, Deep Wells 2024

Well	Date	Significant Trends			
		Second Semiannual 2024		2024 Overall	
		Increasing	Decreasing	Increasing	Decreasing
G-06B	10/1/24	**Total arsenic**	**Dissolved calcium**, **chloride**, sulfate	None	Sulfate, total manganese
G-08D2	10/1/24	None	Dissolved calcium, chloride	Sodium	Dissolved calcium, chloride
G-09D	7/16/24	None	Total arsenic	None	Total arsenic, dissolved arsenic, dissolved lead
	10/2/24	None	Total arsenic		
G-10D	7/16/24	Alkalinity, bicarbonate	Dissolved calcium, chloride, dissolved magnesium, sulfate, total iron, total manganese, dissolved iron, dissolved manganese	Alkalinity, bicarbonate	Dissolved calcium, chloride, dissolved magnesium, sulfate, total iron, total manganese, dissolved iron, dissolved manganese
	10/2/24	None	Dissolved calcium, chloride, dissolved magnesium, sulfate, total iron, total manganese, dissolved iron, dissolved manganese		
G-13D	10/2/24	None	Sulfate	None	Sulfate
Upgradient Wells					
G-14D	10/1/24	None	Chloride	None	Chloride
G-24D	10/1/24	None	None	Dissolved sodium	None

Constituents in **bold** indicate a new trend noted since the previous monitoring period

3.0 SURFACE WATER MONITORING

Snohomish County performed surface water sampling during the second half of 2024 as required by the landfill permit and consistent with the **SAP** and approved Application of Variance.

3.1 SURFACE WATER SAMPLING

Snohomish County field personnel collected surface water samples from four locations on January 10, 2024 and from one location on July 16, 2024 in accordance with the **SAP** procedures. The 2024 surface water analytical results were compared to applicable criteria in **Chapter 173-201A WAC** as summarized ***Table 8*** below.

Table 8 – Semiannual 2024 Surface Water Analytical Results

Sample Point	Date	Fecal Coliform	Conductivity	Nitrate as N	pH
	Criteria:	200	--	--	5.5-6.5
	Units:	CFM/100 mL	µmhos/cm	mg/L	std units
First Quarter					
CC-A1	1/10/24	61	100	1.7	5.91
CC-B1	1/10/24	23	110	1.5	5.99
CC-D	1/10/24	NS	NS	NS	NS
CC-F	1/10/24	36	110	1.6	6.18
CC-NSDP	1/10/24	6	150	0.36	5.68
Third Quarter					
CC-A1	7/16/24	NS	NS	NS	NS
CC-B1	7/16/24	NS	NS	NS	NS
CC-D	7/16/24	NS	NS	NS	NS
CC-F	7/16/24	NS	NS	NS	NS
CC-NSDP	7/16/24	33	284	ND<0.02	6.10

NS = Not sampled – location was dry, ND = Not detected at the indicated laboratory detection limit
Values in **bold** exceed the listed water quality criteria

None of the fecal coliform or pH concentrations detected during the 2024 surface water sampling events exceeded their respective surface water quality criteria.

4.0 LANDFILL GAS MONITORING

Landfill gas readings were collected from eight gas probes in accordance with the SAP on August 16 and November 22, 2024. Landfill gas readings were also collected from seven vaults, six barhole probes, and two lift station vaults on those dates. The 2024 landfill gas monitoring results are summarized in separate quarterly letter reports to SHD and herein on the field sheets in ***Appendix D***.

As shown on the field sheets, no detectable methane concentrations were detected from any of the monitoring points during 2024.

5.0 LEACHATE MONITORING

Cathcart Sanitary Landfill is authorized under City of Everett Industrial Waste Discharge Permit #7701-17 to discharge pretreated industrial wastewater (*landfill leachate and vactor liquid wastes*) to the City of Everett sewer system via connection through the Silver Lake Water and Sewage District sewer.

As shown on the pretreatment system flow diagram (*Figure 7*), landfill leachate and condensate drains to a pump station (*designated SP-1*), from which the leachate and condensate are pumped to a grit chamber and combined with groundwater from the landfill underdrain system to pump station SP-1. The combined leachate and groundwater is then pumped through a flow meter vault

(*designated P-FV-2*), where the total daily flow is measured using an electromagnetic flow meter (*mag meter*). The flow is then discharged into either of two pretreatment lagoons. The lagoons are constructed of concrete equipped with underdrain systems that are connected to leak detection vaults (*designated P-MH-3 and P-MH-4*), which are monitored monthly for the presence of liquid, which could indicate a leak from the lagoons. A total of 16 manholes and vaults within the leachate collection system are monitored monthly for the presence of excess sediment (*or fluid, in the case of leak detection vaults*) and maintenance issues. The completed inspection forms are included in ***Appendix D***. No fluid was observed in the leak detection vaults during 2024.

The maximum design capacity of each lagoon is approximately 2.5 million gallons. Combined leachate and vactor liquid is treated in one or both of the leachate collection lagoons by settlement and aeration. Each lagoon has two aerators installed, which operate hourly for 15 minutes. The aerated liquid is then routed via a sampling vault (*P-MH-9*) to a discharge point to the sewer. Liquid samples are collected from P-MH-9 monthly and the results are summarized in a monthly report, which is submitted to the City of Everett per the IWDP permit.

During 2024, a total of 2,277,600 gallons of landfill leachate were pumped to the pretreatment lagoons for treatment and eventual discharge to the sewer. Leachate was pumped to the pretreatment lagoons at an average rate of 189,800 gallons per month, which varied from 30,000 gallons in September and October to 522,200 gallons in January. Overall, the rate of leachate production and flow correlates with seasonal rainfall totals. The leachate flow totals are included in ***Table 9*** below.

Table 9 – Cathcart Landfill Leachate Flow Totals, 2024

Month	Total (gallons)
January	522,200
February	388,100
March	265,200
April	160,600
May	60,400
June	66,500
July	30,400
August	38,900
September	30,000
October	30,000
November	245,300
December	440,000
Maximum:	522,200
Minimum:	30,000
Monthly Average:	189,800
2024 Total:	**2,277,600**

5.1 LEACHATE SAMPLING

On January 9, 2024, Snohomish County Solid Waste personnel collected annual samples from the leachate pump station vaults designated SP-1 and SP-4 to characterize leachate from above (*SP-1*) and below (*SP-4*) the landfill liner. The leachate samples were analyzed for the following constituents:

- pH by USEPA Method 150.2
- Biological oxygen demand (*BOD*) by Method SM 5210B
- Conductivity by Method SM 2510B
- Total cyanide by USEPA Method 335.4
- Oil and Grease (*HEM*) by USEPA Method 1664 HEM
- Total Petroleum Hydrocarbons (*Polar/Non-Polar*) by USEPA Method 1664 SGT-HEM
- Total Suspended Solids (*TSS*) by Method SM 2540D
- Flashpoint by USEPA Method 1020
- Total Metals by USEPA Method 200.7/200.8/245.1, including:
    - Cadmium
    - Chromium
    - Copper
    - Mercury
    - Nickel
    - Silver
    - Zinc

In addition, the sample from vault SP-1 was analyzed for the standard groundwater constituent suite and priority pollutants, which included:

- Total Cyanide by SM 4500CN-E99
- Total Phenol by EPA Method 420.4
- Total and Dissolved Metals by USEPA Methods 200.7/200.8, including the above-listed metals and:
    - Antimony
    - Arsenic
    - Barium
    - Beryllium
    - Cobalt
    - Iron
    - Lead
    - Manganese
    - Selenium
    - Thallium
    - Vanadium
- VOCs by USEPA Method 8260/8260 SIM/624
- Semivolatile Organic Compounds (*SVOCs*) and Polynuclear Aromatic Hydrocarbons (*PAHs*) by USEPA Method 625/625-SIM

- Organochlorine Pesticides (*OCPs*) by USEPA Method 608
- Polychlorinated Biphenyls (*PCBs*) by USEPA Method 608

Tabulated summaries of the leachate vault sample analytical results are included below as Tables 10 through 13. Only constituents that were detected are shown in the tables; none of the leachate vault samples collected during the current monitoring year contained detectable concentrations of total cyanide/phenols, SVOCs, PAHs, OPPs or PCBs.

Table 10 – Leachate Vault Results – Inorganics

Location ID	Date	pH	BOD	Conductivity	TSS
Units		std. units	mg/L	µmhos/cm	mg/L
SP-1	1/9/24	5.80	13	730	297
SP-4	1/9/24	5.51	52	290	9.0

Table 11 – Leachate Vault Results – Total Metals

Location ID	Date	Sb (200.8)	As (200.8)	Ba (200.7)	Cd (200.8)	Fe (200.7)	Pb (200.8)	Mn (200.7)	Ni (200.7)	Se (200.8)	V (200.7)	Zn (200.7)
Units		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
SP-1	1/9/24	0.87	17.6	576	0.121	139	1.26	791	13	1.2	43	270
Location ID	**Date**	**Sb (200.8)**	**As (200.8)**	**Ba (200.7)**	**Cd (200.8)**	**Fe (200.7)**	**Pb (200.8)**	**Mn (200.7)**	**Ni (200.7)**	**Se (200.8)**	**V (200.7)**	**Zn (200.7)**
Units			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
SP-4	1/9/24	--	ND<10	--	ND<5	--	ND<20	ND<0.1	ND<10	--	--	ND<15

Table 12 – Leachate Vault Results – VOCs

Location ID	Date	1,4-Dichlorobenzene	Benzene	Benzene
Units		µg/L		µg/L
SP-1	1/9/24	1.6	1.0	1.0
SP-4	1/9/24	--	--	--

-- = Not analyzed

6.0 SUMMARY AND RECOMMENDATIONS

6.1 SUMMARY

The groundwater, surface water, leachate, and landfill gas monitoring data collected during the 2024 monitoring events indicate the following:

- The groundwater elevations, flow direction, and gradient measured during the 2024 semiannual monitoring events were generally consistent with those measured historically at the site.
- The most common groundwater standard exceedances were pH, dissolved sodium, total and dissolved arsenic, and total iron, which is consistent with historical site data.
- Most statistical limit exceedances in the shallow zone were noted in wells G-09S and G-10S, which is consistent with recent historical data. No statistical exceedances were noted in shallow wells G-08D1 and G-14S during the 2024 monitoring events.

- Overall, significantly more decreasing trends were noted in both zones during all four monitoring events (*56 decreasing/18 increasing trends in the shallow zone, and 76 decreasing/11 increasing trends in the deep zone*).
- Most decreasing concentration trends noted in the shallow and deep zones during the second and fourth quarters occurred in downgradient wells – 43 of 56 decreasing trends in shallow downgradient wells and 74 of 76 decreasing trends in deep downgradient wells. Only one increasing trend was noted in an upgradient well during 2024 (*sodium, second quarter in well G-24D*).
- Excluding VOC concentrations that were attributable to cross-contamination (*i.e., the acetone and/or methylene chloride concentrations noted during the second, third, and fourth quarters*), VOC detections were mostly limited to the wells located immediately downgradient of the landfill (*G-09S, G-09D, G-10S, and G-10D*). Wells G-08D1 (*fourth quarter*) and G-013D (*second quarter*) also contained low concentrations bromomethane and carbon tetrachloride, respectively.
- No exceedances of the surface water quality goals were noted in the surface water samples collected during 2024.
- The monitoring results at the perimeter gas probe locations, vaults, and manholes and did not indicate the presence of detectable concentrations of landfill gas during 2024.
- Landfill settlement surveys were discontinued in 2019 after six years of annual measurements. During the previous six years, no significant settlement was noted across the landfill mass that exceeded tolerance levels established in the Department of Ecology's Uniform Guidance document.

6.2 CONCLUSIONS/RECOMMENDATIONS

- The groundwater elevation data and fluctuations with seasonal rainfall totals (*as shown on the hydrographs in **Appendix A***) suggest that the shallow and deep groundwater zones are hydraulically continuous and may in fact represent one complex water-bearing zone.
- There is no indication of groundwater impacts extending beyond the site boundaries of the Cathcart Landfill.
- The analytical data indicate that there is likely a leachate impact in monitoring wells G-09S, G-09D, G-10S, and G-10D.
- In accordance with the SAP and the approved variance, Snohomish County Solid Waste will continue to monitor groundwater and surface water semiannually.
- Landfill gas will continue to be monitored quarterly until the stratigraphy and hydrogeology of the site are evaluated for landfill gas migration potential. The data from probe GP-6 confirms that landfill gas is not migrating near the northwest perimeter of the landfill.

6.3 SIGNATURES AND LICENSES

Brian K. Eytcheson

3/4/25

Brian K. Eytcheson, LG
SCPW – Solid Waste Division

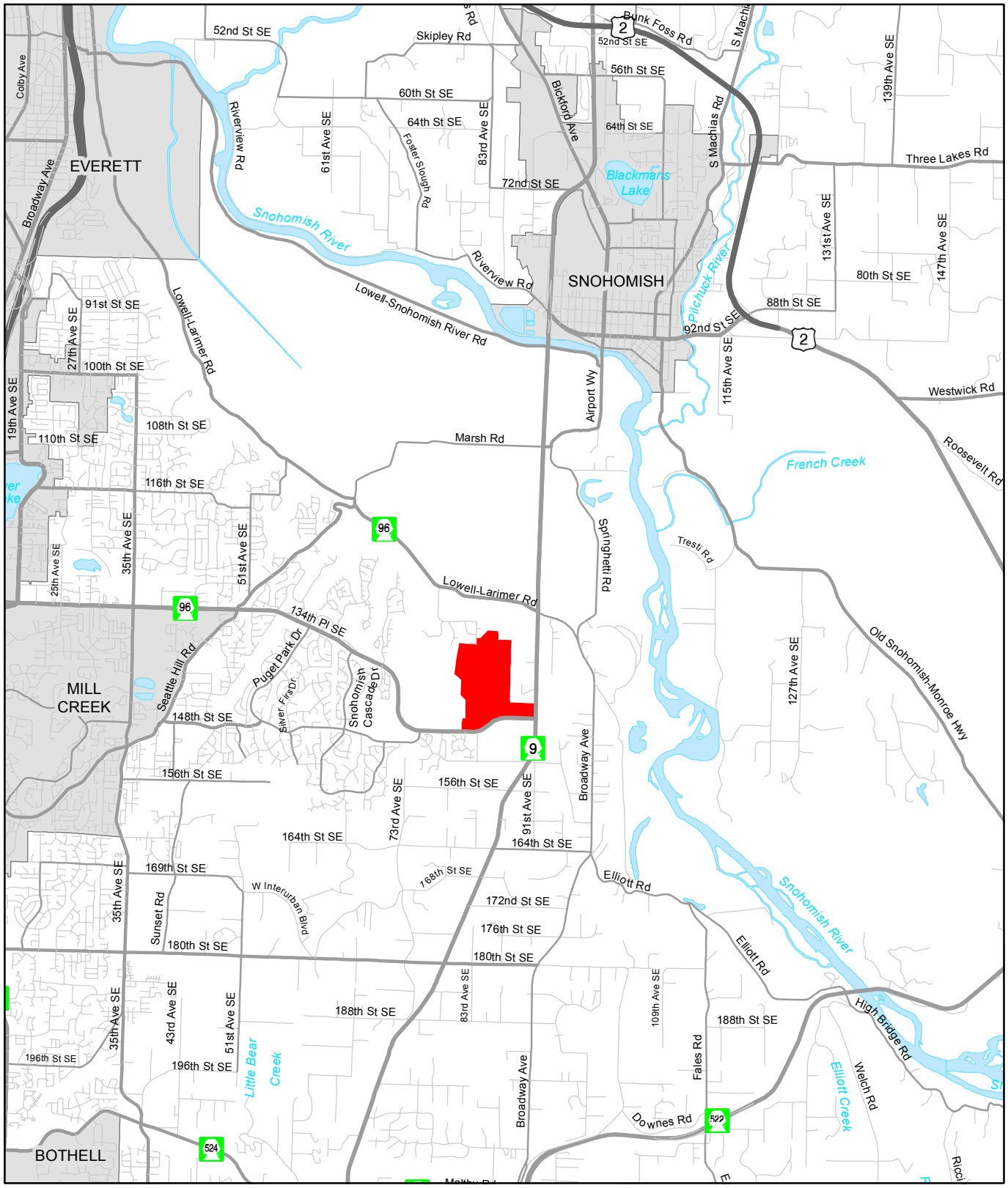
Date

BRIAN K. EYTCHESON

Figures

Figure 1

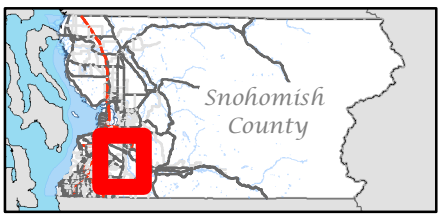
Cathcart Landfill Vicinity Map



0 0.5 1 2 Miles

0 0.5 1 2 3 Kilometers

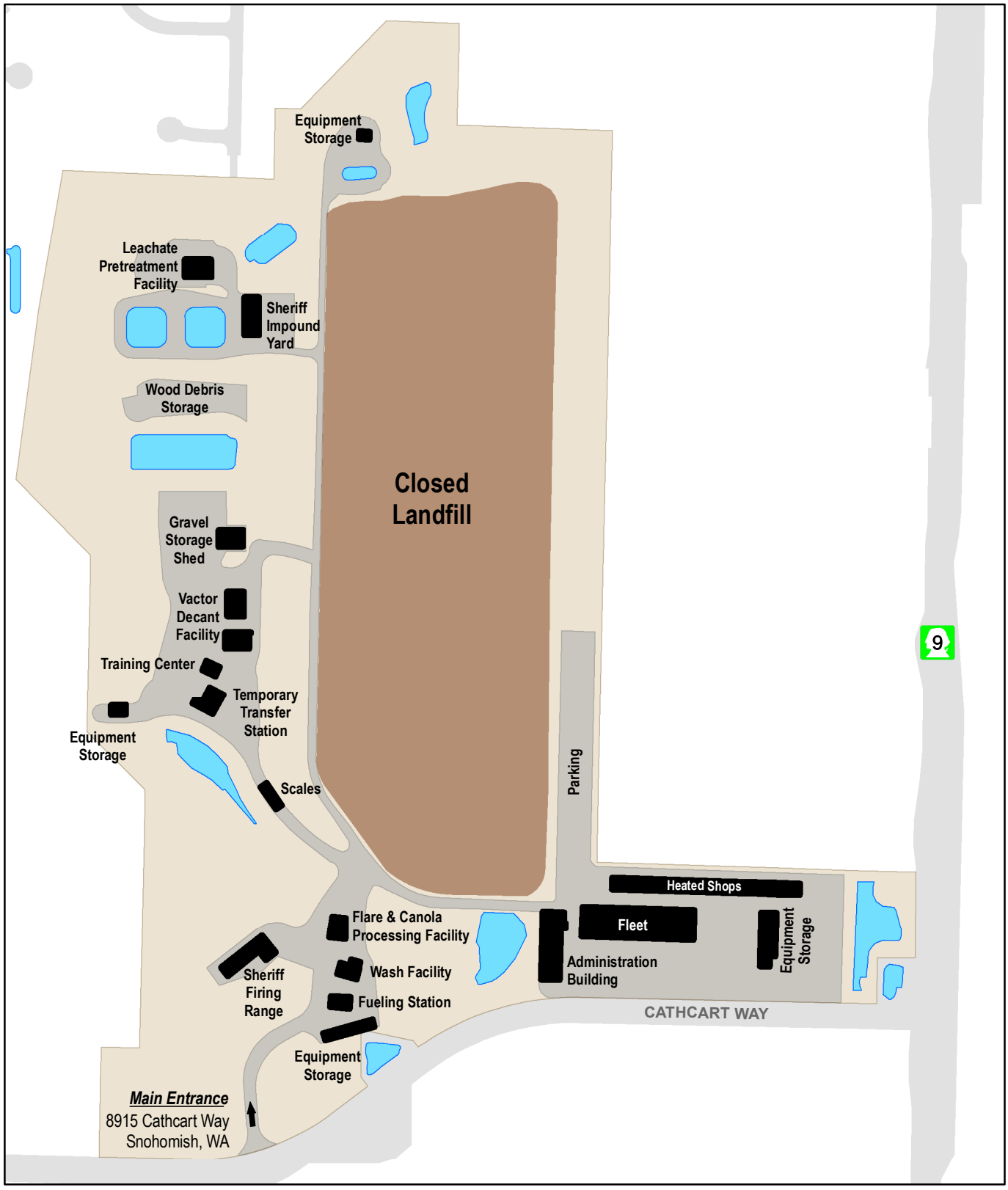
N W E S



Snohomish County
Public Works
Solid Waste Division
March 16, 2010

Figure 2

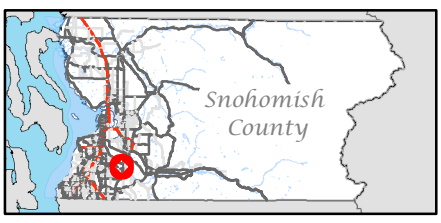
Cathcart Landfill Site Map



0 0.045 0.09 0.18 Miles

0 180 360 720 1,080 Feet

N W E S

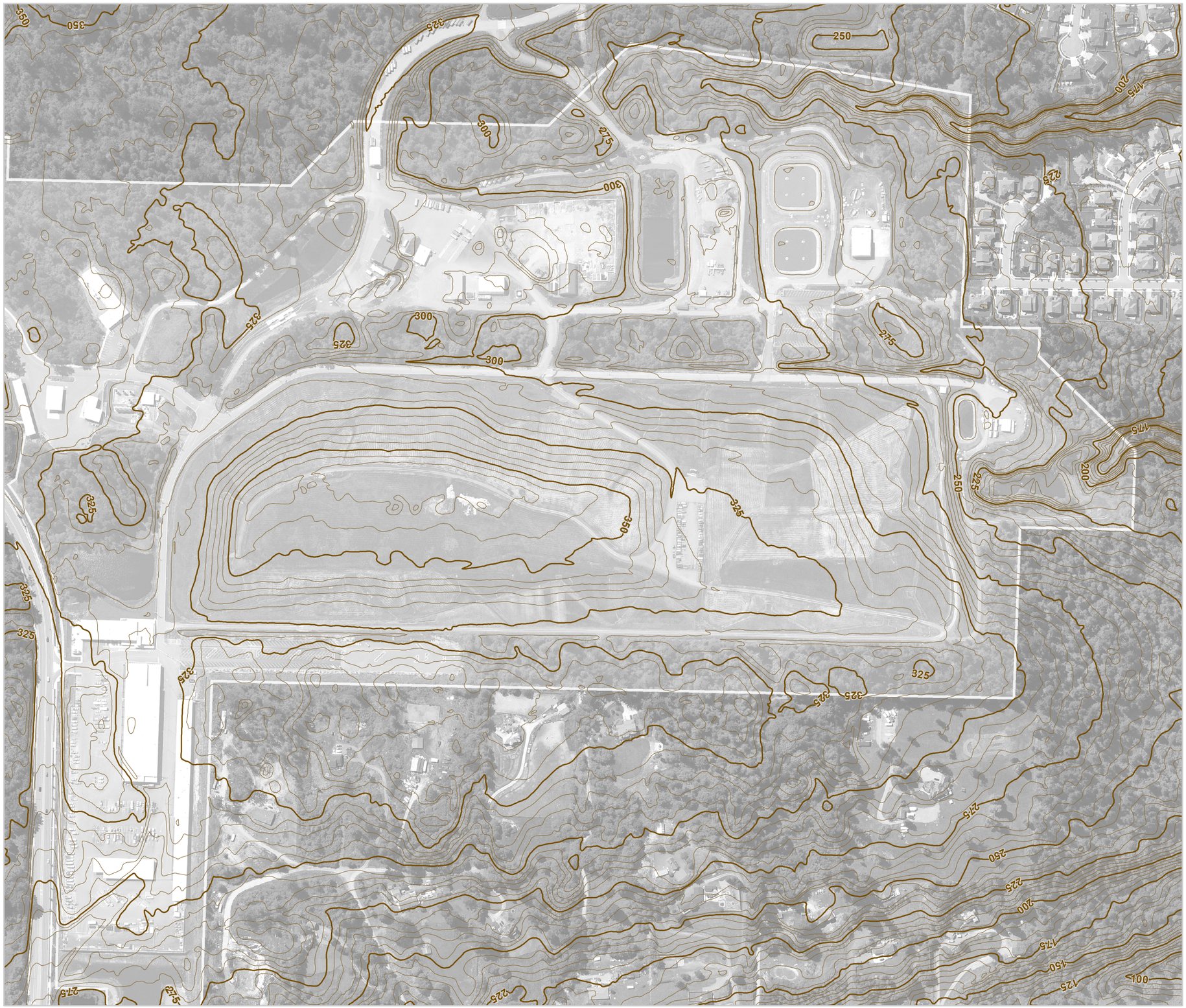


Snohomish County
Public Works
Solid Waste Division
March 16, 2010

Figure 3

Cathcart Landfill

Topography



Map Features

- Parcel Boundary
- Subject Property Boundary
- 5 Foot Contours

N

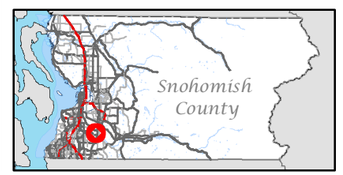
W

E

S

1 inch = 350 feet

0	0.02	0.04	0.08	0.12	0.16	0.2	Miles
0	137.5	275	550	825	1,100		Feet

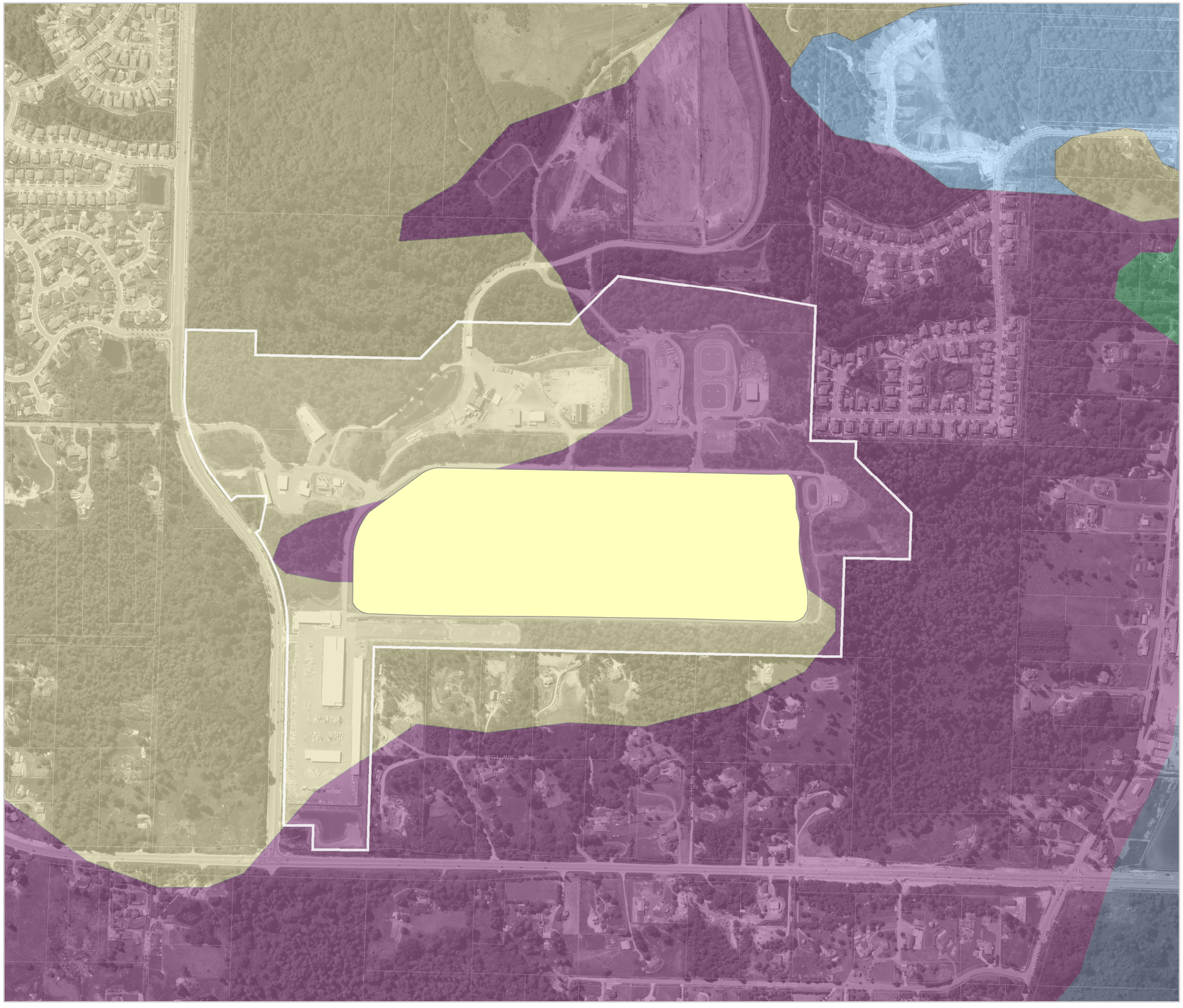


Snohomish County
Public Works
Solid Waste Division
March 24, 2010

Figure 4

Cathcart Landfill

Geologic Map



Map Features

- Parcel Boundary
- Subject Property Boundary

Geologic Description

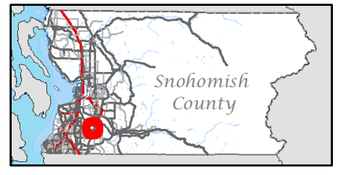
- Recent Alluvium (Qyal)
- Vashon Recessional Outwash (Qvr)
- Vashon Glacial Till (Qvt)
- Vashon Advance Outwash (Qva)
- Transitional Beds (Qtb)
- Modified Land

W S N E

1 inch = 600 feet

0 0.035 0.07 0.14 0.21 0.28 0.35 Miles

0 240 480 960 1,440 1,920 Feet



Snohomish County
Public Works
Solid Waste Division
June 8, 2010

Figure 5

Cathcart Landfill

Monitoring Network

Map Features

- Parcel Boundary
- Subject Property Boundary

Aquifer Unit (Active Wells)

- Deep Aquifer
- Shallow Aquifer

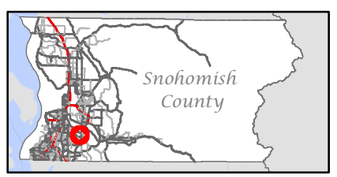
Inactive / Removed Wells

- Abandoned / Decommissioned
- Inactive

Additional Sampling Points

- Gas Probe
- Surface Water Sample Locations

0 125 250 500 750 1,000 Feet



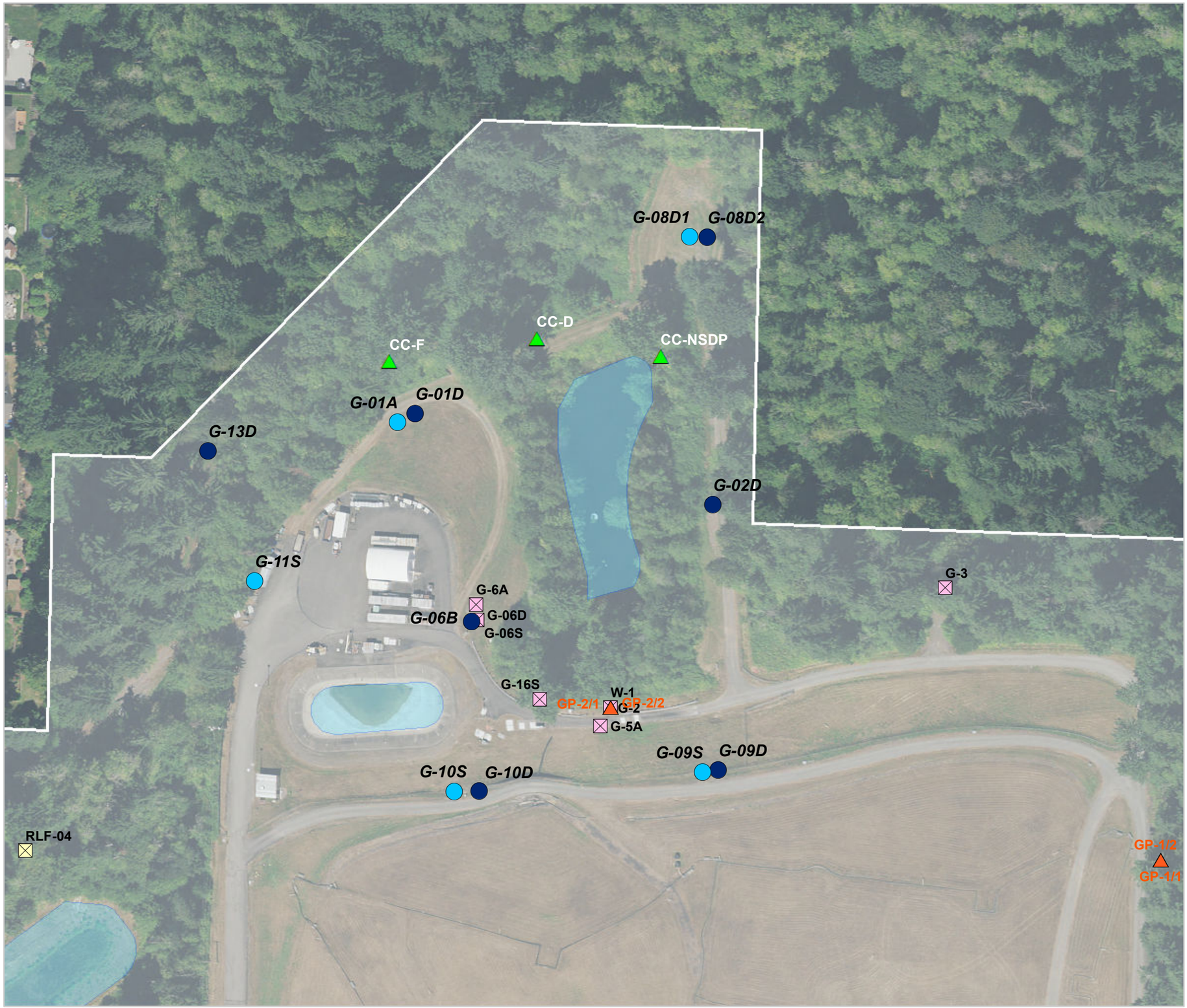
N

Snohomish County
Public Works
Solid Waste Division
November 12, 2019

Figure 5a

Cathcart Landfill

Monitoring Network



Map Features

- Parcel Boundary
- Subject Property Boundary

Aquifer Unit (Active Wells)

- Deep Aquifer
- Shallow Aquifer

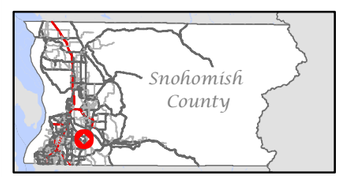
Inactive / Removed Wells

- Abandoned / Decommissioned
- Inactive

Additional Sampling Points

- Gas Probe
- Water Sample Locations

0 37.5 75 150 225 300 Feet



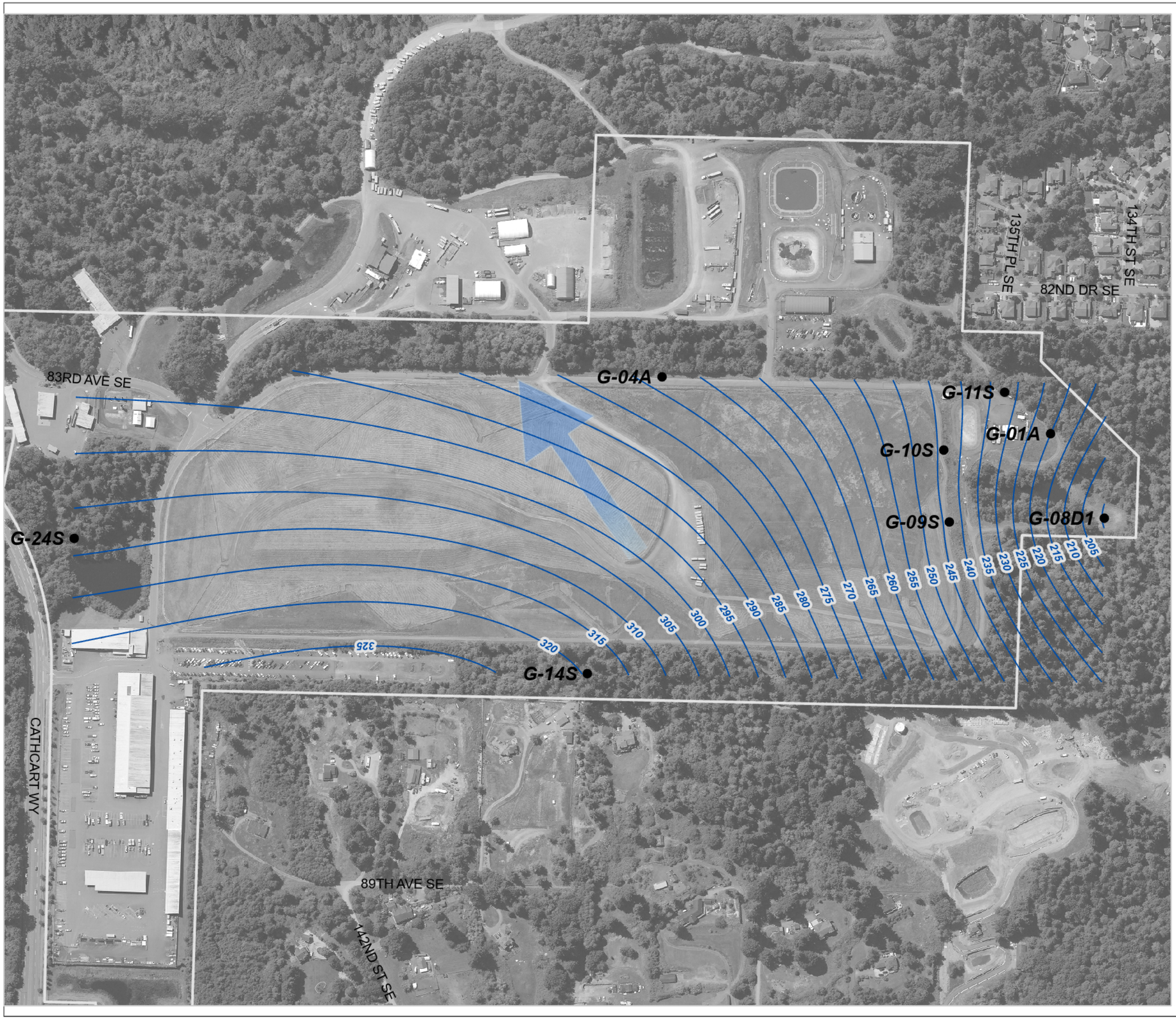
N

Snohomish County
Public Works
Solid Waste Division
November 12, 2019

Figure 6a

Cathcart Landfill

Shallow Aquifer Groundwater Contour Map Second Quarter 2024



GROUNDWATER FLOW
0.000368 ft / day
0.134 ft / year
124.64 degrees to the positive x - axis

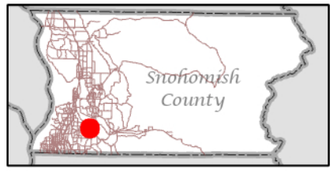
PARCEL BOUNDARY

WELL LOCATION

CONTOURS

WELL ID	DATE	GW ELEVATION
G-01A	4/16/2024	220.05
G-04A	4/16/2024	272.91
G-08D1	4/16/2024	199.47
G-09S	4/16/2024	243.38
G-10S	4/16/2024	243.73
G-11S	4/16/2024	232.43
G-14S	4/16/2024	319.51
G-24S	4/16/2024	308.00

0 100 200 400 600 800 1,000 1,000
Feet



N

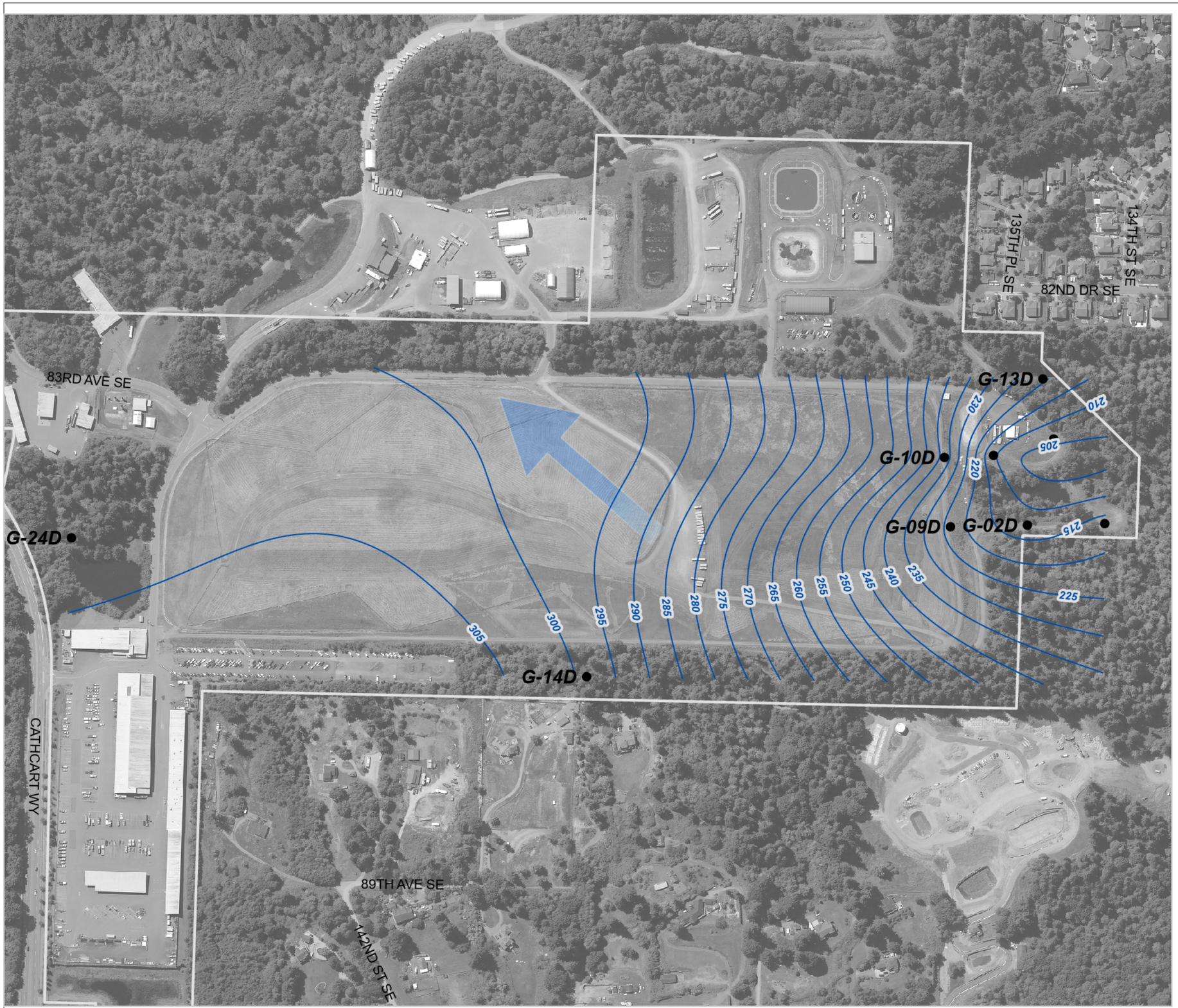
Snohomish County Public Works Solid Waste Division
Date: 7/30/2024

Document Path: I:\pw\swaste\Projects\Groundwater Contours.aprx

Figure 6b

Cathcart Landfill

Deep Aquifer Groundwater Contour Map Second Quarter 2024



GROUNDWATER FLOW
0.0116 ft / day
4.24 ft / year
138.75 degrees to the positive x - axis

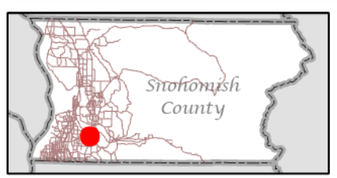
PARCEL BOUNDARY

WELL LOCATION

CONTOURS

WELL ID	DATE	GW ELEVATION
G-01D	4/16/2024	206.19
G-02D	4/16/2024	212.20
G-06B	4/16/2024	211.21
G-08D2	4/16/2024	216.91
G-09D	4/16/2024	223.45
G-10D	4/16/2024	237.85
G-13D	4/16/2024	220.81
G-14D	4/16/2024	298.73
G-24D	4/16/2024	301.80

0 100 200 400 600 800 1,000 1,000
Feet



Snohomish County Public Works
Solid Waste Division
Date: 7/30/2024

Document Path: I:\pw\swaste\Projects\Groundwater Contours.aprx

Figure 6c

Cathcart Landfill

Shallow Aquifer Groundwater Contour Map Fourth Quarter 2024

GROUNDWATER FLOW
0.000401 ft / day
0.146 ft / year
133.97 degrees to the positive x - axis

PARCEL BOUNDARY

WELL LOCATION

CONTOURS

WELL ID	DATE	GW ELEVATION
G-01A	10/1/2024	218.39
G-08D1	10/1/2024	193.64
G-09S	10/1/2024	240.73
G-10S	10/1/2024	242.04
G-11S	10/1/2024	231.50
G-14S	10/1/2024	313.84
G-24S	10/1/2024	306.82

Date Created: 1/22/2025
File Location:
I:\pw\swaste\Maps\
Groundwater Contours\
2024Q4

Snohomish County
Public Works
Solid Waste Division

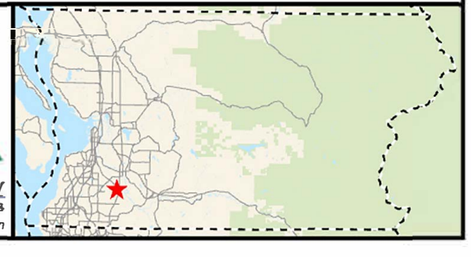
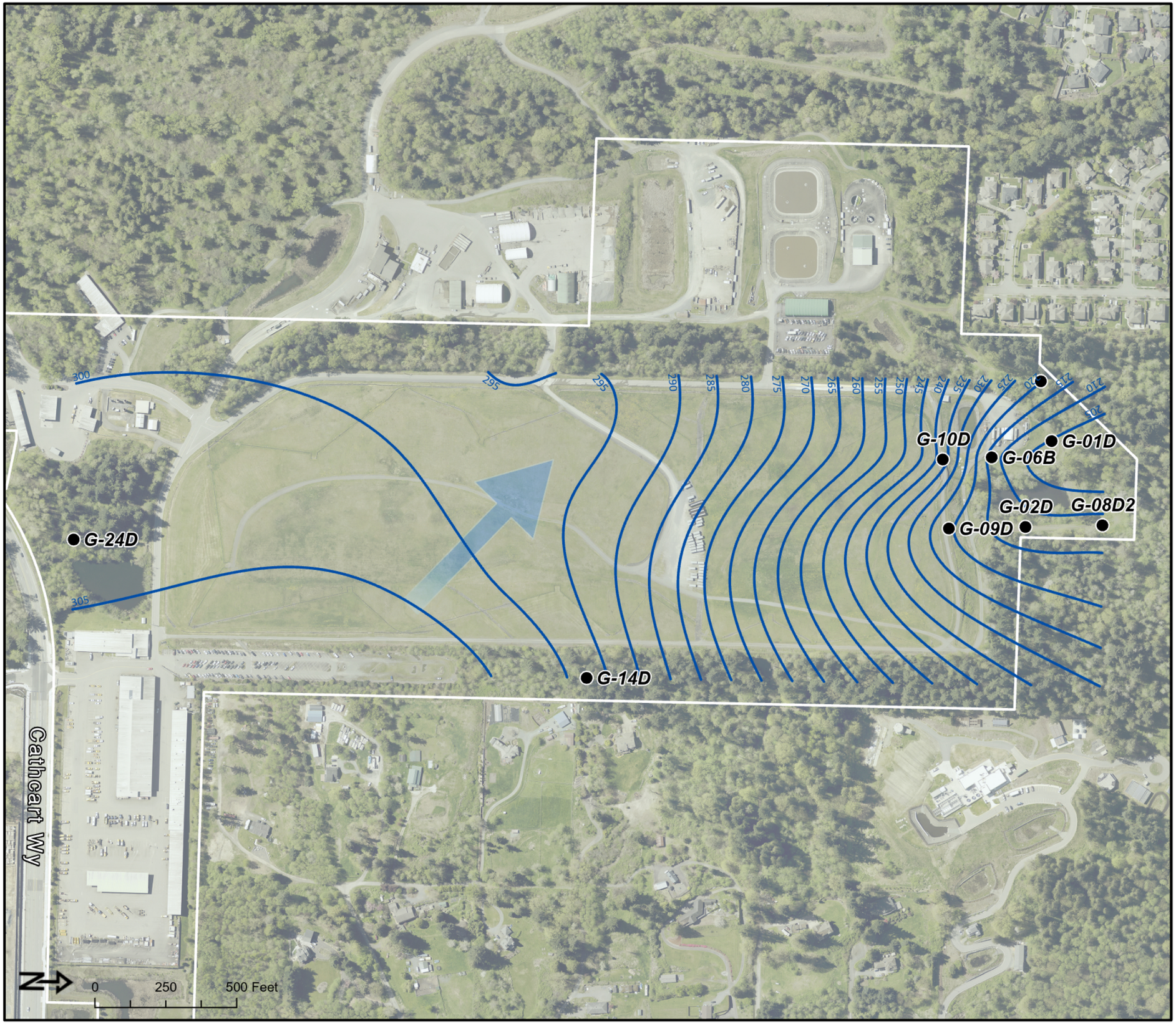


Figure 6d

Cathcart Landfill

Deep Aquifer Groundwater Contour Map Fourth Quarter 2024



GROUNDWATER FLOW
0.0113 ft / day
4.11 ft / year
135.79 degrees to the positive x - axis

PARCEL BOUNDARY

WELL LOCATION

CONTOURS

WELL ID	DATE	GW ELEVATION
G-01D	10/1/2024	204.71
G-02D	10/1/2024	212.12
G-06B	10/1/2024	213.02
G-08D2	10/1/2024	212.38
G-09D	10/1/2024	220.99
G-10D	10/1/2024	237.33
G-13D	10/1/2024	220.17
G-14D	10/1/2024	297.84
G-24D	10/1/2024	301.61

Date Created: 1/22/2025
File Location:
I:\pw\swaste\Maps\
Groundwater Contours\
2024Q4

Snohomish County
Public Works
Solid Waste Division

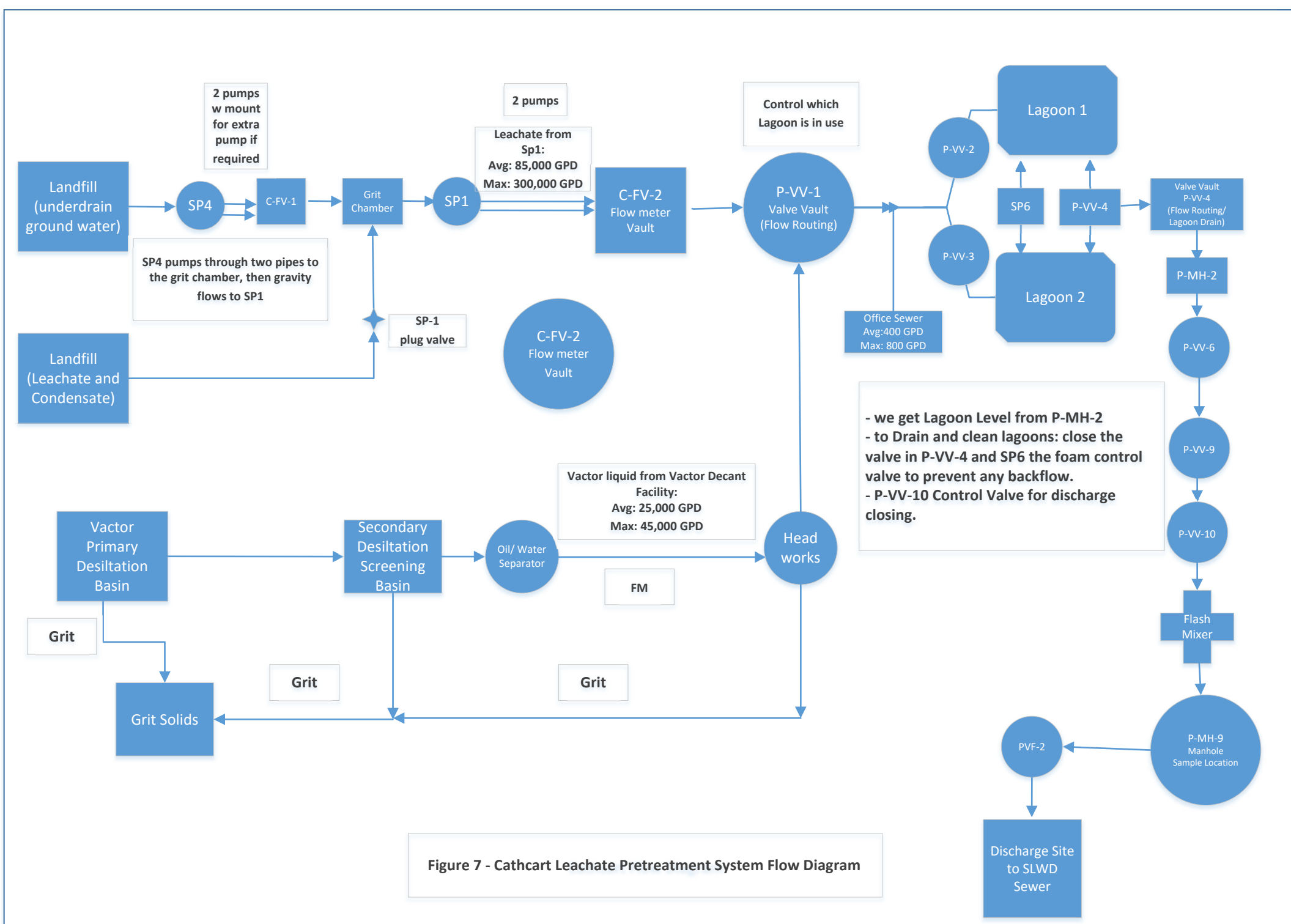
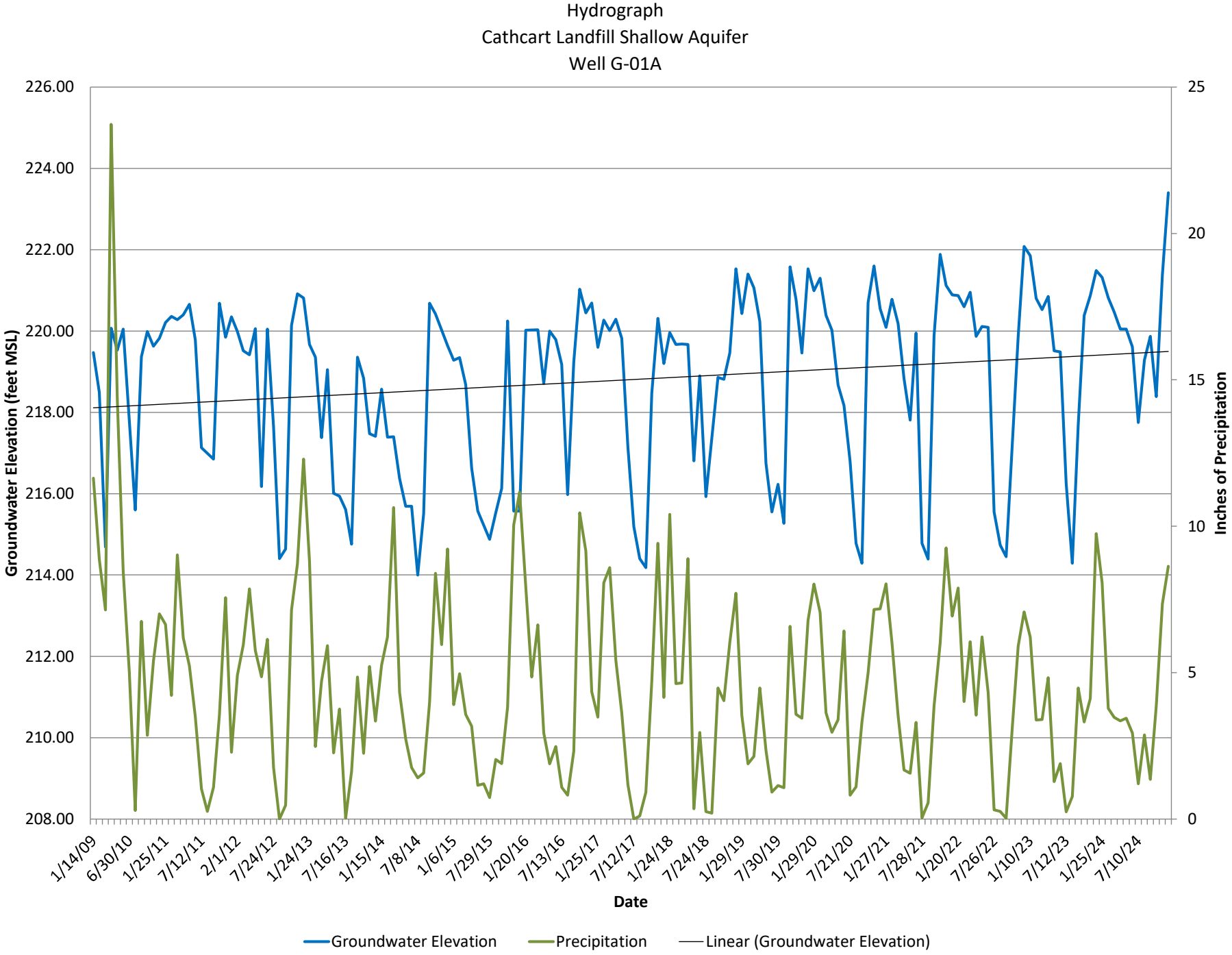


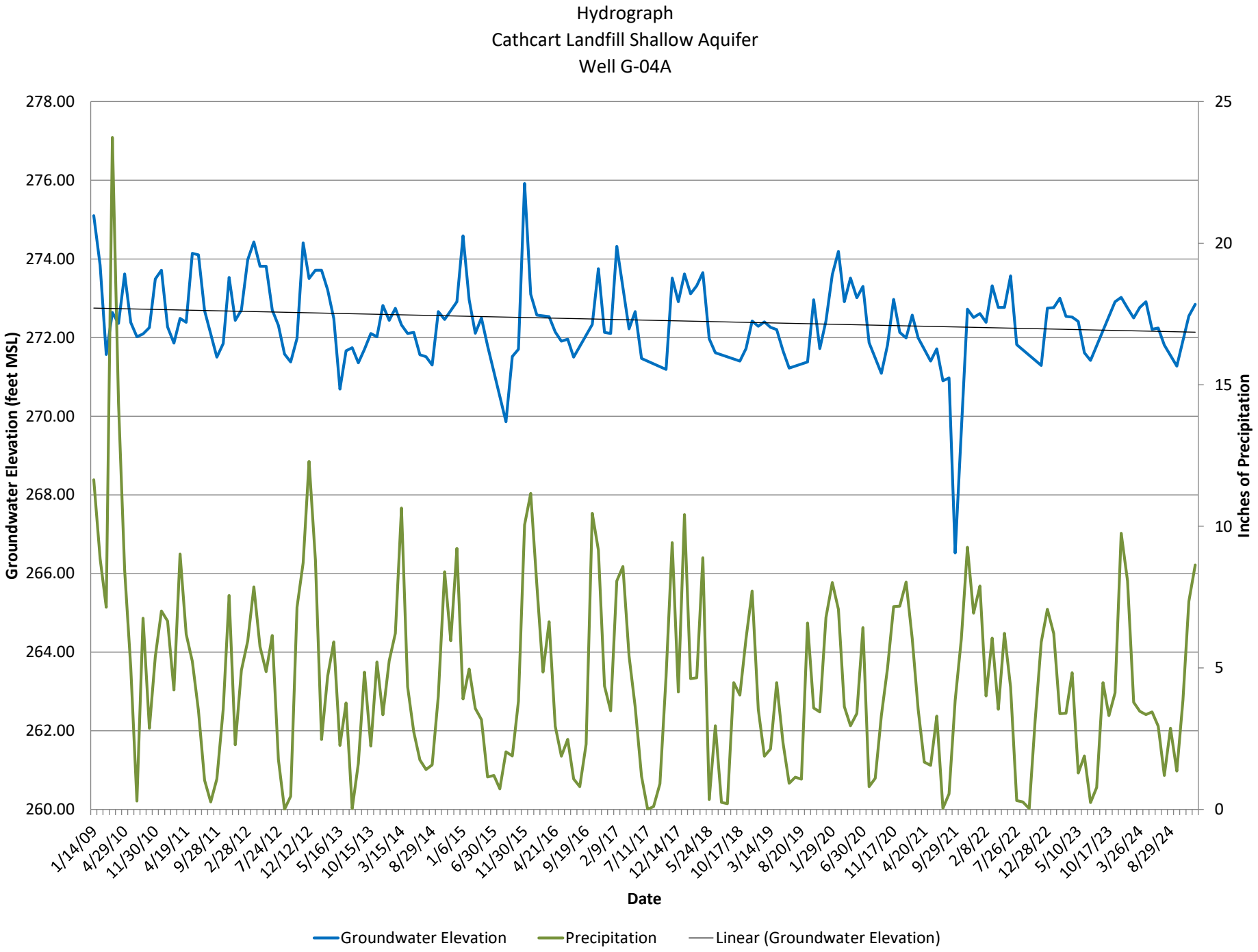
Figure 7 - Cathcart Leachate Pretreatment System Flow Diagram

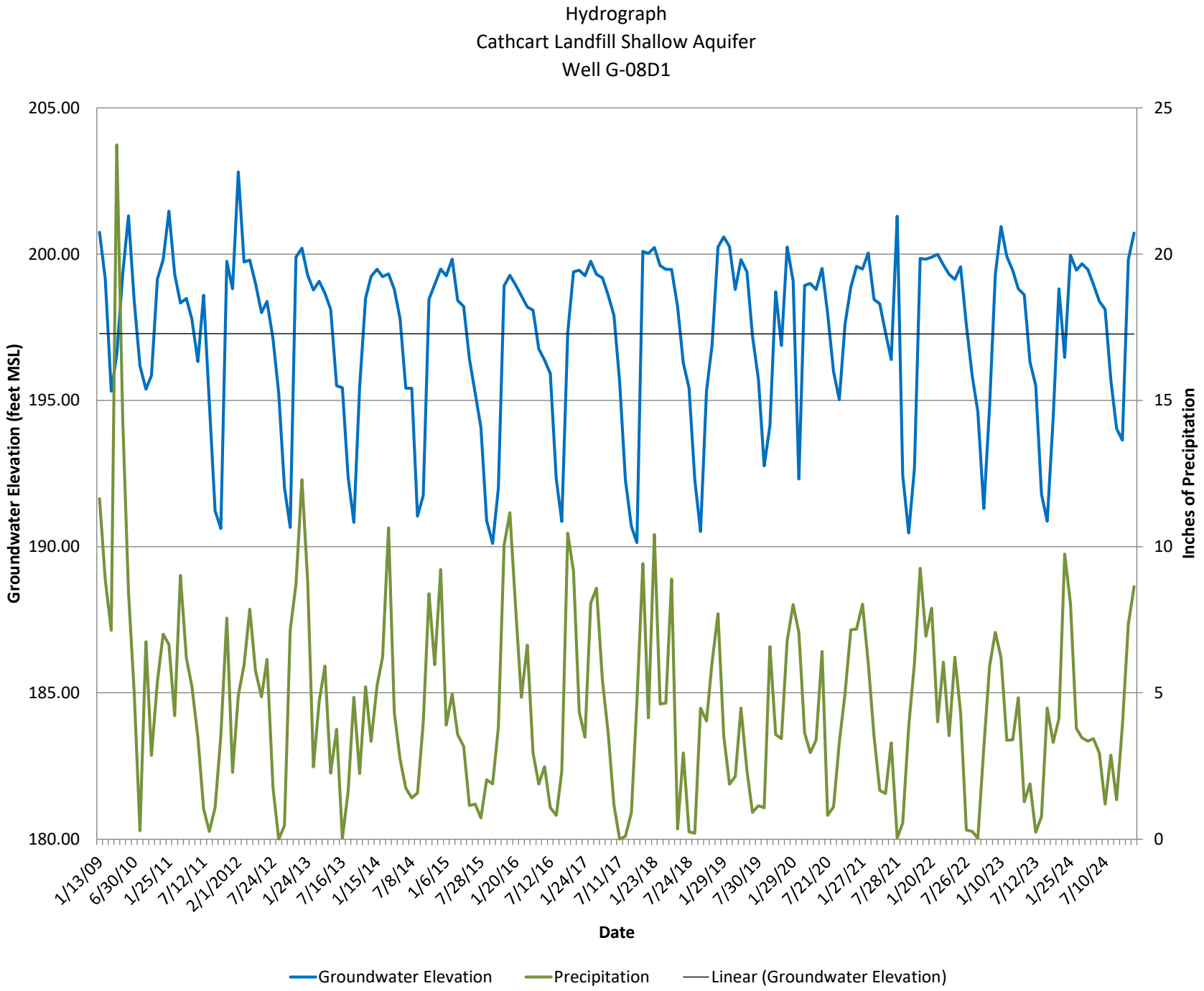
Appendix A

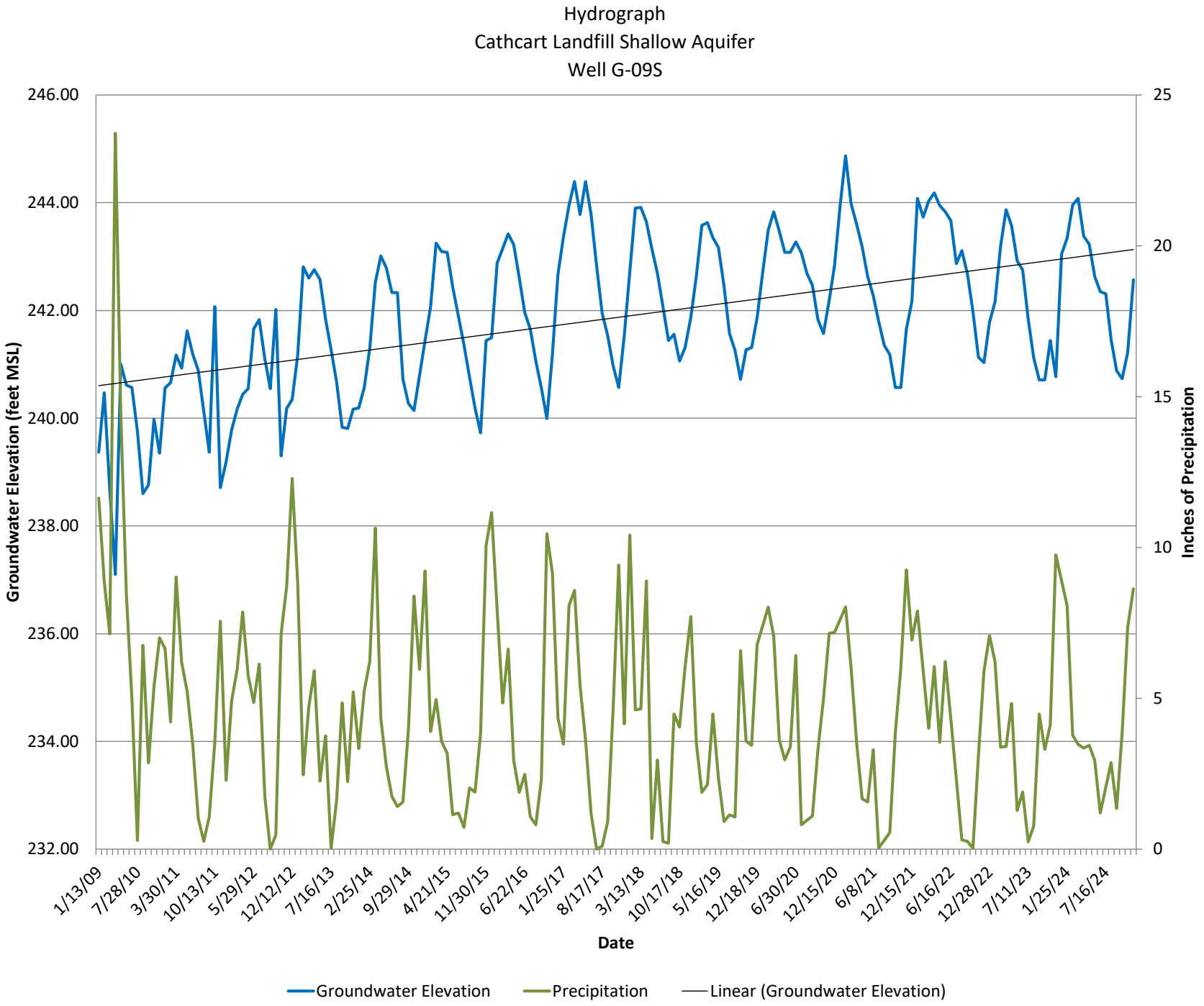
Hydrographs

Shallow Wells

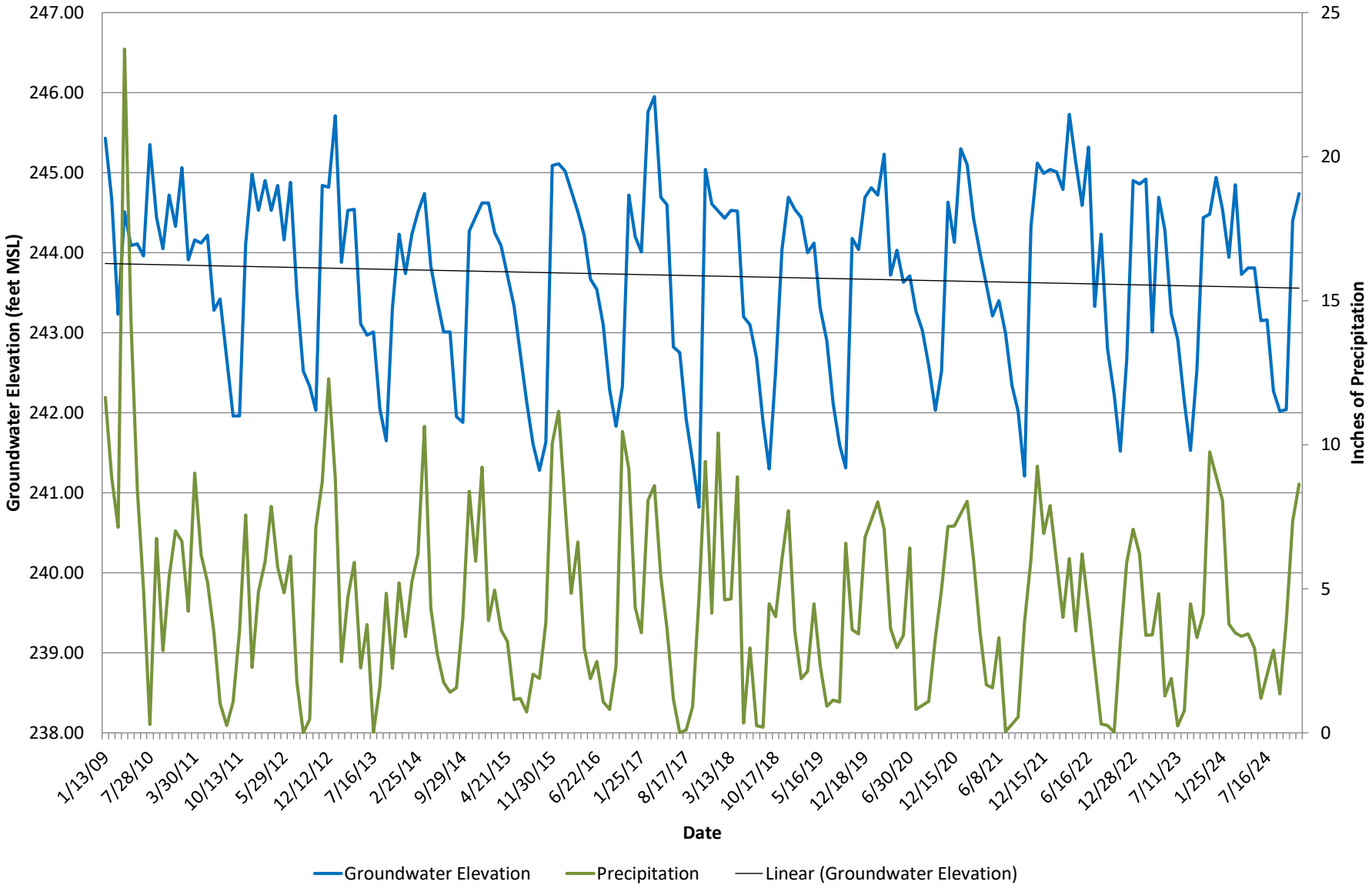

Hydrograph
Cathcart Landfill Shallow Aquifer
Well G-01A
Groundwater Elevation (feet MSL)
226.00
224.00
222.00
220.00
218.00
216.00
214.00
212.00
210.00
208.00
Inches of Precipitation
25
20
15
10
5
0
1/14/09
6/30/10
1/25/11
7/12/11
2/1/12
7/24/12
1/24/13
7/16/13
1/15/14
7/8/14
1/6/15
7/29/15
1/20/16
7/13/16
1/25/17
7/12/17
1/24/18
7/24/18
1/29/19
7/30/19
1/29/20
7/21/20
1/27/21
7/28/21
1/20/22
7/26/22
1/10/23
7/12/23
1/25/24
7/10/24
Date
Groundwater Elevation
Precipitation
Linear (Groundwater Elevation)


Hydrograph
Cathcart Landfill Shallow Aquifer
Well G-04A
Groundwater Elevation (feet MSL)
278.00
276.00
274.00
272.00
270.00
268.00
266.00
264.00
262.00
260.00
Inches of Precipitation
25
20
15
10
5
0
1/14/09
4/29/10
11/30/10
4/19/11
9/28/11
2/28/12
7/24/12
12/12/12
5/16/13
10/15/13
3/15/14
8/29/14
1/6/15
6/30/15
11/30/15
4/21/16
9/19/16
2/9/17
7/11/17
12/14/17
5/24/18
10/17/18
3/14/19
8/20/19
1/29/20
6/30/20
11/17/20
4/20/21
9/29/21
2/8/22
7/26/22
12/28/22
5/10/23
10/17/23
3/26/24
8/29/24
Date
Groundwater Elevation
Precipitation
Linear (Groundwater Elevation)

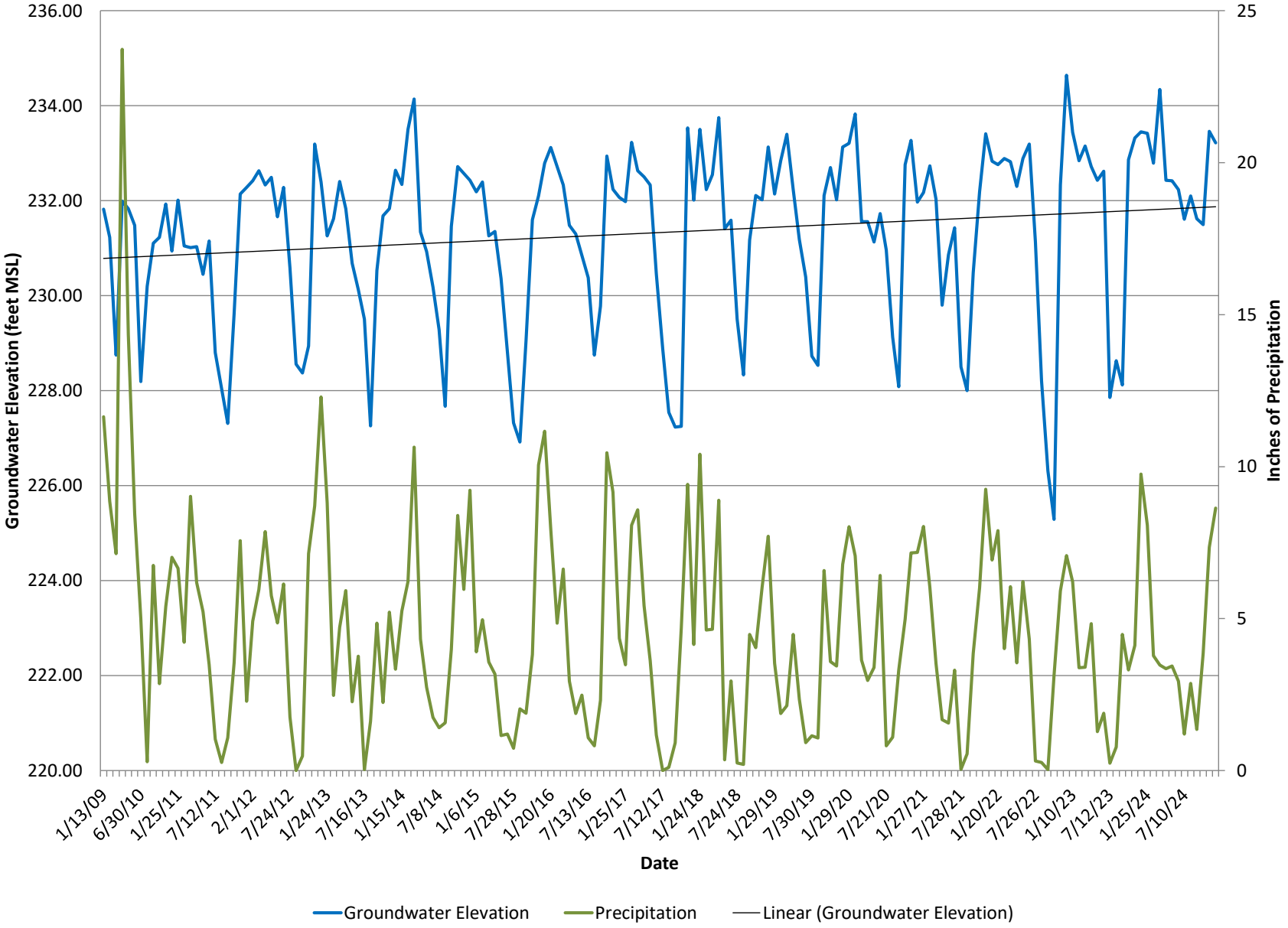

Hydrograph
Cathcart Landfill Shallow Aquifer
Well G-08D1
205.00
200.00
195.00
190.00
185.00
180.00
25
20
15
10
5
0
Groundwater Elevation (feet MSL)
Inches of Precipitation
1/13/09
6/30/10
1/25/11
7/12/11
2/1/2012
7/24/12
1/24/13
7/16/13
1/15/14
7/8/14
1/6/15
7/28/15
1/20/16
7/12/16
1/24/17
7/11/17
1/23/18
7/24/18
1/29/19
7/30/19
1/29/20
7/21/20
1/27/21
7/28/21
1/20/22
7/26/22
1/10/23
7/12/23
1/25/24
7/10/24
Date
Groundwater Elevation
Precipitation
Linear (Groundwater Elevation)


Hydrograph
Cathcart Landfill Shallow Aquifer
Well G-09S
Groundwater Elevation (feet MSL)
246.00
244.00
242.00
240.00
238.00
236.00
234.00
232.00
Inches of Precipitation
25
20
15
10
5
0
1/13/09
7/28/10
3/30/11
10/13/11
5/29/12
12/12/12
7/16/13
2/25/14
9/29/14
4/21/15
11/30/15
6/22/16
1/25/17
8/17/17
3/13/18
10/17/18
5/16/19
12/18/19
6/30/20
12/15/20
6/8/21
12/15/21
6/16/22
12/28/22
7/11/23
1/25/24
7/16/24
Date
Groundwater Elevation
Precipitation
Linear (Groundwater Elevation)

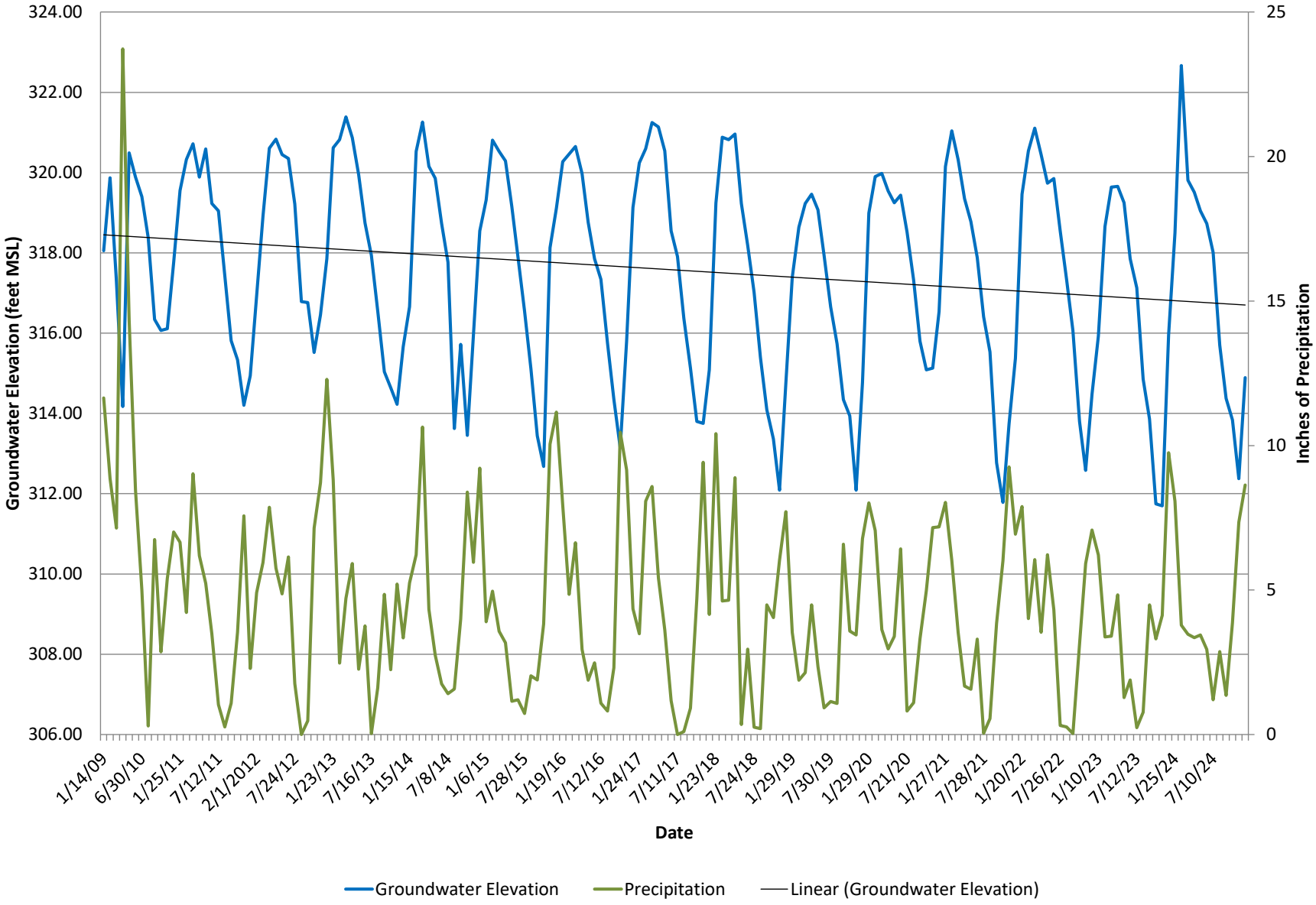
Hydrograph
Cathcart Landfill Shallow Aquifer
Well G-10S

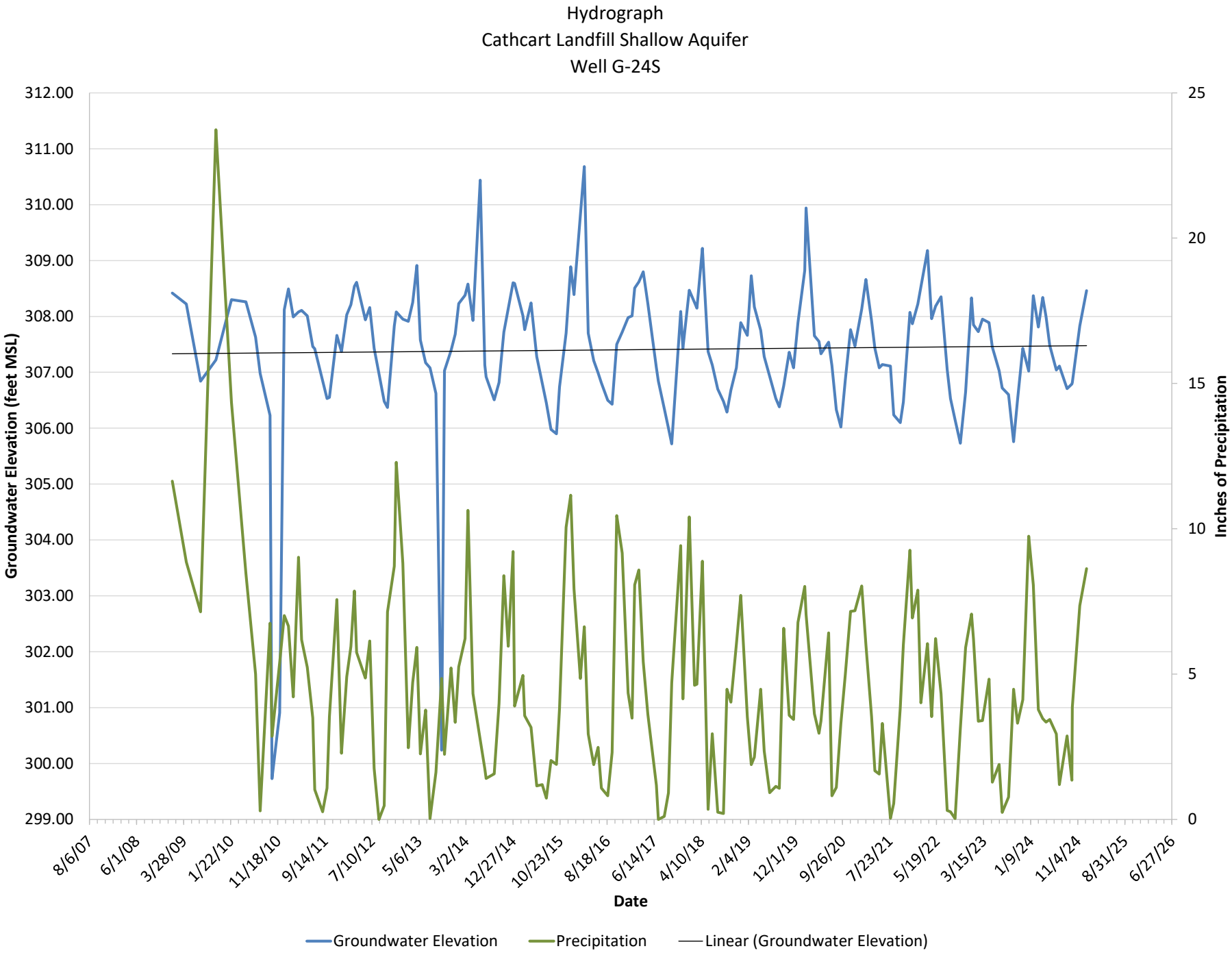


Hydrograph
Cathcart Landfill Shallow Aquifer
Well G-11S



Hydrograph
Cathcart Landfill Shallow Aquifer
Well G-14S




Hydrograph
Cathcart Landfill Shallow Aquifer
Well G-24S
Groundwater Elevation (feet MSL)
312.00
311.00
310.00
309.00
308.00
307.00
306.00
305.00
304.00
303.00
302.00
301.00
300.00
299.00
Inches of Precipitation
25
20
15
10
5
0
8/6/07
6/1/08
3/28/09
1/22/10
11/18/10
9/14/11
7/10/12
5/6/13
3/2/14
12/27/14
10/23/15
8/18/16
6/14/17
4/10/18
2/4/19
12/1/19
9/26/20
7/23/21
5/19/22
3/15/23
1/9/24
11/4/24
8/31/25
6/27/26
Date
Groundwater Elevation
Precipitation
Linear (Groundwater Elevation)

Site: **Cathcart Landfill - Shallow Aquifer**

Measurement Date: **4/16/2024**

	[**X**] matrix			[**D**] matrix
Well ID	**X-axis**	**Y-axis**	**GW Elev.**	D
G-01A	413.12	3968.37	**220.05**	1
G-04A	213.73	2603.52	**272.91**	1
G-08D1	710.11	4157.06	**199.47**	1
G-09S	723.45	3612.73	**243.38**	1
G-10S	470.79	3595.13	**243.73**	1
G-11S	267.66	3807.05	**232.43**	1
G-14S	1256.3	2341.04	**319.51**	1
G-24S	778.15	538.89	**308.00**	1
9	0	0	0	1
10	0	0	0	1
11	0	0	0	1
12	0	0	0	1
13	0	0	0	1
14	0	0	0	1
15	0	0	0	1
16	0	0	0	1
17	0	0	0	1
18	0	0	0	1
19	0	0	0	1
20	0	0	0	1

Pt

413.12	213.73	710.11	723.5	470.79	267.7	1256	778.2
3968.37	2603.52	4157.06	3613	3595.13	3807	2341	538.9
220.05	272.91	199.47	243.4	243.73	232.4	319.5	308

{[P]t[P]}

3721076.974	13833394.8	1284983
13833394.8	86048702.88	5967319
1284983.487	5967318.924	532302.6

{[P]t[P]}'

1.661E-06	4.9586E-08	-4.6E-06
4.9586E-08	5.36921E-08	-7.2E-07
-4.56556E-06	-7.2161E-07	2.1E-05

{[P]t[P]}'[P]t

-0.000121681	-0.00076188	0.000475	3E-04	-0.000152511	-4E-04	7E-04	-9E-05
7.47648E-05	-4.6548E-05	0.000114	5E-05	4.04966E-05	5E-05	-4E-05	-2E-04
-0.00013101	0.002873709	-0.00206	-8E-04	0.000372059	9E-04	-7E-04	0.003

{[P]t[P]}'[P]t [D] = [**A**] matrix

A	-6.222E-05
B	9.00577E-05
C	0.002972047

Groundwater Gradient:	**0.0368**	
Conductivity (ft/day):	**0.001**	
Effective porosity:	**10%**	
GW velocity:	**0.000368**	**ft/day**
	0.134	**ft/year**
Flow direction:	**124.64**	**degrees from the positive x-axis**

This spreadsheet is from the paper, "A Spreadsheet Method For Estimating Hydraulic Gradient With Heads From Multiple Wells" submitted to Ground Water, March, 2002. To use the program, enter the coordinates for the well locations in the columns labeled x and y (part of the [**X**] matrix), and the water levels in the z column. The matrices are automatically updated and the gradient magnitude and direction are calculated in cell H30 and H35.

Site: **Cathcart Landfill - Shallow Aquifer Groundwater Velocity, Fourth Quarter 2024**

Measurement Date: **10/1/2024**

	[**X**] matrix			[**D**] matrix
Well ID	**X-axis**	**Y-axis**	**GW Elev.**	D
G-01A	413.12	3968.37	**218.39**	1
G-08D1	710.11	4157.06	**193.64**	1
G-09S	723.45	3612.73	**240.73**	1
G-10S	470.79	3595.13	**242.04**	1
G-11S	267.66	3807.05	**231.50**	1
G-14S	1256.3	2341.04	**313.84**	1
G-24S	778.15	538.89	**306.82**	1
8	0	0	0	1
9	0	0	0	1
10	0	0	0	1
11	0	0	0	1
12	0	0	0	1
13	0	0	0	1
14	0	0	0	1
15	0	0	0	1
16	0	0	0	1
17	0	0	0	1
18	0	0	0	1
19	0	0	0	1
20	0	0	0	1

Pt

413.12	710.11	723.45	470.79	267.66	1256.3	778.15	0
3968.37	4157.06	3612.73	3595.1	3807.05	2341	538.89	0
218.39	193.64	240.73	242.04	231.5	313.84	306.82	0

{[P]t[P]}

3675396.461	13276944.47	1210825.6
13276944.47	79270386.49	5192869.5
1210825.572	5192869.479	447951.24

{[P]t[P]}'

2.68636E-06	1.06983E-07	-8.5E-06
1.06983E-07	5.66931E-08	-9.46E-07
-8.50151E-06	-9.46392E-07	3.618E-05

{[P]t[P]}'[P]t

-0.000322308	0.000706114	0.0002834	-4E-04	-0.00084178	0.001	-5E-04	0
6.24934E-05	0.000128387	5.439E-05	3E-05	2.53788E-05	-3E-05	-2E-04	0
0.000634285	-0.002964691	-0.000859	0.0014	0.00249795	-0.002	0.004	0

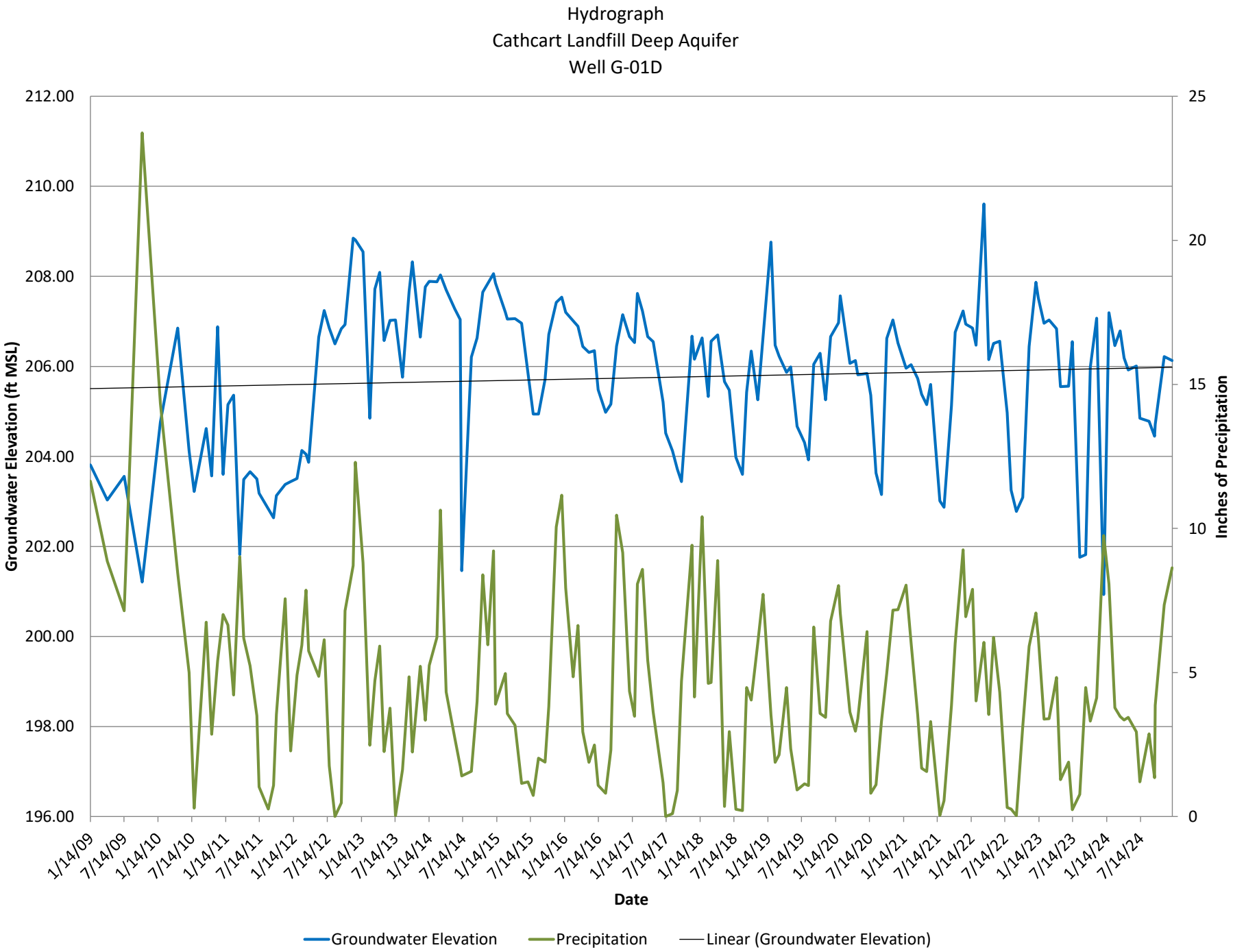
{[P]t[P]}'[P]t [D] = [**A**] matrix

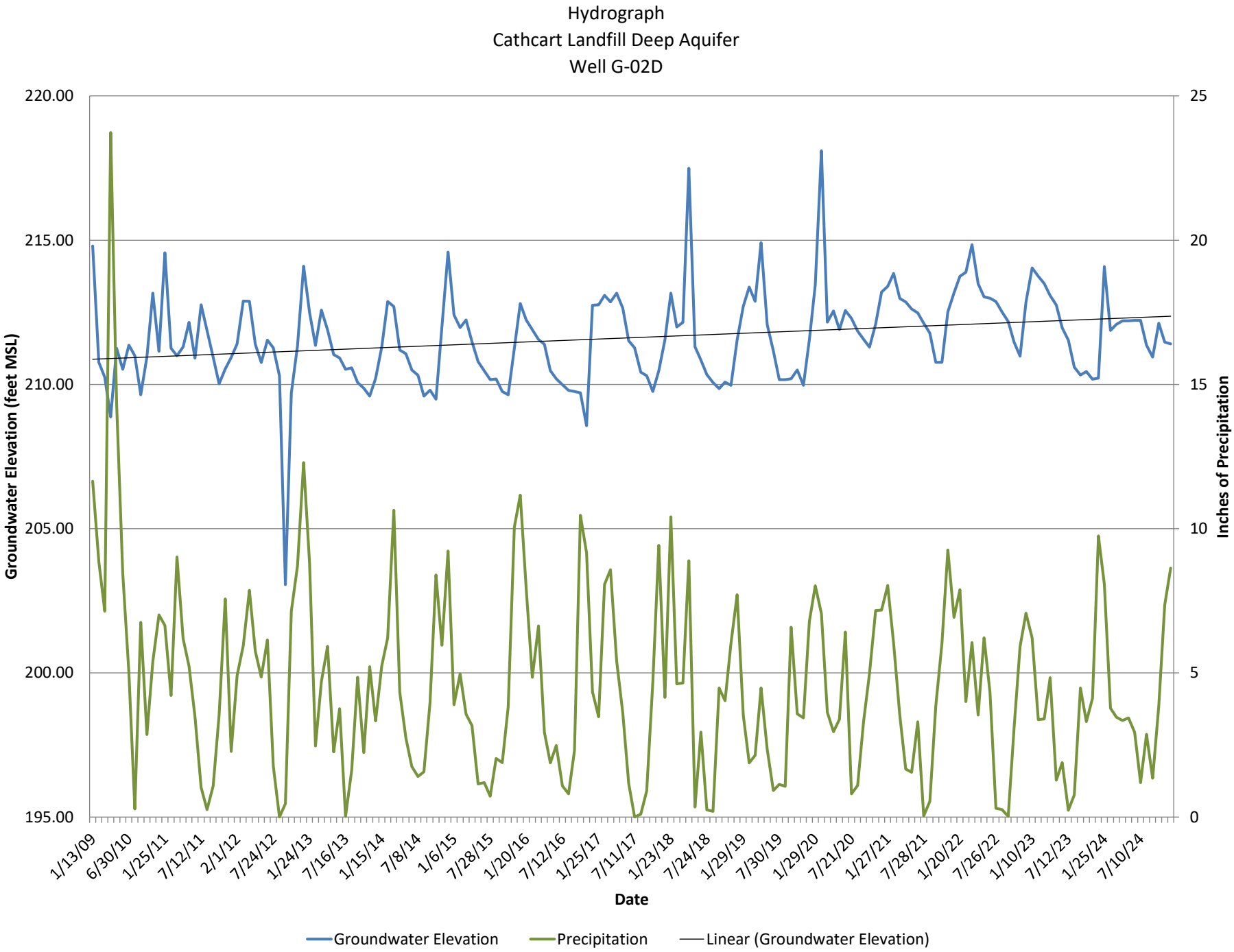
A	-8.61494E-05
B	8.93044E-05
C	0.003097493

Groundwater Gradient:	**0.0401**	
Conductivity (ft/day):	**0.001**	
Effective porosity:	**10%**	
GW velocity:	**0.000401**	**ft/day**
	0.146	**ft/year**
Flow direction:	**133.97**	**degrees from the positive x-axis**

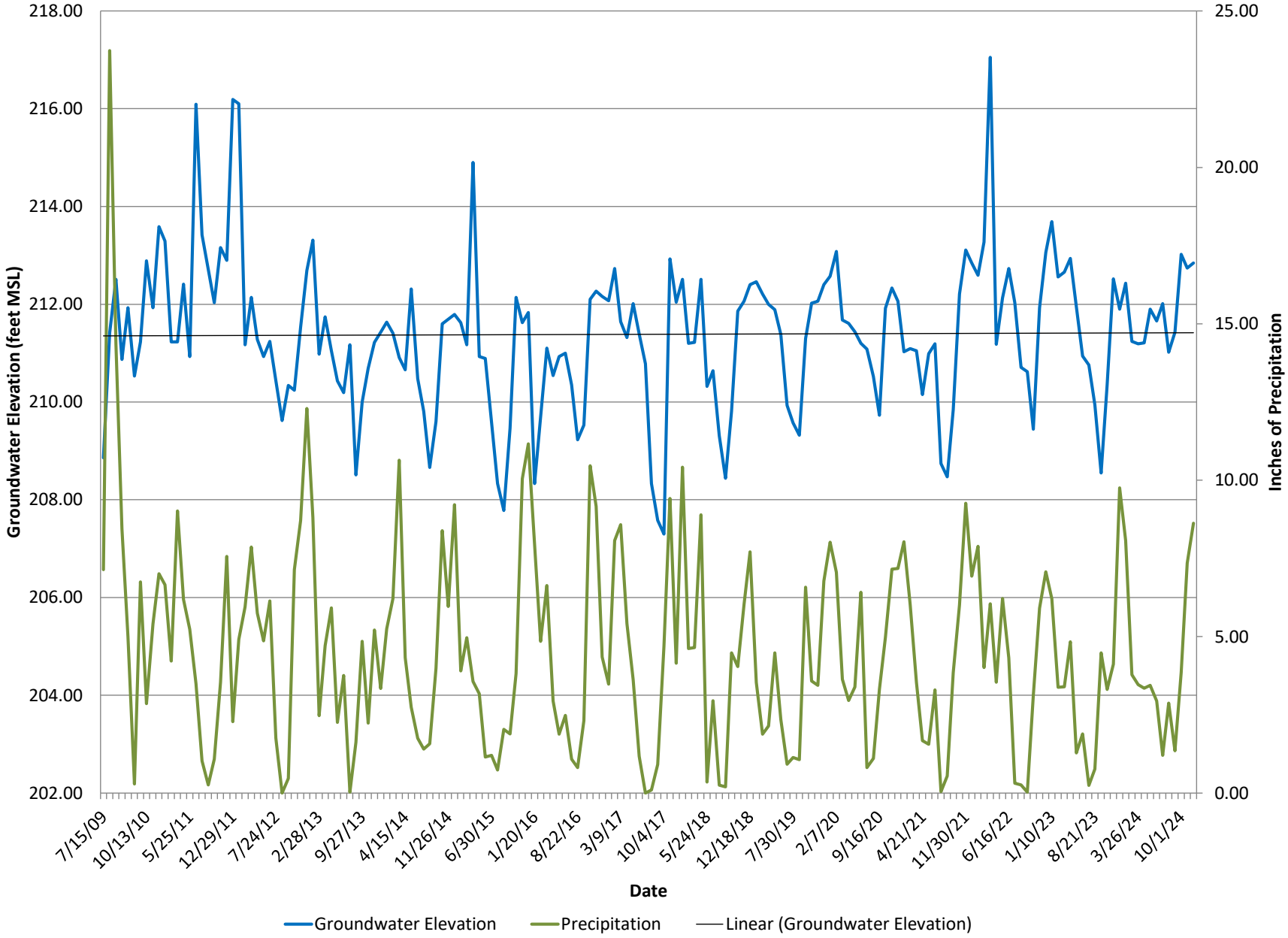
This spreadsheet is from the paper, "A Spreadsheet Method For Estimating Hydraulic Gradient With Heads From Multiple Wells" submitted to Ground Water, March, 2002. To use the program, enter the coordinates for the well locations in the columns labeled x and y (part of the [**X**] matrix), and the water levels in the z column. The matrices are automatically updated and the gradient magnitude and direction are calculated in cell H30 and H35.

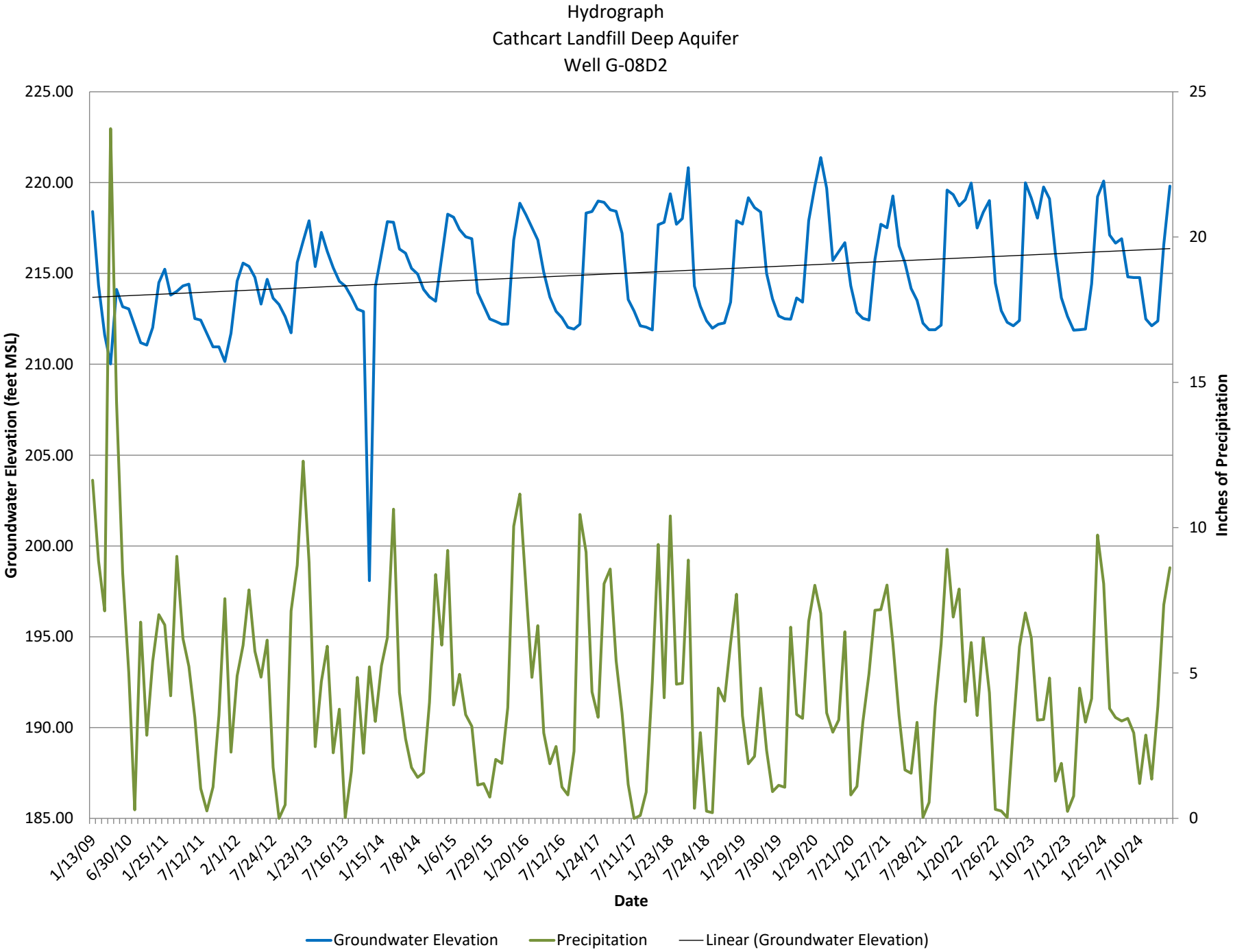
Deep Wells

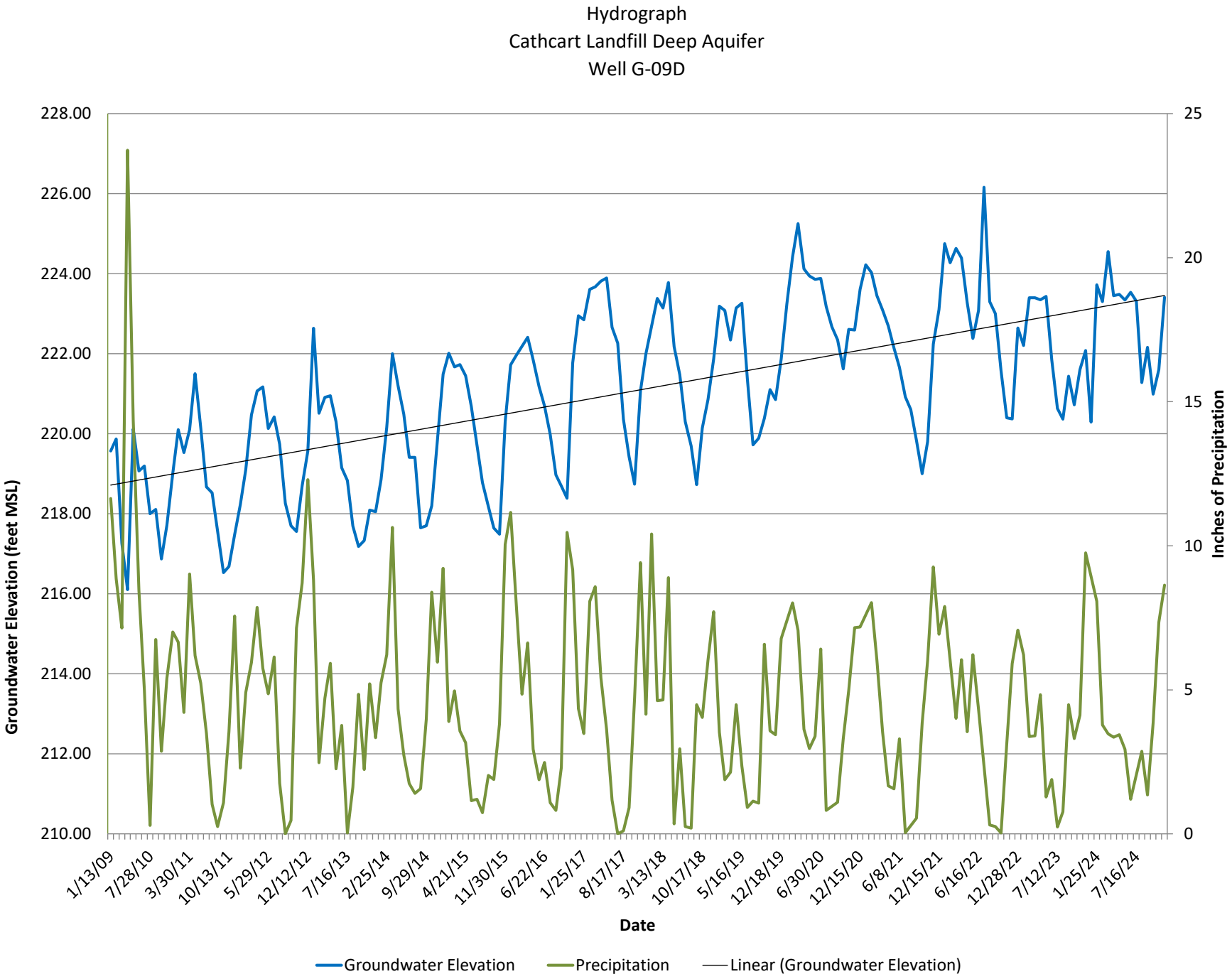

Hydrograph
Cathcart Landfill Deep Aquifer
Well G-01D
Groundwater Elevation (ft MSL)
212.00
210.00
208.00
206.00
204.00
202.00
200.00
198.00
196.00
Inches of Precipitation
25
20
15
10
5
0
1/14/09
7/14/09
1/14/10
7/14/10
1/14/11
7/14/11
1/14/12
7/14/12
1/14/13
7/14/13
1/14/14
7/14/14
1/14/15
7/14/15
1/14/16
7/14/16
1/14/17
7/14/17
1/14/18
7/14/18
1/14/19
7/14/19
1/14/20
7/14/20
1/14/21
7/14/21
1/14/22
7/14/22
1/14/23
7/14/23
1/14/24
7/14/24
Date
Groundwater Elevation
Precipitation
Linear (Groundwater Elevation)


Hydrograph
Cathcart Landfill Deep Aquifer
Well G-02D
Groundwater Elevation (feet MSL)
Inches of Precipitation
220.00
215.00
210.00
205.00
200.00
195.00
25
20
15
10
5
0
1/13/09
6/30/10
1/25/11
7/12/11
2/1/12
7/24/12
1/24/13
7/16/13
1/15/14
7/8/14
1/6/15
7/28/15
1/20/16
7/12/16
1/25/17
7/11/17
1/23/18
7/24/18
1/29/19
7/30/19
1/29/20
7/21/20
1/27/21
7/28/21
1/20/22
7/26/22
1/10/23
7/12/23
1/25/24
7/10/24
Date
Groundwater Elevation
Precipitation
Linear (Groundwater Elevation)

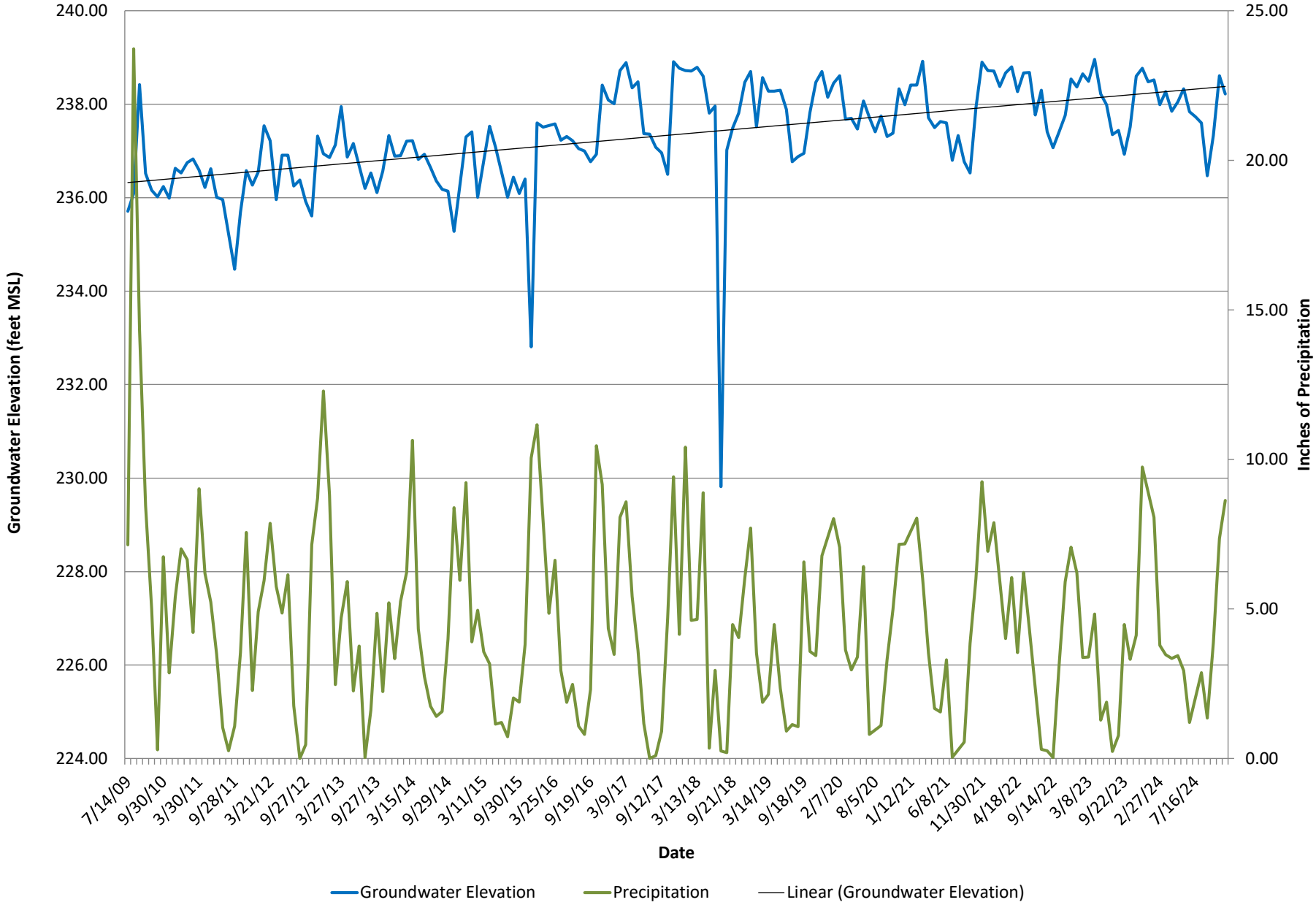
Hydrograph
Cathcart Landfill Deep Aquifer
Well G-06B



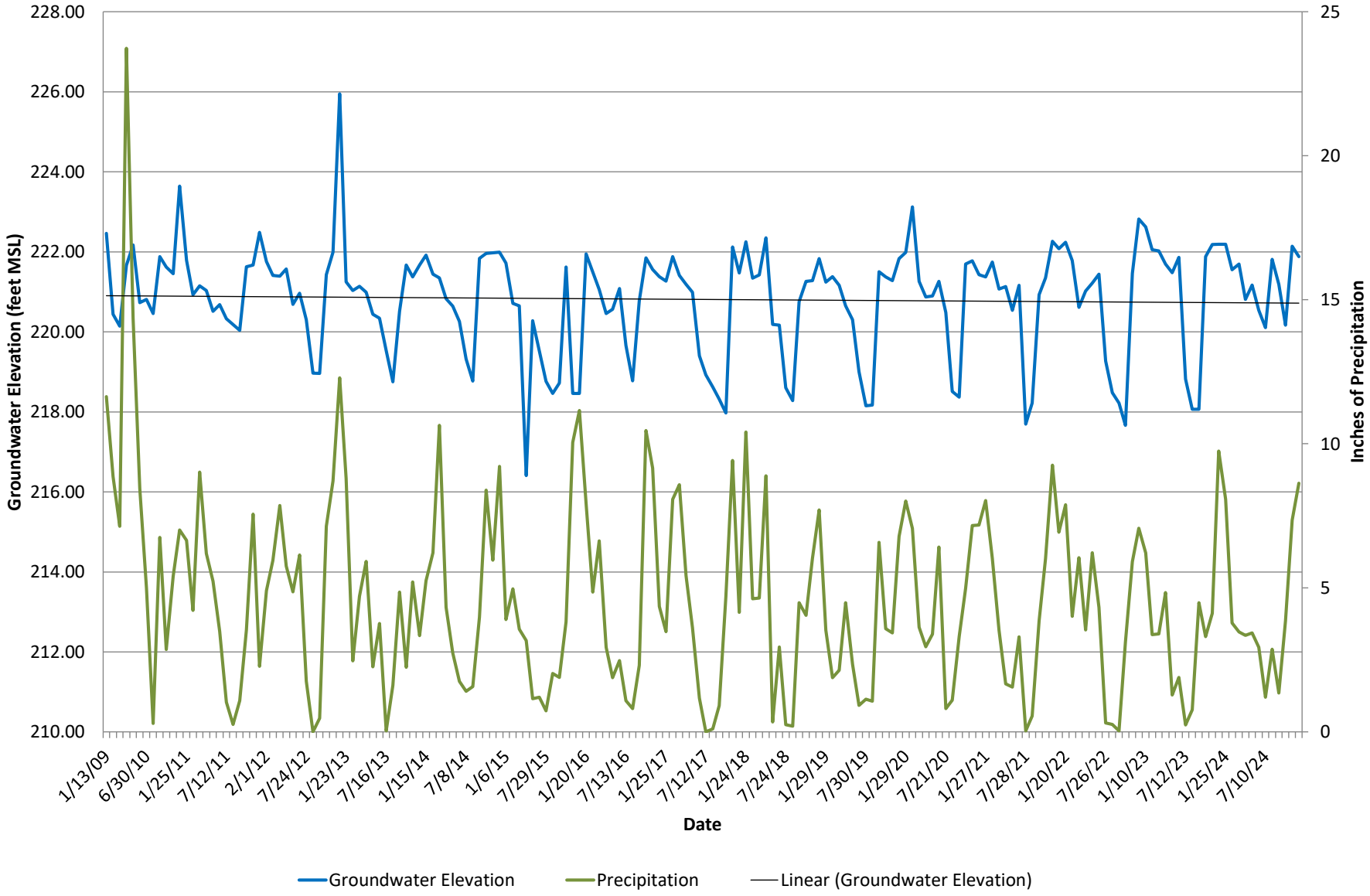

Hydrograph
Cathcart Landfill Deep Aquifer
Well G-08D2
Groundwater Elevation (feet MSL)
225.00
220.00
215.00
210.00
205.00
200.00
195.00
190.00
185.00
Inches of Precipitation
25
20
15
10
5
0
1/13/09
6/30/10
1/25/11
7/12/11
2/1/12
7/24/12
1/23/13
7/16/13
1/15/14
7/8/14
1/6/15
7/29/15
1/20/16
7/12/16
1/24/17
7/11/17
1/23/18
7/24/18
1/29/19
7/30/19
1/29/20
7/21/20
1/27/21
7/28/21
1/20/22
7/26/22
1/10/23
7/12/23
1/25/24
7/10/24
Date
Groundwater Elevation
Precipitation
Linear (Groundwater Elevation)

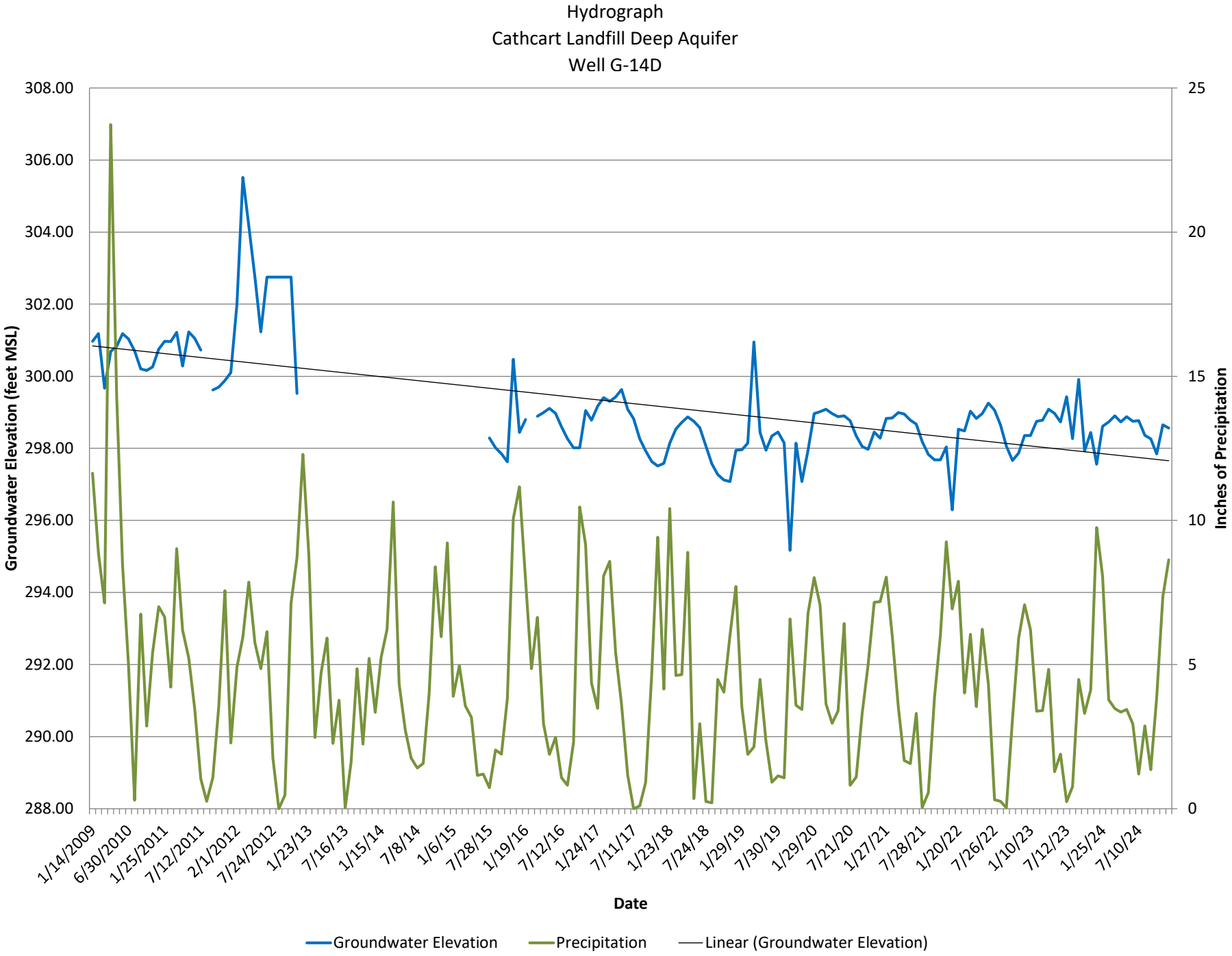

Hydrograph
Cathcart Landfill Deep Aquifer
Well G-09D
Groundwater Elevation (feet MSL)
228.00
226.00
224.00
222.00
220.00
218.00
216.00
214.00
212.00
210.00
Inches of Precipitation
25
20
15
10
5
0
1/13/09
7/28/10
3/30/11
10/13/11
5/29/12
12/12/12
7/16/13
2/25/14
9/29/14
4/21/15
11/30/15
6/22/16
1/25/17
8/17/17
3/13/18
10/17/18
5/16/19
12/18/19
6/30/20
12/15/20
6/8/21
12/15/21
6/16/22
12/28/22
7/12/23
1/25/24
7/16/24
Date
Groundwater Elevation
Precipitation
Linear (Groundwater Elevation)

Hydrograph
Cathcart Landfill Deep Aquifer
Well G-10D

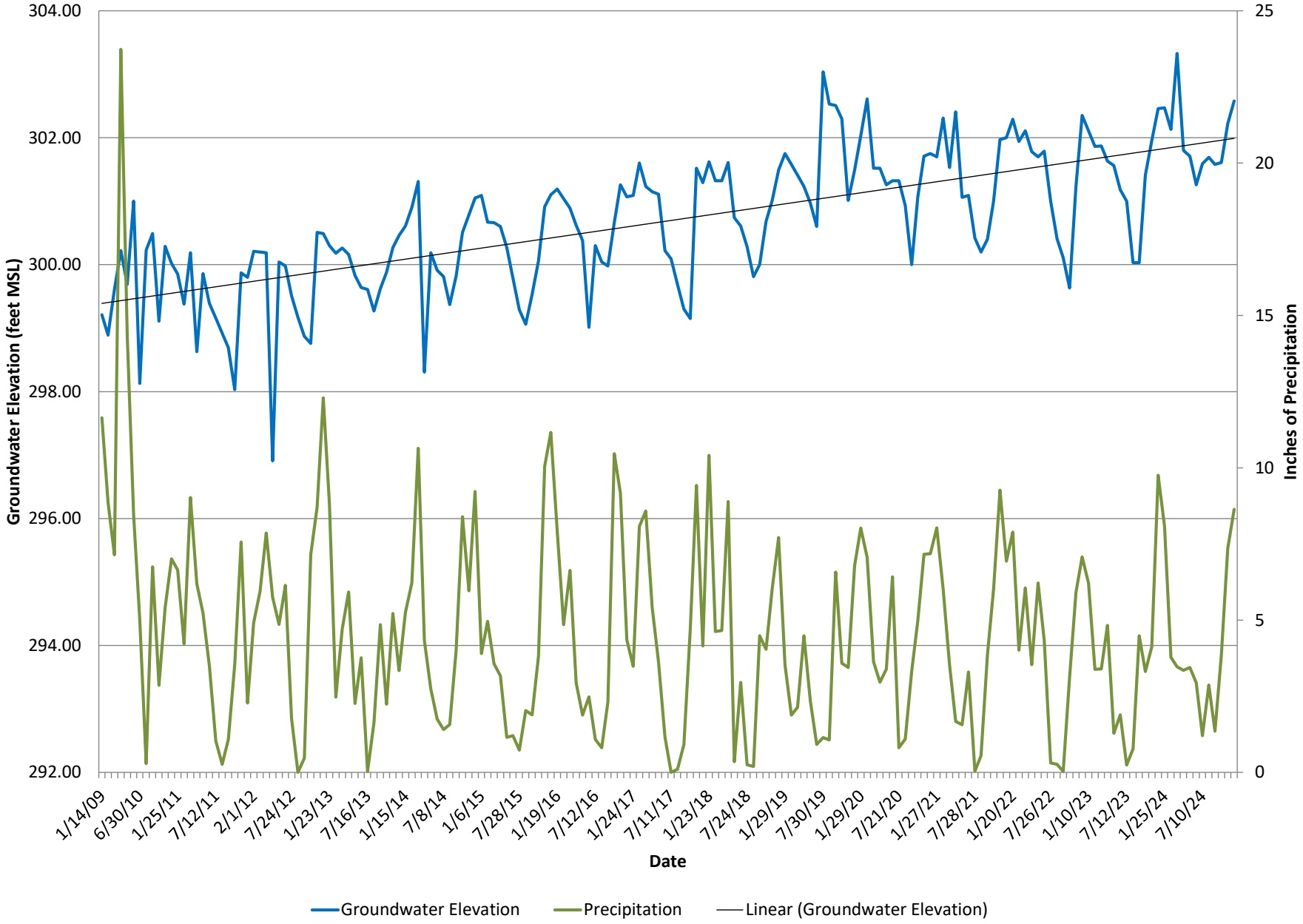


Hydrograph
Cathcart Landfill Deep Aquifer
Well G-13D




Hydrograph
Cathcart Landfill Deep Aquifer
Well G-14D
Groundwater Elevation (feet MSL)
Inches of Precipitation
308.00
306.00
304.00
302.00
300.00
298.00
296.00
294.00
292.00
290.00
288.00
25
20
15
10
5
0
1/14/2009
6/30/2010
1/25/2011
7/12/2011
2/1/2012
7/24/2012
1/23/13
7/16/13
1/15/14
7/8/14
1/6/15
7/28/15
1/19/16
7/12/16
1/24/17
7/11/17
1/23/18
7/24/18
1/29/19
7/30/19
1/29/20
7/21/20
1/27/21
7/28/21
1/20/22
7/26/22
1/10/23
7/12/23
1/25/24
7/10/24
Date
Groundwater Elevation
Precipitation
Linear (Groundwater Elevation)

Hydrograph
Cathcart Landfill Deep Aquifer
Well G-24D



Site: **Cathcart Landfill - Deep Aquifer**

Measurement Date: **4/16/2024**

	[**X**] matrix			[**D**] matrix
Well ID	**X-axis**	**Y-axis**	**GW Elev.**	D
G-01D	431.12	3977.30	**206.19**	1
G-02D	733.79	3884.79	**212.20**	1
G-06B	488.43	3765.90	**211.21**	1
G-08D2	728.12	4156.36	**216.91**	1
G-09D	739.20	3614.85	**223.45**	1
G-10D	495.97	3593.41	**237.85**	1
G-13D	220.31	3939.18	**220.81**	1
G-14D	1266.00	2337.53	**298.73**	1
G-24D	780.99	528.85	**301.80**	1
10	0	0	0	1
11	0	0	0	1
12	0	0	0	1
13	0	0	0	1
14	0	0	0	1
15	0	0	0	1
16	0	0	0	1
17	0	0	0	1
18	0	0	0	1
19	0	0	0	1
20	0	0	0	1

Pt

431.12	733.79	488.43	728.1	739.2	496	220.3	1266	781
3977.3	3884.79	3765.9	4156	3614.85	3593	3939	2338	528.9
206.19	212.2	211.21	216.9	223.45	237.9	220.8	298.7	301.8

{[P]t[P]}

4546675.575	18125521.98	1451383
18125521.98	109608443.7	6731522
1451382.998	6731522.115	514785.2

{[P]t[P]}'

2.37575E-06	9.39202E-08	-7.93E-06
9.39202E-08	5.00423E-08	-9.19E-07
-7.92631E-06	-9.1917E-07	3.63E-05

{[P]t[P]}'[P]t

-0.000236544	0.000426198	-0.00016	4E-04	0.000324527	-4E-04	-9E-04	9E-04	-5E-04
5.00005E-05	6.82737E-05	4.02E-05	8E-05	4.49328E-05	8E-06	1E-05	-4E-05	-2E-04
0.000413623	-0.001682183	0.000336	-0.002	-0.001068463	0.001	0.003	-0.001	0.004

{[P]t[P]}'[P]t [D] = [**A**] matrix

A	-9.89142E-05
B	8.67385E-05
C	0.003280651

Groundwater Gradient:	**0.0401**	
Conductivity (ft/day):	**0.029**	
Effective porosity:	**10%**	
GW velocity:	**0.0116**	**ft/day**
	4.24	**ft/year**
Flow direction:	**138.75**	**degrees from the positive x-axis**

This spreadsheet is from the paper, "A Spreadsheet Method For Estimating Hydraulic Gradient With Heads From Multiple Wells" submitted to Ground Water, March, 2002. To use the program, enter the coordinates for the well locations in the columns labeled x and y (part of the [**X**] matrix), and the water levels in the z column. The matrices are automatically updated and the gradient magnitude and direction are calculated in cell H30 and H35.

Site: **Cathcart Landfill - Deep Aquifer Groundwater Velocity, Fourth Quarter 2024**

Measurement Date: **10/1/2024**

	[**X**] matrix			[**D**] matrix
Well ID	**X-axis**	**Y-axis**	**GW Elev.**	D
G-01D	431.12	3977.30	**204.71**	1
G-02D	733.79	3884.79	**212.12**	1
G-06B	488.43	3765.90	**213.02**	1
G-08D2	728.12	4156.36	**212.38**	1
G-09D	739.20	3614.85	**220.99**	1
G-10D	495.97	3593.41	**237.33**	1
G-13D	220.31	3939.18	**220.17**	1
G-14D	1266.00	2337.53	**297.84**	1
G-24D	780.99	528.85	**301.61**	1
10	0	0	0	1
11	0	0	0	1
12	0	0	0	1
13	0	0	0	1
14	0	0	0	1
15	0	0	0	1
16	0	0	0	1
17	0	0	0	1
18	0	0	0	1
19	0	0	0	1
20	0	0	0	1

Pt

431.12	733.79	488.43	728.1	739.2	496	220.3	1266	781
3977.3	3884.79	3765.9	4156	3614.85	3593	3939	2338	528.9
204.71	212.12	213.02	212.4	220.99	237.3	220.2	297.8	301.6

{[P]t[P]}

4546675.575	18125521.98	1444779
18125521.98	109608443.7	6697850
1444779.449	6697849.834	510698.1

{[P]t[P]}'

2.33513E-06	8.82838E-08	-7.76E-06
8.82838E-08	4.92819E-08	-8.96E-07
-7.76399E-06	-8.96094E-07	3.57E-05

{[P]t[P]}'[P]t

-0.000231515	0.000409559	-0.000181	4E-04	0.000329494	-4E-04	-8E-04	9E-04	-5E-04
5.06304E-05	6.61522E-05	3.78E-05	8E-05	4.53783E-05	8E-06	2E-05	-4E-05	-2E-04
0.000391785	-0.001610893	0.000433	-0.002	-0.001094567	0.001	0.003	-0.001	0.004

{[P]t[P]}'[P]t [D] = [**A**] matrix

A	-9.05613E-05
B	8.80948E-05
C	0.003252343

Groundwater Gradient:	**0.0388**	
Conductivity (ft/day):	**0.029**	
Effective porosity:	**10%**	
GW velocity:	**0.0113**	**ft/day**
	4.11	**ft/year**
Flow direction:	**135.79**	**degrees from the positive x-axis**

This spreadsheet is from the paper, "A Spreadsheet Method For Estimating Hydraulic Gradient With Heads From Multiple Wells" submitted to Ground Water, March, 2002. To use the program, enter the coordinates for the well locations in the columns labeled x and y (part of the [**X**] matrix), and the water levels in the z column. The matrices are automatically updated and the gradient magnitude and direction are calculated in cell H30 and H35.

Appendix B

Groundwater Analytical Summary Tables

Shallow Wells

Groundwater Analytical Summary - Shallow Wells: First Quarter 2024
Cathcart Landfill, Snohomish County, WA

	Statistical Method	Number of Samples	Number of Detects	Prediction Limit	Primary GW Stds 173-200	G-09S					G-10S				
						1/10/24	D	V	Tr	Ch	1/10/24	D	V	Tr	Ch
CONVENTIONAL CHEMISTRY PARAMETERS (mg/L)															
Alkalinity (as CaCO3)	nonpar	58	58	230	--	350		V			430		V		
Ammonia Nitrogen	lognor	58	40	8.0717	--	0.02	U				0.254				
Bicarbonate	nonpar	58	58	210	--	350		V			430		V		
Calcium, Dissolved	normal	54	54	21.056	--	71.1		V			94.7		V		
Chemical Oxygen Demand	nonpar	58	7	18	--	10	U				10	U			
Chloride	lognor	58	58	16.8276	250	3.58					6.72			D	N
Conductivity (umhos/cm)	nonpar	57	57	540	700	920		V			1300		V		
Magnesium, Dissolved	lognor	57	44	34.4414	--	28.2		P			23.1				
Nitrate Nitrogen (mg-N/L)	nonpar	58	50	1.3	10	0.01	U				0.029				
Nitrite Nitrogen (mg-N/L)	lognor	56	32	0.0093	1	0.005					0.010				
pH (std units)	nonpar	59	59	6.60-9.39	6.5-8.5	5.75		V			6.47		E		
Potassium, Dissolved	normal	56	44	2.64	--	4.81		V			4.28		V		
Sodium, Dissolved	nonpar	58	58	120.347	20	80.6					179		V		
Sulfate	nonpar	57	57	310.7689	250	143			D	N	270			D	Y
Total Dissolved Solids	nonpar	58	58	373.9926	500	640		V		Y	820		V		
Total Organic Carbon	nonpar	58	53	14	--	5.3					3.2				
TOTAL METALS EPA Methods 200.7/200.8 (mg/L)															
Antimony	--	--	--	--	0.006	0.0003	U				0.0003	U			
Arsenic	--	--	--	--	0.00005	0.00062					0.00556				
Barium	--	--	--	--	1	0.01	U				0.01	U			
Beryllium	--	--	--	--	0.004	0.0003	U				0.0003	U			
Cadmium	--	--	--	--	0.005	0.0001	U				0.0001	U			
Chromium	--	--	--	--	0.05	0.02	U				0.02	U			
Cobalt	--	--	--	--	--	0.01	U				0.01	U			
Copper	--	--	--	--	1	0.01	U				0.01	U			
Iron	--	--	--	--	0.3	0.435					10.4				
Lead	--	--	--	--	0.05	0.000416					0.0002	U			
Manganese	--	--	--	--	0.05	0.075					3.18				
Nickel	--	--	--	--	0.1	0.024					0.01	U			
Selenium	--	--	--	--	0.01	0.001	U				0.001	U			
Silver	--	--	--	--	0.05	0.00105					0.0002	U			
Thallium	--	--	--	--	0.002	0.0001	U				0.0001	U			
Vanadium	--	--	--	--	--	0.02	U				0.02	U			
Zinc	--	--	--	--	5	0.015	U				0.015	U			
DISSOLVED METALS EPA Methods 200.7/200.8 (mg/L)															
Antimony	nonpar	52	22	0.0006	0.006	0.0001	U				0.0001	U			
Arsenic	normal	58	58	0.0045	0.00005	0.00074					0.00489		V		
Barium	lognor	57	35	19.3066	1	0.01	U				0.01	U			
Beryllium	nonpar	58	0	0.0005	0.004	0.0002	U				0.0002	U			
Cadmium	nonpar	57	13	0.001	0.005	0.00005	U				0.00005	U			
Chromium	nonpar	58	14	0.015	0.05	0.02	U				0.02	U			
Cobalt	nonpar	58	3	0.005	--	0.01	U				0.01	U			
Copper	nonpar	57	19	0.115	1	0.02	U				0.02	U			
Iron	lognor	58	35	10.5013	0.3	0.03	U				2.89			D	Y
Lead	nonpar	58	20	0.0027	0.05	0.0002	U				0.0002	U			
Manganese	lognor	58	34	17.4234	0.05	0.024			D	Y	2.98			D	Y
Nickel	nonpar	58	15	0.038	0.1	0.018					0.01	U			
Selenium	nonpar	56	2	0.0004	0.01	0.0012		V			0.0005	U			
Silver	nonpar	52	0	0.0001	0.05	0.0002	U				0.0002	U			
Thallium	nonpar	58	1	0.00009	0.002	0.00005	U				0.00005	U			
Vanadium	nonpar	58	0	0.01	--	0.02	U				0.02	U			
Zinc	nonpar	58	19	0.03	5	0.02	U				0.02	U			
VOLATILE ORGANIC COMPOUNDS (VOCs) EPA Method 8260/8260 SIM (µg/L)															
1,1,1-Trichloroethane	--	--	--	--	200	1	U				1	U			
1,1,2,2-Tetrachloroethane	--	--	--	--	--	1	U				1	U			
1,1,2-Trichloroethane	--	--	--	--	--	2	U				2	U			
1,1-Dichloroethane	--	--	--	--	1	1	U				1	U			
1,1-Dichloroethylene	--	--	--	--	--	1	U				1	U			
1,2,3-Trichloropropane	--	--	--	--	--	1	U				1	U			
1,2-Dibromo-3-chloropropane	--	--	--	--	0.2	0.03	U				0.03	U			
1,2-Dibromoethane	--	--	--	--	0.001	0.01	U				0.01	U			
1,2-Dichlorobenzene	--	--	--	--	--	1	U				1	U			

Groundwater Analytical Summary - Shallow Wells: First Quarter 2024
Cathcart Landfill, Snohomish County, WA

	Statistical Method	Number of Samples	Number of Detects	Prediction Limit	Primary GW Stds 173-200	G-09S					G-10S				
						1/10/24	D	V	Tr	Ch	1/10/24	D	V	Tr	Ch
VOLATILE ORGANIC COMPOUNDS (VOCs) EPA Method 8260/8260 SIM (µg/L) (cont.)															
1,2-Dichloroethane	--	--	--	--	**0.5**	0.03	U				0.03	U			
1,2-Dichloropropane	--	--	--	--	**0.6**	0.02	U				0.02	U			
1,4-Dichlorobenzene	--	--	--	--	**4**	1	U				1	U			
2-Butanone	--	--	--	--	**--**	5	U				5	U			
2-Hexanone	--	--	--	--	**--**	2	U				2	U			
4-Methyl-2-Pentanone (MIBK)	--	--	--	--	**--**	3	U				3	U			
Acetone	--	--	--	--	**--**	5	U				5	U			
Acrylonitrile	--	--	--	--	**0.07**	0.05	U				0.05	U			
Benzene	--	--	--	--	**1**	0.5	U				0.5	U			
Bromodichloromethane	--	--	--	--	**0.3**	0.02	U				0.02	U			
Bromoform	--	--	--	--	**5**	2	U				2	U			
Bromomethane	--	--	--	--	**--**	2	U				2	U			
Carbon Disulfide	--	--	--	--	**--**	3	U				3	U			
Carbon Tetrachloride	--	--	--	--	**0.3**	0.02	U				0.02	U			
Chlorobenzene	--	--	--	--	**--**	0.03	U				0.03	U			
Chlorodibromomethane	--	--	--	--	**0.5**	0.5	U				0.5	U			
Chloroethane	--	--	--	--	**--**	3	U				3	U			
Chloroform	--	--	--	--	**7**	1	U				1	U			
Chloromethane	--	--	--	--	**--**	2	U				2	U			
cis-1,2-Dichloroethene	--	--	--	--	**--**	0.03	U				0.03	U			
cis-1,3-Dichloropropene	--	--	--	--	**0.2**	0.03	U				0.03	U			
Dibromomethane	--	--	--	--	**--**	0.02	U				0.02	U			
Ethyl Benzene	--	--	--	--	**--**	1	U				1	U			
m,p-Xylene	--	--	--	--	**--**	5	U				5	U			
Methyl Iodide	--	--	--	--	**--**	3	U				3	U			
Methylene Chloride	--	--	--	--	**5**	3	U				3	U			
o-Xylene	--	--	--	--	**--**	1.5	U				1.5	U			
Styrene	--	--	--	--	**--**	2	U				2	U			
Tetrachloroethylene	--	--	--	--	**0.8**	0.03	U				0.03	U			
Toluene	--	--	--	--	**--**	2	U				2	U			
trans-1,2-Dichloroethene	--	--	--	--	**--**	1	U				1	U			
trans-1,3-Dichloropropene	--	--	--	--	**0.2**	0.03	U				0.03	U			
trans-1,4-Dichloro-2-butene	--	--	--	--	**--**	2	U				2	U			
Trichlorethene (1,1,2-Trichloroet	--	--	--	--	**3**	2	U				2	U			
Trichlorofluoromethane	--	--	--	--	**--**	2	U				2	U			
Vinyl Acetate	--	--	--	--	**--**	3	U				3	U			
Vinyl Chloride	--	--	--	--	**0.02**	0.05	U				0.05	U			

D: U = Indicates compound was not detected at the given reporting limit; X indicates that the compound was detected in the trip blank and contamination is suspected.

V: E= Exceedance, waiting verification based on subsequent lab data; V= Exceedance verified based on previous lab data; P=Passed, previous exceedance not verified based on current lab data.

Tr: I=increasing Trend, D=Decreasing Trend;

Ch: Y indicates a change in trend from previous quarter; N means no change in trend.

Values in **purple** exceed the prediction limit; indicates that a value exceeded the Groundwater Standards

The groundwater standards listed are based on the Washington Administrative Code (WAC) 173-200 groundwater limits as modified by the TMS 91-11 standards - the most restrictive of the two is used.

B = Methylene chloride was measured in the lab blank at a similar concentration - contamination during analysis suspected.

Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
Alkalinity (as caco3)	mg/L	G-01A	10/17/2023		28.0000		230.0000
Ammonia nitrogen	mg-N/L	G-01A	10/17/2023	ND	0.0200		6.7986
Bicarbonate	mg/L	G-01A	10/17/2023		28.0000		210.0000
Chemical oxygen demand	mg/L	G-01A	10/17/2023	ND	10.0000		18.0000
Chloride	mg/L	G-01A	10/17/2023		1.9600		17.0245
Conductivity	umhos/cm	G-01A	10/17/2023		160.0000		540.0000
Dissolved antimony	mg/L	G-01A	10/17/2023		0.0001		0.0006
Dissolved arsenic	mg/L	G-01A	10/17/2023		0.0002		0.0047
Dissolved barium	mg/L	G-01A	10/17/2023	ND	0.0100		31.0848
Dissolved beryllium	mg/L	G-01A	10/17/2023	ND	0.0002		0.0005
Dissolved cadmium	mg/L	G-01A	10/17/2023	ND	0.0001		0.0010
Dissolved calcium	mg/L	G-01A	10/17/2023		15.4000		20.5204
Dissolved chromium	mg/L	G-01A	10/17/2023	ND	0.0200		0.0150
Dissolved cobalt	mg/L	G-01A	10/17/2023	ND	0.0100		0.0050
Dissolved copper	mg/L	G-01A	10/17/2023	ND	0.0200		0.1150
Dissolved iron	mg/L	G-01A	10/17/2023	ND	0.0300		10.3131
Dissolved lead	mg/L	G-01A	10/17/2023	ND	0.0002		0.0027
Dissolved magnesium	mg/L	G-01A	10/17/2023		4.1000		29.5281
Dissolved manganese	mg/L	G-01A	10/17/2023	ND	0.0100		26.2749
Dissolved nickel	mg/L	G-01A	10/17/2023	ND	0.0100		0.0380
Dissolved potassium	mg/L	G-01A	10/17/2023		1.4400		1.4923
Dissolved selenium	mg/L	G-01A	10/17/2023	ND	0.0005		0.0004
Dissolved silver	mg/L	G-01A	10/17/2023	ND	0.0002		0.0001
Dissolved sodium	mg/L	G-01A	10/17/2023		6.5000		114.0000
Dissolved thallium	mg/L	G-01A	10/17/2023	ND	0.0001		0.0000
Dissolved vanadium	mg/L	G-01A	10/17/2023	ND	0.0200		0.0100
Dissolved zinc	mg/L	G-01A	10/17/2023	ND	0.0200		0.0300
Nitrate nitrogen	mg-N/L	G-01A	10/17/2023		0.1900		1.3000
Nitrite nitrogen	mg-N/L	G-01A	10/17/2023	ND	0.0020		37.8321
pH	std units	G-01A	10/17/2023		4.7700	***	6.60 - 9.34
Sulfate	mg/L	G-01A	10/17/2023		40.4000		169.0000
Total dissolved solids	mg/L	G-01A	10/17/2023		100.0000		360.0000
Total organic carbon	mg/L	G-01A	10/17/2023		5.5000		14.0000
Alkalinity (as caco3)	mg/L	G-04A	04/18/2023		220.0000	**	230.0000
Ammonia nitrogen	mg-N/L	G-04A	04/18/2023		0.1960		6.7986
Bicarbonate	mg/L	G-04A	04/18/2023		220.0000	***	210.0000
Chemical oxygen demand	mg/L	G-04A	04/18/2023	ND	10.0000		18.0000
Chloride	mg/L	G-04A	04/18/2023		28.2000	*	17.0245
Conductivity	umhos/cm	G-04A	04/18/2023		600.0000	*	540.0000
Dissolved antimony	mg/L	G-04A	04/18/2023	ND	0.0001		0.0006
Dissolved arsenic	mg/L	G-04A	04/18/2023		0.0024	**	0.0047
Dissolved barium	mg/L	G-04A	04/18/2023	ND	0.0100		31.0848
Dissolved beryllium	mg/L	G-04A	04/18/2023	ND	0.0060		0.0005
Dissolved cadmium	mg/L	G-04A	04/18/2023	ND	0.0001		0.0010
Dissolved calcium	mg/L	G-04A	04/18/2023		53.9000	***	20.5204
Dissolved chromium	mg/L	G-04A	04/18/2023	ND	0.0200		0.0150
Dissolved cobalt	mg/L	G-04A	04/18/2023		0.0140	***	0.0050
Dissolved copper	mg/L	G-04A	04/18/2023	ND	0.0200		0.1150
Dissolved iron	mg/L	G-04A	04/18/2023		0.8230	**	10.3131
Dissolved lead	mg/L	G-04A	04/18/2023	ND	0.0002		0.0027
Dissolved magnesium	mg/L	G-04A	04/18/2023		31.0000	*	29.5281
Dissolved manganese	mg/L	G-04A	04/18/2023		7.5600		26.2749
Dissolved nickel	mg/L	G-04A	04/18/2023		0.0160		0.0380
Dissolved potassium	mg/L	G-04A	04/18/2023		2.6700	***	1.4923
Dissolved selenium	mg/L	G-04A	04/18/2023	ND	0.0005		0.0004
Dissolved silver	mg/L	G-04A	04/18/2023	ND	0.0002		0.0001
Dissolved sodium	mg/L	G-04A	04/18/2023		15.1000		114.0000
Dissolved thallium	mg/L	G-04A	04/18/2023	ND	0.0001		0.0000
Dissolved vanadium	mg/L	G-04A	04/18/2023	ND	0.0200		0.0100
Dissolved zinc	mg/L	G-04A	04/18/2023	ND	0.0200		0.0300
Nitrate nitrogen	mg-N/L	G-04A	04/18/2023		0.0840		1.3000
Nitrite nitrogen	mg-N/L	G-04A	04/18/2023	ND	0.0020		37.8321
pH	std units	G-04A	04/18/2023		6.1800	*	6.60 - 9.34
Sulfate	mg/L	G-04A	04/18/2023		32.8000		169.0000
Total dissolved solids	mg/L	G-04A	04/18/2023		360.0000		360.0000
Total organic carbon	mg/L	G-04A	04/18/2023		9.5000		14.0000
Alkalinity (as caco3)	mg/L	G-08D1	10/17/2023		170.0000		230.0000

Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
Ammonia nitrogen	mg-N/L	G-08D1	10/17/2023		0.1160		6.7986
Bicarbonate	mg/L	G-08D1	10/17/2023		170.0000		210.0000
Chemical oxygen demand	mg/L	G-08D1	10/17/2023	ND	10.0000		18.0000
Chloride	mg/L	G-08D1	10/17/2023		2.9700		17.0245
Conductivity	umhos/cm	G-08D1	10/17/2023		440.0000		540.0000
Dissolved antimony	mg/L	G-08D1	10/17/2023	ND	0.0001		0.0006
Dissolved arsenic	mg/L	G-08D1	10/17/2023		0.0017		0.0047
Dissolved barium	mg/L	G-08D1	10/17/2023	ND	0.0100		31.0848
Dissolved beryllium	mg/L	G-08D1	10/17/2023	ND	0.0002		0.0005
Dissolved cadmium	mg/L	G-08D1	10/17/2023	ND	0.0001		0.0010
Dissolved calcium	mg/L	G-08D1	10/17/2023		0.8300		20.5204
Dissolved chromium	mg/L	G-08D1	10/17/2023	ND	0.0200		0.0150
Dissolved cobalt	mg/L	G-08D1	10/17/2023	ND	0.0100		0.0050
Dissolved copper	mg/L	G-08D1	10/17/2023	ND	0.0200		0.1150
Dissolved iron	mg/L	G-08D1	10/17/2023	ND	0.0300		10.3131
Dissolved lead	mg/L	G-08D1	10/17/2023	ND	0.0002		0.0027
Dissolved magnesium	mg/L	G-08D1	10/17/2023	ND	0.0500		29.5281
Dissolved manganese	mg/L	G-08D1	10/17/2023	ND	0.0100		26.2749
Dissolved nickel	mg/L	G-08D1	10/17/2023	ND	0.0100		0.0380
Dissolved potassium	mg/L	G-08D1	10/17/2023	ND	0.5000		1.4923
Dissolved selenium	mg/L	G-08D1	10/17/2023	ND	0.0005		0.0004
Dissolved silver	mg/L	G-08D1	10/17/2023	ND	0.0002		0.0001
Dissolved sodium	mg/L	G-08D1	10/17/2023		106.0000		114.0000
Dissolved thallium	mg/L	G-08D1	10/17/2023	ND	0.0001		0.0000
Dissolved vanadium	mg/L	G-08D1	10/17/2023	ND	0.0200		0.0100
Dissolved zinc	mg/L	G-08D1	10/17/2023	ND	0.0200		0.0300
Nitrate nitrogen	mg-N/L	G-08D1	10/17/2023		0.1200		1.3000
Nitrite nitrogen	mg-N/L	G-08D1	10/17/2023		0.0340		37.8321
pH	std units	G-08D1	10/17/2023		8.7700	**	6.60 - 9.34
Sulfate	mg/L	G-08D1	10/17/2023		47.9000		169.0000
Total dissolved solids	mg/L	G-08D1	10/17/2023		260.0000		360.0000
Total organic carbon	mg/L	G-08D1	10/17/2023		0.5800		14.0000
Alkalinity (as caco3)	mg/L	G-09S	01/10/2024		350.0000	***	230.0000
Ammonia nitrogen	mg-N/L	G-09S	01/10/2024	ND	0.0200		6.7986
Bicarbonate	mg/L	G-09S	01/10/2024		350.0000	***	210.0000
Chemical oxygen demand	mg/L	G-09S	01/10/2024	ND	10.0000		18.0000
Chloride	mg/L	G-09S	01/10/2024		3.5800		17.0245
Conductivity	umhos/cm	G-09S	01/10/2024		920.0000	***	540.0000
Dissolved antimony	mg/L	G-09S	01/10/2024	ND	0.0001		0.0006
Dissolved arsenic	mg/L	G-09S	01/10/2024		0.0007		0.0047
Dissolved barium	mg/L	G-09S	01/10/2024	ND	0.0100		31.0848
Dissolved beryllium	mg/L	G-09S	01/10/2024	ND	0.0002		0.0005
Dissolved cadmium	mg/L	G-09S	01/10/2024	ND	0.0001		0.0010
Dissolved calcium	mg/L	G-09S	01/10/2024		71.1000	***	20.5204
Dissolved chromium	mg/L	G-09S	01/10/2024	ND	0.0200		0.0150
Dissolved cobalt	mg/L	G-09S	01/10/2024	ND	0.0100		0.0050
Dissolved copper	mg/L	G-09S	01/10/2024	ND	0.0200		0.1150
Dissolved iron	mg/L	G-09S	01/10/2024	ND	0.0300		10.3131
Dissolved lead	mg/L	G-09S	01/10/2024	ND	0.0002		0.0027
Dissolved magnesium	mg/L	G-09S	01/10/2024		28.2000	**	29.5281
Dissolved manganese	mg/L	G-09S	01/10/2024		0.0240		26.2749
Dissolved nickel	mg/L	G-09S	01/10/2024		0.0180		0.0380
Dissolved potassium	mg/L	G-09S	01/10/2024		4.8100	***	1.4923
Dissolved selenium	mg/L	G-09S	01/10/2024		0.0012	***	0.0004
Dissolved silver	mg/L	G-09S	01/10/2024	ND	0.0002		0.0001
Dissolved sodium	mg/L	G-09S	01/10/2024		80.6000		114.0000
Dissolved thallium	mg/L	G-09S	01/10/2024	ND	0.0001		0.0000
Dissolved vanadium	mg/L	G-09S	01/10/2024	ND	0.0200		0.0100
Dissolved zinc	mg/L	G-09S	01/10/2024	ND	0.0200		0.0300
Nitrate nitrogen	mg-N/L	G-09S	01/10/2024	ND	0.0100		1.3000
Nitrite nitrogen	mg-N/L	G-09S	01/10/2024		0.0050		37.8321
pH	std units	G-09S	01/10/2024		5.7500	***	6.60 - 9.34
Sulfate	mg/L	G-09S	01/10/2024		143.0000		169.0000
Total dissolved solids	mg/L	G-09S	01/10/2024		640.0000	***	360.0000
Total organic carbon	mg/L	G-09S	01/10/2024		5.3000		14.0000
Alkalinity (as caco3)	mg/L	G-10S	01/10/2024		430.0000	***	230.0000
Ammonia nitrogen	mg-N/L	G-10S	01/10/2024		0.2540		6.7986

Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
Bicarbonate	mg/L	G-10S	01/10/2024		430.0000	***	210.0000
Chemical oxygen demand	mg/L	G-10S	01/10/2024	ND	10.0000		18.0000
Chloride	mg/L	G-10S	01/10/2024		6.7200		17.0245
Conductivity	umhos/cm	G-10S	01/10/2024		1300.0000	***	540.0000
Dissolved antimony	mg/L	G-10S	01/10/2024	ND	0.0001		0.0006
Dissolved arsenic	mg/L	G-10S	01/10/2024		0.0049	***	0.0047
Dissolved barium	mg/L	G-10S	01/10/2024	ND	0.0100		31.0848
Dissolved beryllium	mg/L	G-10S	01/10/2024	ND	0.0002		0.0005
Dissolved cadmium	mg/L	G-10S	01/10/2024	ND	0.0001		0.0010
Dissolved calcium	mg/L	G-10S	01/10/2024		94.7000	***	20.5204
Dissolved chromium	mg/L	G-10S	01/10/2024	ND	0.0200		0.0150
Dissolved cobalt	mg/L	G-10S	01/10/2024	ND	0.0100		0.0050
Dissolved copper	mg/L	G-10S	01/10/2024	ND	0.0200		0.1150
Dissolved iron	mg/L	G-10S	01/10/2024		2.8900		10.3131
Dissolved lead	mg/L	G-10S	01/10/2024	ND	0.0002		0.0027
Dissolved magnesium	mg/L	G-10S	01/10/2024		23.1000		29.5281
Dissolved manganese	mg/L	G-10S	01/10/2024		2.9800		26.2749
Dissolved nickel	mg/L	G-10S	01/10/2024	ND	0.0100		0.0380
Dissolved potassium	mg/L	G-10S	01/10/2024		4.2800	***	1.4923
Dissolved selenium	mg/L	G-10S	01/10/2024	ND	0.0005		0.0004
Dissolved silver	mg/L	G-10S	01/10/2024	ND	0.0002		0.0001
Dissolved sodium	mg/L	G-10S	01/10/2024		179.0000	***	114.0000
Dissolved thallium	mg/L	G-10S	01/10/2024	ND	0.0001		0.0000
Dissolved vanadium	mg/L	G-10S	01/10/2024	ND	0.0200		0.0100
Dissolved zinc	mg/L	G-10S	01/10/2024	ND	0.0200		0.0300
Nitrate nitrogen	mg-N/L	G-10S	01/10/2024		0.0290		1.3000
Nitrite nitrogen	mg-N/L	G-10S	01/10/2024		0.0100		37.8321
pH	std units	G-10S	01/10/2024		6.4700	*	6.60 - 9.34
Sulfate	mg/L	G-10S	01/10/2024		270.0000	***	169.0000
Total dissolved solids	mg/L	G-10S	01/10/2024		820.0000	***	360.0000
Total organic carbon	mg/L	G-10S	01/10/2024		3.2000		14.0000
Alkalinity (as caco3)	mg/L	G-11S	10/18/2023		90.0000		230.0000
Ammonia nitrogen	mg-N/L	G-11S	10/18/2023	ND	0.0200		6.7986
Bicarbonate	mg/L	G-11S	10/18/2023		90.0000		210.0000
Chemical oxygen demand	mg/L	G-11S	10/18/2023		12.0000		18.0000
Chloride	mg/L	G-11S	10/18/2023		9.1200		17.0245
Conductivity	umhos/cm	G-11S	10/18/2023		270.0000		540.0000
Dissolved antimony	mg/L	G-11S	10/18/2023	ND	0.0001		0.0006
Dissolved arsenic	mg/L	G-11S	10/18/2023		0.0004		0.0047
Dissolved barium	mg/L	G-11S	10/18/2023	ND	0.0100		31.0848
Dissolved beryllium	mg/L	G-11S	10/18/2023	ND	0.0002		0.0005
Dissolved cadmium	mg/L	G-11S	10/18/2023	ND	0.0001		0.0010
Dissolved calcium	mg/L	G-11S	10/18/2023		16.9000		20.5204
Dissolved chromium	mg/L	G-11S	10/18/2023	ND	0.0200		0.0150
Dissolved cobalt	mg/L	G-11S	10/18/2023	ND	0.0100		0.0050
Dissolved copper	mg/L	G-11S	10/18/2023	ND	0.0200		0.1150
Dissolved iron	mg/L	G-11S	10/18/2023	ND	0.0300		10.3131
Dissolved lead	mg/L	G-11S	10/18/2023	ND	0.0002		0.0027
Dissolved magnesium	mg/L	G-11S	10/18/2023		3.6700		29.5281
Dissolved manganese	mg/L	G-11S	10/18/2023		0.1280		26.2749
Dissolved nickel	mg/L	G-11S	10/18/2023	ND	0.0100		0.0380
Dissolved potassium	mg/L	G-11S	10/18/2023		1.3300		1.4923
Dissolved selenium	mg/L	G-11S	10/18/2023	ND	0.0005		0.0004
Dissolved silver	mg/L	G-11S	10/18/2023	ND	0.0002		0.0001
Dissolved sodium	mg/L	G-11S	10/18/2023		41.2000		114.0000
Dissolved thallium	mg/L	G-11S	10/18/2023	ND	0.0001		0.0000
Dissolved vanadium	mg/L	G-11S	10/18/2023	ND	0.0200		0.0100
Dissolved zinc	mg/L	G-11S	10/18/2023	ND	0.0200		0.0300
Nitrate nitrogen	mg-N/L	G-11S	10/18/2023		0.0650		1.3000
Nitrite nitrogen	mg-N/L	G-11S	10/18/2023	ND	0.0020		37.8321
pH	std units	G-11S	10/18/2023		5.8900	*	6.60 - 9.34
Sulfate	mg/L	G-11S	10/18/2023		44.8000		169.0000
Total dissolved solids	mg/L	G-11S	10/18/2023		160.0000		360.0000

Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
Total organic carbon	mg/L	G-11S	10/18/2023		2.6000		14.0000

* - Current value failed - awaiting verification.
** - Current value passed - previous exceedance not verified.
*** - Current value failed - exceedance verified.
**** - Current value passed - awaiting one more verification.
***** - Insufficient background data to compute prediction limit.
ND = Not Detected, Result = detection limit.

Table 5

Summary Statistics and Prediction Limits

Constituent	Units	Detect	N	Mean	SD	alpha	Factor	Pred Limit	Type		Conf
Alkalinity (as caco3)	mg/L	58	58					230.0000	nonpar		0.99
Ammonia nitrogen	mg-N/L	40	58	-2.6261	1.8818	0.0100	2.4141	6.7986	lognor		
Bicarbonate	mg/L	58	58					210.0000	nonpar		0.99
Chemical oxygen demand	mg/L	7	58					18.0000	nonpar		0.99
Chloride	mg/L	58	58	1.3632	0.6095	0.0100	2.4141	17.0245	lognor		
Conductivity	umhos/cm	57	57					540.0000	nonpar		0.99
Dissolved antimony	mg/L	22	52					0.0006	nonpar		0.99
Dissolved arsenic	mg/L	58	58	0.0017	0.0012	0.0100	2.4141	0.0047	normal		
Dissolved barium	mg/L	35	57	-3.5775	2.9036	0.0100	2.4157	31.0848	lognor		
Dissolved beryllium	mg/L	0	58					0.0005	nonpar	***	0.99
Dissolved cadmium	mg/L	13	57					0.0010	nonpar		0.99
Dissolved calcium	mg/L	54	54	6.2335	5.9016	0.0100	2.4209	20.5204	normal		
Dissolved chromium	mg/L	14	58					0.0150	nonpar		0.99
Dissolved cobalt	mg/L	3	58					0.0050	nonpar	***	0.99
Dissolved copper	mg/L	19	57					0.1150	nonpar		0.99
Dissolved iron	mg/L	35	58	-1.4512	1.5677	0.0100	2.4141	10.3131	lognor		
Dissolved lead	mg/L	20	58					0.0027	nonpar		0.99
Dissolved magnesium	mg/L	44	57	0.0208	1.3928	0.0100	2.4157	29.5281	lognor		
Dissolved manganese	mg/L	34	58	-2.9004	2.5554	0.0100	2.4141	26.2749	lognor		
Dissolved nickel	mg/L	15	58					0.0380	nonpar		0.99
Dissolved potassium	mg/L	44	56	0.5111	0.4059	0.0100	2.4173	1.4923	normal		
Dissolved selenium	mg/L	2	56					0.0004	nonpar		0.99
Dissolved silver	mg/L	0	52					0.0001	nonpar	***	0.99
Dissolved sodium	mg/L	58	58					114.0000	nonpar		0.99
Dissolved thallium	mg/L	1	58					0.0000	nonpar		0.99
Dissolved vanadium	mg/L	0	58					0.0100	nonpar	***	0.99
Dissolved zinc	mg/L	19	58					0.0300	nonpar		0.99
Nitrate nitrogen	mg-N/L	50	58					1.3000	nonpar		0.99
Nitrite nitrogen	mg-N/L	32	56	-3.1465	2.8046	0.0100	2.4173	37.8321	lognor		
pH	std units	59	59					6.60- 9.34	nonpar		0.99
Sulfate	mg/L	57	57					169.0000	nonpar		0.99
Total dissolved solids	mg/L	58	58					360.0000	nonpar		0.99
Total organic carbon	mg/L	53	58					14.0000	nonpar		0.99

Conf = confidence level for passing initial test or one of two verification resamples at all downgradient wells for a single constituent (nonparametric test only).
* - Insufficient Data.
** - Calculated limit raised to Manual Reporting Limit.
*** - Nonparametric limit based on ND value.
For transformed data, mean and SD in transformed units and prediction limit in original units.
All sample sizes and statistics are based on outlier free data.
For nonparametric limits, median reporting limits are substituted for extreme reporting limit values.

Groundwater Analytical Summary - Shallow Wells: Second Quarter 2024
Cathcart Landfill, Snohomish County, WA

	Statistical Method	Number of Samples	Number of Detects	Prediction Limit	Primary GW Stds 173-200	Downgradient Wells																										Upgradient Wells									
						G-01A					G-04A					G-08D1					G-09S					G-10S					G-11S					G-14S					G-24S				
						4/16/24	D	V	Tr	Ch	4/17/24	D	V	Tr	Ch	4/16/24	D	V	Tr	Ch	4/17/24	D	V	Tr	Ch	4/16/24	D	V	Tr	Ch	4/17/24	D	V	Tr	Ch	4/16/24	D	V	Tr	Ch	4/16/24	D	V	Tr	Ch
CONVENTIONAL CHEMISTRY PARAMETERS (mg/L)																																											
Alkalinity (as CaCO3)	nonpar	58	58	230	--	24.2					220			I	Y	163					360		V			428		V			61.4			D	N	186					102				
Ammonia Nitrogen	lognor	58	38	8.5734	--	0.02	U				0.349					0.111					0.023					0.25					0.029					0.02	U				0.02	U			
Bicarbonate	nonpar	58	58	210	--	24.2					220		V	I	Y	163					360		V			428		V			61.4			D	N	186					101				
Calcium, Dissolved	normal	54	54	20.0173	--	12.1					53.6		V	I	N	0.778					89.4		V			92.8		V			10.9			I	N	0.521					11.2			D	N
Chemical Oxygen Demand	nonpar	56	7	18	--	10	U				15					10	U				10	U				10	U				10	U				10	U				10	U			
Chloride	lognor	58	58	16.4022	250	0.38					30.1		E		Y	1.48			D	N	1.83					3.21			D	N	1.68					1.05			D	N	2.57			D	N
Conductivity (umhos/cm)	nonpar	57	57	540	700	126					572		E	I	N	444					1070		V			1250		V			190					394					365				
Magnesium, Dissolved	lognor	57	44	28.2158	--	3.16					31.2		E	I	N	0.05	U				34.3		E			22.1					2.47			I	N	0.05	U				3.46				Y
Nitrate Nitrogen (mg-N/L)	nonpar	58	50	1.3	10	0.0555					0.043					0.218					0.02	U				0.02	U				0.02	U				0.02	U		D	N	0.0377				
Nitrite Nitrogen (mg-N/L)	lognor	58	36	25.3826	1	0.005					0.02					0.05					0.005					0.03					0.002	U				0.04					0.009				
pH (std units)	nonpar	59	59	6.60-9.34	6.5-8.5	5.95		V			5.82		V			8.96					6.03		V			6.45		V			6.39		E			8.61					7.04				
Potassium, Dissolved	normal	55	43	1.5082	--	0.917					2.72		V	I	N	0.435	U				7.53		V			5.48		V			1.18					0.435	U				1.03			D	N
Sodium, Dissolved	nonpar	58	58	114	20	5.77				Y	15.8			I	N	104			I	N	100					171		V			30.3			D	N	93.0					76.9				
Sulfate	lognor	57	57	321.257	250	0.10	U				29.6					44.1					0.10	U		D	N	238			D	N	12.3			D	N	5.36			D	Y	64.8			D	N
Total Dissolved Solids	normal	58	58	364.0196	500	100	U				390		E			165					649		V			1120		V			149					161					199				
Total Organic Carbon	nonpar	58	53	14	--	3.4					12.2					1.7					6.1					4.1					3.1					1.7					0.80				
TOTAL METALS EPA Methods 200.7/200.8 (mg/L)																																											
Antimony	nonpar	50	7	0.0009	0.006	0.0003	U				0.0003	U				0.0003	U				0.0003	U				0.0003	U				0.0003	U				0.0003	U				0.0003	U			
Arsenic	normal	49	49	0.0049	0.00005	0.000164					0.002414		P			0.001231					0.000557					0.004497		P			0.000504					0.001593					0.000523				
Barium	lognor	51	47	0.7059	1	0.01	U				0.01					0.036					0.01	U				0.01	U				0.01	U				0.054					0.01				
Beryllium	nonpar	51	2	0.0005	0.004	0.0003	U				0.0003	U				0.0003	U				0.0003	U				0.0003	U				0.0003	U				0.0003	U				0.0003	U			
Cadmium	nonpar	49	16	0.0007	0.005	0.0001	U				0.0001	U				0.0001	U				0.0001	U				0.0001	U				0.0001	U				0.0001	U				0.0001	U			
Chromium	lognor	51	33	11.2192	0.05	0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02					0.022					0.02	U			
Cobalt	nonpar	45	5	0.007	--	0.01	U				0.021		V			0.01	U				0.01	U				0.01	U				0.01	U				0.01	U				0.01	U			
Copper	lognor	51	28	19.603	1	0.01	U				0.01	U				0.01	U				0.01	U				0.01	U				0.01	U				0.01	U				0.01	U			
Iron	lognor	58	37	48.2855	0.3	0.214					20.5		E			4.98					0.498			D		10.1					0.104					6.1					0.526				
Lead	nonpar	58	21	0.0039	0.05	0.0002	U				0.0002	U				0.001333					0.000439			D		0.0002	U				0.0002	U				0.001293					0.000532				
Manganese	nonpar	58	35	0.487	0.05	0.01	U				7.0		V	I		0.069					0.114			D		2.7		V			0.01			I		0.138					0.02				
Nickel	lognor	58	16	10.2529	0.1	0.04					0.056					0.054					0.069					0.043					0.044					0.063					0.049				
Selenium	nonpar	54	2	0.0023	0.01	0.001	U				0.001494					0.001	U				0.001	U				0.00111					0.001	U				0.001213					0.001	U			
Silver	nonpar	58	2	0.0006	0.05	0.0002	U				0.0002	U				0.0002	U				0.001527		V			0.0002	U				0.0002	U				0.0002	U				0.0002	U			
Thallium	nonpar	58	3	0.0001	0.002	0.0001	U				0.0001	U				0.0001	U				0.0001	U				0.0001	U				0.0001	U				0.0001	U				0.0001	U			
Vanadium	nonpar	58	2	0.043	--	0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U			
Zinc	lognor	51	36	7.5344	5	0.015	U				0.015	U				0.015	U				0.015	U				0.015	U				0.015	U				0.015					0.015	U			
DISSOLVED METALS EPA Methods 200.7/200.8 (mg/L)																																											
Antimony	--	--	--	--	0.006	0.000111					0.0001	U				0.0001	U				0.0001	U				0.0001	U				0.0001	U				0.000152					0.000168				
Arsenic	--	--	--	--	0.00005	0.000133					0.01535					0.001424					0.000909					0.005795					0.00049					0.002515					0.000571				
Barium	--	--	--	--	1	0.01	U				0.01	U				0.01	U				0.01	U				0.01	U				0.01	U				0.01	U				0.01	U			
Beryllium	--	--	--	--	0.004	0.0002	U				0.0002	U				0.0002	U				0.0002	U				0.0002	U				0.0002	U				0.0002	U				0.0002	U			
Cadmium	--	--	--	--	0.005	0.00005	U				0.00005	U				0.00005	U				0.00005	U				0.00005	U				0.00005	U				0.00005	U				0.00005	U			
Chromium	--	--	--	--	0.05	0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U			
Cobalt	--	--	--	--	--	0.01	U				0.01					0.01	U				0.01	U				0.01	U				0.01	U				0.01	U				0.01	U			
Copper	--	--	--	--	1	0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U			
Iron	lognor	58	37	9.1501	0.3	0.03	U				25.3		E			0.03	U				0.03	U				9.41		E	D	N	0.03	U				0.03	U				0.03	U			
Lead	--	--	--	--	0.05	0.0002	U				0.0002	U				0.0002	U				0.0002	U				0.0002	U				0.0002	U				0.0002	U				0.0002	U			
Manganese	lognor	58	35	22.9071	0.05	0.01	U				7.59			I	N	0.01	U				0.059				Y	2.89			D	N	0.134			I	N	0.01	U				0.01	U			
Nickel	--	--	--	--	0.1	0.01	U				0.062					0.05					0.071					0.055					0.056					0.01	U				0.055				
Selenium	--	--	--	--	0.01	0.0005	U				0.000645					0.0005	U				0.001369					0.0008					0.0005	U				0.0005	U				0.0005	U			
Silver	--	--	--	--	0.05	0.0002	U				0.0002	U				0.0002	U				0.0002	U				0.0002	U				0.0002	U				0.0002	U				0.0002	U			
Thallium	--	--	--	--	0.002	0.00005	U				0.00005	U				0.00005	U				0.00005	U				0.00005	U				0.00005	U				0.00005	U				0.00005	U			
Vanadium	--	--	--	--	--	0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U			
Zinc	--	--	--	--	5	0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U			
VOLATILE ORGANIC COMPOUNDS (VOCs) EPA Method 8260 (µg/L)																																											
1,1,1-Trichloroethane	--	--	--	--	200	1	U				1	U				1	U				1	U				1	U				1	U				1	U				1	U			
1,1,2,2-Tetrachloroethane	--	--	--	--	--	1	U				1	U				1	U				1	U				1	U				1	U				1	U				1	U			
1,1,2-Trichloroethane	--	--	--	--	--	2	U				2	U				2	U				2	U				2	U				2	U				2	U				2	U			
1,1-Dichloroethane	--	--	--	--	1	1	U				1	U				1	U				1	U				1	U				1	U				1	U				1	U			

Groundwater Analytical Summary - Shallow Wells: Second Quarter 2024
Cathcart Landfill, Snohomish County, WA

	Statistical Method	Number of Samples	Number of Detects	Prediction Limit	Primary GW Stds 173-200	Downgradient Wells																						Upgradient Wells									
						G-01A					G-04A					G-08D1					G-09S					G-10S					G-11S					G-14S					G-24S				
						4/16/24	D	V	Tr	Ch	4/17/24	D	V	Tr	Ch	4/16/24	D	V	Tr	Ch	4/17/24	D	V	Tr	Ch	4/17/24	D	V	Tr	Ch	4/17/24	D	V	Tr	Ch	4/16/24	D	V	Tr	Ch	4/16/24	D	V	Tr	Ch
VOLATILE ORGANIC COMPOUNDS (VOCs) EPA Method 8260 (µg/L) (cont.)																																											
1,1-Dichloroethylene	--	--	--	--	--	1	U				1	U				1	U				1	U				1	U				1	U				1	U				1	U			
1,2,3-Trichloropropane	--	--	--	--	--	1	U				1	U				1	U				1	U				1	U				1	U				1	U				1	U			
1,2-Dibromo-3-chloropropane	--	--	--	--	0.2	0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U			
1,2-Dibromoethane	--	--	--	--	0.001	0.01	U				0.01	U				0.01	U				0.01	U				0.01	U				0.01	U				0.01	U				0.01	U			
1,2-Dichlorobenzene	--	--	--	--	--	1	U				1	U				1	U				1	U				1	U				1	U				1	U				1	U			
1,2-Dichloroethane	--	--	--	--	0.5	0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U			
1,2-Dichloropropane	--	--	--	--	0.6	0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U			
1,4-Dichlorobenzene	--	--	--	--	4	1	U				1	U				1	U				1	U				1	U				1	U				1	U				1	U			
2-Butanone	--	--	--	--	--	5	U				5	U				5	U				5	U				5	U				5	U				5	U				5	U			
2-Hexanone	--	--	--	--	--	2	U				2	U				2	U				2	U				2	U				2	U				2	U				2	U			
4-Methyl-2-Pentanone (MIBK)	--	--	--	--	--	3	U				3	U				3	U				3	U				3	U				3	U				3	U				3	U			
Acetone	--	--	--	--	--	**5.34**					**5.30**					**5.03**					**5.11**					5	U				**5.29**					**5.60**					**5.74**				
Acrylonitrile	--	--	--	--	0.07	0.05	U				0.05	U				0.05	U				0.05	U				0.05	U				0.05	U				0.05	U				0.05	U			
Benzene	--	--	--	--	1	0.5	U				1	U				0.5	U				1	U				0.5	U				0.5	U				0.5	U				0.5	U			
Bromodichloromethane	--	--	--	--	0.3	0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U			
Bromoform	--	--	--	--	5	2	U				2	U				2	U				2	U				2	U				2	U				2	U				2	U			
Bromomethane	--	--	--	--	--	2	U				2	U				2	U				2	U				2	U				2	U				2	U				2	U			
Carbon Disulfide	--	--	--	--	--	3	U				3	U				3	U				3	U				3	U				3	U				3	U				3	U			
Carbon Tetrachloride	--	--	--	--	0.3	0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U			
Chlorobenzene	--	--	--	--	--	0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U			
Chlorodibromomethane	--	--	--	--	0.5	0.5	U				0.5	U				0.5	U				0.5	U				0.5	U				0.5	U				0.5	U				0.5	U			
Chloroethane	--	--	--	--	--	0.2	U				0	U				0.2	U				0.2	U				0.2	U				0.2	U				0.2	U				0.2	U			
Chloroform	--	--	--	--	7	1	U				1	U				1	U				1	U				1	U				1	U				1	U				1	U			
Chloromethane	--	--	--	--	--	0.5	U				1	U				0.5	U				0.5	U				0.5	U				0.5	U				0.5	U				0.5	U			
cis-1,2-Dichloroethene	--	--	--	--	--	0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U			
cis-1,3-Dichloropropene	--	--	--	--	0.2	0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U			
Dibromomethane	--	--	--	--	--	0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U			
Ethyl Benzene	--	--	--	--	--	1	U				1	U				1	U				1	U				1	U				1	U				1	U				1	U			
m,p-Xylene	--	--	--	--	--	5	U				5	U				5	U				5	U				5	U				5	U				5	U				5	U			
Methyl Iodide	--	--	--	--	--	3	U				3	U				3	U				3	U				3	U				3	U				3	U				3	U			
Methylene Chloride	--	--	--	--	5	3	U				3	U				3	U				3	U				3	U				3	U				3	U				3	U			
o-Xylene	--	--	--	--	--	1.5	U				1.5	U				1.5	U				1.5	U				1.5	U				1.5	U				1.5	U				1.5	U			
Styrene	--	--	--	--	--	2	U				2	U				2	U				2	U				2	U				2	U				2	U				2	U			
Tetrachloroethylene	--	--	--	--	0.8	0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U			
Toluene	--	--	--	--	--	2	U				2	U				2	U				2	U				2	U				2	U				2	U				2	U			
trans-1,2-Dichloroethene	--	--	--	--	--	1	U				1	U				1	U				1	U				1	U				1	U				1	U				1	U			
trans-1,3-Dichloropropene	--	--	--	--	0.2	0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U			
trans-1,4-Dichloro-2-butene	--	--	--	--	--	2	U				2	U				2	U				2	U				2	U				2	U				2	U				2	U			
Trichlorethene (1,1,2-Trichloroe	--	--	--	--	3	2	U				2	U				2	U				2	U				2	U				2	U				2	U				2	U			
Trichlorofluoromethane	--	--	--	--	--	2	U				2	U				2	U				2	U				2	U				2	U				2	U				2	U			
Vinyl Acetate	--	--	--	--	--	3	U				3	U				3	U				3	U				3	U				3	U				3	U				3	U			
Vinyl Chloride	--	--	--	--	0.02	0.01	U				0.01	U				0.01	U				0.01	U				0.01	U				0.01	U				0.01	U				0.01	U			

D: U = Indicates compound was not detected at the given reporting limit; X indicates that the compound was detected in the trip blank and contamination is suspected.

V: E= Exceedance, waiting verification based on subsequent lab data; V= Exceedance verified based on previous lab data; P=Passed, previous exceedance not verified based on current lab data.

Tr: I=increasing Trend, D=Decreasing Trend;

Ch: Y indicates a change in trend from previous quarter; N means no change in trend.

Values in **purple** exceed the prediction limit; indicates that a value exceeded the Groundwater Standards

The groundwater standards listed are based on the Washington Administrative Code (WAC) 173-200 groundwater limits or WAC 246-290, whichever is more protective of groundwater quality.

Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
Alkalinity (as caco3)	mg/L	G-01A	04/16/2024		24.2000		230.0000
Ammonia nitrogen	mg-N/L	G-01A	04/16/2024	ND	0.0200		8.5734
Antimony	mg/L	G-01A	04/16/2024		0.0005		0.0009
Arsenic	mg/L	G-01A	04/16/2024		0.0002		0.0049
Barium	mg/L	G-01A	04/16/2024		0.0210		0.7059
Beryllium	mg/L	G-01A	04/16/2024		0.0003		0.0005
Bicarbonate	mg/L	G-01A	04/16/2024		24.2000		210.0000
Cadmium	mg/L	G-01A	04/16/2024		0.0001		0.0007
Chemical oxygen demand	mg/L	G-01A	04/16/2024	ND	2.1100		18.0000
Chloride	mg/L	G-01A	04/16/2024		0.3800		16.4022
Chromium	mg/L	G-01A	04/16/2024		0.0490		11.2192
Cobalt, Total	mg/L	G-01A	10/17/2023	ND	0.0100		0.0070
Conductivity	umhos/cm	G-01A	04/16/2024		126.0000		540.0000
Copper	mg/L	G-01A	04/16/2024		0.0220		19.6030
Dissolved calcium	mg/L	G-01A	04/16/2024		12.1000		20.0173
Dissolved iron	mg/L	G-01A	04/16/2024		0.0780		9.1501
Dissolved magnesium	mg/L	G-01A	04/16/2024		3.1600		28.2158
Dissolved manganese	mg/L	G-01A	04/16/2024		0.0190		22.9071
Dissolved potassium	mg/L	G-01A	04/16/2024		0.9170		1.5082
Dissolved sodium	mg/L	G-01A	04/16/2024		5.7700		114.0000
Iron	mg/L	G-01A	04/16/2024		0.2140		48.2855
Lead	mg/L	G-01A	04/16/2024		0.0006		0.0039
Manganese	mg/L	G-01A	04/16/2024		0.0180		0.4870
Nickel	mg/L	G-01A	04/16/2024		0.0400		10.2529
Nitrate nitrogen	mg-N/L	G-01A	10/17/2023		0.1900		1.3000
Nitrite nitrogen	mg-N/L	G-01A	04/16/2024		0.0050		25.3826
pH	std units	G-01A	04/16/2024		5.9500	***	6.60 - 9.34
Selenium	mg/L	G-01A	04/16/2024		0.0023		0.0023
Silver	mg/L	G-01A	04/16/2024		0.0006		0.0006
Sulfate	mg/L	G-01A	04/16/2024		0.1400		321.2570
Thallium	mg/L	G-01A	04/16/2024		0.0001		0.0001
Total dissolved solids	mg/L	G-01A	04/16/2024		1.0000		364.0196
Total organic carbon	mg/L	G-01A	04/16/2024		3.4000		14.0000
Vanadium	mg/L	G-01A	04/16/2024		0.0430		0.0430
Zinc	mg/L	G-01A	04/16/2024		0.0380		7.5344
Alkalinity (as caco3)	mg/L	G-04A	04/17/2024		220.0000		230.0000
Ammonia nitrogen	mg-N/L	G-04A	04/17/2024		0.3490		8.5734
Antimony	mg/L	G-04A	04/17/2024		0.0005		0.0009
Arsenic	mg/L	G-04A	04/17/2024		0.0024	**	0.0049
Barium	mg/L	G-04A	04/17/2024		0.0100		0.7059
Beryllium	mg/L	G-04A	04/17/2024		0.0003		0.0005
Bicarbonate	mg/L	G-04A	04/17/2024		220.0000	***	210.0000
Cadmium	mg/L	G-04A	04/17/2024		0.0001		0.0007
Chemical oxygen demand	mg/L	G-04A	04/17/2024		15.0000		18.0000
Chloride	mg/L	G-04A	04/17/2024		30.1000	*	16.4022
Chromium	mg/L	G-04A	04/17/2024		0.0490		11.2192
Cobalt, Total	mg/L	G-04A	04/18/2023		0.0170	***	0.0070
Conductivity	umhos/cm	G-04A	04/17/2024		572.0000	*	540.0000
Copper	mg/L	G-04A	04/17/2024		0.0220		19.6030
Dissolved calcium	mg/L	G-04A	04/17/2024		53.6000	***	20.0173
Dissolved iron	mg/L	G-04A	04/17/2024		25.3000	*	9.1501
Dissolved magnesium	mg/L	G-04A	04/17/2024		31.2000	*	28.2158
Dissolved manganese	mg/L	G-04A	04/17/2024		7.5900		22.9071
Dissolved potassium	mg/L	G-04A	04/17/2024		2.7200	***	1.5082
Dissolved sodium	mg/L	G-04A	04/17/2024		15.8000		114.0000
Iron	mg/L	G-04A	04/17/2024		20.5000		48.2855
Lead	mg/L	G-04A	04/17/2024		0.0006		0.0039
Manganese	mg/L	G-04A	04/17/2024		7.0000	***	0.4870
Nickel	mg/L	G-04A	04/17/2024		0.0560		10.2529
Nitrate nitrogen	mg-N/L	G-04A	04/17/2024		0.0430		1.3000
Nitrite nitrogen	mg-N/L	G-04A	04/17/2024		0.0200		25.3826
pH	std units	G-04A	04/17/2024		5.8200	***	6.60 - 9.34
Selenium	mg/L	G-04A	04/17/2024		0.0015		0.0023
Silver	mg/L	G-04A	04/17/2024		0.0006		0.0006
Sulfate	mg/L	G-04A	04/17/2024		29.6000		321.2570
Thallium	mg/L	G-04A	04/17/2024		0.0001		0.0001
Total dissolved solids	mg/L	G-04A	04/17/2024		390.0000	*	364.0196

Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
Total organic carbon	mg/L	G-04A	04/17/2024		12.2000		14.0000
Vanadium	mg/L	G-04A	04/17/2024		0.0430		0.0430
Zinc	mg/L	G-04A	04/17/2024		0.0380		7.5344
Alkalinity (as caco3)	mg/L	G-08D1	04/16/2024		163.0000		230.0000
Ammonia nitrogen	mg-N/L	G-08D1	04/16/2024		0.1110		8.5734
Antimony	mg/L	G-08D1	04/16/2024		0.0005		0.0009
Arsenic	mg/L	G-08D1	04/16/2024		0.0012		0.0049
Barium	mg/L	G-08D1	04/16/2024		0.0360		0.7059
Beryllium	mg/L	G-08D1	04/16/2024		0.0003		0.0005
Bicarbonate	mg/L	G-08D1	04/16/2024		163.0000		210.0000
Cadmium	mg/L	G-08D1	04/16/2024		0.0001		0.0007
Chemical oxygen demand	mg/L	G-08D1	04/16/2024	ND	2.1100		18.0000
Chloride	mg/L	G-08D1	04/16/2024		1.4800		16.4022
Chromium	mg/L	G-08D1	04/16/2024		0.0490		11.2192
Cobalt, Total	mg/L	G-08D1	10/17/2023	ND	0.0100		0.0070
Conductivity	umhos/cm	G-08D1	04/16/2024		444.0000		540.0000
Copper	mg/L	G-08D1	04/16/2024		0.0220		19.6030
Dissolved calcium	mg/L	G-08D1	04/16/2024		0.7780		20.0173
Dissolved iron	mg/L	G-08D1	04/16/2024		0.0780		9.1501
Dissolved magnesium	mg/L	G-08D1	04/16/2024		0.0800		28.2158
Dissolved manganese	mg/L	G-08D1	04/16/2024		0.0190		22.9071
Dissolved potassium	mg/L	G-08D1	04/16/2024		1.4500		1.5082
Dissolved sodium	mg/L	G-08D1	04/16/2024		104.0000		114.0000
Iron	mg/L	G-08D1	04/16/2024		4.9800		48.2855
Lead	mg/L	G-08D1	04/16/2024		0.0013		0.0039
Manganese	mg/L	G-08D1	04/16/2024		0.0690		0.4870
Nickel	mg/L	G-08D1	04/16/2024		0.0540		10.2529
Nitrate nitrogen	mg-N/L	G-08D1	04/16/2024		0.2180		1.3000
Nitrite nitrogen	mg-N/L	G-08D1	04/16/2024		0.0500		25.3826
pH	std units	G-08D1	04/16/2024		8.9600		6.60 - 9.34
Selenium	mg/L	G-08D1	04/16/2024		0.0023		0.0023
Silver	mg/L	G-08D1	04/16/2024		0.0006		0.0006
Sulfate	mg/L	G-08D1	04/16/2024		44.1000		321.2570
Thallium	mg/L	G-08D1	04/16/2024		0.0001		0.0001
Total dissolved solids	mg/L	G-08D1	04/16/2024		165.0000		364.0196
Total organic carbon	mg/L	G-08D1	04/16/2024		1.7000		14.0000
Vanadium	mg/L	G-08D1	04/16/2024		0.0430		0.0430
Zinc	mg/L	G-08D1	04/16/2024		0.0380		7.5344
Alkalinity (as caco3)	mg/L	G-09S	04/17/2024		360.0000	***	230.0000
Ammonia nitrogen	mg-N/L	G-09S	04/17/2024		0.0230		8.5734
Antimony	mg/L	G-09S	04/17/2024		0.0005		0.0009
Arsenic	mg/L	G-09S	04/17/2024		0.0006		0.0049
Barium	mg/L	G-09S	04/17/2024		0.0210		0.7059
Beryllium	mg/L	G-09S	04/17/2024		0.0003		0.0005
Bicarbonate	mg/L	G-09S	04/17/2024		360.0000	***	210.0000
Cadmium	mg/L	G-09S	04/17/2024		0.0001		0.0007
Chemical oxygen demand	mg/L	G-09S	04/17/2024	ND	2.1100		18.0000
Chloride	mg/L	G-09S	04/17/2024		1.8300		16.4022
Chromium	mg/L	G-09S	04/17/2024		0.0490		11.2192
Cobalt, Total	mg/L	G-09S	01/10/2024	ND	0.0100		0.0070
Conductivity	umhos/cm	G-09S	04/17/2024		1070.0000	***	540.0000
Copper	mg/L	G-09S	04/17/2024		0.0220		19.6030
Dissolved calcium	mg/L	G-09S	04/17/2024		89.4000	***	20.0173
Dissolved iron	mg/L	G-09S	04/17/2024		0.0780		9.1501
Dissolved magnesium	mg/L	G-09S	04/17/2024		34.3000	*	28.2158
Dissolved manganese	mg/L	G-09S	04/17/2024		0.0590		22.9071
Dissolved potassium	mg/L	G-09S	04/17/2024		7.5300	***	1.5082
Dissolved sodium	mg/L	G-09S	04/17/2024		100.0000		114.0000
Iron	mg/L	G-09S	04/17/2024		0.4980		48.2855
Lead	mg/L	G-09S	04/17/2024		0.0004		0.0039
Manganese	mg/L	G-09S	04/17/2024		0.1140		0.4870
Nickel	mg/L	G-09S	04/17/2024		0.0690		10.2529
Nitrate nitrogen	mg-N/L	G-09S	04/17/2024		0.0200		1.3000
Nitrite nitrogen	mg-N/L	G-09S	04/17/2024		0.0050		25.3826
pH	std units	G-09S	04/17/2024		6.0300	***	6.60 - 9.34
Selenium	mg/L	G-09S	04/17/2024		0.0023		0.0023
Silver	mg/L	G-09S	04/17/2024		0.0015	***	0.0006

Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
Sulfate	mg/L	G-09S	04/17/2024		0.1400		321.2570
Thallium	mg/L	G-09S	04/17/2024		0.0001		0.0001
Total dissolved solids	mg/L	G-09S	04/17/2024		649.0000	***	364.0196
Total organic carbon	mg/L	G-09S	04/17/2024		6.1000		14.0000
Vanadium	mg/L	G-09S	04/17/2024		0.0430		0.0430
Zinc	mg/L	G-09S	04/17/2024		0.0380		7.5344
Alkalinity (as caco3)	mg/L	G-10S	04/17/2024		428.0000	***	230.0000
Ammonia nitrogen	mg-N/L	G-10S	04/17/2024		0.2500		8.5734
Antimony	mg/L	G-10S	04/17/2024		0.0005		0.0009
Arsenic	mg/L	G-10S	04/17/2024		0.0045	**	0.0049
Barium	mg/L	G-10S	04/17/2024		0.0210		0.7059
Beryllium	mg/L	G-10S	04/17/2024		0.0003		0.0005
Bicarbonate	mg/L	G-10S	04/17/2024		428.0000	***	210.0000
Cadmium	mg/L	G-10S	04/17/2024		0.0001		0.0007
Chemical oxygen demand	mg/L	G-10S	04/17/2024	ND	2.1100		18.0000
Chloride	mg/L	G-10S	04/17/2024		3.2100		16.4022
Chromium	mg/L	G-10S	04/17/2024		0.0490		11.2192
Cobalt, Total	mg/L	G-10S	01/10/2024	ND	0.0100		0.0070
Conductivity	umhos/cm	G-10S	04/17/2024		1250.0000	***	540.0000
Copper	mg/L	G-10S	04/17/2024		0.0220		19.6030
Dissolved calcium	mg/L	G-10S	04/17/2024		92.8000	***	20.0173
Dissolved iron	mg/L	G-10S	04/17/2024		9.4100	*	9.1501
Dissolved magnesium	mg/L	G-10S	04/17/2024		22.1000		28.2158
Dissolved manganese	mg/L	G-10S	04/17/2024		2.8900		22.9071
Dissolved potassium	mg/L	G-10S	04/17/2024		5.4800	***	1.5082
Dissolved sodium	mg/L	G-10S	04/17/2024		171.0000	***	114.0000
Iron	mg/L	G-10S	04/17/2024		10.1000		48.2855
Lead	mg/L	G-10S	04/17/2024		0.0006		0.0039
Manganese	mg/L	G-10S	04/17/2024		2.7000	***	0.4870
Nickel	mg/L	G-10S	04/17/2024		0.0430		10.2529
Nitrate nitrogen	mg-N/L	G-10S	04/17/2024		0.0200		1.3000
Nitrite nitrogen	mg-N/L	G-10S	04/17/2024		0.0300		25.3826
pH	std units	G-10S	04/17/2024		6.4500	***	6.60 - 9.34
Selenium	mg/L	G-10S	04/17/2024		0.0011		0.0023
Silver	mg/L	G-10S	04/17/2024		0.0006		0.0006
Sulfate	mg/L	G-10S	04/17/2024		238.0000		321.2570
Thallium	mg/L	G-10S	04/17/2024		0.0001		0.0001
Total dissolved solids	mg/L	G-10S	04/17/2024		1120.0000	***	364.0196
Total organic carbon	mg/L	G-10S	04/17/2024		4.1000		14.0000
Vanadium	mg/L	G-10S	04/17/2024		0.0430		0.0430
Zinc	mg/L	G-10S	04/17/2024		0.0380		7.5344
Alkalinity (as caco3)	mg/L	G-11S	04/17/2024		61.4000		230.0000
Ammonia nitrogen	mg-N/L	G-11S	04/17/2024		0.0290		8.5734
Antimony	mg/L	G-11S	04/17/2024		0.0005		0.0009
Arsenic	mg/L	G-11S	04/17/2024		0.0005		0.0049
Barium	mg/L	G-11S	04/17/2024		0.0210		0.7059
Beryllium	mg/L	G-11S	04/17/2024		0.0003		0.0005
Bicarbonate	mg/L	G-11S	04/17/2024		61.4000		210.0000
Cadmium	mg/L	G-11S	04/17/2024		0.0001		0.0007
Chemical oxygen demand	mg/L	G-11S	04/17/2024	ND	2.1100		18.0000
Chloride	mg/L	G-11S	04/17/2024		1.6800		16.4022
Chromium	mg/L	G-11S	04/17/2024		0.0200		11.2192
Cobalt, Total	mg/L	G-11S	10/18/2023	ND	0.0100		0.0070
Conductivity	umhos/cm	G-11S	04/17/2024		190.0000		540.0000
Copper	mg/L	G-11S	04/17/2024		0.0220		19.6030
Dissolved calcium	mg/L	G-11S	04/17/2024		10.9000		20.0173
Dissolved iron	mg/L	G-11S	04/17/2024		0.0780		9.1501
Dissolved magnesium	mg/L	G-11S	04/17/2024		2.4700		28.2158
Dissolved manganese	mg/L	G-11S	04/17/2024		0.1340		22.9071
Dissolved potassium	mg/L	G-11S	04/17/2024		1.1800		1.5082
Dissolved sodium	mg/L	G-11S	04/17/2024		30.3000		114.0000
Iron	mg/L	G-11S	04/17/2024		0.1040		48.2855
Lead	mg/L	G-11S	04/17/2024		0.0006		0.0039
Manganese	mg/L	G-11S	04/17/2024		0.1000		0.4870
Nickel	mg/L	G-11S	04/17/2024		0.0440		10.2529
Nitrate nitrogen	mg-N/L	G-11S	04/17/2024		0.0200		1.3000
Nitrite nitrogen	mg-N/L	G-11S	04/17/2024		0.0060		25.3826

Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
pH	std units	G-11S	04/17/2024		6.3900	*	6.60 - 9.34
Selenium	mg/L	G-11S	04/17/2024		0.0023		0.0023
Silver	mg/L	G-11S	04/17/2024		0.0006		0.0006
Sulfate	mg/L	G-11S	04/17/2024		12.3000		321.2570
Thallium	mg/L	G-11S	04/17/2024		0.0001		0.0001
Total dissolved solids	mg/L	G-11S	04/17/2024		149.0000		364.0196
Total organic carbon	mg/L	G-11S	04/17/2024		3.1000		14.0000
Vanadium	mg/L	G-11S	04/17/2024		0.0430		0.0430
Zinc	mg/L	G-11S	04/17/2024		0.0380		7.5344

* - Current value failed - awaiting verification.
** - Current value passed - previous exceedance not verified.
*** - Current value failed - exceedance verified.
**** - Current value passed - awaiting one more verification.
***** - Insufficient background data to compute prediction limit.
ND = Not Detected, Result = detection limit.

Table 5

Summary Statistics and Prediction Limits

Constituent	Units	Detect	N	Mean	SD	alpha	Factor	Pred Limit	Type		Conf
Alkalinity (as caco3)	mg/L	58	58					230.0000	nonpar		0.99
Ammonia nitrogen	mg-N/L	38	58	-2.4837	1.9189	0.0100	2.4141	8.5734	lognor		
Antimony	mg/L	7	50					0.0009	nonpar		0.99
Arsenic	mg/L	49	49	0.0016	0.0013	0.0100	2.4310	0.0049	normal		
Barium	mg/L	47	51	-3.9120	1.4685	0.0100	2.4267	0.7059	lognor		
Beryllium	mg/L	2	51					0.0005	nonpar	***	0.99
Bicarbonate	mg/L	58	58					210.0000	nonpar		0.99
Cadmium	mg/L	16	49					0.0007	nonpar		0.99
Chemical oxygen demand	mg/L	7	56					18.0000	nonpar		0.99
Chloride	mg/L	58	58	1.3196	0.6121	0.0100	2.4141	16.4022	lognor		
Chromium	mg/L	33	51	-2.7726	2.1388	0.0100	2.4267	11.2192	lognor		
Cobalt, Total	mg/L	5	45					0.0070	nonpar		0.99
Conductivity	umhos/cm	57	57					540.0000	nonpar		0.99
Copper	mg/L	28	51	-2.2899	2.1699	0.0100	2.4267	19.6030	lognor		
Dissolved calcium	mg/L	54	54	6.1135	5.7433	0.0100	2.4209	20.0173	normal		
Dissolved iron	mg/L	37	58	-1.5391	1.5546	0.0100	2.4141	9.1501	lognor		
Dissolved magnesium	mg/L	44	57	0.0185	1.3749	0.0100	2.4157	28.2158	lognor		
Dissolved manganese	mg/L	35	58	-2.9538	2.5207	0.0100	2.4141	22.9071	lognor		
Dissolved potassium	mg/L	43	55	0.5167	0.4098	0.0100	2.4191	1.5082	normal		
Dissolved sodium	mg/L	58	58					114.0000	nonpar		0.99
Iron	mg/L	49	49	0.3222	1.4624	0.0100	2.4310	48.2855	lognor		
Lead	mg/L	45	51					0.0039	nonpar		0.99
Manganese	mg/L	49	49					0.4870	nonpar		0.99
Nickel	mg/L	33	50	-2.8121	2.1162	0.0100	2.4288	10.2529	lognor		
Nitrate nitrogen	mg-N/L	50	58					1.3000	nonpar		0.99
Nitrite nitrogen	mg-N/L	36	58	-3.2777	2.6974	0.0100	2.4141	25.3826	lognor		
pH	std units	59	59					6.60- 9.34	nonpar		0.99
Selenium	mg/L	5	51					0.0023	nonpar		0.99
Silver	mg/L	4	51					0.0006	nonpar		0.99
Sulfate	mg/L	57	57	3.6086	0.8957	0.0100	2.4157	321.2570	lognor		
Thallium	mg/L	12	51					0.0001	nonpar		0.99
Total dissolved solids	mg/L	58	58	256.2069	44.6600	0.0100	2.4141	364.0196	normal		
Total organic carbon	mg/L	53	58					14.0000	nonpar		0.99
Vanadium	mg/L	10	50					0.0430	nonpar		0.99
Zinc	mg/L	36	51	-3.0961	2.1081	0.0100	2.4267	7.5344	lognor		

Conf = confidence level for passing initial test or one of two verification resamples at all downgradient wells for a single constituent (nonparametric test only).
* - Insufficient Data.
** - Calculated limit raised to Manual Reporting Limit.
*** - Nonparametric limit based on ND value.
For transformed data, mean and SD in transformed units and prediction limit in original units.
All sample sizes and statistics are based on outlier free data.
For nonparametric limits, median reporting limits are substituted for extreme reporting limit values.

Groundwater Analytical Summary - Shallow Wells: Third Quarter 2024
Cathcart Landfill, Snohomish County, WA

	Statistical Method	Number of Samples	Number of Detects	Prediction Limit	Primary GW Stds 173-200	G-09S					G-10S				
						7/16/24	D	V	Tr	Ch	7/16/24	D	V	Tr	Ch
CONVENTIONAL CHEMISTRY PARAMETERS (mg/L)															
Alkalinity (as CaCO3)	nonpar	58	58	230	--	361		V			423		V		
Ammonia Nitrogen	lognor	58	40	8.5734	--	0.02	U				0.254				
Bicarbonate	nonpar	58	58	210	--	361		V			423		V		
Calcium, Dissolved	normal	54	54	20.0173	--	65.7		V			69.7		V		
Chemical Oxygen Demand	nonpar	58	7	18	--	10	U				11				
Chloride	lognor	58	58	16.4022	250	4.03					6.67			D	N
Conductivity (umhos/cm)	nonpar	57	57	540	700	1010		V			1260		V		
Magnesium, Dissolved	lognor	57	44	28.2158	--	25.7					16.9			D	Y
Nitrate Nitrogen (mg-N/L)	nonpar	58	50	1.3	10	0.017					0.051				
Nitrite Nitrogen (mg-N/L)	lognor	56	32	25.3826	1	0.003					0.01				
pH (std units)	nonpar	59	59	6.60-9.34	6.5-8.5	6.20		V			6.67				
Potassium, Dissolved	normal	56	44	1.5082	--	5.06		V			3.52		V		
Sodium, Dissolved	nonpar	58	58	114	20	85.8					142		V		
Sulfate	nonpar	57	57	321.257	250	183			D	N	260			D	N
Total Dissolved Solids	nonpar	58	58	364.0196	500	662		V			827		V		
Total Organic Carbon	nonpar	58	53	14	--	4.0					3.7				
TOTAL METALS EPA Methods 200.7/200.8 (µg/L)															
Antimony	nonpar	50	7	0.9	6	0.3	U				0.3	U			
Arsenic	normal	49	49	4.9	0.05	0.661					5.048		E		
Barium	lognor	51	47	705.9	1000	10	U				10	U			
Beryllium	nonpar	51	2	0.5	4	0.3	U				0.3	U			
Cadmium	nonpar	49	16	0.7	5	0.1	U				0.1	U			
Chromium	lognor	51	33	11219.2	50	20	U				20	U			
Cobalt	nonpar	45	5	7	--	10	U				10	U			
Copper	lognor	51	28	19603	1000	10	U				10	U			
Iron	lognor	58	37	48285.5	300	363			D	N	9120				
Lead	nonpar	58	21	3.9	50	0.342			D	N	0.2	U			
Manganese	nonpar	58	35	487	50	80			D	N	2420		V		
Nickel	lognor	58	16	10252.9	100	72					51				
Selenium	nonpar	54	2	2.3	10	1	U				1	U			
Silver	nonpar	58	2	0.6	50	1.647		V			0.2	U			
Thallium	nonpar	58	3	0.1	2	0.1	U				0.1	U			
Vanadium	nonpar	58	2	43	--	20	U				20	U			
Zinc	lognor	51	36	7534.4	5000	15	U				15	U			
DISSOLVED METALS EPA Methods 200.7/200.8 (µg/L)															
Antimony	--	--	--	--	6	0.1	U				0.1	U			
Arsenic	--	--	--	--	0.05	0.866					4.816				
Barium	--	--	--	--	1000	10	U				10	U			
Beryllium	--	--	--	--	4	0.2	U				0.2	U			
Cadmium	--	--	--	--	5	0.05	U				0.05	U			
Chromium	--	--	--	--	50	20	U				20	U			
Cobalt	--	--	--	--	--	10	U				10	U			
Copper	--	--	--	--	1000	20	U				20	U			
Iron	lognor	58	37	9150.1	300	30	U				6610		P	D	N
Lead	--	--	--	--	50	0.2	U				0.2	U			
Manganese	lognor	58	35	22907.1	50	19					2200			D	N
Nickel	--	--	--	--	100	10	U				10	U			
Selenium	--	--	--	--	10	1.478					0.685				
Silver	--	--	--	--	50	0.2	U				0.2	U			
Thallium	--	--	--	--	2	0.05	U				0.05	U			
Vanadium	--	--	--	--	--	20	U				20	U			
Zinc	--	--	--	--	5000	20	U				20	U			
VOLATILE ORGANIC COMPOUNDS (VOCs) EPA Method 8260/8260 SIM (µg/L)															
1,1,1-Trichloroethane	--	--	--	--	200	1	U				1	U			
1,1,2,2-Tetrachloroethane	--	--	--	--	--	1	U				1	U			
1,1,2-Trichloroethane	--	--	--	--	--	2	U				2	U			
1,1-Dichloroethane	--	--	--	--	1	1	U				1	U			
1,1-Dichloroethylene	--	--	--	--	--	1	U				1	U			
1,2,3-Trichloropropane	--	--	--	--	--	1	U				1	U			
1,2-Dibromo-3-chloropropane	--	--	--	--	0.2	0.03	U				0.03	U			
1,2-Dibromoethane	--	--	--	--	0.001	0.01	U				0.01	U			
1,2-Dichlorobenzene	--	--	--	--	--	1	U				1	U			

Groundwater Analytical Summary - Shallow Wells: Third Quarter 2024
Cathcart Landfill, Snohomish County, WA

	Statistical Method	Number of Samples	Number of Detects	Prediction Limit	Primary GW Stds 173-200	G-09S					G-10S				
						7/16/24	D	V	Tr	Ch	7/16/24	D	V	Tr	Ch
VOLATILE ORGANIC COMPOUNDS (VOCs) EPA Method 8260/8260 SIM (µg/L) (cont.)															
1,2-Dichloroethane	--	--	--	--	**0.5**	0.03	U				0.03	U			
1,2-Dichloropropane	--	--	--	--	**0.6**	0.02	U				0.02	U			
1,4-Dichlorobenzene	--	--	--	--	**4**	1	U				1	U			
2-Butanone	--	--	--	--	**--**	5	U				5	U			
2-Hexanone	--	--	--	--	**--**	2	U				2	U			
4-Methyl-2-Pentanone (MIBK)	--	--	--	--	**--**	3	U				3	U			
Acetone	--	--	--	--	**--**	5	U				5	U			
Acrylonitrile	--	--	--	--	**0.07**	0.05	U				0.05	U			
Benzene	--	--	--	--	**1**	0.5	U				0.5	U			
Bromodichloromethane	--	--	--	--	**0.3**	0.02	U				0.02	U			
Bromoform	--	--	--	--	**5**	2	U				2	U			
Bromomethane	--	--	--	--	**--**	2	U				2	U			
Carbon Disulfide	--	--	--	--	**--**	3	U				3	U			
Carbon Tetrachloride	--	--	--	--	**0.3**	0.02	U				0.02	U			
Chlorobenzene	--	--	--	--	**--**	0.03	U				0.03	U			
Chlorodibromomethane	--	--	--	--	**0.5**	0.5	U				0.5	U			
Chloroethane	--	--	--	--	**--**	0.02	U				0.02	U			
Chloroform	--	--	--	--	**7**	1	U				1	U			
Chloromethane	--	--	--	--	**--**	0.5	U				0.5	U			
cis-1,2-Dichloroethene	--	--	--	--	**--**	0.03	U				**0.14**				
cis-1,3-Dichloropropene	--	--	--	--	**0.2**	0.03	U				0.03	U			
Dibromomethane	--	--	--	--	**--**	0.02	U				0.02	U			
Ethyl Benzene	--	--	--	--	**--**	1	U				1	U			
m,p-Xylene	--	--	--	--	**--**	5	U				5	U			
Methyl Iodide	--	--	--	--	**--**	3	U				3	U			
Methylene Chloride	--	--	--	--	**5**	**3.36**					**3.29**				
o-Xylene	--	--	--	--	**--**	1.5	U				1.5	U			
Styrene	--	--	--	--	**--**	2	U				2	U			
Tetrachloroethylene	--	--	--	--	**0.8**	0.03	U				0.03	U			
Toluene	--	--	--	--	**--**	2	U				2	U			
trans-1,2-Dichloroethene	--	--	--	--	**--**	1	U				1	U			
trans-1,3-Dichloropropene	--	--	--	--	**0.2**	0.03	U				0.03	U			
trans-1,4-Dichloro-2-butene	--	--	--	--	**--**	2	U				2	U			
Trichlorethene (1,1,2-Trichloroet	--	--	--	--	**3**	2	U				2	U			
Trichlorofluoromethane	--	--	--	--	**--**	2	U				2	U			
Vinyl Acetate	--	--	--	--	**--**	3	U				3	U			
Vinyl Chloride	--	--	--	--	**0.02**	0.01	U				0.01	U			

D: U = Indicates compound was not detected at the given reporting limit; X indicates that the compound was detected in the trip blank and contamination is suspected.

V: E= Exceedance, waiting verification based on subsequent lab data; V= Exceedance verified based on previous lab data; P=Passed, previous exceedance not verified based on current lab data.

Tr: I=increasing Trend, D=Decreasing Trend;

Ch: Y indicates a change in trend from previous quarter; N means no change in trend.

Values in **purple** exceed the prediction limit; indicates that a value exceeded the Groundwater Standards

The groundwater standards listed are based on the Washington Administrative Code (WAC) 173-200 groundwater limits as modified by the TMS 91-11 standards - the most restrictive of the two is used.

B = Methylene chloride was measured in the lab blank at a similar concentration - contamination during analysis suspected.

Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
Alkalinity (as caco3)	mg/L	G-01A	04/16/2024		24.2000		230.0000
Ammonia nitrogen	mg-N/L	G-01A	04/16/2024	ND	0.0200		8.3936
Antimony	mg/L	G-01A	04/16/2024		0.0005		0.0009
Arsenic	mg/L	G-01A	04/16/2024		0.0002		0.0049
Barium	mg/L	G-01A	04/16/2024		0.0210		0.7059
Beryllium	mg/L	G-01A	04/16/2024		0.0003		0.0005
Bicarbonate	mg/L	G-01A	04/16/2024		24.2000		210.0000
Cadmium	mg/L	G-01A	04/16/2024		0.0001		0.0007
Chemical oxygen demand	mg/L	G-01A	04/16/2024	ND	2.1100		18.0000
Chloride	mg/L	G-01A	04/16/2024		0.3800		16.2152
Chromium	mg/L	G-01A	04/16/2024		0.0490		11.2192
Cobalt, Total	mg/L	G-01A	10/17/2023	ND	0.0100		0.0070
Conductivity	umhos/cm	G-01A	04/16/2024		126.0000		540.0000
Copper	mg/L	G-01A	04/16/2024		0.0220		19.6030
Dissolved calcium	mg/L	G-01A	04/16/2024		12.1000		19.6283
Dissolved iron	mg/L	G-01A	04/16/2024		0.0780		9.1344
Dissolved magnesium	mg/L	G-01A	04/16/2024		3.1600		5.7299
Dissolved manganese	mg/L	G-01A	04/16/2024		0.0190		24.8381
Dissolved potassium	mg/L	G-01A	04/16/2024		0.9170		1.5069
Dissolved sodium	mg/L	G-01A	04/16/2024		5.7700		121.2768
Iron	mg/L	G-01A	04/16/2024		0.2140		48.2855
Lead	mg/L	G-01A	04/16/2024		0.0006		0.0039
Manganese	mg/L	G-01A	04/16/2024		0.0180		0.4870
Nickel	mg/L	G-01A	04/16/2024		0.0400		10.2529
Nitrate nitrogen	mg-N/L	G-01A	10/17/2023		0.1900		1.3000
Nitrite nitrogen	mg-N/L	G-01A	04/16/2024		0.0050		24.4682
pH	std units	G-01A	04/16/2024		5.9500	***	6.60 - 9.34
Selenium	mg/L	G-01A	04/16/2024		0.0023		0.0023
Silver	mg/L	G-01A	04/16/2024		0.0006		0.0006
Sulfate	mg/L	G-01A	04/16/2024		0.1400		323.9959
Thallium	mg/L	G-01A	04/16/2024		0.0001		0.0001
Total dissolved solids	mg/L	G-01A	04/16/2024		1.0000		362.7966
Total organic carbon	mg/L	G-01A	04/16/2024		3.4000		14.0000
Vanadium	mg/L	G-01A	04/16/2024		0.0430		0.0430
Zinc	mg/L	G-01A	04/16/2024		0.0380		7.5344
Alkalinity (as caco3)	mg/L	G-04A	04/17/2024		220.0000		230.0000
Ammonia nitrogen	mg-N/L	G-04A	04/17/2024		0.3490		8.3936
Antimony	mg/L	G-04A	04/17/2024		0.0005		0.0009
Arsenic	mg/L	G-04A	04/17/2024		0.0024	**	0.0049
Barium	mg/L	G-04A	04/17/2024		0.0100		0.7059
Beryllium	mg/L	G-04A	04/17/2024		0.0003		0.0005
Bicarbonate	mg/L	G-04A	04/17/2024		220.0000	***	210.0000
Cadmium	mg/L	G-04A	04/17/2024		0.0001		0.0007
Chemical oxygen demand	mg/L	G-04A	04/17/2024		15.0000		18.0000
Chloride	mg/L	G-04A	04/17/2024		30.1000	*	16.2152
Chromium	mg/L	G-04A	04/17/2024		0.0490		11.2192
Cobalt, Total	mg/L	G-04A	04/18/2023		0.0170	***	0.0070
Conductivity	umhos/cm	G-04A	04/17/2024		572.0000	*	540.0000
Copper	mg/L	G-04A	04/17/2024		0.0220		19.6030
Dissolved calcium	mg/L	G-04A	04/17/2024		53.6000	***	19.6283
Dissolved iron	mg/L	G-04A	04/17/2024		25.3000	*	9.1344
Dissolved magnesium	mg/L	G-04A	04/17/2024		31.2000	***	5.7299
Dissolved manganese	mg/L	G-04A	04/17/2024		7.5900		24.8381
Dissolved potassium	mg/L	G-04A	04/17/2024		2.7200	***	1.5069
Dissolved sodium	mg/L	G-04A	04/17/2024		15.8000		121.2768
Iron	mg/L	G-04A	04/17/2024		20.5000		48.2855
Lead	mg/L	G-04A	04/17/2024		0.0006		0.0039
Manganese	mg/L	G-04A	04/17/2024		7.0000	***	0.4870
Nickel	mg/L	G-04A	04/17/2024		0.0560		10.2529
Nitrate nitrogen	mg-N/L	G-04A	04/17/2024		0.0430		1.3000
Nitrite nitrogen	mg-N/L	G-04A	04/17/2024		0.0200		24.4682
pH	std units	G-04A	04/17/2024		5.8200	***	6.60 - 9.34
Selenium	mg/L	G-04A	04/17/2024		0.0015		0.0023
Silver	mg/L	G-04A	04/17/2024		0.0006		0.0006
Sulfate	mg/L	G-04A	04/17/2024		29.6000		323.9959
Thallium	mg/L	G-04A	04/17/2024		0.0001		0.0001
Total dissolved solids	mg/L	G-04A	04/17/2024		390.0000	*	362.7966

Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
Total organic carbon	mg/L	G-04A	04/17/2024		12.2000		14.0000
Vanadium	mg/L	G-04A	04/17/2024		0.0430		0.0430
Zinc	mg/L	G-04A	04/17/2024		0.0380		7.5344
Alkalinity (as caco3)	mg/L	G-08D1	04/16/2024		163.0000		230.0000
Ammonia nitrogen	mg-N/L	G-08D1	04/16/2024		0.1110		8.3936
Antimony	mg/L	G-08D1	04/16/2024		0.0005		0.0009
Arsenic	mg/L	G-08D1	04/16/2024		0.0012		0.0049
Barium	mg/L	G-08D1	04/16/2024		0.0360		0.7059
Beryllium	mg/L	G-08D1	04/16/2024		0.0003		0.0005
Bicarbonate	mg/L	G-08D1	04/16/2024		163.0000		210.0000
Cadmium	mg/L	G-08D1	04/16/2024		0.0001		0.0007
Chemical oxygen demand	mg/L	G-08D1	04/16/2024	ND	2.1100		18.0000
Chloride	mg/L	G-08D1	04/16/2024		1.4800		16.2152
Chromium	mg/L	G-08D1	04/16/2024		0.0490		11.2192
Cobalt, Total	mg/L	G-08D1	10/17/2023	ND	0.0100		0.0070
Conductivity	umhos/cm	G-08D1	04/16/2024		444.0000		540.0000
Copper	mg/L	G-08D1	04/16/2024		0.0220		19.6030
Dissolved calcium	mg/L	G-08D1	04/16/2024		0.7780		19.6283
Dissolved iron	mg/L	G-08D1	04/16/2024		0.0780		9.1344
Dissolved magnesium	mg/L	G-08D1	04/16/2024		0.0800		5.7299
Dissolved manganese	mg/L	G-08D1	04/16/2024		0.0190		24.8381
Dissolved potassium	mg/L	G-08D1	04/16/2024		1.4500		1.5069
Dissolved sodium	mg/L	G-08D1	04/16/2024		104.0000		121.2768
Iron	mg/L	G-08D1	04/16/2024		4.9800		48.2855
Lead	mg/L	G-08D1	04/16/2024		0.0013		0.0039
Manganese	mg/L	G-08D1	04/16/2024		0.0690		0.4870
Nickel	mg/L	G-08D1	04/16/2024		0.0540		10.2529
Nitrate nitrogen	mg-N/L	G-08D1	04/16/2024		0.2180		1.3000
Nitrite nitrogen	mg-N/L	G-08D1	04/16/2024		0.0500		24.4682
pH	std units	G-08D1	04/16/2024		8.9600		6.60 - 9.34
Selenium	mg/L	G-08D1	04/16/2024		0.0023		0.0023
Silver	mg/L	G-08D1	04/16/2024		0.0006		0.0006
Sulfate	mg/L	G-08D1	04/16/2024		44.1000		323.9959
Thallium	mg/L	G-08D1	04/16/2024		0.0001		0.0001
Total dissolved solids	mg/L	G-08D1	04/16/2024		165.0000		362.7966
Total organic carbon	mg/L	G-08D1	04/16/2024		1.7000		14.0000
Vanadium	mg/L	G-08D1	04/16/2024		0.0430		0.0430
Zinc	mg/L	G-08D1	04/16/2024		0.0380		7.5344
Alkalinity (as caco3)	mg/L	G-09S	07/16/2024		361.0000	***	230.0000
Ammonia nitrogen	mg-N/L	G-09S	07/16/2024	ND	0.0200		8.3936
Antimony	mg/L	G-09S	07/16/2024	ND	0.0002		0.0009
Arsenic	mg/L	G-09S	07/16/2024		0.0007		0.0049
Barium	mg/L	G-09S	07/16/2024	ND	0.0060		0.7059
Beryllium	mg/L	G-09S	07/16/2024	ND	0.0001		0.0005
Bicarbonate	mg/L	G-09S	07/16/2024		361.0000	***	210.0000
Cadmium	mg/L	G-09S	07/16/2024	ND	0.0000		0.0007
Chemical oxygen demand	mg/L	G-09S	07/16/2024	ND	2.1100		18.0000
Chloride	mg/L	G-09S	07/16/2024		4.0300		16.2152
Chromium	mg/L	G-09S	07/16/2024	ND	0.0150		11.2192
Cobalt, Total	mg/L	G-09S	07/16/2024	ND	0.0040		0.0070
Conductivity	umhos/cm	G-09S	07/16/2024		1010.0000	***	540.0000
Copper	mg/L	G-09S	07/16/2024	ND	0.0070		19.6030
Dissolved calcium	mg/L	G-09S	07/16/2024		65.7000	***	19.6283
Dissolved iron	mg/L	G-09S	07/16/2024	ND	0.0230		9.1344
Dissolved magnesium	mg/L	G-09S	07/16/2024		25.7000	***	5.7299
Dissolved manganese	mg/L	G-09S	07/16/2024		0.0190		24.8381
Dissolved potassium	mg/L	G-09S	07/16/2024		5.0600	***	1.5069
Dissolved sodium	mg/L	G-09S	07/16/2024		85.8000		121.2768
Iron	mg/L	G-09S	07/16/2024		0.3630		48.2855
Lead	mg/L	G-09S	07/16/2024		0.0003		0.0039
Manganese	mg/L	G-09S	07/16/2024		0.0800		0.4870
Nickel	mg/L	G-09S	07/16/2024		0.0720		10.2529
Nitrate nitrogen	mg-N/L	G-09S	04/17/2024		0.0200		1.3000
Nitrite nitrogen	mg-N/L	G-09S	07/16/2024		0.0030		24.4682
pH	std units	G-09S	07/16/2024		5.7400	***	6.60 - 9.34
Selenium	mg/L	G-09S	07/16/2024	ND	0.0007		0.0023
Silver	mg/L	G-09S	07/16/2024		0.0016	***	0.0006

Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
Sulfate	mg/L	G-09S	07/16/2024		183.0000		323.9959
Thallium	mg/L	G-09S	07/16/2024	ND	0.0000		0.0001
Total dissolved solids	mg/L	G-09S	07/16/2024		662.0000	***	362.7966
Total organic carbon	mg/L	G-09S	07/16/2024		4.0000		14.0000
Vanadium	mg/L	G-09S	07/16/2024	ND	0.0130		0.0430
Zinc	mg/L	G-09S	07/16/2024	ND	0.0110		7.5344
Alkalinity (as caco3)	mg/L	G-10S	07/16/2024		423.0000	***	230.0000
Ammonia nitrogen	mg-N/L	G-10S	07/16/2024		0.2540		8.3936
Antimony	mg/L	G-10S	07/16/2024	ND	0.0002		0.0009
Arsenic	mg/L	G-10S	07/16/2024		0.0050	*	0.0049
Barium	mg/L	G-10S	07/16/2024	ND	0.0060		0.7059
Beryllium	mg/L	G-10S	07/16/2024	ND	0.0001		0.0005
Bicarbonate	mg/L	G-10S	07/16/2024		423.0000	***	210.0000
Cadmium	mg/L	G-10S	07/16/2024	ND	0.0000		0.0007
Chemical oxygen demand	mg/L	G-10S	07/16/2024		11.3000		18.0000
Chloride	mg/L	G-10S	07/16/2024		6.6700		16.2152
Chromium	mg/L	G-10S	07/16/2024	ND	0.0150		11.2192
Cobalt, Total	mg/L	G-10S	07/16/2024	ND	0.0040		0.0070
Conductivity	umhos/cm	G-10S	07/16/2024		1260.0000	***	540.0000
Copper	mg/L	G-10S	07/16/2024	ND	0.0070		19.6030
Dissolved calcium	mg/L	G-10S	07/16/2024		69.7000	***	19.6283
Dissolved iron	mg/L	G-10S	07/16/2024		6.6100	**	9.1344
Dissolved magnesium	mg/L	G-10S	07/16/2024		16.9000	***	5.7299
Dissolved manganese	mg/L	G-10S	07/16/2024		2.2000		24.8381
Dissolved potassium	mg/L	G-10S	07/16/2024		3.5200	***	1.5069
Dissolved sodium	mg/L	G-10S	07/16/2024		142.0000	***	121.2768
Iron	mg/L	G-10S	07/16/2024		9.1200		48.2855
Lead	mg/L	G-10S	07/16/2024	ND	0.0002		0.0039
Manganese	mg/L	G-10S	07/16/2024		2.4200	***	0.4870
Nickel	mg/L	G-10S	07/16/2024		0.0510		10.2529
Nitrate nitrogen	mg-N/L	G-10S	04/17/2024		0.0200		1.3000
Nitrite nitrogen	mg-N/L	G-10S	07/16/2024		0.0100		24.4682
pH	std units	G-10S	07/16/2024		6.3000	***	6.60 - 9.34
Selenium	mg/L	G-10S	07/16/2024	ND	0.0007		0.0023
Silver	mg/L	G-10S	07/16/2024	ND	0.0002		0.0006
Sulfate	mg/L	G-10S	07/16/2024		260.0000		323.9959
Thallium	mg/L	G-10S	07/16/2024	ND	0.0000		0.0001
Total dissolved solids	mg/L	G-10S	07/16/2024		827.0000	***	362.7966
Total organic carbon	mg/L	G-10S	07/16/2024		3.7000		14.0000
Vanadium	mg/L	G-10S	07/16/2024	ND	0.0130		0.0430
Zinc	mg/L	G-10S	07/16/2024	ND	0.0110		7.5344
Alkalinity (as caco3)	mg/L	G-11S	04/17/2024		61.4000		230.0000
Ammonia nitrogen	mg-N/L	G-11S	04/17/2024		0.0290		8.3936
Antimony	mg/L	G-11S	04/17/2024		0.0005		0.0009
Arsenic	mg/L	G-11S	04/17/2024		0.0005		0.0049
Barium	mg/L	G-11S	04/17/2024		0.0210		0.7059
Beryllium	mg/L	G-11S	04/17/2024		0.0003		0.0005
Bicarbonate	mg/L	G-11S	04/17/2024		61.4000		210.0000
Cadmium	mg/L	G-11S	04/17/2024		0.0001		0.0007
Chemical oxygen demand	mg/L	G-11S	04/17/2024	ND	2.1100		18.0000
Chloride	mg/L	G-11S	04/17/2024		1.6800		16.2152
Chromium	mg/L	G-11S	04/17/2024		0.0200		11.2192
Cobalt, Total	mg/L	G-11S	10/18/2023	ND	0.0100		0.0070
Conductivity	umhos/cm	G-11S	04/17/2024		190.0000		540.0000
Copper	mg/L	G-11S	04/17/2024		0.0220		19.6030
Dissolved calcium	mg/L	G-11S	04/17/2024		10.9000		19.6283
Dissolved iron	mg/L	G-11S	04/17/2024		0.0780		9.1344
Dissolved magnesium	mg/L	G-11S	04/17/2024		2.4700		5.7299
Dissolved manganese	mg/L	G-11S	04/17/2024		0.1340		24.8381
Dissolved potassium	mg/L	G-11S	04/17/2024		1.1800		1.5069
Dissolved sodium	mg/L	G-11S	04/17/2024		30.3000		121.2768
Iron	mg/L	G-11S	04/17/2024		0.1040		48.2855
Lead	mg/L	G-11S	04/17/2024		0.0006		0.0039
Manganese	mg/L	G-11S	04/17/2024		0.1000		0.4870
Nickel	mg/L	G-11S	04/17/2024		0.0440		10.2529
Nitrate nitrogen	mg-N/L	G-11S	04/17/2024		0.0200		1.3000
Nitrite nitrogen	mg-N/L	G-11S	04/17/2024		0.0060		24.4682

Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
pH	std units	G-11S	04/17/2024		6.3900	*	6.60 - 9.34
Selenium	mg/L	G-11S	04/17/2024		0.0023		0.0023
Silver	mg/L	G-11S	04/17/2024		0.0006		0.0006
Sulfate	mg/L	G-11S	04/17/2024		12.3000		323.9959
Thallium	mg/L	G-11S	04/17/2024		0.0001		0.0001
Total dissolved solids	mg/L	G-11S	04/17/2024		149.0000		362.7966
Total organic carbon	mg/L	G-11S	04/17/2024		3.1000		14.0000
Vanadium	mg/L	G-11S	04/17/2024		0.0430		0.0430
Zinc	mg/L	G-11S	04/17/2024		0.0380		7.5344

* - Current value failed - awaiting verification.
** - Current value passed - previous exceedance not verified.
*** - Current value failed - exceedance verified.
**** - Current value passed - awaiting one more verification.
***** - Insufficient background data to compute prediction limit.
ND = Not Detected, Result = detection limit.

Table 5

Summary Statistics and Prediction Limits

Constituent	Units	Detect	N	Mean	SD	alpha	Factor	Pred Limit	Type		Conf
Alkalinity (as caco3)	mg/L	56	56					230.0000	nonpar		0.99
Ammonia nitrogen	mg-N/L	37	56	-2.5043	1.9161	0.0100	2.4173	8.3936	lognor		
Antimony	mg/L	7	50					0.0009	nonpar		0.99
Arsenic	mg/L	49	49	0.0016	0.0013	0.0100	2.4310	0.0049	normal		
Barium	mg/L	47	51	-3.9120	1.4685	0.0100	2.4267	0.7059	lognor		
Beryllium	mg/L	2	51					0.0005	nonpar	***	0.99
Bicarbonate	mg/L	56	56					210.0000	nonpar		0.99
Cadmium	mg/L	16	49					0.0007	nonpar		0.99
Chemical oxygen demand	mg/L	6	54					18.0000	nonpar		0.99
Chloride	mg/L	56	56	1.3019	0.6139	0.0100	2.4173	16.2152	lognor		
Chromium	mg/L	33	51	-2.7726	2.1388	0.0100	2.4267	11.2192	lognor		
Cobalt, Total	mg/L	5	45					0.0070	nonpar		0.99
Conductivity	umhos/cm	55	55					540.0000	nonpar		0.99
Copper	mg/L	28	51	-2.2899	2.1699	0.0100	2.4267	19.6030	lognor		
Dissolved calcium	mg/L	53	53	5.9383	5.6507	0.0100	2.4227	19.6283	normal		
Dissolved iron	mg/L	36	56	-1.5342	1.5498	0.0100	2.4173	9.1344	lognor		
Dissolved magnesium	mg/L	42	55	1.6115	1.7025	0.0100	2.4191	5.7299	normal		
Dissolved manganese	mg/L	33	56	-2.8559	2.5103	0.0100	2.4173	24.8381	lognor		
Dissolved potassium	mg/L	41	53	0.5057	0.4133	0.0100	2.4227	1.5069	normal		
Dissolved sodium	mg/L	56	56	91.2804	12.4089	0.0100	2.4173	121.2768	normal		
Iron	mg/L	49	49	0.3222	1.4624	0.0100	2.4310	48.2855	lognor		
Lead	mg/L	45	51					0.0039	nonpar		0.99
Manganese	mg/L	49	49					0.4870	nonpar		0.99
Nickel	mg/L	33	50	-2.8121	2.1162	0.0100	2.4288	10.2529	lognor		
Nitrate nitrogen	mg-N/L	48	56					1.3000	nonpar		0.99
Nitrite nitrogen	mg-N/L	35	56	-3.2837	2.6811	0.0100	2.4173	24.4682	lognor		
pH	std units	57	57					6.60- 9.34	nonpar		0.99
Selenium	mg/L	5	51					0.0023	nonpar		0.99
Silver	mg/L	4	51					0.0006	nonpar		0.99
Sulfate	mg/L	55	55	3.5924	0.9046	0.0100	2.4191	323.9959	lognor		
Thallium	mg/L	12	51					0.0001	nonpar		0.99
Total dissolved solids	mg/L	56	56	257.1429	43.7066	0.0100	2.4173	362.7966	normal		
Total organic carbon	mg/L	51	56					14.0000	nonpar		0.99
Vanadium	mg/L	10	50					0.0430	nonpar		0.99
Zinc	mg/L	36	51	-3.0961	2.1081	0.0100	2.4267	7.5344	lognor		

Conf = confidence level for passing initial test or one of two verification resamples at all downgradient wells for a single constituent (nonparametric test only).
* - Insufficient Data.
** - Calculated limit raised to Manual Reporting Limit.
*** - Nonparametric limit based on ND value.
For transformed data, mean and SD in transformed units and prediction limit in original units.
All sample sizes and statistics are based on outlier free data.
For nonparametric limits, median reporting limits are substituted for extreme reporting limit values.

Groundwater Analytical Summary - Shallow Wells: Fourth Quarter 2024
Cathcart Landfill, Snohomish County, WA

	Statistical Method	Number of Samples	Number of Detects	Prediction Limit	Primary GW Stds 173-200	Downgradient Wells																										Upgradient Wells									
						G-01A					G-04A					G-08D1					G-09S					G-10S					G-11S					G-14S					G-24S				
						10/1/24	D	V	Tr	Ch	10/1/24	D	V	Tr	Ch	10/1/24	D	V	Tr	Ch	10/2/24	D	V	Tr	Ch	10/2/24	D	V	Tr	Ch	10/2/24	D	V	Tr	Ch	10/1/24	D	V	Tr	Ch	10/1/24	D	V	Tr	Ch
CONVENTIONAL CHEMISTRY PARAMETERS (mg/L)																																									
Alkalinity (as CaCO3)	nonpar	58	58	230	--	45.6					Not sampled - insufficient water					165					195		P			451		V			81.6				Y	194					113				
Ammonia Nitrogen	lognor	58	38	8.5734	--	0.02	U									0.128					0.168					0.268					0.02	U				0.02					0.02	U			
Bicarbonate	nonpar	58	58	210	--	45.6										89.8					134		P			451		V			81.6				Y	152					113				
Calcium, Dissolved	normal	54	54	20.0173	--	15.5										0.607					1.18		P			79.8		V	D	Y	8.81			I	N	0.307					6.06			D	N
Chemical Oxygen Demand	nonpar	56	7	18	--	10	U									10	U				10	U				10	U				10	U				10	U				10	U			
Chloride	lognor	58	58	16.4022	250	1.33										2.97			D	N	6.63					7.28			D	N	7.68					2.17			D	N	5.01			D	N
Conductivity (umhos/cm)	nonpar	57	57	540	700	172										466					648		V			122		P			252					399					399				
Magnesium, Dissolved	lognor	57	44	28.2158	--	4.14										0.05	U				0.05	U	P			20.2		V	D	Y	2.05			I	N	0.05	U				1.75				
Nitrate Nitrogen (mg-N/L)	nonpar	58	50	1.3	10	0.49										0.254					0.191					0.05					0.033					0.027				Y	0.029				
Nitrite Nitrogen (mg-N/L)	lognor	58	36	25.3826	1	0.002										0.005					0.014					0.002					0.002					0.004					0.009				
pH (std units)	nonpar	59	59	6.60-9.34	6.5-8.5	5.14		E								8.81			D	Y	5.88		V	D	Y	6.16					5.92					8.15					5.85				
Potassium, Dissolved	normal	55	43	1.5082	--	1.07										0.5	U				0.5	U	P			3.36		V			0.884					0.5	U				0.587			D	N
Sodium, Dissolved	nonpar	58	58	114	20	7.12										94.2				Y	154		E			159		V			35.3			D	N	88.3					78.6				
Sulfate	lognor	57	57	321.257	250	33.6										46.4			D	Y	123			D	N	242			D	N	30.1				Y	13.6			D	N	75.6			D	N
Total Dissolved Solids	normal	58	58	364.0196	500	119										274					410		V			837		V			175					252					262				
Total Organic Carbon	nonpar	58	53	14	--	4.0										0.8					2.5					4.1					2.3					2.0					1.0				
TOTAL METALS EPA Methods 200.7/200.8 (µg/L)																																									
Antimony	nonpar	50	7	0.9	6	0.3	U				Not sampled - insufficient water					0.3	U				0.3	U				0.3	U				0.3	U				0.328					0.3	U			
Arsenic	normal	49	49	4.9	0.05	0.28										1.367					2.403					5.006		E			0.656					2.692					0.695				
Barium	lognor	51	47	705.9	1000	10	U									19					10	U				10	U				10	U				53					10	U			
Beryllium	nonpar	51	2	0.5	4	0.3	U									0.3	U				0.3	U				0.3	U				0.3	U				0.3	U				0.3	U			
Cadmium	nonpar	49	16	0.7	5	0.1	U									0.1	U				0.1	U				0.1	U				0.1	U				0.1	U				0.1	U			
Chromium	lognor	51	33	11219.2	50	20	U	P								20	U	P			26					20	U				20	U				24					22				
Cobalt	nonpar	45	5	7	--	10	U									10	U				10	U				10	U				10	U				10	U				10	U			
Copper	lognor	51	28	19603	1000	10	U									10	U				10	U				10	U				10	U				10	U				10	U			
Iron	lognor	58	37	48285.5	300	55										2450					1510				Y	9840					181					5920					397				
Lead	nonpar	58	21	3.9	50	0.2	U									0.83					1.584			D	N	0.2	U				0.225					1.178					0.338				
Manganese	nonpar	58	35	487	50	10	U									41					78			D	N	3060		V			1620		E	I	N	147					27				
Nickel	lognor	58	16	10252.9	100	10	U									10	U				10	U				10	U				10	U				10	U				10	U			
Selenium	nonpar	54	2	2.3	10	1.0	U									1.067					1	U				1	U				1	U				1	U				1	U			
Silver	nonpar	58	2	0.6	50	0.2	U									0.2	U				0.2	U	P			0.2	U				0.2	U				0.2	U				0.2	U			
Thallium	nonpar	58	3	0.1	2	0.1	U									0.1	U				0.1	U				0.1	U				0.1	U				0.1	U				0.1	U			
Vanadium	nonpar	58	2	43	--	20	U									20	U				20	U				20	U				20	U				20	U				20	U			
Zinc	lognor	51	36	7534.4	5000	15	U									15	U				15	U				15	U				15	U				17					15	U			
DISSOLVED METALS EPA Methods 200.7/200.8 (µg/L)																																									
Antimony	--	--	--	--	6	0.141					Not sampled - insufficient water					0.1	U				0.103					0.1	U				0.1	U				0.257					0.181				
Arsenic	--	--	--	--	0.05	0.321										2.225					3.128					4.794					0.578					4.097					0.75				
Barium	--	--	--	--	1000	10	U									10	U				10	U				10	U				10	U				10	U				10	U			
Beryllium	--	--	--	--	4	0.2	U									0.2	U				0.2	U				0.2	U				0.2	U				0.2	U				0.2	U			
Cadmium	--	--	--	--	5	0.05	U									0.05	U				0.05	U				0.05	U				0.05	U				0.05	U				0.05	U			
Chromium	--	--	--	--	50	20	U									20	U				20	U				20	U				20	U				20	U				20	U			
Cobalt	--	--	--	--	--	10	U									10	U				10	U				10	U				10	U				10	U				10	U			
Copper	--	--	--	--	1000	20	U									20	U				20	U				20	U				20	U				20	U				20	U			
Iron	lognor	58	37	9150.1	300	31										30	U				30	U				4830			D	N	30	U				30	U				30	U			
Lead	--	--	--	--	50	0.2	U									0.2	U				0.2	U				0.2	U				0.2	U				0.2	U				0.2	U			
Manganese	lognor	58	35	22907.1	50	10	U									10	U				10	U		D	Y	2730			D	N	87			I	N	10	U				10	U			
Nickel	--	--	--	--	100	10	U									10	U				10	U				10	U				10	U				10	U				10	U			
Selenium	--	--	--	--	10	0.541										1.695					1.4					1.415					0.982					1.194					0.5	U			
Silver	--	--	--	--	50	0.2	U									0.2	U				0.2	U				0.2	U				0.2	U				0.2	U				0.2	U			
Thallium	--	--	--	--	2	0.05	U									0.05	U				0.05	U				0.05	U				0.05	U				0.05	U				0.05	U			
Vanadium	--	--	--	--	--	20	U									20	U				20	U				20	U				20	U				20	U				20	U			
Zinc	--	--	--	--	5000	20	U									20	U				20	U				20	U				20	U				20	U				20	U			
VOLATILE ORGANIC COMPOUNDS (VOCs) EPA Method 8260 (µg/L)																																									
1,1,1-Trichloroethane	--	--	--	--	200	1	U				Not sampled - insufficient water					1	U				1	U				1	U				1	U				1	U				1	U			
1,1,2,2-Tetrachloroethane	--	--	--	--	--	1	U									1	U				1	U				1	U				1	U				1	U				1	U			
1,1,2-Trichloroethane	--	--	--	--	--	2	U									2	U				2	U				2	U				2	U				2	U				2	U			
1,1-Dichloroethane	--	--	--	--	1	1	U									1	U				1	U				1	U				1	U				1	U				1	U			

Groundwater Analytical Summary - Shallow Wells: Fourth Quarter 2024
Cathcart Landfill, Snohomish County, WA

	Statistical Method	Number of Samples	Number of Detects	Prediction Limit	Primary GW Stds 173-200	Downgradient Wells																										Upgradient Wells									
						G-01A					G-04A					G-08D1					G-09S					G-10S					G-11S					G-14S					G-24S				
						10/1/24	D	V	Tr	Ch	10/1/24	D	V	Tr	Ch	10/1/24	D	V	Tr	Ch	10/2/24	D	V	Tr	Ch	10/2/24	D	V	Tr	Ch	10/2/24	D	V	Tr	Ch	10/1/24	D	V	Tr	Ch	10/1/24	D	V	Tr	Ch
VOLATILE ORGANIC COMPOUNDS (VOCs) EPA Method 8260 (µg/L) (cont.)																																											
1,1-Dichloroethylene	--	--	--	--	--	1	U				Not sampled - insufficient water					1	U				1	U				1	U				1	U				1	U				1	U			
1,2,3-Trichloropropane	--	--	--	--	--	1	U									1	U				1	U				1	U				1	U				1	U				1	U			
1,2-Dibromo-3-chloropropane	--	--	--	--	0.2	0.03	U									0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U			
1,2-Dibromoethane	--	--	--	--	0.001	0.01	U									0.01	U				0.01	U				0.01	U				0.01	U				0.01	U				0.01	U			
1,2-Dichlorobenzene	--	--	--	--	--	1	U									1	U				1	U				1	U				1	U				1	U				1	U			
1,2-Dichloroethane	--	--	--	--	0.5	0.03	U									0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U			
1,2-Dichloropropane	--	--	--	--	0.6	0.02	U									0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U			
1,4-Dichlorobenzene	--	--	--	--	4	1	U									1	U				1	U				1	U				1	U				1	U				1	U			
2-Butanone	--	--	--	--	--	5	U									5	U				5	U				5	U				5	U				5	U				5	U			
2-Hexanone	--	--	--	--	--	2	U									2	U				2	U				2	U				2	U				2	U				2	U			
4-Methyl-2-Pentanone (MIBK)	--	--	--	--	--	3	U									3	U				3	U				3	U				3	U				3	U				3	U			
Acetone	--	--	--	--	--	5	U									5	U				5	U				5	U				**5**	U				5	U				5	U			
Acrylonitrile	--	--	--	--	0.07	0.05	U									0.05	U				0.05	U				0.05	U				0.05	U				0.05	U				0.05	U			
Benzene	--	--	--	--	1	0.5	U									0.5	U				1	U				0.5	U				0.5	U				0.5	U				0.5	U			
Bromodichloromethane	--	--	--	--	0.3	0.02	U									0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U			
Bromoform	--	--	--	--	5	2	U									2	U				2	U				2	U				2	U				2	U				2	U			
Bromomethane	--	--	--	--	--	2	U									**4.00**					2	U				2	U				2	U				2	U				2	U			
Carbon Disulfide	--	--	--	--	--	3	U									3	U				3	U				3	U				3	U				3	U				3	U			
Carbon Tetrachloride	--	--	--	--	0.3	0.02	U									0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U			
Chlorobenzene	--	--	--	--	--	0.03	U									0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U			
Chlorodibromomethane	--	--	--	--	0.5	0.5	U									0.5	U				0.5	U				0.5	U				0.5	U				0.5	U				0.5	U			
Chloroethane	--	--	--	--	--	0.0	U									0.0	U				0.0	U				0.0	U				0.0	U				0.0	U				0.0	U			
Chloroform	--	--	--	--	7	1	U									1	U				1	U				1	U				1	U				1	U				1	U			
Chloromethane	--	--	--	--	--	0.5	U									0.5	U				0.5	U				0.5	U				0.5	U				0.5	U				0.5	U			
cis-1,2-Dichloroethene	--	--	--	--	--	0.03	U									0.03	U				**0.11**					**0.16**					0.03	U				0.03	U				0.03	U			
cis-1,3-Dichloropropene	--	--	--	--	0.2	0.03	U									0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U			
Dibromomethane	--	--	--	--	--	0.02	U									0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U			
Ethyl Benzene	--	--	--	--	--	1	U									1	U				1	U				1	U				1	U				1	U				1	U			
m,p-Xylene	--	--	--	--	--	5	U									5	U				5	U				5	U				5	U				5	U				5	U			
Methyl Iodide	--	--	--	--	--	3	U									3	U				3	U				3	U				3	U				3	U				3	U			
Methylene Chloride	--	--	--	--	5	5.77										6.51					6.00					**3.13**					5.98					5.96					**3.04**				
o-Xylene	--	--	--	--	--	1.5	U									1.5	U				1.5	U				1.5	U				1.5	U				1.5	U				1.5	U			
Styrene	--	--	--	--	--	2	U									2	U				2	U				2	U				2	U				2	U				2	U			
Tetrachloroethylene	--	--	--	--	0.8	0.03	U									0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U			
Toluene	--	--	--	--	--	2	U									2	U				2	U				2	U				2	U				2	U				2	U			
trans-1,2-Dichloroethene	--	--	--	--	--	1	U									1	U				1	U				1	U				1	U				1	U				1	U			
trans-1,3-Dichloropropene	--	--	--	--	0.2	0.03	U									0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U			
trans-1,4-Dichloro-2-butene	--	--	--	--	--	2	U									2	U				2	U				2	U				2	U				2	U				2	U			
Trichlorethene (1,1,2-Trichloro	--	--	--	--	3	2	U									2	U				2	U				2	U				2	U				2	U				2	U			
Trichlorofluoromethane	--	--	--	--	--	2	U									2	U				2	U				2	U				2	U				2	U				2	U			
Vinyl Acetate	--	--	--	--	--	3	U									3	U				3	U				3	U				3	U				3	U				3	U			
Vinyl Chloride	--	--	--	--	0.02	0.01	U									0.01	U				0.26					0.01	U				0.01	U				0.01	U				0.01	U			

D: U = Indicates compound was not detected at the given reporting limit; X indicates that the compound was detected in the trip blank and contamination is suspected.

V: E= Exceedance, waiting verification based on subsequent lab data; V= Exceedance verified based on previous lab data; P=Passed, previous exceedance not verified based on current lab data.

Tr: I=increasing Trend, D=Decreasing Trend;

Ch: Y indicates a change in trend from previous quarter; N means no change in trend.

Values in **purple** exceed the prediction limit; indicates that a value exceeded the Groundwater Standards

The groundwater standards listed are based on the Washington Administrative Code (WAC) 173-200 groundwater limits or WAC 246-290, whichever is more protective of groundwater quality.

Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
Alkalinity (as caco3)	mg/L	G-01A	10/01/2024		45.6000		230.0000
Ammonia nitrogen	mg-N/L	G-01A	10/01/2024	ND	0.0200		8.3122
Antimony	mg/L	G-01A	10/01/2024	ND	0.0002		0.0009
Arsenic	mg/L	G-01A	10/01/2024		0.0003		0.0048
Barium	mg/L	G-01A	10/01/2024	ND	0.0060		0.9195
Beryllium	mg/L	G-01A	10/01/2024	ND	0.0001		0.0005
Bicarbonate	mg/L	G-01A	10/01/2024		45.6000		210.0000
Cadmium	mg/L	G-01A	10/01/2024	ND	0.0000		0.0007
Chemical oxygen demand	mg/L	G-01A	10/01/2024	ND	2.1100		18.0000
Chloride	mg/L	G-01A	10/01/2024		1.3300		15.9771
Chromium	mg/L	G-01A	10/01/2024	ND	0.0150	**	0.0415
Cobalt, Total	mg/L	G-01A	10/01/2024	ND	0.0040		0.0070
Conductivity	umhos/cm	G-01A	10/01/2024		172.0000		540.0000
Copper	mg/L	G-01A	10/01/2024	ND	0.0070		21.3465
Dissolved calcium	mg/L	G-01A	10/01/2024		15.5000		19.2032
Dissolved iron	mg/L	G-01A	10/01/2024		0.0310		9.6686
Dissolved magnesium	mg/L	G-01A	10/01/2024		4.1400		5.6266
Dissolved manganese	mg/L	G-01A	10/01/2024	ND	0.0060		0.0287
Dissolved potassium	mg/L	G-01A	10/01/2024		1.0700		1.5000
Dissolved sodium	mg/L	G-01A	10/01/2024		7.1200		121.1007
Iron	mg/L	G-01A	10/01/2024		0.0550		47.6999
Lead	mg/L	G-01A	10/01/2024	ND	0.0002		0.0039
Manganese	mg/L	G-01A	10/01/2024	ND	0.0050		0.4870
Nickel	mg/L	G-01A	10/01/2024	ND	0.0080		12.1447
Nitrate nitrogen	mg-N/L	G-01A	10/01/2024		0.4900		1.3000
Nitrite nitrogen	mg-N/L	G-01A	10/01/2024		0.0020		24.1679
pH	std units	G-01A	10/01/2024		5.1400	*	5.85 - 9.34
Selenium	mg/L	G-01A	10/01/2024	ND	0.0007		0.0023
Silver	mg/L	G-01A	10/01/2024	ND	0.0002		0.0006
Sulfate	mg/L	G-01A	10/01/2024		33.6000		318.9728
Thallium	mg/L	G-01A	10/01/2024	ND	0.0000		0.0001
Total dissolved solids	mg/L	G-01A	10/01/2024		119.0000		361.8209
Total organic carbon	mg/L	G-01A	10/01/2024		4.0000		14.0000
Vanadium	mg/L	G-01A	10/01/2024	ND	0.0130		0.0430
Zinc	mg/L	G-01A	10/01/2024	ND	0.0110		7.9125
Alkalinity (as caco3)	mg/L	G-04A	04/17/2024		220.0000		230.0000
Ammonia nitrogen	mg-N/L	G-04A	04/17/2024		0.3490		8.3122
Antimony	mg/L	G-04A	04/17/2024		0.0005		0.0009
Arsenic	mg/L	G-04A	04/17/2024		0.0024	**	0.0048
Barium	mg/L	G-04A	04/17/2024		0.0100		0.9195
Beryllium	mg/L	G-04A	04/17/2024		0.0003		0.0005
Bicarbonate	mg/L	G-04A	04/17/2024		220.0000	***	210.0000
Cadmium	mg/L	G-04A	04/17/2024		0.0001		0.0007
Chemical oxygen demand	mg/L	G-04A	04/17/2024		15.0000		18.0000
Chloride	mg/L	G-04A	04/17/2024		30.1000	*	15.9771
Chromium	mg/L	G-04A	04/17/2024		0.0490	*	0.0415
Cobalt, Total	mg/L	G-04A	04/18/2023		0.0170	***	0.0070
Conductivity	umhos/cm	G-04A	04/17/2024		572.0000	*	540.0000
Copper	mg/L	G-04A	04/17/2024		0.0220		21.3465
Dissolved calcium	mg/L	G-04A	04/17/2024		53.6000	***	19.2032
Dissolved iron	mg/L	G-04A	04/17/2024		25.3000	*	9.6686
Dissolved magnesium	mg/L	G-04A	04/17/2024		31.2000	***	5.6266
Dissolved manganese	mg/L	G-04A	04/17/2024		7.5900	***	0.0287
Dissolved potassium	mg/L	G-04A	04/17/2024		2.7200	***	1.5000
Dissolved sodium	mg/L	G-04A	04/17/2024		15.8000		121.1007
Iron	mg/L	G-04A	04/17/2024		20.5000		47.6999
Lead	mg/L	G-04A	04/17/2024		0.0006		0.0039
Manganese	mg/L	G-04A	04/17/2024		7.0000	***	0.4870
Nickel	mg/L	G-04A	04/17/2024		0.0560		12.1447
Nitrate nitrogen	mg-N/L	G-04A	04/17/2024		0.0430		1.3000
Nitrite nitrogen	mg-N/L	G-04A	04/17/2024		0.0200		24.1679
pH	std units	G-04A	04/17/2024		5.8200	*	5.85 - 9.34
Selenium	mg/L	G-04A	04/17/2024		0.0015		0.0023
Silver	mg/L	G-04A	04/17/2024		0.0006		0.0006
Sulfate	mg/L	G-04A	04/17/2024		29.6000		318.9728
Thallium	mg/L	G-04A	04/17/2024		0.0001		0.0001
Total dissolved solids	mg/L	G-04A	04/17/2024		390.0000	*	361.8209

Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
Total organic carbon	mg/L	G-04A	04/17/2024		12.2000		14.0000
Vanadium	mg/L	G-04A	04/17/2024		0.0430		0.0430
Zinc	mg/L	G-04A	04/17/2024		0.0380		7.9125
Alkalinity (as caco3)	mg/L	G-08D1	10/01/2024		165.0000		230.0000
Ammonia nitrogen	mg-N/L	G-08D1	10/01/2024		0.1280		8.3122
Antimony	mg/L	G-08D1	10/01/2024	ND	0.0002		0.0009
Arsenic	mg/L	G-08D1	10/01/2024		0.0014		0.0048
Barium	mg/L	G-08D1	10/01/2024		0.0190		0.9195
Beryllium	mg/L	G-08D1	10/01/2024	ND	0.0001		0.0005
Bicarbonate	mg/L	G-08D1	10/01/2024		89.8000		210.0000
Cadmium	mg/L	G-08D1	10/01/2024	ND	0.0000		0.0007
Chemical oxygen demand	mg/L	G-08D1	10/01/2024	ND	2.1100		18.0000
Chloride	mg/L	G-08D1	10/01/2024		2.9700		15.9771
Chromium	mg/L	G-08D1	10/01/2024	ND	0.0150	**	0.0415
Cobalt, Total	mg/L	G-08D1	10/01/2024	ND	0.0040		0.0070
Conductivity	umhos/cm	G-08D1	10/01/2024		466.0000		540.0000
Copper	mg/L	G-08D1	10/01/2024	ND	0.0070		21.3465
Dissolved calcium	mg/L	G-08D1	10/01/2024		0.6070		19.2032
Dissolved iron	mg/L	G-08D1	10/01/2024	ND	0.0230		9.6686
Dissolved magnesium	mg/L	G-08D1	10/01/2024	ND	0.0240		5.6266
Dissolved manganese	mg/L	G-08D1	10/01/2024	ND	0.0060		0.0287
Dissolved potassium	mg/L	G-08D1	10/01/2024	ND	0.4350		1.5000
Dissolved sodium	mg/L	G-08D1	10/01/2024		94.2000		121.1007
Iron	mg/L	G-08D1	10/01/2024		2.4500		47.6999
Lead	mg/L	G-08D1	10/01/2024		0.0008		0.0039
Manganese	mg/L	G-08D1	10/01/2024		0.0410		0.4870
Nickel	mg/L	G-08D1	10/01/2024	ND	0.0080		12.1447
Nitrate nitrogen	mg-N/L	G-08D1	10/01/2024		0.2540		1.3000
Nitrite nitrogen	mg-N/L	G-08D1	10/01/2024		0.0050		24.1679
pH	std units	G-08D1	10/01/2024		8.8100		5.85 - 9.34
Selenium	mg/L	G-08D1	10/01/2024		0.0011		0.0023
Silver	mg/L	G-08D1	10/01/2024	ND	0.0002		0.0006
Sulfate	mg/L	G-08D1	10/01/2024		46.4000		318.9728
Thallium	mg/L	G-08D1	10/01/2024	ND	0.0000		0.0001
Total dissolved solids	mg/L	G-08D1	10/01/2024		274.0000		361.8209
Total organic carbon	mg/L	G-08D1	10/01/2024		0.8000		14.0000
Vanadium	mg/L	G-08D1	10/01/2024	ND	0.0130		0.0430
Zinc	mg/L	G-08D1	10/01/2024	ND	0.0110		7.9125
Alkalinity (as caco3)	mg/L	G-09S	10/02/2024		195.0000	**	230.0000
Ammonia nitrogen	mg-N/L	G-09S	10/02/2024		0.1680		8.3122
Antimony	mg/L	G-09S	10/02/2024	ND	0.0002		0.0009
Arsenic	mg/L	G-09S	10/02/2024		0.0024		0.0048
Barium	mg/L	G-09S	10/02/2024	ND	0.0060		0.9195
Beryllium	mg/L	G-09S	10/02/2024	ND	0.0001		0.0005
Bicarbonate	mg/L	G-09S	10/02/2024		134.0000	**	210.0000
Cadmium	mg/L	G-09S	10/02/2024	ND	0.0000		0.0007
Chemical oxygen demand	mg/L	G-09S	10/02/2024	ND	2.1100		18.0000
Chloride	mg/L	G-09S	10/02/2024		6.6300		15.9771
Chromium	mg/L	G-09S	10/02/2024		0.0260		0.0415
Cobalt, Total	mg/L	G-09S	10/02/2024	ND	0.0040		0.0070
Conductivity	umhos/cm	G-09S	10/02/2024		648.0000	***	540.0000
Copper	mg/L	G-09S	10/02/2024	ND	0.0070		21.3465
Dissolved calcium	mg/L	G-09S	10/02/2024		1.1800	**	19.2032
Dissolved iron	mg/L	G-09S	10/02/2024	ND	0.0230		9.6686
Dissolved magnesium	mg/L	G-09S	10/02/2024	ND	0.0240	**	5.6266
Dissolved manganese	mg/L	G-09S	10/02/2024	ND	0.0060		0.0287
Dissolved potassium	mg/L	G-09S	10/02/2024	ND	0.4350	**	1.5000
Dissolved sodium	mg/L	G-09S	10/02/2024		154.0000	*	121.1007
Iron	mg/L	G-09S	10/02/2024		1.5100		47.6999
Lead	mg/L	G-09S	10/02/2024		0.0016		0.0039
Manganese	mg/L	G-09S	10/02/2024		0.0780		0.4870
Nickel	mg/L	G-09S	10/02/2024	ND	0.0080		12.1447
Nitrate nitrogen	mg-N/L	G-09S	10/02/2024		0.1910		1.3000
Nitrite nitrogen	mg-N/L	G-09S	10/02/2024		0.0140		24.1679
pH	std units	G-09S	10/02/2024		5.8800	**	5.85 - 9.34
Selenium	mg/L	G-09S	10/02/2024	ND	0.0007		0.0023
Silver	mg/L	G-09S	10/02/2024	ND	0.0002	**	0.0006

Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
Sulfate	mg/L	G-09S	10/02/2024		123.0000		318.9728
Thallium	mg/L	G-09S	10/02/2024	ND	0.0000		0.0001
Total dissolved solids	mg/L	G-09S	10/02/2024		410.0000	***	361.8209
Total organic carbon	mg/L	G-09S	10/02/2024		2.5000		14.0000
Vanadium	mg/L	G-09S	10/02/2024	ND	0.0130		0.0430
Zinc	mg/L	G-09S	10/02/2024	ND	0.0110		7.9125
Alkalinity (as caco3)	mg/L	G-10S	10/02/2024		451.0000	***	230.0000
Ammonia nitrogen	mg-N/L	G-10S	10/02/2024		0.2680		8.3122
Antimony	mg/L	G-10S	10/02/2024	ND	0.0002		0.0009
Arsenic	mg/L	G-10S	10/02/2024		0.0050	*	0.0048
Barium	mg/L	G-10S	10/02/2024	ND	0.0060		0.9195
Beryllium	mg/L	G-10S	10/02/2024	ND	0.0001		0.0005
Bicarbonate	mg/L	G-10S	10/02/2024		451.0000	***	210.0000
Cadmium	mg/L	G-10S	10/02/2024	ND	0.0000		0.0007
Chemical oxygen demand	mg/L	G-10S	10/02/2024	ND	2.1100		18.0000
Chloride	mg/L	G-10S	10/02/2024		7.2800		15.9771
Chromium	mg/L	G-10S	10/02/2024	ND	0.0150		0.0415
Cobalt, Total	mg/L	G-10S	10/02/2024	ND	0.0040		0.0070
Conductivity	umhos/cm	G-10S	10/02/2024		122.0000	**	540.0000
Copper	mg/L	G-10S	10/02/2024	ND	0.0070		21.3465
Dissolved calcium	mg/L	G-10S	10/02/2024		79.8000	***	19.2032
Dissolved iron	mg/L	G-10S	10/02/2024		4.8300		9.6686
Dissolved magnesium	mg/L	G-10S	10/02/2024		20.2000	***	5.6266
Dissolved manganese	mg/L	G-10S	10/02/2024		2.7300	***	0.0287
Dissolved potassium	mg/L	G-10S	10/02/2024		3.3600	***	1.5000
Dissolved sodium	mg/L	G-10S	10/02/2024		159.0000	***	121.1007
Iron	mg/L	G-10S	10/02/2024		9.8400		47.6999
Lead	mg/L	G-10S	10/02/2024	ND	0.0002		0.0039
Manganese	mg/L	G-10S	10/02/2024		3.0600	***	0.4870
Nickel	mg/L	G-10S	10/02/2024	ND	0.0080		12.1447
Nitrate nitrogen	mg-N/L	G-10S	10/02/2024		0.0500		1.3000
Nitrite nitrogen	mg-N/L	G-10S	10/02/2024		0.0020		24.1679
pH	std units	G-10S	10/02/2024		6.1600		5.85 - 9.34
Selenium	mg/L	G-10S	10/02/2024	ND	0.0007		0.0023
Silver	mg/L	G-10S	10/02/2024	ND	0.0002		0.0006
Sulfate	mg/L	G-10S	10/02/2024		242.0000		318.9728
Thallium	mg/L	G-10S	10/02/2024	ND	0.0000		0.0001
Total dissolved solids	mg/L	G-10S	10/02/2024		837.0000	***	361.8209
Total organic carbon	mg/L	G-10S	10/02/2024		4.1000		14.0000
Vanadium	mg/L	G-10S	10/02/2024	ND	0.0130		0.0430
Zinc	mg/L	G-10S	10/02/2024	ND	0.0110		7.9125
Alkalinity (as caco3)	mg/L	G-11S	10/02/2024		81.6000		230.0000
Ammonia nitrogen	mg-N/L	G-11S	10/02/2024	ND	0.0200		8.3122
Antimony	mg/L	G-11S	10/02/2024	ND	0.0002		0.0009
Arsenic	mg/L	G-11S	10/02/2024		0.0007		0.0048
Barium	mg/L	G-11S	10/02/2024	ND	0.0060		0.9195
Beryllium	mg/L	G-11S	10/02/2024	ND	0.0001		0.0005
Bicarbonate	mg/L	G-11S	10/02/2024		81.6000		210.0000
Cadmium	mg/L	G-11S	10/02/2024	ND	0.0000		0.0007
Chemical oxygen demand	mg/L	G-11S	10/02/2024	ND	2.1100		18.0000
Chloride	mg/L	G-11S	10/02/2024		7.6800		15.9771
Chromium	mg/L	G-11S	10/02/2024	ND	0.0150		0.0415
Cobalt, Total	mg/L	G-11S	10/02/2024	ND	0.0040		0.0070
Conductivity	umhos/cm	G-11S	10/02/2024		252.0000		540.0000
Copper	mg/L	G-11S	10/02/2024	ND	0.0070		21.3465
Dissolved calcium	mg/L	G-11S	10/02/2024		8.8100		19.2032
Dissolved iron	mg/L	G-11S	10/02/2024	ND	0.0230		9.6686
Dissolved magnesium	mg/L	G-11S	10/02/2024		2.0500		5.6266
Dissolved manganese	mg/L	G-11S	10/02/2024		0.0870	***	0.0287
Dissolved potassium	mg/L	G-11S	10/02/2024		0.8840		1.5000
Dissolved sodium	mg/L	G-11S	10/02/2024		35.3000		121.1007
Iron	mg/L	G-11S	10/02/2024		0.1810		47.6999
Lead	mg/L	G-11S	10/02/2024		0.0002		0.0039
Manganese	mg/L	G-11S	10/02/2024		1.6200	*	0.4870
Nickel	mg/L	G-11S	10/02/2024	ND	0.0080		12.1447
Nitrate nitrogen	mg-N/L	G-11S	10/02/2024		0.0330		1.3000
Nitrite nitrogen	mg-N/L	G-11S	10/02/2024		0.0020		24.1679

Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
pH	std units	G-11S	10/02/2024		5.9200		5.85 - 9.34
Selenium	mg/L	G-11S	10/02/2024	ND	0.0007		0.0023
Silver	mg/L	G-11S	10/02/2024	ND	0.0002		0.0006
Sulfate	mg/L	G-11S	10/02/2024		30.1000		318.9728
Thallium	mg/L	G-11S	10/02/2024	ND	0.0000		0.0001
Total dissolved solids	mg/L	G-11S	10/02/2024		175.0000		361.8209
Total organic carbon	mg/L	G-11S	10/02/2024		2.3000		14.0000
Vanadium	mg/L	G-11S	10/02/2024	ND	0.0130		0.0430
Zinc	mg/L	G-11S	10/02/2024	ND	0.0110		7.9125

* - Current value failed - awaiting verification.
** - Current value passed - previous exceedance not verified.
*** - Current value failed - exceedance verified.
**** - Current value passed - awaiting one more verification.
***** - Insufficient background data to compute prediction limit.
ND = Not Detected, Result = detection limit.

Table 5

Summary Statistics and Prediction Limits

Constituent	Units	Detect	N	Mean	SD	alpha	Factor	Pred Limit	Type		Conf
Alkalinity (as caco3)	mg/L	56	56					230.0000	nonpar		0.99
Ammonia nitrogen	mg-N/L	37	56	-2.4949	1.9081	0.0100	2.4173	8.3122	lognor		
Antimony	mg/L	8	52					0.0009	nonpar		0.99
Arsenic	mg/L	51	51	0.0016	0.0013	0.0100	2.4267	0.0048	normal		
Barium	mg/L	48	53	-3.8198	1.5420	0.0100	2.4227	0.9195	lognor		
Beryllium	mg/L	2	53					0.0005	nonpar	***	0.99
Bicarbonate	mg/L	56	56					210.0000	nonpar		0.99
Cadmium	mg/L	16	51					0.0007	nonpar		0.99
Chemical oxygen demand	mg/L	5	52					18.0000	nonpar		0.99
Chloride	mg/L	56	56	1.2916	0.6121	0.0100	2.4173	15.9771	lognor		
Chromium	mg/L	35	53	0.0115	0.0124	0.0100	2.4227	0.0415	normal		
Cobalt, Total	mg/L	5	47					0.0070	nonpar		0.99
Conductivity	umhos/cm	55	55					540.0000	nonpar		0.99
Copper	mg/L	28	53	-2.2035	2.1729	0.0100	2.4227	21.3465	lognor		
Dissolved calcium	mg/L	53	53	5.7800	5.5406	0.0100	2.4227	19.2032	normal		
Dissolved iron	mg/L	35	56	-1.5102	1.5633	0.0100	2.4173	9.6686	lognor		
Dissolved magnesium	mg/L	41	55	1.5700	1.6769	0.0100	2.4191	5.6266	normal		
Dissolved manganese	mg/L	31	56	0.0064	0.0092	0.0100	2.4173	0.0287	normal		
Dissolved potassium	mg/L	40	53	0.4939	0.4153	0.0100	2.4227	1.5000	normal		
Dissolved sodium	mg/L	56	56	91.0107	12.4476	0.0100	2.4173	121.1007	normal		
Iron	mg/L	51	51	0.3263	1.4582	0.0100	2.4267	47.6999	lognor		
Lead	mg/L	47	53					0.0039	nonpar		0.99
Manganese	mg/L	51	51					0.4870	nonpar		0.99
Nickel	mg/L	33	52	-2.7040	2.1450	0.0100	2.4246	12.1447	lognor		
Nitrate nitrogen	mg-N/L	48	56					1.3000	nonpar		0.99
Nitrite nitrogen	mg-N/L	35	56	-3.2681	2.6695	0.0100	2.4173	24.1679	lognor		
pH	std units	57	57					5.85- 9.34	nonpar		0.99
Selenium	mg/L	5	53					0.0023	nonpar		0.99
Silver	mg/L	4	53					0.0006	nonpar		0.99
Sulfate	mg/L	55	55	3.5679	0.9083	0.0100	2.4191	318.9728	lognor		
Thallium	mg/L	12	53					0.0001	nonpar		0.99
Total dissolved solids	mg/L	56	56	256.5000	43.5690	0.0100	2.4173	361.8209	normal		
Total organic carbon	mg/L	52	56					14.0000	nonpar		0.99
Vanadium	mg/L	10	52					0.0430	nonpar		0.99
Zinc	mg/L	37	53	-3.0562	2.1152	0.0100	2.4227	7.9125	lognor		

Conf = confidence level for passing initial test or one of two verification resamples at all downgradient wells for a single constituent (nonparametric test only).
* - Insufficient Data.
** - Calculated limit raised to Manual Reporting Limit.
*** - Nonparametric limit based on ND value.
For transformed data, mean and SD in transformed units and prediction limit in original units.
All sample sizes and statistics are based on outlier free data.
For nonparametric limits, median reporting limits are substituted for extreme reporting limit values.

Deep Wells

Groundwater Analytical Summary - Deep Wells: First Quarter 2024
Cathcart Landfill, Snohomish County, WA

	Statistical Method	Number of Samples	Number of Detects	Prediction Limit	Primary GW Stds 173-200	G-09D					G-10D				
						1/10/24	D	V	Tr	Ch	1/10/24	D	V	Tr	Ch
CONVENTIONAL CHEMISTRY PARAMETERS (mg/L)															
Alkalinity (as CaCO3)	nonpar	54	54	280	--	220					520		V	I	N
Ammonia Nitrogen	lognor	52	52	0.249	--	0.165					0.321		V		
Bicarbonate	nonpar	54	54	280	--	220					520		V	I	N
Calcium, Dissolved	nonpar	49	49	1.59	--	1.68		E		Y	17.2		V	D	N
Chemical Oxygen Demand	nonpar	54	9	28	--	10	U				10	U			
Chloride	nonpar	53	53	6.86	250	9.48		E			13.8		V	D	N
Conductivity (umhos/cm)	nonpar	54	54	530	700	760		V			1500		V		
Magnesium, Dissolved	nonpar	53	31	2.33	--	0.05					1.6			D	N
Nitrate Nitrogen (mg-N/L)	nonpar	53	17	0.28	10	1.3		E			0.033				
Nitrite Nitrogen (mg-N/L)	nonpar	54	24	0.042	1	0.032					0.002	U			
pH (std units)	nonpar	54	54	7.42-9.88	6.5-8.5	8.75					6.67		V		
Potassium, Dissolved	lognor	54	34	2.7583	--	0.54					1.95				
Sodium, Dissolved	normal	54	54	137.1404	20	167		V			326		V		
Sulfate	nonpar	52	52	66.05	250	152		V			257		V	D	N
Total Dissolved Solids	nonpar	54	54	355	500	440		V			1000		V		
Total Organic Carbon	nonpar	52	52	25	--	3.5					4.7				
TOTAL METALS EPA Methods 200.7/200.8 (mg/L)															
Antimony	--	--	--	--	0.006	0.0003	U				0.0003	U			
Arsenic	--	--	--	--	0.00005	0.00256					0.00108				
Barium	--	--	--	--	1	0.0106					0.01	U			
Beryllium	--	--	--	--	0.004	0.0003	U				0.0003	U			
Cadmium	--	--	--	--	0.005	0.0001	U				0.0001	U			
Chromium	--	--	--	--	0.05	0.02	U				0.02	U			
Cobalt	--	--	--	--	--	0.01	U				0.01	U			
Copper	--	--	--	--	1	0.01	U				0.01	U			
Iron	--	--	--	--	0.3	2.32					0.51				
Lead	--	--	--	--	0.05	0.00174					0.0002	U			
Manganese	--	--	--	--	0.05	0.102					0.32				
Nickel	--	--	--	--	0.1	0.016					0.01				
Selenium	--	--	--	--	0.01	0.001	U				0.001	U			
Silver	--	--	--	--	0.05	0.0002	U				0.0002	U			
Thallium	--	--	--	--	0.002	0.0001	U				0.0001	U			
Vanadium	--	--	--	--	--	0.02	U				0.02	U			
Zinc	--	--	--	--	5	0.015	U				0.015	U			
DISSOLVED METALS EPA Methods 200.7/200.8 (mg/L)															
Antimony	nonpar	53	3	0.0008	0.006	0.0001	U				0.0001	U			
Arsenic	nonpar	53	40	0.0015	0.00005	0.00249		V	D	Y	0.00141				
Barium	nonpar	54	12	0.0046	1	0.01	U				0.01	U			
Beryllium	nonpar	54	0	0.0005	0.004	0.0002	U				0.0002	U			
Cadmium	nonpar	52	3	0.0001	0.005	0.00005	U				0.00005	U			
Chromium	nonpar	54	5	0.0136	0.05	0.02	U				0.02	U			
Cobalt	nonpar	51	1	0.005	--	0.01	U				0.01	U			
Copper	nonpar	54	5	0.055	1	0.02	U				0.02	U			
Iron	nonpar	54	25	0.871	0.3	0.03	U				0.330			D	N
Lead	nonpar	54	12	0.0007	0.05	0.0002	U		D	N	0.0002	U			
Manganese	normal	53	27	0.012	0.05	0.01	U				0.257		V	D	N
Nickel	nonpar	54	2	0.026	0.1	0.01	U				0.01				
Selenium	nonpar	53	14	0.001	0.01	0.0007					0.0005	U			
Silver	nonpar	51	0	0.0001	0.05	0.0002	U				0.0002	U			
Thallium	nonpar	53	0	0.00009	0.002	0.00005	U				0.00005	U			
Vanadium	nonpar	54	1	0.01	--	0.02	U				0.02	U			
Zinc	nonpar	54	8	0.012	5	0.02	U				0.02	U			
VOLATILE ORGANIC COMPOUNDS (VOCs) EPA Method 8260 (µg/L)															
1,1,1-Trichloroethane	--	--	--	--	200	1	U				1	U			
1,1,2,2-Tetrachloroethane	--	--	--	--	--	1	U				1	U			
1,1,2-Trichloroethane	--	--	--	--	--	2	U				2	U			
1,1-Dichloroethane	--	--	--	--	1	1	U				1	U			

Groundwater Analytical Summary - Deep Wells: First Quarter 2024
Cathcart Landfill, Snohomish County, WA

	Statistical Method	Number of Samples	Number of Detects	Prediction Limit	Primary GW Stds 173-200	G-09D					G-10D				
						1/10/24	D	V	Tr	Ch	1/10/24	D	V	Tr	Ch
VOLATILE ORGANIC COMPOUNDS (VOCs) EPA Method 8260 (µg/L) (cont.)															
1,1-Dichloroethylene	--	--	--	--	--	1	U				1	U			
1,2,3-Trichloropropane	--	--	--	--	--	1	U				1	U			
1,2-Dibromo-3-chloropropane	--	--	--	--	0.2	0.03	U				0.03	U			
1,2-Dibromoethane	--	--	--	--	0.001	0.01	U				0.01	U			
1,2-Dichlorobenzene	--	--	--	--	--	1	U				1	U			
1,2-Dichloroethane	--	--	--	--	0.5	0.03	U				0.03	U			
1,2-Dichloropropane	--	--	--	--	0.6	**0.17**					0.02	U			
1,4-Dichlorobenzene	--	--	--	--	4	1	U				1	U			
2-Butanone	--	--	--	--	--	5	U				5	U			
2-Hexanone	--	--	--	--	--	2	U				2	U			
4-Methyl-2-Pentanone (MIBK)	--	--	--	--	--	3	U				3	U			
Acetone	--	--	--	--	--	5	U				5	U			
Acrylonitrile	--	--	--	--	0.07	0.05	U				0.05	U			
Benzene	--	--	--	--	1	0.5	U				0.5	U			
Bromodichloromethane	--	--	--	--	0.3	0.02	U				0.02	U			
Bromoform	--	--	--	--	5	2	U				2	U			
Bromomethane	--	--	--	--	--	2	U				2	U			
Carbon Disulfide	--	--	--	--	--	3	U				3	U			
Carbon Tetrachloride	--	--	--	--	0.3	0.02	U				0.02	U			
Chlorobenzene	--	--	--	--	--	0.03	U				0.03	U			
Chlorodibromomethane	--	--	--	--	0.5	0.5	U				0.5	U			
Chloroethane	--	--	--	--	--	3	U				3	U			
Chloroform	--	--	--	--	7	1	U				1	U			
Chloromethane	--	--	--	--	--	2	U				2	U			
cis-1,2-Dichloroethene	--	--	--	--	--	**0.15**					0.03	U			
cis-1,3-Dichloropropene	--	--	--	--	0.2	0.03	U				0.03	U			
Dibromomethane	--	--	--	--	--	0.02	U				0.02	U			
Ethyl Benzene	--	--	--	--	--	1	U				1	U			
m,p-Xylene	--	--	--	--	--	5	U				5	U			
Methyl Iodide	--	--	--	--	--	3	U				3	U			
Methylene Chloride	--	--	--	--	5	3	U				3	U			
o-Xylene	--	--	--	--	--	1.5	U				1.5	U			
Styrene	--	--	--	--	--	2	U				2	U			
Tetrachloroethylene	--	--	--	--	0.8	0.03	U				0.03	U			
Toluene	--	--	--	--	--	2	U				2	U			
trans-1,2-Dichloroethene	--	--	--	--	--	1	U				1	U			
trans-1,3-Dichloropropene	--	--	--	--	0.2	0.03	U				0.03	U			
trans-1,4-Dichloro-2-butene	--	--	--	--	--	2	U				2	U			
Trichlorethene (1,1,2-Trichloroet	--	--	--	--	3	2	U				2	U			
Trichlorofluoromethane	--	--	--	--	--	2	U				2	U			
Vinyl Acetate	--	--	--	--	--	3	U				3	U			
Vinyl Chloride	--	--	--	--	0.02	**0.27**					0.05	U			

D: U = Indicates compound was not detected at the given reporting limit; X indicates that the compound was detected in the trip blank and contamination is suspected.

V: E= Exceedance, waiting verification based on subsequent lab data; V= Exceedance verified based on previous lab data; P=Passed, previous exceedance not verified based on current lab data.

Tr: I=increasing Trend, D=Decreasing Trend;

Ch: Y indicates a change in trend from previous quarter; N means no change in trend.

Values in **purple** exceed the prediction limit; indicates that a value exceeded the Groundwater Standards

The groundwater standards listed are based on the Washington Administrative Code (WAC) 173-200 groundwater limits as modified by the TMS 91-11 standards.

B = Methylene chloride was measured in the lab blank at a similar concentration - contamination during analysis suspected.

Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
Alkalinity (as caco3)	mg/L	G-01D	10/17/2023		230.0000		280.0000
Ammonia nitrogen	mg-N/L	G-01D	10/17/2023		0.1500		0.2466
Bicarbonate	mg/L	G-01D	10/17/2023		230.0000		280.0000
Chemical oxygen demand	mg/L	G-01D	10/17/2023	ND	10.0000		28.0000
Chloride	mg/L	G-01D	10/17/2023		7.7100	*	6.8600
Conductivity	umhos/cm	G-01D	10/17/2023		590.0000	***	530.0000
Dissolved antimony	mg/L	G-01D	10/17/2023	ND	0.0001		0.0008
Dissolved arsenic	mg/L	G-01D	10/17/2023		0.0012		0.0015
Dissolved barium	mg/L	G-01D	10/17/2023	ND	0.0100		0.1040
Dissolved beryllium	mg/L	G-01D	10/17/2023	ND	0.0002		0.0005
Dissolved cadmium	mg/L	G-01D	10/17/2023	ND	0.0001		0.0001
Dissolved calcium	mg/L	G-01D	10/17/2023		1.0100		1.5900
Dissolved chromium	mg/L	G-01D	10/17/2023	ND	0.0200		0.0136
Dissolved cobalt	mg/L	G-01D	10/17/2023	ND	0.0100		0.0050
Dissolved copper	mg/L	G-01D	10/17/2023	ND	0.0200		0.0550
Dissolved iron	mg/L	G-01D	10/17/2023	ND	0.0300		0.8710
Dissolved lead	mg/L	G-01D	10/17/2023	ND	0.0002		0.0007
Dissolved magnesium	mg/L	G-01D	10/17/2023	ND	0.0500		2.3300
Dissolved manganese	mg/L	G-01D	10/17/2023	ND	0.0100		0.0119
Dissolved nickel	mg/L	G-01D	10/17/2023	ND	0.0100		0.0260
Dissolved potassium	mg/L	G-01D	10/17/2023	ND	0.5000		2.7440
Dissolved selenium	mg/L	G-01D	10/17/2023	ND	0.0005		0.0010
Dissolved silver	mg/L	G-01D	10/17/2023	ND	0.0002		0.0001
Dissolved sodium	mg/L	G-01D	10/17/2023		136.0000	**	137.3888
Dissolved thallium	mg/L	G-01D	10/17/2023	ND	0.0001		0.0001
Dissolved vanadium	mg/L	G-01D	10/17/2023	ND	0.0200		0.0100
Dissolved zinc	mg/L	G-01D	10/17/2023	ND	0.0200		0.0120
Nitrate nitrogen	mg-N/L	G-01D	10/17/2023	ND	0.0100		0.2800
Nitrite nitrogen	mg-N/L	G-01D	10/17/2023		0.0240		0.0650
pH	std units	G-01D	10/17/2023		8.6500		7.42 - 9.88
Sulfate	mg/L	G-01D	10/17/2023		52.7000		66.0500
Total dissolved solids	mg/L	G-01D	10/17/2023		320.0000		355.0000
Total organic carbon	mg/L	G-01D	10/17/2023		1.4000		25.0000
Alkalinity (as caco3)	mg/L	G-02D	10/18/2023		110.0000		280.0000
Ammonia nitrogen	mg-N/L	G-02D	10/18/2023		0.0200		0.2466
Bicarbonate	mg/L	G-02D	10/18/2023		110.0000		280.0000
Chemical oxygen demand	mg/L	G-02D	10/18/2023	ND	10.0000		28.0000
Chloride	mg/L	G-02D	10/18/2023		5.9100		6.8600
Conductivity	umhos/cm	G-02D	10/18/2023		360.0000		530.0000
Dissolved antimony	mg/L	G-02D	10/18/2023		0.0002		0.0008
Dissolved arsenic	mg/L	G-02D	10/18/2023		0.0047	***	0.0015
Dissolved barium	mg/L	G-02D	10/18/2023	ND	0.0100		0.1040
Dissolved beryllium	mg/L	G-02D	10/18/2023	ND	0.0002		0.0005
Dissolved cadmium	mg/L	G-02D	10/18/2023	ND	0.0001		0.0001
Dissolved calcium	mg/L	G-02D	10/18/2023		0.4700		1.5900
Dissolved chromium	mg/L	G-02D	10/18/2023	ND	0.0200		0.0136
Dissolved cobalt	mg/L	G-02D	10/18/2023	ND	0.0100		0.0050
Dissolved copper	mg/L	G-02D	10/18/2023	ND	0.0200		0.0550
Dissolved iron	mg/L	G-02D	10/18/2023	ND	0.0300		0.8710
Dissolved lead	mg/L	G-02D	10/18/2023	ND	0.0002		0.0007
Dissolved magnesium	mg/L	G-02D	10/18/2023		0.0500		2.3300
Dissolved manganese	mg/L	G-02D	10/18/2023	ND	0.0100		0.0119
Dissolved nickel	mg/L	G-02D	10/18/2023	ND	0.0100		0.0260
Dissolved potassium	mg/L	G-02D	10/18/2023	ND	0.5000		2.7440
Dissolved selenium	mg/L	G-02D	10/18/2023	ND	0.0005		0.0010
Dissolved silver	mg/L	G-02D	10/18/2023	ND	0.0002		0.0001
Dissolved sodium	mg/L	G-02D	10/18/2023		87.8000		137.3888
Dissolved thallium	mg/L	G-02D	10/18/2023	ND	0.0001		0.0001
Dissolved vanadium	mg/L	G-02D	10/18/2023	ND	0.0200		0.0100
Dissolved zinc	mg/L	G-02D	10/18/2023	ND	0.0200		0.0120
Nitrate nitrogen	mg-N/L	G-02D	10/18/2023		0.0350		0.2800
Nitrite nitrogen	mg-N/L	G-02D	10/18/2023		0.0250		0.0650
pH	std units	G-02D	10/18/2023		6.9600	*	7.42 - 9.88
Sulfate	mg/L	G-02D	10/18/2023		62.8000		66.0500
Total dissolved solids	mg/L	G-02D	10/18/2023		180.0000		355.0000
Total organic carbon	mg/L	G-02D	10/18/2023		0.5400		25.0000
Alkalinity (as caco3)	mg/L	G-06B	10/17/2023		270.0000		280.0000

Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
Ammonia nitrogen	mg-N/L	G-06B	10/17/2023		0.0430		0.2466
Bicarbonate	mg/L	G-06B	10/17/2023		270.0000		280.0000
Chemical oxygen demand	mg/L	G-06B	10/17/2023		12.0000		28.0000
Chloride	mg/L	G-06B	10/17/2023		7.1800	*	6.8600
Conductivity	umhos/cm	G-06B	10/17/2023		660.0000	***	530.0000
Dissolved antimony	mg/L	G-06B	10/17/2023		0.0002		0.0008
Dissolved arsenic	mg/L	G-06B	10/17/2023		0.0047	***	0.0015
Dissolved barium	mg/L	G-06B	10/17/2023	ND	0.0100		0.1040
Dissolved beryllium	mg/L	G-06B	10/17/2023	ND	0.0002		0.0005
Dissolved cadmium	mg/L	G-06B	10/17/2023	ND	0.0001		0.0001
Dissolved calcium	mg/L	G-06B	10/17/2023		1.0600		1.5900
Dissolved chromium	mg/L	G-06B	10/17/2023	ND	0.0200		0.0136
Dissolved cobalt	mg/L	G-06B	10/17/2023	ND	0.0100		0.0050
Dissolved copper	mg/L	G-06B	10/17/2023	ND	0.0200		0.0550
Dissolved iron	mg/L	G-06B	10/17/2023	ND	0.0300		0.8710
Dissolved lead	mg/L	G-06B	10/17/2023	ND	0.0002		0.0007
Dissolved magnesium	mg/L	G-06B	10/17/2023	ND	0.0500		2.3300
Dissolved manganese	mg/L	G-06B	10/17/2023	ND	0.0100		0.0119
Dissolved nickel	mg/L	G-06B	10/17/2023	ND	0.0100		0.0260
Dissolved potassium	mg/L	G-06B	10/17/2023		0.5700		2.7440
Dissolved selenium	mg/L	G-06B	10/17/2023	ND	0.0005		0.0010
Dissolved silver	mg/L	G-06B	10/17/2023	ND	0.0002		0.0001
Dissolved sodium	mg/L	G-06B	10/17/2023		165.0000	***	137.3888
Dissolved thallium	mg/L	G-06B	10/17/2023	ND	0.0001		0.0001
Dissolved vanadium	mg/L	G-06B	10/17/2023	ND	0.0200		0.0100
Dissolved zinc	mg/L	G-06B	10/17/2023	ND	0.0200		0.0120
Nitrate nitrogen	mg-N/L	G-06B	10/17/2023		0.3000	*	0.2800
Nitrite nitrogen	mg-N/L	G-06B	10/17/2023		0.0100		0.0650
pH	std units	G-06B	10/17/2023		7.3200	*	7.42 - 9.88
Sulfate	mg/L	G-06B	10/17/2023		64.3000		66.0500
Total dissolved solids	mg/L	G-06B	10/17/2023		370.0000	***	355.0000
Total organic carbon	mg/L	G-06B	10/17/2023		2.6000		25.0000
Alkalinity (as caco3)	mg/L	G-08D2	10/17/2023		180.0000		280.0000
Ammonia nitrogen	mg-N/L	G-08D2	10/17/2023		0.1865		0.2466
Bicarbonate	mg/L	G-08D2	10/17/2023		180.0000		280.0000
Chemical oxygen demand	mg/L	G-08D2	10/17/2023	ND	10.0000		28.0000
Chloride	mg/L	G-08D2	10/17/2023		3.0800		6.8600
Conductivity	umhos/cm	G-08D2	10/17/2023		470.0000		530.0000
Dissolved antimony	mg/L	G-08D2	10/17/2023	ND	0.0001		0.0008
Dissolved arsenic	mg/L	G-08D2	10/17/2023		0.0006		0.0015
Dissolved barium	mg/L	G-08D2	10/17/2023	ND	0.0100		0.1040
Dissolved beryllium	mg/L	G-08D2	10/17/2023	ND	0.0002		0.0005
Dissolved cadmium	mg/L	G-08D2	10/17/2023	ND	0.0001		0.0001
Dissolved calcium	mg/L	G-08D2	10/17/2023		0.6150		1.5900
Dissolved chromium	mg/L	G-08D2	10/17/2023	ND	0.0200		0.0136
Dissolved cobalt	mg/L	G-08D2	10/17/2023	ND	0.0100		0.0050
Dissolved copper	mg/L	G-08D2	10/17/2023	ND	0.0200		0.0550
Dissolved iron	mg/L	G-08D2	10/17/2023	ND	0.0300		0.8710
Dissolved lead	mg/L	G-08D2	10/17/2023	ND	0.0002		0.0007
Dissolved magnesium	mg/L	G-08D2	10/17/2023	ND	0.0500		2.3300
Dissolved manganese	mg/L	G-08D2	10/17/2023	ND	0.0100		0.0119
Dissolved nickel	mg/L	G-08D2	10/17/2023	ND	0.0100		0.0260
Dissolved potassium	mg/L	G-08D2	10/17/2023	ND	0.5000		2.7440
Dissolved selenium	mg/L	G-08D2	10/17/2023	ND	0.0005		0.0010
Dissolved silver	mg/L	G-08D2	10/17/2023	ND	0.0002		0.0001
Dissolved sodium	mg/L	G-08D2	10/17/2023		104.5000		137.3888
Dissolved thallium	mg/L	G-08D2	10/17/2023	ND	0.0001		0.0001
Dissolved vanadium	mg/L	G-08D2	10/17/2023	ND	0.0200		0.0100
Dissolved zinc	mg/L	G-08D2	10/17/2023	ND	0.0200		0.0120
Nitrate nitrogen	mg-N/L	G-08D2	10/17/2023	ND	0.0100		0.2800
Nitrite nitrogen	mg-N/L	G-08D2	10/17/2023		0.0680	*	0.0650
pH	std units	G-08D2	10/17/2023		9.0100	**	7.42 - 9.88
Sulfate	mg/L	G-08D2	10/17/2023		44.2500		66.0500
Total dissolved solids	mg/L	G-08D2	10/17/2023		280.0000		355.0000
Total organic carbon	mg/L	G-08D2	10/17/2023		1.0850		25.0000
Alkalinity (as caco3)	mg/L	G-09D	01/10/2024		215.0000		280.0000
Ammonia nitrogen	mg-N/L	G-09D	01/10/2024		0.1710		0.2466

Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
Bicarbonate	mg/L	G-09D	01/10/2024		215.0000		280.0000
Chemical oxygen demand	mg/L	G-09D	01/10/2024	ND	10.0000		28.0000
Chloride	mg/L	G-09D	01/10/2024		9.4150	*	6.8600
Conductivity	umhos/cm	G-09D	01/10/2024		760.0000	***	530.0000
Dissolved antimony	mg/L	G-09D	01/10/2024	ND	0.0001		0.0008
Dissolved arsenic	mg/L	G-09D	01/10/2024		0.0024	***	0.0015
Dissolved barium	mg/L	G-09D	01/10/2024	ND	0.0100		0.1040
Dissolved beryllium	mg/L	G-09D	01/10/2024	ND	0.0002		0.0005
Dissolved cadmium	mg/L	G-09D	01/10/2024	ND	0.0001		0.0001
Dissolved calcium	mg/L	G-09D	01/10/2024		1.6700	*	1.5900
Dissolved chromium	mg/L	G-09D	01/10/2024	ND	0.0200		0.0136
Dissolved cobalt	mg/L	G-09D	01/10/2024	ND	0.0100		0.0050
Dissolved copper	mg/L	G-09D	01/10/2024	ND	0.0200		0.0550
Dissolved iron	mg/L	G-09D	01/10/2024	ND	0.0300		0.8710
Dissolved lead	mg/L	G-09D	01/10/2024	ND	0.0002		0.0007
Dissolved magnesium	mg/L	G-09D	01/10/2024		0.0500		2.3300
Dissolved manganese	mg/L	G-09D	01/10/2024	ND	0.0100		0.0119
Dissolved nickel	mg/L	G-09D	01/10/2024	ND	0.0100		0.0260
Dissolved potassium	mg/L	G-09D	01/10/2024		0.5350		2.7440
Dissolved selenium	mg/L	G-09D	01/10/2024		0.0007		0.0010
Dissolved silver	mg/L	G-09D	01/10/2024	ND	0.0002		0.0001
Dissolved sodium	mg/L	G-09D	01/10/2024		168.0000	***	137.3888
Dissolved thallium	mg/L	G-09D	01/10/2024	ND	0.0001		0.0001
Dissolved vanadium	mg/L	G-09D	01/10/2024	ND	0.0200		0.0100
Dissolved zinc	mg/L	G-09D	01/10/2024	ND	0.0200		0.0120
Nitrate nitrogen	mg-N/L	G-09D	01/10/2024		0.6820	*	0.2800
Nitrite nitrogen	mg-N/L	G-09D	01/10/2024		0.0340		0.0650
pH	std units	G-09D	01/10/2024		8.7500		7.42 - 9.88
Sulfate	mg/L	G-09D	01/10/2024		148.0000	***	66.0500
Total dissolved solids	mg/L	G-09D	01/10/2024		455.0000	***	355.0000
Total organic carbon	mg/L	G-09D	01/10/2024		3.2000		25.0000
Alkalinity (as caco3)	mg/L	G-10D	01/10/2024		520.0000	***	280.0000
Ammonia nitrogen	mg-N/L	G-10D	01/10/2024		0.3210	***	0.2466
Bicarbonate	mg/L	G-10D	01/10/2024		520.0000	***	280.0000
Chemical oxygen demand	mg/L	G-10D	01/10/2024	ND	10.0000		28.0000
Chloride	mg/L	G-10D	01/10/2024		13.8000	***	6.8600
Conductivity	umhos/cm	G-10D	01/10/2024		1500.0000	***	530.0000
Dissolved antimony	mg/L	G-10D	01/10/2024	ND	0.0001		0.0008
Dissolved arsenic	mg/L	G-10D	01/10/2024		0.0014		0.0015
Dissolved barium	mg/L	G-10D	01/10/2024	ND	0.0100		0.1040
Dissolved beryllium	mg/L	G-10D	01/10/2024	ND	0.0002		0.0005
Dissolved cadmium	mg/L	G-10D	01/10/2024	ND	0.0001		0.0001
Dissolved calcium	mg/L	G-10D	01/10/2024		17.2000	***	1.5900
Dissolved chromium	mg/L	G-10D	01/10/2024	ND	0.0200		0.0136
Dissolved cobalt	mg/L	G-10D	01/10/2024	ND	0.0100		0.0050
Dissolved copper	mg/L	G-10D	01/10/2024	ND	0.0200		0.0550
Dissolved iron	mg/L	G-10D	01/10/2024		0.3300		0.8710
Dissolved lead	mg/L	G-10D	01/10/2024	ND	0.0002		0.0007
Dissolved magnesium	mg/L	G-10D	01/10/2024		1.6000		2.3300
Dissolved manganese	mg/L	G-10D	01/10/2024		0.2570	***	0.0119
Dissolved nickel	mg/L	G-10D	01/10/2024		0.0100		0.0260
Dissolved potassium	mg/L	G-10D	01/10/2024		1.9500		2.7440
Dissolved selenium	mg/L	G-10D	01/10/2024	ND	0.0005		0.0010
Dissolved silver	mg/L	G-10D	01/10/2024	ND	0.0002		0.0001
Dissolved sodium	mg/L	G-10D	01/10/2024		326.0000	***	137.3888
Dissolved thallium	mg/L	G-10D	01/10/2024	ND	0.0001		0.0001
Dissolved vanadium	mg/L	G-10D	01/10/2024	ND	0.0200		0.0100
Dissolved zinc	mg/L	G-10D	01/10/2024	ND	0.0200		0.0120
Nitrate nitrogen	mg-N/L	G-10D	01/10/2024		0.0330		0.2800
Nitrite nitrogen	mg-N/L	G-10D	01/10/2024	ND	0.0020		0.0650
pH	std units	G-10D	01/10/2024		6.6700	***	7.42 - 9.88
Sulfate	mg/L	G-10D	01/10/2024		257.0000	***	66.0500
Total dissolved solids	mg/L	G-10D	01/10/2024		1000.0000	***	355.0000
Total organic carbon	mg/L	G-10D	01/10/2024		4.7000		25.0000
Alkalinity (as caco3)	mg/L	G-13D	10/18/2023		190.0000		280.0000
Ammonia nitrogen	mg-N/L	G-13D	10/18/2023		0.0720		0.2466
Bicarbonate	mg/L	G-13D	10/18/2023		190.0000		280.0000

Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
Chemical oxygen demand	mg/L	G-13D	10/18/2023	ND	10.0000		28.0000
Chloride	mg/L	G-13D	10/18/2023		11.8000	***	6.8600
Conductivity	umhos/cm	G-13D	10/18/2023		460.0000		530.0000
Dissolved antimony	mg/L	G-13D	10/18/2023	ND	0.0001		0.0008
Dissolved arsenic	mg/L	G-13D	10/18/2023		0.0002		0.0015
Dissolved barium	mg/L	G-13D	10/18/2023	ND	0.0100		0.1040
Dissolved beryllium	mg/L	G-13D	10/18/2023	ND	0.0002		0.0005
Dissolved cadmium	mg/L	G-13D	10/18/2023	ND	0.0001		0.0001
Dissolved calcium	mg/L	G-13D	10/18/2023		0.5700		1.5900
Dissolved chromium	mg/L	G-13D	10/18/2023	ND	0.0200		0.0136
Dissolved cobalt	mg/L	G-13D	10/18/2023	ND	0.0100		0.0050
Dissolved copper	mg/L	G-13D	10/18/2023	ND	0.0200		0.0550
Dissolved iron	mg/L	G-13D	10/18/2023	ND	0.0300		0.8710
Dissolved lead	mg/L	G-13D	10/18/2023	ND	0.0002		0.0007
Dissolved magnesium	mg/L	G-13D	10/18/2023	ND	0.0500		2.3300
Dissolved manganese	mg/L	G-13D	10/18/2023	ND	0.0100		0.0119
Dissolved nickel	mg/L	G-13D	10/18/2023	ND	0.0100		0.0260
Dissolved potassium	mg/L	G-13D	10/18/2023	ND	0.5000		2.7440
Dissolved selenium	mg/L	G-13D	10/18/2023	ND	0.0005		0.0010
Dissolved silver	mg/L	G-13D	10/18/2023	ND	0.0002		0.0001
Dissolved sodium	mg/L	G-13D	10/18/2023		111.0000		137.3888
Dissolved thallium	mg/L	G-13D	10/18/2023	ND	0.0001		0.0001
Dissolved vanadium	mg/L	G-13D	10/18/2023	ND	0.0200		0.0100
Dissolved zinc	mg/L	G-13D	10/18/2023	ND	0.0200		0.0120
Nitrate nitrogen	mg-N/L	G-13D	10/18/2023	ND	0.0100		0.2800
Nitrite nitrogen	mg-N/L	G-13D	10/18/2023		0.0030		0.0650
pH	std units	G-13D	10/18/2023		8.5000		7.42 - 9.88
Sulfate	mg/L	G-13D	10/18/2023		33.8000		66.0500
Total dissolved solids	mg/L	G-13D	10/18/2023		330.0000		355.0000
Total organic carbon	mg/L	G-13D	10/18/2023		1.3000		25.0000

* - Current value failed - awaiting verification.
** - Current value passed - previous exceedance not verified.
*** - Current value failed - exceedance verified.
**** - Current value passed - awaiting one more verification.
***** - Insufficient background data to compute prediction limit.
ND = Not Detected, Result = detection limit.

Table 5

Summary Statistics and Prediction Limits

Constituent	Units	Detect	N	Mean	SD	alpha	Factor	Pred Limit	Type		Conf
Alkalinity (as caco3)	mg/L	54	54					280.0000	nonpar		0.99
Ammonia nitrogen	mg-N/L	52	52	-2.1258	0.2994	0.0100	2.4246	0.2466	lognor		
Bicarbonate	mg/L	54	54					280.0000	nonpar		0.99
Chemical oxygen demand	mg/L	9	54					28.0000	nonpar		0.99
Chloride	mg/L	53	53					6.8600	nonpar		0.99
Conductivity	umhos/cm	54	54					530.0000	nonpar		0.99
Dissolved antimony	mg/L	3	53					0.0008	nonpar		0.99
Dissolved arsenic	mg/L	40	53					0.0015	nonpar		0.99
Dissolved barium	mg/L	12	54					0.1040	nonpar		0.99
Dissolved beryllium	mg/L	0	54					0.0005	nonpar	***	0.99
Dissolved cadmium	mg/L	3	52					0.0001	nonpar	***	0.99
Dissolved calcium	mg/L	49	49					1.5900	nonpar		0.99
Dissolved chromium	mg/L	5	54					0.0136	nonpar		0.99
Dissolved cobalt	mg/L	1	51					0.0050	nonpar	***	0.99
Dissolved copper	mg/L	5	54					0.0550	nonpar		0.99
Dissolved iron	mg/L	25	54					0.8710	nonpar		0.99
Dissolved lead	mg/L	12	54					0.0007	nonpar		0.99
Dissolved magnesium	mg/L	31	53					2.3300	nonpar		0.99
Dissolved manganese	mg/L	27	53	0.0026	0.0038	0.0100	2.4227	0.0119	normal		
Dissolved nickel	mg/L	2	54					0.0260	nonpar		0.99
Dissolved potassium	mg/L	34	54	-0.8241	0.7574	0.0100	2.4209	2.7440	lognor		
Dissolved selenium	mg/L	14	53					0.0010	nonpar		0.99
Dissolved silver	mg/L	0	51					0.0001	nonpar	***	0.99
Dissolved sodium	mg/L	54	54	111.6722	10.6229	0.0100	2.4209	137.3888	normal		
Dissolved thallium	mg/L	0	53					0.0001	nonpar	***	0.99
Dissolved vanadium	mg/L	1	54					0.0100	nonpar	***	0.99
Dissolved zinc	mg/L	8	54					0.0120	nonpar		0.99
Nitrate nitrogen	mg-N/L	17	53					0.2800	nonpar		0.99
Nitrite nitrogen	mg-N/L	24	54					0.0650	nonpar		0.99
pH	std units	54	54					7.42- 9.88	nonpar		0.99
Sulfate	mg/L	52	52					66.0500	nonpar		0.99
Total dissolved solids	mg/L	54	54					355.0000	nonpar		0.99
Total organic carbon	mg/L	52	52					25.0000	nonpar		0.99

Conf = confidence level for passing initial test or one of two verification resamples at all downgradient wells for a single constituent (nonparametric test only).
* - Insufficient Data.
** - Calculated limit raised to Manual Reporting Limit.
*** - Nonparametric limit based on ND value.
For transformed data, mean and SD in transformed units and prediction limit in original units.
All sample sizes and statistics are based on outlier free data.
For nonparametric limits, median reporting limits are substituted for extreme reporting limit values.

Groundwater Analytical Summary - Deep Wells: Second Quarter 2024
Cathcart Landfill, Snohomish County, WA

						Downgradient Wells																												Upgradient Wells									
						G-01D					G-02D					G-06B					G-08D2					G-09D					G-10D					G-13D					G-14D					G-24D				
	Statistical Method	Number of Samples	Number of Detects	Prediction Limit	Primary GW Stds 173-200	4/16/24	D	V	Tr	Ch	4/16/24	D	V	Tr	Ch	4/16/24	D	V	Tr	Ch	4/16/24	D	V	Tr	Ch	4/17/24	D	V	Tr	Ch	4/17/24	D	V	Tr	Ch	4/17/24	D	V	Tr	Ch	4/16/24	D	V	Tr	Ch	4/16/24	D	V	Tr	Ch
CONVENTIONAL CHEMISTRY PARAMETERS (mg/L)																																															
Alkalinity (as CaCO3)	nonpar	55	55	280	--	245			D	N	97.8					266					181					199					503			I	N	180					235					207				
Ammonia Nitrogen	lognor	53	53	0.2465	--	0.151					0.02	U				0.057					0.174					0.16					0.315					0.05					0.147					0.1				
Bicarbonate	nonpar	55	55	280	--	245			D	N	97.8					266					181					199					503			I	N	180					235					207				
Calcium, Dissolved	nonpar	52	50	1.59	--	0.965			D	N	0.415			D	N	1.03					0.402			D	Y	1.54					17.4			D	N	0.55					0.422					0.596				
Chemical Oxygen Demand	nonpar	53	9	28	--	10	U				10	U				10	U				10	U				11.3					10	U				10	U				10	U				10	U			
Chloride	nonpar	54	54	6.86	250	3.77					3.03			D	N	3.67					1.52			D	N	3.69					8.28			D	N	6.35					1.13			D	Y	2.58				
Conductivity (umhos/cm)	nonpar	55	55	530	700	605			D	Y	357			D	N	666					472					701					1470					462					489					494				
Magnesium, Dissolved	nonpar	54	32	2.33	--	0.05	U				0.05	U				0.05	U				0.05	U				0.05	U				1.54			D	N	0.05	U				0.05	U				0.05	U			Y
Nitrate Nitrogen (mg-N/L)	nonpar	54	19	0.28	10	0.02	U				0.02	U		D	N	0.134					0.02	U				0.02	U				0.025					0.02	U				0.02	U				0.02	U			
Nitrite Nitrogen (mg-N/L)	nonpar	55	26	0.065	1	0.02					0.01					0.01					0.06					0.05					0.002					0.006	U				0.05					0.002				
pH (std units)	nonpar	55	55	7.42-9.88	6.5-8.5	8.87					7.57			D	N	7.63					9.23					8.99					7.00					8.83					9.06					8.15				
Potassium, Dissolved	nonpar	55	36	1.45	--	0.554					0.435	U				0.695					0.435	U				0.761					2.9					0.435	U				0.435	U				0.435	U			
Sodium, Dissolved	normal	55	55	137.2145	20	134			D	Y	79.7			D	Y	161					103			I	N	167					329					102					112					114			I	N
Sulfate	nonpar	53	53	66.05	250	46.9					61.1			D	N	60.4			D	Y	39.9					0.1	U				229			D	N	16.1			D	N	1.77					36.8				
Total Dissolved Solids	nonpar	55	55	355	500	286			D	Y	231			D	N	326					233					429					979					297					248					129				
Total Organic Carbon	nonpar	53	53	25	--	2.4					0.9					2.4					1.4					2.4					3.9					1.2					1.6					2.6				
TOTAL METALS EPA Methods 200.7/200.8 (mg/L)																																															
Antimony	nonpar	49	5	0.0008	0.006	0.0003	U				0.0003	U				0.0003	U				0.0003	U				0.0003	U				0.0003	U				0.0003	U				0.0003	U				0.0003	U			
Arsenic	lognor	51	39	11.6749	0.00005	0.000307					0.005068			I		0.001897					0.000849					0.002185			D		0.001167					0.000248					0.000517					0.0001	U			
Barium	normal	50	29	0.043	1	0.014					0.014					0.01	U				0.047					0.01					0.01	U				0.01	U				0.032					0.01	U			
Beryllium	nonpar	51	2	0.0005	0.004	0.0003	U				0.0003	U				0.0003	U				0.0003	U				0.0003	U				0.0003	U				0.0003	U				0.0003	U				0.0003	U			
Cadmium	nonpar	50	8	0.0003	0.005	0.0001	U				0.0001	U				0.0001	U				0.0001	U				0.0001	U				0.0001	U				0.0001	U				0.0001	U				0.0001	U			
Chromium	nonpar	51	17	0.049	0.05	0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U			
Cobalt	nonpar	48	3	0.005	--	0.01	U				0.01	U				0.01	U				0.01	U				0.01	U				0.01	U				0.01	U				0.01	U				0.01	U			
Copper	nonpar	49	11	0.015	1	0.01	U				0.01	U				0.01	U				0.01	U				0.01					0.01	U				0.01	U				0.01	U				0.01	U			
Iron	lognor	48	44	106.935	0.3	1.99					1.09					0.677					9.16					1.8					0.491			D		0.905					5.1					0.043				
Lead	nonpar	51	25	0.0019	0.05	0.000326					0.000688					0.000282					0.00138					0.001932					0.0002	U				0.000244					0.000641					0.0002	U			
Manganese	nonpar	51	41	0.152	0.05	0.03					0.015					0.02			D		0.171					0.077					0.266			D		0.015					0.066					0.01	U			
Nickel	nonpar	50	13	0.091	0.1	0.045					0.042					0.043					0.061					0.053					0.056					0.044					0.049					0.039				
Selenium	nonpar	51	11	0.0023	0.01	0.001	U				0.001	U				0.001	U				0.001	U				0.001	U				0.001	U				0.001	U				0.001	U				0.001	U			
Silver	nonpar	51	4	0.0006	0.05	0.0002	U				0.0002	U				0.0002	U				0.0002	U				0.0002	U				0.0002	U				0.0002	U				0.0002	U				0.0002	U			
Thallium	nonpar	51	8	0.0001	0.002	0.0001	U				0.0001	U				0.0001	U				0.0001	U				0.0001	U				0.0001	U				0.0001	U				0.0001	U				0.0001	U			
Vanadium	nonpar	50	12	0.043	--	0.02	U				0.02	U				0.02	U				0.029					0.02	U				0.02	U				0.02	U				0.02	U				0.02	U			
Zinc	nonpar	51	21	0.038	5	0.015	U				0.015	U				0.015	U				0.016					0.015	U				0.015	U				0.015	U				0.016					0.015	U			
DISSOLVED METALS EPA Methods 200.7/200.8 (mg/L)																																															
Antimony	--	--	--	--	0.006	0.0001	U				0.000212					0.0001					0.0001	U				0.0001					0.0001	U				0.0001	U				0.0001	U				0.0001	U			
Arsenic	--	--	--	--	0.00005	0.00059					0.005491					0.004232					0.001105					0.003168					0.001358					0.0002					0.00086					0.000088				
Barium	--	--	--	--	1	0.01	U				0.01	U				0.01	U				0.01	U				0.01	U				0.01	U				0.01	U				0.01	U				0.01	U			
Beryllium	--	--	--	--	0.004	0.0002	U				0.0002	U				0.0002	U				0.0002	U				0.0002	U				0.0002	U				0.0002	U				0.0002	U				0.0002	U			
Cadmium	--	--	--	--	0.005	0.00005	U				0.00005	U				0.00005	U				0.00005	U				0.00005	U				0.00005	U				0.00005	U				0.00005	U				0.00005	U			
Chromium	--	--	--	--	0.05	0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U			
Cobalt	--	--	--	--	--	0.01	U				0.01	U				0.01	U				0.01	U				0.01	U				0.01	U				0.01	U				0.01	U				0.01	U			
Copper	--	--	--	--	1	0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U			
Iron	nonpar	55	27	0.871	0.3	0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.451			D	N	0.03	U				0.03	U				0.03	U			
Lead	--	--	--	--	0.05	0.0002	U				0.0002	U				0.0002	U				0.0002	U				0.0002	U				0.0002	U				0.0002	U				0.0002	U				0.0002	U			
Manganese	nonpar	54	28	0.019	0.05	0.01	U				0.01	U				0.01	U				0.01	U				0.01	U				0.285			D	N	0.01	U				0.01	U				0.01	U			
Nickel	--	--	--	--	0.1	0.051					0.01	U				0.01	U				0.049					0.05					0.045					0.052					0.01	U				0.051				
Selenium	--	--	--	--	0.01	0.0005	U				0.0005	U				0.0005	U				0.0005	U				0.000766					0.000829					0.0005	U				0.0005	U				0.0005	U			
Silver	--	--	--	--	0.05	0.0002	U				0.0002	U				0.0002	U				0.0002	U				0.0002	U				0.0002	U				0.0002	U				0.0002	U				0.0002	U			
Thallium	--	--	--	--	0.002	0.00005	U				0.00005	U				0.00005	U				0.00005	U				0.00005	U				0.00005	U				0.00005	U				0.00005	U				0.00005	U			
Vanadium	--	--	--	--	--	0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U			
Zinc	--	--	--	--	5	0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U			
VOLATILE ORGANIC COMPOUNDS (VOCs) EPA Method 8260 (µg/L)																																															
1,1,1-Trichloroethane	--	--	--	--	200	1	U				1	U				1	U				1	U				1	U				1	U				1	U				1	U				1	U			
1,1,2,2-Tetrachloroethane	--	--	--	--	--	1	U				1	U				1	U				1	U				1	U				1	U				1	U				1	U				1	U			
1,1,2-Trichloroethane	--	--	--	--	--	2	U				2	U				2	U				2	U				2	U				2	U				2	U				2	U				2	U			
1,1-Dichloroethane	--	--	--	--	1	1	U				1	U				1	U				1	U				1	U				1	U				1	U				1	U				1	U			

Groundwater Analytical Summary - Deep Wells: Second Quarter 2024
Cathcart Landfill, Snohomish County, WA

	Statistical Method	Number of Samples	Number of Detects	Prediction Limit	Primary GW Stds 173-200	Downgradient Wells																										Upgradient Wells									
						G-01D					G-02D					G-06B					G-08D2					G-09D					G-10D					G-13D					G-14D					G-24D				
						4/16/24	D	V	Tr	Ch	4/16/24	D	V	Tr	Ch	4/16/24	D	V	Tr	Ch	4/16/24	D	V	Tr	Ch	4/17/24	D	V	Tr	Ch	4/17/24	D	V	Tr	Ch	4/17/24	D	V	Tr	Ch	4/16/24	D	V	Tr	Ch	4/16/24	D	V	Tr	Ch
VOLATILE ORGANIC COMPOUNDS (VOCs) EPA Method 8260 (µg/L) (cont.)																																																
1,1-Dichloroethylene	--	--	--	--	--	1	U				1	U				1	U				1	U				1	U				1	U				1	U				1	U				1	U			
1,2,3-Trichloropropane	--	--	--	--	--	1	U				1	U				1	U				1	U				1	U				1	U				1	U				1	U				1	U			
1,2-Dibromo-3-chloropropane	--	--	--	--	0.2	0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U			
1,2-Dibromoethane	--	--	--	--	0.001	0.01	U				0.01	U				0.01	U				0.01	U				0.01	U				0.01	U				0.01	U				0.01	U				0.01	U			
1,2-Dichlorobenzene	--	--	--	--	--	1	U				1	U				1	U				1	U				1	U				1	U				1	U				1	U				1	U			
1,2-Dichloroethane	--	--	--	--	0.5	0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U			
1,2-Dichloropropane	--	--	--	--	0.6	0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U			
1,4-Dichlorobenzene	--	--	--	--	4	1	U				1	U				1	U				1	U				1	U				1	U				1	U				1	U				1	U			
2-Butanone	--	--	--	--	--	5	U				5	U				5	U				5	U				5	U				5	U				5	U				5	U				5	U			
2-Hexanone	--	--	--	--	--	2	U				2	U				2	U				2	U				2	U				2	U				2	U				2	U				2	U			
4-Methyl-2-Pentanone (MIBK)	--	--	--	--	--	3	U				3	U				3	U				3	U				3	U				3	U				3	U				3	U				3	U			
Acetone	--	--	--	--	--	**5.26**					5	U				**5.63**					5	U				**5.16**					**5.51**					5	U				**5.78**					**5.28**				
Acrylonitrile	--	--	--	--	0.07	0.05	U				0.05	U				0.05	U				0.05	U				0.05	U				0.05	U				0.05	U				0.05	U				0.05	U			
Benzene	--	--	--	--	1	0.5	U				0.5	U				0.5	U				0.5	U				0.5	U				0.5	U				0.5	U				0.5	U				0.5	U			
Bromodichloromethane	--	--	--	--	0.3	0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U			
Bromoform	--	--	--	--	5	2	U				2	U				2	U				2	U				2	U				2	U				2	U				2	U				2	U			
Bromomethane	--	--	--	--	--	2	U				2	U				2	U				2	U				2	U				2	U				2	U				2	U				2	U			
Carbon Disulfide	--	--	--	--	--	3	U				3	U				3	U				3	U				3	U				3	U				3	U				3	U				3	U			
Carbon Tetrachloride	--	--	--	--	0.3	0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				**0.28**					0.02	U				0.02	U			
Chlorobenzene	--	--	--	--	--	0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U			
Chlorodibromomethane	--	--	--	--	0.5	0.5	U				0.5	U				0.5	U				0.5	U				0.5	U				0.5	U				0.5	U				0.5	U				0.5	U			
Chloroethane	--	--	--	--	--	0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U			
Chloroform	--	--	--	--	7	1	U				1	U				1	U				1	U				1	U				1	U				1	U				1	U				1	U			
Chloromethane	--	--	--	--	--	0.5	U				0.5	U				0.5	U				0.5	U				0.5	U				0.5	U				0.5	U				0.5	U				0.5	U			
cis-1,2-Dichloroethene	--	--	--	--	--	0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U			
cis-1,3-Dichloropropene	--	--	--	--	0.2	0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U			
Dibromomethane	--	--	--	--	--	0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U			
Ethyl Benzene	--	--	--	--	--	1	U				1	U				1	U				1	U				1	U				1	U				1	U				1	U				1	U			
m,p-Xylene	--	--	--	--	--	5	U				5	U				5	U				5	U				5	U				5	U				5	U				5	U				5	U			
Methyl Iodide	--	--	--	--	--	3	U				3	U				3	U				3	U				3	U				3	U				3	U				3	U				3	U			
Methylene Chloride	--	--	--	--	5	3	U				3	U				3	U				3	U				3	U				3	U				3	U				3	U				3	U			
o-Xylene	--	--	--	--	--	1.5	U				1.5	U				1.5	U				1.5	U				1.5	U				1.5	U				1.5	U				1.5	U				1.5	U			
Styrene	--	--	--	--	--	2	U				2	U				2	U				2	U				2	U				2	U				2	U				2	U				2	U			
Tetrachloroethylene	--	--	--	--	0.8	0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U			
Toluene	--	--	--	--	--	2	U				2	U				2	U				2	U				2	U				2	U				2	U				2	U				2	U			
trans-1,2-Dichloroethene	--	--	--	--	--	1	U				1	U				1.0	U				1	U				1	U				1	U				1	U				1	U				1	U			
trans-1,3-Dichloropropene	--	--	--	--	0.2	0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U			
trans-1,4-Dichloro-2-butene	--	--	--	--	--	2	U				2	U				2	U				2	U				2	U				2	U				2	U				2	U				2	U			
Trichloroethene (1,1,2-Trichloroe	--	--	--	--	3	2	U				2	U				2	U				2	U				2	U				2	U				2	U				2	U				2	U			
Trichlorofluoromethane	--	--	--	--	--	2	U				2	U				2	U				2	U				2	U				2	U				2	U				2	U				2	U			
Vinyl Acetate	--	--	--	--	--	3	U				3	U				3	U				3	U				3	U				3	U				3	U				3	U				3	U			
Vinyl Chloride	--	--	--	--	0.02	0.01	U				0.01	U				0.01	U				0.01	U				0.01	U				0.01	U				0.01	U				0.01	U				0.01	U			

D: U = Indicates compound was not detected at the given reporting limit; X indicates that the compound was detected in the trip blank and contamination is suspected.

V: E= Exceedance, waiting verification based on subsequent lab data; V= Exceedance verified based on previous lab data; P=Passed, previous exceedance not verified based on current lab data.

Tr: I=increasing Trend, D=Decreasing Trend;

Ch: Y indicates a change in trend from previous quarter; N means no change in trend.

Values in **purple** exceed the prediction limit; indicates that a value exceeded the Groundwater Standards

The groundwater standards listed are based on the Washington Administrative Code (WAC) 173-200 groundwater limits or WAC 246-290, whichever is more protective of groundwater quality.

Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
Alkalinity (as caco3)	mg/L	G-02D	04/16/2024		97.8000		280.0000
Ammonia nitrogen	mg-N/L	G-02D	04/16/2024	ND	0.0200		0.2465
Antimony	mg/L	G-02D	04/16/2024		0.0005		0.0008
Arsenic	mg/L	G-02D	04/16/2024		0.0051		11.6749
Barium	mg/L	G-02D	04/16/2024		0.0140		0.0430
Beryllium	mg/L	G-02D	04/16/2024		0.0003		0.0005
Bicarbonate	mg/L	G-02D	04/16/2024		97.8000		280.0000
Cadmium	mg/L	G-02D	04/16/2024		0.0001		0.0003
Chemical oxygen demand	mg/L	G-02D	04/16/2024	ND	2.1100		28.0000
Chloride	mg/L	G-02D	04/16/2024		3.0300		6.8600
Chromium	mg/L	G-02D	04/16/2024		0.0490		0.0490
Cobalt, Total	mg/L	G-02D	10/18/2023	ND	0.0100		0.0050
Conductivity	umhos/cm	G-02D	04/16/2024		357.0000		530.0000
Copper	mg/L	G-02D	04/16/2024		0.0220	*	0.0150
Dissolved calcium	mg/L	G-02D	04/16/2024		0.4150		1.5900
Dissolved iron	mg/L	G-02D	04/16/2024		0.0780		0.8710
Dissolved magnesium	mg/L	G-02D	04/16/2024		0.0800		2.3300
Dissolved manganese	mg/L	G-02D	04/16/2024		0.0190		0.0190
Dissolved potassium	mg/L	G-02D	04/16/2024		1.4500		1.4500
Dissolved sodium	mg/L	G-02D	04/16/2024		79.7000		137.2145
Iron	mg/L	G-02D	04/16/2024		1.0900		106.9350
Lead	mg/L	G-02D	04/16/2024		0.0007		0.0019
Manganese	mg/L	G-02D	04/16/2024		0.0150		0.1520
Nickel	mg/L	G-02D	04/16/2024		0.0420		0.0910
Nitrate nitrogen	mg-N/L	G-02D	04/16/2024		0.0200		0.2800
Nitrite nitrogen	mg-N/L	G-02D	04/16/2024		0.0100		0.0650
pH	std units	G-02D	04/16/2024		7.5700	**	7.42 - 9.88
Selenium	mg/L	G-02D	04/16/2024		0.0023		0.0023
Silver	mg/L	G-02D	04/16/2024		0.0006		0.0006
Sulfate	mg/L	G-02D	04/16/2024		61.1000		66.0500
Thallium	mg/L	G-02D	04/16/2024		0.0001		0.0001
Total dissolved solids	mg/L	G-02D	04/16/2024		231.0000		355.0000
Total organic carbon	mg/L	G-02D	04/16/2024		0.9000		25.0000
Vanadium	mg/L	G-02D	04/16/2024		0.0430		0.0430
Zinc	mg/L	G-02D	04/16/2024		0.0380		0.0380
Alkalinity (as caco3)	mg/L	G-06B	04/16/2024		266.0000		280.0000
Ammonia nitrogen	mg-N/L	G-06B	04/16/2024		0.0570		0.2465
Antimony	mg/L	G-06B	04/16/2024		0.0005		0.0008
Arsenic	mg/L	G-06B	04/16/2024		0.0019		11.6749
Barium	mg/L	G-06B	04/16/2024		0.0210		0.0430
Beryllium	mg/L	G-06B	04/16/2024		0.0003		0.0005
Bicarbonate	mg/L	G-06B	04/16/2024		266.0000		280.0000
Cadmium	mg/L	G-06B	04/16/2024		0.0001		0.0003
Chemical oxygen demand	mg/L	G-06B	04/16/2024	ND	2.1100		28.0000
Chloride	mg/L	G-06B	04/16/2024		3.6700	**	6.8600
Chromium	mg/L	G-06B	04/16/2024		0.0490		0.0490
Cobalt, Total	mg/L	G-06B	10/17/2023	ND	0.0100		0.0050
Conductivity	umhos/cm	G-06B	04/16/2024		666.0000	***	530.0000
Copper	mg/L	G-06B	04/16/2024		0.0220	*	0.0150
Dissolved calcium	mg/L	G-06B	04/16/2024		1.0300		1.5900
Dissolved iron	mg/L	G-06B	04/16/2024		0.0780		0.8710
Dissolved magnesium	mg/L	G-06B	04/16/2024		0.0800		2.3300
Dissolved manganese	mg/L	G-06B	04/16/2024		0.0190		0.0190
Dissolved potassium	mg/L	G-06B	04/16/2024		0.6950		1.4500
Dissolved sodium	mg/L	G-06B	04/16/2024		161.0000	***	137.2145
Iron	mg/L	G-06B	04/16/2024		0.6770		106.9350
Lead	mg/L	G-06B	04/16/2024		0.0003		0.0019
Manganese	mg/L	G-06B	04/16/2024		0.0200		0.1520
Nickel	mg/L	G-06B	04/16/2024		0.0430		0.0910
Nitrate nitrogen	mg-N/L	G-06B	10/17/2023		0.3000	*	0.2800
Nitrite nitrogen	mg-N/L	G-06B	10/17/2023		0.0100		0.0650
pH	std units	G-06B	04/16/2024		7.6300	**	7.42 - 9.88
Selenium	mg/L	G-06B	04/16/2024		0.0023		0.0023
Silver	mg/L	G-06B	04/16/2024		0.0006		0.0006
Sulfate	mg/L	G-06B	04/16/2024		60.4000		66.0500
Thallium	mg/L	G-06B	04/16/2024		0.0001		0.0001
Total dissolved solids	mg/L	G-06B	04/16/2024		326.0000	**	355.0000

Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
Total organic carbon	mg/L	G-06B	04/16/2024		2.4000		25.0000
Vanadium	mg/L	G-06B	04/16/2024		0.0430		0.0430
Zinc	mg/L	G-06B	04/16/2024		0.0380		0.0380
Alkalinity (as caco3)	mg/L	G-08D2	04/16/2024		181.0000		280.0000
Ammonia nitrogen	mg-N/L	G-08D2	04/16/2024		0.1740		0.2465
Antimony	mg/L	G-08D2	04/16/2024		0.0005		0.0008
Arsenic	mg/L	G-08D2	04/16/2024		0.0008		11.6749
Barium	mg/L	G-08D2	04/16/2024		0.0470	*	0.0430
Beryllium	mg/L	G-08D2	04/16/2024		0.0003		0.0005
Bicarbonate	mg/L	G-08D2	04/16/2024		181.0000		280.0000
Cadmium	mg/L	G-08D2	04/16/2024		0.0001		0.0003
Chemical oxygen demand	mg/L	G-08D2	04/16/2024	ND	2.1100		28.0000
Chloride	mg/L	G-08D2	04/16/2024		1.5200		6.8600
Chromium	mg/L	G-08D2	04/16/2024		0.0490		0.0490
Cobalt, Total	mg/L	G-08D2	10/17/2023	ND	0.0100		0.0050
Conductivity	umhos/cm	G-08D2	04/16/2024		472.0000		530.0000
Copper	mg/L	G-08D2	04/16/2024		0.0220	*	0.0150
Dissolved calcium	mg/L	G-08D2	04/16/2024		0.4020		1.5900
Dissolved iron	mg/L	G-08D2	04/16/2024		0.0780		0.8710
Dissolved magnesium	mg/L	G-08D2	04/16/2024		0.0800		2.3300
Dissolved manganese	mg/L	G-08D2	04/16/2024		0.0190		0.0190
Dissolved potassium	mg/L	G-08D2	04/16/2024		1.4500		1.4500
Dissolved sodium	mg/L	G-08D2	04/16/2024		103.0000		137.2145
Iron	mg/L	G-08D2	04/16/2024		9.1600		106.9350
Lead	mg/L	G-08D2	04/16/2024		0.0014		0.0019
Manganese	mg/L	G-08D2	04/16/2024		0.1710	*	0.1520
Nickel	mg/L	G-08D2	04/16/2024		0.0610		0.0910
Nitrate nitrogen	mg-N/L	G-08D2	04/16/2024		0.0200		0.2800
Nitrite nitrogen	mg-N/L	G-08D2	04/16/2024		0.0600	**	0.0650
pH	std units	G-08D2	04/16/2024		9.2300		7.42 - 9.88
Selenium	mg/L	G-08D2	04/16/2024		0.0023		0.0023
Silver	mg/L	G-08D2	04/16/2024		0.0006		0.0006
Sulfate	mg/L	G-08D2	04/16/2024		39.9000		66.0500
Thallium	mg/L	G-08D2	04/16/2024		0.0001		0.0001
Total dissolved solids	mg/L	G-08D2	04/16/2024		233.0000		355.0000
Total organic carbon	mg/L	G-08D2	04/16/2024		1.4000		25.0000
Vanadium	mg/L	G-08D2	04/16/2024		0.0290		0.0430
Zinc	mg/L	G-08D2	04/16/2024		0.0160		0.0380
Alkalinity (as caco3)	mg/L	G-09D	04/17/2024		199.0000		280.0000
Ammonia nitrogen	mg-N/L	G-09D	04/17/2024		0.1600		0.2465
Antimony	mg/L	G-09D	04/17/2024		0.0005		0.0008
Arsenic	mg/L	G-09D	04/17/2024		0.0022		11.6749
Barium	mg/L	G-09D	04/17/2024		0.0100		0.0430
Beryllium	mg/L	G-09D	04/17/2024		0.0003		0.0005
Bicarbonate	mg/L	G-09D	04/17/2024		199.0000		280.0000
Cadmium	mg/L	G-09D	04/17/2024		0.0001		0.0003
Chemical oxygen demand	mg/L	G-09D	04/17/2024		11.3000		28.0000
Chloride	mg/L	G-09D	04/17/2024		3.6900	**	6.8600
Chromium	mg/L	G-09D	04/17/2024		0.0490		0.0490
Cobalt, Total	mg/L	G-09D	01/10/2024	ND	0.0100		0.0050
Conductivity	umhos/cm	G-09D	04/17/2024		701.0000	***	530.0000
Copper	mg/L	G-09D	04/17/2024		0.0100		0.0150
Dissolved calcium	mg/L	G-09D	04/17/2024		1.5400	**	1.5900
Dissolved iron	mg/L	G-09D	04/17/2024		0.0780		0.8710
Dissolved magnesium	mg/L	G-09D	04/17/2024		0.0800		2.3300
Dissolved manganese	mg/L	G-09D	04/17/2024		0.0190		0.0190
Dissolved potassium	mg/L	G-09D	04/17/2024		0.7610		1.4500
Dissolved sodium	mg/L	G-09D	04/17/2024		167.0000	***	137.2145
Iron	mg/L	G-09D	04/17/2024		1.8000		106.9350
Lead	mg/L	G-09D	04/17/2024		0.0019		0.0019
Manganese	mg/L	G-09D	04/17/2024		0.0770		0.1520
Nickel	mg/L	G-09D	04/17/2024		0.0530		0.0910
Nitrate nitrogen	mg-N/L	G-09D	04/17/2024		0.0200	**	0.2800
Nitrite nitrogen	mg-N/L	G-09D	04/17/2024		0.0500		0.0650
pH	std units	G-09D	04/17/2024		8.9900		7.42 - 9.88
Selenium	mg/L	G-09D	04/17/2024		0.0023		0.0023
Silver	mg/L	G-09D	04/17/2024		0.0006		0.0006

Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
Sulfate	mg/L	G-09D	04/17/2024		0.1400	**	66.0500
Thallium	mg/L	G-09D	04/17/2024		0.0001		0.0001
Total dissolved solids	mg/L	G-09D	04/17/2024		429.0000	***	355.0000
Total organic carbon	mg/L	G-09D	04/17/2024		2.4000		25.0000
Vanadium	mg/L	G-09D	04/17/2024		0.0430		0.0430
Zinc	mg/L	G-09D	04/17/2024		0.0380		0.0380
Alkalinity (as caco3)	mg/L	G-10D	04/17/2024		503.0000	***	280.0000
Ammonia nitrogen	mg-N/L	G-10D	04/17/2024		0.3150	***	0.2465
Antimony	mg/L	G-10D	04/17/2024		0.0005		0.0008
Arsenic	mg/L	G-10D	04/17/2024		0.0012		11.6749
Barium	mg/L	G-10D	04/17/2024		0.0210		0.0430
Beryllium	mg/L	G-10D	04/17/2024		0.0003		0.0005
Bicarbonate	mg/L	G-10D	04/17/2024		503.0000	***	280.0000
Cadmium	mg/L	G-10D	04/17/2024		0.0001		0.0003
Chemical oxygen demand	mg/L	G-10D	04/17/2024	ND	2.1100		28.0000
Chloride	mg/L	G-10D	04/17/2024		8.2800	***	6.8600
Chromium	mg/L	G-10D	04/17/2024		0.0490		0.0490
Cobalt, Total	mg/L	G-10D	01/10/2024	ND	0.0100		0.0050
Conductivity	umhos/cm	G-10D	04/17/2024		1470.0000	***	530.0000
Copper	mg/L	G-10D	04/17/2024		0.0220	*	0.0150
Dissolved calcium	mg/L	G-10D	04/17/2024		17.4000	***	1.5900
Dissolved iron	mg/L	G-10D	04/17/2024		0.4510		0.8710
Dissolved magnesium	mg/L	G-10D	04/17/2024		1.5400		2.3300
Dissolved manganese	mg/L	G-10D	04/17/2024		0.2850	***	0.0190
Dissolved potassium	mg/L	G-10D	04/17/2024		2.9000	***	1.4500
Dissolved sodium	mg/L	G-10D	04/17/2024		329.0000	***	137.2145
Iron	mg/L	G-10D	04/17/2024		0.4910		106.9350
Lead	mg/L	G-10D	04/17/2024		0.0006		0.0019
Manganese	mg/L	G-10D	04/17/2024		0.2660	***	0.1520
Nickel	mg/L	G-10D	04/17/2024		0.0450		0.0910
Nitrate nitrogen	mg-N/L	G-10D	04/17/2024		0.0250		0.2800
Nitrite nitrogen	mg-N/L	G-10D	04/17/2024		0.0020		0.0650
pH	std units	G-10D	04/17/2024		7.0000	***	7.42 - 9.88
Selenium	mg/L	G-10D	04/17/2024		0.0023		0.0023
Silver	mg/L	G-10D	04/17/2024		0.0006		0.0006
Sulfate	mg/L	G-10D	04/17/2024		229.0000	***	66.0500
Thallium	mg/L	G-10D	04/17/2024		0.0001		0.0001
Total dissolved solids	mg/L	G-10D	04/17/2024		979.0000	***	355.0000
Total organic carbon	mg/L	G-10D	04/17/2024		3.9000		25.0000
Vanadium	mg/L	G-10D	04/17/2024		0.0430		0.0430
Zinc	mg/L	G-10D	04/17/2024		0.0380		0.0380
Alkalinity (as caco3)	mg/L	G-13D	04/17/2024		180.0000		280.0000
Ammonia nitrogen	mg-N/L	G-13D	04/17/2024		0.0500		0.2465
Antimony	mg/L	G-13D	04/17/2024		0.0005		0.0008
Arsenic	mg/L	G-13D	04/17/2024		0.0002		11.6749
Barium	mg/L	G-13D	04/17/2024		0.0210		0.0430
Beryllium	mg/L	G-13D	04/17/2024		0.0003		0.0005
Bicarbonate	mg/L	G-13D	04/17/2024		180.0000		280.0000
Cadmium	mg/L	G-13D	04/17/2024		0.0001		0.0003
Chemical oxygen demand	mg/L	G-13D	04/17/2024	ND	2.1100		28.0000
Chloride	mg/L	G-13D	04/17/2024		6.3500	**	6.8600
Chromium	mg/L	G-13D	04/17/2024		0.0490		0.0490
Cobalt, Total	mg/L	G-13D	10/18/2023	ND	0.0100		0.0050
Conductivity	umhos/cm	G-13D	04/17/2024		462.0000		530.0000
Copper	mg/L	G-13D	04/17/2024		0.0220	*	0.0150
Dissolved calcium	mg/L	G-13D	04/17/2024		0.5500		1.5900
Dissolved iron	mg/L	G-13D	04/17/2024		0.0780		0.8710
Dissolved magnesium	mg/L	G-13D	04/17/2024		0.0800		2.3300
Dissolved manganese	mg/L	G-13D	04/17/2024		0.0190		0.0190
Dissolved potassium	mg/L	G-13D	04/17/2024		1.4500		1.4500
Dissolved sodium	mg/L	G-13D	04/17/2024		102.0000		137.2145
Iron	mg/L	G-13D	04/17/2024		0.9050		106.9350
Lead	mg/L	G-13D	04/17/2024		0.0002		0.0019
Manganese	mg/L	G-13D	04/17/2024		0.0150		0.1520
Nickel	mg/L	G-13D	04/17/2024		0.0440		0.0910
Nitrate nitrogen	mg-N/L	G-13D	04/17/2024		0.0200		0.2800
Nitrite nitrogen	mg-N/L	G-13D	04/17/2024		0.0060		0.0650

Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
pH	std units	G-13D	04/17/2024		8.8300		7.42 - 9.88
Selenium	mg/L	G-13D	04/17/2024		0.0023		0.0023
Silver	mg/L	G-13D	04/17/2024		0.0006		0.0006
Sulfate	mg/L	G-13D	04/17/2024		16.1000		66.0500
Thallium	mg/L	G-13D	04/17/2024		0.0001		0.0001
Total dissolved solids	mg/L	G-13D	04/17/2024		297.0000		355.0000
Total organic carbon	mg/L	G-13D	04/17/2024		1.2000		25.0000
Vanadium	mg/L	G-13D	04/17/2024		0.0430		0.0430
Zinc	mg/L	G-13D	04/17/2024		0.0380		0.0380
Alkalinity (as caco3)	mg/L	G-01D	04/16/2024		245.0000		280.0000
Ammonia nitrogen	mg-N/L	G-01D	04/16/2024		0.1510		0.2465
Antimony	mg/L	G-01D	04/16/2024		0.0005		0.0008
Arsenic	mg/L	G-01D	04/16/2024		0.0003		11.6749
Barium	mg/L	G-01D	04/16/2024		0.0140		0.0430
Beryllium	mg/L	G-01D	04/16/2024		0.0003		0.0005
Bicarbonate	mg/L	G-01D	04/16/2024		245.0000		280.0000
Cadmium	mg/L	G-01D	04/16/2024		0.0001		0.0003
Chemical oxygen demand	mg/L	G-01D	04/16/2024	ND	2.1100		28.0000
Chloride	mg/L	G-01D	04/16/2024		3.7700	**	6.8600
Chromium	mg/L	G-01D	04/16/2024		0.0490		0.0490
Cobalt, Total	mg/L	G-01D	10/17/2023	ND	0.0100		0.0050
Conductivity	umhos/cm	G-01D	04/16/2024		605.0000	***	530.0000
Copper	mg/L	G-01D	04/16/2024		0.0220	*	0.0150
Dissolved calcium	mg/L	G-01D	04/16/2024		0.9470		1.5900
Dissolved iron	mg/L	G-01D	04/16/2024		0.0780		0.8710
Dissolved magnesium	mg/L	G-01D	04/16/2024		0.0800		2.3300
Dissolved manganese	mg/L	G-01D	04/16/2024		0.0190		0.0190
Dissolved potassium	mg/L	G-01D	04/16/2024		0.5480		1.4500
Dissolved sodium	mg/L	G-01D	04/16/2024		133.0000		137.2145
Iron	mg/L	G-01D	04/16/2024		1.9900		106.9350
Lead	mg/L	G-01D	04/16/2024		0.0003		0.0019
Manganese	mg/L	G-01D	04/16/2024		0.0310		0.1520
Nickel	mg/L	G-01D	04/16/2024		0.0450		0.0910
Nitrate nitrogen	mg-N/L	G-01D	04/16/2024		0.0200		0.2800
Nitrite nitrogen	mg-N/L	G-01D	04/16/2024		0.0200		0.0650
pH	std units	G-01D	04/16/2024		8.8700		7.42 - 9.88
Selenium	mg/L	G-01D	04/16/2024		0.0023		0.0023
Silver	mg/L	G-01D	04/16/2024		0.0006		0.0006
Sulfate	mg/L	G-01D	04/16/2024		46.9000		66.0500
Thallium	mg/L	G-01D	04/16/2024		0.0001		0.0001
Total dissolved solids	mg/L	G-01D	04/16/2024		286.0000		355.0000
Total organic carbon	mg/L	G-01D	04/16/2024		2.4000		25.0000
Vanadium	mg/L	G-01D	04/16/2024		0.0430		0.0430
Zinc	mg/L	G-01D	04/16/2024		0.0380		0.0380

* - Current value failed - awaiting verification.
** - Current value passed - previous exceedance not verified.
*** - Current value failed - exceedance verified.
**** - Current value passed - awaiting one more verification.
***** - Insufficient background data to compute prediction limit.
ND = Not Detected, Result = detection limit.

Table 5

Summary Statistics and Prediction Limits

Constituent	Units	Detect	N	Mean	SD	alpha	Factor	Pred Limit	Type		Conf
Alkalinity (as caco3)	mg/L	55	55					280.0000	nonpar		0.99
Ammonia nitrogen	mg-N/L	53	53	-2.1244	0.2988	0.0100	2.4227	0.2465	lognor		
Antimony	mg/L	5	49					0.0008	nonpar		0.99
Arsenic	mg/L	39	51	-5.9657	3.4711	0.0100	2.4267	11.6749	lognor		
Barium	mg/L	29	50	0.0103	0.0134	0.0100	2.4288	0.0430	normal		
Beryllium	mg/L	2	51					0.0005	nonpar	***	0.99
Bicarbonate	mg/L	55	55					280.0000	nonpar		0.99
Cadmium	mg/L	8	50					0.0003	nonpar		0.99
Chemical oxygen demand	mg/L	9	53					28.0000	nonpar		0.99
Chloride	mg/L	54	54					6.8600	nonpar		0.99
Chromium	mg/L	17	51					0.0490	nonpar		0.99
Cobalt, Total	mg/L	3	48					0.0050	nonpar		0.99
Conductivity	umhos/cm	55	55					530.0000	nonpar		0.99
Copper	mg/L	11	49					0.0150	nonpar		0.99
Dissolved calcium	mg/L	50	52					1.5900	nonpar		0.99
Dissolved iron	mg/L	27	55					0.8710	nonpar		0.99
Dissolved magnesium	mg/L	32	54					2.3300	nonpar		0.99
Dissolved manganese	mg/L	28	54					0.0190	nonpar		0.99
Dissolved potassium	mg/L	36	55					1.4500	nonpar		0.99
Dissolved sodium	mg/L	55	55	111.7509	10.5262	0.0100	2.4191	137.2145	normal		
Iron	mg/L	44	48	-0.5807	2.1588	0.0100	2.4332	106.9350	lognor		
Lead	mg/L	25	51					0.0019	nonpar		0.99
Manganese	mg/L	41	51					0.1520	nonpar		0.99
Nickel	mg/L	13	50					0.0910	nonpar		0.99
Nitrate nitrogen	mg-N/L	19	54					0.2800	nonpar		0.99
Nitrite nitrogen	mg-N/L	26	55					0.0650	nonpar		0.99
pH	std units	55	55					7.42- 9.88	nonpar		0.99
Selenium	mg/L	11	51					0.0023	nonpar		0.99
Silver	mg/L	4	51					0.0006	nonpar		0.99
Sulfate	mg/L	53	53					66.0500	nonpar		0.99
Thallium	mg/L	8	51					0.0001	nonpar		0.99
Total dissolved solids	mg/L	55	55					355.0000	nonpar		0.99
Total organic carbon	mg/L	53	53					25.0000	nonpar		0.99
Vanadium	mg/L	12	50					0.0430	nonpar		0.99
Zinc	mg/L	21	51					0.0380	nonpar		0.99

Conf = confidence level for passing initial test or one of two verification resamples at all downgradient wells for a single constituent (nonparametric test only).
* - Insufficient Data.
** - Calculated limit raised to Manual Reporting Limit.
*** - Nonparametric limit based on ND value.
For transformed data, mean and SD in transformed units and prediction limit in original units.
All sample sizes and statistics are based on outlier free data.
For nonparametric limits, median reporting limits are substituted for extreme reporting limit values.

Groundwater Analytical Summary - Deep Wells: Third Quarter 2024
Cathcart Landfill, Snohomish County, WA

	Statistical Method	Number of Samples	Number of Detects	Prediction Limit	Primary GW Stds 173-200	G-09D					G-10D				
						7/16/24	D	V	Tr	Ch	7/16/24	D	V	Tr	Ch
CONVENTIONAL CHEMISTRY PARAMETERS (mg/L)															
Alkalinity (as CaCO3)	nonpar	54	54	280	--	197					518		V	I	N
Ammonia Nitrogen	lognor	52	52	0.2465	--	0.147					0.308		V		
Bicarbonate	nonpar	54	54	280	--	114					518		V	I	N
Calcium, Dissolved	nonpar	49	49	1.59	--	1.10					11.7		V	D	N
Chemical Oxygen Demand	nonpar	54	9	28	--	10	U				10	U			
Chloride	nonpar	53	53	6.86	250	5.87					16.2		V	D	N
Conductivity (umhos/cm)	nonpar	54	54	530	700	664		V			1500		V		
Magnesium, Dissolved	nonpar	53	31	2.33	--	0.05	U				1.08			D	N
Nitrate Nitrogen (mg-N/L)	nonpar	53	17	0.28	10	0.082		P			0.034				
Nitrite Nitrogen (mg-N/L)	nonpar	54	24	0.065	1	0.033					0.002				
pH (std units)	nonpar	54	54	7.42-9.88	6.5-8.5	8.63					7.01		V		
Potassium, Dissolved	lognor	54	34	1.45	--	0.50					1.74				
Sodium, Dissolved	normal	54	54	137.2145	20	138		V			281		V		
Sulfate	nonpar	52	52	66.05	250	110		E			248		V	D	N
Total Dissolved Solids	nonpar	54	54	355	500	400		V			957		V		
Total Organic Carbon	nonpar	52	52	25	--	2.4					5.3				
TOTAL METALS EPA Methods 200.7/200.8 (µg/L)															
Antimony	nonpar	49	5	0.8	6	0.3	U				0.3	U			
Arsenic	lognor	51	39	11674.9	0.05	2.201			D	N	1.314				
Barium	normal	50	29	43	1000	10	U				10	U			
Beryllium	nonpar	51	2	0.5	4	0.3	U				0.3	U			
Cadmium	nonpar	50	8	0.3	5	0.1	U				0.1	U			
Chromium	nonpar	51	17	49	50	20	U				20	U			
Cobalt	nonpar	48	3	5	--	10	U				10	U			
Copper	nonpar	49	11	15	1000	10	U				10	U	P		
Iron	lognor	48	44	106935	300	1360					356			D	N
Lead	nonpar	51	25	1.9	50	1.052					0.2	U			
Manganese	nonpar	51	41	152	50	48					196		V	D	N
Nickel	nonpar	50	13	91	100	53					53				
Selenium	nonpar	51	11	2.3	10	1	U				1	U			
Silver	nonpar	51	4	0.6	50	0.2	U				0.2	U			
Thallium	nonpar	51	8	0.1	2	0.1	U				0.1	U			
Vanadium	nonpar	50	12	43	--	20	U				20	U			
Zinc	nonpar	51	21	38	5000	15	U				15	U			
DISSOLVED METALS EPA Methods 200.7/200.8 (µg/L)															
Antimony	--	--	--	--	6	0.131					0.1	U			
Arsenic	--	--	--	--	0.05	2.854					1.293				
Barium	--	--	--	--	1000	10	U				10	U			
Beryllium	--	--	--	--	4	0.2	U				0.2	U			
Cadmium	--	--	--	--	5	0.05	U				0.05	U			
Chromium	--	--	--	--	50	20	U				20	U			
Cobalt	--	--	--	--	--	10	U				10	U			
Copper	--	--	--	--	1000	20	U				20	U			
Iron	nonpar	55	27	871	300	30	U				30	U		D	N
Lead	--	--	--	--	50	0.2	U				0.2	U			
Manganese	nonpar	54	28	19	50	10	U				178		V	D	N
Nickel	--	--	--	--	100	10	U				10	U			
Selenium	--	--	--	--	10	0.5	U				0.564				
Silver	--	--	--	--	50	0.2	U				0.2	U			
Thallium	--	--	--	--	2	0.05	U				0.05	U			
Vanadium	--	--	--	--	--	20	U				20	U			
Zinc	--	--	--	--	5000	20	U				20	U			
VOLATILE ORGANIC COMPOUNDS (VOCs) EPA Method 8260 (µg/L)															
1,1,1-Trichloroethane	--	--	--	--	200	1	U				1	U			
1,1,2,2-Tetrachloroethane	--	--	--	--	--	1	U				1	U			
1,1,2-Trichloroethane	--	--	--	--	--	2	U				2	U			
1,1-Dichloroethane	--	--	--	--	1	1	U				1	U			

Groundwater Analytical Summary - Deep Wells: Third Quarter 2024
Cathcart Landfill, Snohomish County, WA

	Statistical Method	Number of Samples	Number of Detects	Prediction Limit	Primary GW Stds 173-200	G-09D					G-10D				
						7/16/24	D	V	Tr	Ch	7/16/24	D	V	Tr	Ch
VOLATILE ORGANIC COMPOUNDS (VOCs) EPA Method 8260 (µg/L) (cont.)															
1,1-Dichloroethylene	--	--	--	--	--	1	U				1	U			
1,2,3-Trichloropropane	--	--	--	--	--	1	U				1	U			
1,2-Dibromo-3-chloropropane	--	--	--	--	0.2	0.03	U				0.03	U			
1,2-Dibromoethane	--	--	--	--	0.001	0.01	U				0.01	U			
1,2-Dichlorobenzene	--	--	--	--	--	1	U				1	U			
1,2-Dichloroethane	--	--	--	--	0.5	0.03	U				0.03	U			
1,2-Dichloropropane	--	--	--	--	0.6	**0.10**					0.02	U			
1,4-Dichlorobenzene	--	--	--	--	4	1	U				1	U			
2-Butanone	--	--	--	--	--	5	U				5	U			
2-Hexanone	--	--	--	--	--	2	U				2	U			
4-Methyl-2-Pentanone (MIBK)	--	--	--	--	--	3	U				3	U			
Acetone	--	--	--	--	--	5	U				5	U			
Acrylonitrile	--	--	--	--	0.07	0.05	U				0.05	U			
Benzene	--	--	--	--	1	0.5	U				0.5	U			
Bromodichloromethane	--	--	--	--	0.3	0.02	U				0.02	U			
Bromoform	--	--	--	--	5	2	U				2	U			
Bromomethane	--	--	--	--	--	2	U				2	U			
Carbon Disulfide	--	--	--	--	--	3	U				3	U			
Carbon Tetrachloride	--	--	--	--	0.3	0.02	U				0.02	U			
Chlorobenzene	--	--	--	--	--	0.03	U				0.03	U			
Chlorodibromomethane	--	--	--	--	0.5	0.5	U				0.5	U			
Chloroethane	--	--	--	--	--	0.02	U				0	U			
Chloroform	--	--	--	--	7	1	U				1	U			
Chloromethane	--	--	--	--	--	0.5	U				1	U			
cis-1,2-Dichloroethene	--	--	--	--	--	**0.12**					0.03	U			
cis-1,3-Dichloropropene	--	--	--	--	0.2	0.03	U				0.03	U			
Dibromomethane	--	--	--	--	--	0.02	U				0.02	U			
Ethyl Benzene	--	--	--	--	--	1	U				1	U			
m,p-Xylene	--	--	--	--	--	5	U				5	U			
Methyl Iodide	--	--	--	--	--	3	U				3	U			
Methylene Chloride	--	--	--	--	5	**3.44**					**3.13**				
o-Xylene	--	--	--	--	--	1.5	U				1.5	U			
Styrene	--	--	--	--	--	2	U				2	U			
Tetrachloroethylene	--	--	--	--	0.8	0.03	U				0.03	U			
Toluene	--	--	--	--	--	2	U				2	U			
trans-1,2-Dichloroethene	--	--	--	--	--	1	U				1	U			
trans-1,3-Dichloropropene	--	--	--	--	0.2	0.03	U				0.03	U			
trans-1,4-Dichloro-2-butene	--	--	--	--	--	2	U				2	U			
Trichlorethene (1,1,2-Trichloroe	--	--	--	--	3	2	U				2	U			
Trichlorofluoromethane	--	--	--	--	--	2	U				2	U			
Vinyl Acetate	--	--	--	--	--	3	U				3	U			
Vinyl Chloride	--	--	--	--	0.02	**0.10**					0.01	U			

D: U = Indicates compound was not detected at the given reporting limit; X indicates that the compound was detected in the trip blank and contamination is suspected.

V: E= Exceedance, waiting verification based on subsequent lab data; V= Exceedance verified based on previous lab data; P=Passed, previous exceedance not verified based on current lab data.

Tr: I=increasing Trend, D=Decreasing Trend;

Ch: Y indicates a change in trend from previous quarter; N means no change in trend.

Values in **purple** exceed the prediction limit; indicates that a value exceeded the Groundwater Standards

The groundwater standards listed are based on the Washington Administrative Code (WAC) 173-200 groundwater limits as modified by the TMS 91-11 standards.

B = Methylene chloride was measured in the lab blank at a similar concentration - contamination during analysis suspected.

Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
Alkalinity (as caco3)	mg/L	G-02D	04/16/2024		97.8000		280.0000
Ammonia nitrogen	mg-N/L	G-02D	04/16/2024	ND	0.0200		0.2484
Antimony	mg/L	G-02D	04/16/2024		0.0005		0.0008
Arsenic	mg/L	G-02D	04/16/2024		0.0051		11.6749
Barium	mg/L	G-02D	04/16/2024		0.0140		0.0430
Beryllium	mg/L	G-02D	04/16/2024		0.0003		0.0005
Bicarbonate	mg/L	G-02D	04/16/2024		97.8000		280.0000
Cadmium	mg/L	G-02D	04/16/2024		0.0001		0.0003
Chemical oxygen demand	mg/L	G-02D	04/16/2024	ND	2.1100		28.0000
Chloride	mg/L	G-02D	04/16/2024		3.0300		6.8600
Chromium	mg/L	G-02D	04/16/2024		0.0490		0.0490
Cobalt, Total	mg/L	G-02D	10/18/2023	ND	0.0100		0.0050
Conductivity	umhos/cm	G-02D	04/16/2024		357.0000		530.0000
Copper	mg/L	G-02D	04/16/2024		0.0220	*	0.0150
Dissolved calcium	mg/L	G-02D	04/16/2024		0.4150		1.5900
Dissolved iron	mg/L	G-02D	04/16/2024		0.0780		19.6731
Dissolved magnesium	mg/L	G-02D	04/16/2024		0.0800		2.3300
Dissolved manganese	mg/L	G-02D	04/16/2024		0.0190		0.0190
Dissolved potassium	mg/L	G-02D	04/16/2024		1.4500		2.9977
Dissolved sodium	mg/L	G-02D	04/16/2024		79.7000		137.5113
Iron	mg/L	G-02D	04/16/2024		1.0900		106.9350
Lead	mg/L	G-02D	04/16/2024		0.0007		0.0019
Manganese	mg/L	G-02D	04/16/2024		0.0150		0.1520
Nickel	mg/L	G-02D	04/16/2024		0.0420		0.0910
Nitrate nitrogen	mg-N/L	G-02D	04/16/2024		0.0200		0.2800
Nitrite nitrogen	mg-N/L	G-02D	04/16/2024		0.0100		0.0650
pH	std units	G-02D	04/16/2024		7.5700	**	7.42 - 9.88
Silver	mg/L	G-02D	04/16/2024		0.0006		0.0006
Sulfate	mg/L	G-02D	04/16/2024		61.1000		66.0500
Thallium	mg/L	G-02D	04/16/2024		0.0001		0.0001
Total dissolved solids	mg/L	G-02D	04/16/2024		231.0000		355.0000
Total organic carbon	mg/L	G-02D	04/16/2024		0.9000		6.3539
Vanadium	mg/L	G-02D	04/16/2024		0.0430		0.0430
Zinc	mg/L	G-02D	04/16/2024		0.0380		0.0380
Alkalinity (as caco3)	mg/L	G-06B	04/16/2024		266.0000		280.0000
Ammonia nitrogen	mg-N/L	G-06B	04/16/2024		0.0570		0.2484
Antimony	mg/L	G-06B	04/16/2024		0.0005		0.0008
Arsenic	mg/L	G-06B	04/16/2024		0.0019		11.6749
Barium	mg/L	G-06B	04/16/2024		0.0210		0.0430
Beryllium	mg/L	G-06B	04/16/2024		0.0003		0.0005
Bicarbonate	mg/L	G-06B	04/16/2024		266.0000		280.0000
Cadmium	mg/L	G-06B	04/16/2024		0.0001		0.0003
Chemical oxygen demand	mg/L	G-06B	04/16/2024	ND	2.1100		28.0000
Chloride	mg/L	G-06B	04/16/2024		3.6700	**	6.8600
Chromium	mg/L	G-06B	04/16/2024		0.0490		0.0490
Cobalt, Total	mg/L	G-06B	10/17/2023	ND	0.0100		0.0050
Conductivity	umhos/cm	G-06B	04/16/2024		666.0000	***	530.0000
Copper	mg/L	G-06B	04/16/2024		0.0220	*	0.0150
Dissolved calcium	mg/L	G-06B	04/16/2024		1.0300		1.5900
Dissolved iron	mg/L	G-06B	04/16/2024		0.0780		19.6731
Dissolved magnesium	mg/L	G-06B	04/16/2024		0.0800		2.3300
Dissolved manganese	mg/L	G-06B	04/16/2024		0.0190		0.0190
Dissolved potassium	mg/L	G-06B	04/16/2024		0.6950		2.9977
Dissolved sodium	mg/L	G-06B	04/16/2024		161.0000	***	137.5113
Iron	mg/L	G-06B	04/16/2024		0.6770		106.9350
Lead	mg/L	G-06B	04/16/2024		0.0003		0.0019
Manganese	mg/L	G-06B	04/16/2024		0.0200		0.1520
Nickel	mg/L	G-06B	04/16/2024		0.0430		0.0910
Nitrate nitrogen	mg-N/L	G-06B	10/17/2023		0.3000	*	0.2800
Nitrite nitrogen	mg-N/L	G-06B	10/17/2023		0.0100		0.0650
pH	std units	G-06B	04/16/2024		7.6300	**	7.42 - 9.88
Silver	mg/L	G-06B	04/16/2024		0.0006		0.0006
Sulfate	mg/L	G-06B	04/16/2024		60.4000		66.0500
Thallium	mg/L	G-06B	04/16/2024		0.0001		0.0001
Total dissolved solids	mg/L	G-06B	04/16/2024		326.0000	**	355.0000
Total organic carbon	mg/L	G-06B	04/16/2024		2.4000		6.3539
Vanadium	mg/L	G-06B	04/16/2024		0.0430		0.0430

Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
Zinc	mg/L	G-06B	04/16/2024		0.0380		0.0380
Alkalinity (as caco3)	mg/L	G-08D2	04/16/2024		181.0000		280.0000
Ammonia nitrogen	mg-N/L	G-08D2	04/16/2024		0.1740		0.2484
Antimony	mg/L	G-08D2	04/16/2024		0.0005		0.0008
Arsenic	mg/L	G-08D2	04/16/2024		0.0008		11.6749
Barium	mg/L	G-08D2	04/16/2024		0.0470	*	0.0430
Beryllium	mg/L	G-08D2	04/16/2024		0.0003		0.0005
Bicarbonate	mg/L	G-08D2	04/16/2024		181.0000		280.0000
Cadmium	mg/L	G-08D2	04/16/2024		0.0001		0.0003
Chemical oxygen demand	mg/L	G-08D2	04/16/2024	ND	2.1100		28.0000
Chloride	mg/L	G-08D2	04/16/2024		1.5200		6.8600
Chromium	mg/L	G-08D2	04/16/2024		0.0490		0.0490
Cobalt, Total	mg/L	G-08D2	10/17/2023	ND	0.0100		0.0050
Conductivity	umhos/cm	G-08D2	04/16/2024		472.0000		530.0000
Copper	mg/L	G-08D2	04/16/2024		0.0220	*	0.0150
Dissolved calcium	mg/L	G-08D2	04/16/2024		0.4020		1.5900
Dissolved iron	mg/L	G-08D2	04/16/2024		0.0780		19.6731
Dissolved magnesium	mg/L	G-08D2	04/16/2024		0.0800		2.3300
Dissolved manganese	mg/L	G-08D2	04/16/2024		0.0190		0.0190
Dissolved potassium	mg/L	G-08D2	04/16/2024		1.4500		2.9977
Dissolved sodium	mg/L	G-08D2	04/16/2024		103.0000		137.5113
Iron	mg/L	G-08D2	04/16/2024		9.1600		106.9350
Lead	mg/L	G-08D2	04/16/2024		0.0014		0.0019
Manganese	mg/L	G-08D2	04/16/2024		0.1710	*	0.1520
Nickel	mg/L	G-08D2	04/16/2024		0.0610		0.0910
Nitrate nitrogen	mg-N/L	G-08D2	04/16/2024		0.0200		0.2800
Nitrite nitrogen	mg-N/L	G-08D2	04/16/2024		0.0600	**	0.0650
pH	std units	G-08D2	04/16/2024		9.2300		7.42 - 9.88
Silver	mg/L	G-08D2	04/16/2024		0.0006		0.0006
Sulfate	mg/L	G-08D2	04/16/2024		39.9000		66.0500
Thallium	mg/L	G-08D2	04/16/2024		0.0001		0.0001
Total dissolved solids	mg/L	G-08D2	04/16/2024		233.0000		355.0000
Total organic carbon	mg/L	G-08D2	04/16/2024		1.4000		6.3539
Vanadium	mg/L	G-08D2	04/16/2024		0.0290		0.0430
Zinc	mg/L	G-08D2	04/16/2024		0.0160		0.0380
Alkalinity (as caco3)	mg/L	G-09D	07/16/2024		197.5000		280.0000
Ammonia nitrogen	mg-N/L	G-09D	07/16/2024		0.1490		0.2484
Antimony	mg/L	G-09D	07/16/2024	ND	0.0002		0.0008
Arsenic	mg/L	G-09D	07/16/2024		0.0024		11.6749
Barium	mg/L	G-09D	07/16/2024		0.0090		0.0430
Beryllium	mg/L	G-09D	07/16/2024	ND	0.0001		0.0005
Bicarbonate	mg/L	G-09D	07/16/2024		112.5000		280.0000
Cadmium	mg/L	G-09D	07/16/2024	ND	0.0000		0.0003
Chemical oxygen demand	mg/L	G-09D	07/16/2024	ND	2.1100		28.0000
Chloride	mg/L	G-09D	07/16/2024		6.6150		6.8600
Chromium	mg/L	G-09D	07/16/2024		0.0175		0.0490
Cobalt, Total	mg/L	G-09D	07/16/2024	ND	0.0040		0.0050
Conductivity	umhos/cm	G-09D	07/16/2024		682.0000	***	530.0000
Copper	mg/L	G-09D	07/16/2024	ND	0.0070		0.0150
Dissolved calcium	mg/L	G-09D	07/16/2024		1.0600		1.5900
Dissolved iron	mg/L	G-09D	07/16/2024	ND	0.0230		19.6731
Dissolved magnesium	mg/L	G-09D	07/16/2024	ND	0.0240		2.3300
Dissolved manganese	mg/L	G-09D	07/16/2024	ND	0.0060		0.0190
Dissolved potassium	mg/L	G-09D	07/16/2024		0.4690		2.9977
Dissolved sodium	mg/L	G-09D	07/16/2024		135.0000	**	137.5113
Iron	mg/L	G-09D	07/16/2024		1.9700		106.9350
Lead	mg/L	G-09D	07/16/2024		0.0016		0.0019
Manganese	mg/L	G-09D	07/16/2024		0.0715		0.1520
Nickel	mg/L	G-09D	07/16/2024		0.0580		0.0910
Nitrate nitrogen	mg-N/L	G-09D	04/17/2024		0.0200	**	0.2800
Nitrite nitrogen	mg-N/L	G-09D	07/16/2024		0.0365		0.0650
pH	std units	G-09D	07/16/2024		8.6500		7.42 - 9.88
Silver	mg/L	G-09D	07/16/2024	ND	0.0002		0.0006
Sulfate	mg/L	G-09D	07/16/2024		118.5000	*	66.0500
Thallium	mg/L	G-09D	07/16/2024	ND	0.0000		0.0001
Total dissolved solids	mg/L	G-09D	07/16/2024		409.5000	***	355.0000
Total organic carbon	mg/L	G-09D	07/16/2024		2.3000		6.3539

Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
Vanadium	mg/L	G-09D	07/16/2024	ND	0.0130		0.0430
Zinc	mg/L	G-09D	07/16/2024	ND	0.0110		0.0380
Alkalinity (as caco3)	mg/L	G-10D	07/16/2024		518.0000	***	280.0000
Ammonia nitrogen	mg-N/L	G-10D	07/16/2024		0.3080	***	0.2484
Antimony	mg/L	G-10D	07/16/2024	ND	0.0002		0.0008
Arsenic	mg/L	G-10D	07/16/2024		0.0013		11.6749
Barium	mg/L	G-10D	07/16/2024	ND	0.0060		0.0430
Beryllium	mg/L	G-10D	07/16/2024	ND	0.0001		0.0005
Bicarbonate	mg/L	G-10D	07/16/2024		518.0000	***	280.0000
Cadmium	mg/L	G-10D	07/16/2024	ND	0.0000		0.0003
Chemical oxygen demand	mg/L	G-10D	07/16/2024	ND	2.1100		28.0000
Chloride	mg/L	G-10D	07/16/2024		16.2000	***	6.8600
Chromium	mg/L	G-10D	07/16/2024	ND	0.0150		0.0490
Cobalt, Total	mg/L	G-10D	07/16/2024	ND	0.0040		0.0050
Conductivity	umhos/cm	G-10D	07/16/2024		1500.0000	***	530.0000
Copper	mg/L	G-10D	07/16/2024	ND	0.0070	**	0.0150
Dissolved calcium	mg/L	G-10D	07/16/2024		11.7000	***	1.5900
Dissolved iron	mg/L	G-10D	07/16/2024	ND	0.0230		19.6731
Dissolved magnesium	mg/L	G-10D	07/16/2024		1.0800		2.3300
Dissolved manganese	mg/L	G-10D	07/16/2024		0.1780	***	0.0190
Dissolved potassium	mg/L	G-10D	07/16/2024		1.7400		2.9977
Dissolved sodium	mg/L	G-10D	07/16/2024		281.0000	***	137.5113
Iron	mg/L	G-10D	07/16/2024		0.3560		106.9350
Lead	mg/L	G-10D	07/16/2024	ND	0.0002		0.0019
Manganese	mg/L	G-10D	07/16/2024		0.1960	***	0.1520
Nickel	mg/L	G-10D	07/16/2024		0.0530		0.0910
Nitrate nitrogen	mg-N/L	G-10D	04/17/2024		0.0250		0.2800
Nitrite nitrogen	mg-N/L	G-10D	07/16/2024		0.0020		0.0650
pH	std units	G-10D	07/16/2024		6.8900	***	7.42 - 9.88
Silver	mg/L	G-10D	07/16/2024	ND	0.0002		0.0006
Sulfate	mg/L	G-10D	07/16/2024		248.0000	***	66.0500
Thallium	mg/L	G-10D	07/16/2024	ND	0.0000		0.0001
Total dissolved solids	mg/L	G-10D	07/16/2024		957.0000	***	355.0000
Total organic carbon	mg/L	G-10D	07/16/2024		5.3000		6.3539
Vanadium	mg/L	G-10D	07/16/2024	ND	0.0130		0.0430
Zinc	mg/L	G-10D	07/16/2024	ND	0.0110		0.0380
Alkalinity (as caco3)	mg/L	G-13D	04/17/2024		180.0000		280.0000
Ammonia nitrogen	mg-N/L	G-13D	04/17/2024		0.0500		0.2484
Antimony	mg/L	G-13D	04/17/2024		0.0005		0.0008
Arsenic	mg/L	G-13D	04/17/2024		0.0002		11.6749
Barium	mg/L	G-13D	04/17/2024		0.0210		0.0430
Beryllium	mg/L	G-13D	04/17/2024		0.0003		0.0005
Bicarbonate	mg/L	G-13D	04/17/2024		180.0000		280.0000
Cadmium	mg/L	G-13D	04/17/2024		0.0001		0.0003
Chemical oxygen demand	mg/L	G-13D	04/17/2024	ND	2.1100		28.0000
Chloride	mg/L	G-13D	04/17/2024		6.3500	**	6.8600
Chromium	mg/L	G-13D	04/17/2024		0.0490		0.0490
Cobalt, Total	mg/L	G-13D	10/18/2023	ND	0.0100		0.0050
Conductivity	umhos/cm	G-13D	04/17/2024		462.0000		530.0000
Copper	mg/L	G-13D	04/17/2024		0.0220	*	0.0150
Dissolved calcium	mg/L	G-13D	04/17/2024		0.5500		1.5900
Dissolved iron	mg/L	G-13D	04/17/2024		0.0780		19.6731
Dissolved magnesium	mg/L	G-13D	04/17/2024		0.0800		2.3300
Dissolved manganese	mg/L	G-13D	04/17/2024		0.0190		0.0190
Dissolved potassium	mg/L	G-13D	04/17/2024		1.4500		2.9977
Dissolved sodium	mg/L	G-13D	04/17/2024		102.0000		137.5113
Iron	mg/L	G-13D	04/17/2024		0.9050		106.9350
Lead	mg/L	G-13D	04/17/2024		0.0002		0.0019
Manganese	mg/L	G-13D	04/17/2024		0.0150		0.1520
Nickel	mg/L	G-13D	04/17/2024		0.0440		0.0910
Nitrate nitrogen	mg-N/L	G-13D	04/17/2024		0.0200		0.2800
Nitrite nitrogen	mg-N/L	G-13D	04/17/2024		0.0060		0.0650
pH	std units	G-13D	04/17/2024		8.8300		7.42 - 9.88
Silver	mg/L	G-13D	04/17/2024		0.0006		0.0006
Sulfate	mg/L	G-13D	04/17/2024		16.1000		66.0500
Thallium	mg/L	G-13D	04/17/2024		0.0001		0.0001
Total dissolved solids	mg/L	G-13D	04/17/2024		297.0000		355.0000

Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
Total organic carbon	mg/L	G-13D	04/17/2024		1.2000		6.3539
Vanadium	mg/L	G-13D	04/17/2024		0.0430		0.0430
Zinc	mg/L	G-13D	04/17/2024		0.0380		0.0380
Alkalinity (as caco3)	mg/L	G-01D	04/16/2024		245.0000		280.0000
Ammonia nitrogen	mg-N/L	G-01D	04/16/2024		0.1510		0.2484
Antimony	mg/L	G-01D	04/16/2024		0.0005		0.0008
Arsenic	mg/L	G-01D	04/16/2024		0.0003		11.6749
Barium	mg/L	G-01D	04/16/2024		0.0140		0.0430
Beryllium	mg/L	G-01D	04/16/2024		0.0003		0.0005
Bicarbonate	mg/L	G-01D	04/16/2024		245.0000		280.0000
Cadmium	mg/L	G-01D	04/16/2024		0.0001		0.0003
Chemical oxygen demand	mg/L	G-01D	04/16/2024	ND	2.1100		28.0000
Chloride	mg/L	G-01D	04/16/2024		3.7700	**	6.8600
Chromium	mg/L	G-01D	04/16/2024		0.0490		0.0490
Cobalt, Total	mg/L	G-01D	10/17/2023	ND	0.0100		0.0050
Conductivity	umhos/cm	G-01D	04/16/2024		605.0000	***	530.0000
Copper	mg/L	G-01D	04/16/2024		0.0220	*	0.0150
Dissolved calcium	mg/L	G-01D	04/16/2024		0.9470		1.5900
Dissolved iron	mg/L	G-01D	04/16/2024		0.0780		19.6731
Dissolved magnesium	mg/L	G-01D	04/16/2024		0.0800		2.3300
Dissolved manganese	mg/L	G-01D	04/16/2024		0.0190		0.0190
Dissolved potassium	mg/L	G-01D	04/16/2024		0.5480		2.9977
Dissolved sodium	mg/L	G-01D	04/16/2024		133.0000		137.5113
Iron	mg/L	G-01D	04/16/2024		1.9900		106.9350
Lead	mg/L	G-01D	04/16/2024		0.0003		0.0019
Manganese	mg/L	G-01D	04/16/2024		0.0310		0.1520
Nickel	mg/L	G-01D	04/16/2024		0.0450		0.0910
Nitrate nitrogen	mg-N/L	G-01D	04/16/2024		0.0200		0.2800
Nitrite nitrogen	mg-N/L	G-01D	04/16/2024		0.0200		0.0650
pH	std units	G-01D	04/16/2024		8.8700		7.42 - 9.88
Silver	mg/L	G-01D	04/16/2024		0.0006		0.0006
Sulfate	mg/L	G-01D	04/16/2024		46.9000		66.0500
Thallium	mg/L	G-01D	04/16/2024		0.0001		0.0001
Total dissolved solids	mg/L	G-01D	04/16/2024		286.0000		355.0000
Total organic carbon	mg/L	G-01D	04/16/2024		2.4000		6.3539
Vanadium	mg/L	G-01D	04/16/2024		0.0430		0.0430
Zinc	mg/L	G-01D	04/16/2024		0.0380		0.0380

* - Current value failed - awaiting verification.
** - Current value passed - previous exceedance not verified.
*** - Current value failed - exceedance verified.
**** - Current value passed - awaiting one more verification.
***** - Insufficient background data to compute prediction limit.
ND = Not Detected, Result = detection limit.

Table 5

Summary Statistics and Prediction Limits

Constituent	Units	Detect	N	Mean	SD	alpha	Factor	Pred Limit	Type		Conf
Alkalinity (as caco3)	mg/L	54	54					280.0000	nonpar		0.99
Ammonia nitrogen	mg-N/L	52	52	-2.1198	0.2998	0.0100	2.4246	0.2484	lognor		
Antimony	mg/L	5	49					0.0008	nonpar		0.99
Arsenic	mg/L	39	51	-5.9657	3.4711	0.0100	2.4267	11.6749	lognor		
Barium	mg/L	29	50	0.0103	0.0134	0.0100	2.4288	0.0430	normal		
Beryllium	mg/L	2	51					0.0005	nonpar	***	0.99
Bicarbonate	mg/L	54	54					280.0000	nonpar		0.99
Cadmium	mg/L	8	50					0.0003	nonpar		0.99
Chemical oxygen demand	mg/L	8	52					28.0000	nonpar		0.99
Chloride	mg/L	53	53					6.8600	nonpar		0.99
Chromium	mg/L	17	51					0.0490	nonpar		0.99
Cobalt, Total	mg/L	3	48					0.0050	nonpar		0.99
Conductivity	umhos/cm	54	54					530.0000	nonpar		0.99
Copper	mg/L	11	49					0.0150	nonpar		0.99
Dissolved calcium	mg/L	49	51					1.5900	nonpar		0.99
Dissolved iron	mg/L	27	54	-1.4959	1.8486	0.0100	2.4209	19.6731	lognor		
Dissolved magnesium	mg/L	31	53					2.3300	nonpar		0.99
Dissolved manganese	mg/L	27	53					0.0190	nonpar		0.99
Dissolved potassium	mg/L	35	54	-0.7805	0.7759	0.0100	2.4209	2.9977	lognor		
Dissolved sodium	mg/L	54	54	111.8204	10.6123	0.0100	2.4209	137.5113	normal		
Iron	mg/L	44	48	-0.5807	2.1588	0.0100	2.4332	106.9350	lognor		
Lead	mg/L	25	51					0.0019	nonpar		0.99
Manganese	mg/L	41	51					0.1520	nonpar		0.99
Nickel	mg/L	13	50					0.0910	nonpar		0.99
Nitrate nitrogen	mg-N/L	19	53					0.2800	nonpar		0.99
Nitrite nitrogen	mg-N/L	26	54					0.0650	nonpar		0.99
pH	std units	54	54					7.42- 9.88	nonpar		0.99
Silver	mg/L	4	51					0.0006	nonpar		0.99
Sulfate	mg/L	52	52					66.0500	nonpar		0.99
Thallium	mg/L	8	51					0.0001	nonpar		0.99
Total dissolved solids	mg/L	54	54					355.0000	nonpar		0.99
Total organic carbon	mg/L	50	50	0.8135	0.4264	0.0100	2.4288	6.3539	lognor		
Vanadium	mg/L	12	50					0.0430	nonpar		0.99
Zinc	mg/L	21	51					0.0380	nonpar		0.99

Conf = confidence level for passing initial test or one of two verification resamples at all downgradient wells for a single constituent (nonparametric test only).
* - Insufficient Data.
** - Calculated limit raised to Manual Reporting Limit.
*** - Nonparametric limit based on ND value.
For transformed data, mean and SD in transformed units and prediction limit in original units.
All sample sizes and statistics are based on outlier free data.
For nonparametric limits, median reporting limits are substituted for extreme reporting limit values.

Groundwater Analytical Summary - Deep Wells: Fourth Quarter 2024
Cathcart Landfill, Snohomish County, WA

	Statistical Method	Number of Samples	Number of Detects	Prediction Limit	Primary GW Stds 173-200	Downgradient Wells																												Upgradient Wells									
						G-01D					G-02D					G-06B					G-08D2					G-09D					G-10D					G-13D					G-14D					G-24D				
						10/1/24	D	V	Tr	Ch	10/1/24	D	V	Tr	Ch	10/1/24	D	V	Tr	Ch	10/1/24	D	V	Tr	Ch	10/2/24	D	V	Tr	Ch	10/2/24	D	V	Tr	Ch	10/2/24	D	V	Tr	Ch	10/1/24	D	V	Tr	Ch	10/1/24	D	V	Tr	Ch
CONVENTIONAL CHEMISTRY PARAMETERS (mg/L)																																														
Alkalinity (as CaCO3)	nonpar	55	55	280	--	230			D	N	112					272					179					367		E			507		V		Y	179					243					213				
Ammonia Nitrogen	lognor	53	53	0.2465	--	0.153					0.281		E			0.04					0.193					0.02	U				0.326		V			0.084					0.166					0.112				
Bicarbonate	nonpar	55	55	280	--	130			D	N	112					246					71.8					367		E			507		V		Y	113					127					187				
Calcium, Dissolved	nonpar	52	50	1.59	--	0.537			D	N	0.371			D	N	0.617			D	Y	0.462			D	N	71.8		E			15.2		V	D	N	0.272					0.376					0.361				
Chemical Oxygen Demand	nonpar	53	9	28	--	10	U				10	U				10	U				10	U				10	U				10	U				10	U				10	U				10	U			
Chloride	nonpar	54	54	6.86	250	7.67		E			6.04			D	N	7.43		E	D	Y	3.08			D	N	3.87					17.3		V	D	N	12.3					2.40			D	N	5.87				
Conductivity (umhos/cm)	nonpar	55	55	530	700	567		V	D	N	368			D	N	662		V			463					954		V			148		P			450					482					488				
Magnesium, Dissolved	nonpar	54	32	2.33	--	0.05	U				0.051					0.05	U				0.05	U				28.9		E			1.37			D	N	0.05	U				0.05	U				0.05	U			
Nitrate Nitrogen (mg-N/L)	nonpar	54	19	0.28	10	0.02	U				0.02	U		D	N	0.448		V			0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U			
Nitrite Nitrogen (mg-N/L)	nonpar	55	26	0.065	1	0.003					0.006					0.004					0.015					0.005					0.002					0.006					0.005					0.002				
pH (std units)	nonpar	55	55	7.42-9.88	6.5-8.5	8.81					6.56		E	D	N	7.29		E			9.06					8.71					6.84		V			8.63					8.80					7.87				
Potassium, Dissolved	nonpar	55	36	1.45	--	0.5	U				0.5	U				0.5	U				0.5	U				4.69		E			1.78		V			0.5	U				0.5	U				0.5	U			
Sodium, Dissolved	normal	55	55	137.2145	20	118			D	N	68.8			D	N	150		V			89.7				Y	87.8					333		V			95.8					99.6					99.8				Y
Sulfate	nonpar	53	53	66.05	250	48.6					59.4			D	N	61.6			D	N	43.5					164		E			248		V	D	N	33.1			D	N	3.38					33.1				
Total Dissolved Solids	nonpar	55	55	355	500	344			D	N	229			D	N	400		E			295					622					957		V			306					277					304				
Total Organic Carbon	nonpar	53	53	25	--	1.8					1.4					2.5					1.4					4.6					3.7					1.2					2.2					2.4				
TOTAL METALS EPA Methods 200.7/200.8 (µg/L)																																														
Antimony	nonpar	49	5	0.8	6	0.3	U				0.3	U				0.3	U				0.3	U				0.3	U				0.3	U				0.3	U				0.3	U				0.3	U			
Arsenic	lognor	51	39	11674.9	0.05	1.032					3.372			I	N	2.754			I	Y	0.758					0.906			D	N	1.615					0.362					0.821					0.171				
Barium	normal	50	29	43	1000	14					14					21					38		P			10	U				10	U				10	U				36					10	U			
Beryllium	nonpar	51	2	0.5	4	0.3	U				0.3	U				0.3	U				0.3	U				0.3	U				0.3	U				0.3	U				0.3	U				0.3	U			
Cadmium	nonpar	50	8	0.3	5	0.1	U				0.1	U				0.1	U				0.1	U				0.1	U				0.1	U				0.1	U				0.1	U				0.1	U			
Chromium	nonpar	51	17	49	50	20	U				20	U				25					20					20	U				20	U				20	U				20	U				20	U			
Cobalt	nonpar	48	3	5	--	10	U				10	U				10	U				10	U				10	U				10	U				10	U				10	U				10	U			
Copper	nonpar	49	11	15	1000	10	U	P			63		E			37		E			10	U	P			10	U				10	U				10	U				10	U				10	U			
Iron	lognor	48	44	106935	300	1850					1300					2330					7330					591					377			D	N	382					5950					30	U			
Lead	nonpar	51	25	1.9	50	0.565					1.959		E			0.904					0.992					0.541					0.2	U				0.2	U				0.731					0.2	U			
Manganese	nonpar	51	41	152	50	32					33					107				Y	159		E			82					269		V	D	N	10	U				88					10	U			
Nickel	nonpar	50	13	91	100	10	U				10	U				10	U				10	U				10	U				10	U				10	U				10	U				10	U			
Selenium	nonpar	51	11	2.3	10	1.0	U				1	U				1	U				1	U				1	U				1	U				1	U				1	U				1	U			
Silver	nonpar	51	4	0.6	50	0.2	U				0.22					0.2	U				0.2	U				1.443		E			0.2	U				0.2	U				0.2	U				0.2	U			
Thallium	nonpar	51	8	0.1	2	0.1	U				0.1	U				0.1	U				0.1	U				0.1	U				0.1	U				0.1	U				0.1	U				0.1	U			
Vanadium	nonpar	50	12	43	--	20	U				20	U				20	U				20					20	U				20	U				20	U				22					20	U			
Zinc	nonpar	51	21	38	5000	15	U				15	U				15	U				15	U				15	U				15	U				15	U				15	U				15	U			
DISSOLVED METALS EPA Methods 200.7/200.8 (µg/L)																																														
Antimony	--	--	--	--	6	0.1	U				0.138					0.194					0.1	U				0.1	U				0.1	U				0.1	U				0.1	U				0.1	U			
Arsenic	--	--	--	--	0.05	1.231					3.367					4.399					0.819					0.923					1.726					0.412					0.985					0.08				
Barium	--	--	--	--	1000	10	U				10	U				10	U				10	U				10	U				10	U				10	U				10	U				10	U			
Beryllium	--	--	--	--	4	0.2	U				0.2	U				0.2	U				0.2	U				0.2	U				0.2	U				0.2	U				0.2	U				0.2	U			
Cadmium	--	--	--	--	5	0.05	U				0.05	U				0.05	U				0.05	U				0.05	U				0.05	U				0.05	U				0.05	U				0.05	U			
Chromium	--	--	--	--	50	20	U				20	U				20	U				20	U				20	U				20	U				20	U				20	U				20	U			
Cobalt	--	--	--	--	--	10	U				10	U				10	U				10	U				10	U				10	U				10	U				10	U				10	U			
Copper	--	--	--	--	1000	20	U				20	U				20	U				20	U				20	U				20	U				20	U				20	U				20	U			
Iron	nonpar	55	27	871	300	30	U				116					30	U				30	U				30	U				36			D	N	30	U				30	U				30	U			
Lead	--	--	--	--	50	0.2	U				0.579					0.2	U				0.2	U				0.2	U				0.2	U				0.2	U				0.2	U				0.2	U			
Manganese	nonpar	54	28	19	50	10	U				14					10	U				10	U				23		E			246		V	D	N	10	U				10	U				10	U			
Nickel	--	--	--	--	100	10	U				10	U				10	U				10	U				10	U				10	U				10	U				10	U				10	U			
Selenium	--	--	--	--	10	1.685					1.724					0.79					0.841					2.193					1.815					1.011					0.981					0.5	U			
Silver	--	--	--	--	50	0.2	U				0.2	U				0.2	U				0.2	U				0.2	U				0.2	U				0.2	U				0.2	U				0.2	U			
Thallium	--	--	--	--	2	0.05	U				0.05	U				0.05	U				0.05	U				0.05	U				0.05	U				0.05	U				0.05	U				0.05	U			
Vanadium	--	--	--	--	--	20	U				20	U				20	U				20	U				20	U				20	U				20	U				20	U				20	U			
Zinc	--	--	--	--	5000	20	U				20	U				20	U				20	U				20	U				20	U				20	U				20	U				20	U			
VOLATILE ORGANIC COMPOUNDS (VOCs) EPA Method 8260 (µg/L)																																														
1,1,1-Trichloroethane	--	--	--	--	200	1	U				1	U				1	U				1	U				1	U				1	U				1	U				1	U				1	U			
1,1,2,2-Tetrachloroethane	--	--	--	--	--	1	U				1	U				1	U				1	U				1	U				1	U				1	U				1	U				1	U			
1,1,2-Trichloroethane	--	--	--	--	--	2	U				2	U				2	U				2	U				2	U				2	U				2	U				2	U				2	U			
1,1-Dichloroethane	--	--	--	--	1	1	U				1	U				1	U				1	U				1	U				1	U				1	U				1	U				1	U			

Groundwater Analytical Summary - Deep Wells: Fourth Quarter 2024
Cathcart Landfill, Snohomish County, WA

	Statistical Method	Number of Samples	Number of Detects	Prediction Limit	Primary GW Stds 173-200	Downgradient Wells																												Upgradient Wells									
						G-01D					G-02D					G-06B					G-08D2					G-09D					G-10D					G-13D					G-14D					G-24D				
						10/1/24	D	V	Tr	Ch	10/1/24	D	V	Tr	Ch	10/1/24	D	V	Tr	Ch	10/1/24	D	V	Tr	Ch	10/2/24	D	V	Tr	Ch	10/2/24	D	V	Tr	Ch	10/2/24	D	V	Tr	Ch	10/1/24	D	V	Tr	Ch	10/1/24	D	V	Tr	Ch
VOLATILE ORGANIC COMPOUNDS (VOCs) EPA Method 8260 (µg/L) (cont.)																																														
1,1-Dichloroethylene	--	--	--	--	--	1	U				1	U				1	U				1	U				1	U				1	U				1	U				1	U				1	U			
1,2,3-Trichloropropane	--	--	--	--	--	1	U				1	U				1	U				1	U				1	U				1	U				1	U				1	U				1	U			
1,2-Dibromo-3-chloropropane	--	--	--	--	0.2	0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U			
1,2-Dibromoethane	--	--	--	--	0.001	0.01	U				0.01	U				0.01	U				0.01	U				0.01	U				0.01	U				0.01	U				0.01	U				0.01	U			
1,2-Dichlorobenzene	--	--	--	--	--	1	U				1	U				1	U				1	U				1	U				1	U				1	U				1	U				1	U			
1,2-Dichloroethane	--	--	--	--	0.5	0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U			
1,2-Dichloropropane	--	--	--	--	0.6	0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U			
1,4-Dichlorobenzene	--	--	--	--	4	1	U				1	U				1	U				1	U				1	U				1	U				1	U				1	U				1	U			
2-Butanone	--	--	--	--	--	5	U				5	U				5	U				5	U				5	U				5	U				5	U				5	U				5	U			
2-Hexanone	--	--	--	--	--	2	U				2	U				2	U				2	U				2	U				2	U				2	U				2	U				2	U			
4-Methyl-2-Pentanone (MIBK)	--	--	--	--	--	3	U				3	U				3	U				3	U				3	U				3	U				3	U				3	U				3	U			
Acetone	--	--	--	--	--	5	U				5	U				5	U				5	U				**5**	U				5	U				5	U				5	U				5	U			
Acrylonitrile	--	--	--	--	0.07	0.05	U				0.05	U				0.05	U				0.05	U				0.05	U				0.05	U				0.05	U				0.05	U				0.05	U			
Benzene	--	--	--	--	1	0.5	U				0.5	U				0.5	U				0.5	U				0.5	U				0.5	U				0.5	U				0.5	U				0.5	U			
Bromodichloromethane	--	--	--	--	0.3	0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U			
Bromoform	--	--	--	--	5	2	U				2	U				2	U				2	U				2	U				2	U				2	U				2	U				2	U			
Bromomethane	--	--	--	--	--	2	U				2	U				2	U				2	U				2	U				2	U				2	U				2	U				2	U			
Carbon Disulfide	--	--	--	--	--	3	U				3	U				3	U				3	U				3	U				3	U				3	U				3	U				3	U			
Carbon Tetrachloride	--	--	--	--	0.3	0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U			
Chlorobenzene	--	--	--	--	--	0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U			
Chlorodibromomethane	--	--	--	--	0.5	0.5	U				0.5	U				0.5	U				0.5	U				0.5	U				0.5	U				0.5	U				0.5	U				0.5	U			
Chloroethane	--	--	--	--	--	0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U			
Chloroform	--	--	--	--	7	1	U				1	U				1	U				1	U				1	U				1	U				1	U				1	U				1	U			
Chloromethane	--	--	--	--	--	0.5	U				0.5	U				0.5	U				0.5	U				0.5	U				0.5	U				0.5	U				0.5	U				0.5	U			
cis-1,2-Dichloroethene	--	--	--	--	--	0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				**0.12**					0.03	U				0.03	U				0.03	U			
cis-1,3-Dichloropropene	--	--	--	--	0.2	0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U			
Dibromomethane	--	--	--	--	--	0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U				0.02	U			
Ethyl Benzene	--	--	--	--	--	1	U				1	U				1	U				1	U				1	U				1	U				1	U				1	U				1	U			
m,p-Xylene	--	--	--	--	--	5	U				5	U				5	U				5	U				5	U				5	U				5	U				5	U				5	U			
Methyl Iodide	--	--	--	--	--	3	U				3	U				3	U				3	U				3	U				3	U				3	U				3	U				3	U			
Methylene Chloride	--	--	--	--	5	**4.28**					**4.64**					6.20					6.36					5.87					5.72					5.58					6.00					5.92				
o-Xylene	--	--	--	--	--	1.5	U				1.5	U				1.5	U				1.5	U				1.5	U				1.5	U				1.5	U				1.5	U				1.5	U			
Styrene	--	--	--	--	--	2	U				2	U				2	U				2	U				2	U				2	U				2	U				2	U				2	U			
Tetrachloroethylene	--	--	--	--	0.8	0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U			
Toluene	--	--	--	--	--	2	U				2	U				2	U				2	U				2	U				2	U				2	U				2	U				2	U			
trans-1,2-Dichloroethene	--	--	--	--	--	1	U				1	U				1.0	U				1	U				1	U				1	U				1	U				1	U				1	U			
trans-1,3-Dichloropropene	--	--	--	--	0.2	0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U				0.03	U			
trans-1,4-Dichloro-2-butene	--	--	--	--	--	2	U				2	U				2	U				2	U				2	U				2	U				2	U				2	U				2	U			
Trichloroethene (1,1,2-Trichloroe	--	--	--	--	3	2	U				2	U				2	U				2	U				2	U				2	U				2	U				2	U				2	U			
Trichlorofluoromethane	--	--	--	--	--	2	U				2	U				2	U				2	U				2	U				2	U				2	U				2	U				2	U			
Vinyl Acetate	--	--	--	--	--	3	U				3	U				3	U				3	U				3	U				3	U				3	U				3	U				3	U			
Vinyl Chloride	--	--	--	--	0.02	0.01	U				0.01	U				0.01	U				0.01	U				0.04					0.01	U				0.01	U				0.01	U				0.01	U			

D: U = Indicates compound was not detected at the given reporting limit; X indicates that the compound was detected in the trip blank and contamination is suspected.

V: E= Exceedance, waiting verification based on subsequent lab data; V= Exceedance verified based on previous lab data; P=Passed, previous exceedance not verified based on current lab data.

Tr: I=increasing Trend, D=Decreasing Trend;

Ch: Y indicates a change in trend from previous quarter; N means no change in trend.

Values in **purple** exceed the prediction limit; indicates that a value exceeded the Groundwater Standards

The groundwater standards listed are based on the Washington Administrative Code (WAC) 173-200 groundwater limits or WAC 246-290, whichever is more protective of groundwater quality.

Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
Alkalinity (as caco3)	mg/L	G-02D	10/01/2024		112.0000		280.0000
Ammonia nitrogen	mg-N/L	G-02D	10/01/2024		0.2810	*	0.2486
Antimony	mg/L	G-02D	10/01/2024	ND	0.0002		0.0008
Arsenic	mg/L	G-02D	10/01/2024		0.0034		9.6282
Barium	mg/L	G-02D	10/01/2024		0.0140		0.0439
Beryllium	mg/L	G-02D	10/01/2024	ND	0.0001		0.0005
Bicarbonate	mg/L	G-02D	10/01/2024		112.0000		280.0000
Cadmium	mg/L	G-02D	10/01/2024	ND	0.0000		0.0003
Chemical oxygen demand	mg/L	G-02D	10/01/2024	ND	2.1100		28.0000
Chloride	mg/L	G-02D	10/01/2024		6.0400		6.8600
Chromium	mg/L	G-02D	10/01/2024	ND	0.0150		0.0490
Cobalt, Total	mg/L	G-02D	10/01/2024	ND	0.0040		0.0050
Conductivity	umhos/cm	G-02D	10/01/2024		368.0000		530.0000
Copper	mg/L	G-02D	10/01/2024		0.0630	*	0.0150
Dissolved calcium	mg/L	G-02D	10/01/2024		0.3710		1.5900
Dissolved iron	mg/L	G-02D	10/01/2024		0.1160		0.8710
Dissolved magnesium	mg/L	G-02D	10/01/2024		0.0510		2.3300
Dissolved manganese	mg/L	G-02D	10/01/2024		0.0140		0.0190
Dissolved potassium	mg/L	G-02D	10/01/2024	ND	0.4350		3.0134
Dissolved sodium	mg/L	G-02D	10/01/2024		68.8000		137.4536
Iron	mg/L	G-02D	10/01/2024		1.3000		107.9130
Lead	mg/L	G-02D	10/01/2024		0.0020	*	0.0019
Manganese	mg/L	G-02D	10/01/2024		0.0330		0.1520
Nickel	mg/L	G-02D	10/01/2024	ND	0.0080		0.0910
Nitrate nitrogen	mg-N/L	G-02D	10/01/2024	ND	0.0000		0.2800
Nitrite nitrogen	mg-N/L	G-02D	10/01/2024		0.0060		0.0650
pH	std units	G-02D	10/01/2024		6.5600	*	7.42 - 9.88
Silver	mg/L	G-02D	10/01/2024		0.0002		0.0006
Sulfate	mg/L	G-02D	10/01/2024		59.4000		66.0500
Thallium	mg/L	G-02D	10/01/2024	ND	0.0000		0.0001
Total dissolved solids	mg/L	G-02D	10/01/2024		229.0000		355.0000
Total organic carbon	mg/L	G-02D	10/01/2024		1.4000		6.2939
Vanadium	mg/L	G-02D	10/01/2024	ND	0.0130		0.0430
Zinc	mg/L	G-02D	10/01/2024	ND	0.0110		0.0380
Alkalinity (as caco3)	mg/L	G-06B	10/01/2024		272.0000		280.0000
Ammonia nitrogen	mg-N/L	G-06B	10/01/2024		0.0400		0.2486
Antimony	mg/L	G-06B	10/01/2024	ND	0.0002		0.0008
Arsenic	mg/L	G-06B	10/01/2024		0.0028		9.6282
Barium	mg/L	G-06B	10/01/2024		0.0210		0.0439
Beryllium	mg/L	G-06B	10/01/2024	ND	0.0001		0.0005
Bicarbonate	mg/L	G-06B	10/01/2024		246.0000		280.0000
Cadmium	mg/L	G-06B	10/01/2024	ND	0.0000		0.0003
Chemical oxygen demand	mg/L	G-06B	10/01/2024	ND	2.1100		28.0000
Chloride	mg/L	G-06B	10/01/2024		7.4300	*	6.8600
Chromium	mg/L	G-06B	10/01/2024		0.0250		0.0490
Cobalt, Total	mg/L	G-06B	10/01/2024	ND	0.0040		0.0050
Conductivity	umhos/cm	G-06B	10/01/2024		662.0000	***	530.0000
Copper	mg/L	G-06B	10/01/2024		0.0370	*	0.0150
Dissolved calcium	mg/L	G-06B	10/01/2024		0.6170		1.5900
Dissolved iron	mg/L	G-06B	10/01/2024	ND	0.0230		0.8710
Dissolved magnesium	mg/L	G-06B	10/01/2024	ND	0.0240		2.3300
Dissolved manganese	mg/L	G-06B	10/01/2024	ND	0.0060		0.0190
Dissolved potassium	mg/L	G-06B	10/01/2024	ND	0.4350		3.0134
Dissolved sodium	mg/L	G-06B	10/01/2024		150.0000	***	137.4536
Iron	mg/L	G-06B	10/01/2024		2.3300		107.9130
Lead	mg/L	G-06B	10/01/2024		0.0009		0.0019
Manganese	mg/L	G-06B	10/01/2024		0.1070		0.1520
Nickel	mg/L	G-06B	10/01/2024	ND	0.0080		0.0910
Nitrate nitrogen	mg-N/L	G-06B	10/01/2024		0.4480	***	0.2800
Nitrite nitrogen	mg-N/L	G-06B	10/01/2024		0.0040		0.0650
pH	std units	G-06B	10/01/2024		7.2900	*	7.42 - 9.88
Silver	mg/L	G-06B	10/01/2024	ND	0.0002		0.0006
Sulfate	mg/L	G-06B	10/01/2024		61.6000		66.0500
Thallium	mg/L	G-06B	10/01/2024	ND	0.0000		0.0001
Total dissolved solids	mg/L	G-06B	10/01/2024		400.0000	*	355.0000
Total organic carbon	mg/L	G-06B	10/01/2024		2.5000		6.2939
Vanadium	mg/L	G-06B	10/01/2024	ND	0.0130		0.0430

Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
Zinc	mg/L	G-06B	10/01/2024	ND	0.0110		0.0380
Alkalinity (as caco3)	mg/L	G-08D2	10/01/2024		182.0000		280.0000
Ammonia nitrogen	mg-N/L	G-08D2	10/01/2024		0.1960		0.2486
Antimony	mg/L	G-08D2	10/01/2024	ND	0.0002		0.0008
Arsenic	mg/L	G-08D2	10/01/2024		0.0007		9.6282
Barium	mg/L	G-08D2	10/01/2024		0.0375	**	0.0439
Beryllium	mg/L	G-08D2	10/01/2024	ND	0.0001		0.0005
Bicarbonate	mg/L	G-08D2	10/01/2024		75.9000		280.0000
Cadmium	mg/L	G-08D2	10/01/2024	ND	0.0000		0.0003
Chemical oxygen demand	mg/L	G-08D2	10/01/2024	ND	2.1100		28.0000
Chloride	mg/L	G-08D2	10/01/2024		3.0900		6.8600
Chromium	mg/L	G-08D2	10/01/2024		0.0175		0.0490
Cobalt, Total	mg/L	G-08D2	10/01/2024	ND	0.0040		0.0050
Conductivity	umhos/cm	G-08D2	10/01/2024		448.5000		530.0000
Copper	mg/L	G-08D2	10/01/2024	ND	0.0070	**	0.0150
Dissolved calcium	mg/L	G-08D2	10/01/2024		0.4505		1.5900
Dissolved iron	mg/L	G-08D2	10/01/2024	ND	0.0230		0.8710
Dissolved magnesium	mg/L	G-08D2	10/01/2024	ND	0.0240		2.3300
Dissolved manganese	mg/L	G-08D2	10/01/2024	ND	0.0060		0.0190
Dissolved potassium	mg/L	G-08D2	10/01/2024	ND	0.4350		3.0134
Dissolved sodium	mg/L	G-08D2	10/01/2024		89.3500		137.4536
Iron	mg/L	G-08D2	10/01/2024		7.3250		107.9130
Lead	mg/L	G-08D2	10/01/2024		0.0010		0.0019
Manganese	mg/L	G-08D2	10/01/2024		0.1580	*	0.1520
Nickel	mg/L	G-08D2	10/01/2024	ND	0.0080		0.0910
Nitrate nitrogen	mg-N/L	G-08D2	10/01/2024		0.0120		0.2800
Nitrite nitrogen	mg-N/L	G-08D2	10/01/2024		0.0145		0.0650
pH	std units	G-08D2	10/01/2024		9.0600		7.42 - 9.88
Silver	mg/L	G-08D2	10/01/2024	ND	0.0002		0.0006
Sulfate	mg/L	G-08D2	10/01/2024		43.1000		66.0500
Thallium	mg/L	G-08D2	10/01/2024	ND	0.0000		0.0001
Total dissolved solids	mg/L	G-08D2	10/01/2024		298.5000		355.0000
Total organic carbon	mg/L	G-08D2	10/01/2024		1.7000		6.2939
Vanadium	mg/L	G-08D2	10/01/2024		0.0200		0.0430
Zinc	mg/L	G-08D2	10/01/2024	ND	0.0110		0.0380
Alkalinity (as caco3)	mg/L	G-09D	10/02/2024		367.0000	*	280.0000
Ammonia nitrogen	mg-N/L	G-09D	10/02/2024	ND	0.0200		0.2486
Antimony	mg/L	G-09D	10/02/2024	ND	0.0002		0.0008
Arsenic	mg/L	G-09D	10/02/2024		0.0009		9.6282
Barium	mg/L	G-09D	10/02/2024	ND	0.0060		0.0439
Beryllium	mg/L	G-09D	10/02/2024	ND	0.0001		0.0005
Bicarbonate	mg/L	G-09D	10/02/2024		367.0000	*	280.0000
Cadmium	mg/L	G-09D	10/02/2024	ND	0.0000		0.0003
Chemical oxygen demand	mg/L	G-09D	10/02/2024	ND	2.1100		28.0000
Chloride	mg/L	G-09D	10/02/2024		3.8700		6.8600
Chromium	mg/L	G-09D	10/02/2024	ND	0.0150		0.0490
Cobalt, Total	mg/L	G-09D	10/02/2024	ND	0.0040		0.0050
Conductivity	umhos/cm	G-09D	10/02/2024		954.0000	***	530.0000
Copper	mg/L	G-09D	10/02/2024	ND	0.0070		0.0150
Dissolved calcium	mg/L	G-09D	10/02/2024		71.8000	*	1.5900
Dissolved iron	mg/L	G-09D	10/02/2024	ND	0.0230		0.8710
Dissolved magnesium	mg/L	G-09D	10/02/2024		28.9000	*	2.3300
Dissolved manganese	mg/L	G-09D	10/02/2024		0.0230	*	0.0190
Dissolved potassium	mg/L	G-09D	10/02/2024		4.6900	*	3.0134
Dissolved sodium	mg/L	G-09D	10/02/2024		87.8000		137.4536
Iron	mg/L	G-09D	10/02/2024		0.5910		107.9130
Lead	mg/L	G-09D	10/02/2024		0.0005		0.0019
Manganese	mg/L	G-09D	10/02/2024		0.0820		0.1520
Nickel	mg/L	G-09D	10/02/2024	ND	0.0080		0.0910
Nitrate nitrogen	mg-N/L	G-09D	10/02/2024	ND	0.0000		0.2800
Nitrite nitrogen	mg-N/L	G-09D	10/02/2024		0.0050		0.0650
pH	std units	G-09D	10/02/2024		8.7100		7.42 - 9.88
Silver	mg/L	G-09D	10/02/2024		0.0014	*	0.0006
Sulfate	mg/L	G-09D	10/02/2024		164.0000	*	66.0500
Thallium	mg/L	G-09D	10/02/2024	ND	0.0000		0.0001
Total dissolved solids	mg/L	G-09D	10/02/2024		622.0000	***	355.0000
Total organic carbon	mg/L	G-09D	10/02/2024		4.6000		6.2939

Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
Vanadium	mg/L	G-09D	10/02/2024	ND	0.0130		0.0430
Zinc	mg/L	G-09D	10/02/2024	ND	0.0110		0.0380
Alkalinity (as caco3)	mg/L	G-10D	10/02/2024		507.0000	***	280.0000
Ammonia nitrogen	mg-N/L	G-10D	10/02/2024		0.3260	***	0.2486
Antimony	mg/L	G-10D	10/02/2024	ND	0.0002		0.0008
Arsenic	mg/L	G-10D	10/02/2024		0.0016		9.6282
Barium	mg/L	G-10D	10/02/2024	ND	0.0060		0.0439
Beryllium	mg/L	G-10D	10/02/2024	ND	0.0001		0.0005
Bicarbonate	mg/L	G-10D	10/02/2024		507.0000	***	280.0000
Cadmium	mg/L	G-10D	10/02/2024	ND	0.0000		0.0003
Chemical oxygen demand	mg/L	G-10D	10/02/2024	ND	2.1100		28.0000
Chloride	mg/L	G-10D	10/02/2024		17.3000	***	6.8600
Chromium	mg/L	G-10D	10/02/2024	ND	0.0150		0.0490
Cobalt, Total	mg/L	G-10D	10/02/2024	ND	0.0040		0.0050
Conductivity	umhos/cm	G-10D	10/02/2024		148.0000	**	530.0000
Copper	mg/L	G-10D	10/02/2024	ND	0.0070		0.0150
Dissolved calcium	mg/L	G-10D	10/02/2024		15.2000	***	1.5900
Dissolved iron	mg/L	G-10D	10/02/2024		0.0360		0.8710
Dissolved magnesium	mg/L	G-10D	10/02/2024		1.3700		2.3300
Dissolved manganese	mg/L	G-10D	10/02/2024		0.2460	***	0.0190
Dissolved potassium	mg/L	G-10D	10/02/2024		1.7800		3.0134
Dissolved sodium	mg/L	G-10D	10/02/2024		333.0000	***	137.4536
Iron	mg/L	G-10D	10/02/2024		0.3770		107.9130
Lead	mg/L	G-10D	10/02/2024	ND	0.0002		0.0019
Manganese	mg/L	G-10D	10/02/2024		0.2690	***	0.1520
Nickel	mg/L	G-10D	10/02/2024	ND	0.0080		0.0910
Nitrate nitrogen	mg-N/L	G-10D	10/02/2024	ND	0.0000		0.2800
Nitrite nitrogen	mg-N/L	G-10D	10/02/2024		0.0020		0.0650
pH	std units	G-10D	10/02/2024		6.8400	***	7.42 - 9.88
Silver	mg/L	G-10D	10/02/2024	ND	0.0002		0.0006
Sulfate	mg/L	G-10D	10/02/2024		248.0000	***	66.0500
Thallium	mg/L	G-10D	10/02/2024	ND	0.0000		0.0001
Total dissolved solids	mg/L	G-10D	10/02/2024		957.0000	***	355.0000
Total organic carbon	mg/L	G-10D	10/02/2024		3.7000		6.2939
Vanadium	mg/L	G-10D	10/02/2024	ND	0.0130		0.0430
Zinc	mg/L	G-10D	10/02/2024	ND	0.0110		0.0380
Alkalinity (as caco3)	mg/L	G-13D	10/02/2024		179.0000		280.0000
Ammonia nitrogen	mg-N/L	G-13D	10/02/2024		0.0840		0.2486
Antimony	mg/L	G-13D	10/02/2024	ND	0.0002		0.0008
Arsenic	mg/L	G-13D	10/02/2024		0.0004		9.6282
Barium	mg/L	G-13D	10/02/2024	ND	0.0060		0.0439
Beryllium	mg/L	G-13D	10/02/2024	ND	0.0001		0.0005
Bicarbonate	mg/L	G-13D	10/02/2024		113.0000		280.0000
Cadmium	mg/L	G-13D	10/02/2024	ND	0.0000		0.0003
Chemical oxygen demand	mg/L	G-13D	10/02/2024	ND	2.1100		28.0000
Chloride	mg/L	G-13D	10/02/2024		12.3000	*	6.8600
Chromium	mg/L	G-13D	10/02/2024	ND	0.0150		0.0490
Cobalt, Total	mg/L	G-13D	10/02/2024	ND	0.0040		0.0050
Conductivity	umhos/cm	G-13D	10/02/2024		450.0000		530.0000
Copper	mg/L	G-13D	10/02/2024	ND	0.0070	**	0.0150
Dissolved calcium	mg/L	G-13D	10/02/2024		0.2720		1.5900
Dissolved iron	mg/L	G-13D	10/02/2024	ND	0.0230		0.8710
Dissolved magnesium	mg/L	G-13D	10/02/2024	ND	0.0240		2.3300
Dissolved manganese	mg/L	G-13D	10/02/2024	ND	0.0060		0.0190
Dissolved potassium	mg/L	G-13D	10/02/2024	ND	0.4350		3.0134
Dissolved sodium	mg/L	G-13D	10/02/2024		95.8000		137.4536
Iron	mg/L	G-13D	10/02/2024		0.3820		107.9130
Lead	mg/L	G-13D	10/02/2024	ND	0.0002		0.0019
Manganese	mg/L	G-13D	10/02/2024	ND	0.0050		0.1520
Nickel	mg/L	G-13D	10/02/2024	ND	0.0080		0.0910
Nitrate nitrogen	mg-N/L	G-13D	10/02/2024	ND	0.0000		0.2800
Nitrite nitrogen	mg-N/L	G-13D	10/02/2024		0.0060		0.0650
pH	std units	G-13D	10/02/2024		8.6300		7.42 - 9.88
Silver	mg/L	G-13D	10/02/2024	ND	0.0002		0.0006
Sulfate	mg/L	G-13D	10/02/2024		33.1000		66.0500
Thallium	mg/L	G-13D	10/02/2024	ND	0.0000		0.0001
Total dissolved solids	mg/L	G-13D	10/02/2024		306.0000		355.0000

Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
Total organic carbon	mg/L	G-13D	10/02/2024		1.2000		6.2939
Vanadium	mg/L	G-13D	10/02/2024	ND	0.0130		0.0430
Zinc	mg/L	G-13D	10/02/2024	ND	0.0110		0.0380
Alkalinity (as caco3)	mg/L	G-01D	10/01/2024		230.0000		280.0000
Ammonia nitrogen	mg-N/L	G-01D	10/01/2024		0.1530		0.2486
Antimony	mg/L	G-01D	10/01/2024	ND	0.0002		0.0008
Arsenic	mg/L	G-01D	10/01/2024		0.0010		9.6282
Barium	mg/L	G-01D	10/01/2024		0.0140		0.0439
Beryllium	mg/L	G-01D	10/01/2024	ND	0.0001		0.0005
Bicarbonate	mg/L	G-01D	10/01/2024		130.0000		280.0000
Cadmium	mg/L	G-01D	10/01/2024	ND	0.0000		0.0003
Chemical oxygen demand	mg/L	G-01D	10/01/2024	ND	2.1100		28.0000
Chloride	mg/L	G-01D	10/01/2024		7.6700	*	6.8600
Chromium	mg/L	G-01D	10/01/2024	ND	0.0150		0.0490
Cobalt, Total	mg/L	G-01D	10/01/2024	ND	0.0040		0.0050
Conductivity	umhos/cm	G-01D	10/01/2024		567.0000	***	530.0000
Copper	mg/L	G-01D	10/01/2024	ND	0.0070	**	0.0150
Dissolved calcium	mg/L	G-01D	10/01/2024		0.5370		1.5900
Dissolved iron	mg/L	G-01D	10/01/2024	ND	0.0230		0.8710
Dissolved magnesium	mg/L	G-01D	10/01/2024	ND	0.0240		2.3300
Dissolved manganese	mg/L	G-01D	10/01/2024	ND	0.0060		0.0190
Dissolved potassium	mg/L	G-01D	10/01/2024	ND	0.4350		3.0134
Dissolved sodium	mg/L	G-01D	10/01/2024		118.0000		137.4536
Iron	mg/L	G-01D	10/01/2024		1.8500		107.9130
Lead	mg/L	G-01D	10/01/2024		0.0006		0.0019
Manganese	mg/L	G-01D	10/01/2024		0.0320		0.1520
Nickel	mg/L	G-01D	10/01/2024	ND	0.0080		0.0910
Nitrate nitrogen	mg-N/L	G-01D	10/01/2024	ND	0.0000		0.2800
Nitrite nitrogen	mg-N/L	G-01D	10/01/2024		0.0030		0.0650
pH	std units	G-01D	10/01/2024		8.8100		7.42 - 9.88
Silver	mg/L	G-01D	10/01/2024	ND	0.0002		0.0006
Sulfate	mg/L	G-01D	10/01/2024		48.6000		66.0500
Thallium	mg/L	G-01D	10/01/2024	ND	0.0000		0.0001
Total dissolved solids	mg/L	G-01D	10/01/2024		344.0000		355.0000
Total organic carbon	mg/L	G-01D	10/01/2024		1.8000		6.2939
Vanadium	mg/L	G-01D	10/01/2024	ND	0.0130		0.0430
Zinc	mg/L	G-01D	10/01/2024	ND	0.0110		0.0380

* - Current value failed - awaiting verification.
** - Current value passed - previous exceedance not verified.
*** - Current value failed - exceedance verified.
**** - Current value passed - awaiting one more verification.
***** - Insufficient background data to compute prediction limit.
ND = Not Detected, Result = detection limit.

Table 5

Summary Statistics and Prediction Limits

Constituent	Units	Detect	N	Mean	SD	alpha	Factor	Pred Limit	Type		Conf
Alkalinity (as caco3)	mg/L	55	55					280.0000	nonpar		0.99
Ammonia nitrogen	mg-N/L	53	53	-2.1078	0.2955	0.0100	2.4227	0.2486	lognor		
Antimony	mg/L	5	51					0.0008	nonpar		0.99
Arsenic	mg/L	41	53	-6.0383	3.4272	0.0100	2.4227	9.6282	lognor		
Barium	mg/L	30	52	0.0106	0.0137	0.0100	2.4246	0.0439	normal		
Beryllium	mg/L	2	53					0.0005	nonpar	***	0.99
Bicarbonate	mg/L	55	55					280.0000	nonpar		0.99
Cadmium	mg/L	8	52					0.0003	nonpar		0.99
Chemical oxygen demand	mg/L	8	51					28.0000	nonpar		0.99
Chloride	mg/L	54	54					6.8600	nonpar		0.99
Chromium	mg/L	17	53					0.0490	nonpar		0.99
Cobalt, Total	mg/L	3	50					0.0050	nonpar		0.99
Conductivity	umhos/cm	55	55					530.0000	nonpar		0.99
Copper	mg/L	11	51					0.0150	nonpar		0.99
Dissolved calcium	mg/L	50	53					1.5900	nonpar		0.99
Dissolved iron	mg/L	27	55					0.8710	nonpar		0.99
Dissolved magnesium	mg/L	30	54					2.3300	nonpar		0.99
Dissolved manganese	mg/L	26	54					0.0190	nonpar		0.99
Dissolved potassium	mg/L	33	54	-0.7631	0.7709	0.0100	2.4209	3.0134	lognor		
Dissolved sodium	mg/L	55	55	111.4855	10.7348	0.0100	2.4191	137.4536	normal		
Iron	mg/L	45	50	-0.5218	2.1423	0.0100	2.4288	107.9130	lognor		
Lead	mg/L	26	53					0.0019	nonpar		0.99
Manganese	mg/L	42	53					0.1520	nonpar		0.99
Nickel	mg/L	13	52					0.0910	nonpar		0.99
Nitrate nitrogen	mg-N/L	19	52					0.2800	nonpar		0.99
Nitrite nitrogen	mg-N/L	28	55					0.0650	nonpar		0.99
pH	std units	55	55					7.42- 9.88	nonpar		0.99
Silver	mg/L	4	53					0.0006	nonpar		0.99
Sulfate	mg/L	53	53					66.0500	nonpar		0.99
Thallium	mg/L	8	53					0.0001	nonpar		0.99
Total dissolved solids	mg/L	55	55					355.0000	nonpar		0.99
Total organic carbon	mg/L	51	51	0.8197	0.4203	0.0100	2.4267	6.2939	lognor		
Vanadium	mg/L	13	52					0.0430	nonpar		0.99
Zinc	mg/L	21	53					0.0380	nonpar		0.99

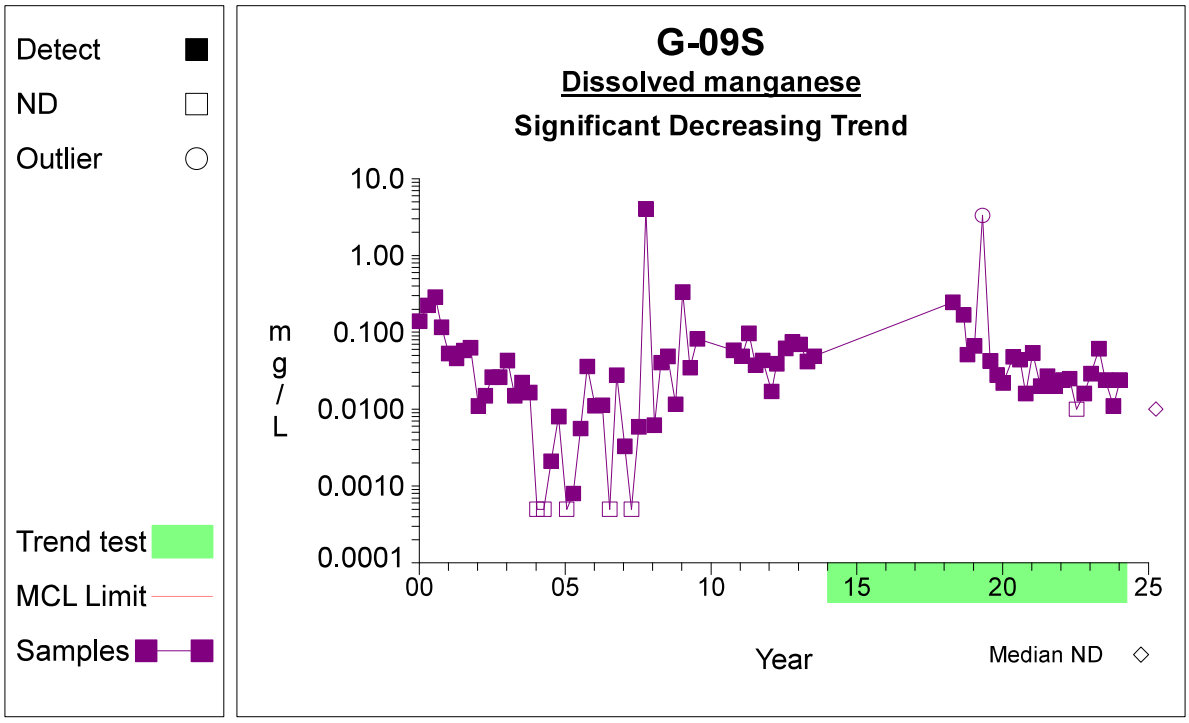
Conf = confidence level for passing initial test or one of two verification resamples at all downgradient wells for a single constituent (nonparametric test only).
* - Insufficient Data.
** - Calculated limit raised to Manual Reporting Limit.
*** - Nonparametric limit based on ND value.
For transformed data, mean and SD in transformed units and prediction limit in original units.
All sample sizes and statistics are based on outlier free data.
For nonparametric limits, median reporting limits are substituted for extreme reporting limit values.

Appendix C

Groundwater Statistical Analyses

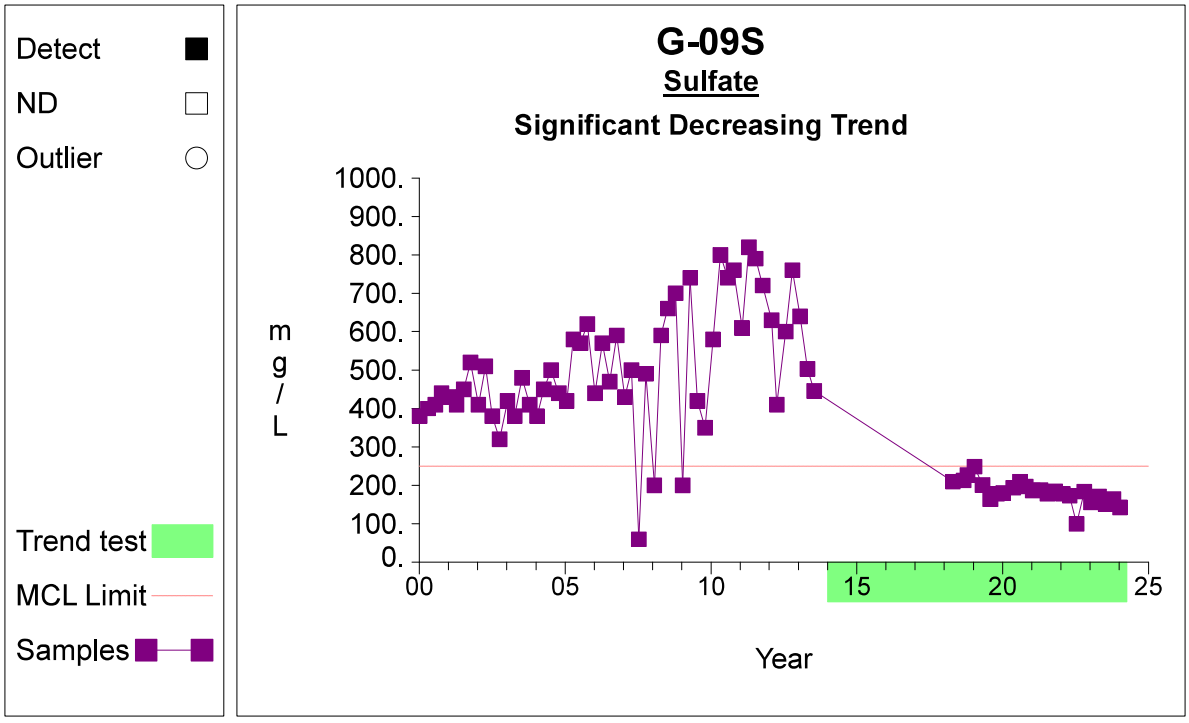
Shallow Wells

Time Series



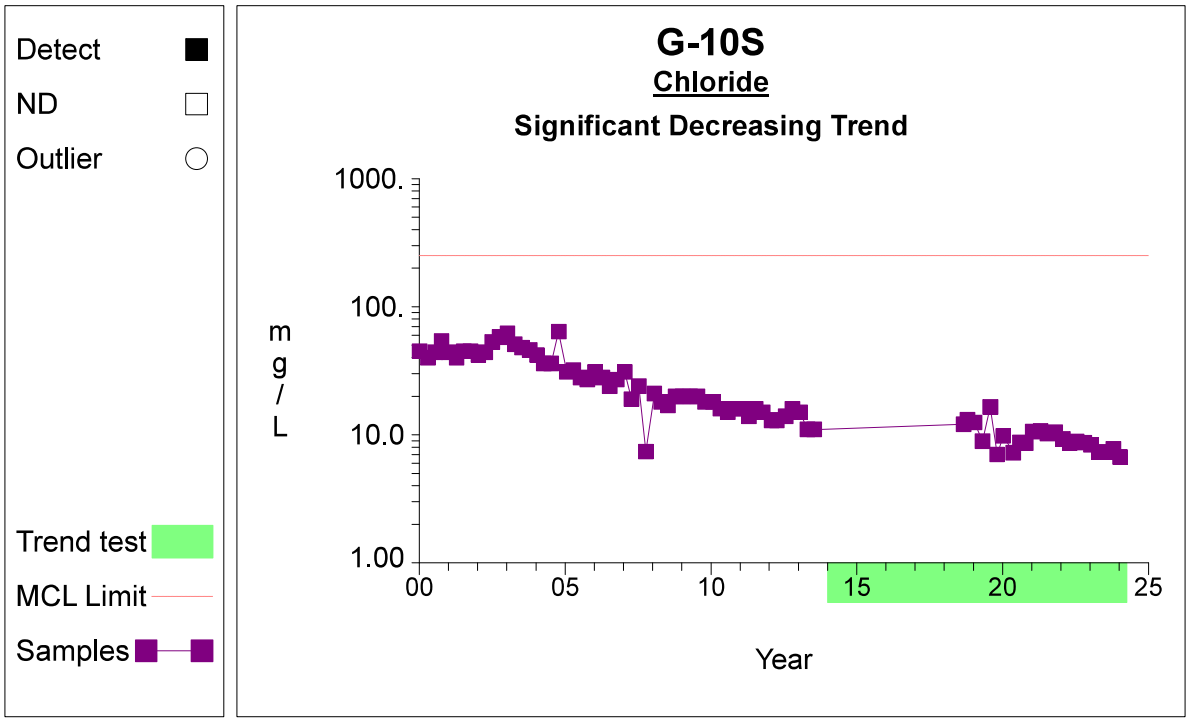
Graph 118

Time Series



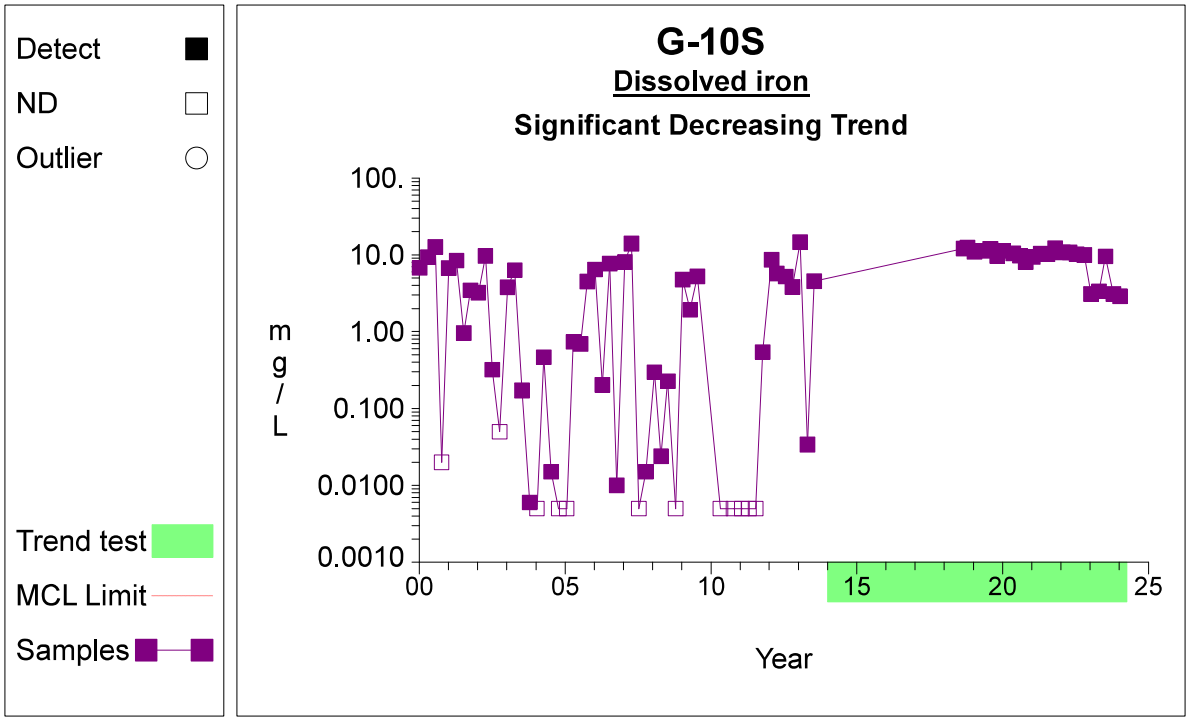
Graph 130

Time Series



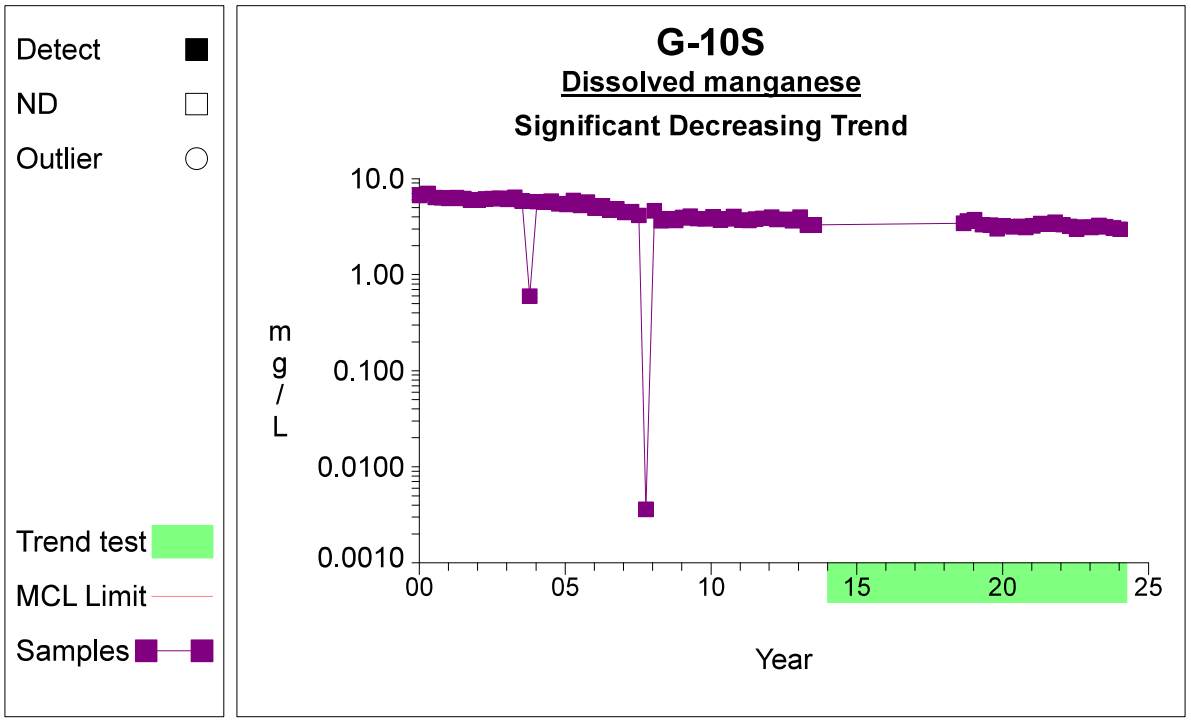
Graph 137

Time Series



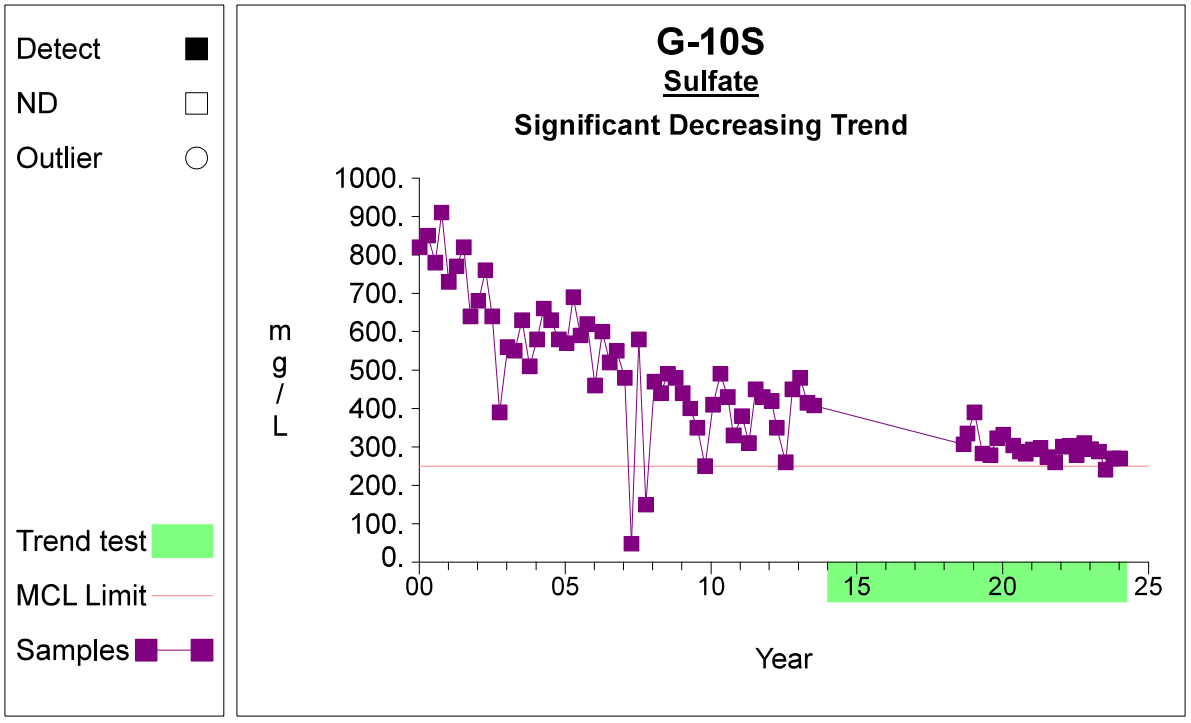
Graph 148

Time Series



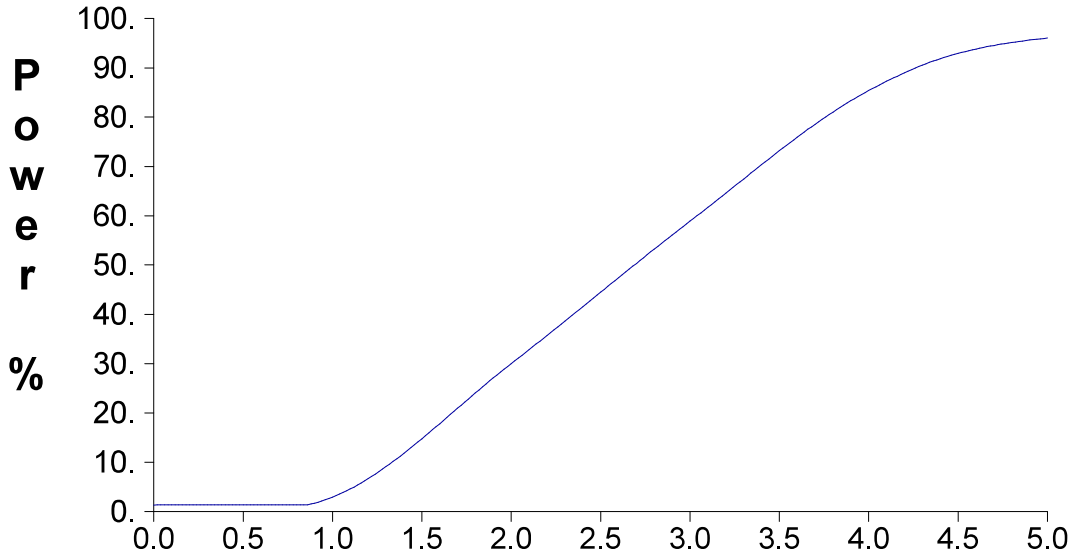
Graph 151

Time Series

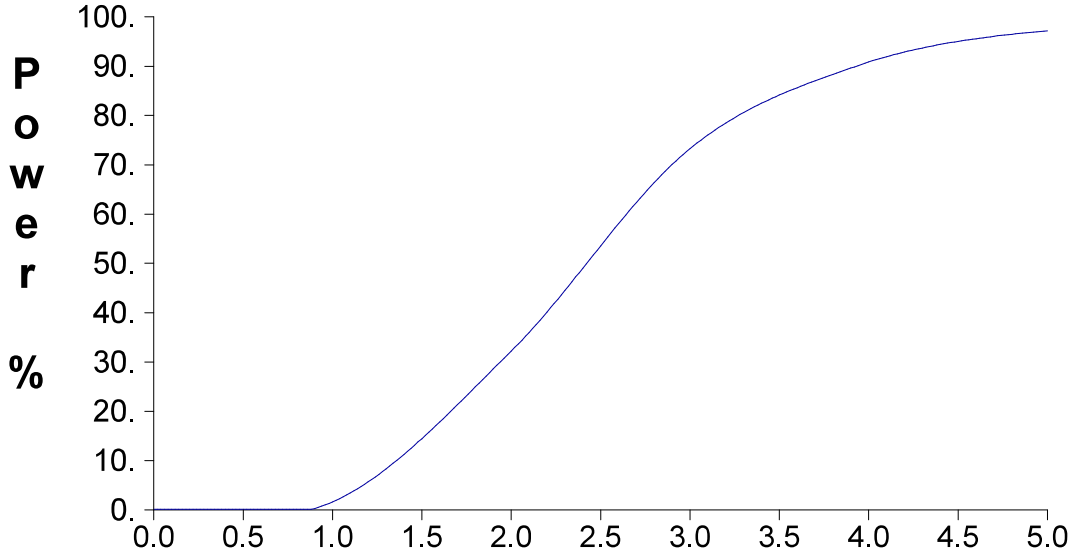


Graph 163

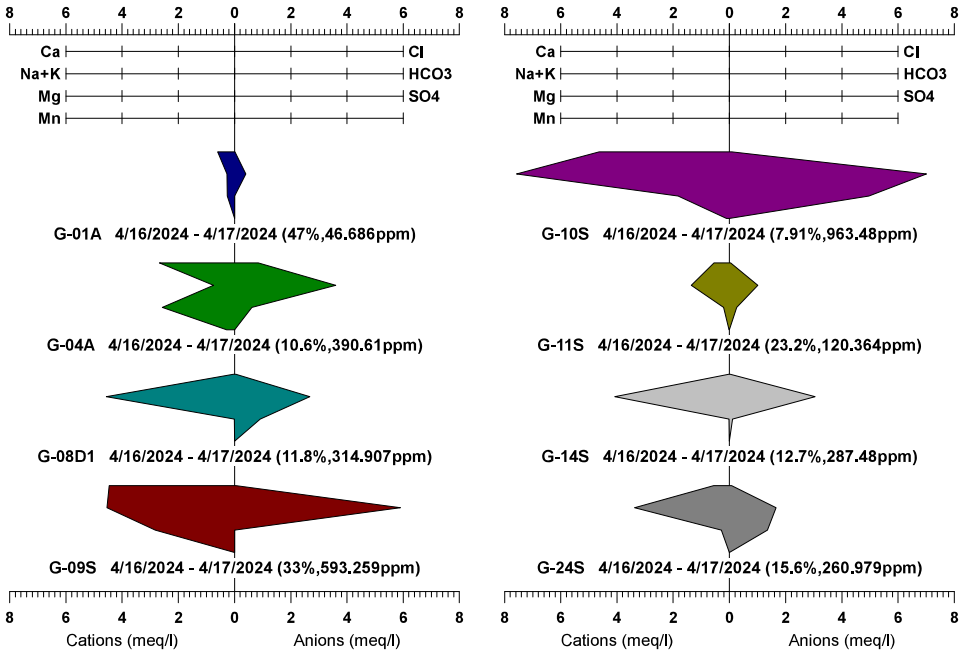
False Positive and False Negative Rates for Current Intra-Well Prediction Limits Monitoring Program



False Positive and False Negative Rates for Current Upgradient vs. Downgradient Monitoring Program



Cathcart Landfill



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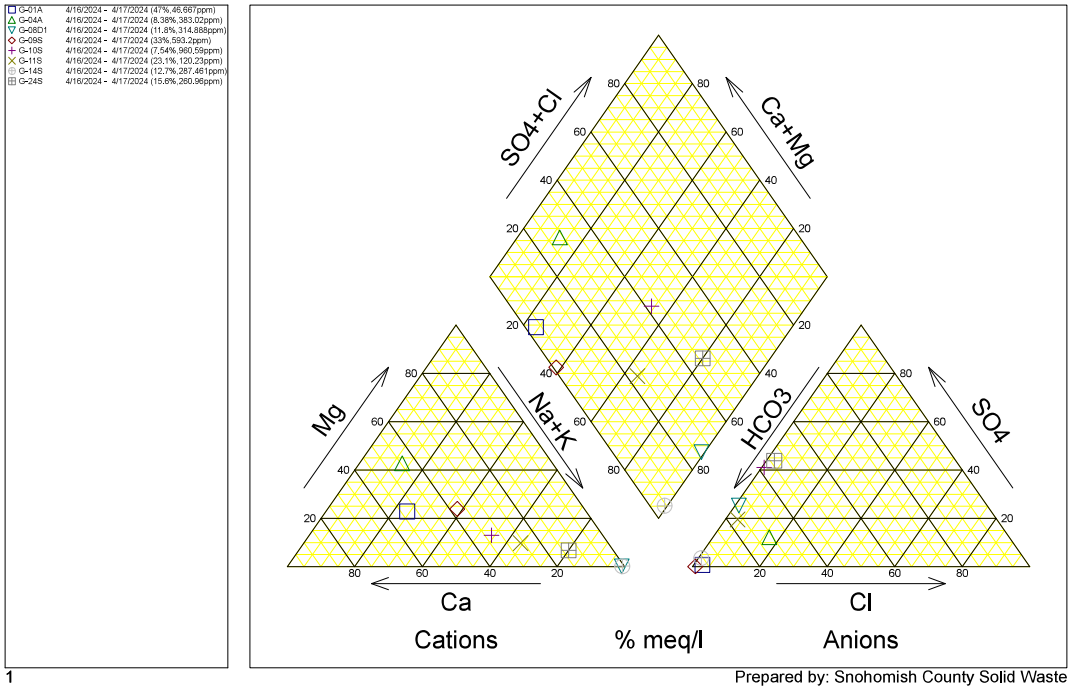
Cathcart Landfill



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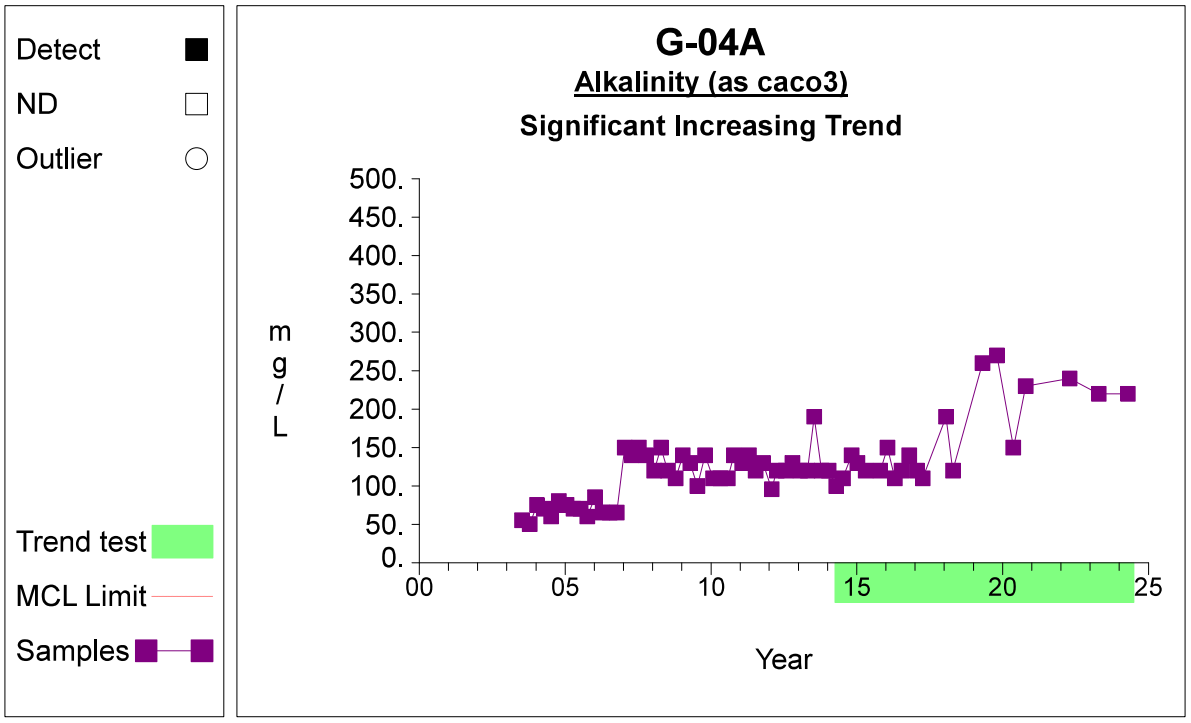
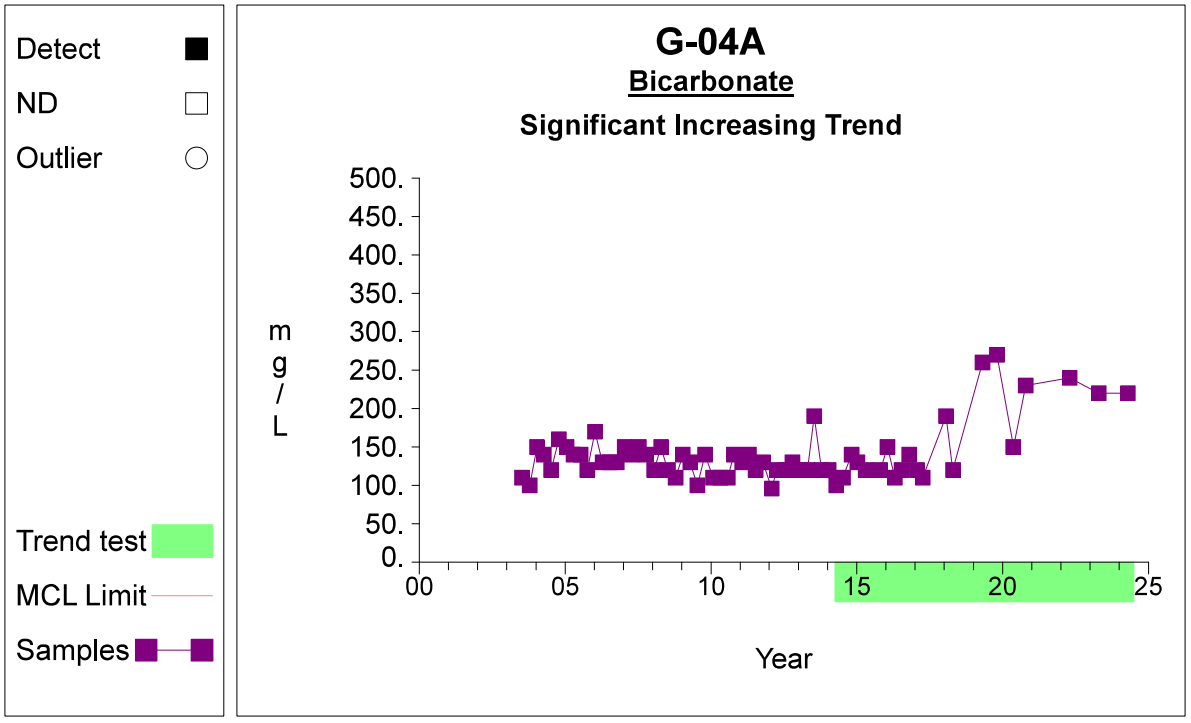
Time Series



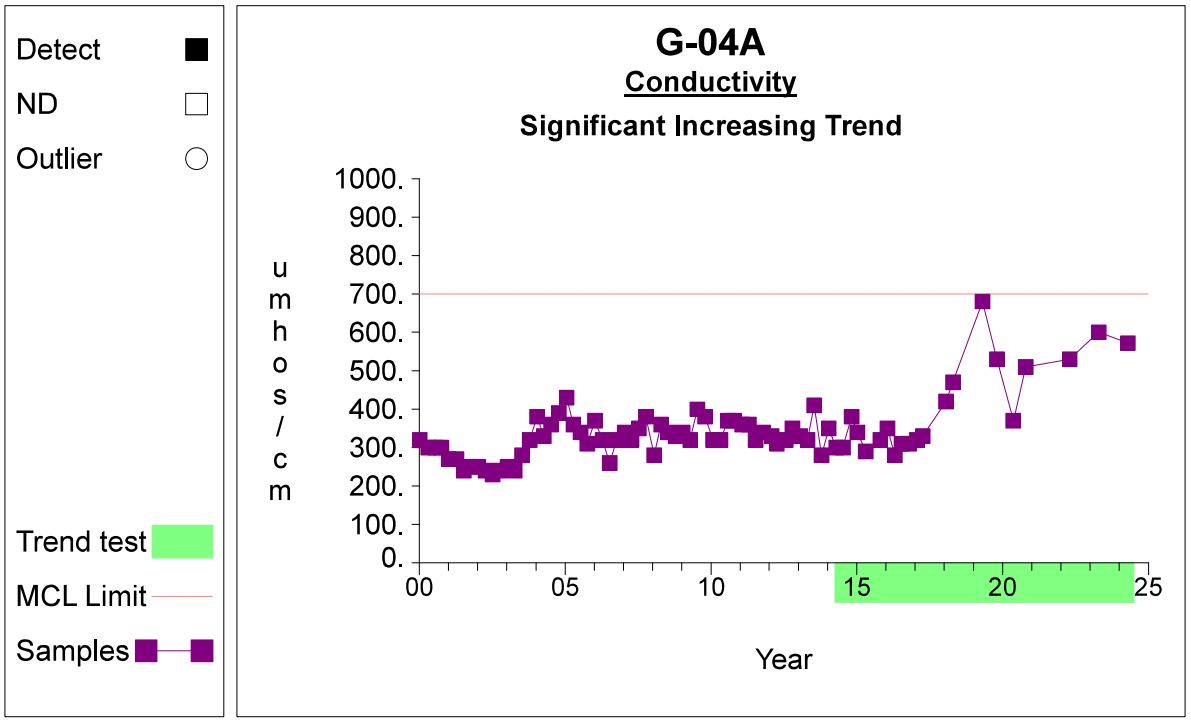
Graph 36

Time Series



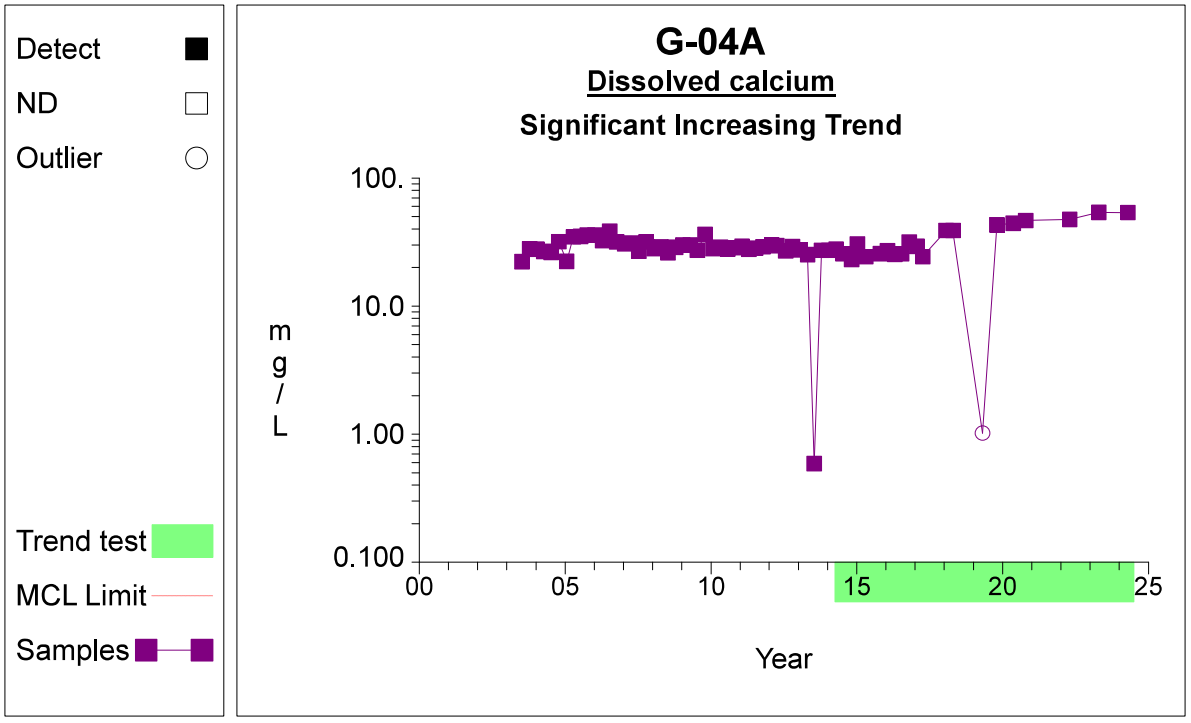
Graph 42

Time Series



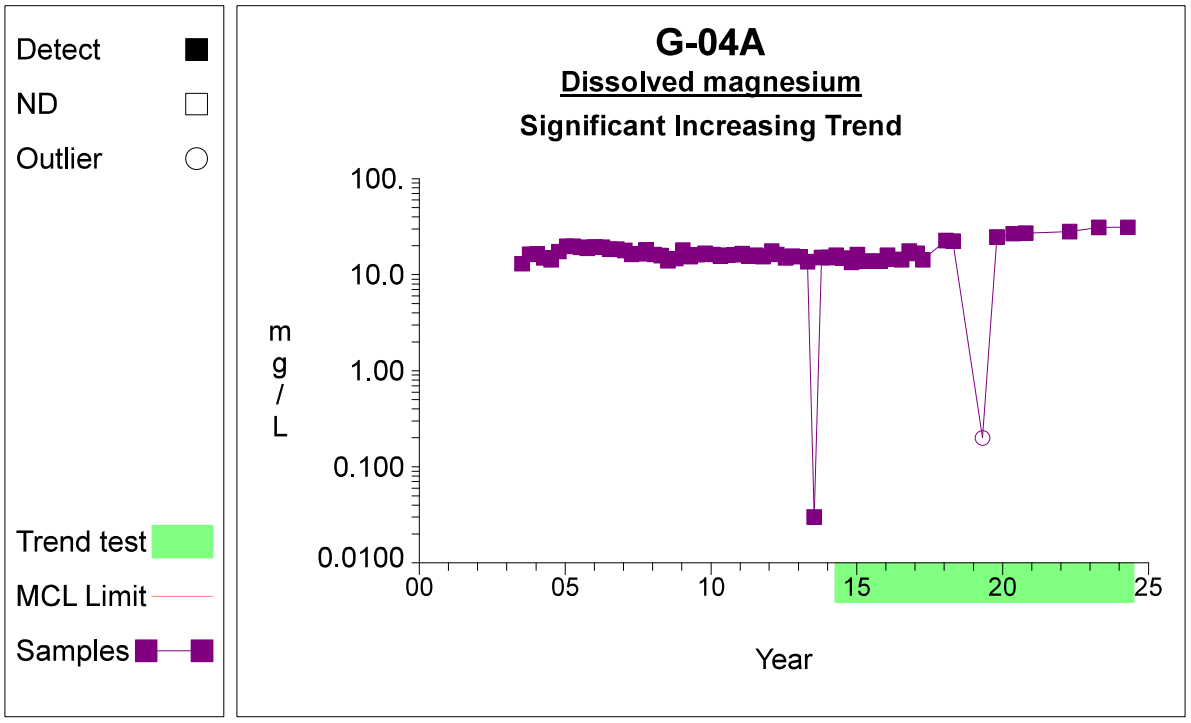
Graph 48

Time Series



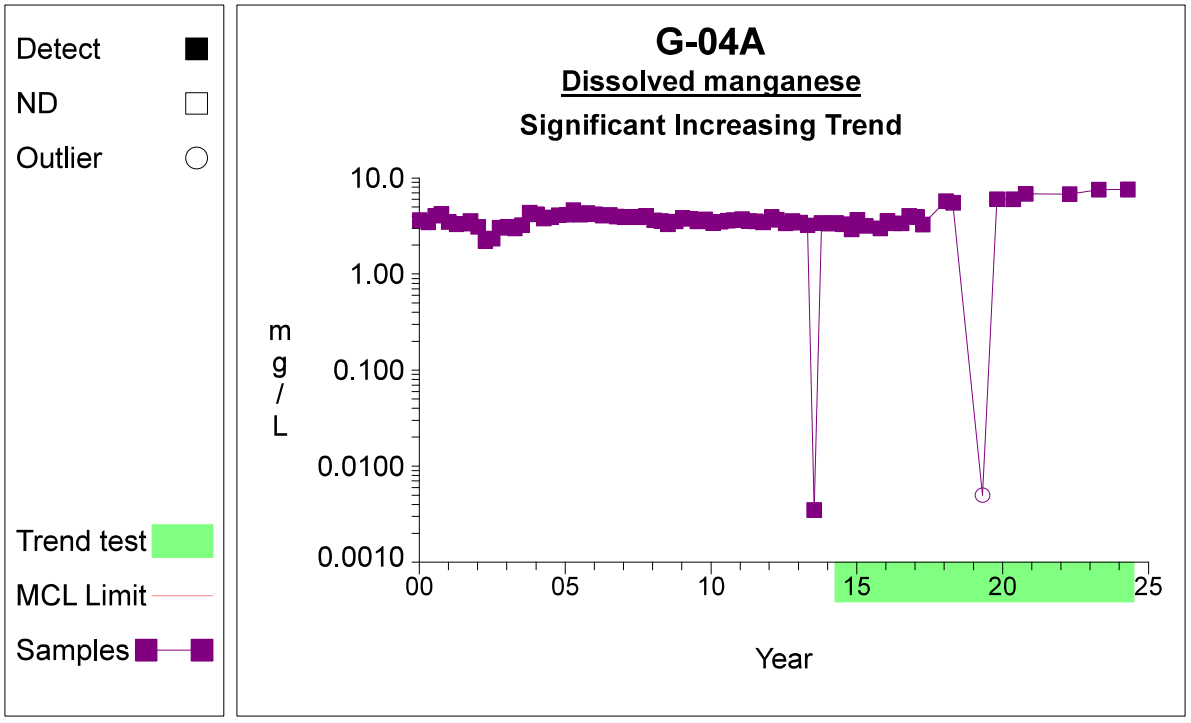
Graph 50

Time Series



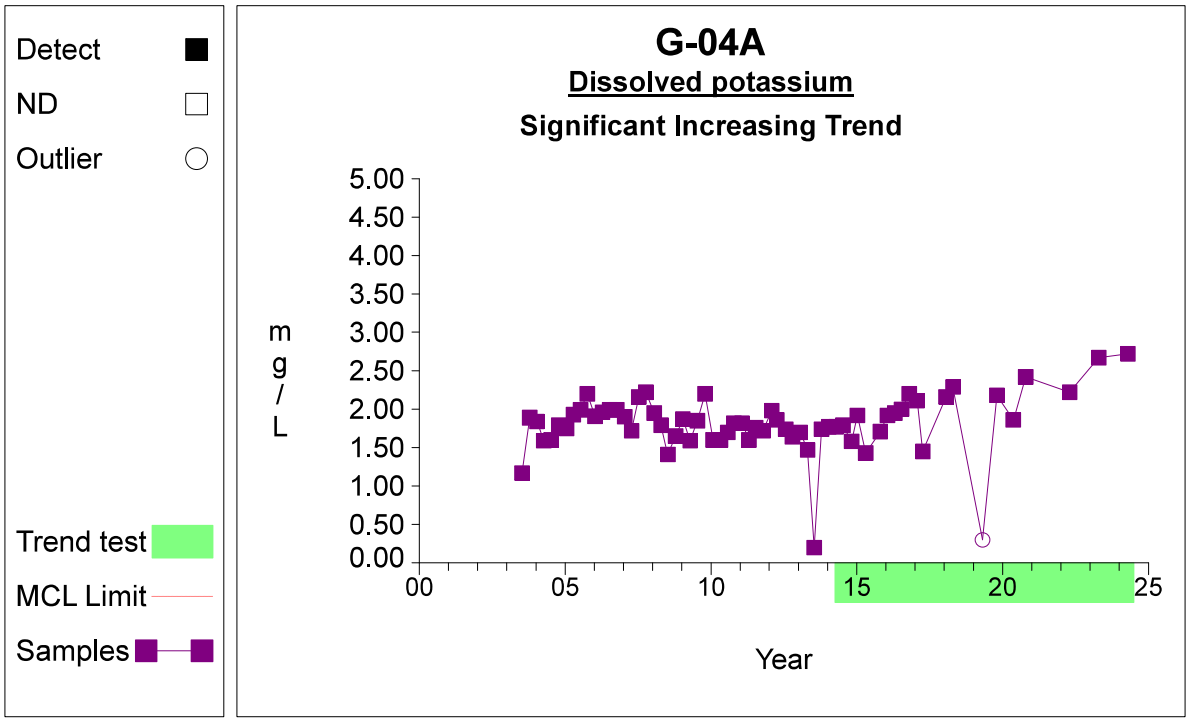
Graph 52

Time Series



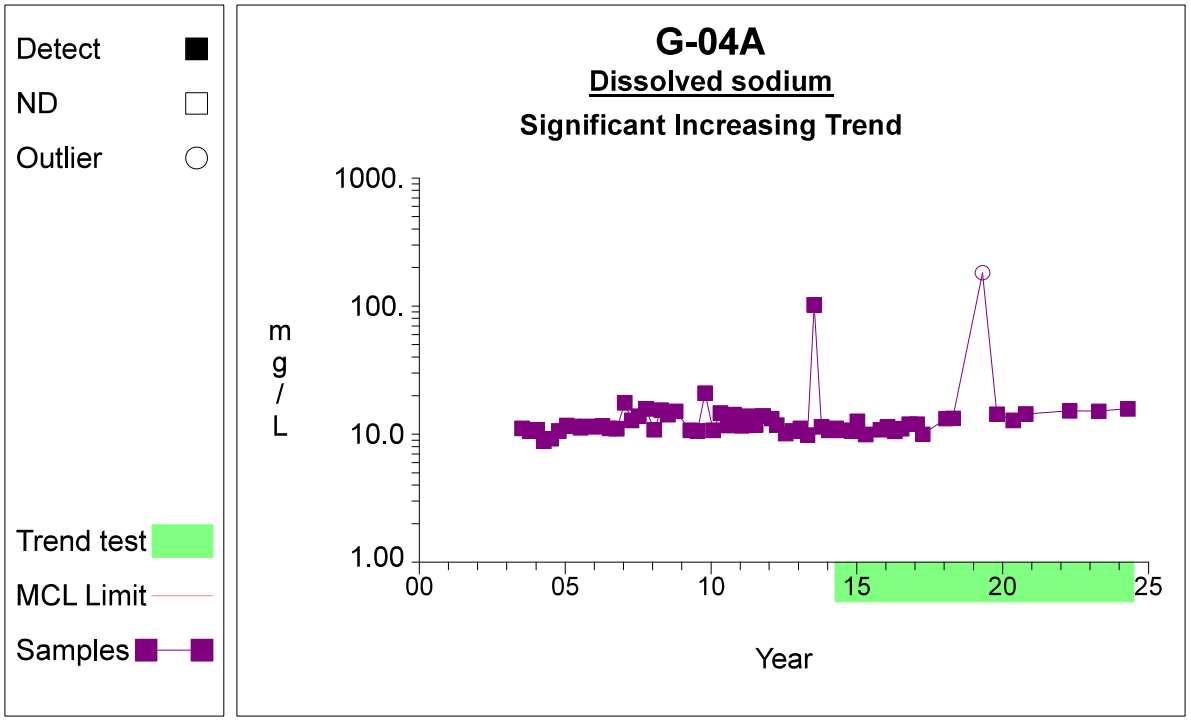
Graph 53

Time Series



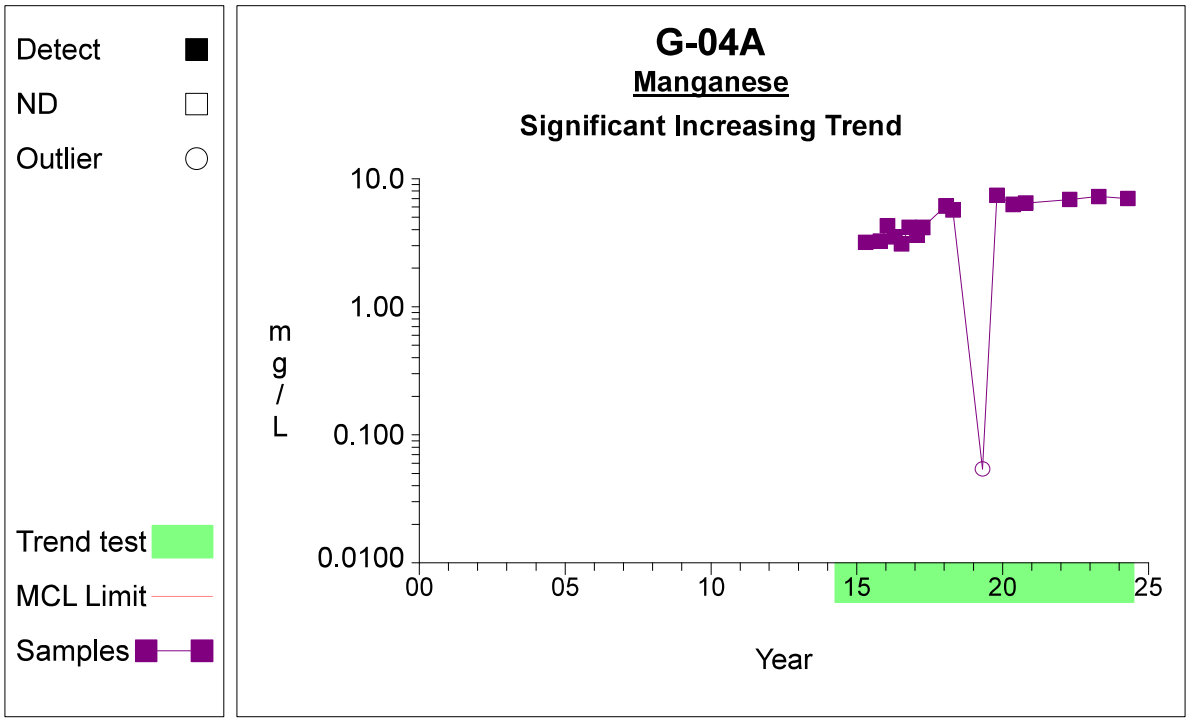
Graph 54

Time Series



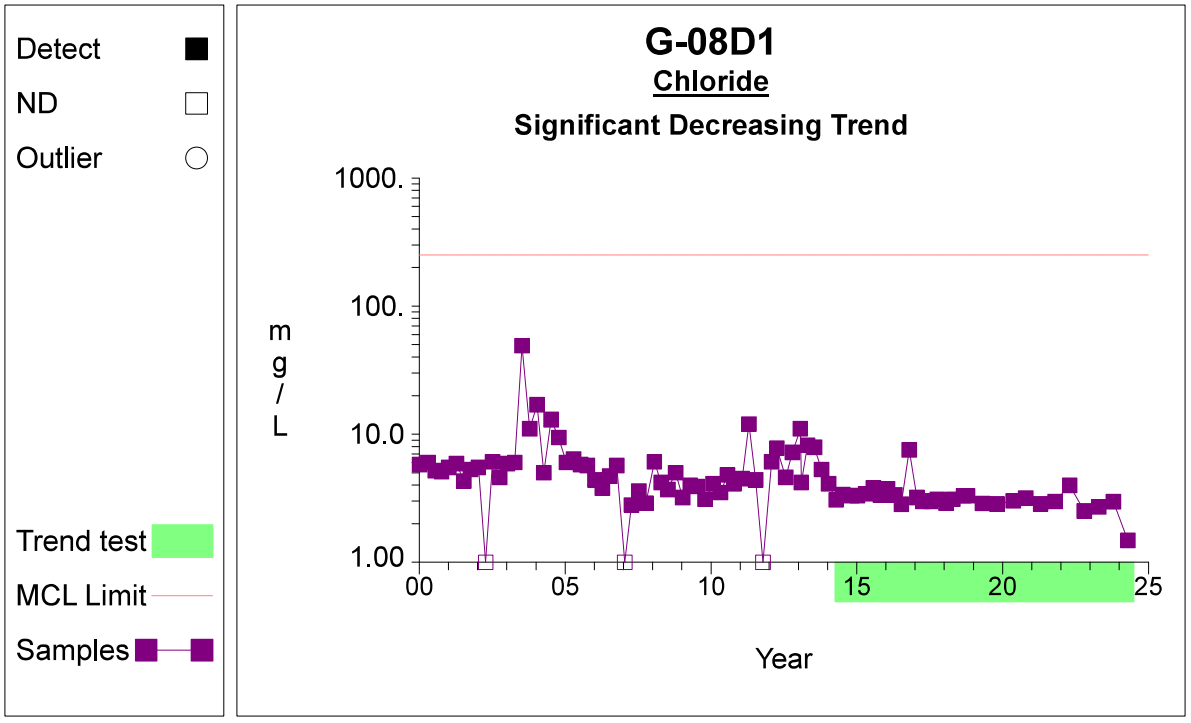
Graph 55

Time Series



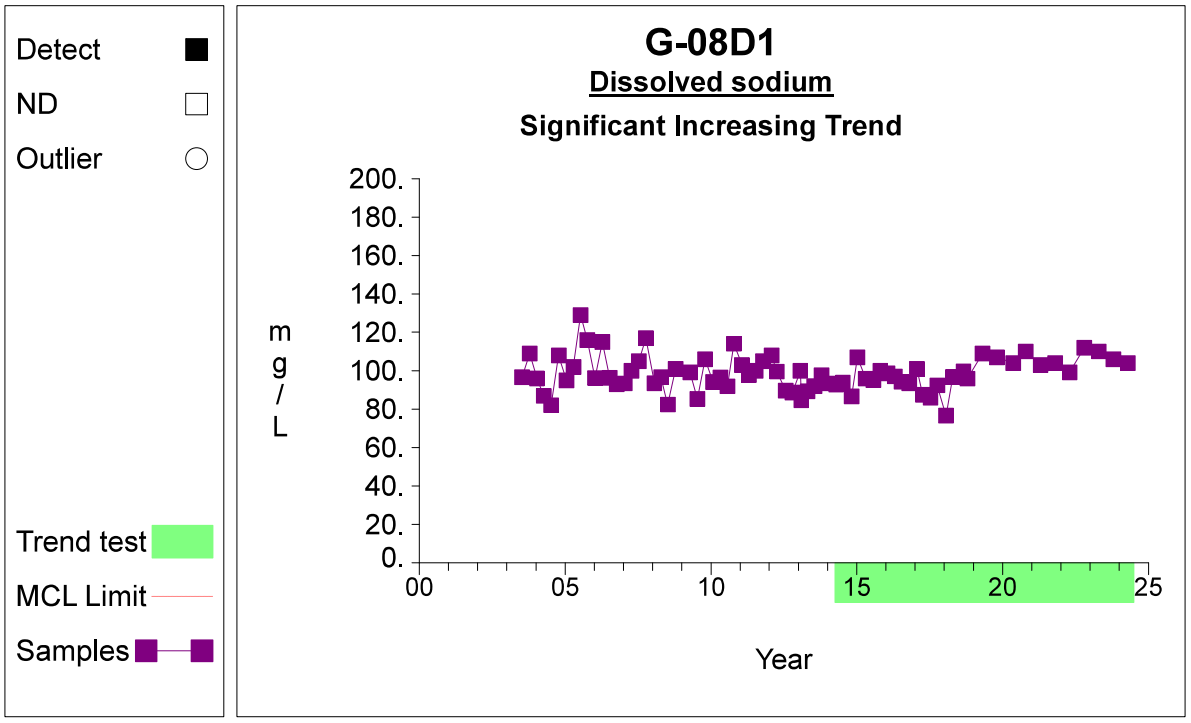
Graph 58

Time Series



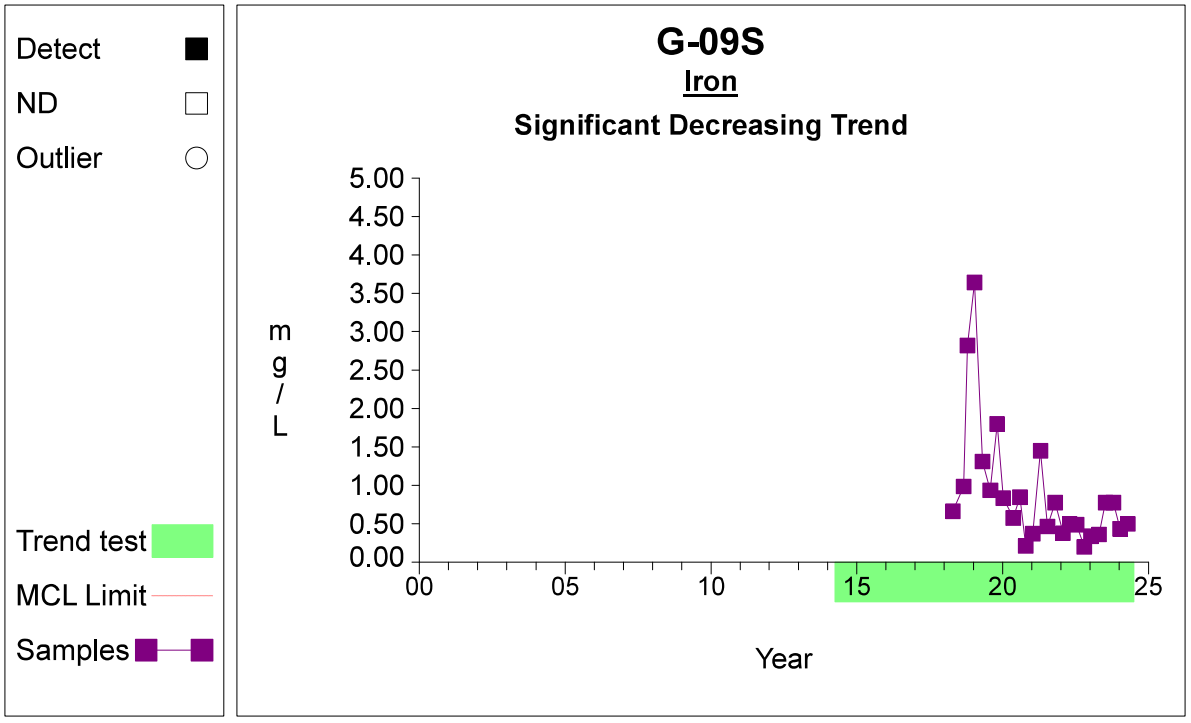
Graph 80

Time Series



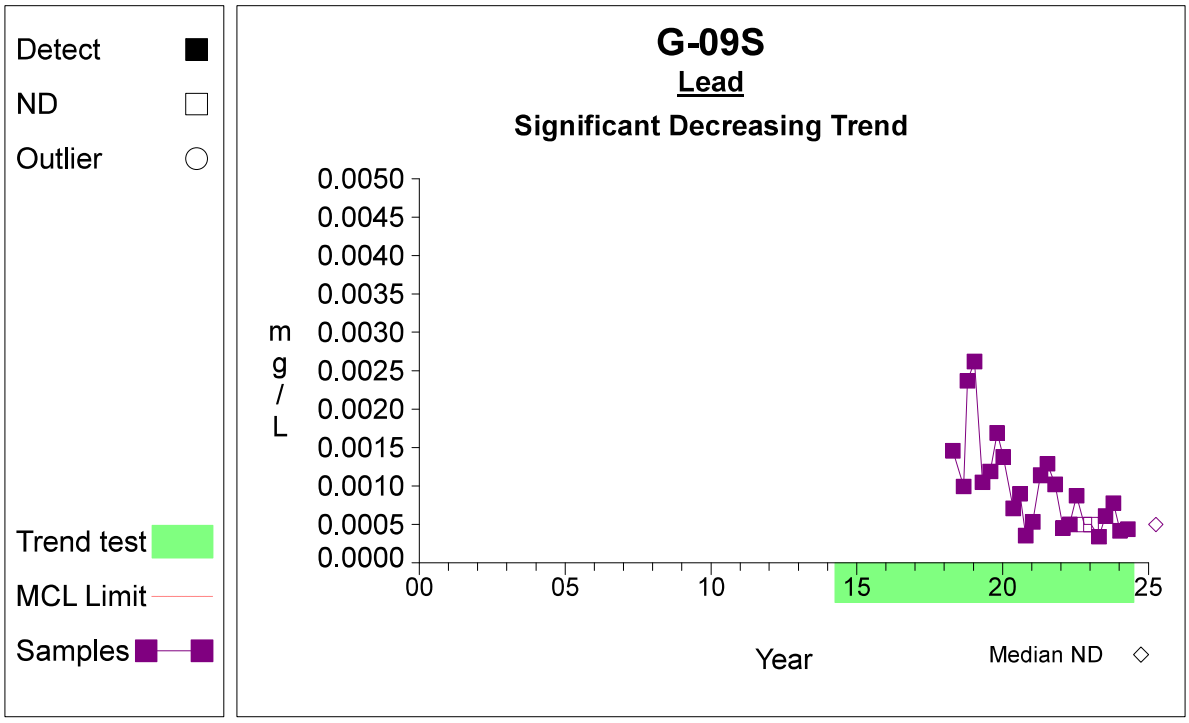
Graph 90

Time Series



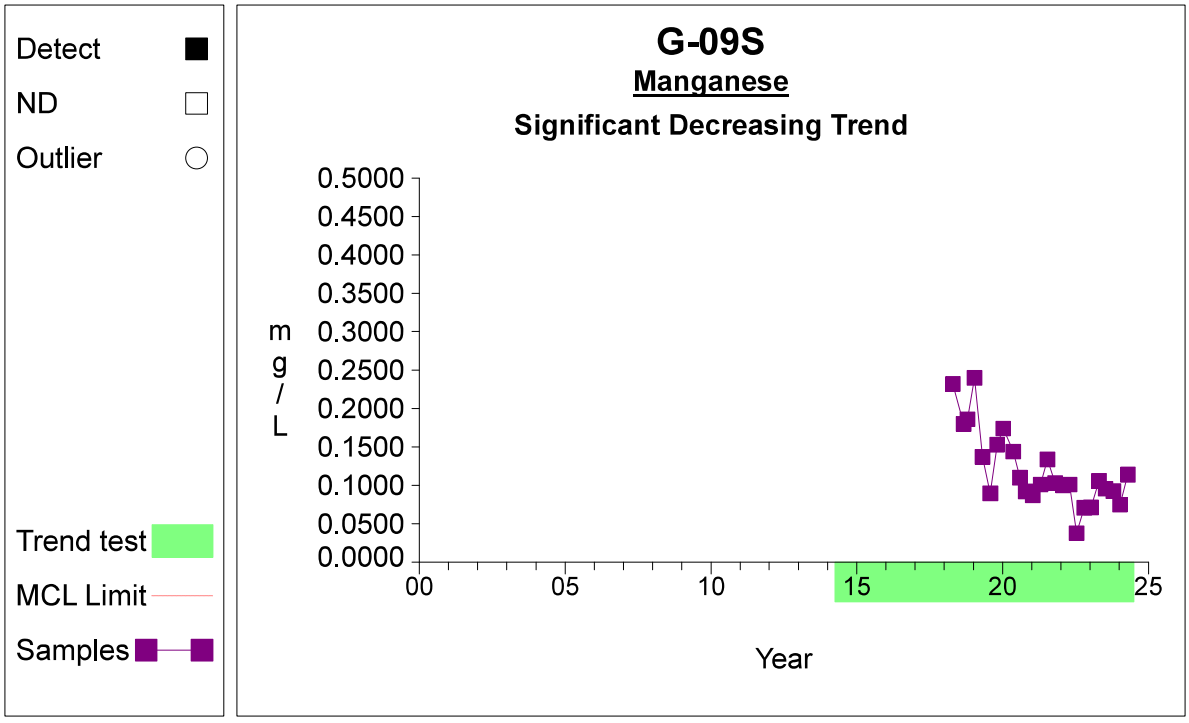
Graph 126

Time Series



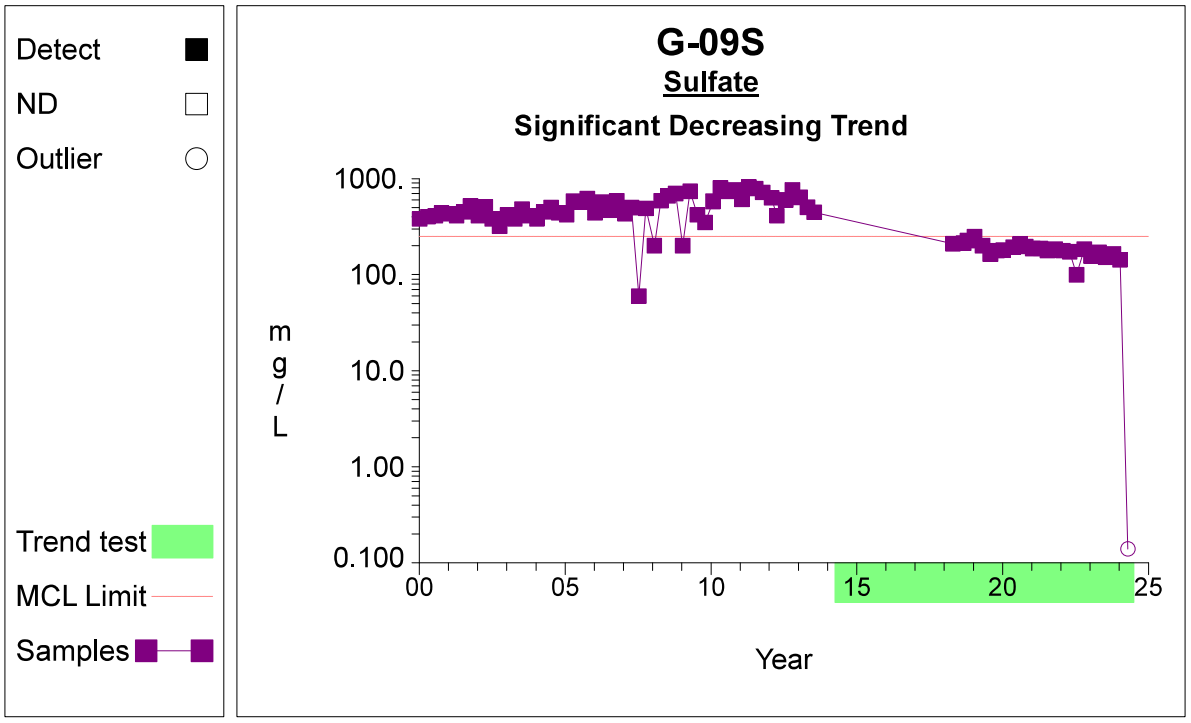
Graph 127

Time Series



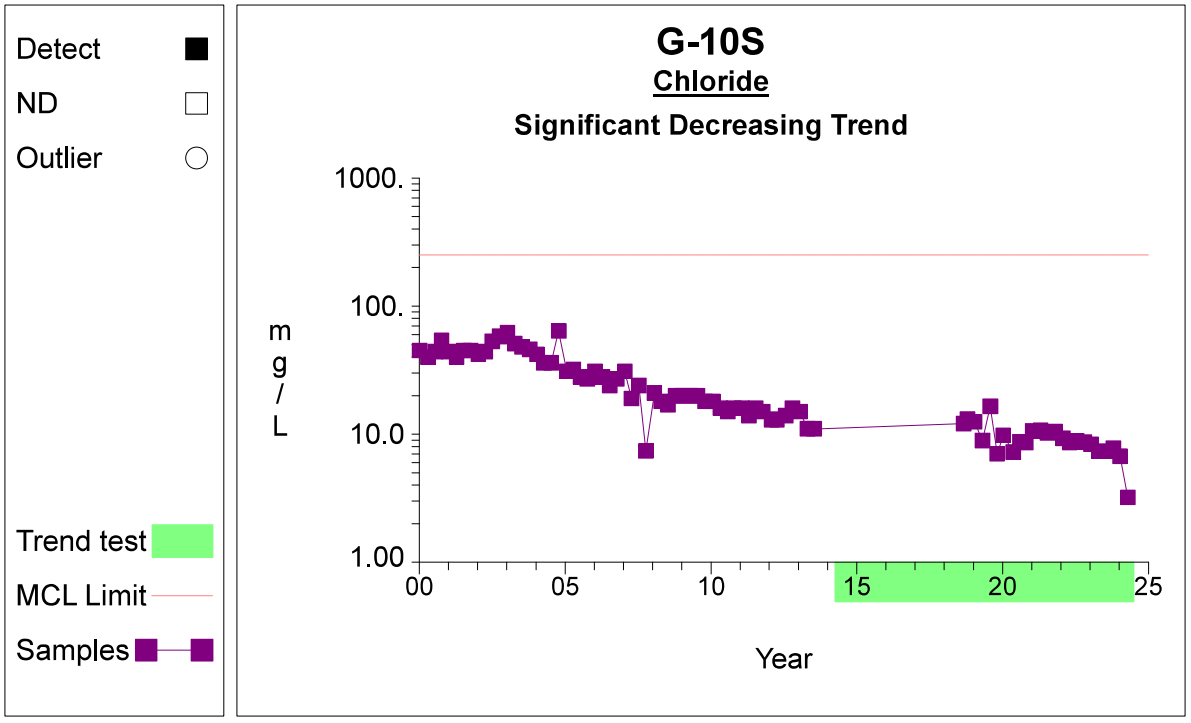
Graph 128

Time Series



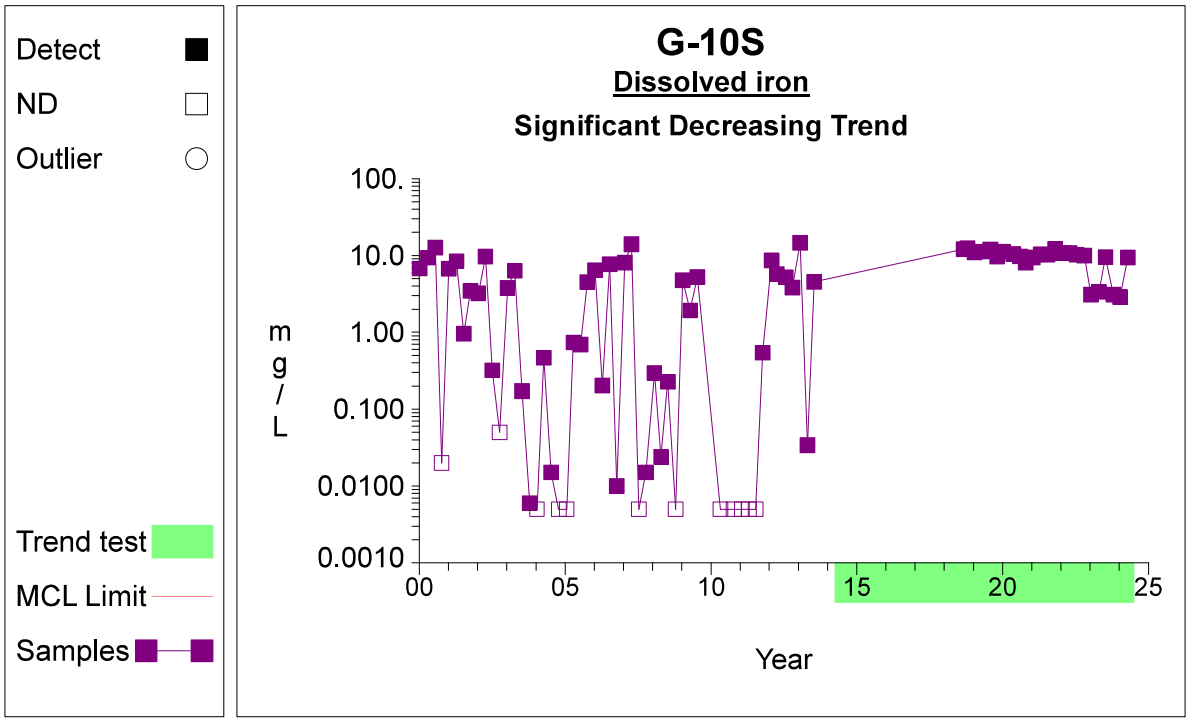
Graph 135

Time Series



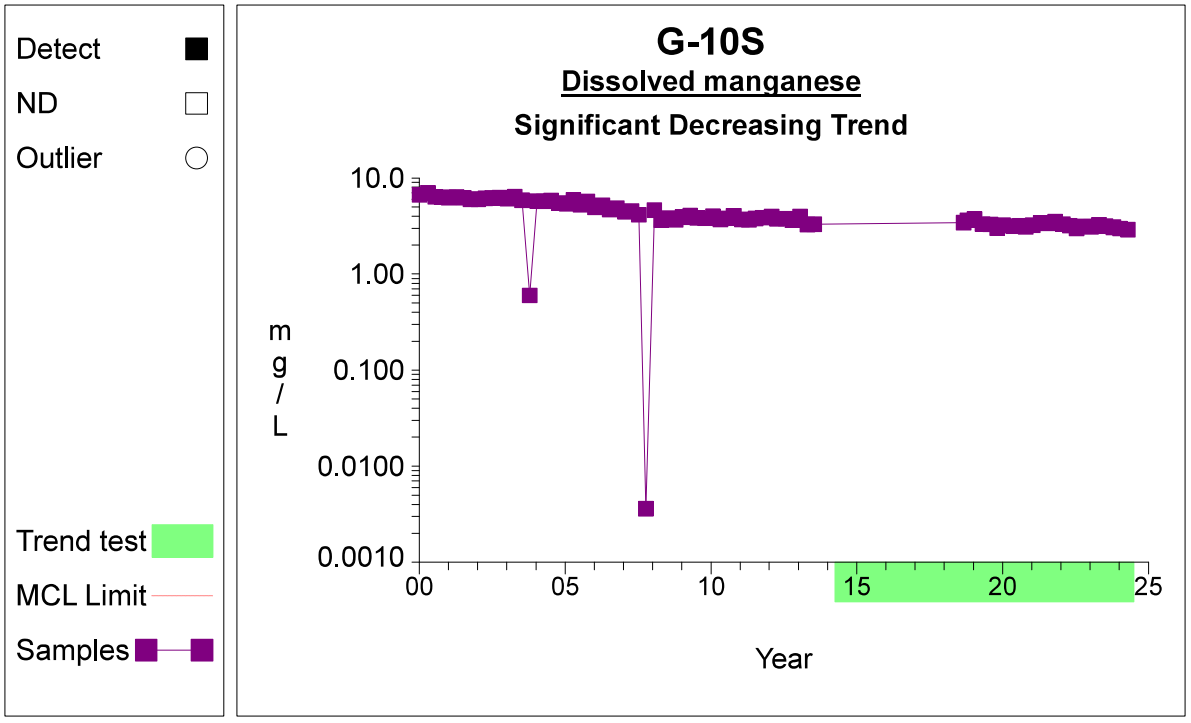
Graph 150

Time Series



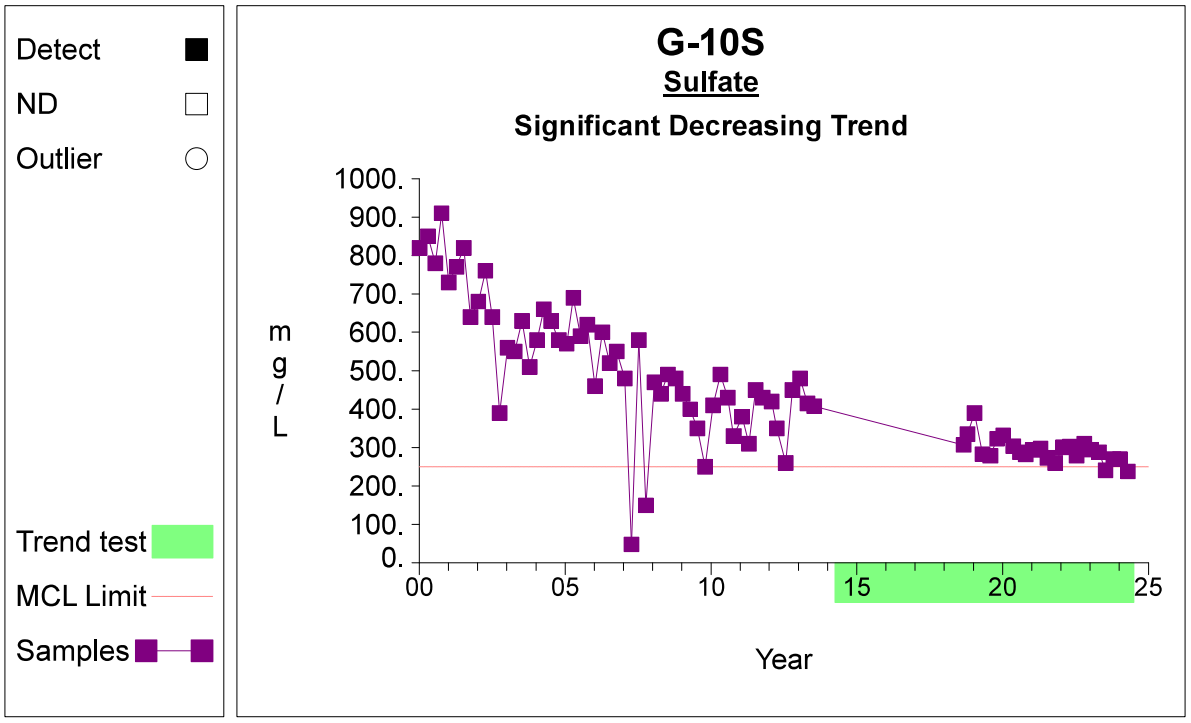
Graph 156

Time Series



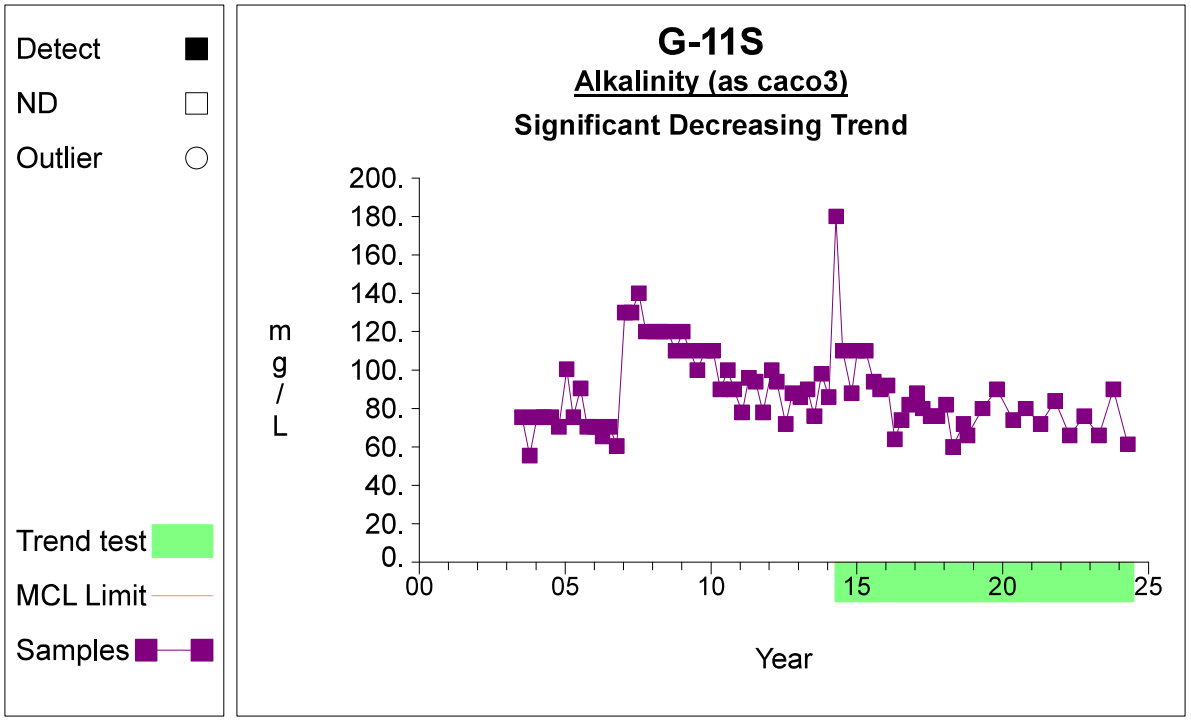
Graph 158

Time Series



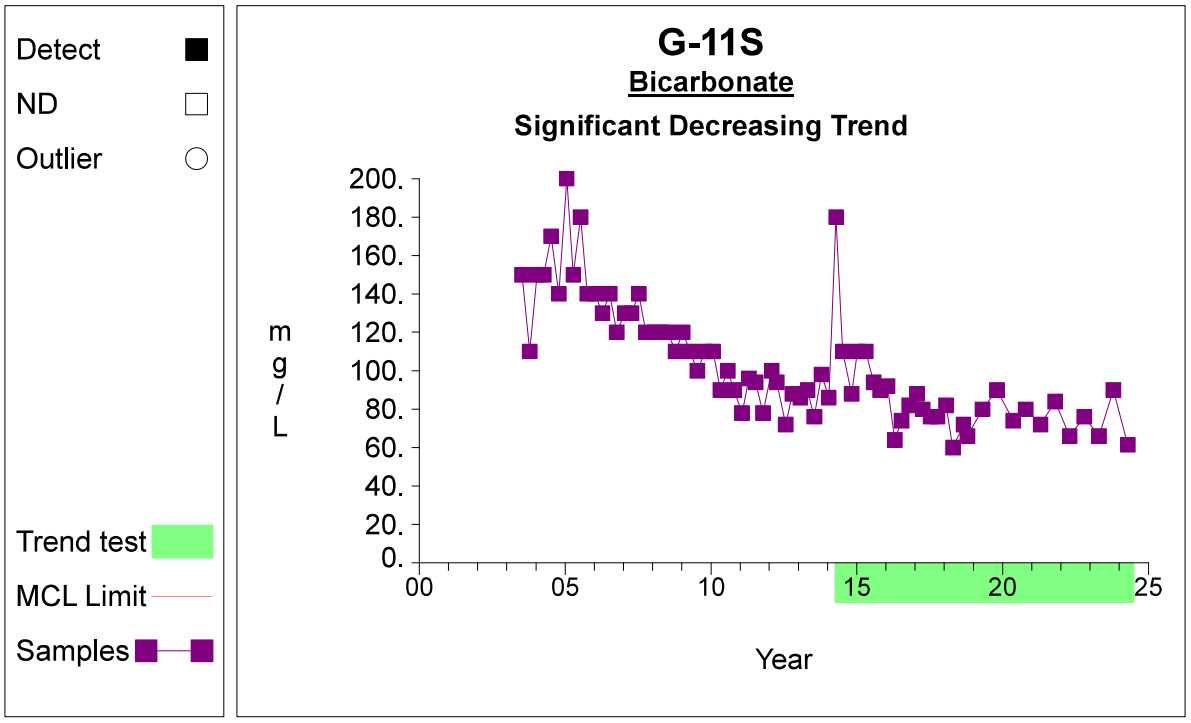
Graph 170

Time Series



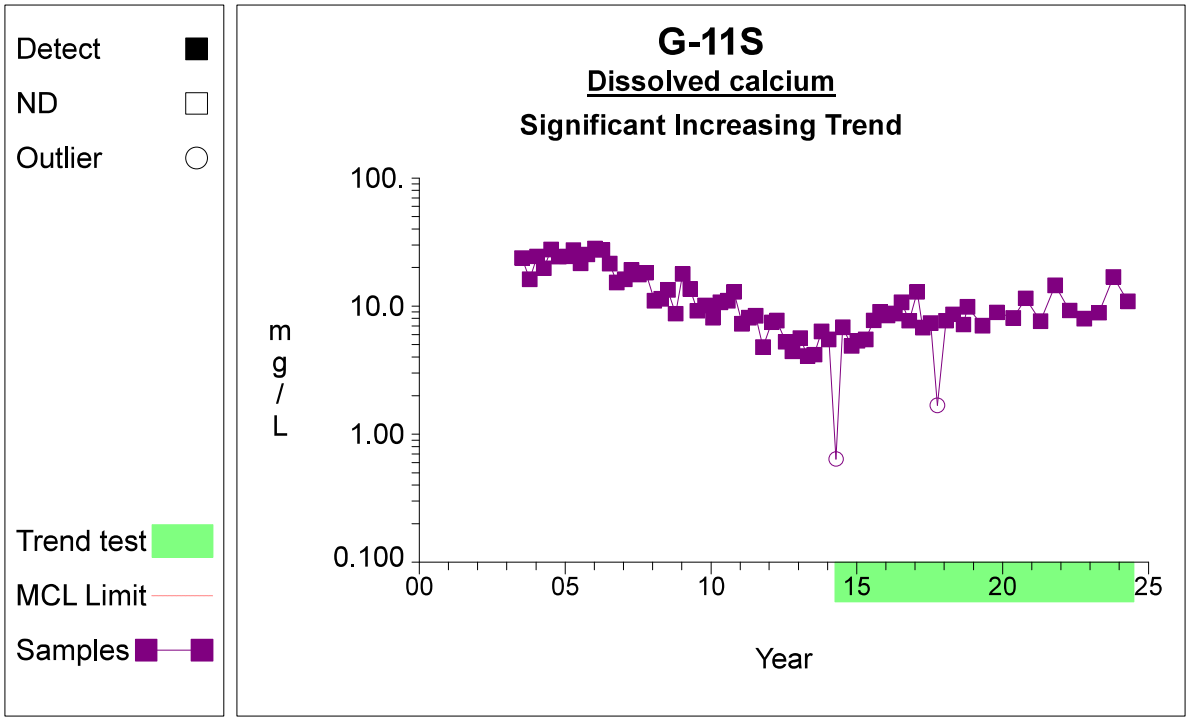
Graph 176

Time Series



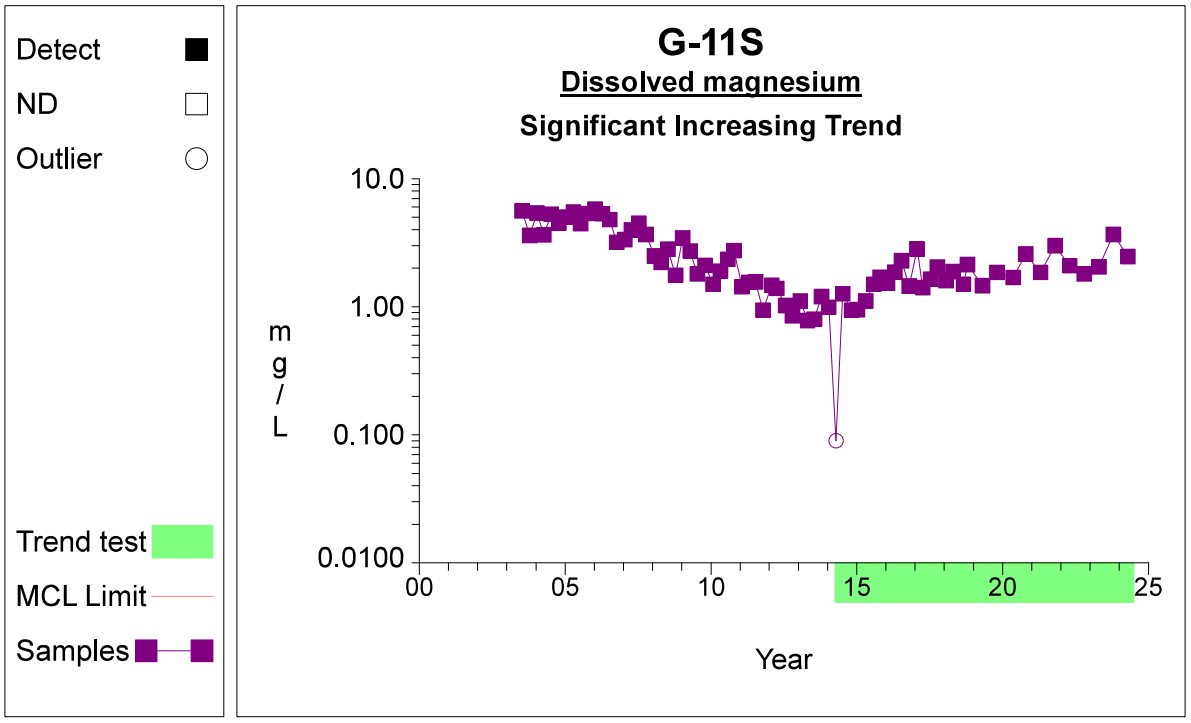
Graph 182

Time Series



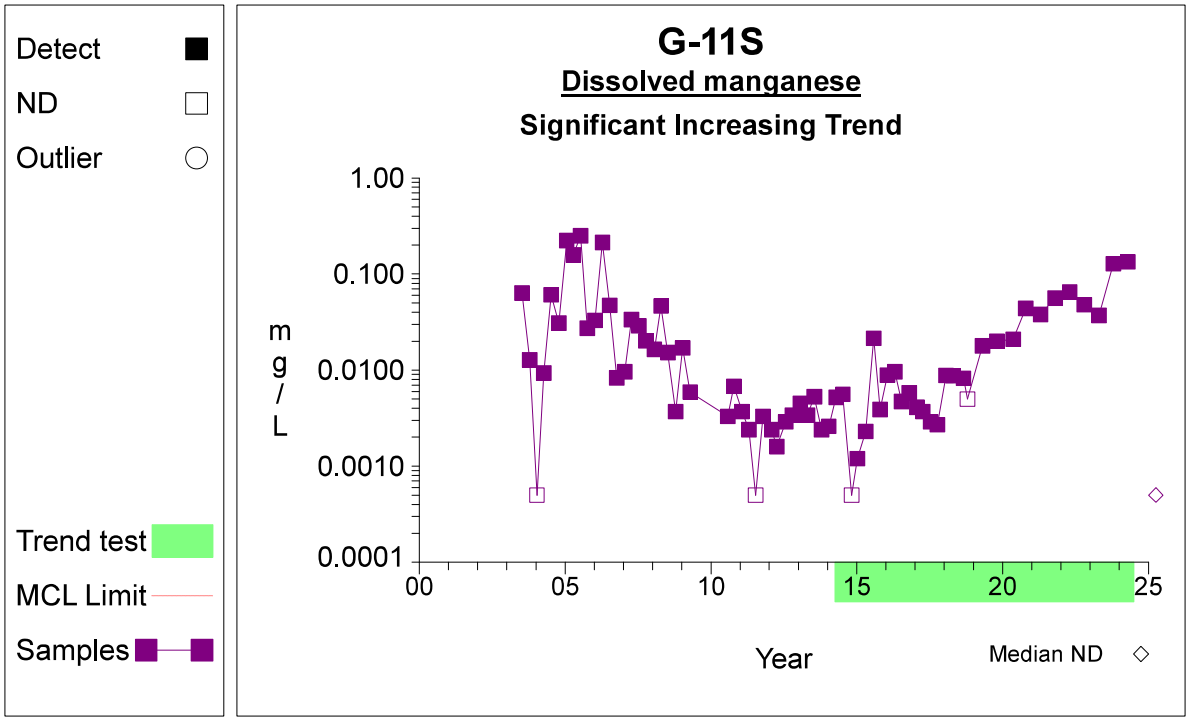
Graph 190

Time Series



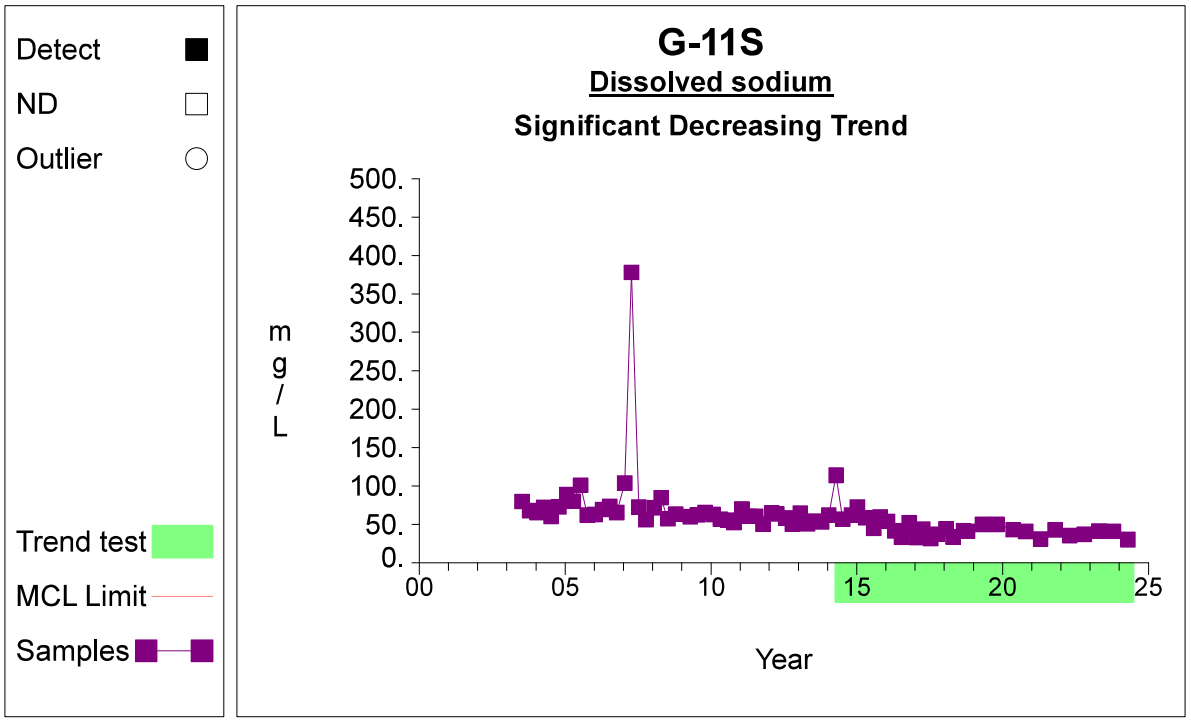
Graph 192

Time Series



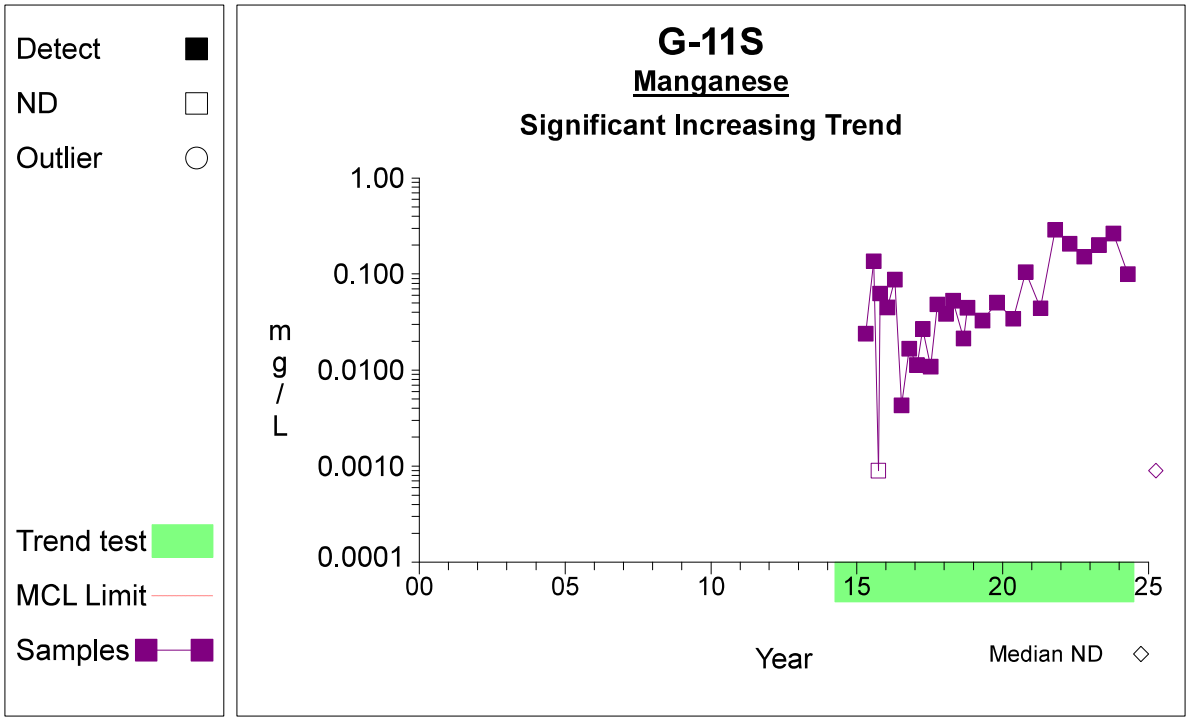
Graph 193

Time Series



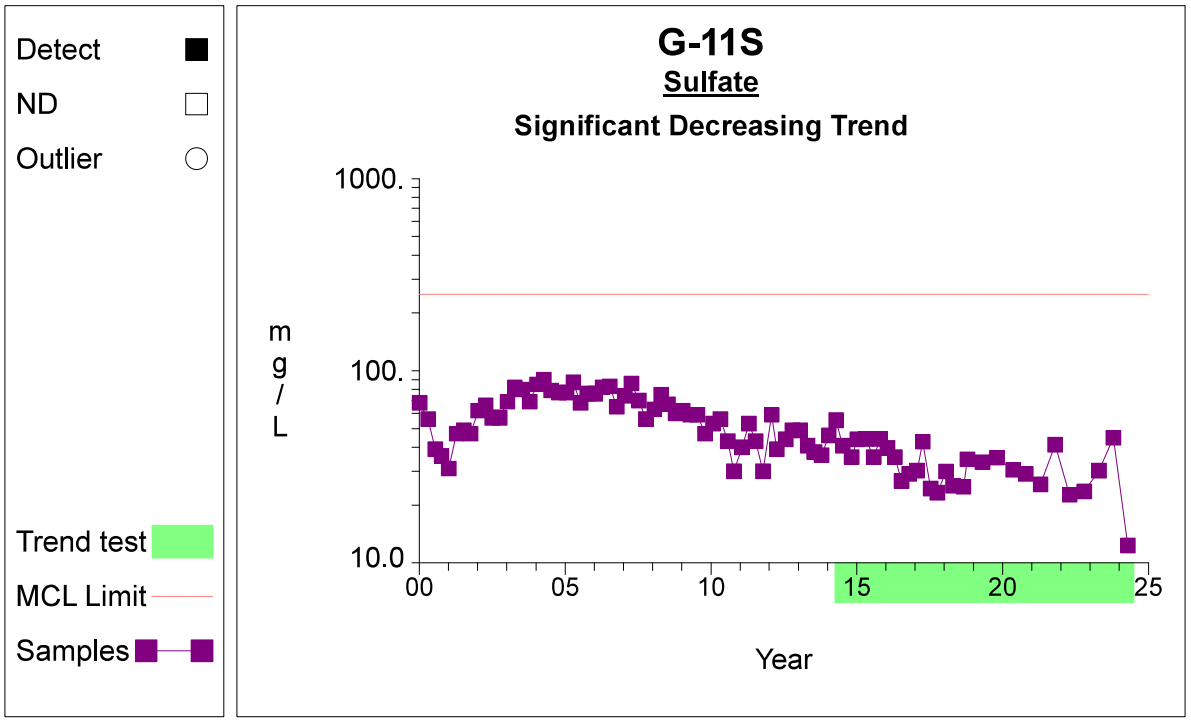
Graph 195

Time Series



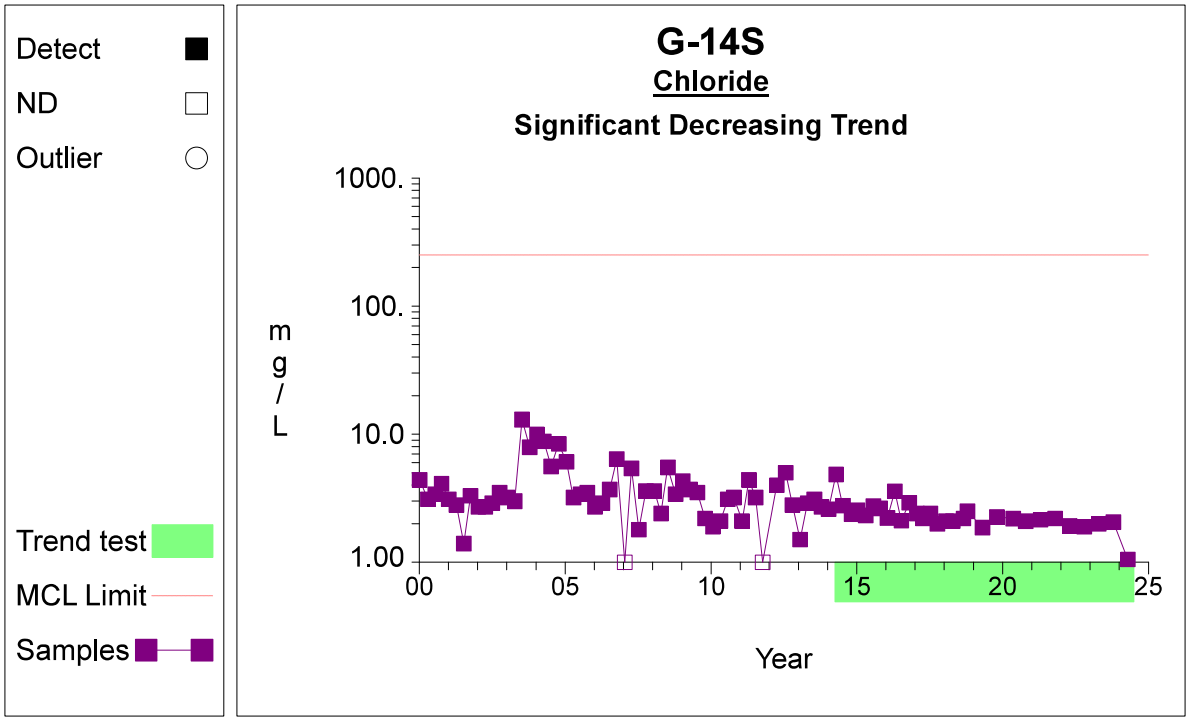
Graph 198

Time Series



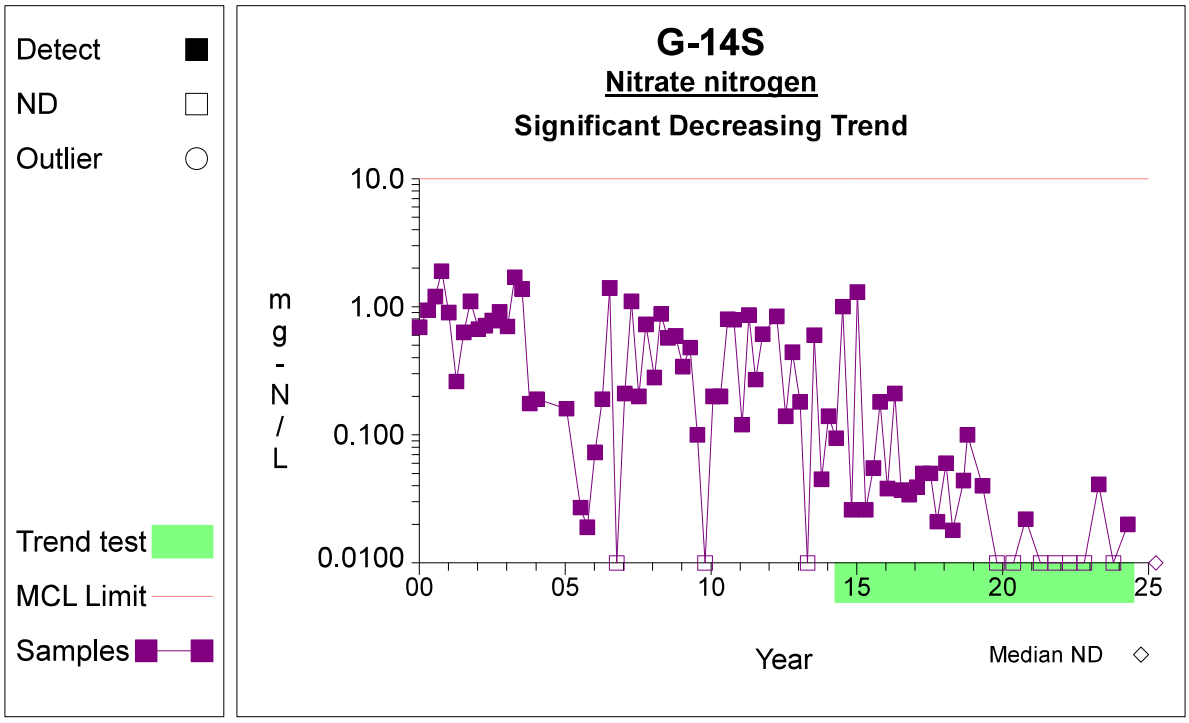
Graph 205

Time Series



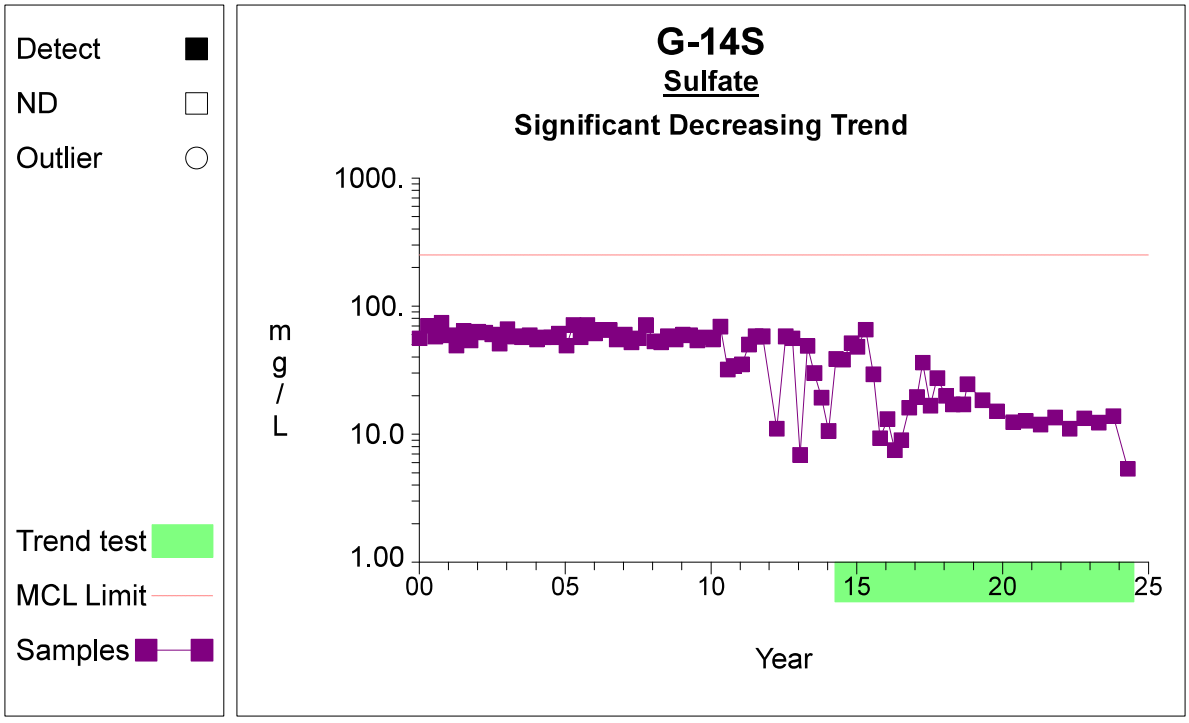
Graph 220

Time Series



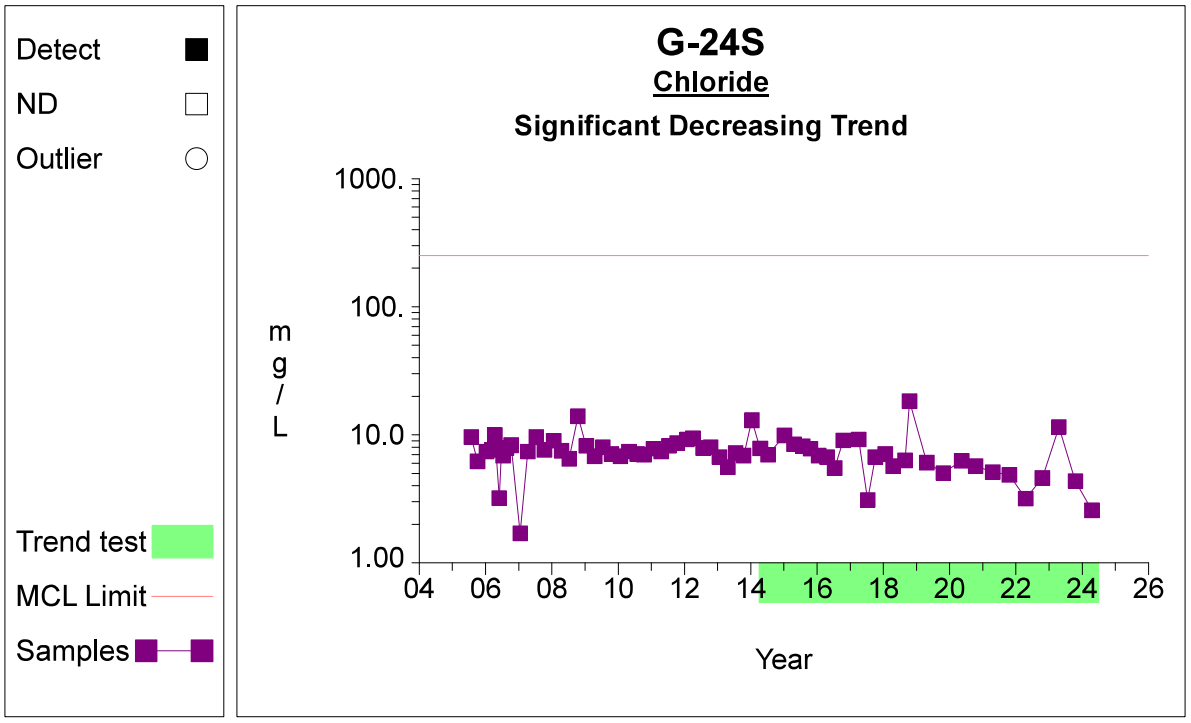
Graph 235

Time Series



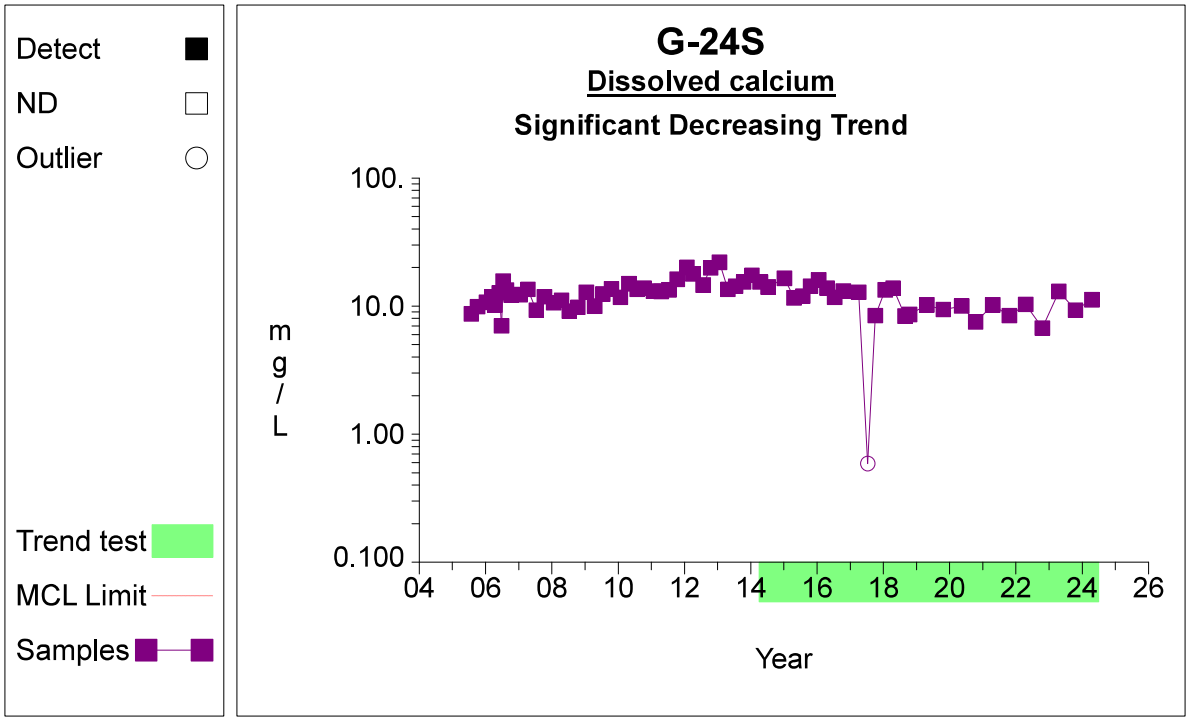
Graph 240

Time Series



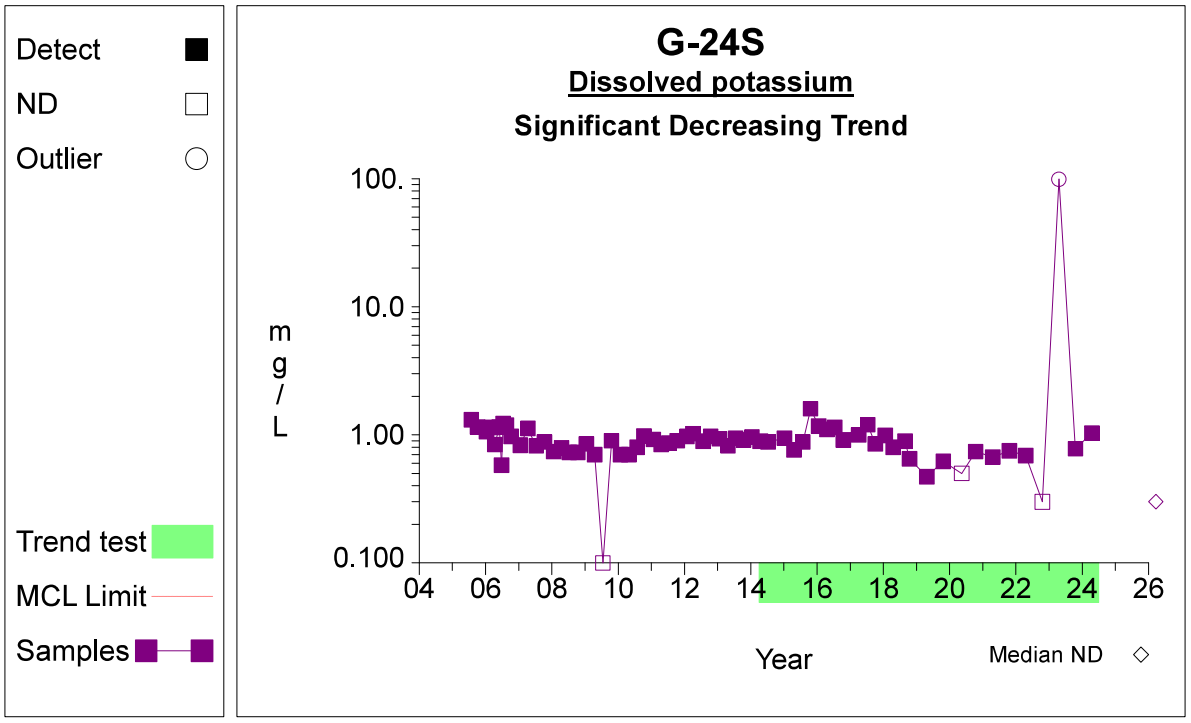
Graph 255

Time Series



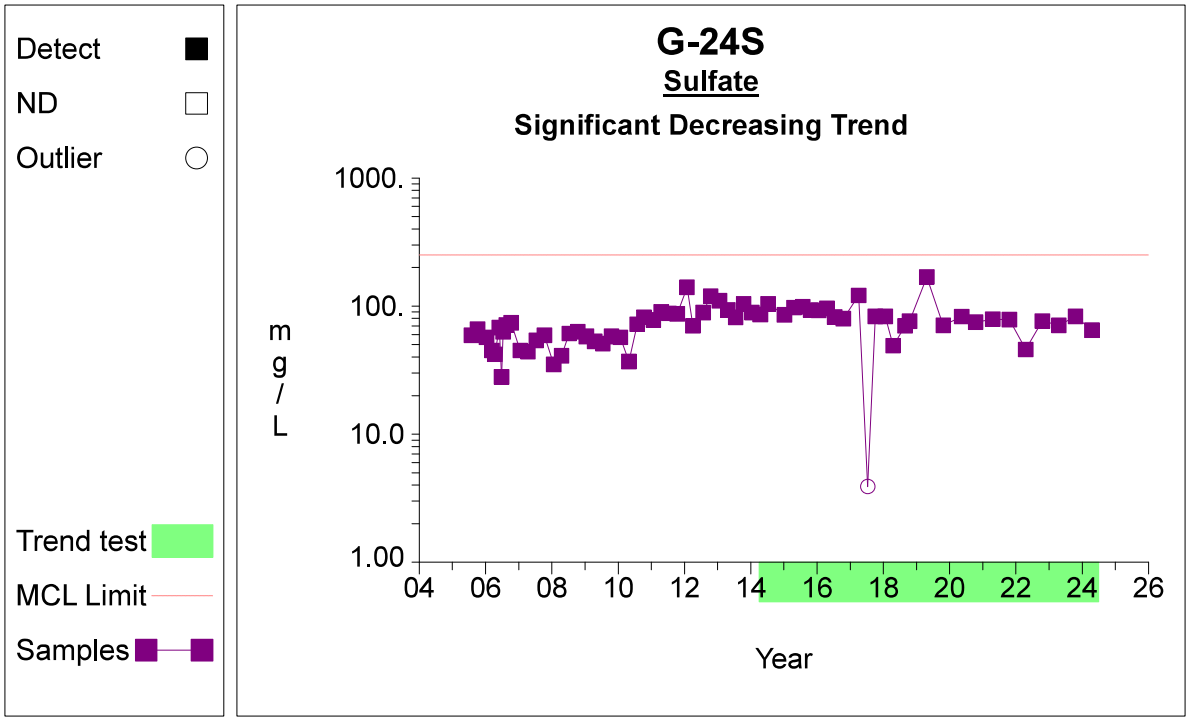
Graph 260

Time Series



Graph 264

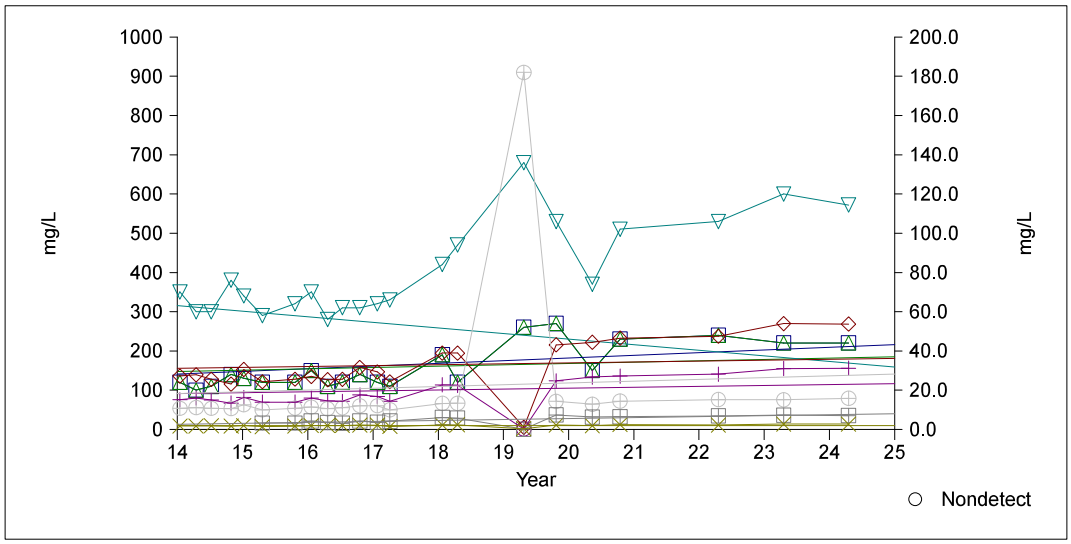
Time Series



Graph 275

Cathcart Landfill

Time Series Plot for G-04A



Alkalinity (as caco3)
Bicarbonate
Conductivity
Dissolved calcium
Dissolved magnesium
Dissolved sodium
Manganese
Dissolved potassium

1

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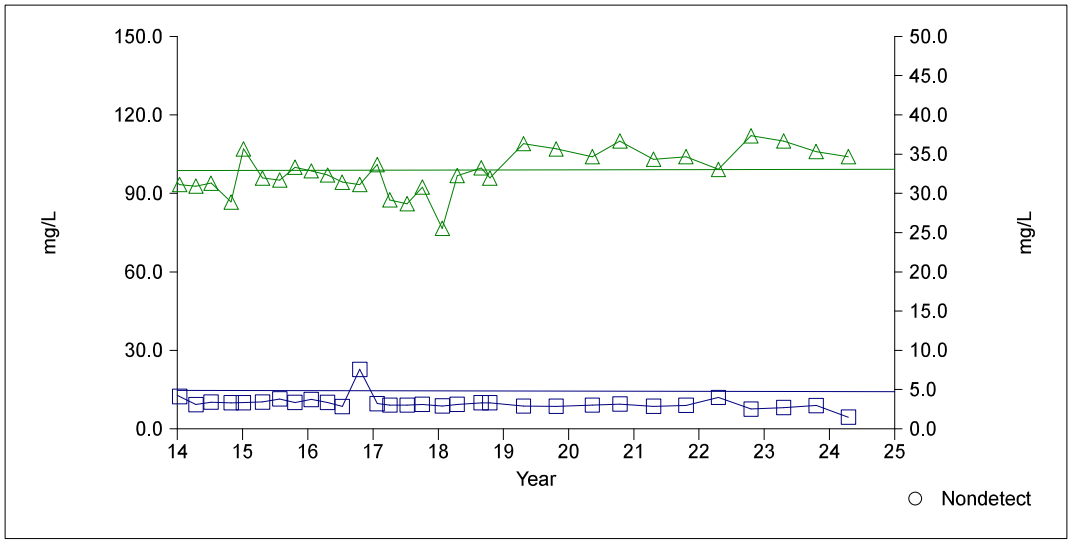
Cathcart Landfill

Time Series Plot for G-08D1



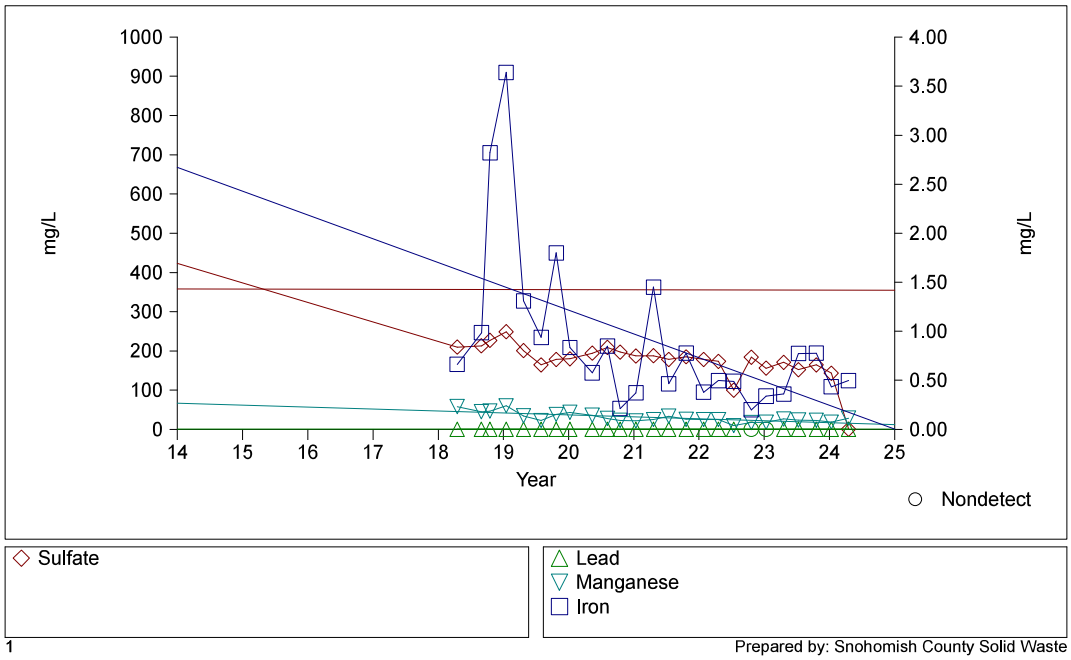
Dissolved sodium
Chloride

1

Prepared by: Snohomish County Solid Waste

Cathcart Landfill

Time Series Plot for G-09S

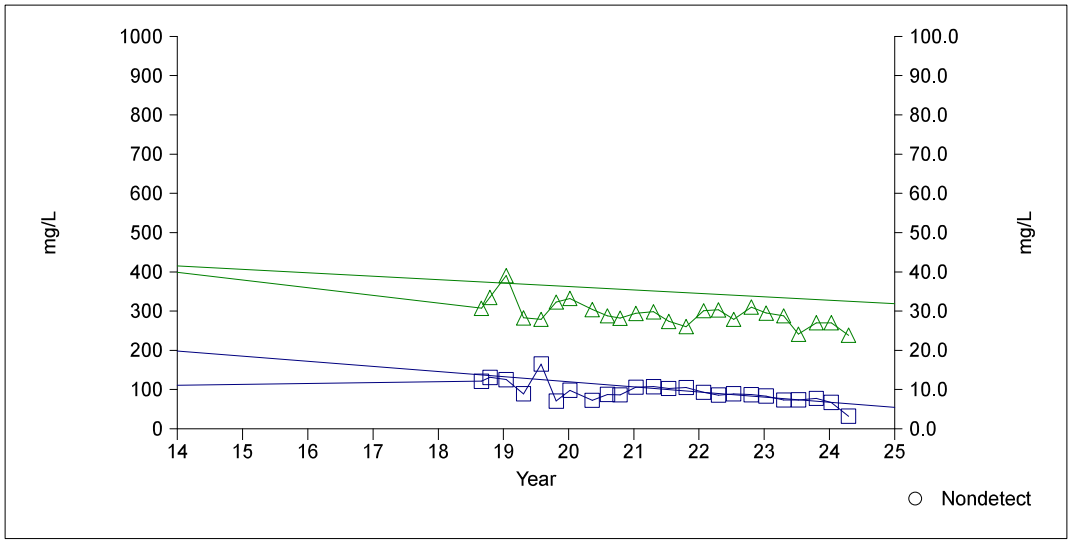


1

Prepared by: Snohomish County Solid Waste

Cathcart Landfill

Time Series Plot for G-10S

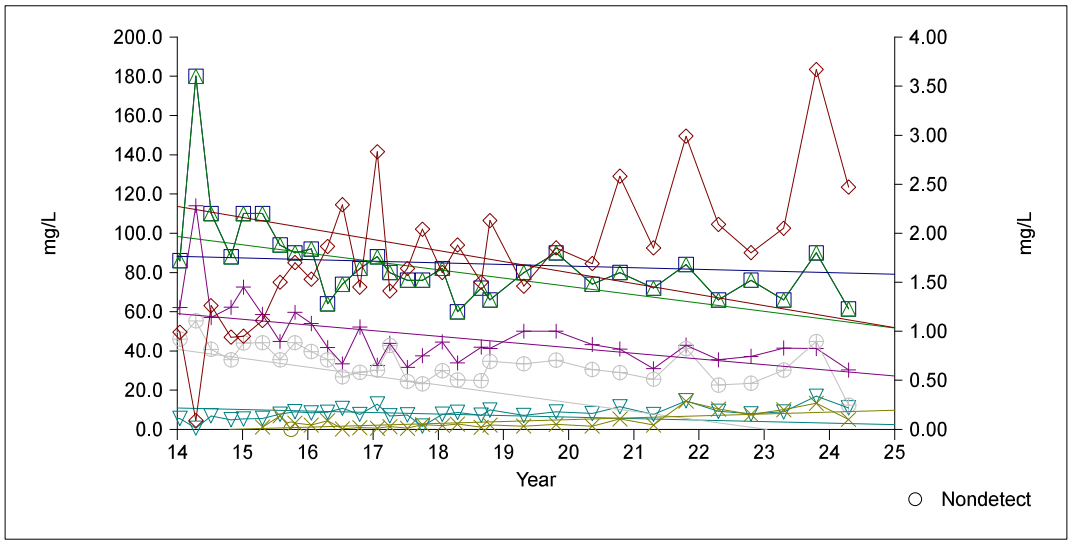


1

Prepared by: Snohomish County Solid Waste

Cathcart Landfill

Time Series Plot for G-11S



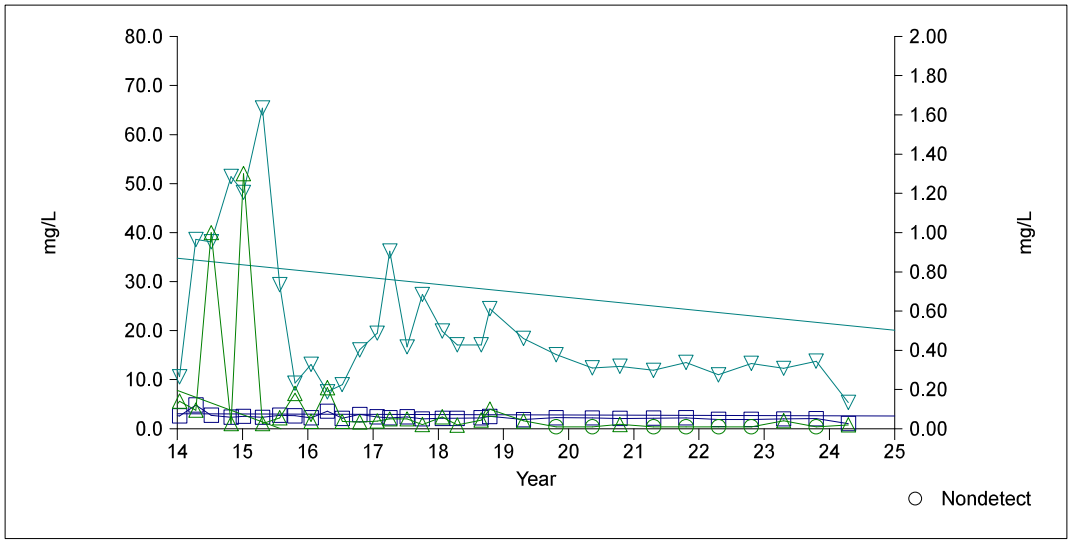
Alkalinity (as caco3)
Bicarbonate
Dissolved calcium
Dissolved sodium
Sulfate
Manganese
Dissolved magnesium

1

Prepared by: Snohomish County Solid Waste

Cathcart Landfill

Time Series Plot for G-14S



Chloride
Sulfate
Nitrate nitrogen

1

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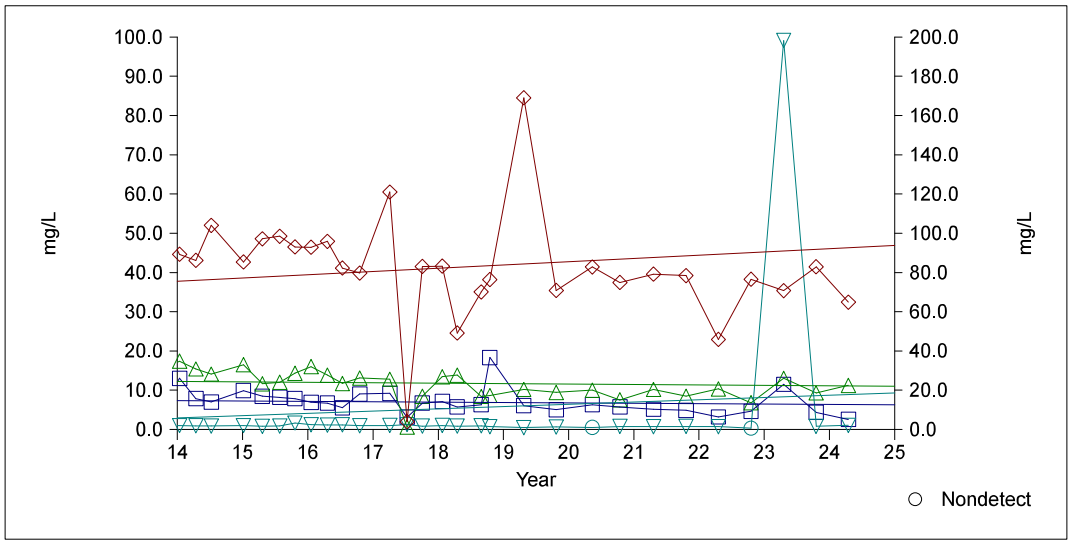
Cathcart Landfill

Time Series Plot for G-24S



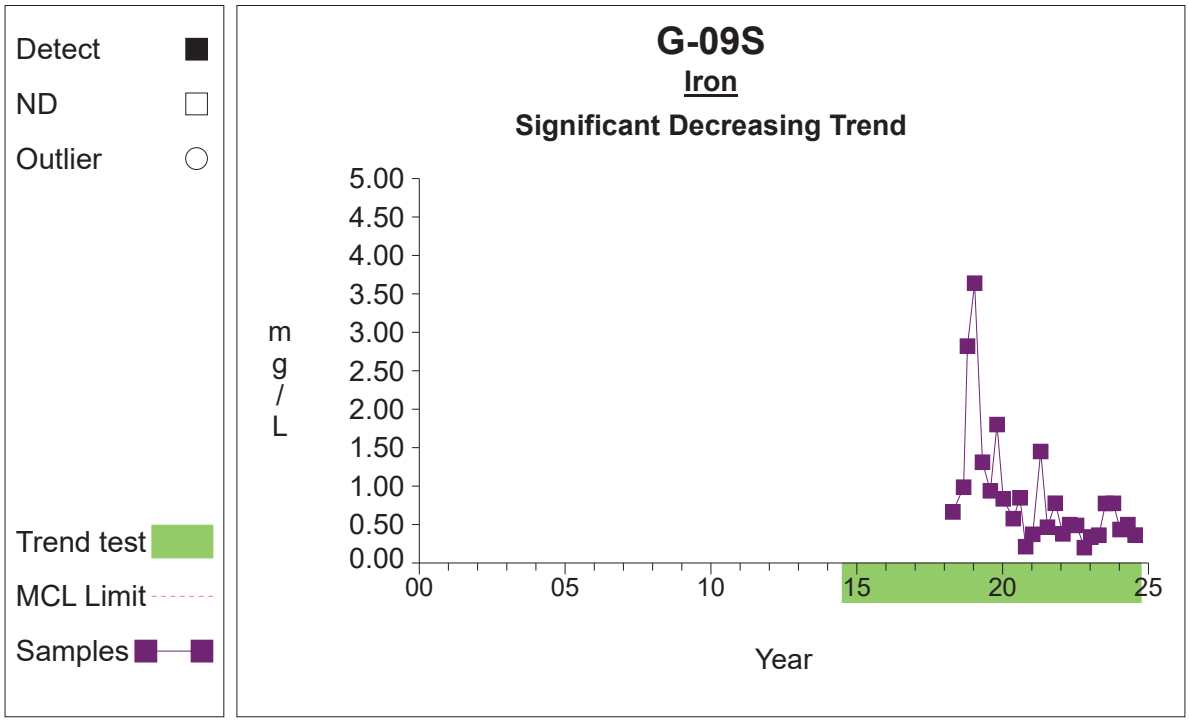
Chloride
Dissolved calcium
Dissolved potassium

Sulfate

1

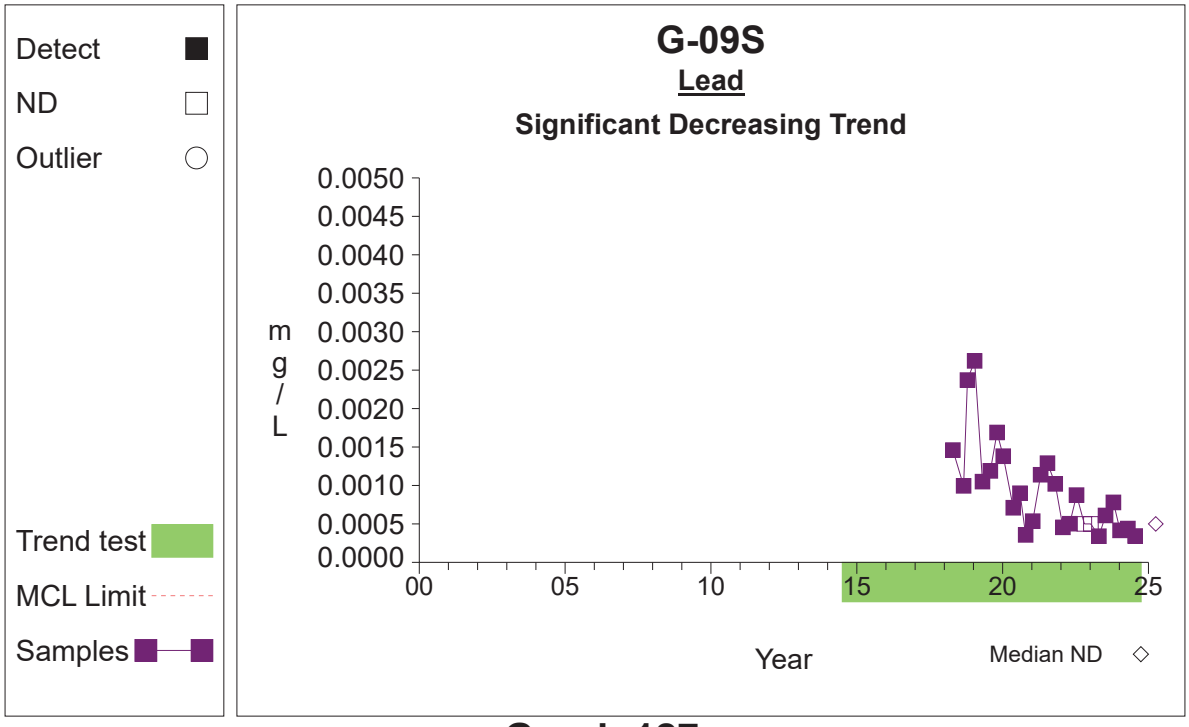
Prepared by: Snohomish County Solid Waste

Time Series



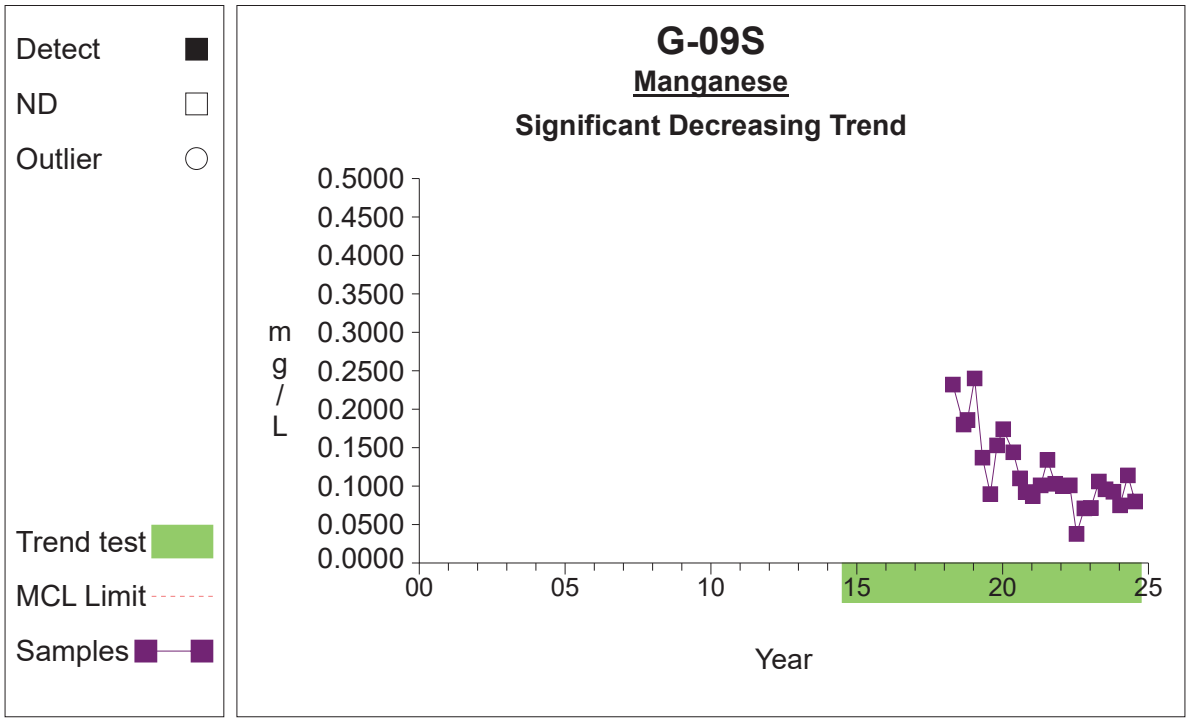
Graph 126

Time Series



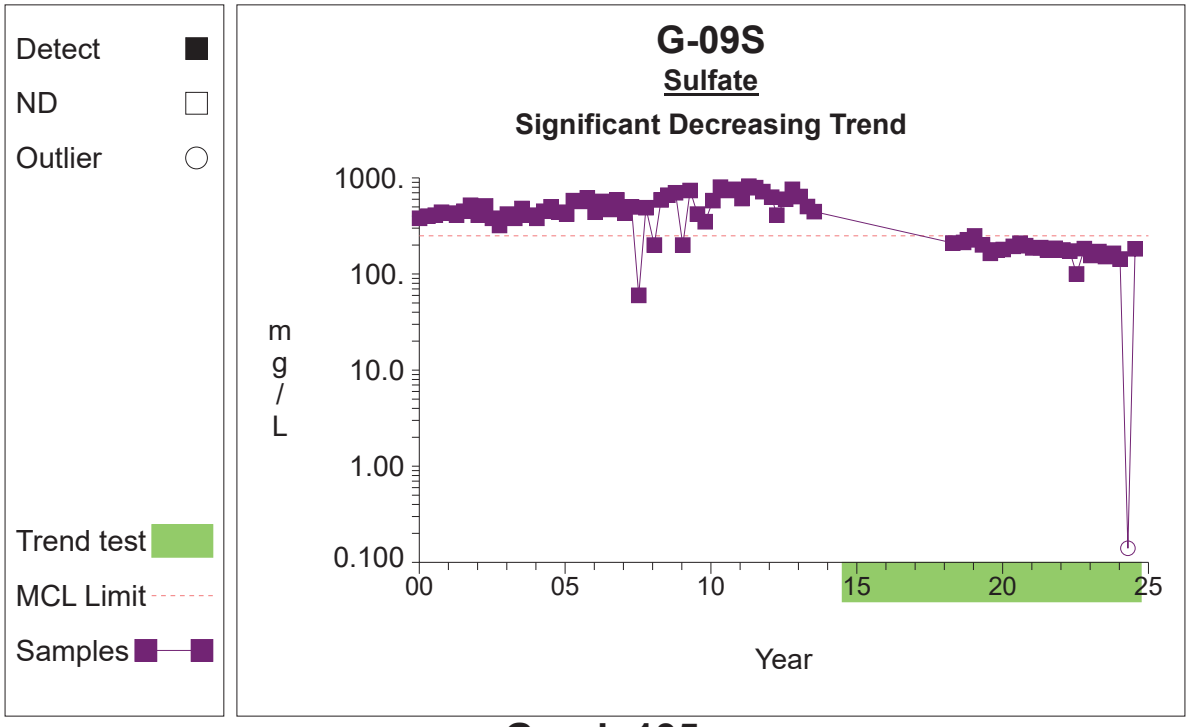
Graph 127

Time Series



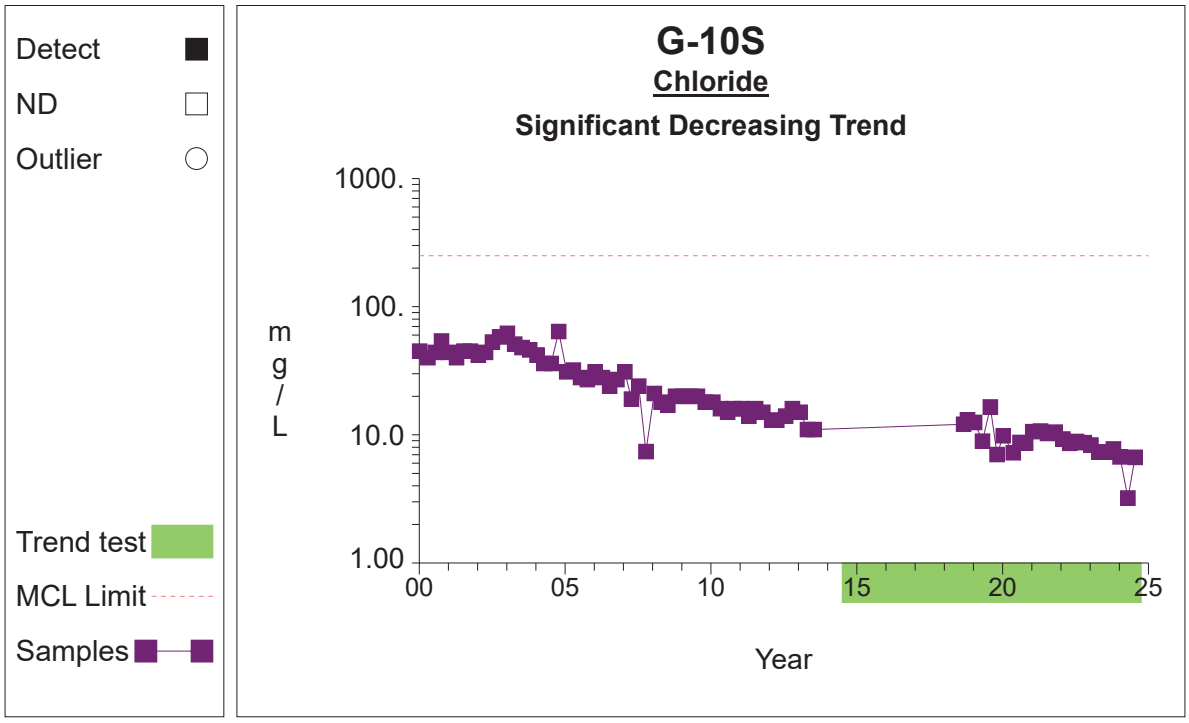
Graph 128

Time Series



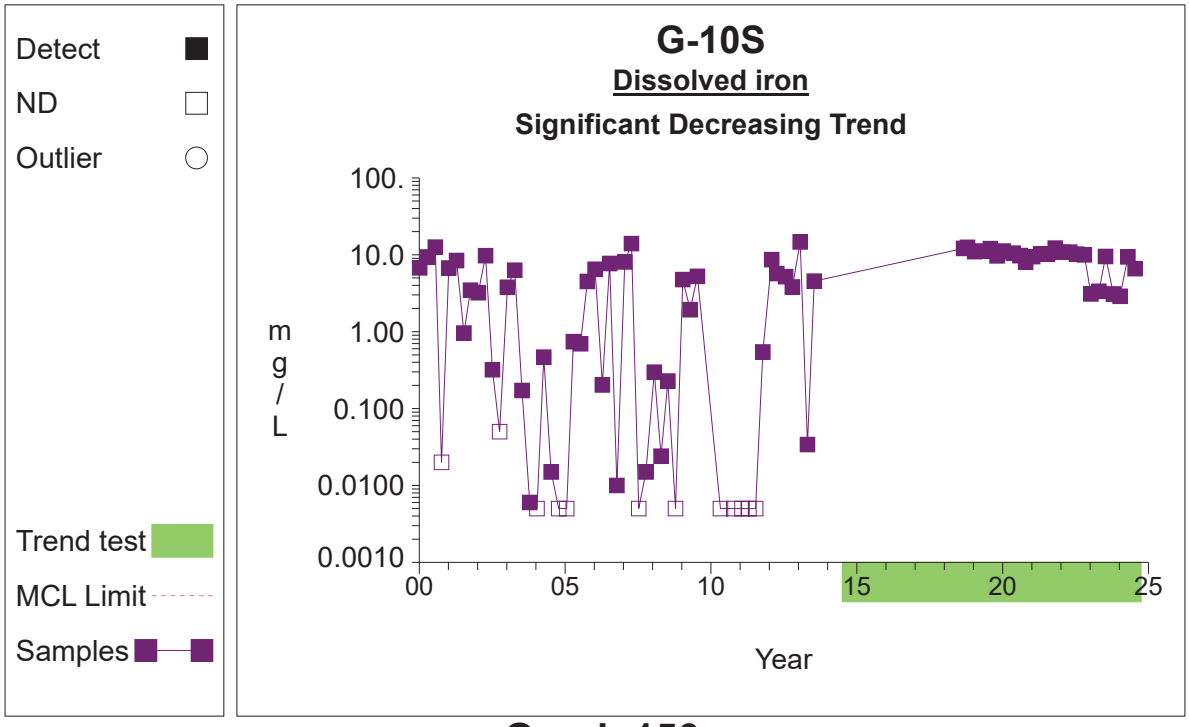
Graph 135

Time Series



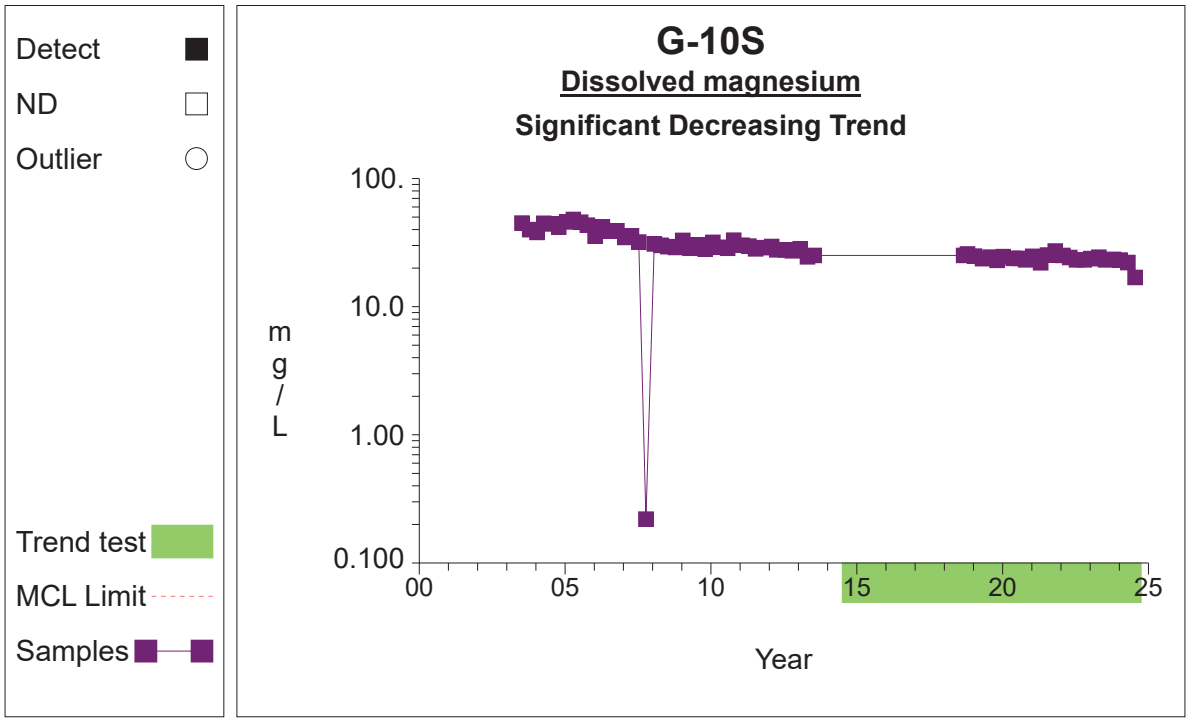
Graph 150

Time Series



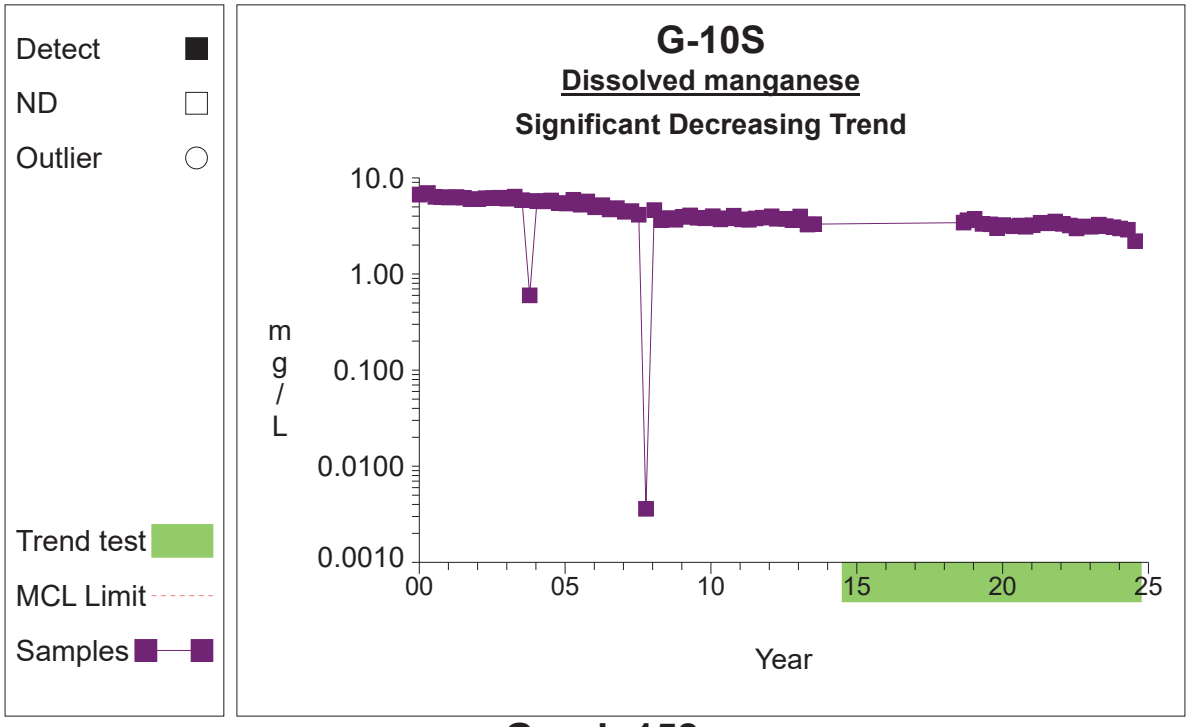
Graph 156

Time Series



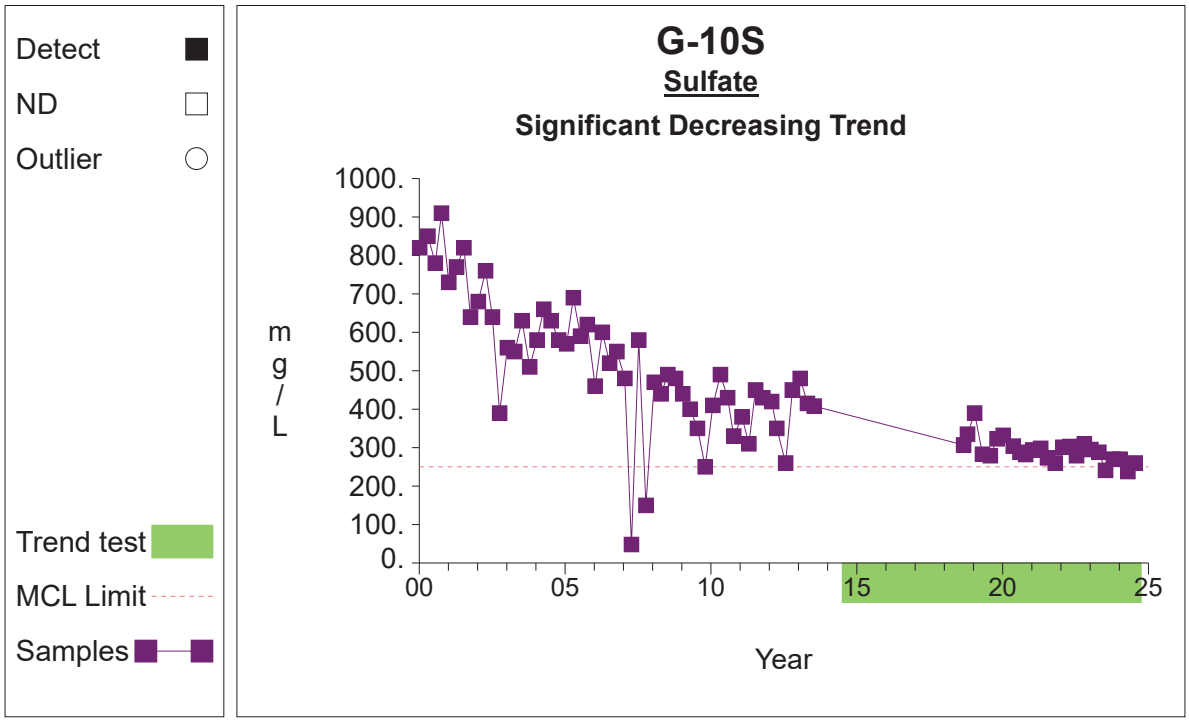
Graph 157

Time Series



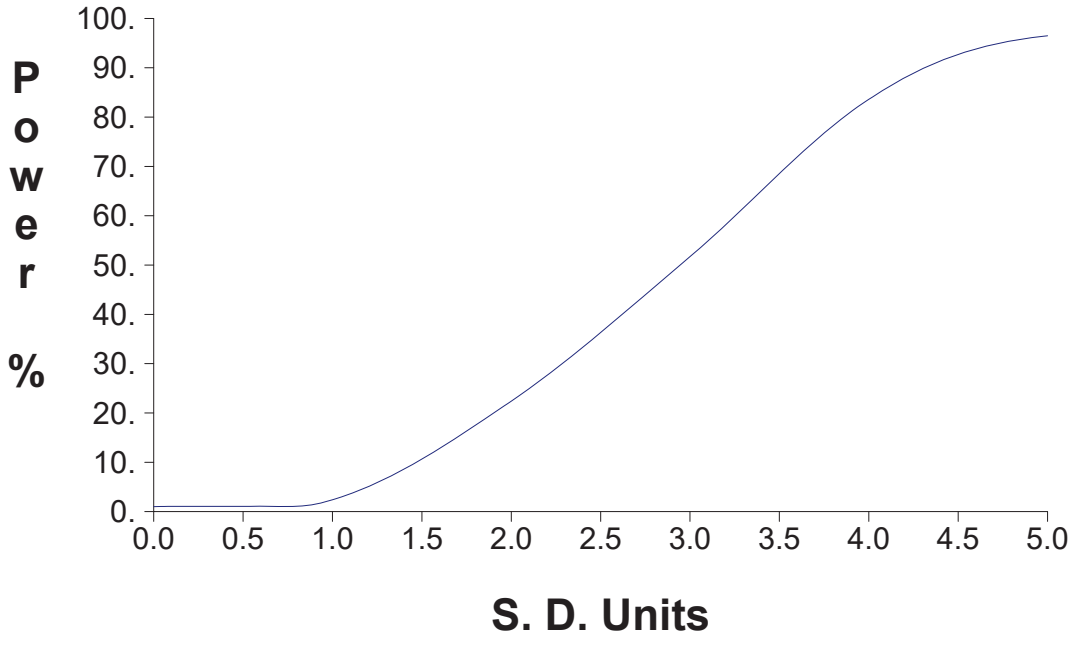
Graph 158

Time Series

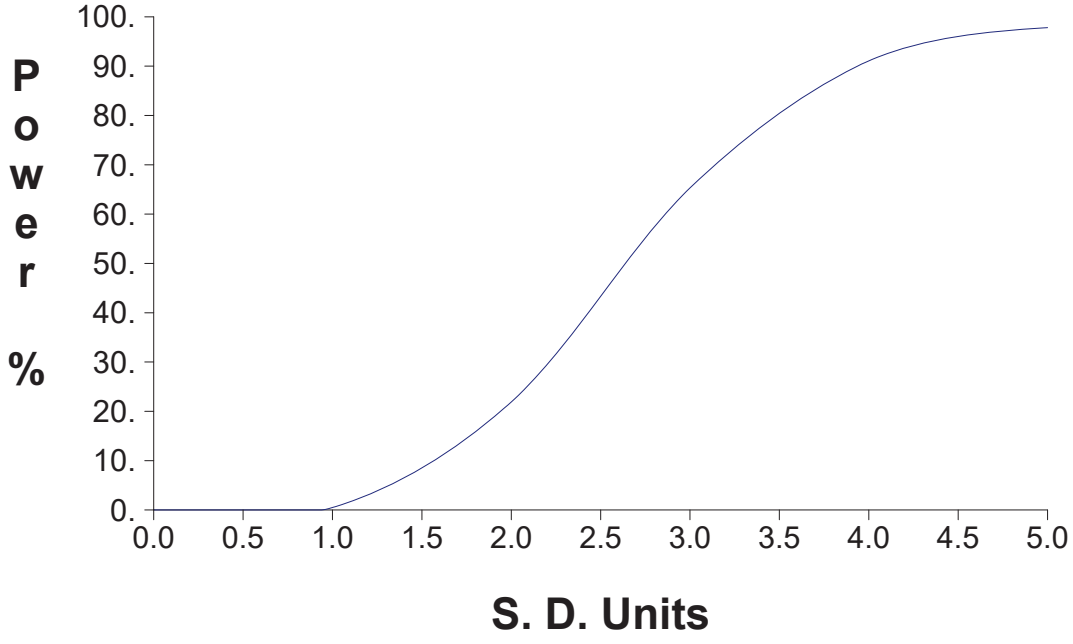


Graph 170

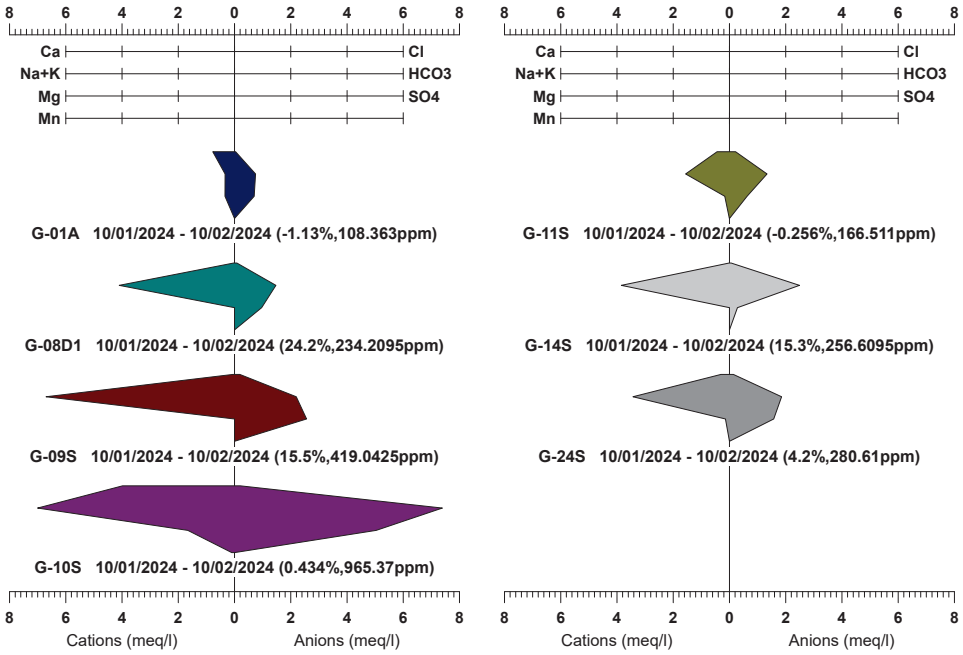
False Positive and False Negative Rates for Current Intra-Well Prediction Limits Monitoring Program



False Positive and False Negative Rates for Current Upgradient vs. Downgradient Monitoring Program



Cathcart Landfill



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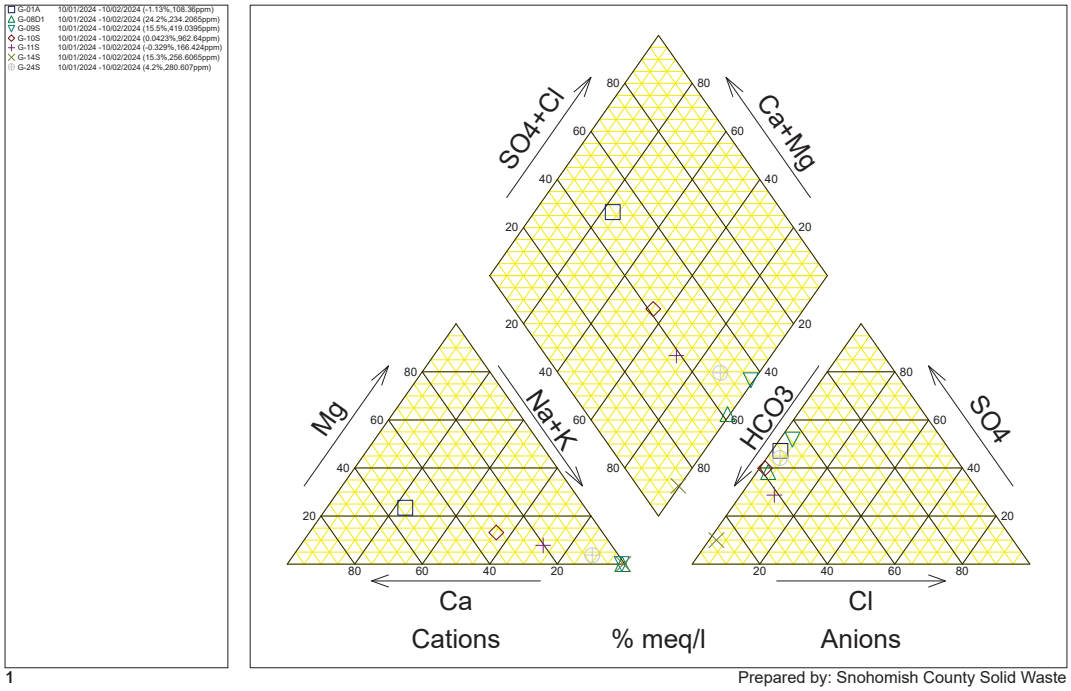
Cathcart Landfill



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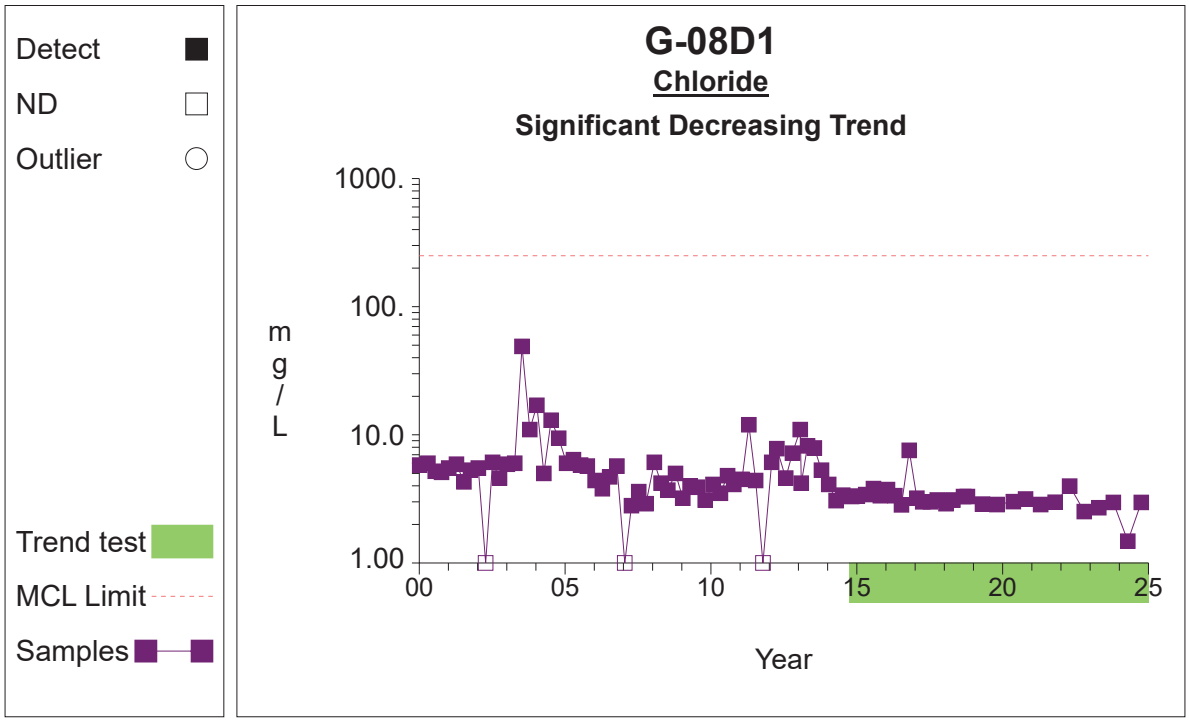
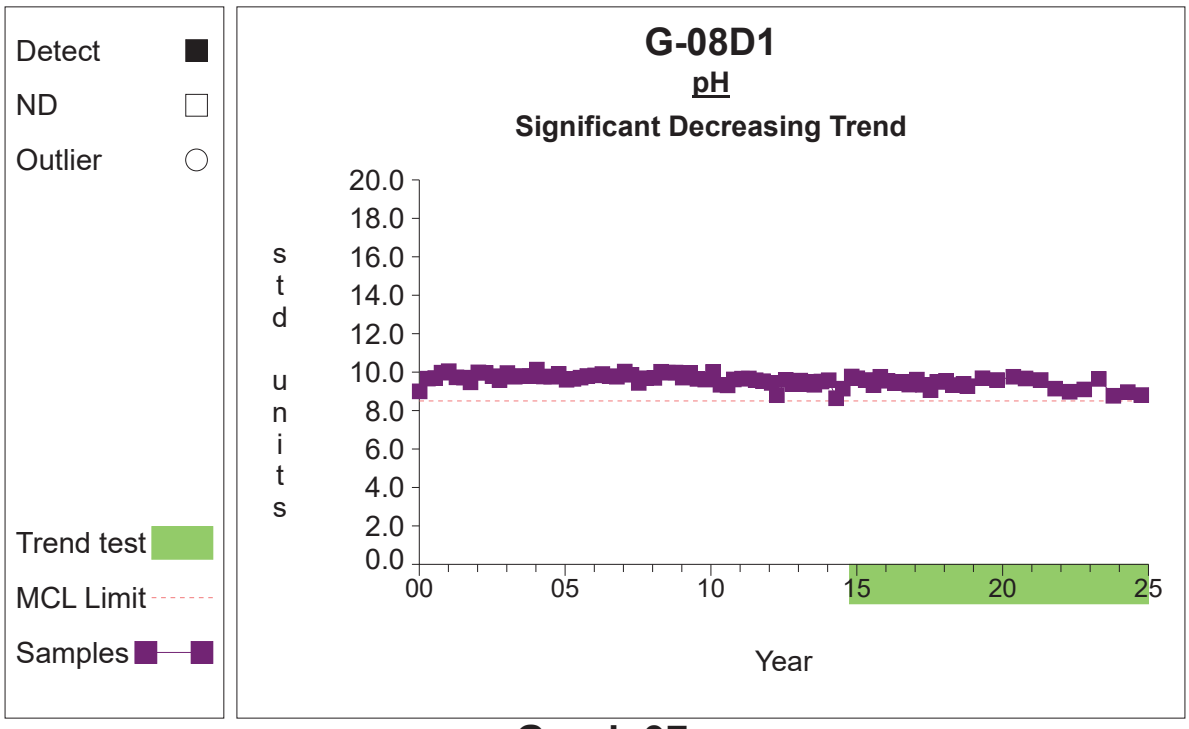
Time Series



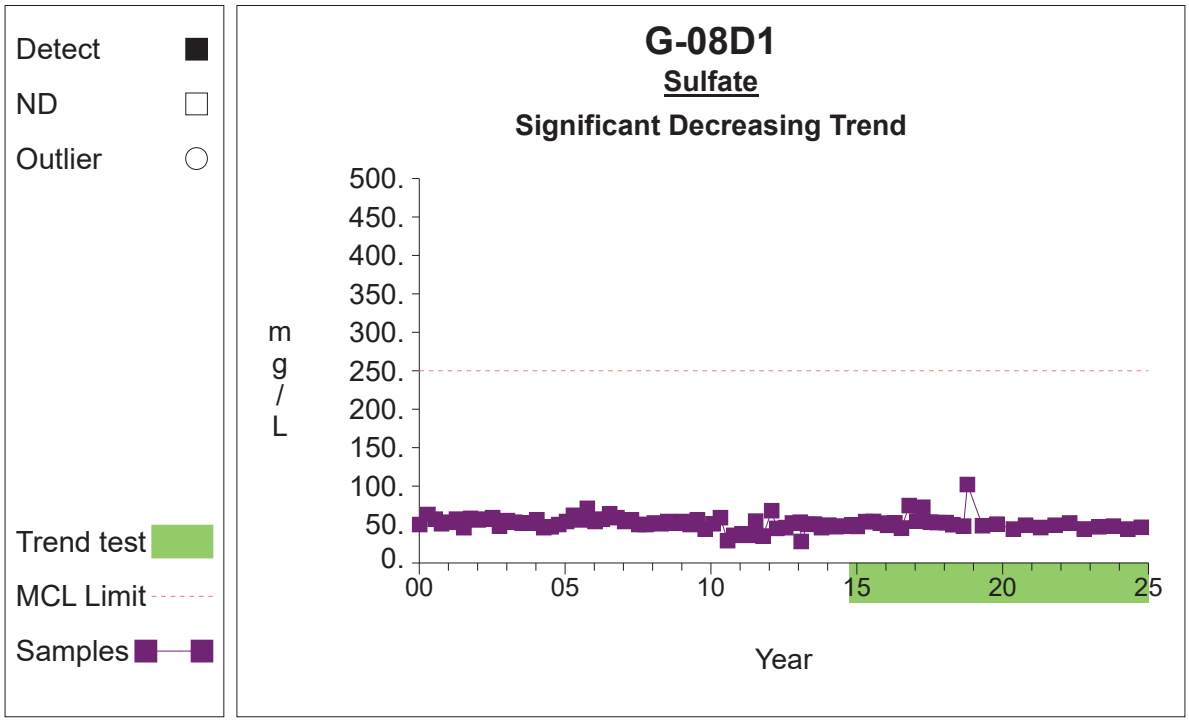
Graph 80

Time Series



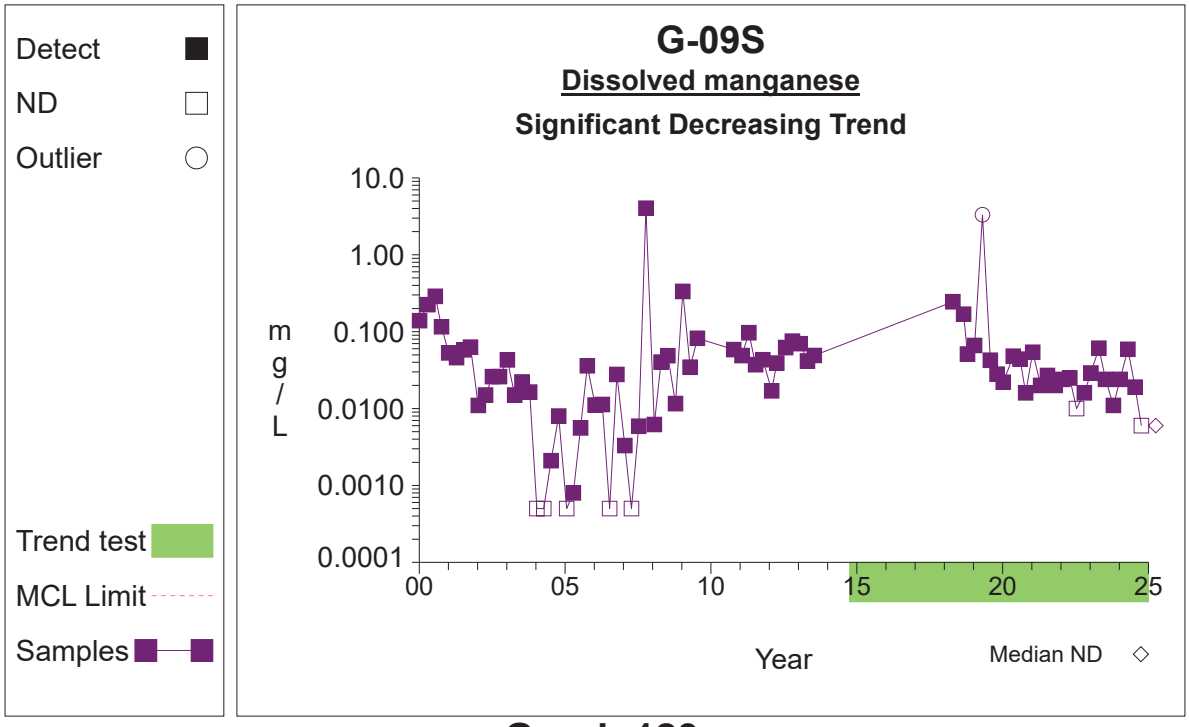
Graph 97

Time Series



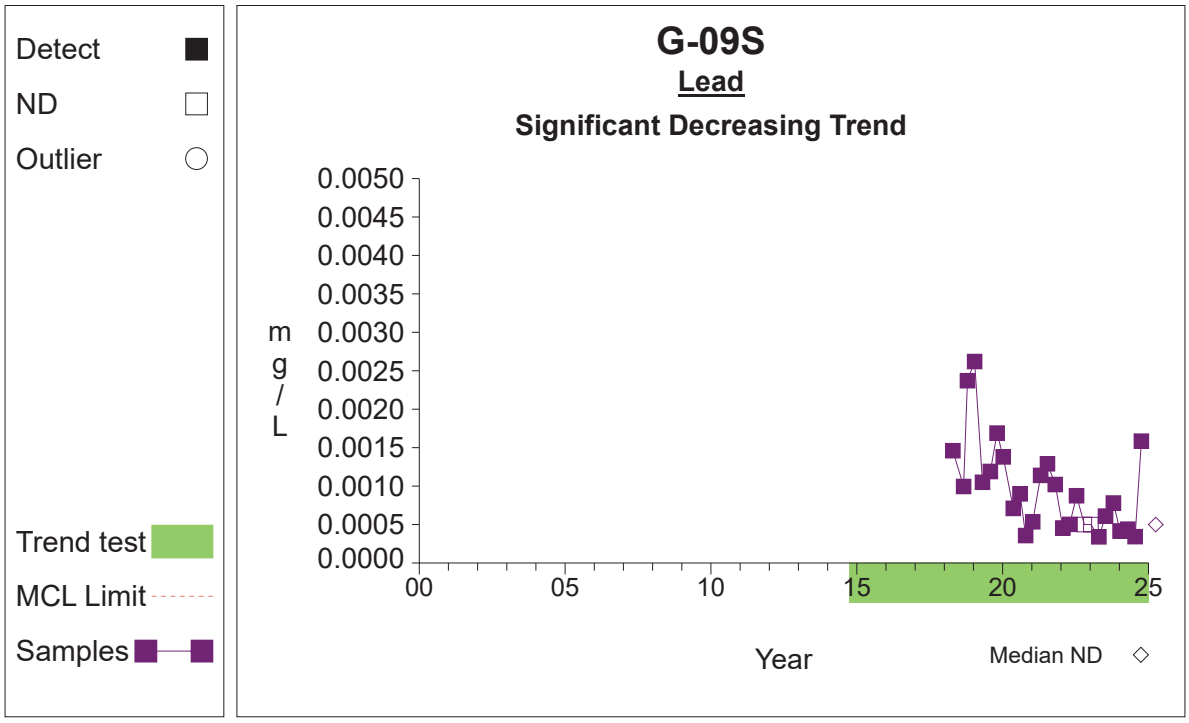
Graph 100

Time Series



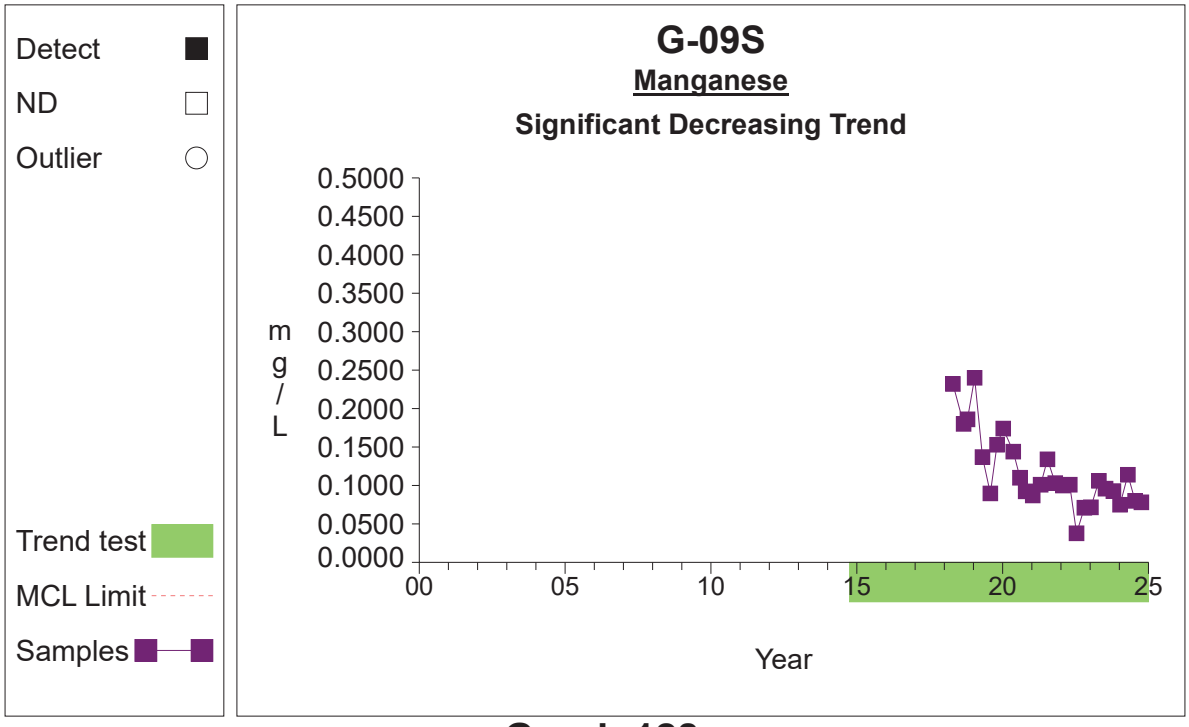
Graph 123

Time Series



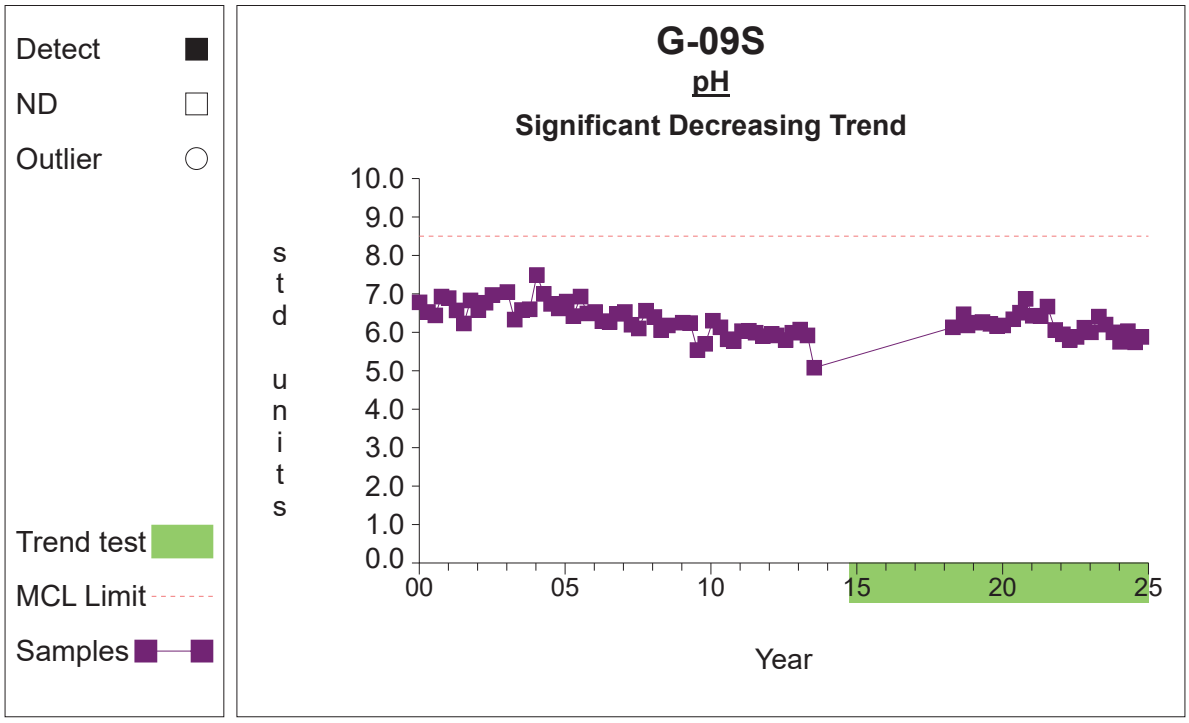
Graph 127

Time Series



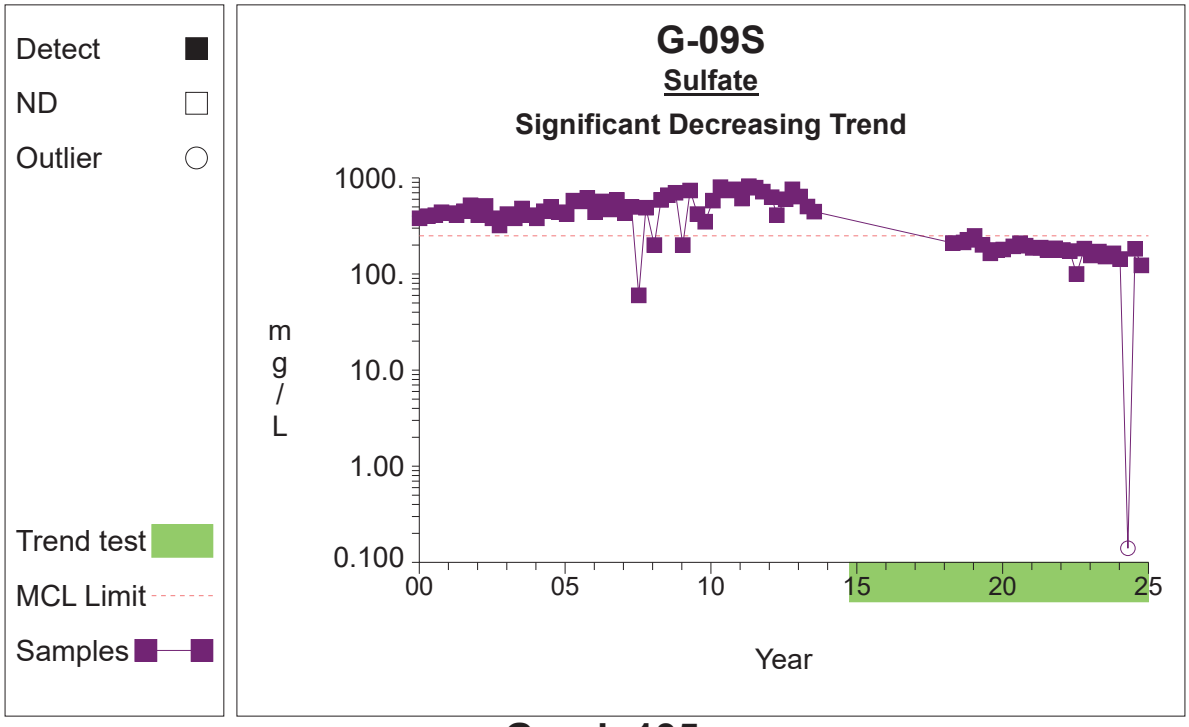
Graph 128

Time Series



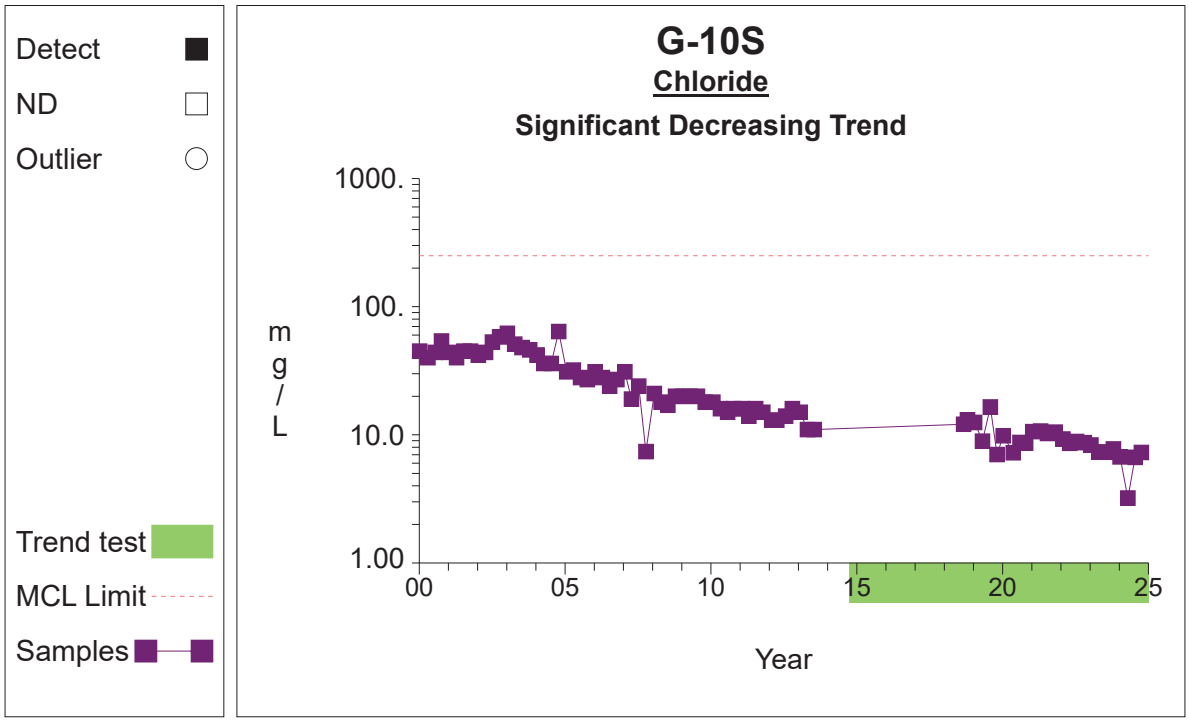
Graph 132

Time Series



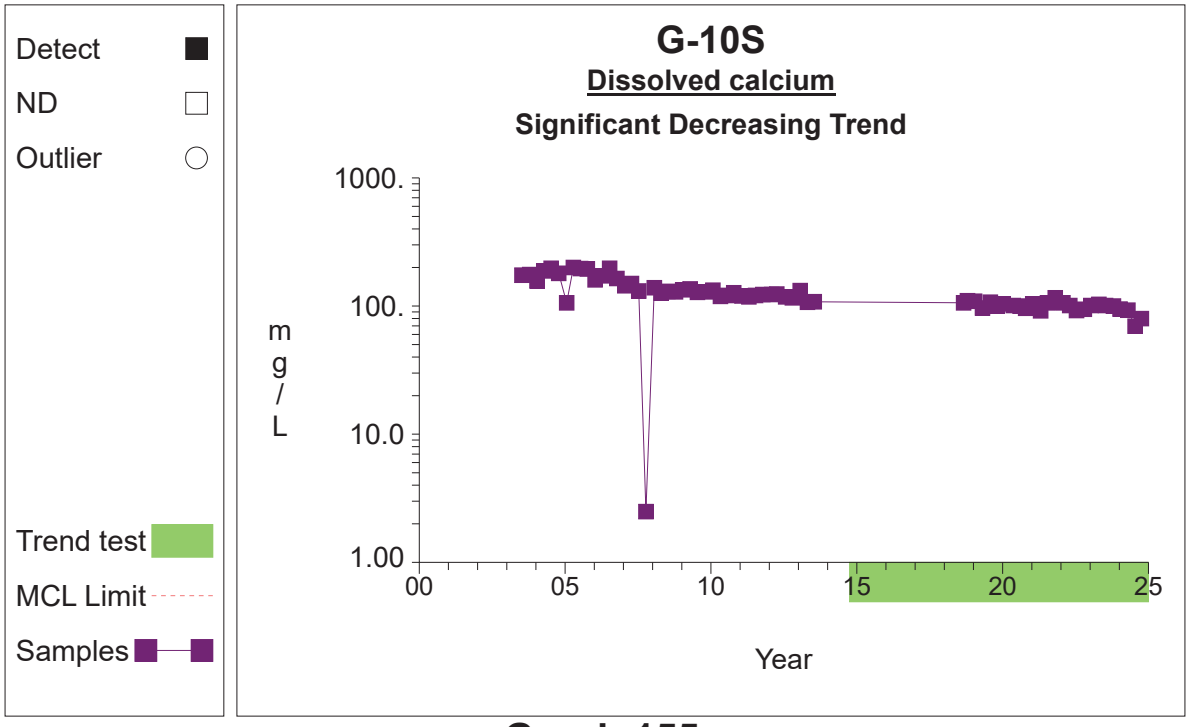
Graph 135

Time Series



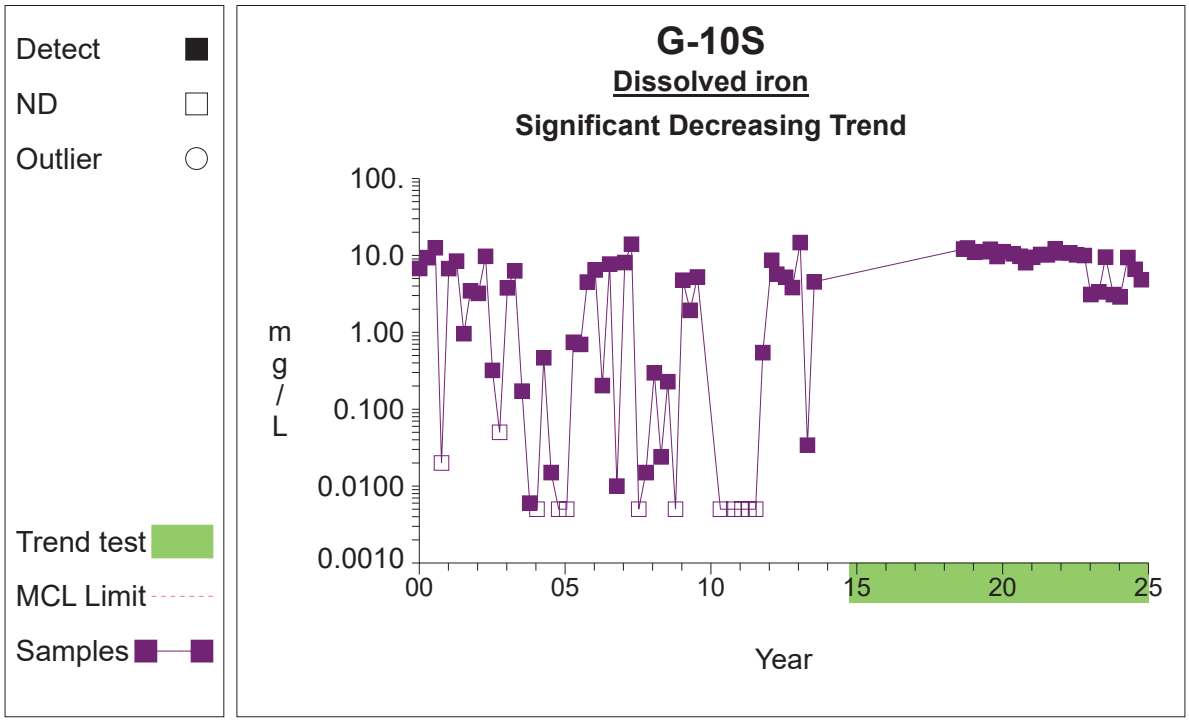
Graph 150

Time Series



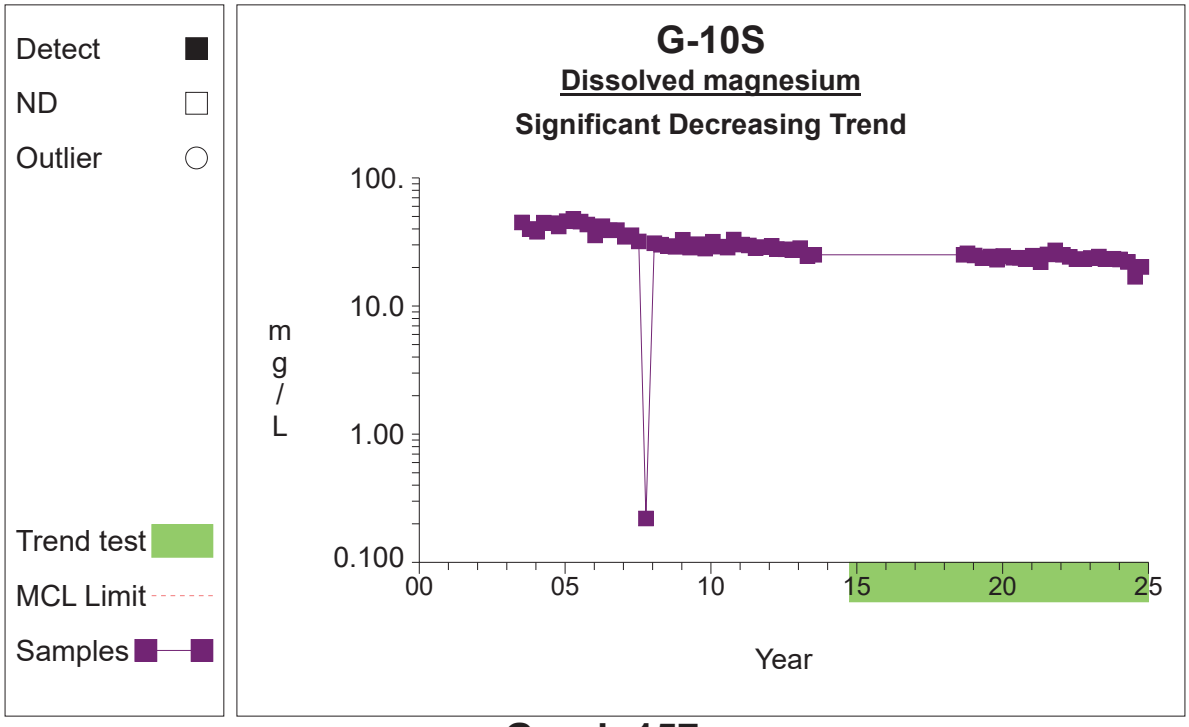
Graph 155

Time Series



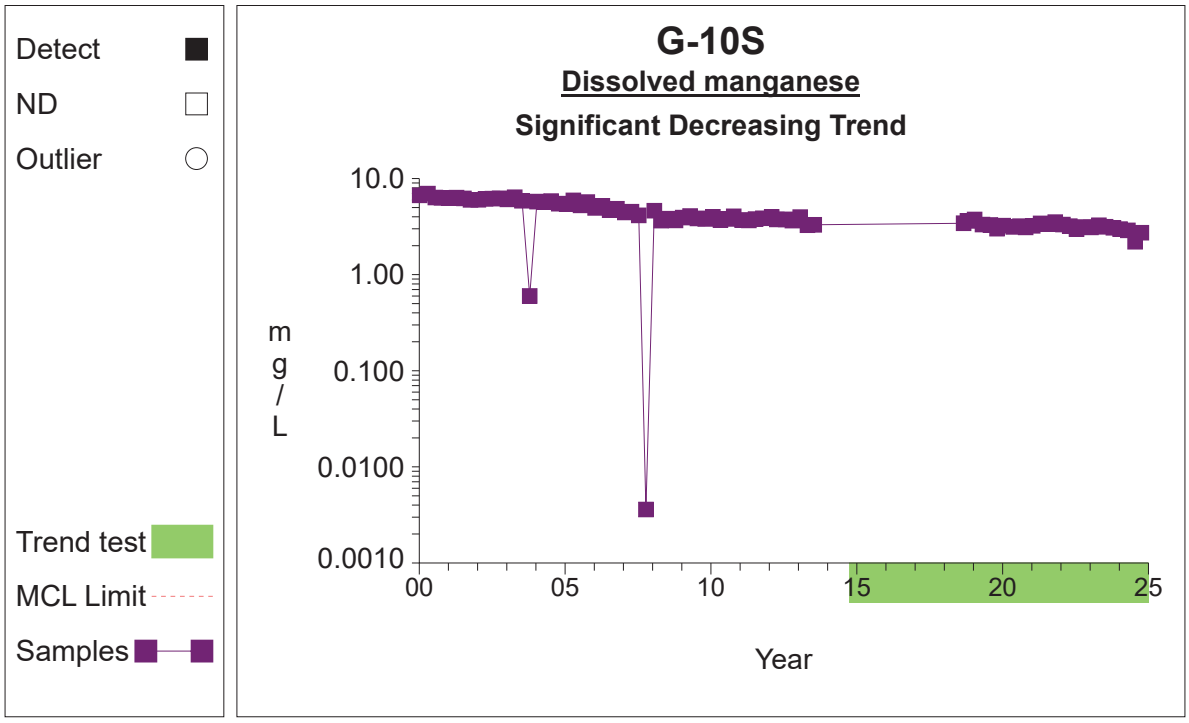
Graph 156

Time Series



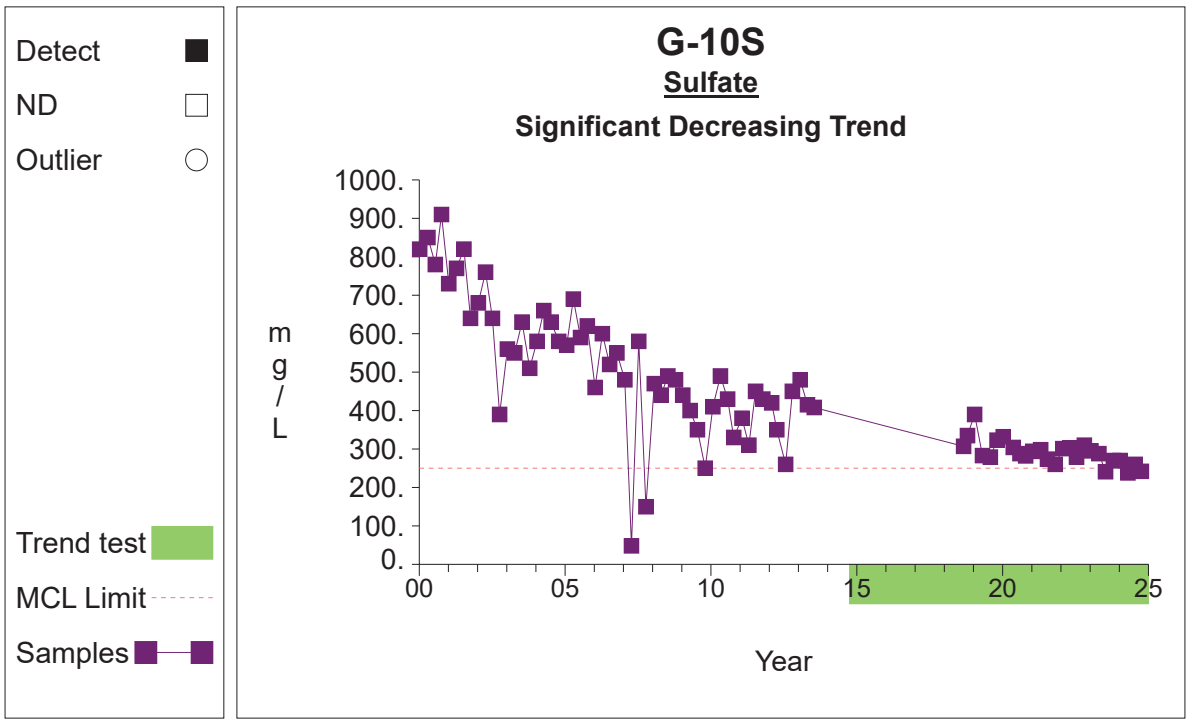
Graph 157

Time Series



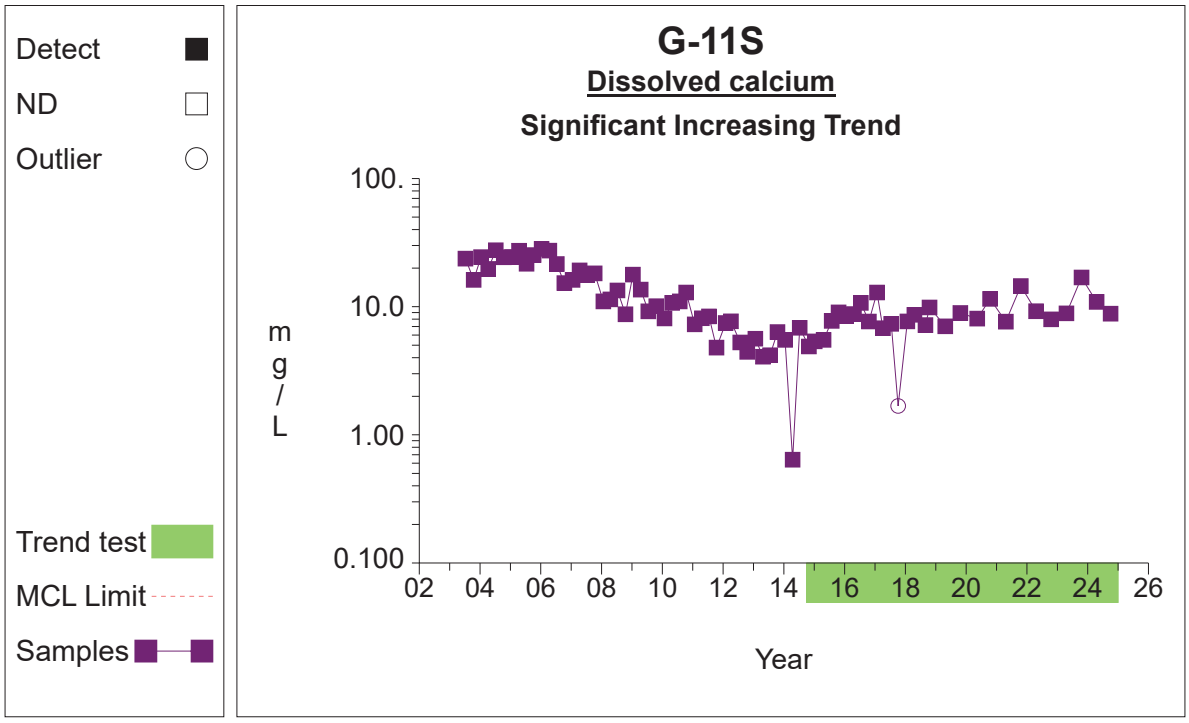
Graph 158

Time Series



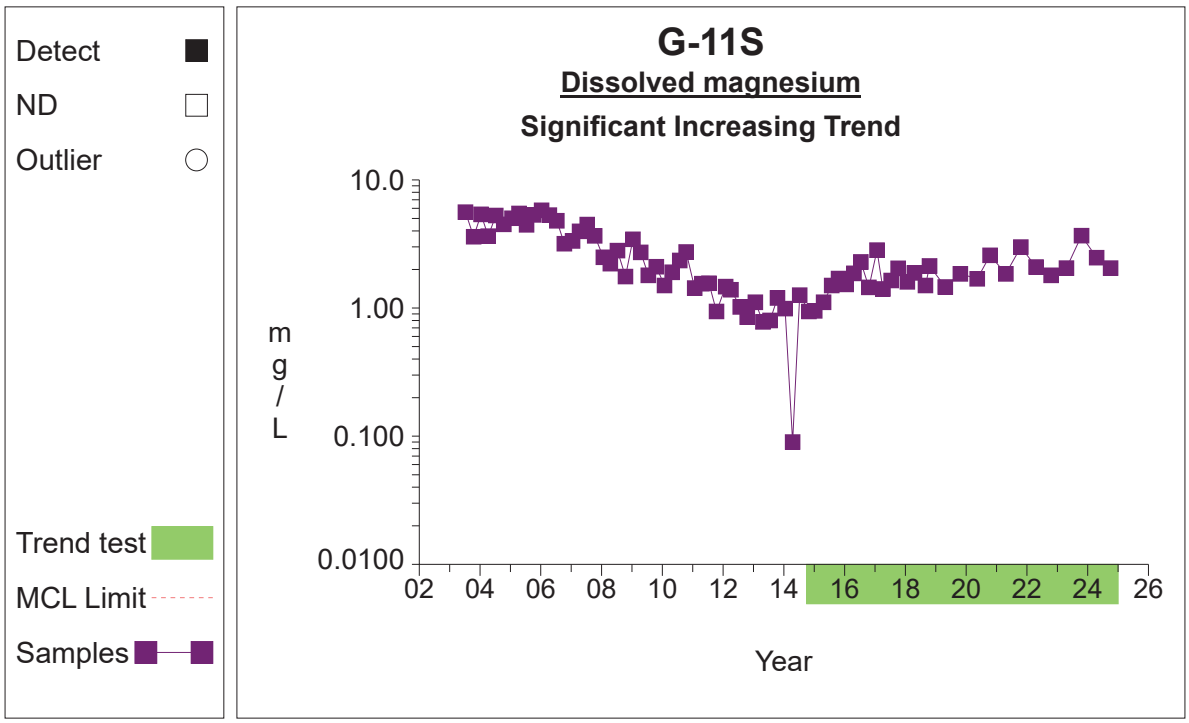
Graph 170

Time Series



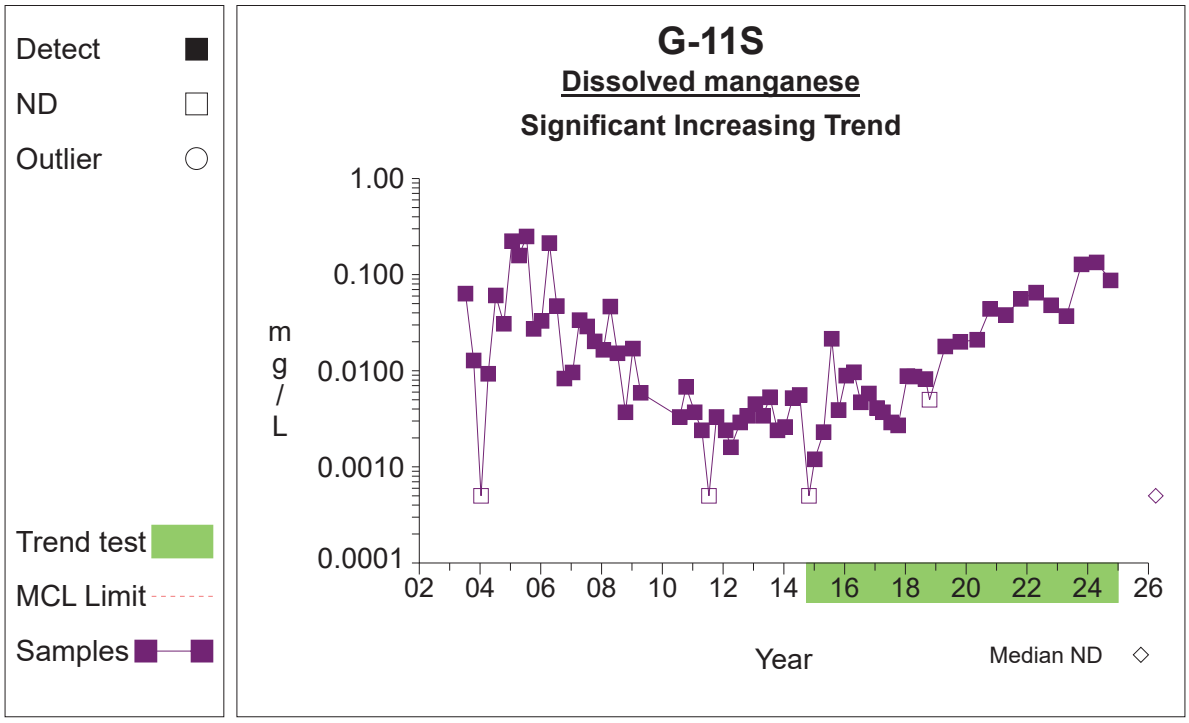
Graph 190

Time Series



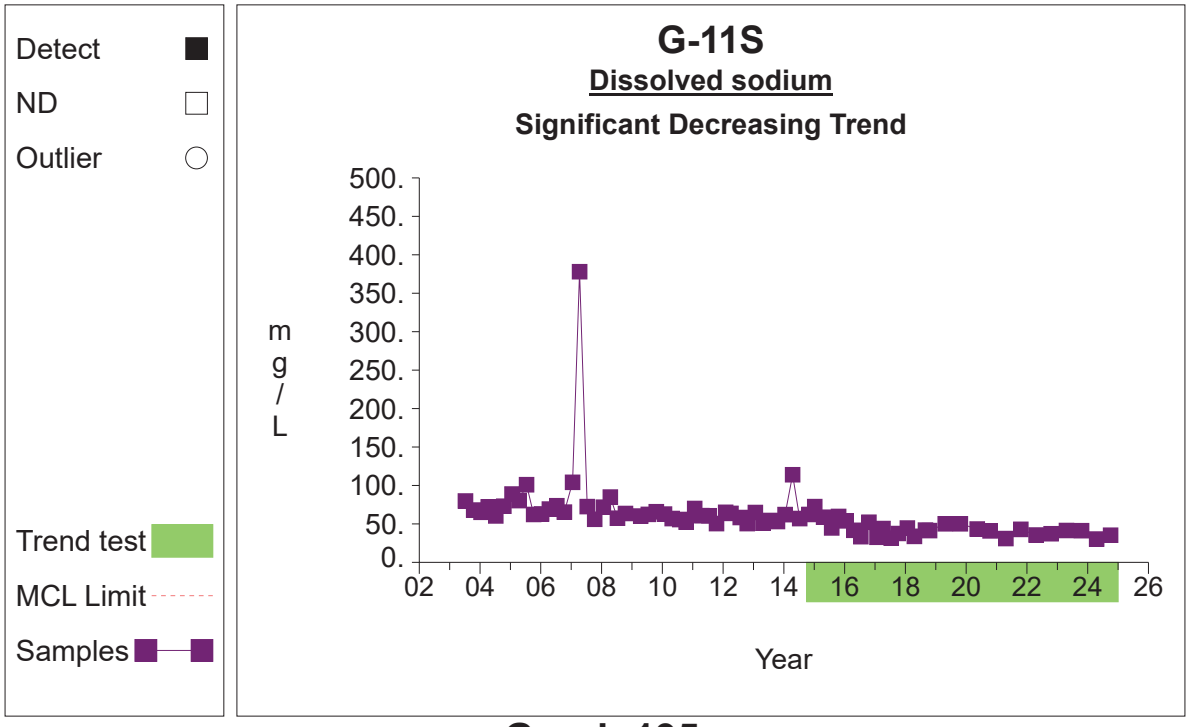
Graph 192

Time Series



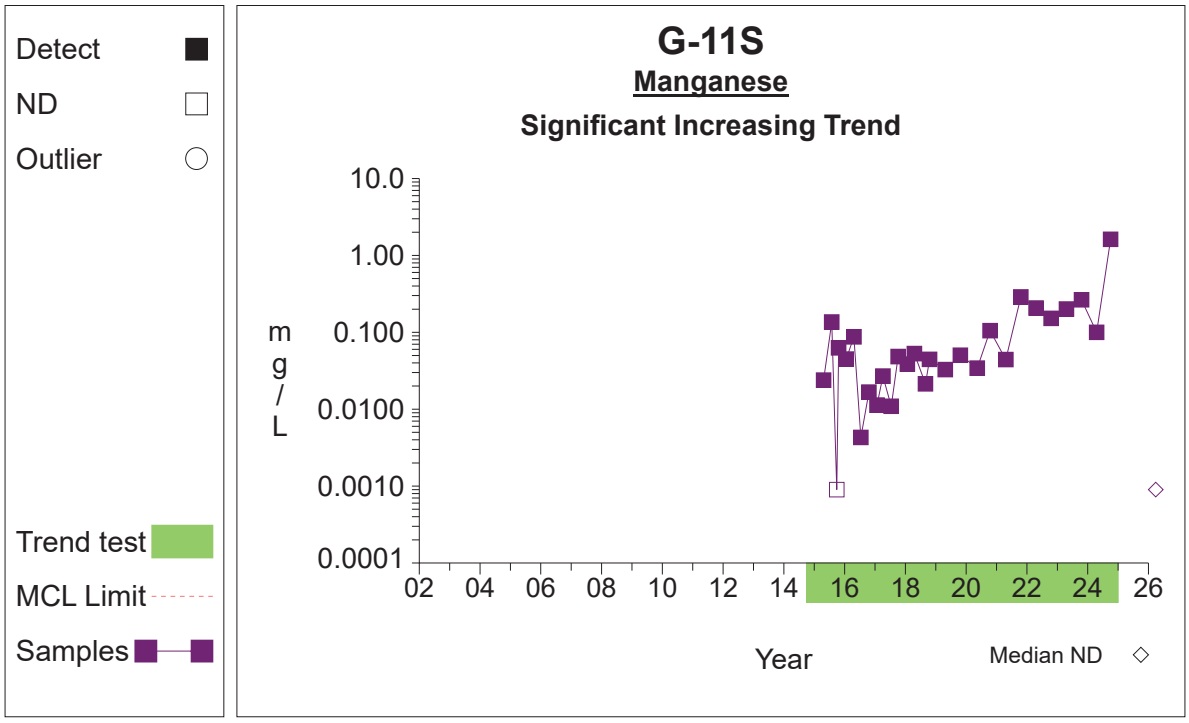
Graph 193

Time Series



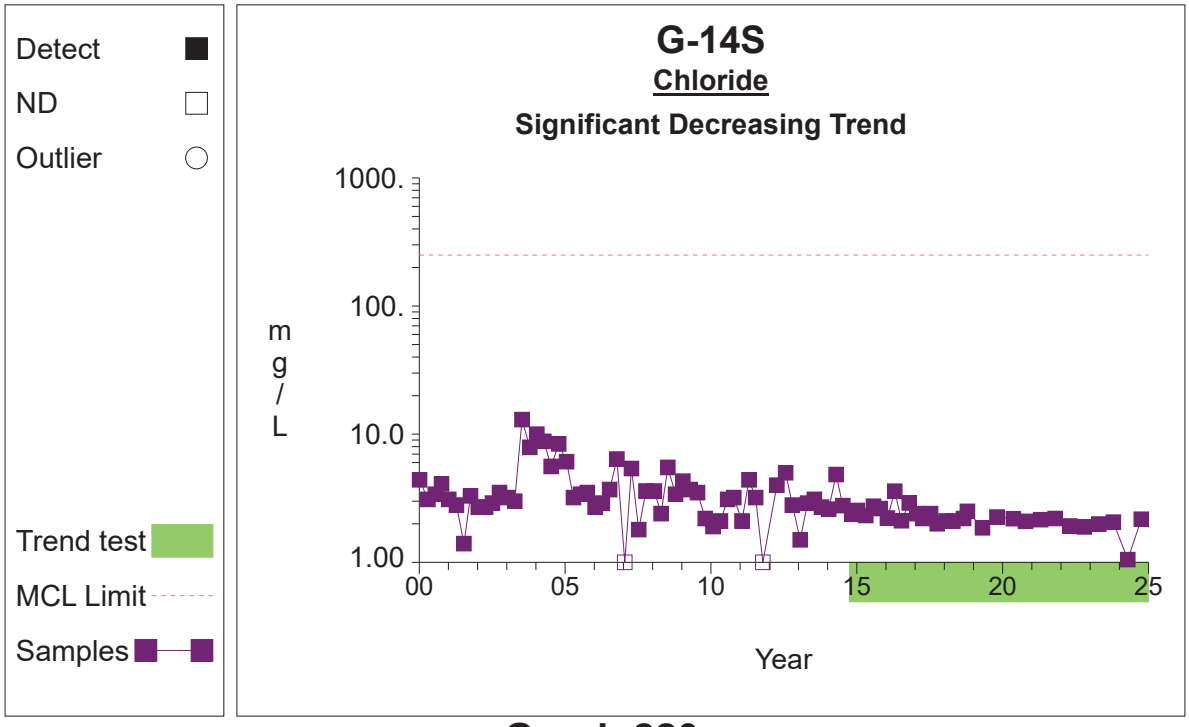
Graph 195

Time Series



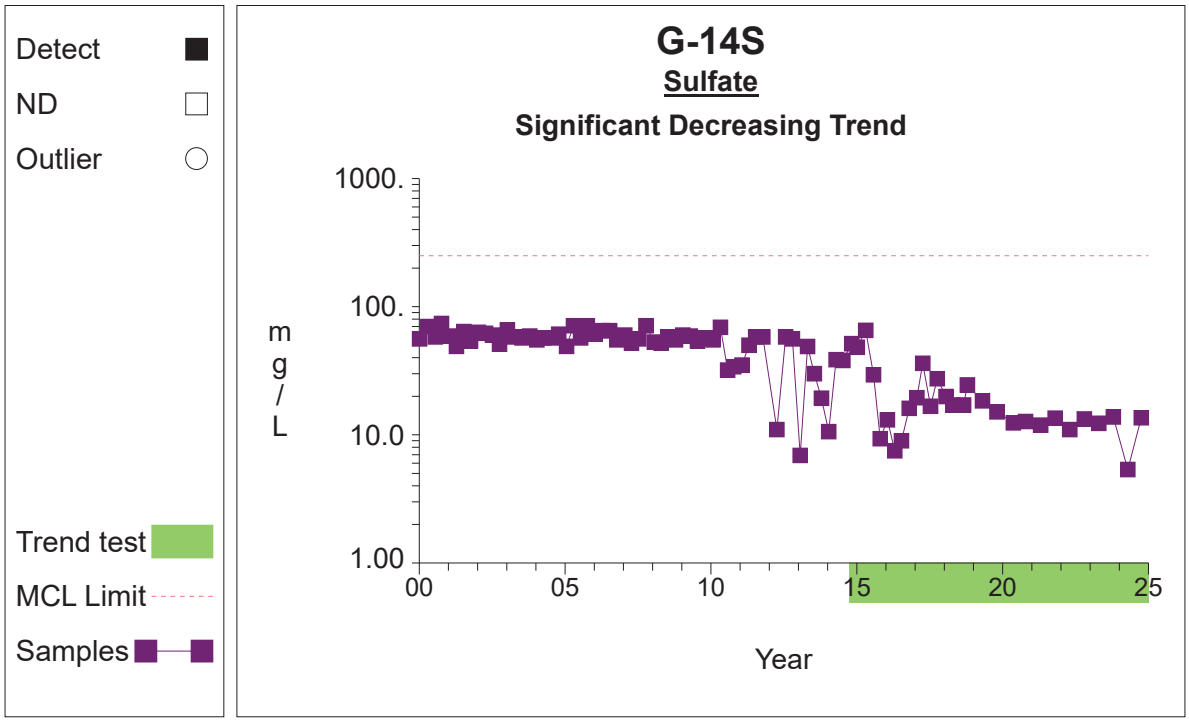
Graph 198

Time Series



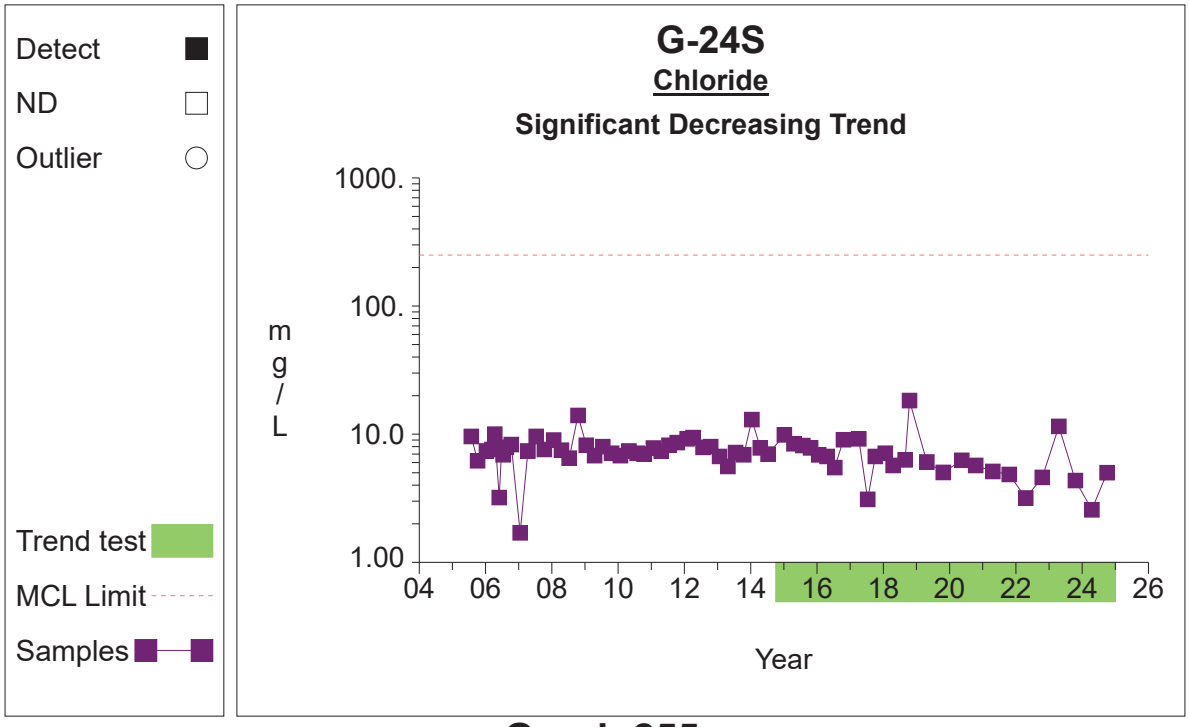
Graph 220

Time Series



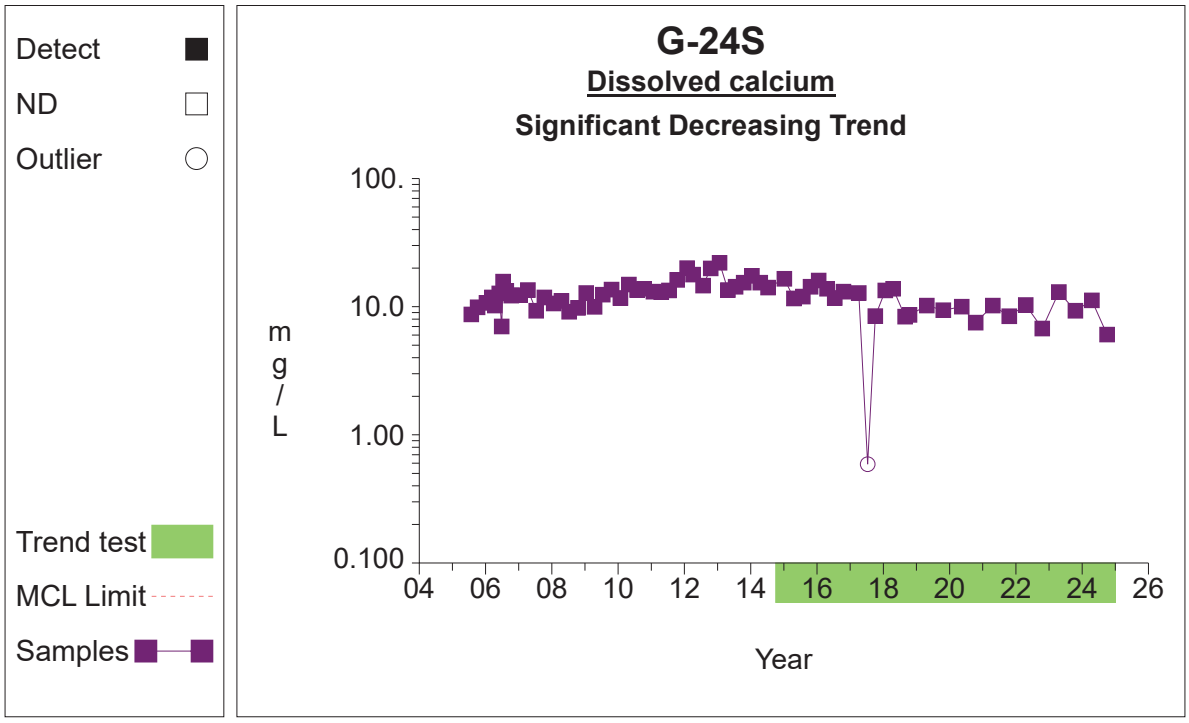
Graph 240

Time Series



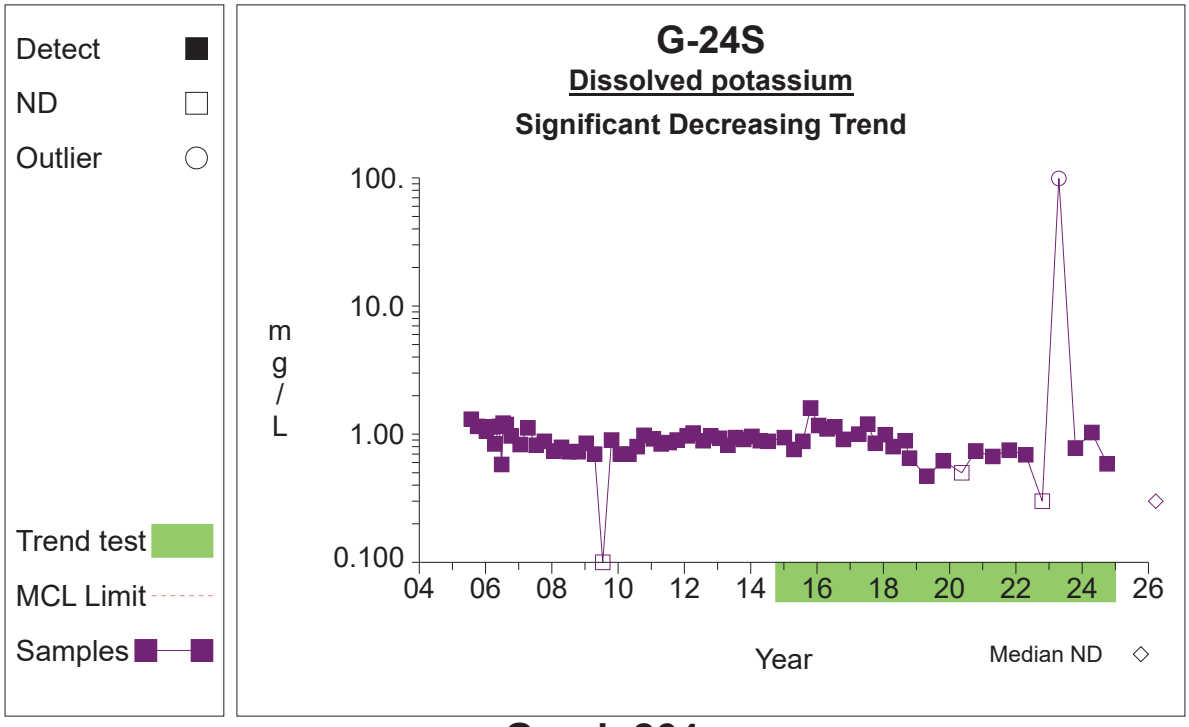
Graph 255

Time Series



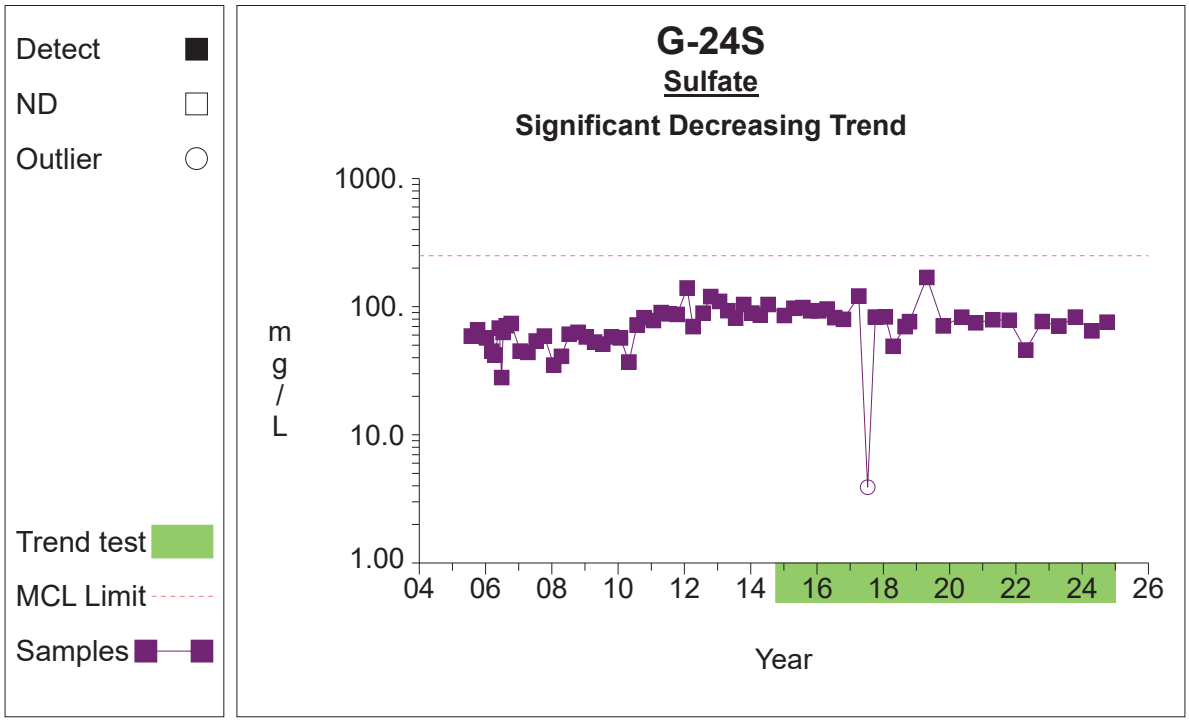
Graph 260

Time Series



Graph 264

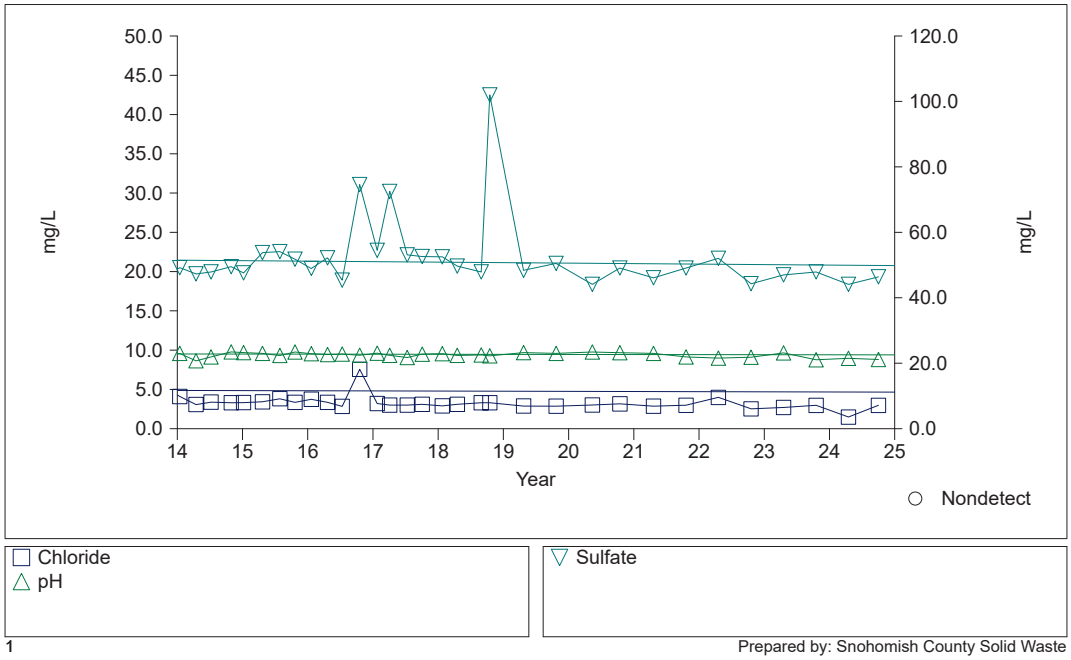
Time Series



Graph 275

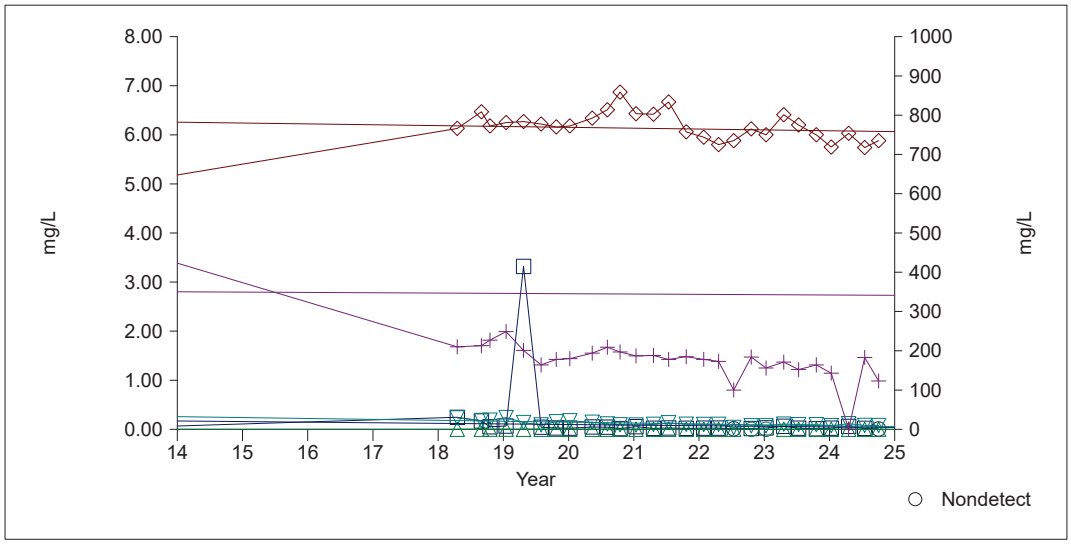
Cathcart Landfill

Time Series Plot for G-08D1



Cathcart Landfill

Time Series Plot for G-09S



Dissolved manganese
Lead
Manganese
pH
Sulfate

1

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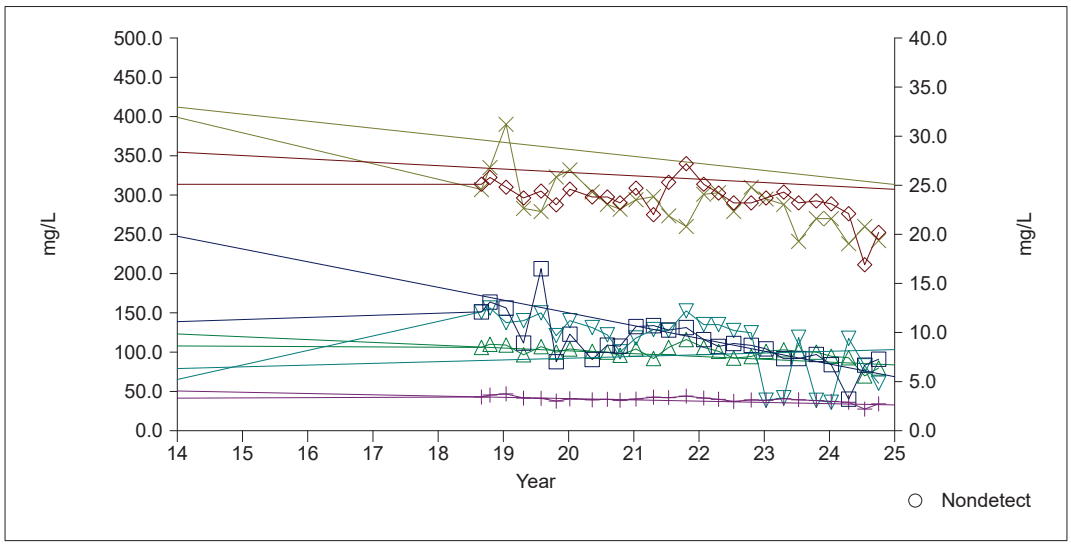
Cathcart Landfill

Time Series Plot for G-10S



Dissolved calcium
Sulfate
Dissolved iron
Dissolved manganese
Chloride
Dissolved magnesium

1

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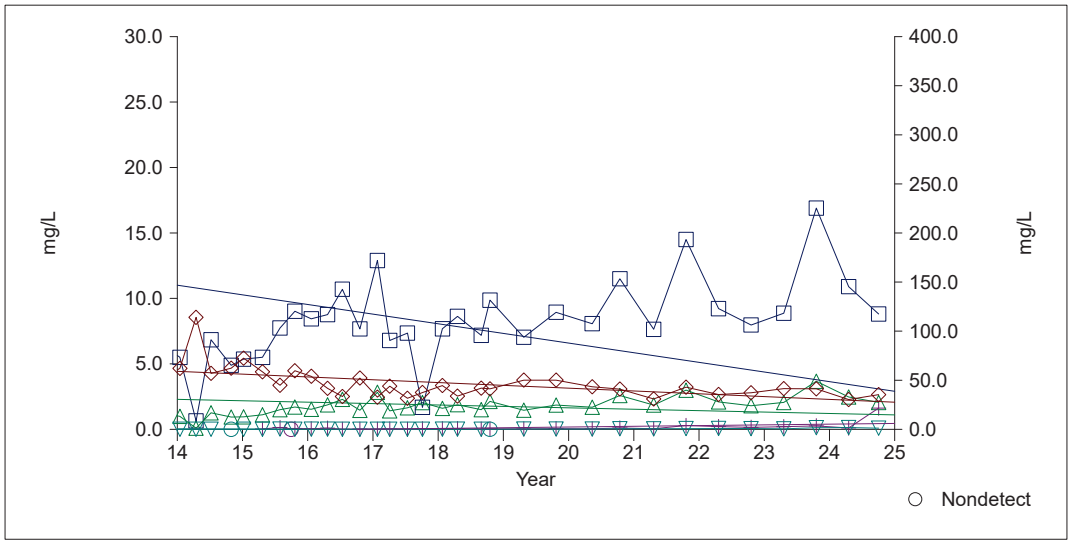
Cathcart Landfill

Time Series Plot for G-11S



Manganese
Dissolved magnesium
Dissolved calcium

Dissolved manganese

Dissolved sodium

1

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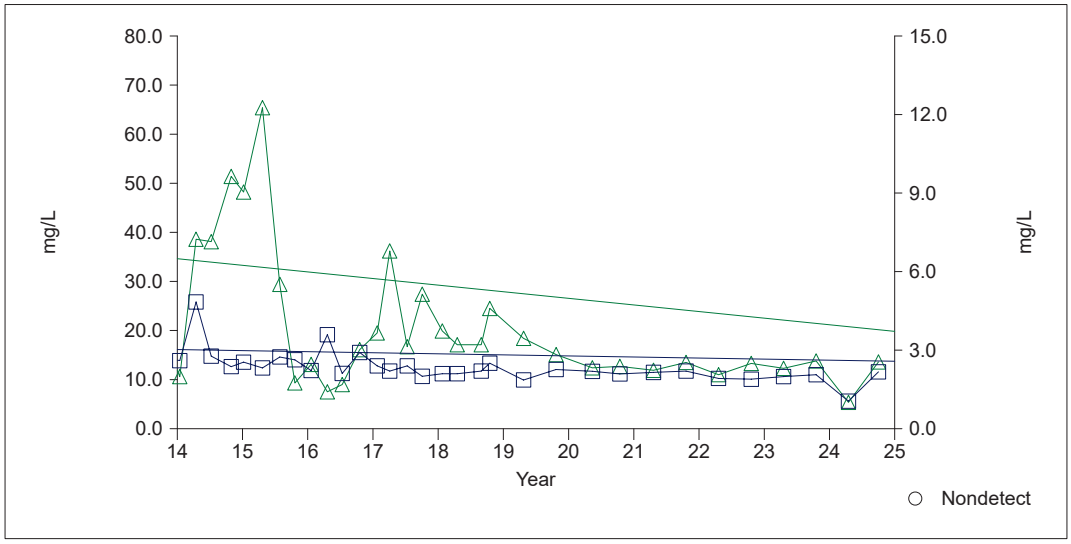
Cathcart Landfill

Time Series Plot for G-14S



Sulfate

Chloride

1

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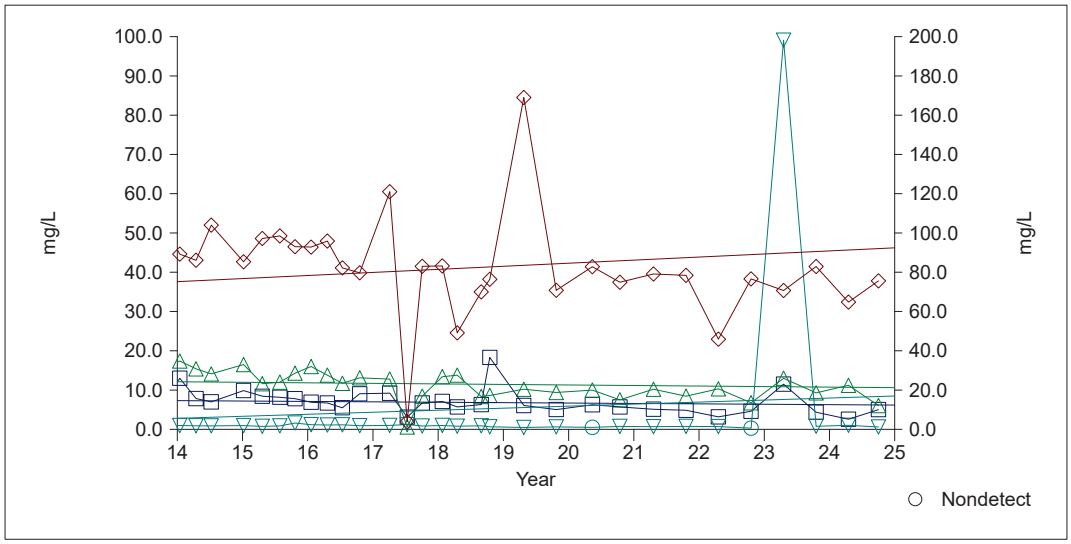
Cathcart Landfill

Time Series Plot for G-24S



Chloride
Dissolved calcium
Dissolved potassium

Sulfate

1

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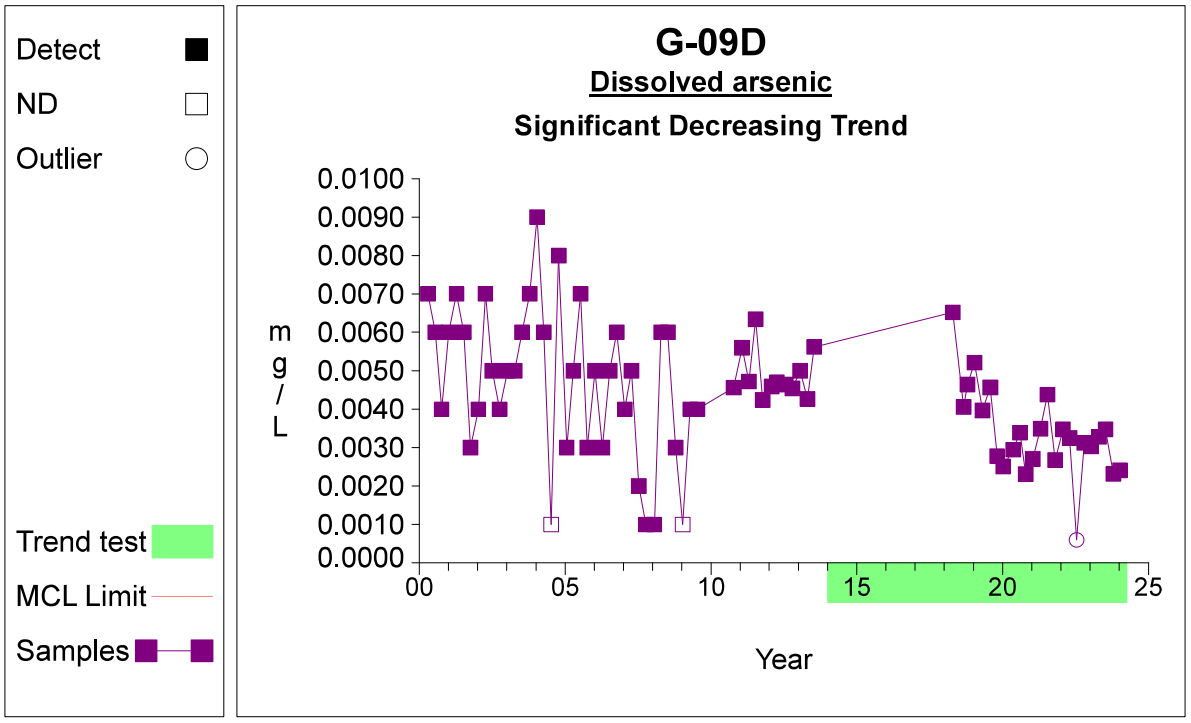
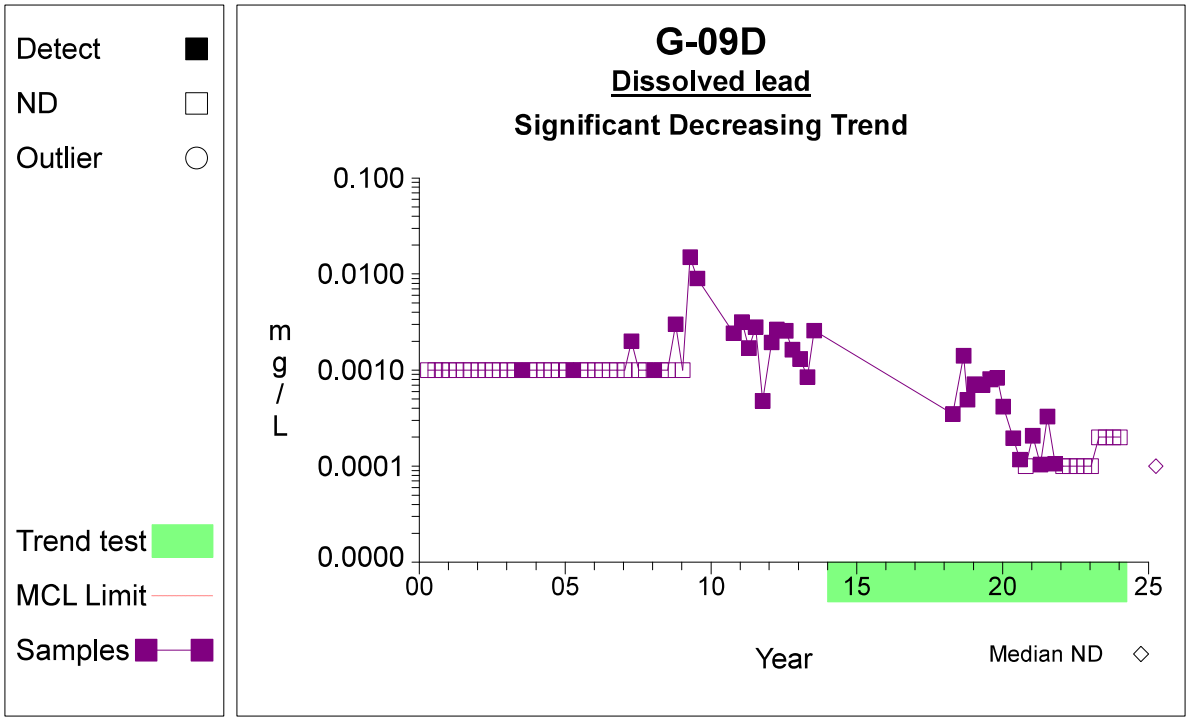
Deep Wells

Time Series



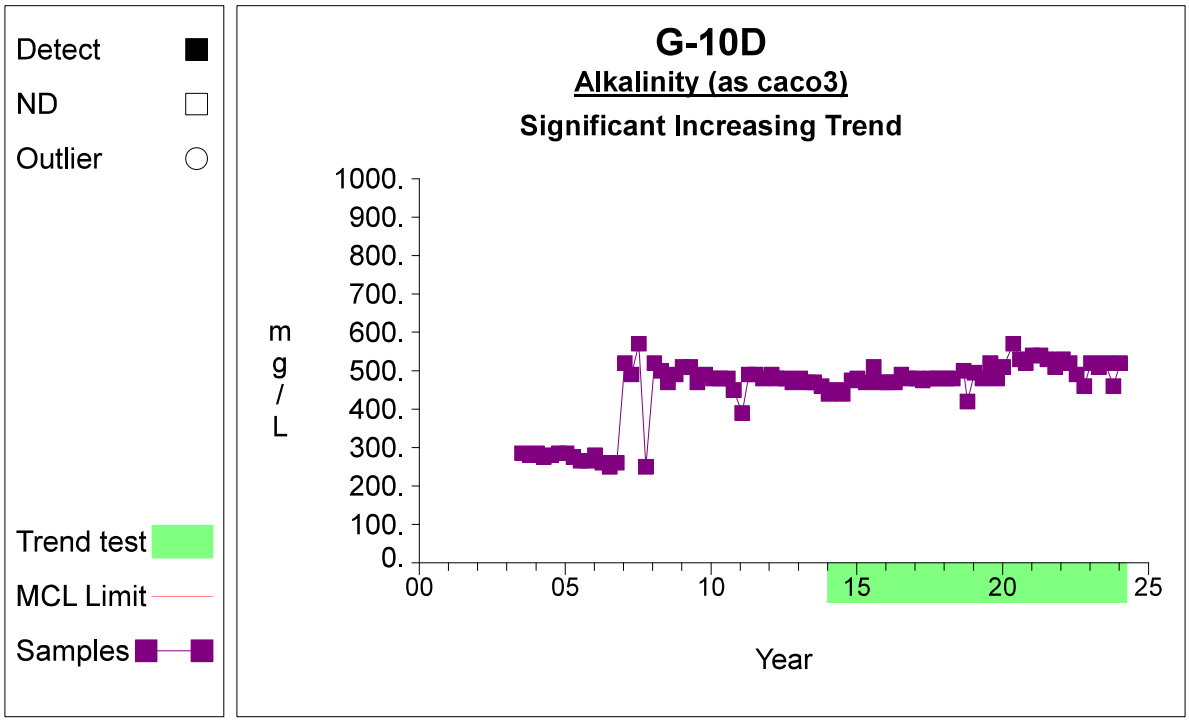
Graph 140

Time Series



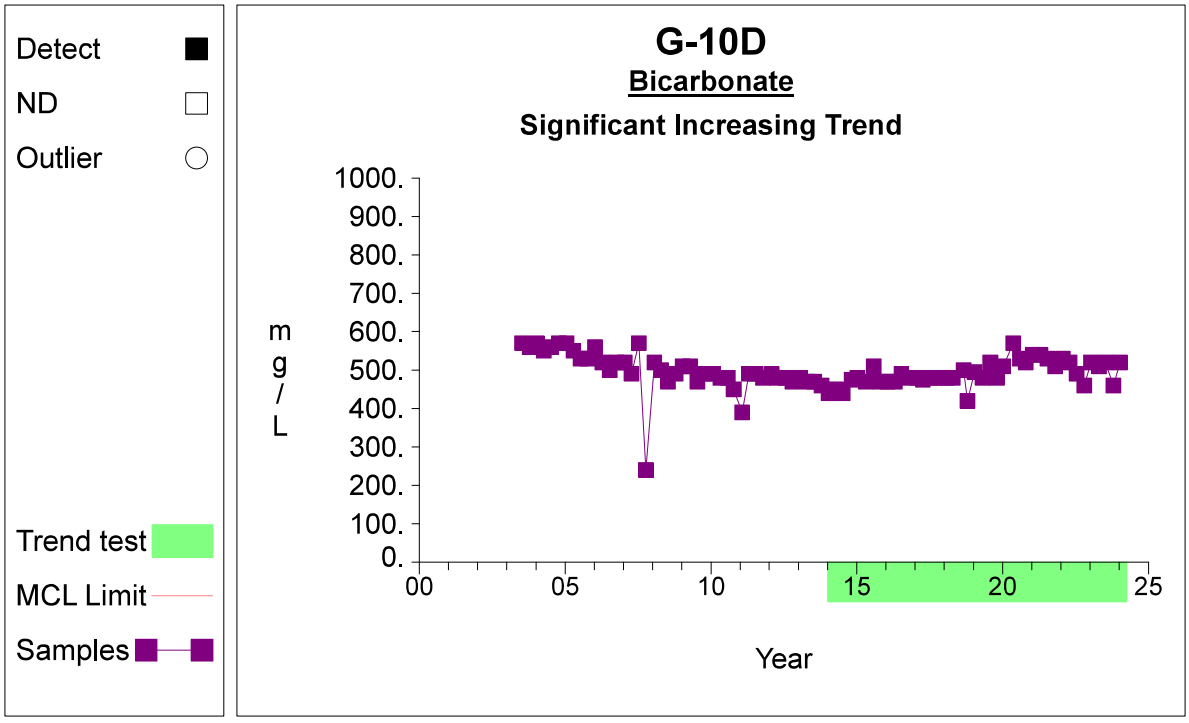
Graph 149

Time Series



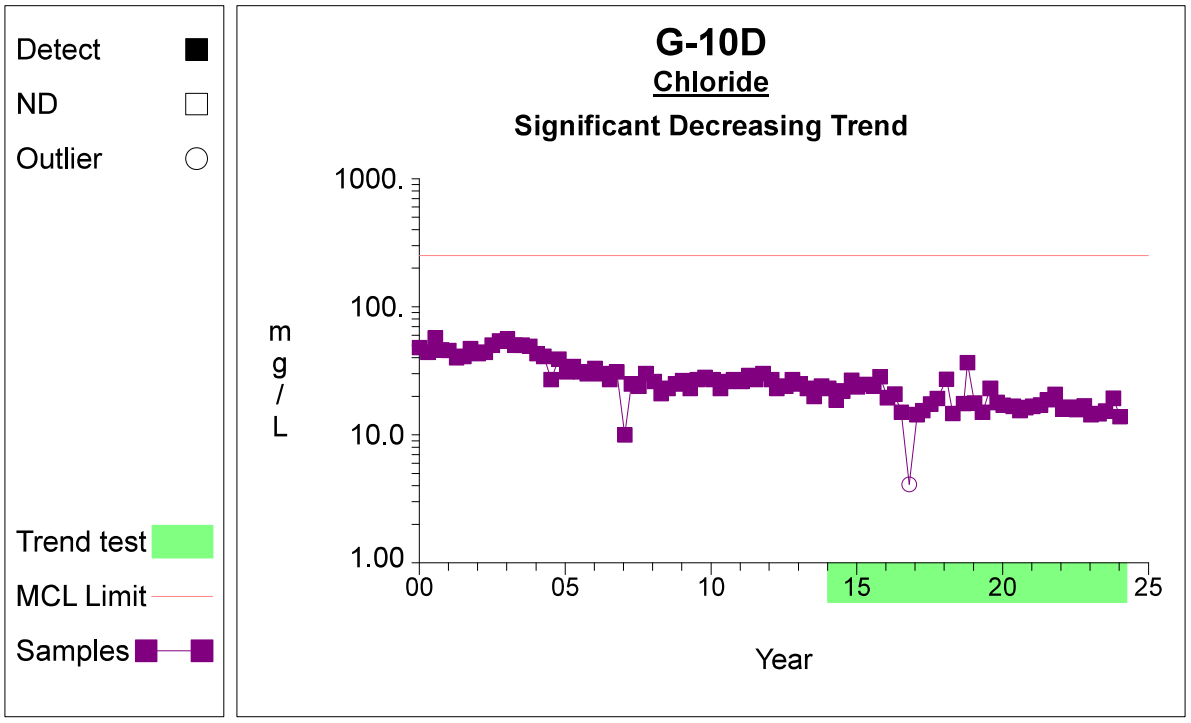
Graph 166

Time Series



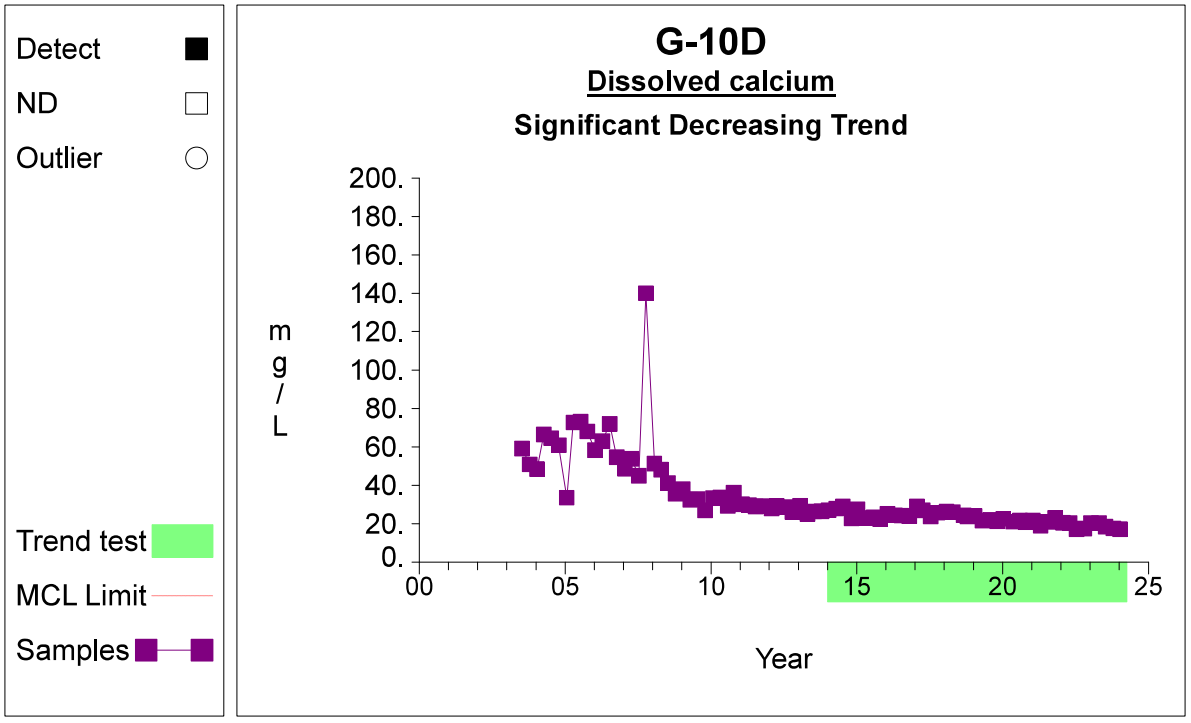
Graph 168

Time Series



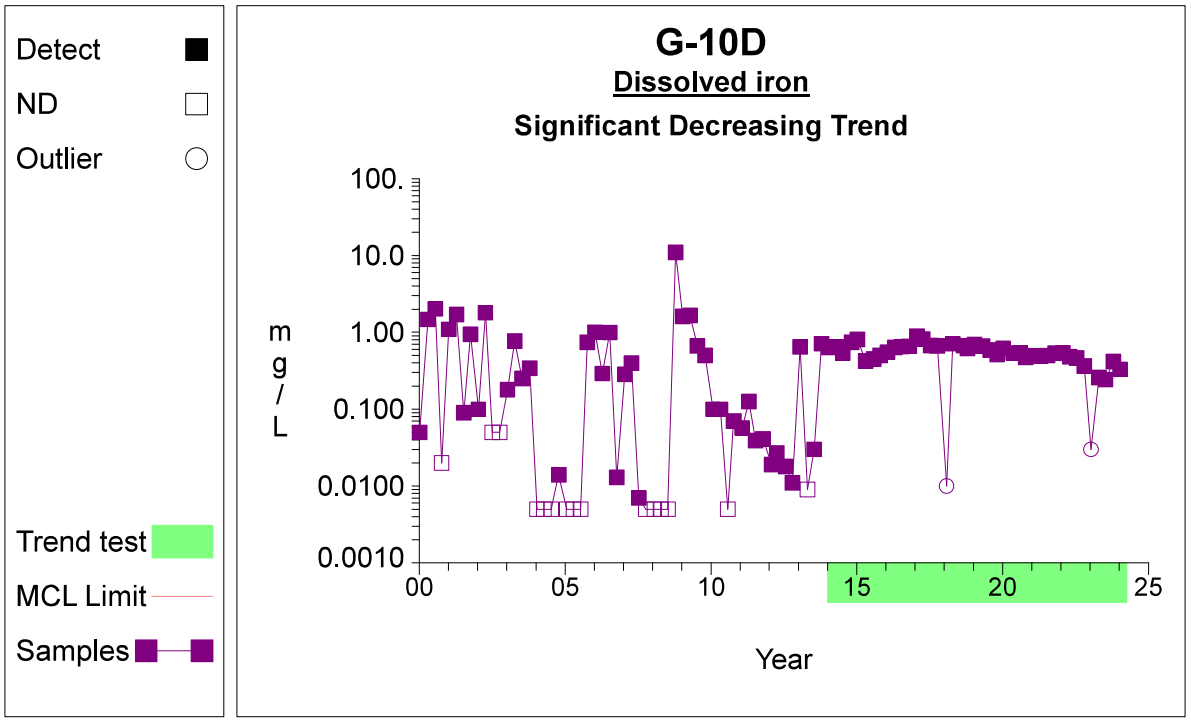
Graph 170

Time Series



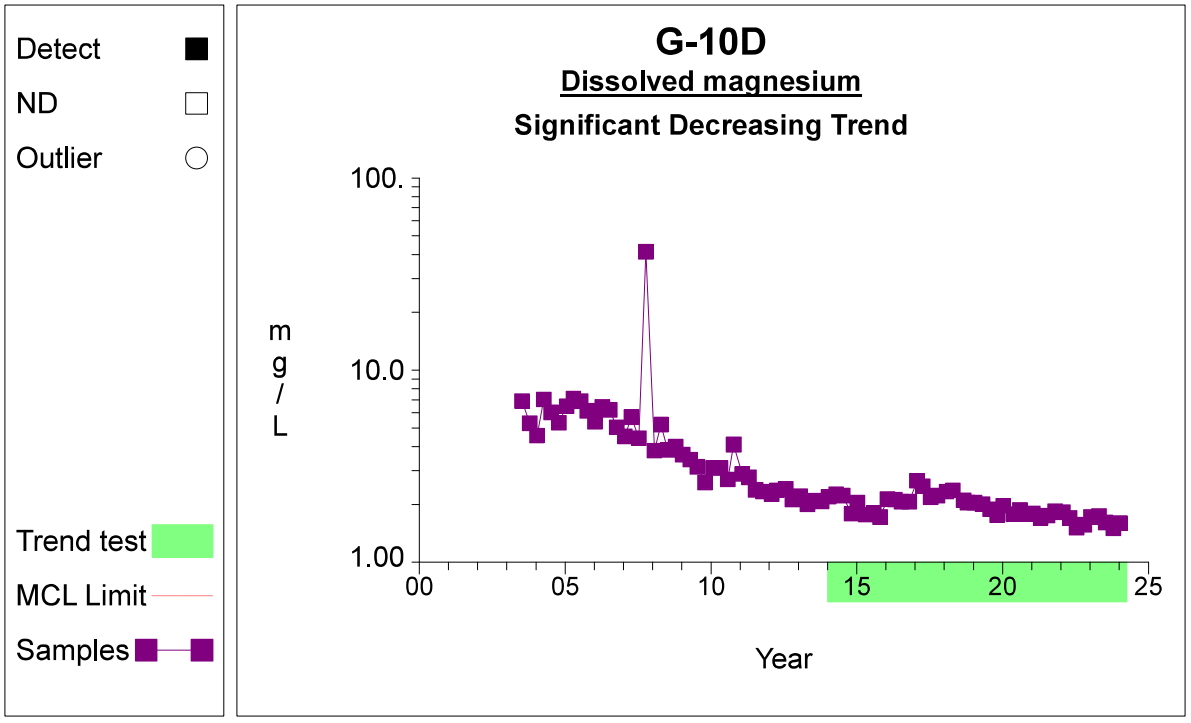
Graph 177

Time Series



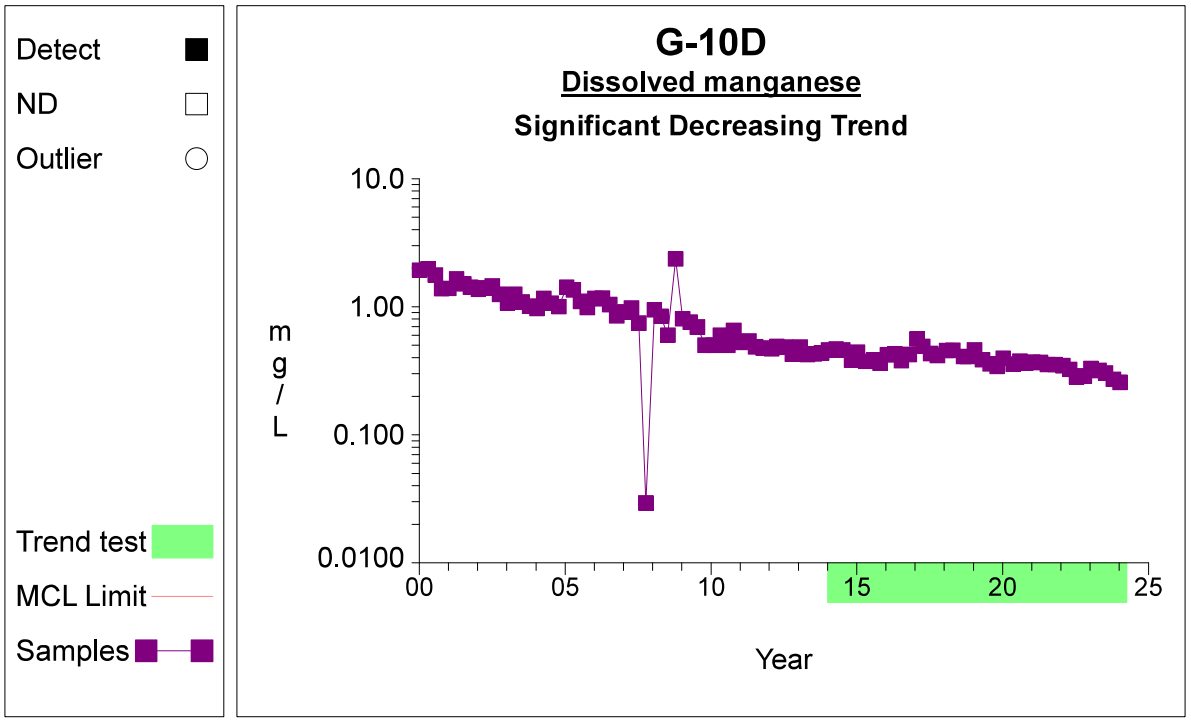
Graph 181

Time Series



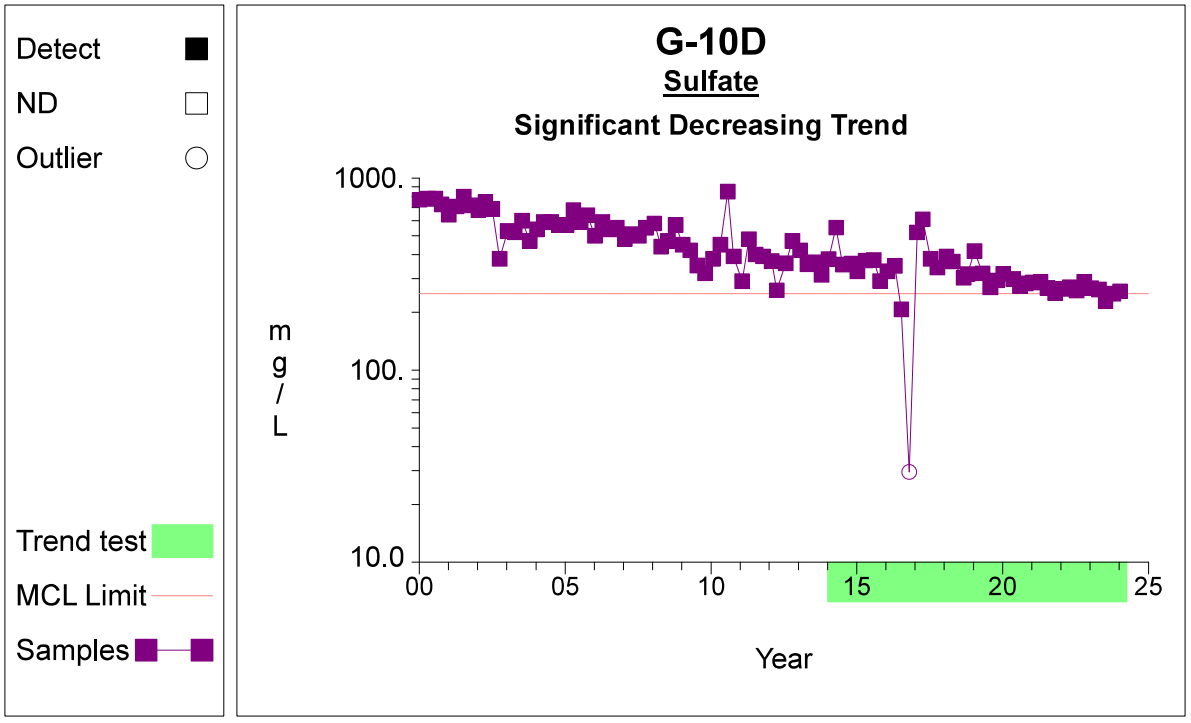
Graph 183

Time Series



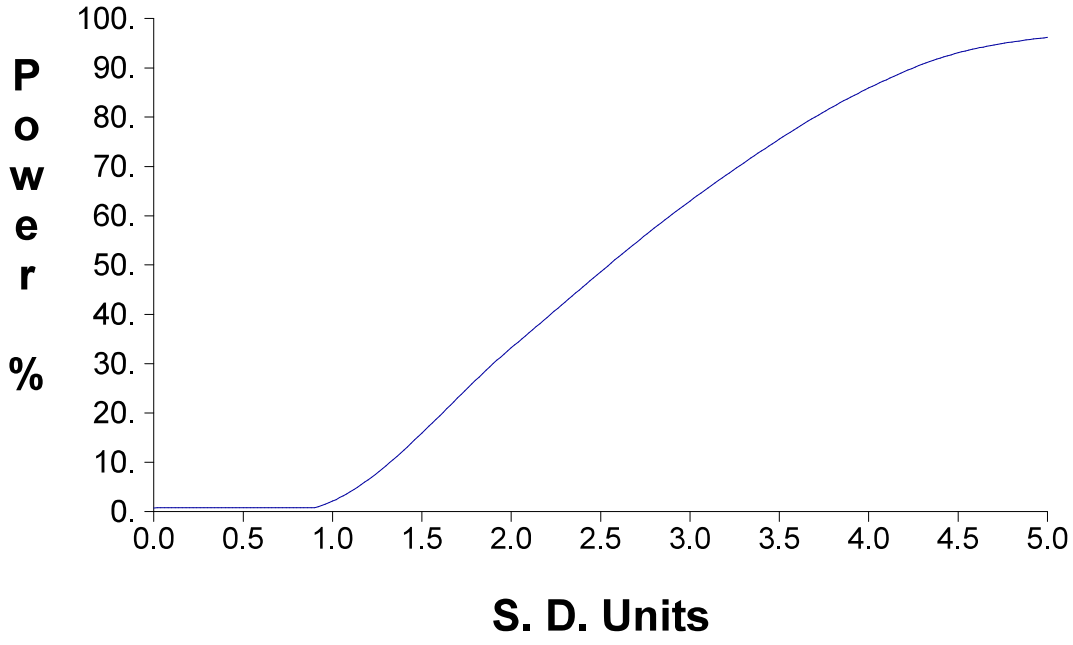
Graph 184

Time Series

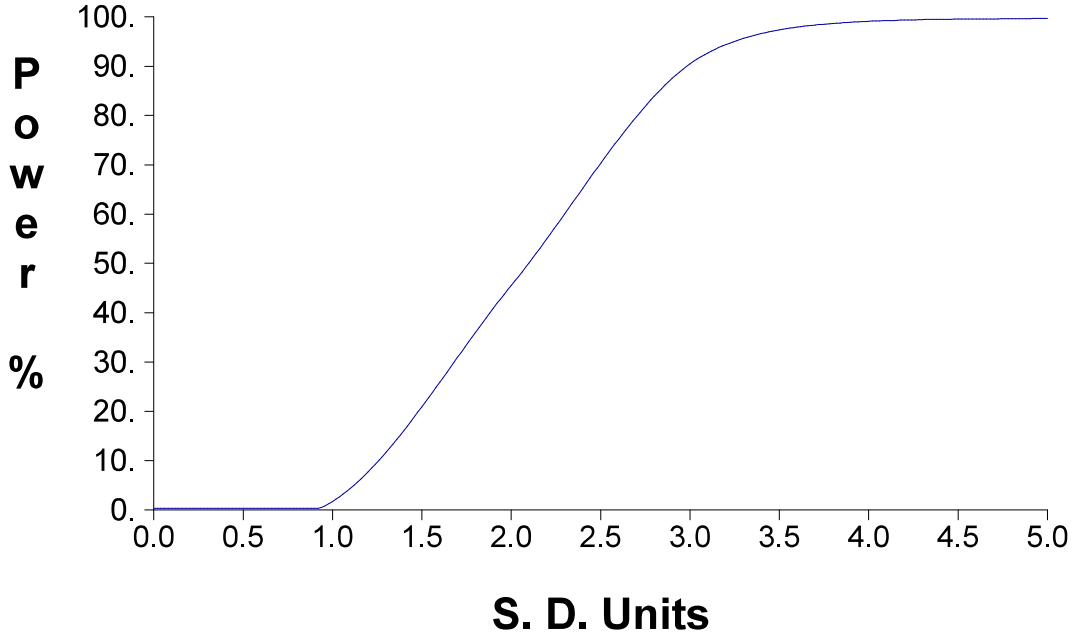


Graph 196

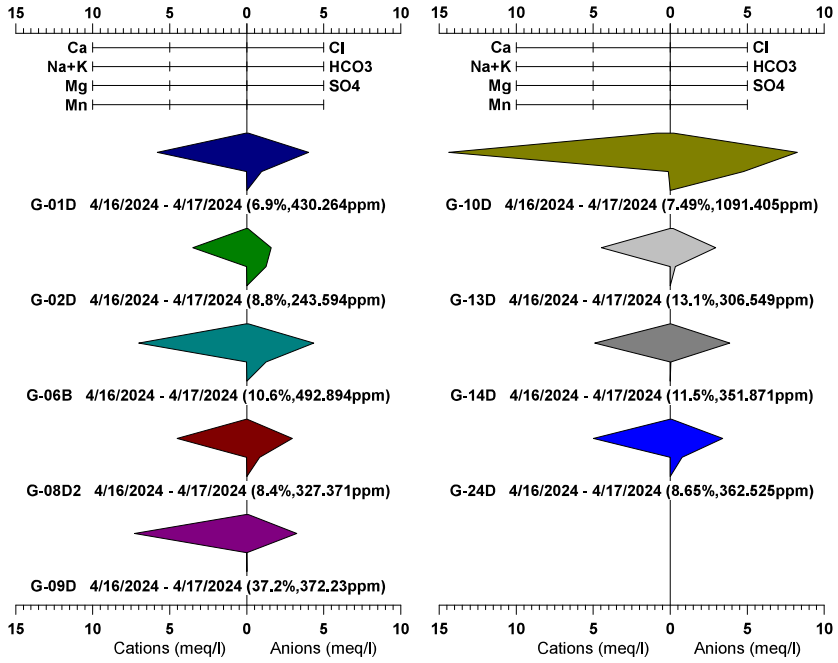
False Positive and False Negative Rates for Current Intra-Well Prediction Limits Monitoring Program



False Positive and False Negative Rates for Current Upgradient vs. Downgradient Monitoring Program



Cathcart Landfill



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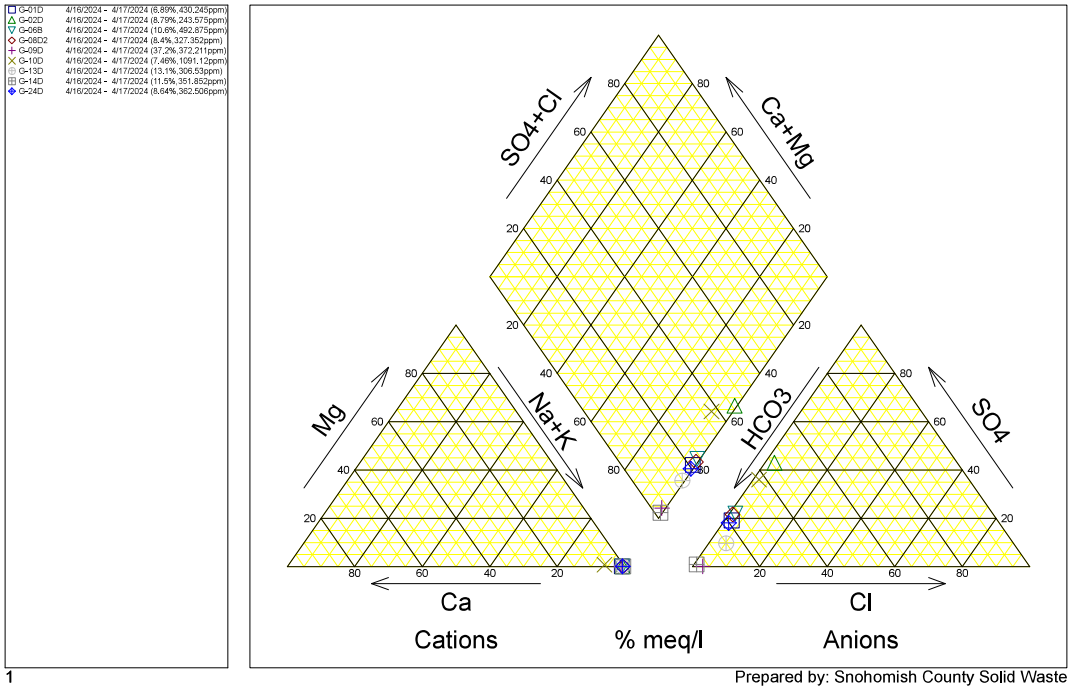
Cathcart Landfill



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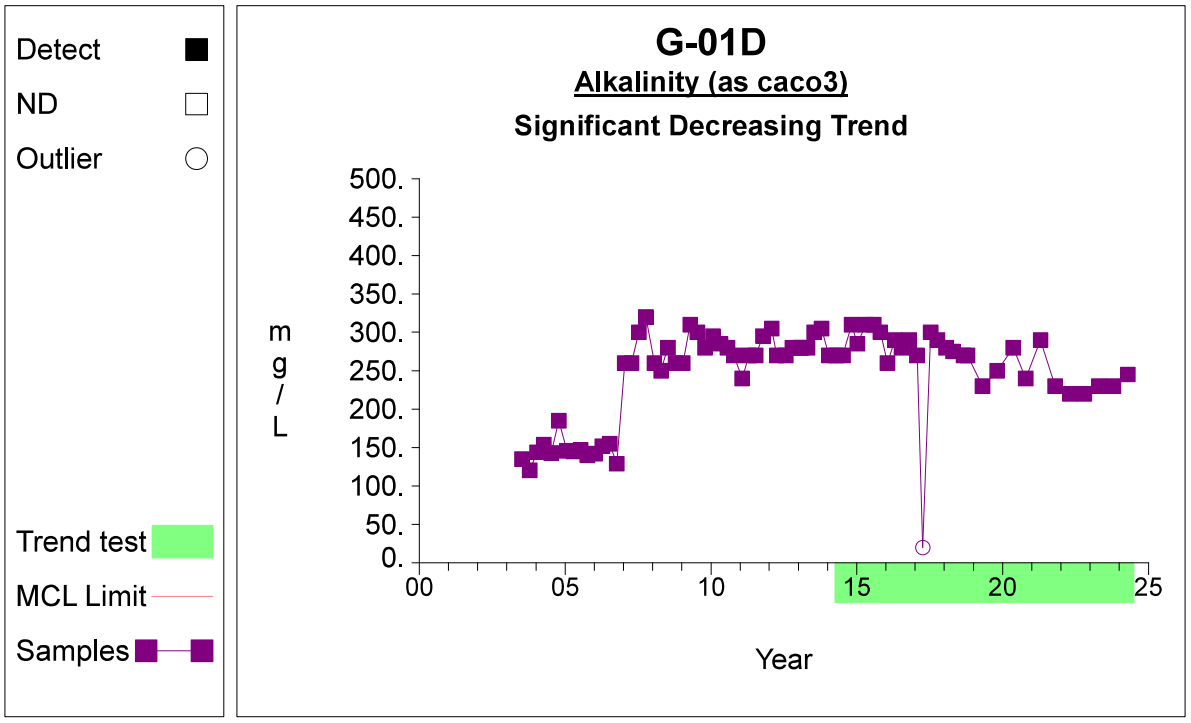
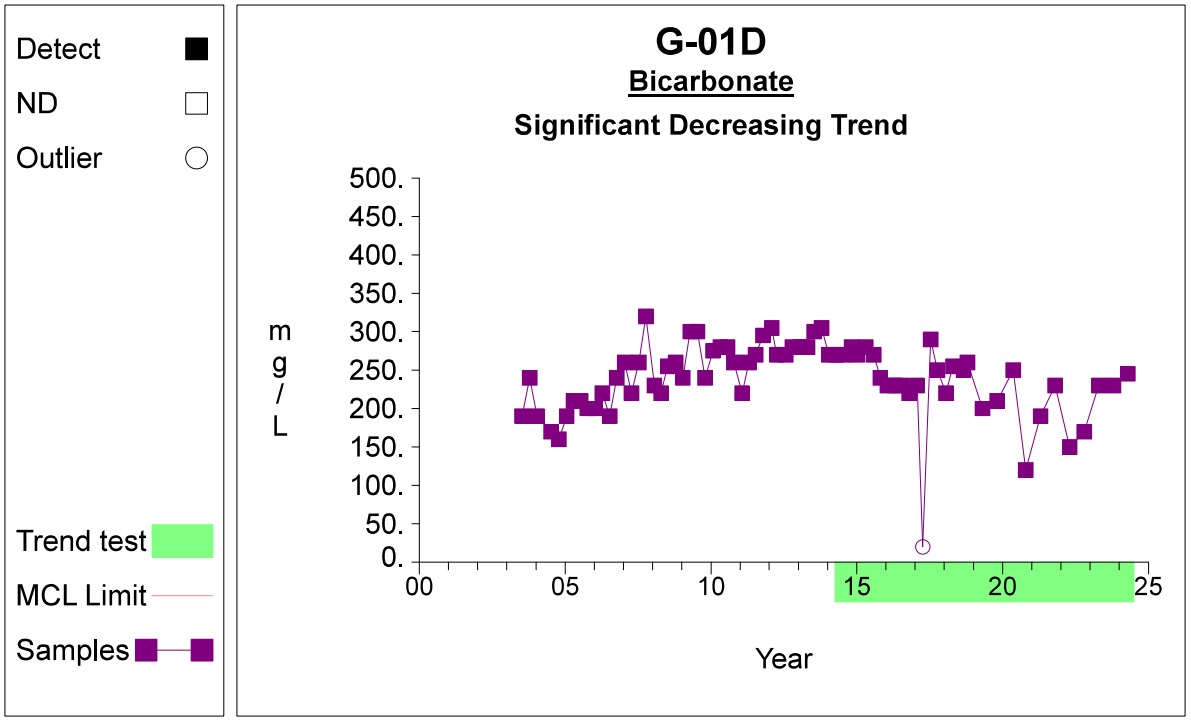
Time Series



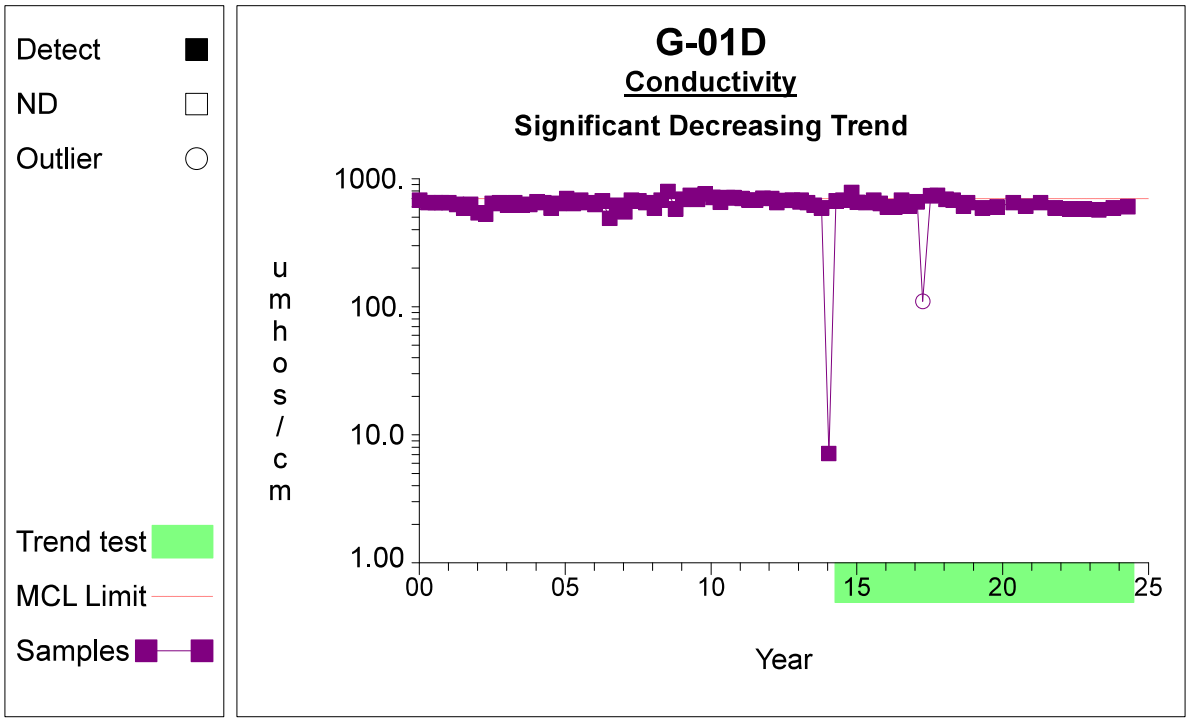
Graph 1

Time Series



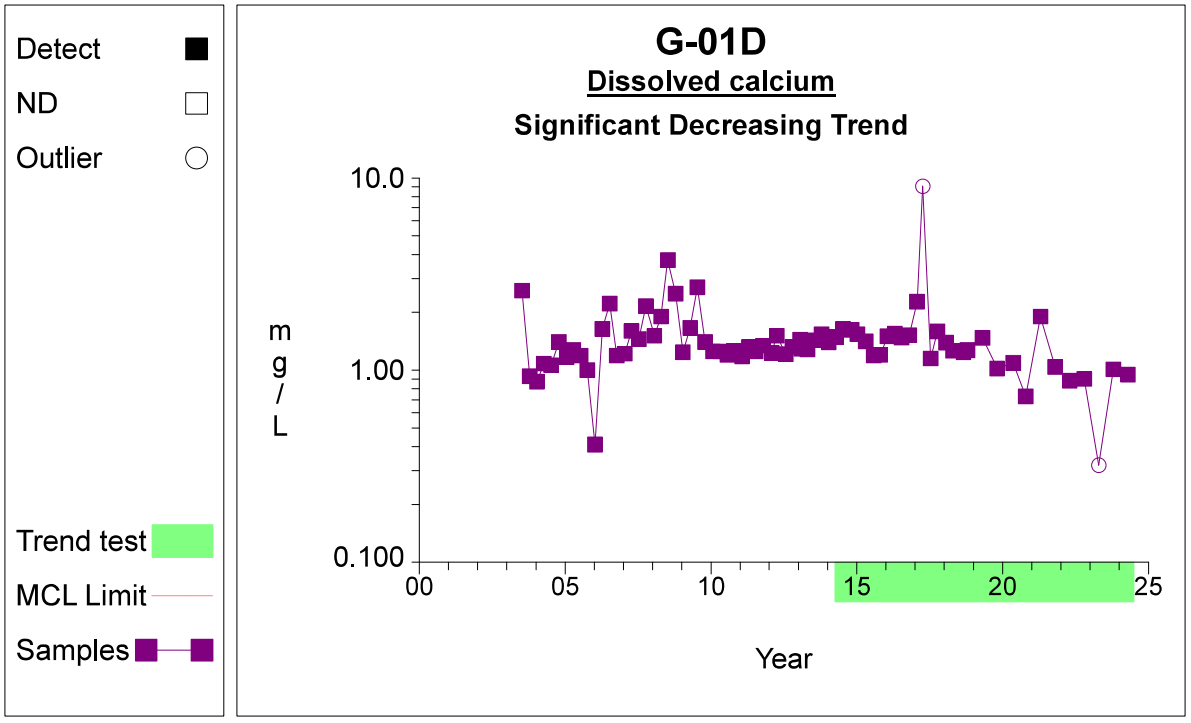
Graph 7

Time Series



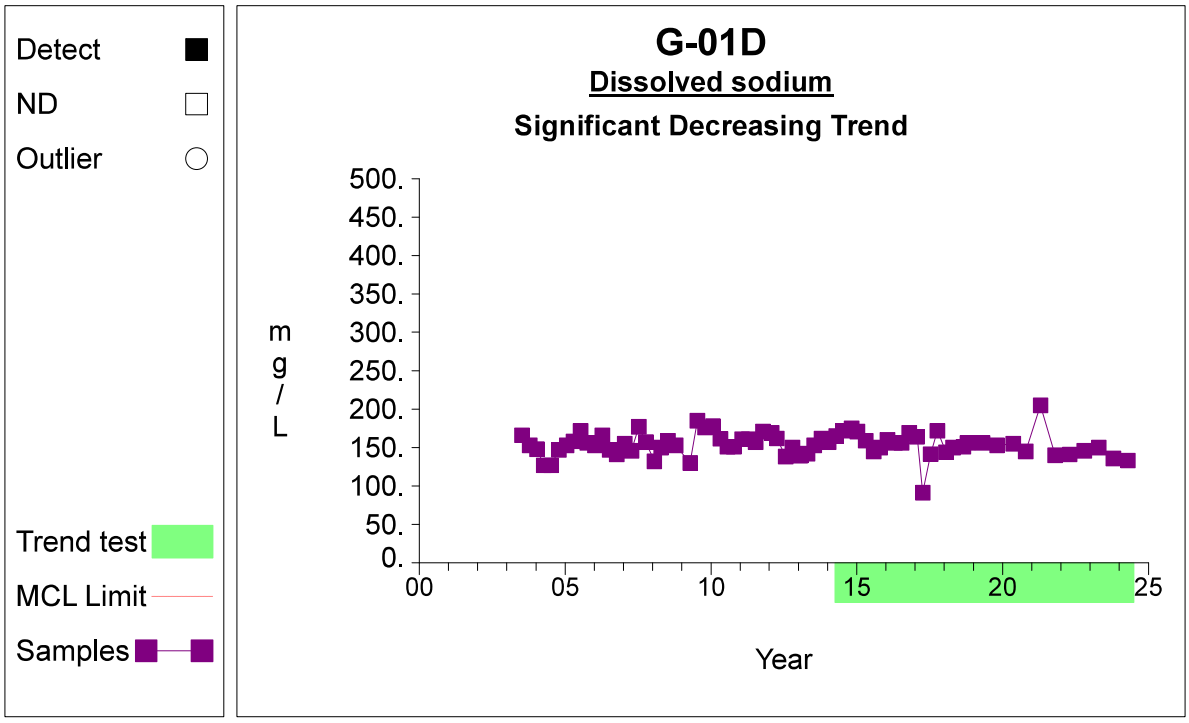
Graph 13

Time Series



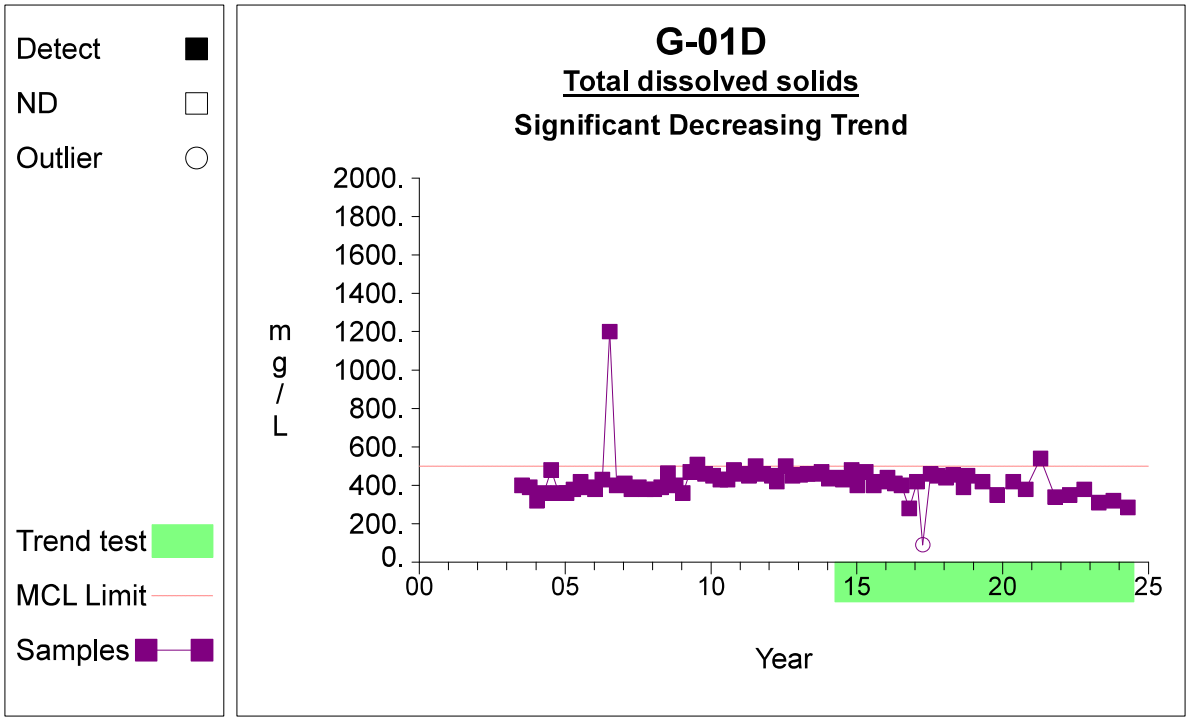
Graph 15

Time Series



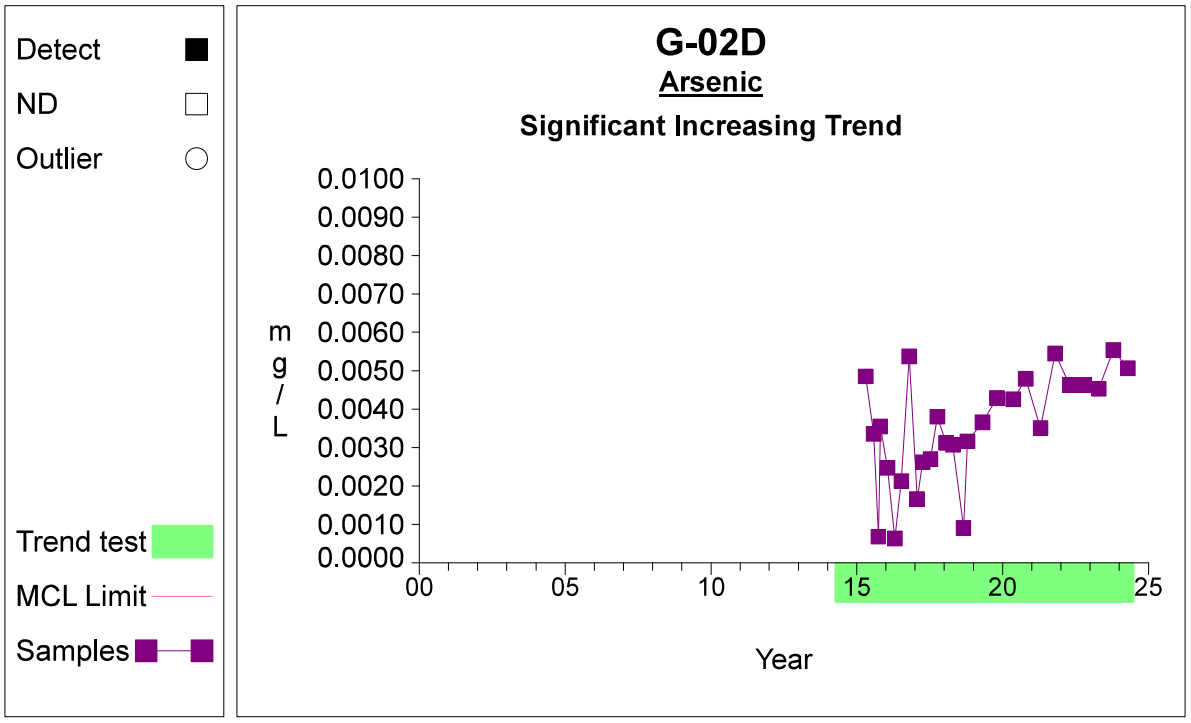
Graph 20

Time Series



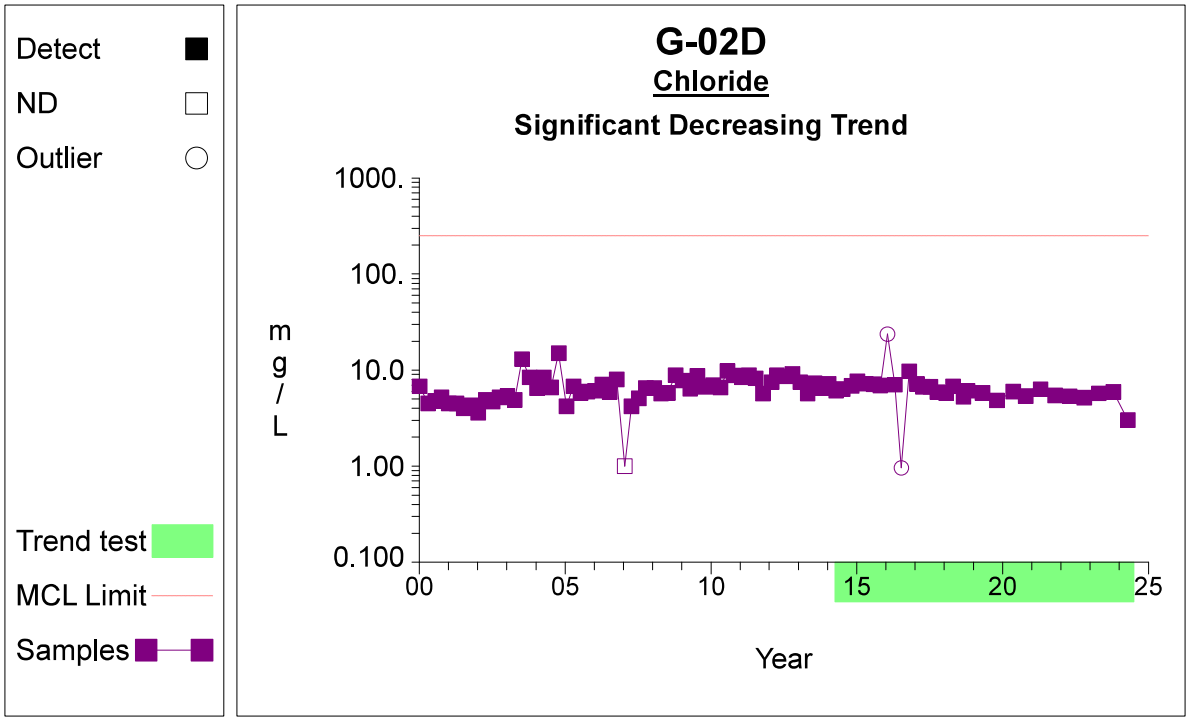
Graph 32

Time Series



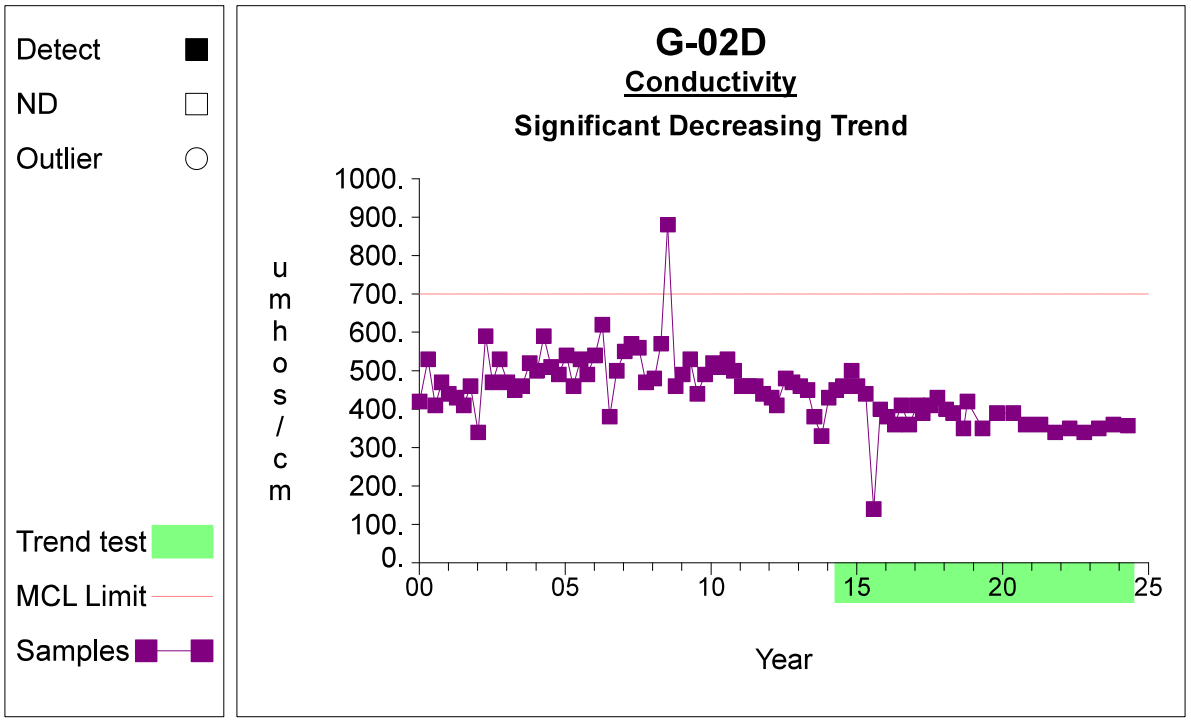
Graph 39

Time Series



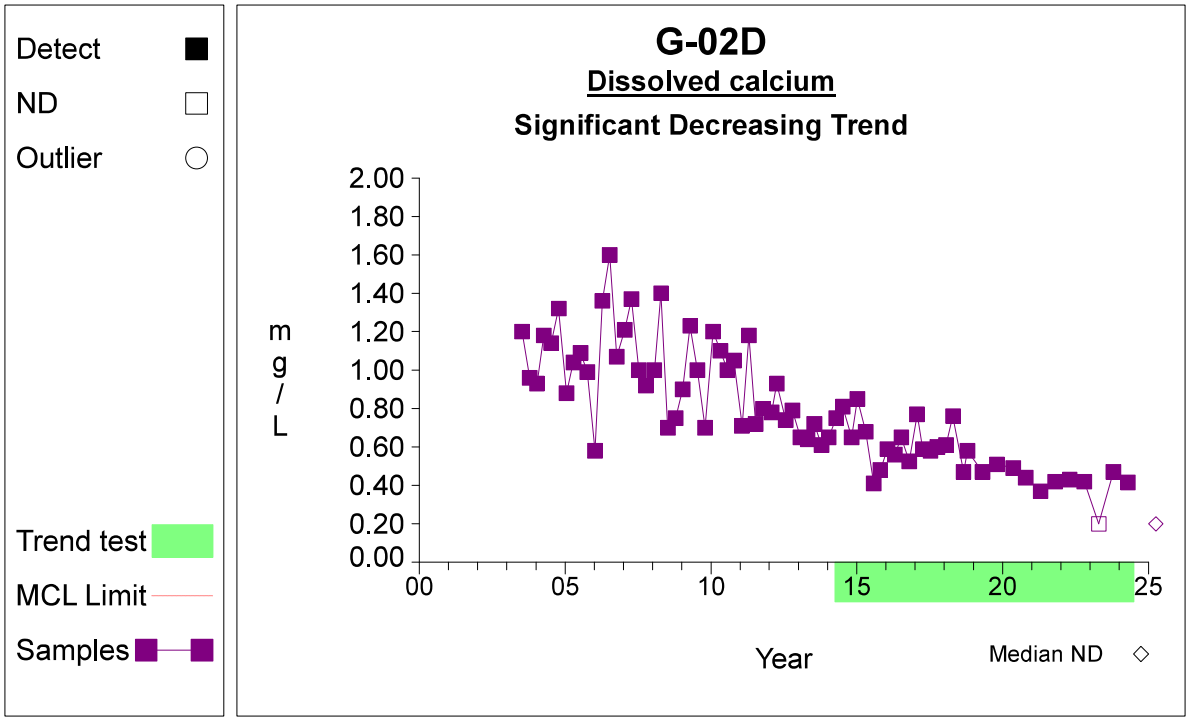
Graph 45

Time Series



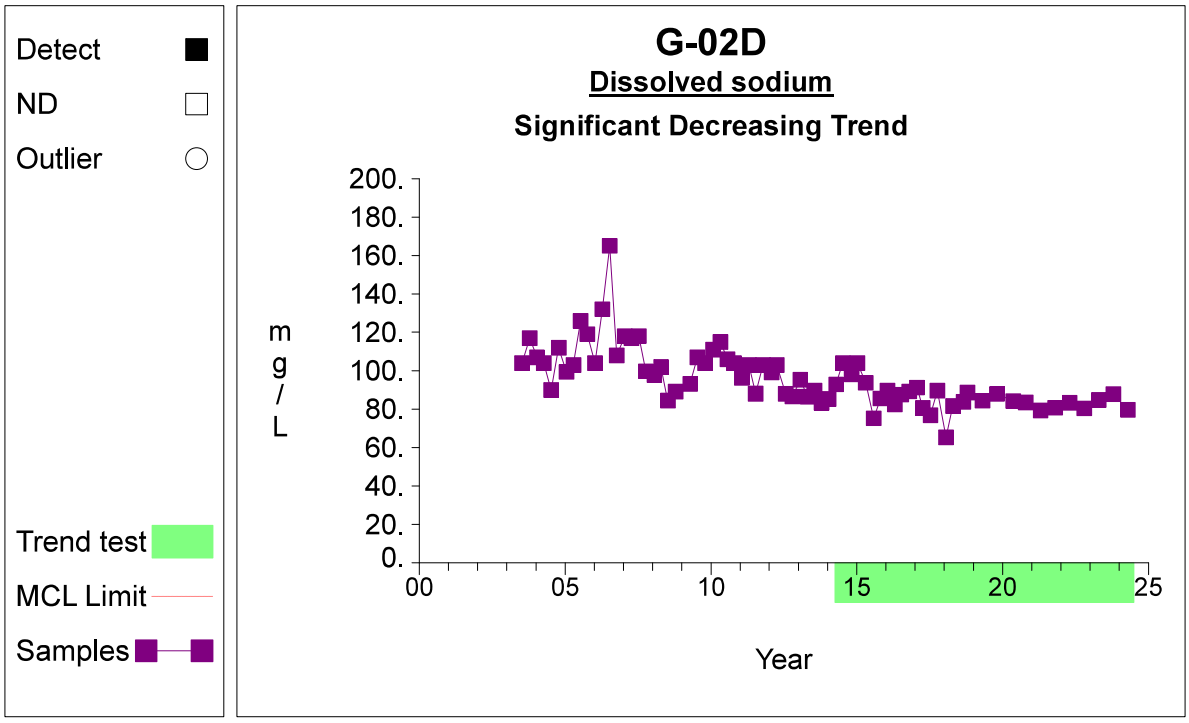
Graph 48

Time Series



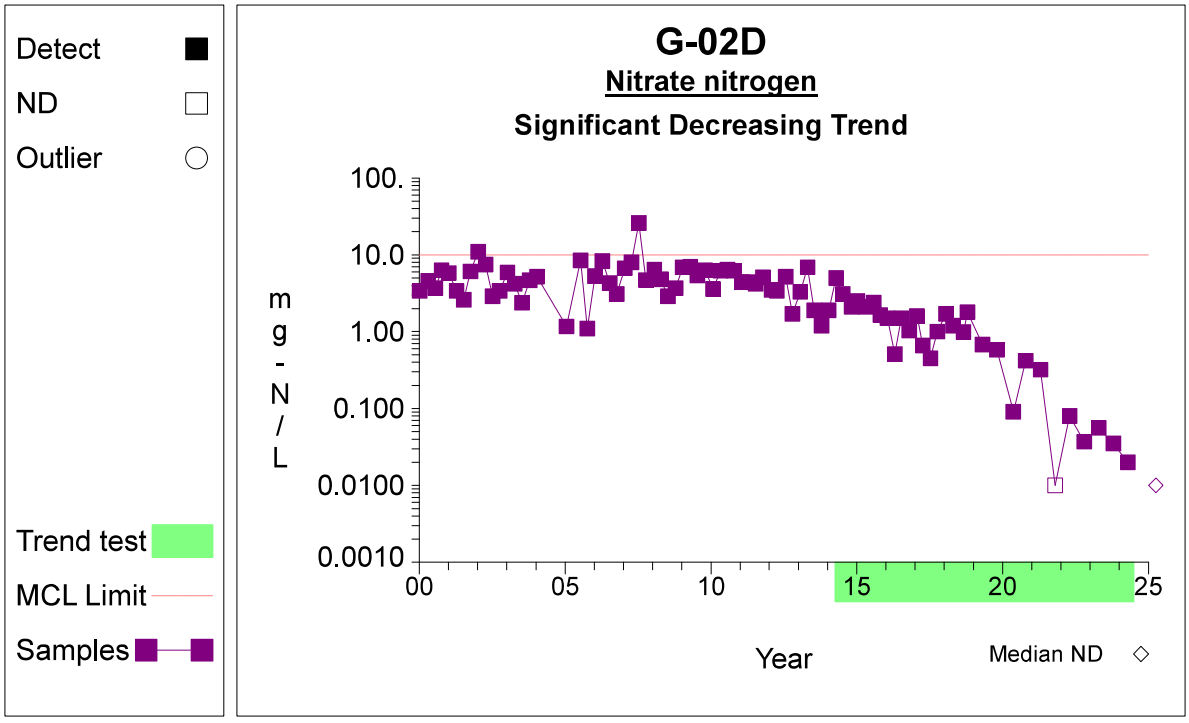
Graph 50

Time Series



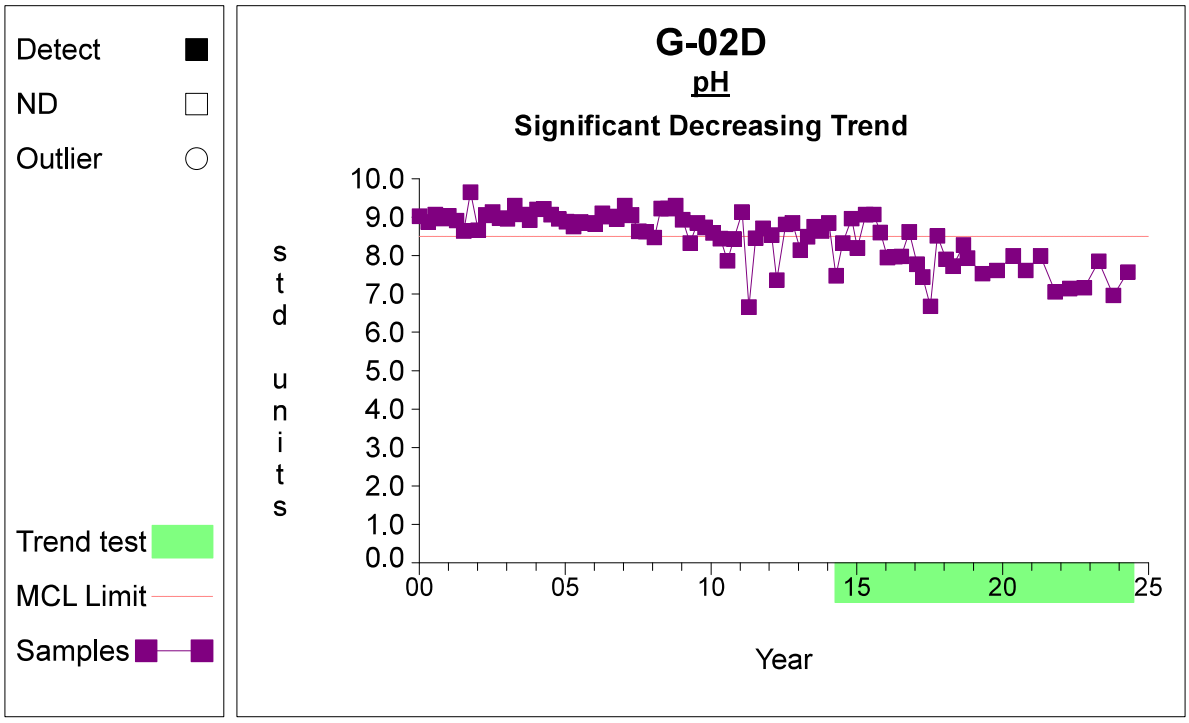
Graph 55

Time Series



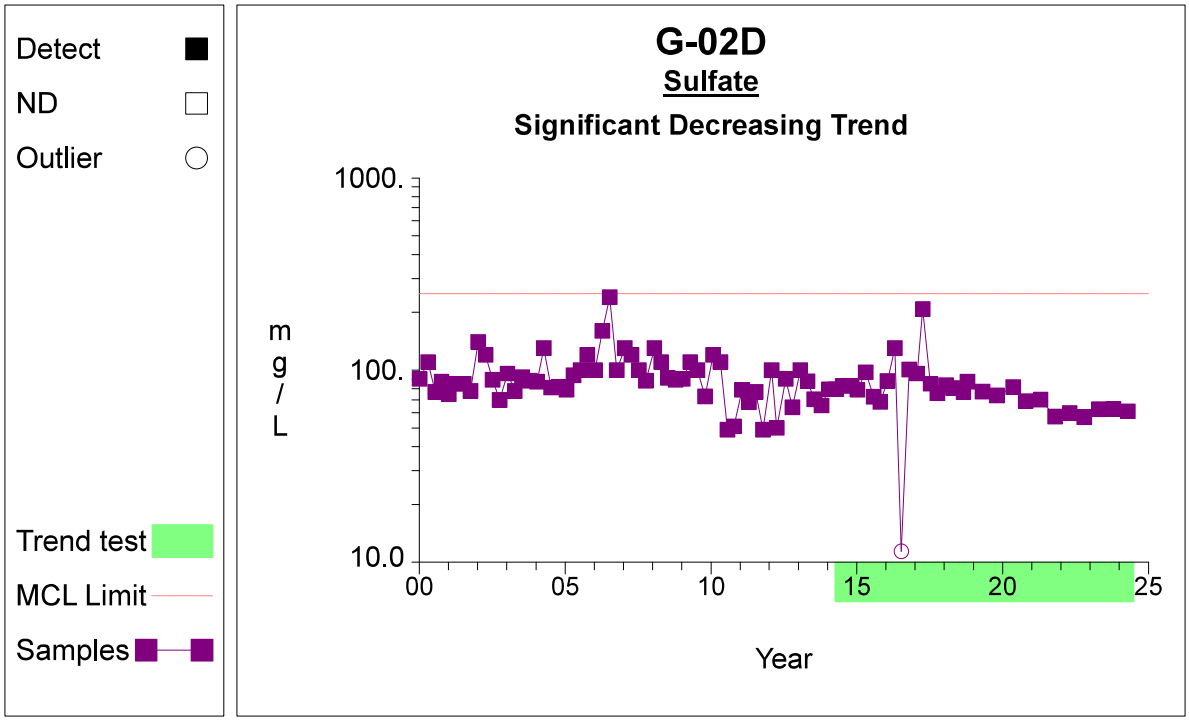
Graph 60

Time Series



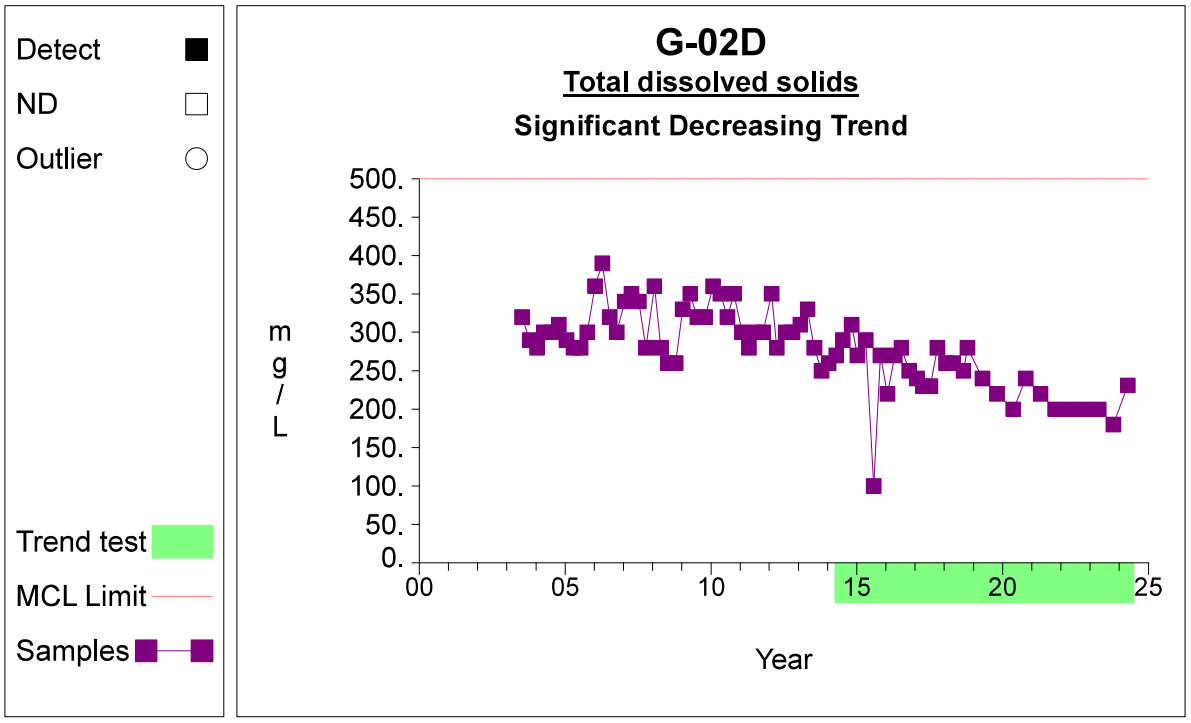
Graph 62

Time Series



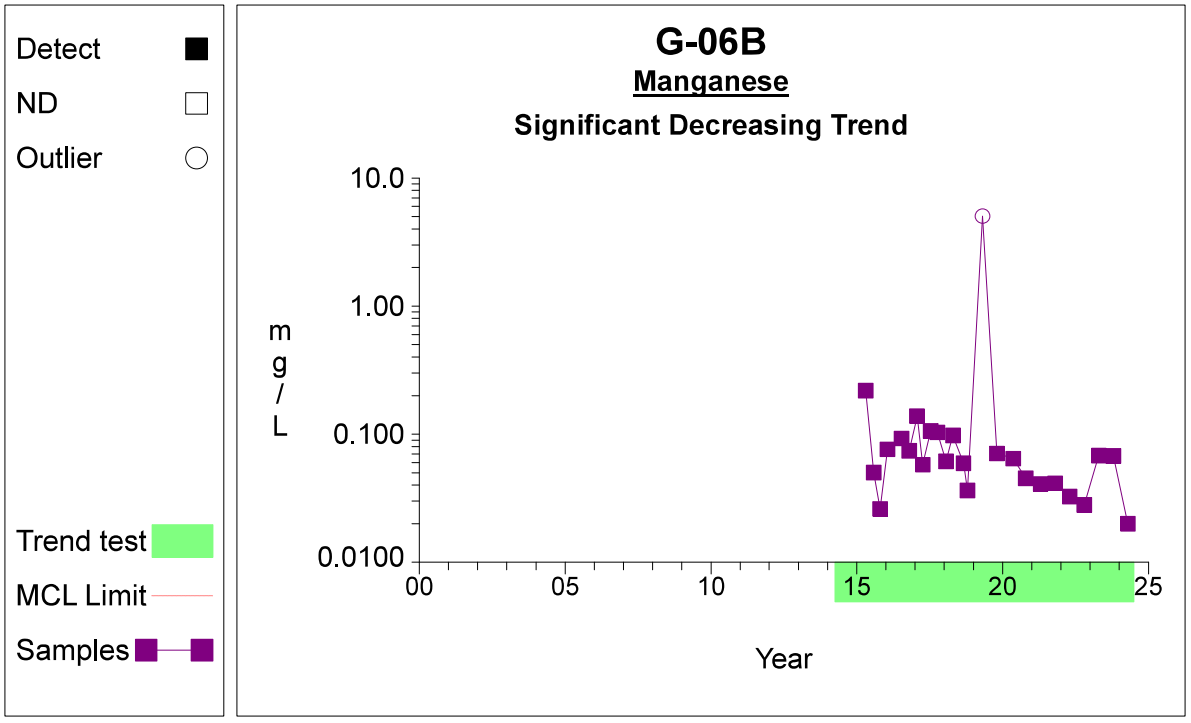
Graph 65

Time Series



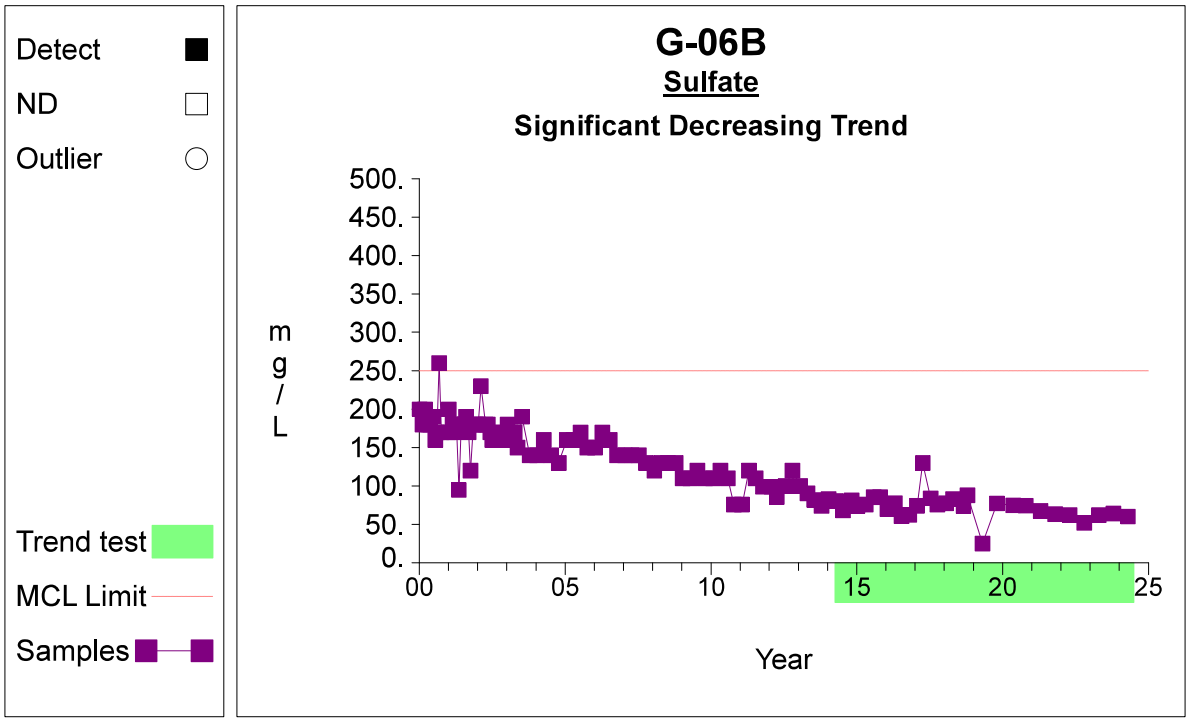
Graph 67

Time Series



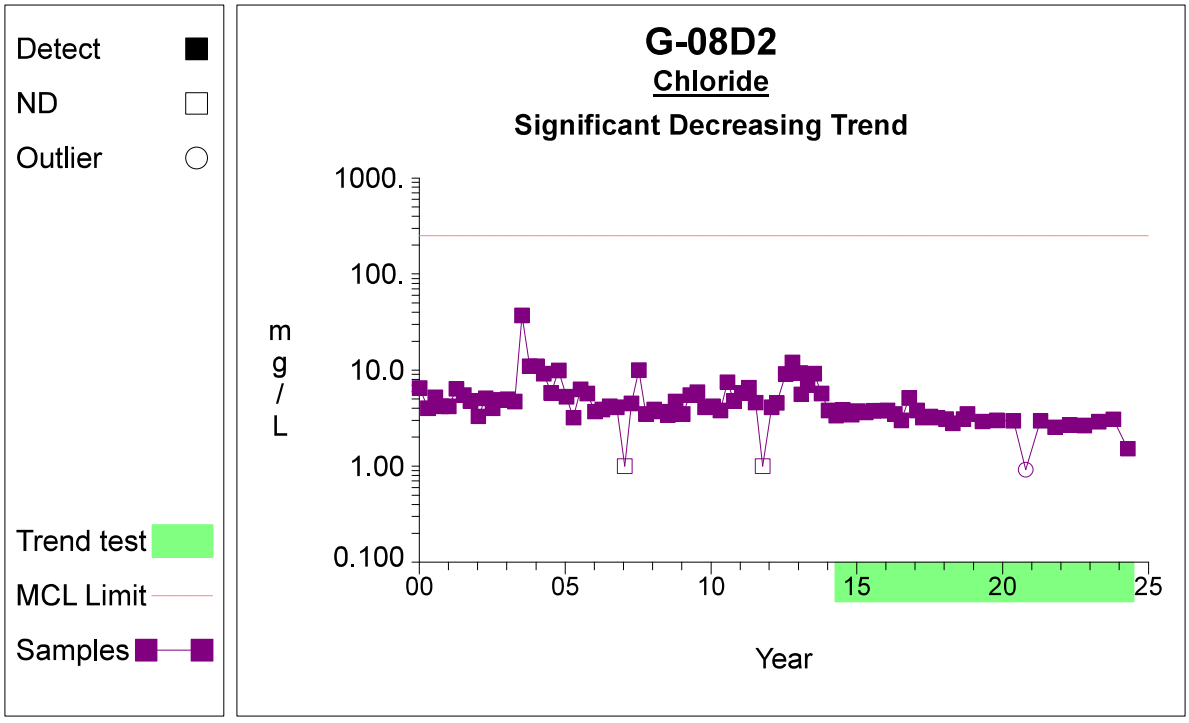
Graph 93

Time Series



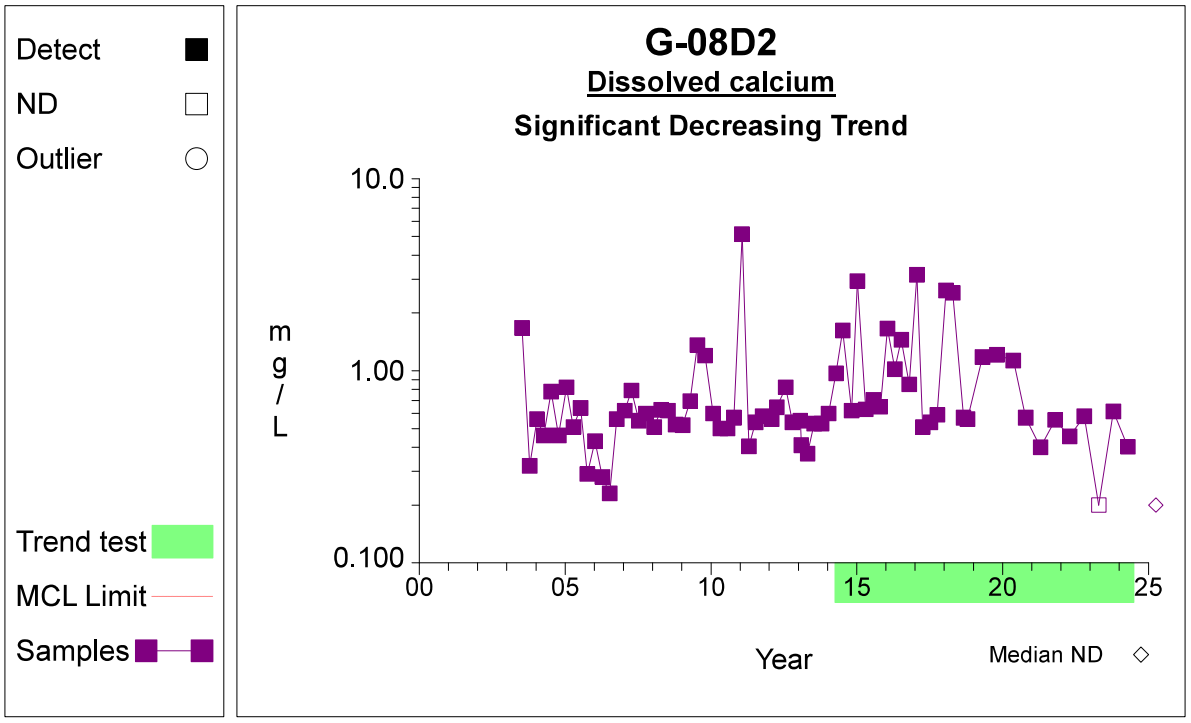
Graph 100

Time Series



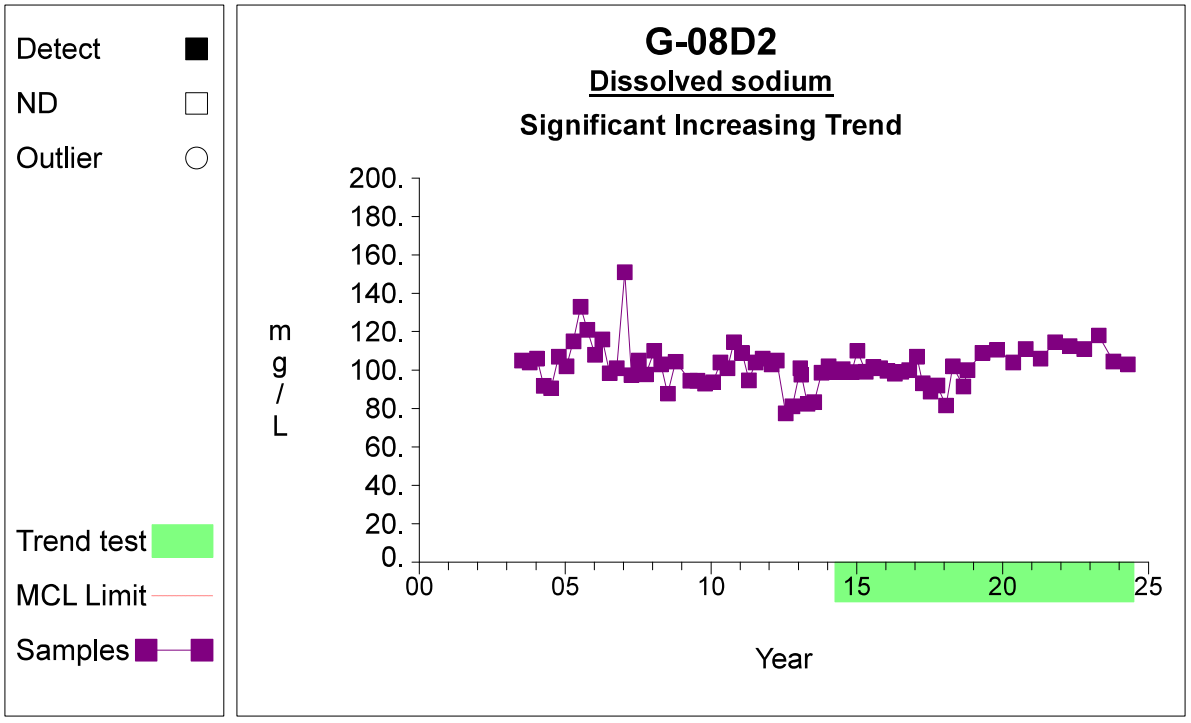
Graph 115

Time Series



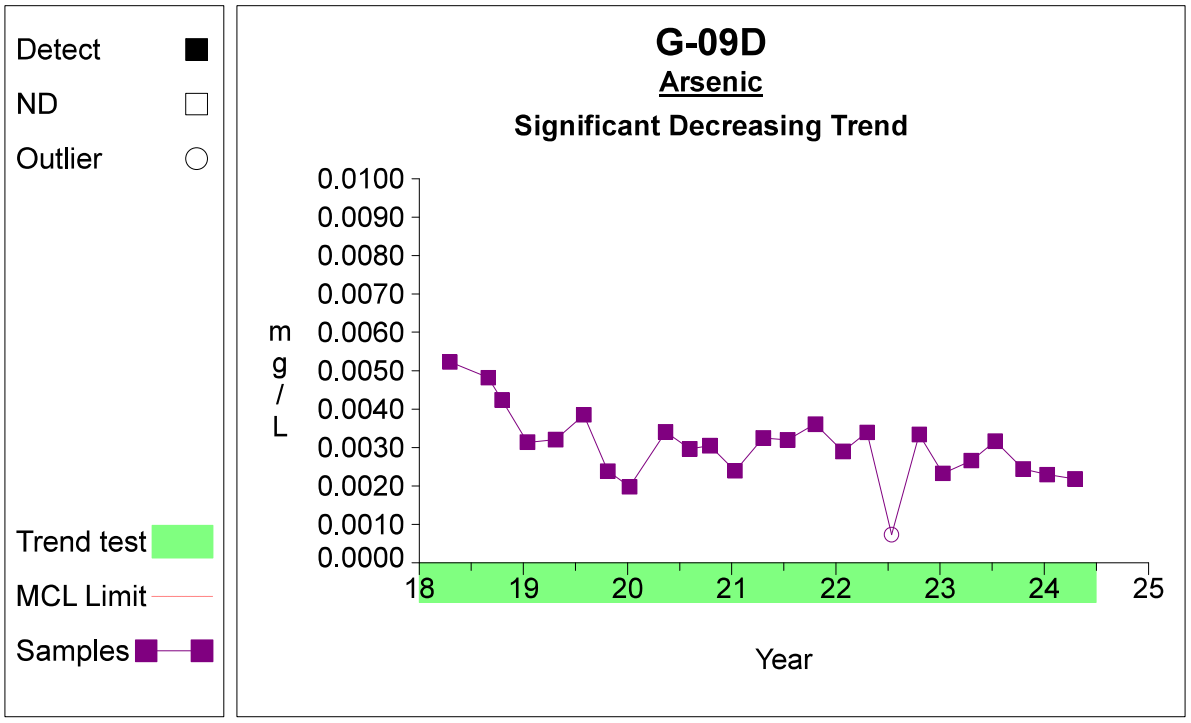
Graph 120

Time Series



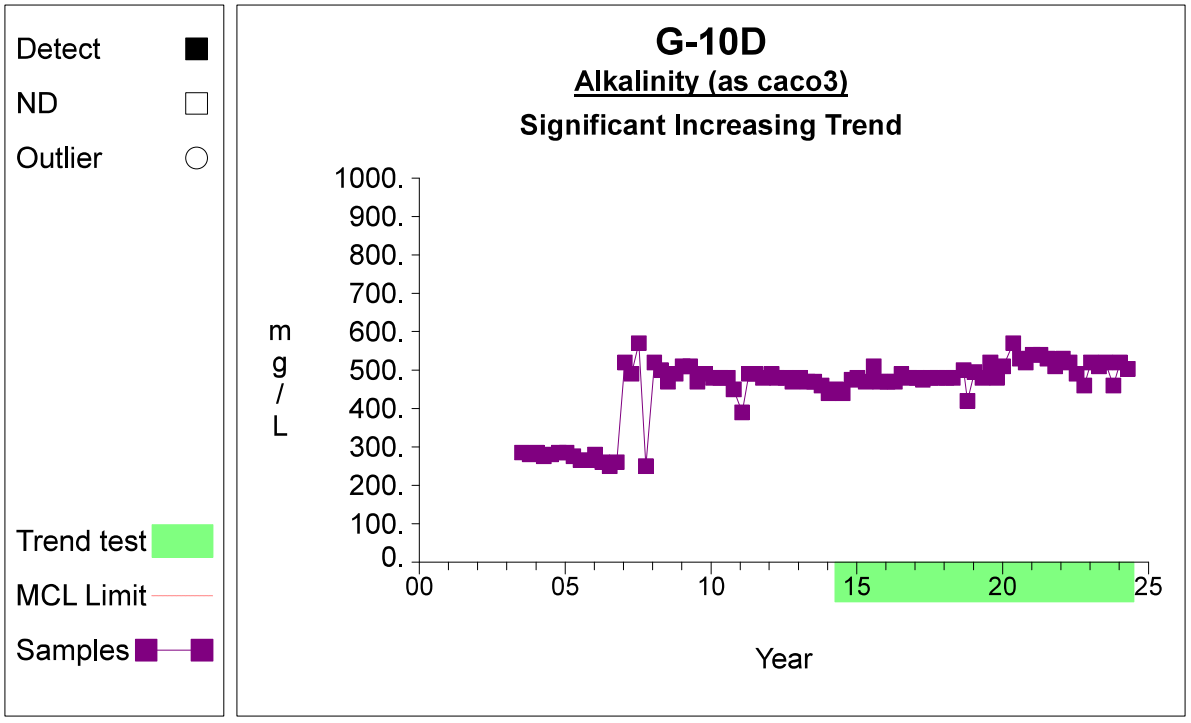
Graph 125

Time Series



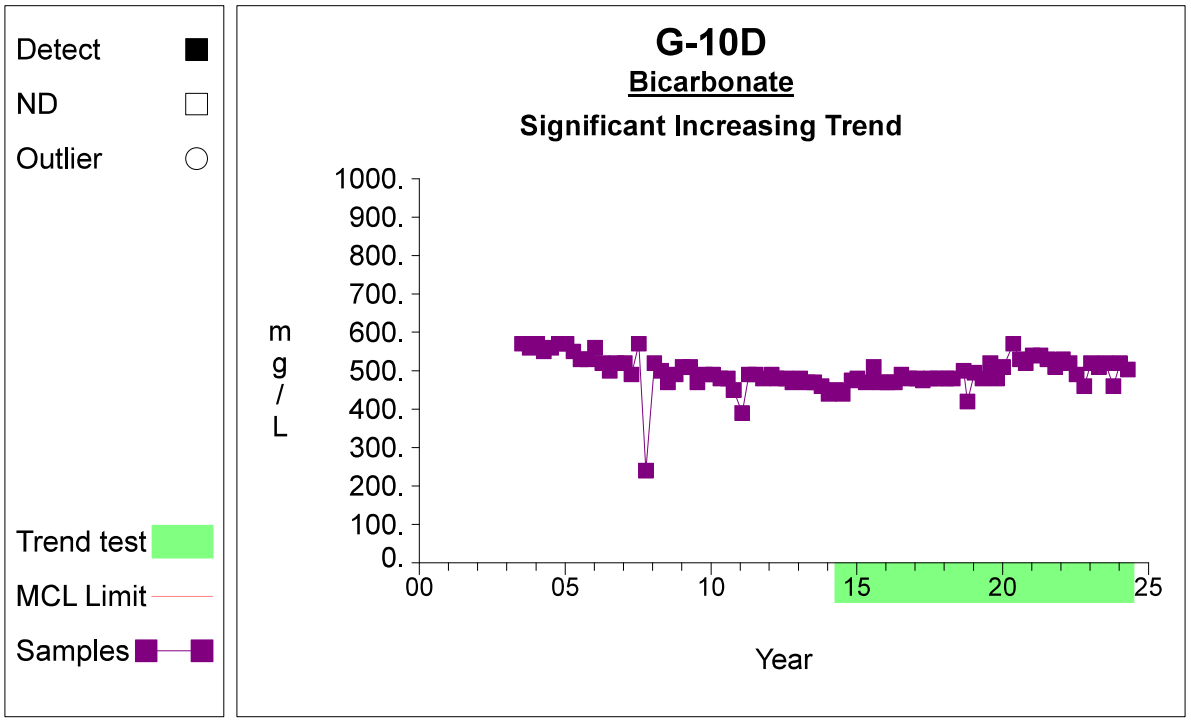
Graph 144

Time Series



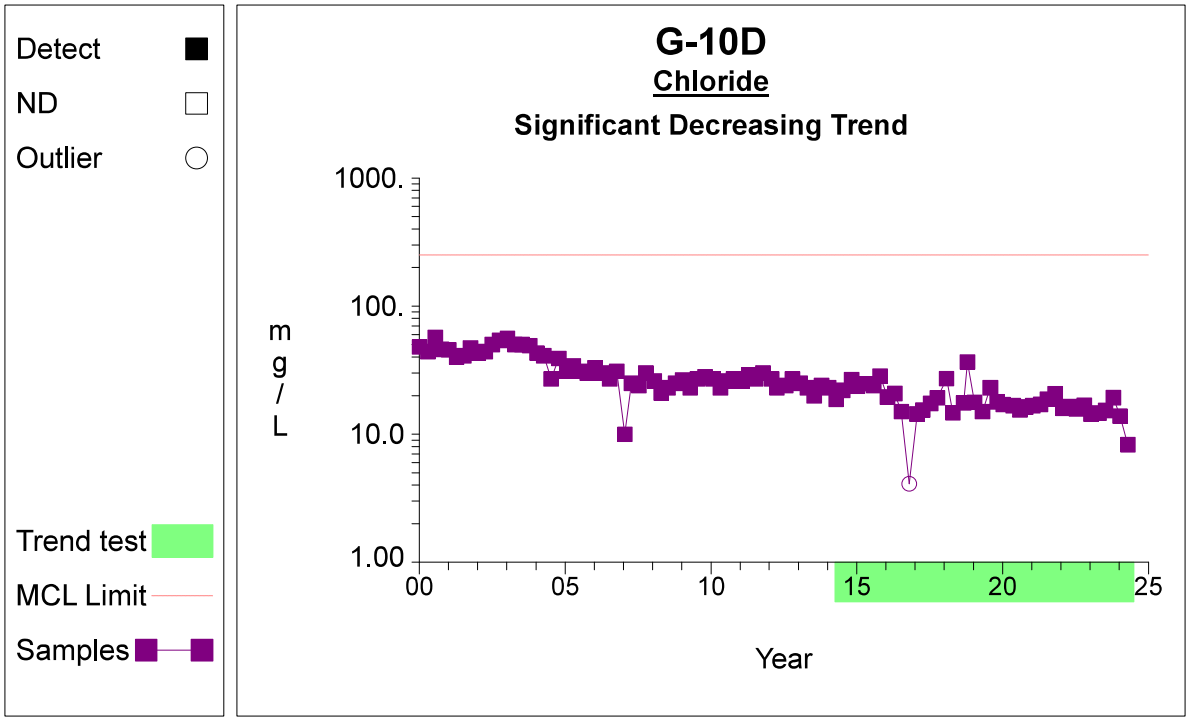
Graph 176

Time Series



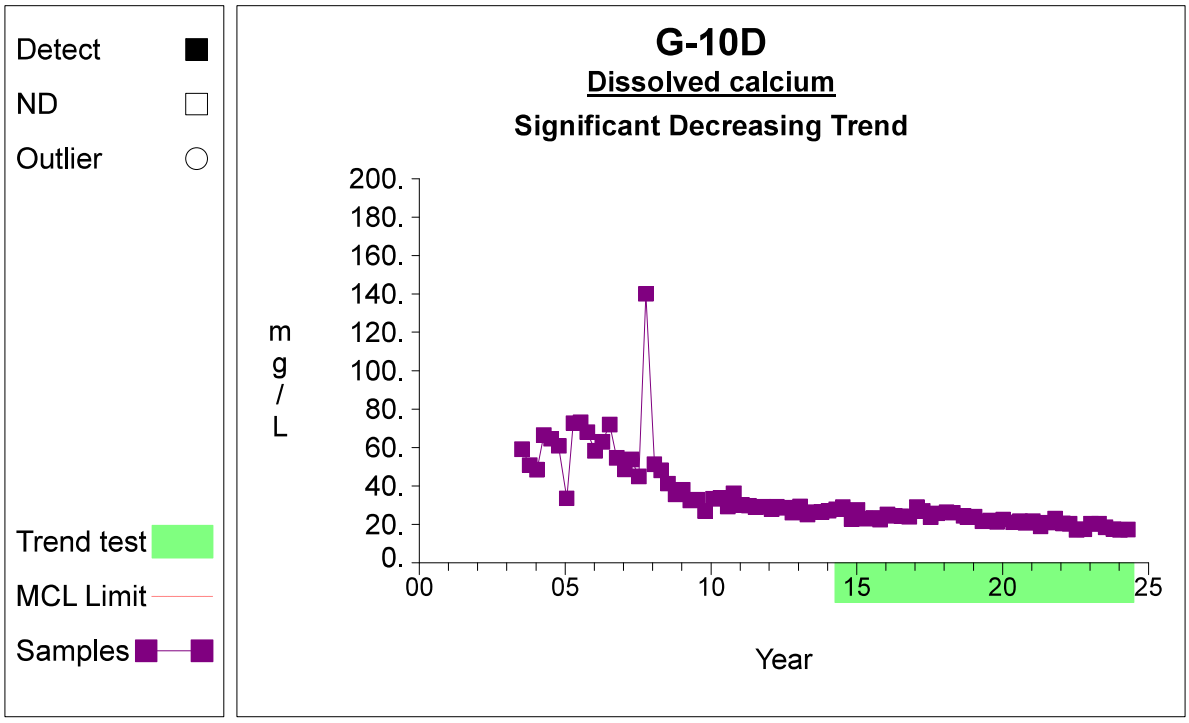
Graph 182

Time Series



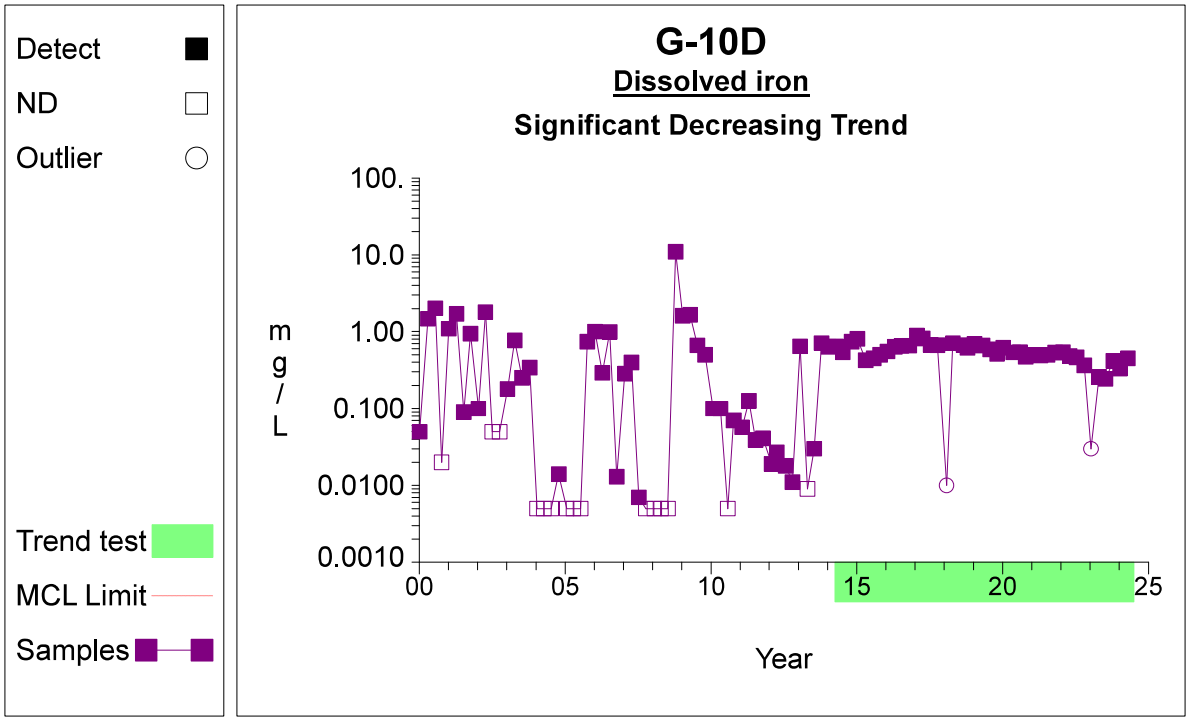
Graph 185

Time Series



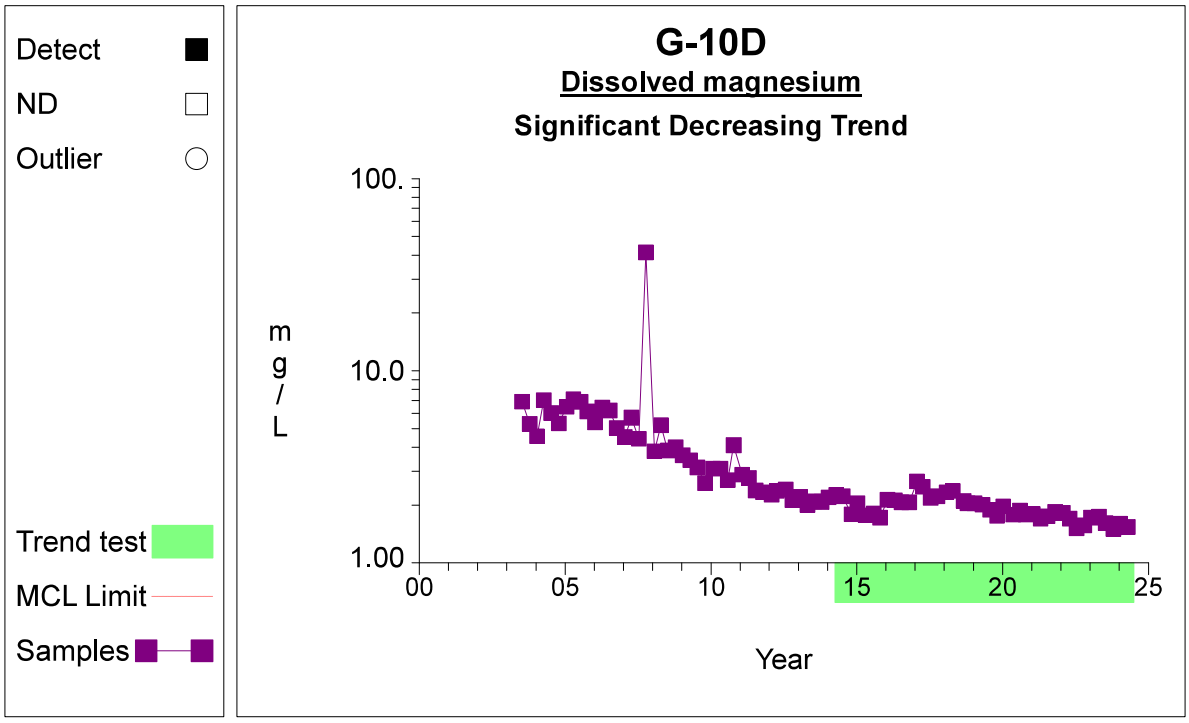
Graph 190

Time Series



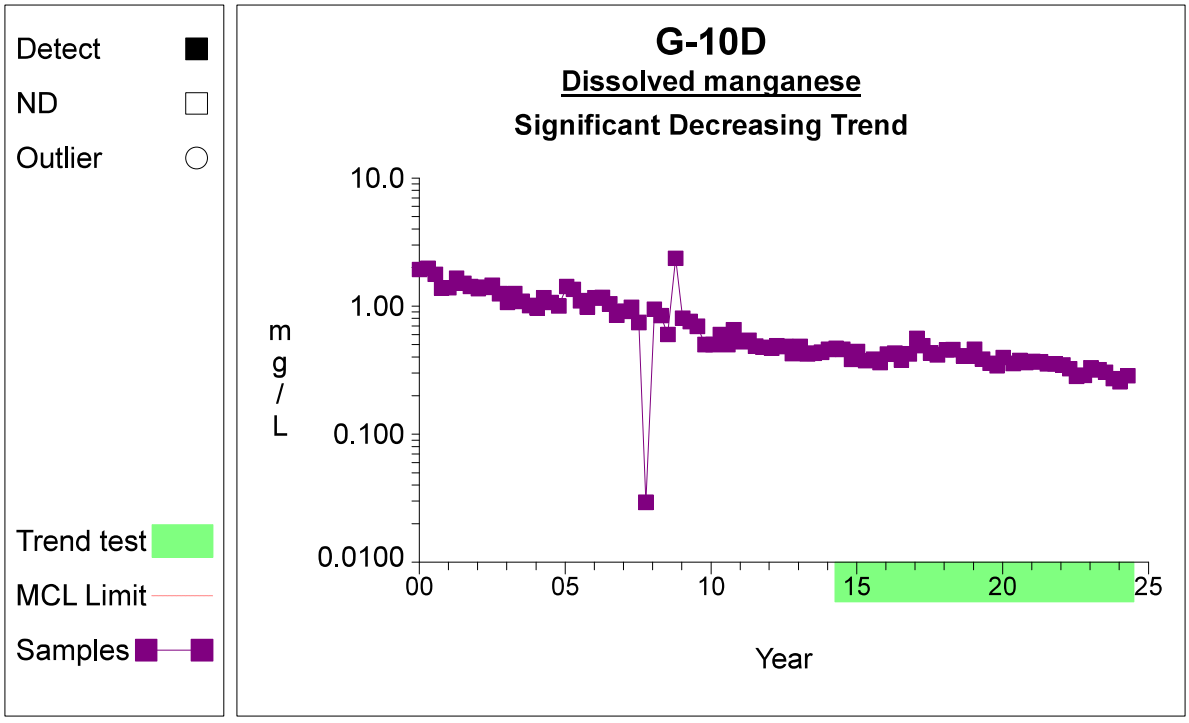
Graph 191

Time Series



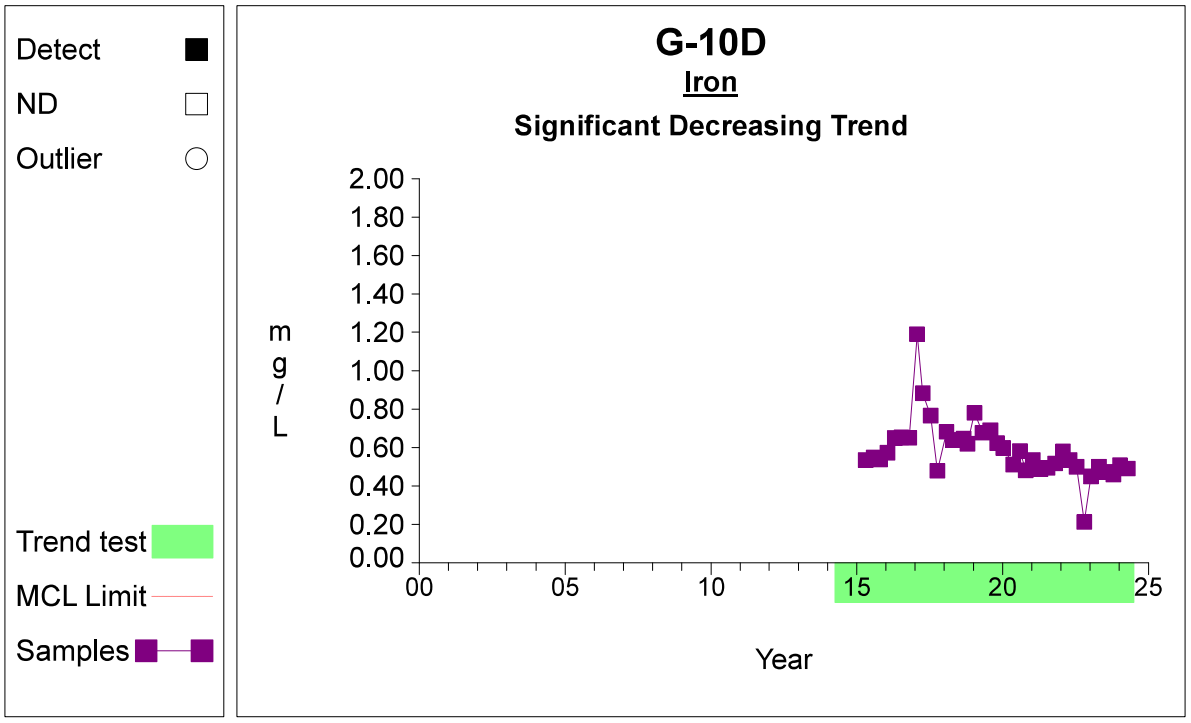
Graph 192

Time Series



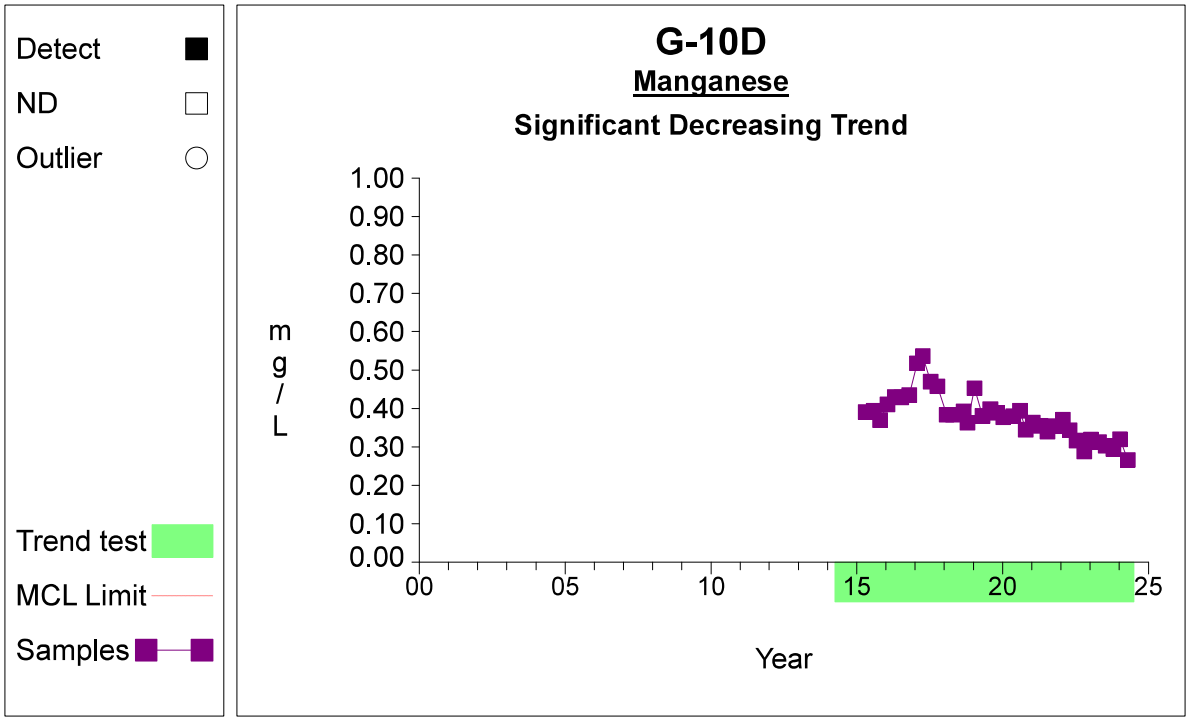
Graph 193

Time Series



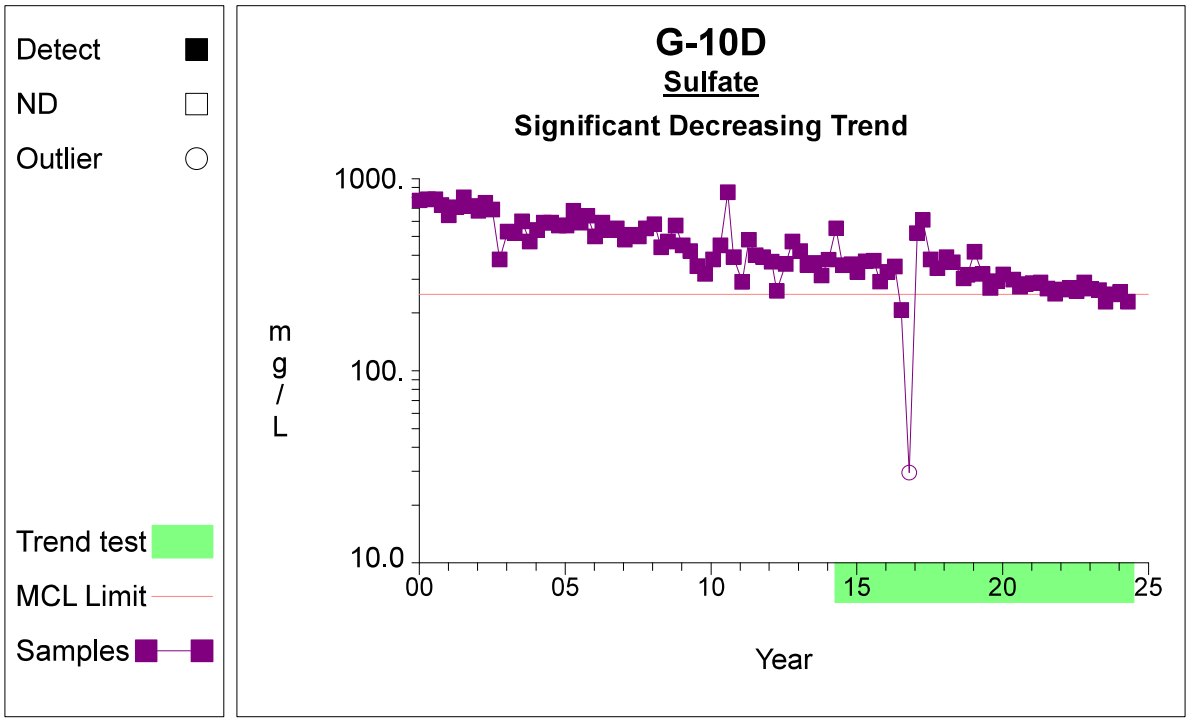
Graph 196

Time Series



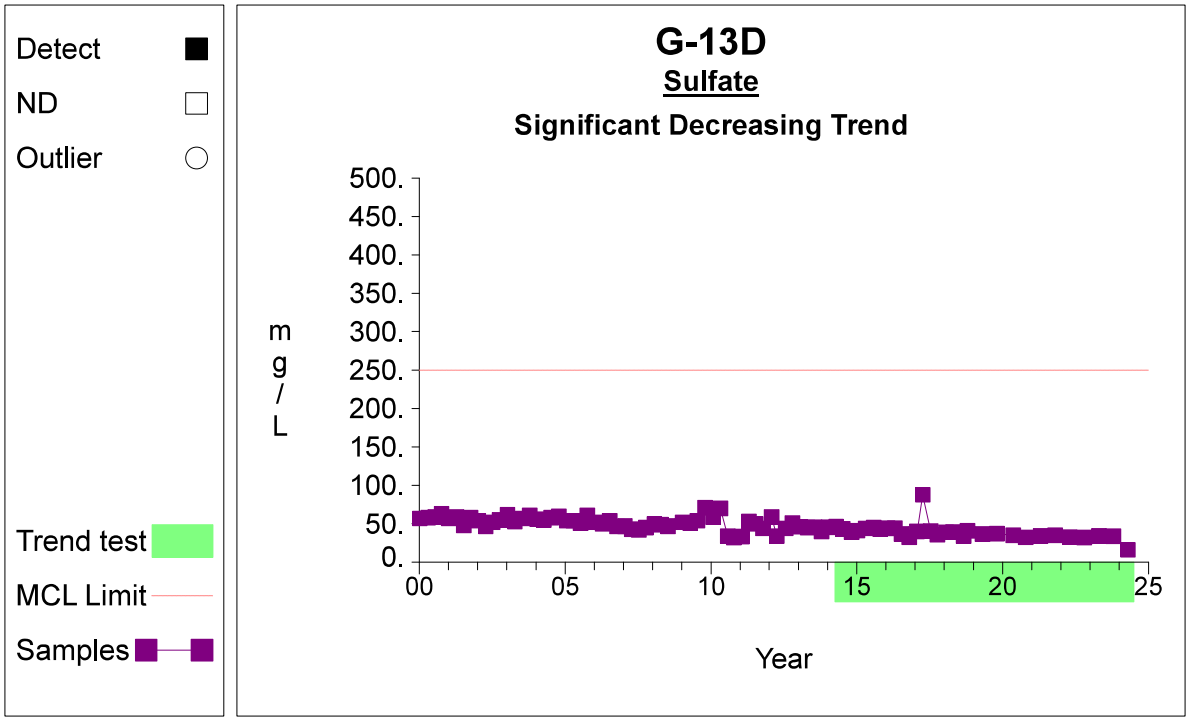
Graph 198

Time Series



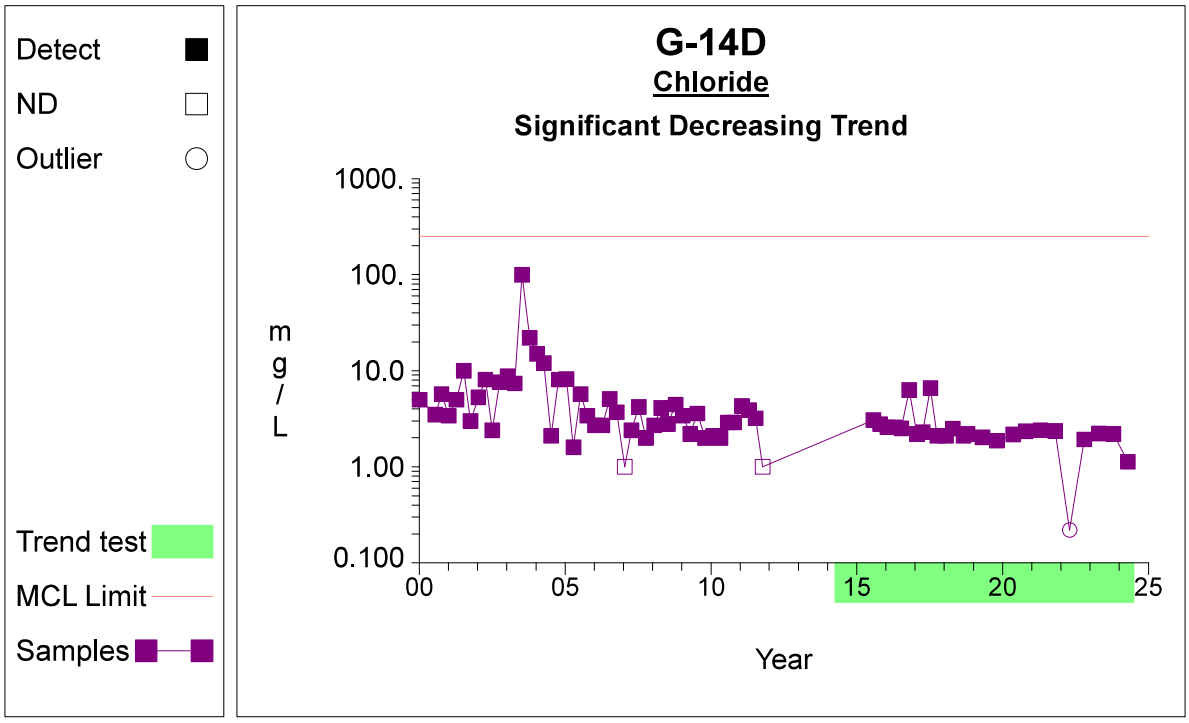
Graph 205

Time Series



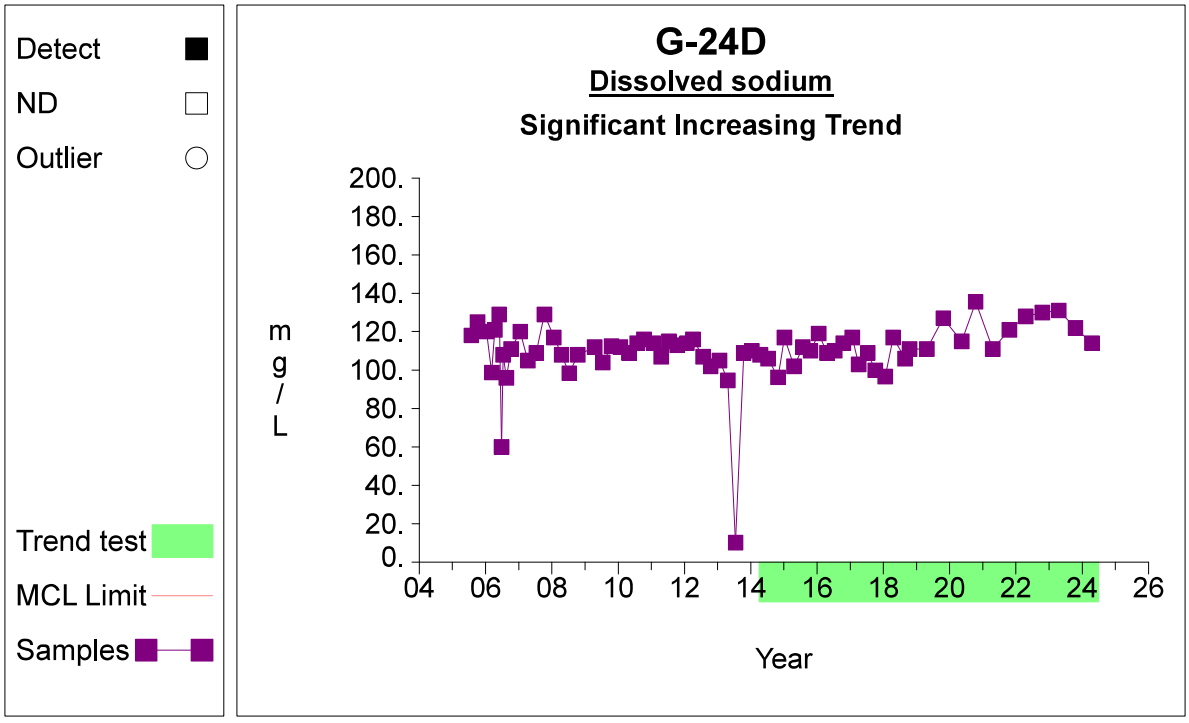
Graph 240

Time Series



Graph 255

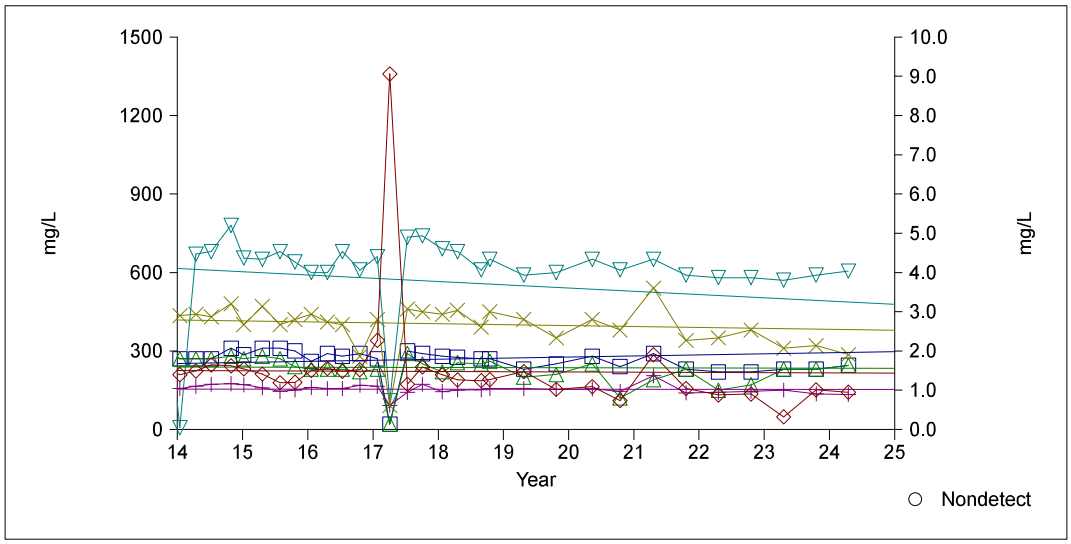
Time Series



Graph 300

Cathcart Landfill

Time Series Plot for G-01D



Alkalinity (as caco3)
Bicarbonate
Conductivity
Dissolved sodium
Total dissolved solids
Dissolved calcium

1

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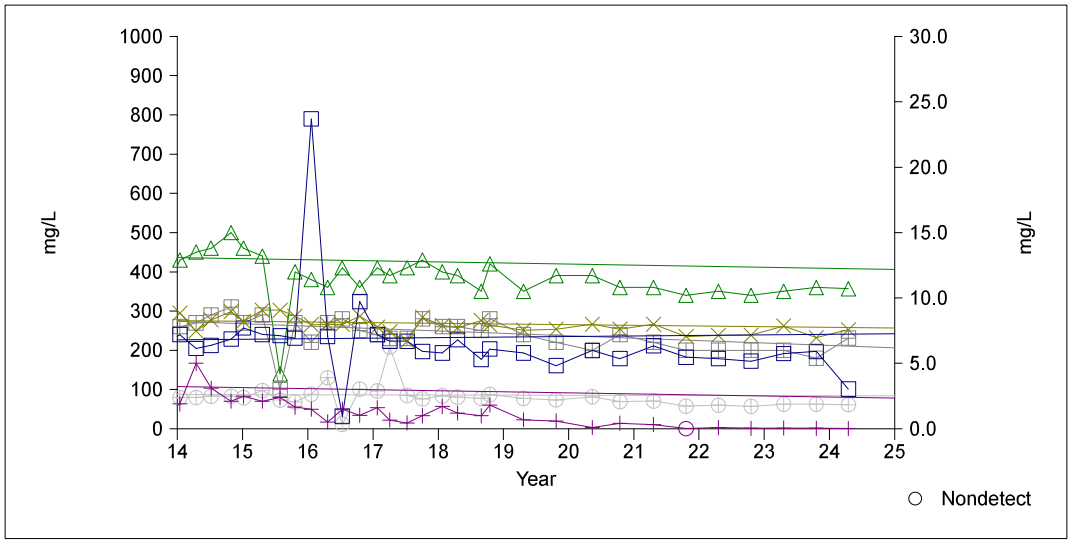
Cathcart Landfill

Time Series Plot for G-02D



Conductivity
Sulfate
Total dissolved solids
Chloride
pH
Nitrate nitrogen

1

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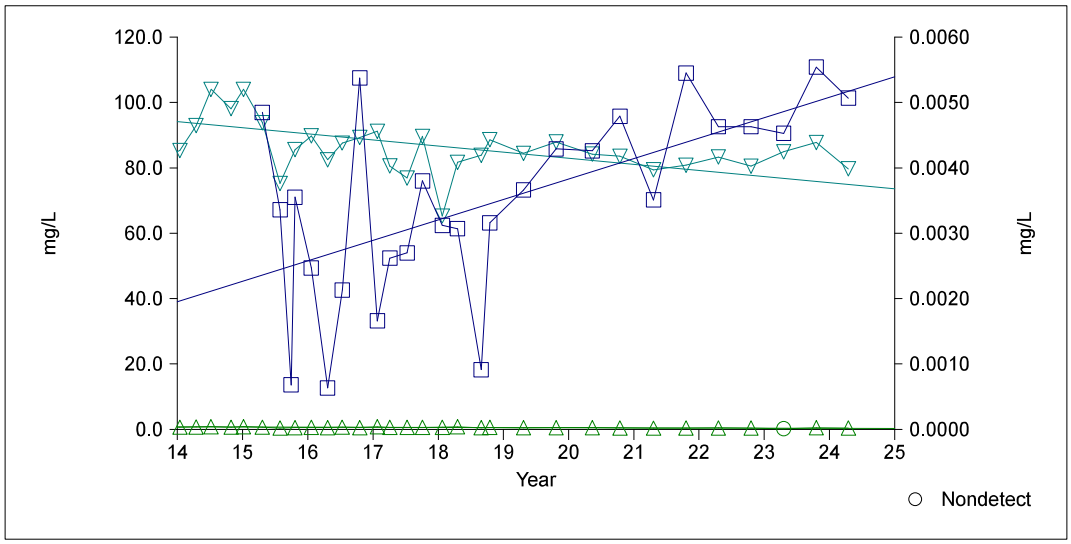
Cathcart Landfill

Time Series Plot for G-02D



Dissolved sodium
Dissolved calcium

Arsenic

1

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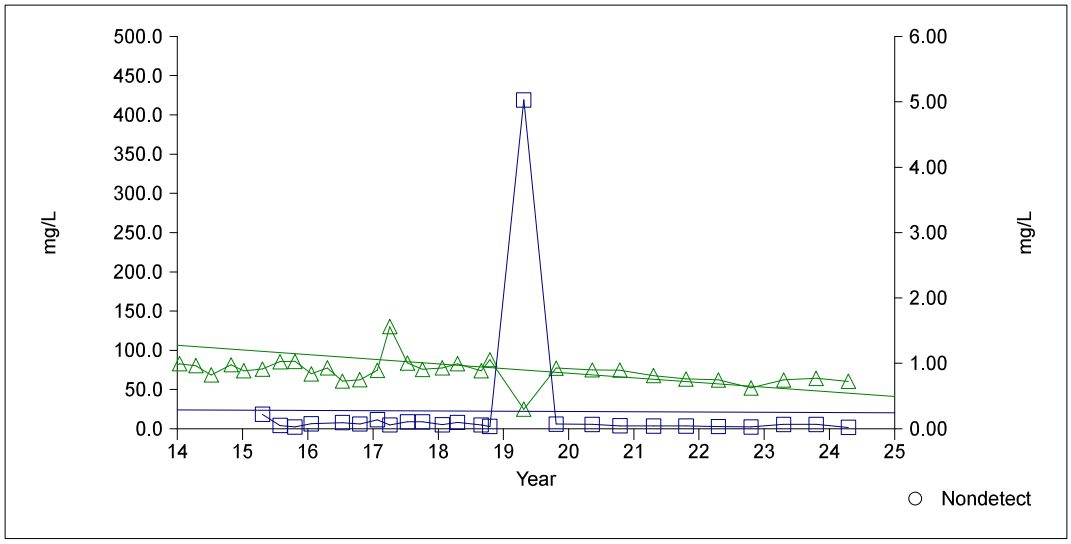
Cathcart Landfill

Time Series Plot for G-06B



Sulfate

Manganese

1

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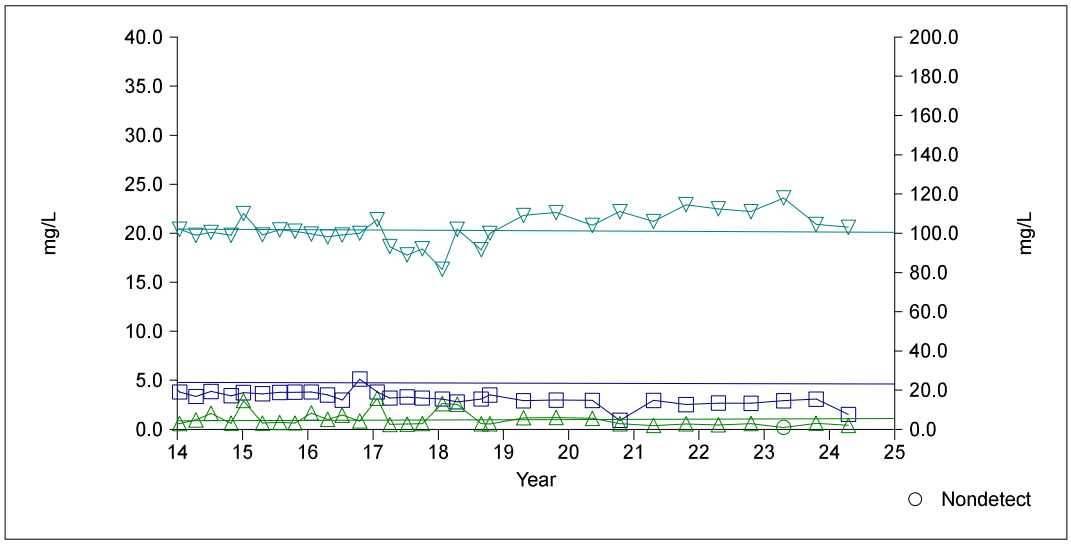
Cathcart Landfill

Time Series Plot for G-08D2



Chloride
Dissolved calcium
Dissolved sodium

1

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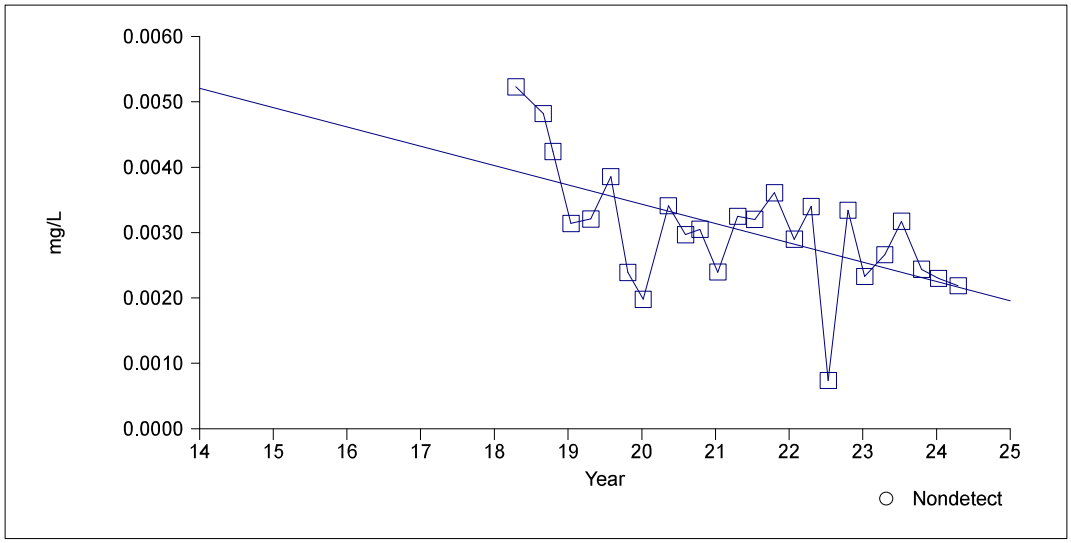
Cathcart Landfill

Time Series Plot for G-09D



Arsenic

1

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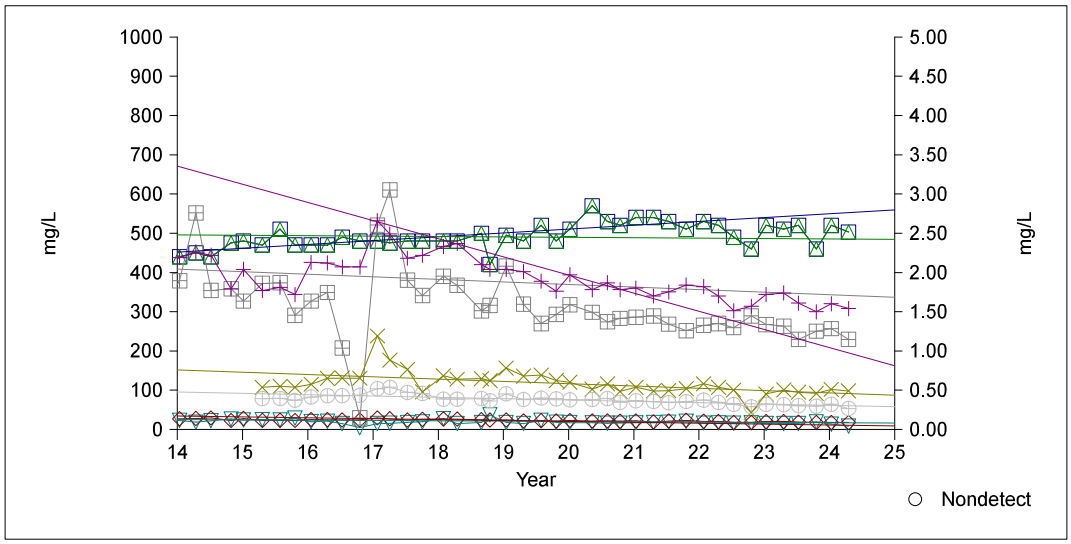
Cathcart Landfill

Time Series Plot for G-10D



Alkalinity (as caco3)
Bicarbonate
Chloride
Dissolved calcium
Sulfate
Dissolved magnesium
Iron
Manganese

1

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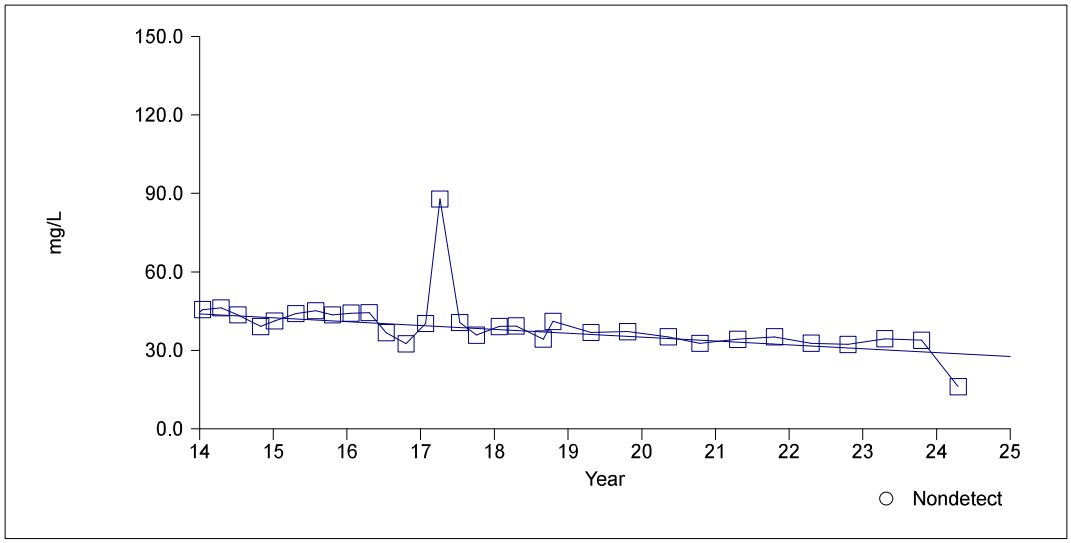
Cathcart Landfill

Time Series Plot for G-13D



Sulfate

1

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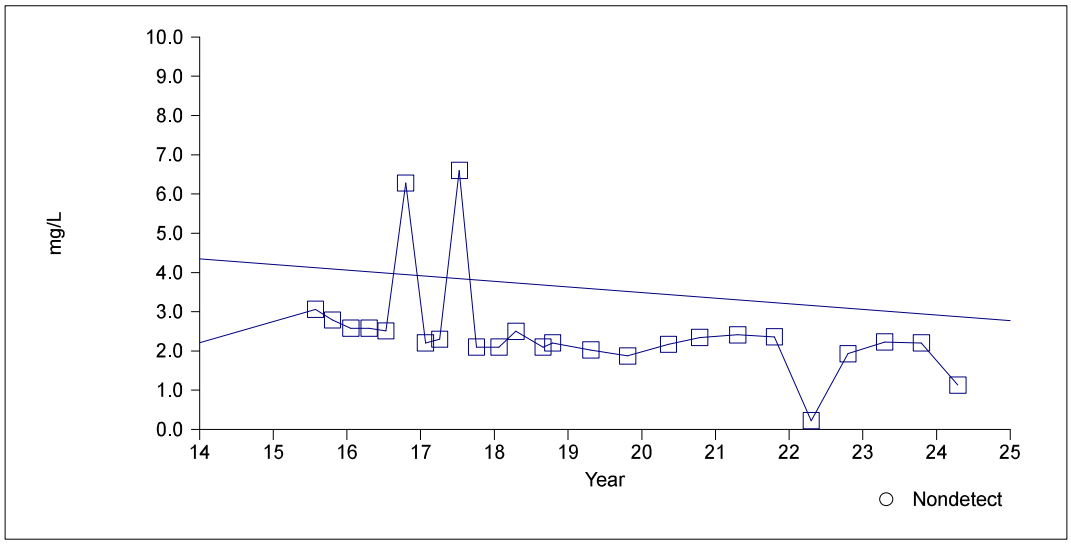
Cathcart Landfill

Time Series Plot for G-14D



1

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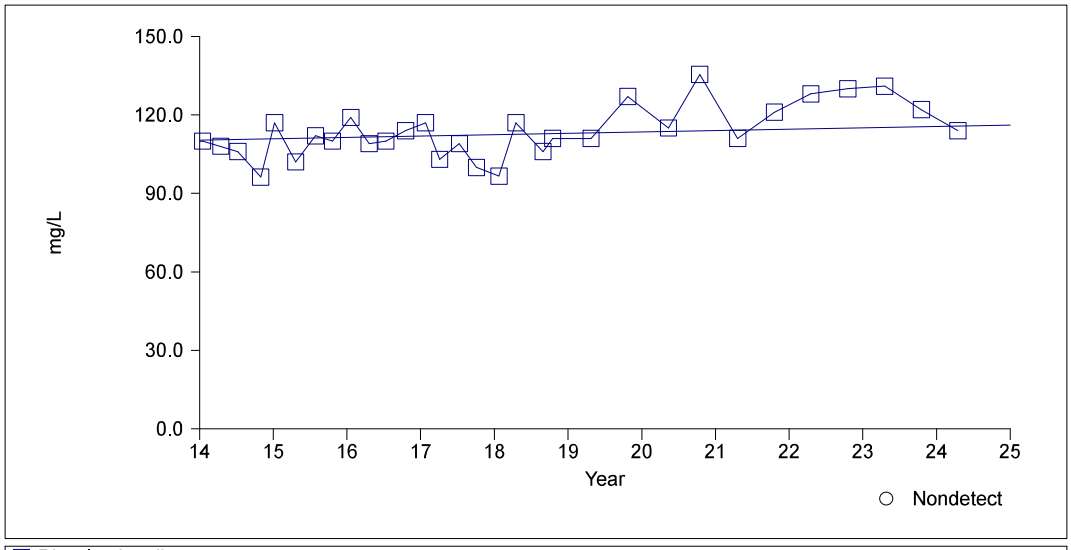
Cathcart Landfill

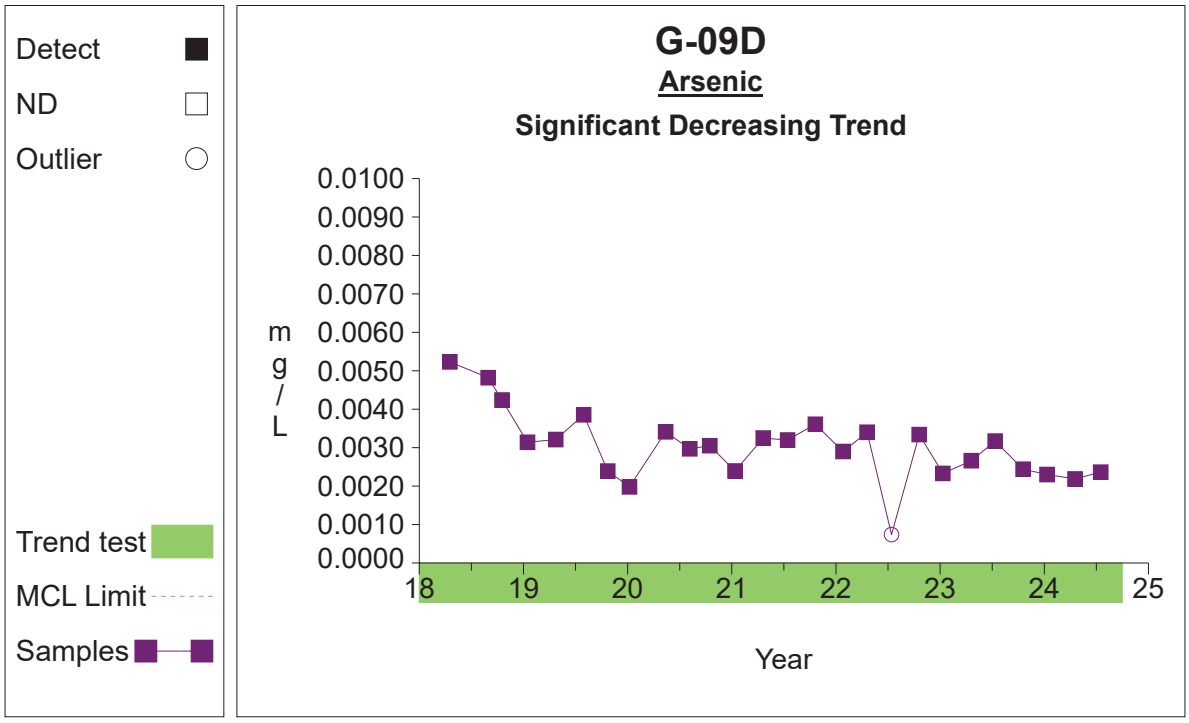
Time Series Plot for G-24D



1

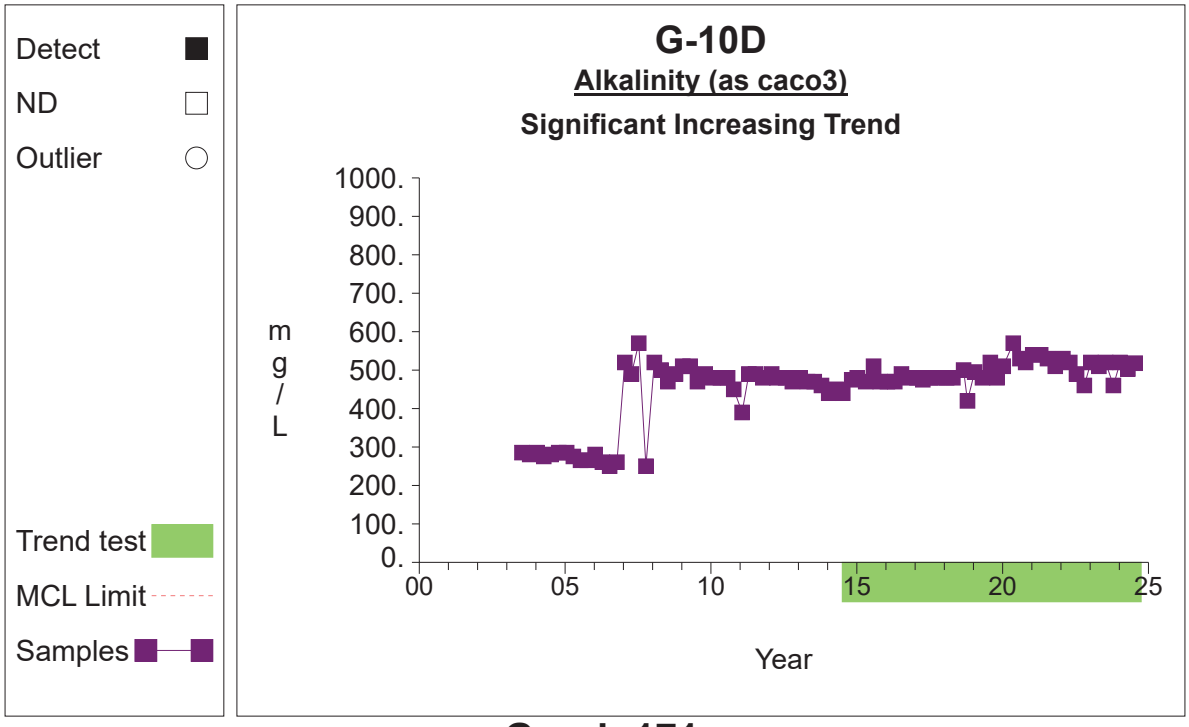
Prepared by: Snohomish County Solid Waste

Time Series



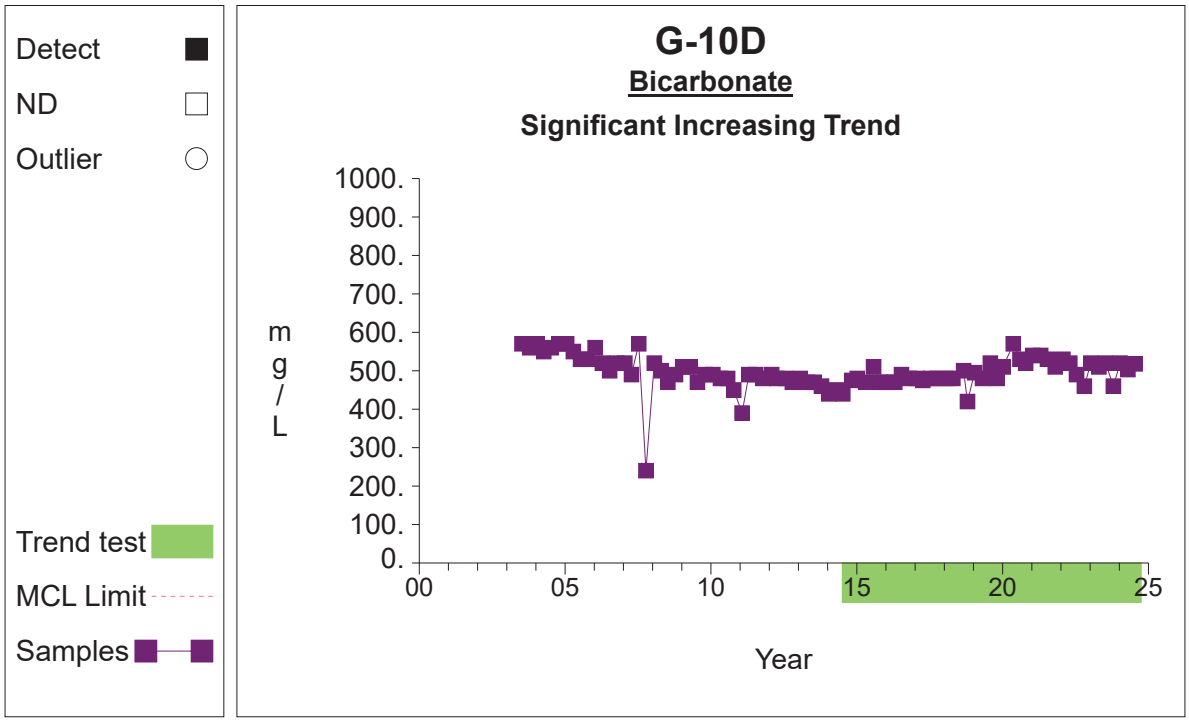
Graph 140

Time Series



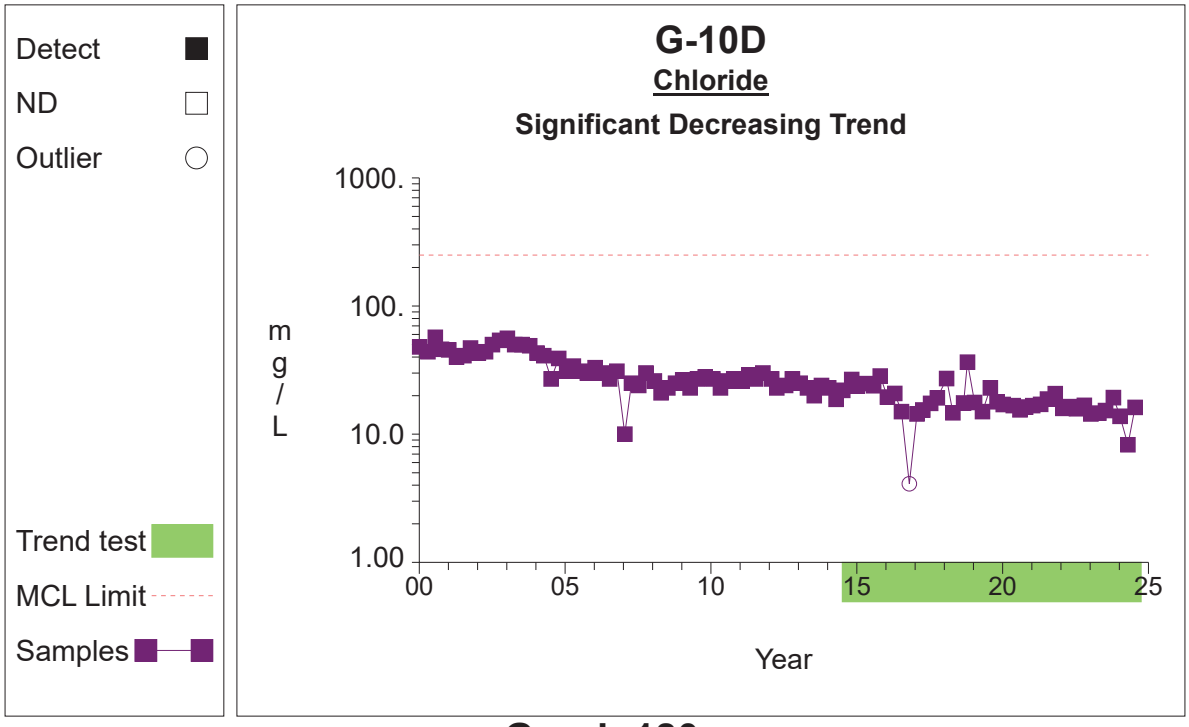
Graph 171

Time Series



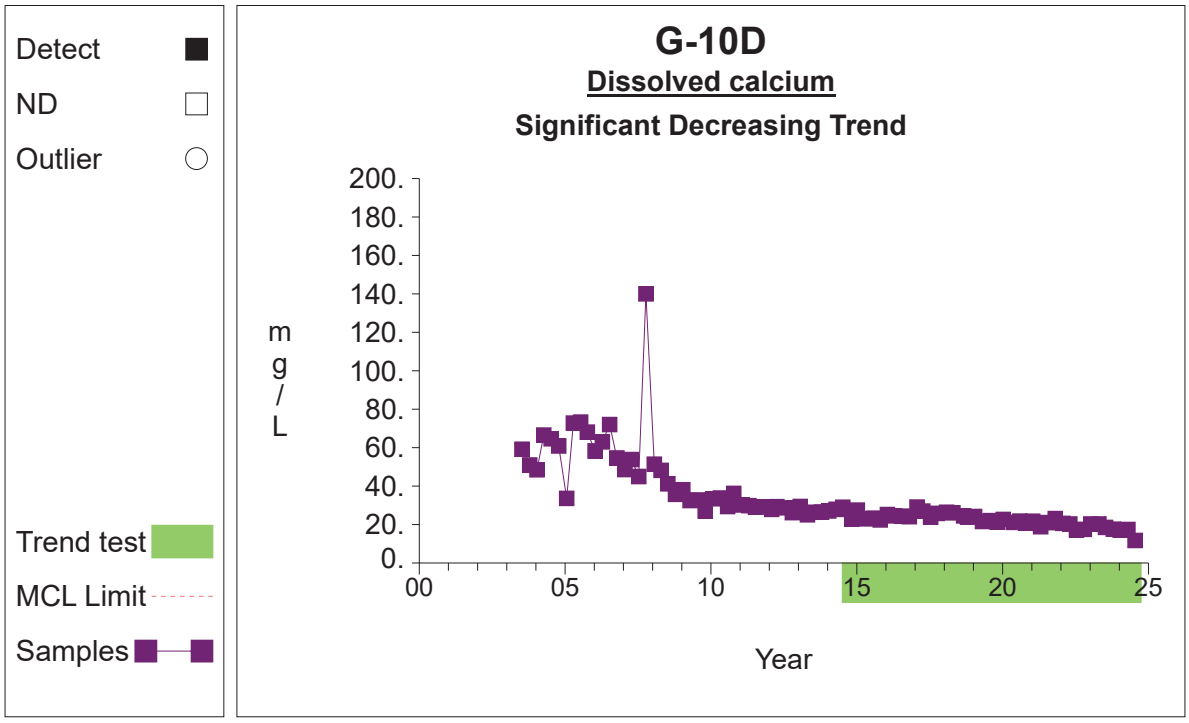
Graph 177

Time Series



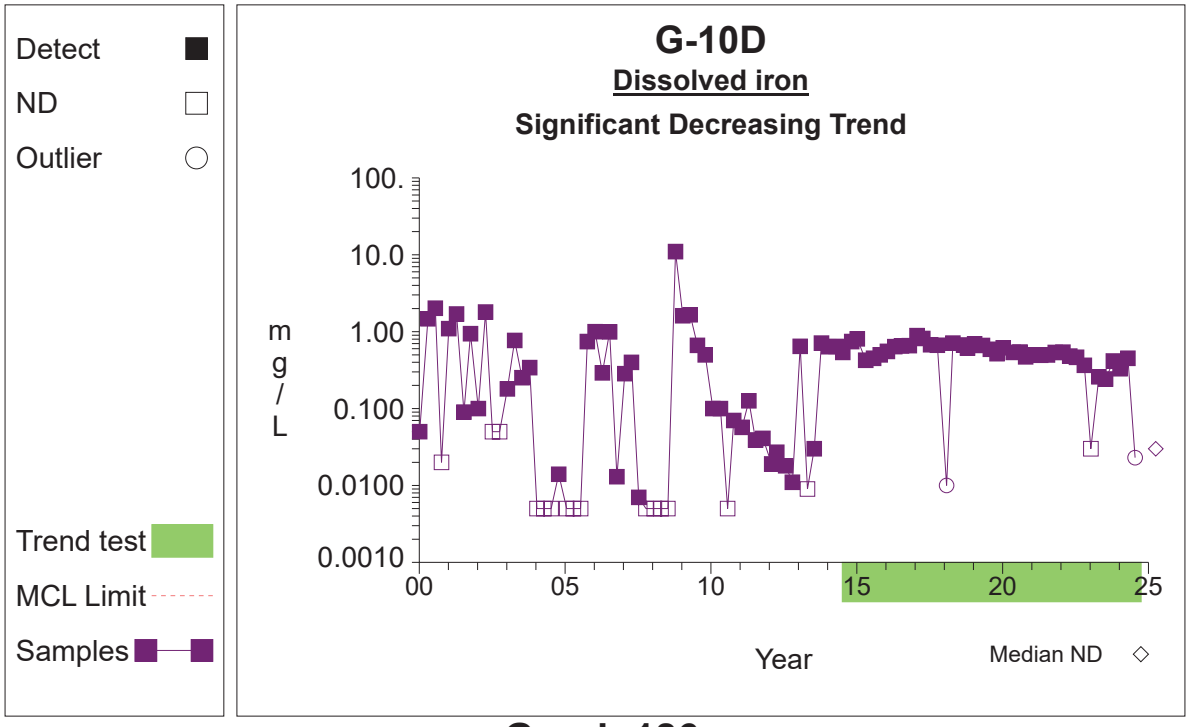
Graph 180

Time Series



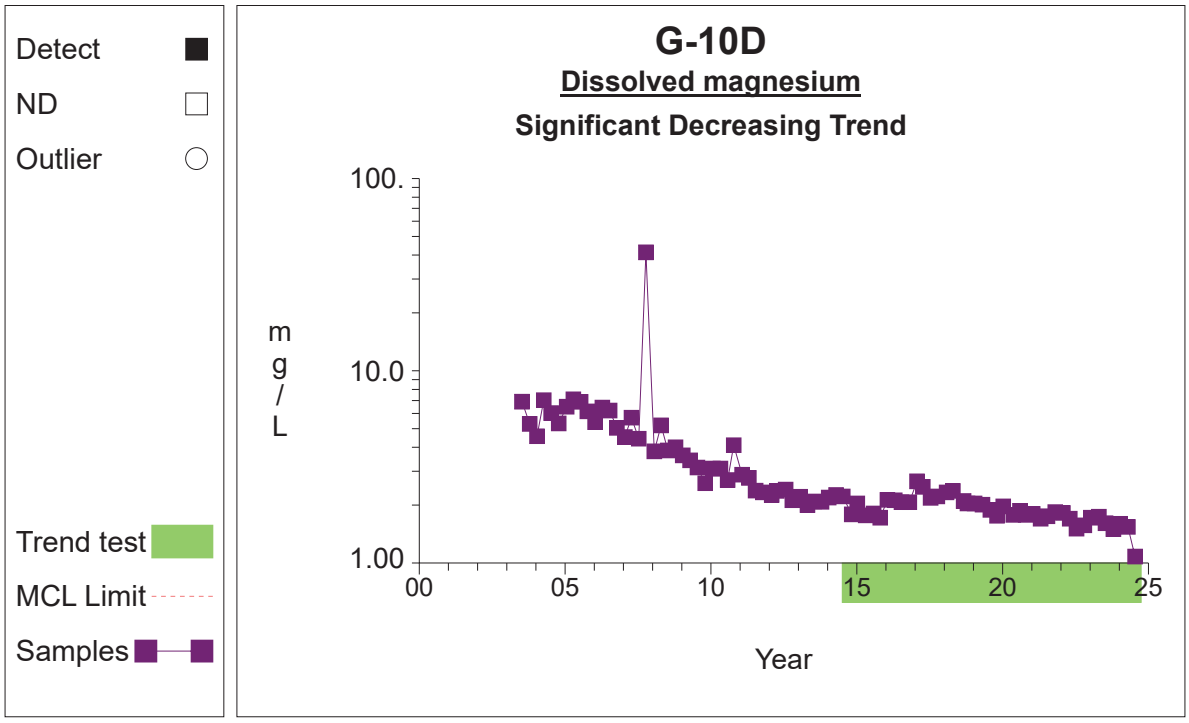
Graph 185

Time Series



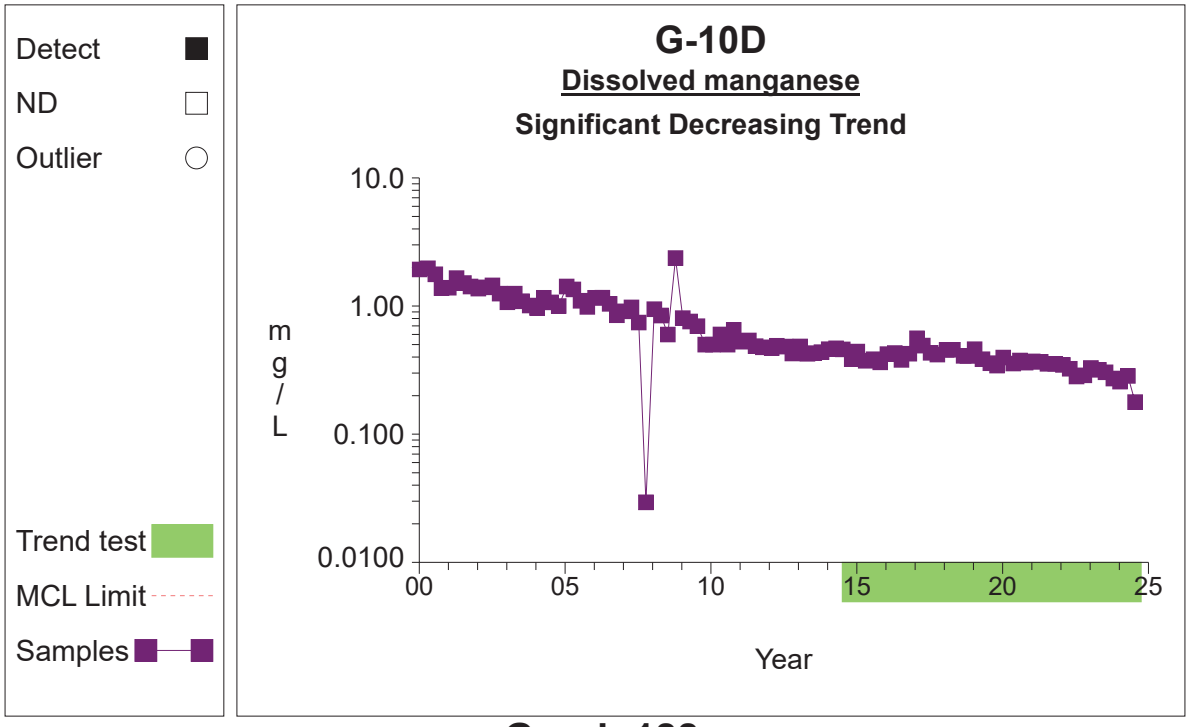
Graph 186

Time Series



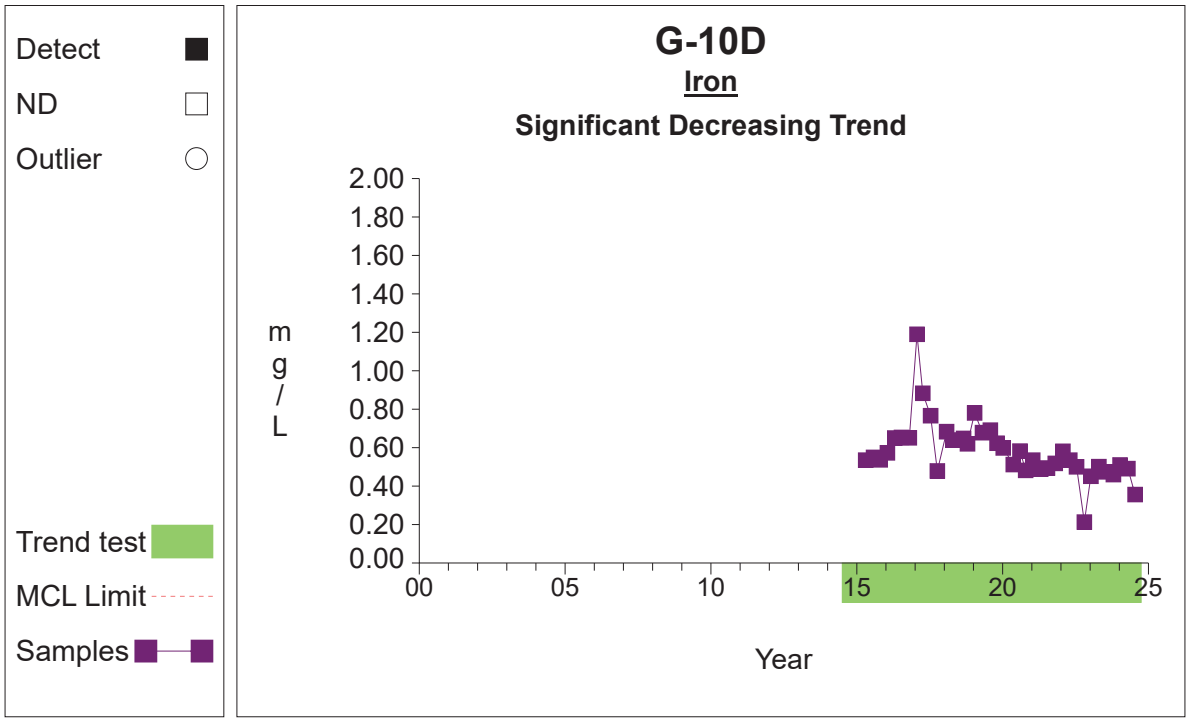
Graph 187

Time Series



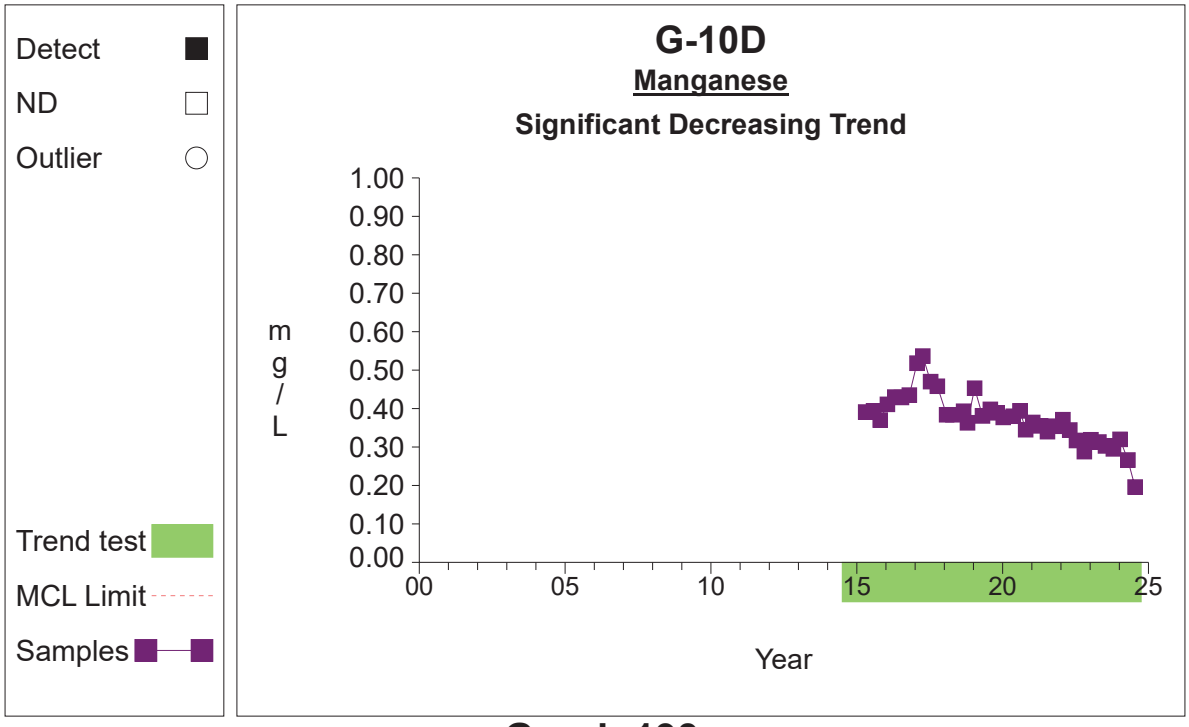
Graph 188

Time Series



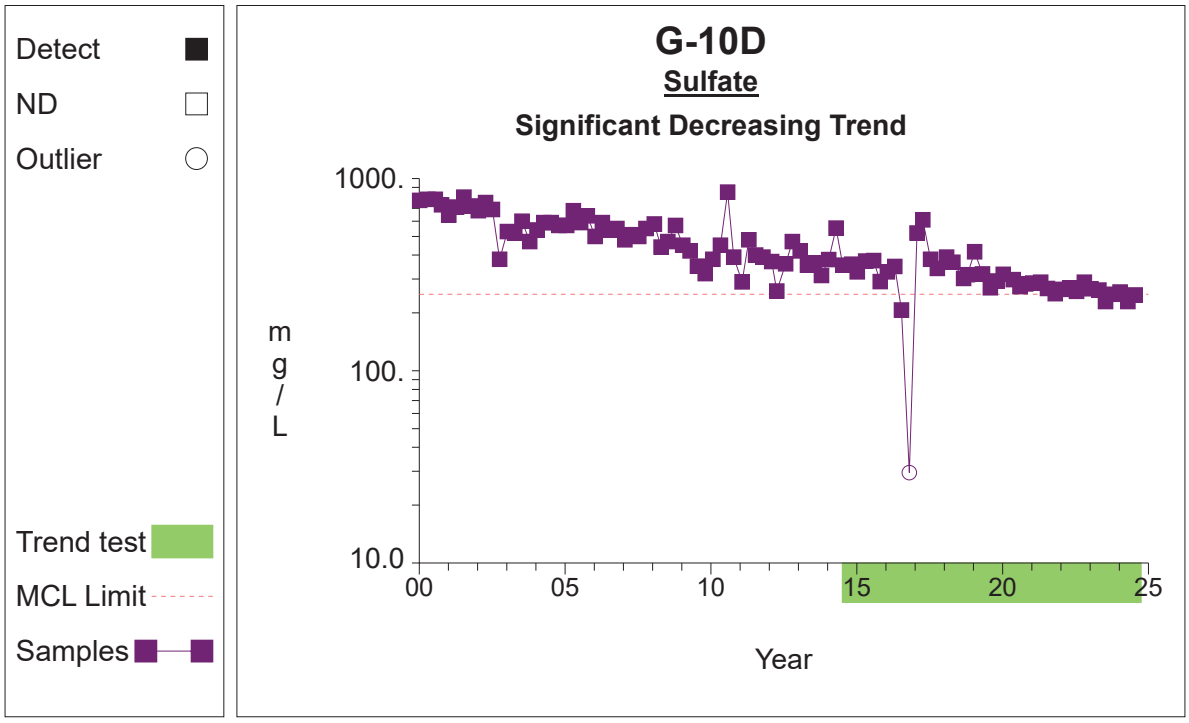
Graph 191

Time Series



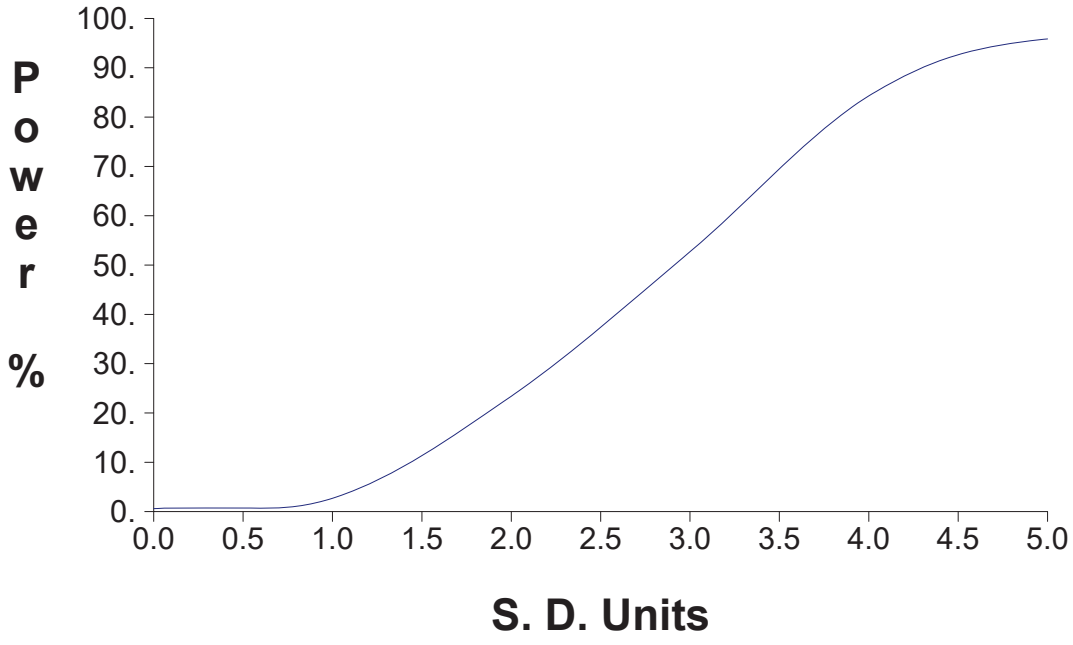
Graph 193

Time Series

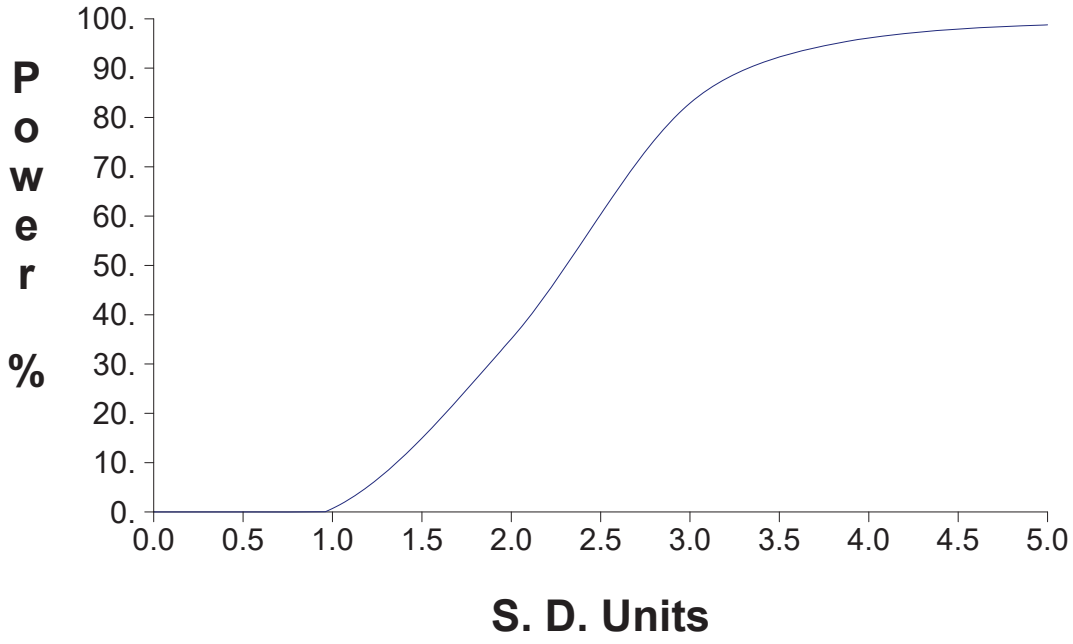


Graph 199

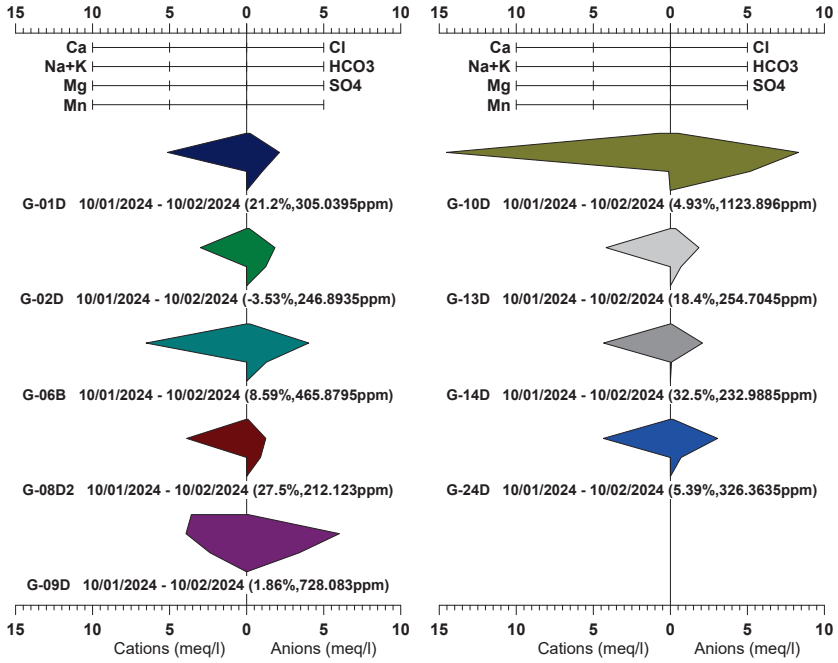
False Positive and False Negative Rates for Current Intra-Well Prediction Limits Monitoring Program



False Positive and False Negative Rates for Current Upgradient vs. Downgradient Monitoring Program



Cathcart Landfill



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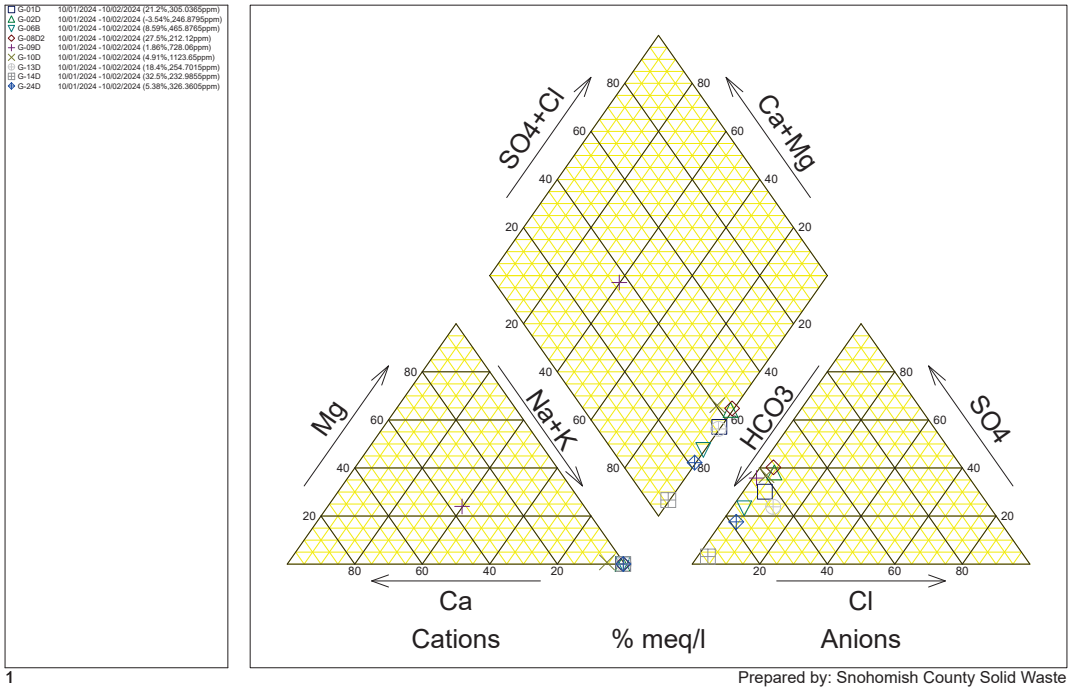
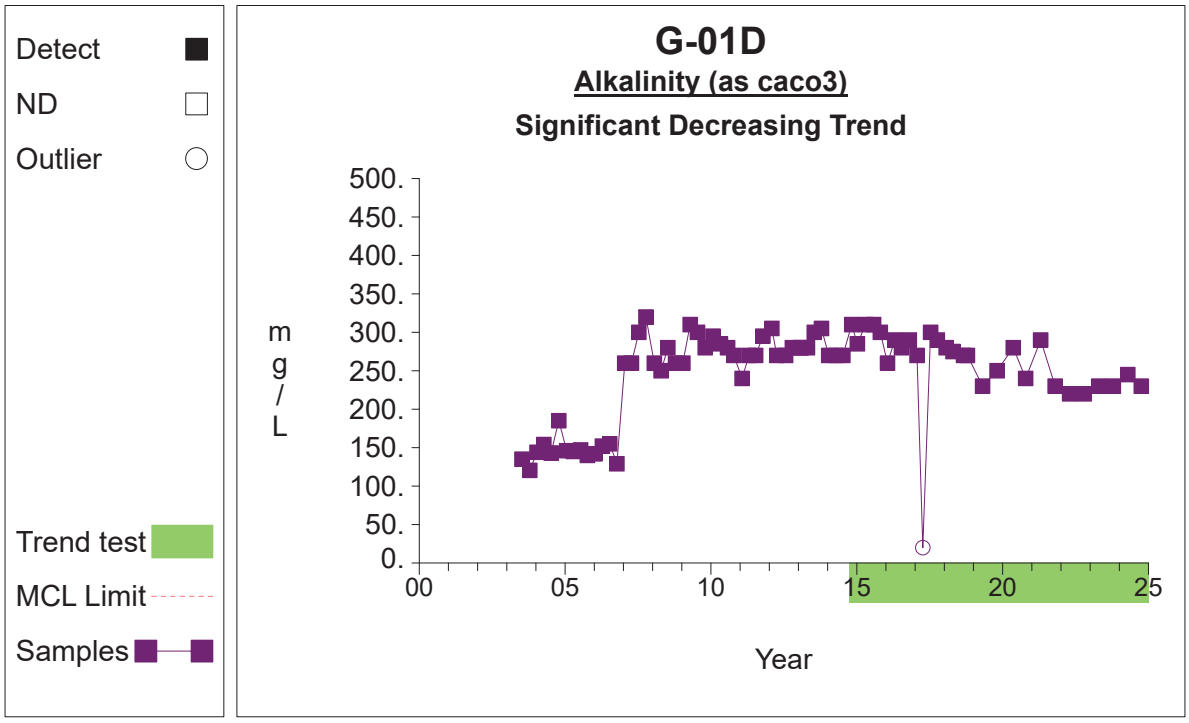
Cathcart Landfill



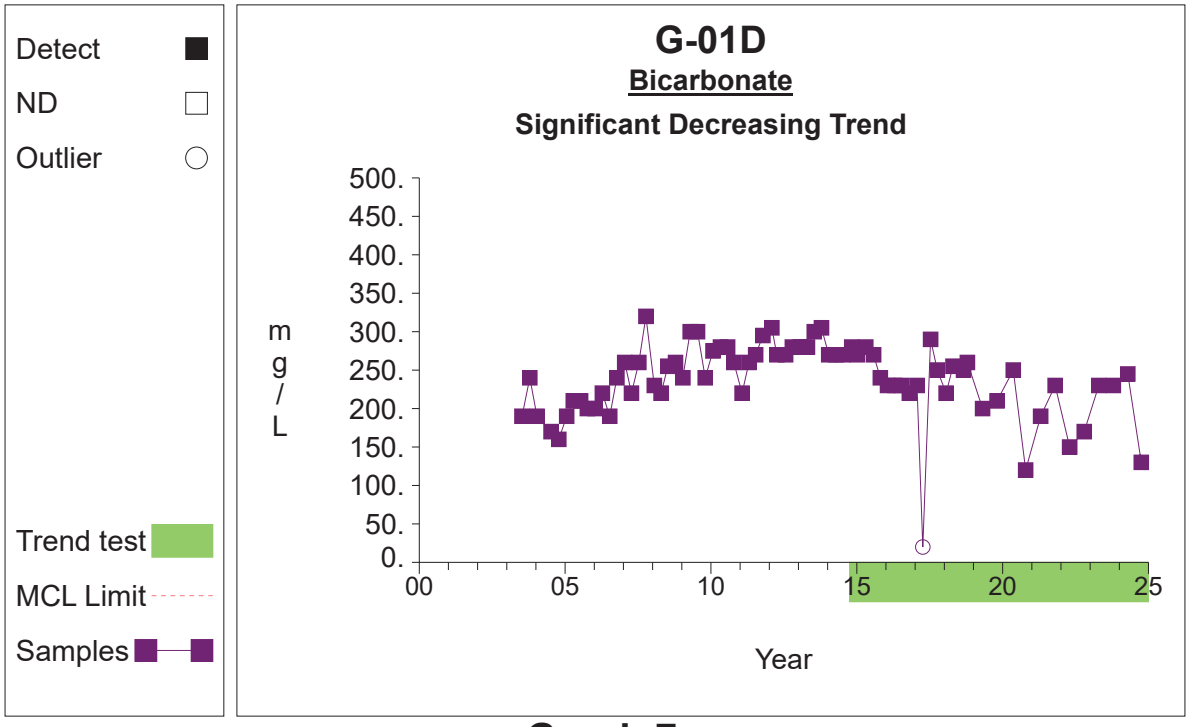
Prepared by: Snohomish County Solid Waste

Time Series



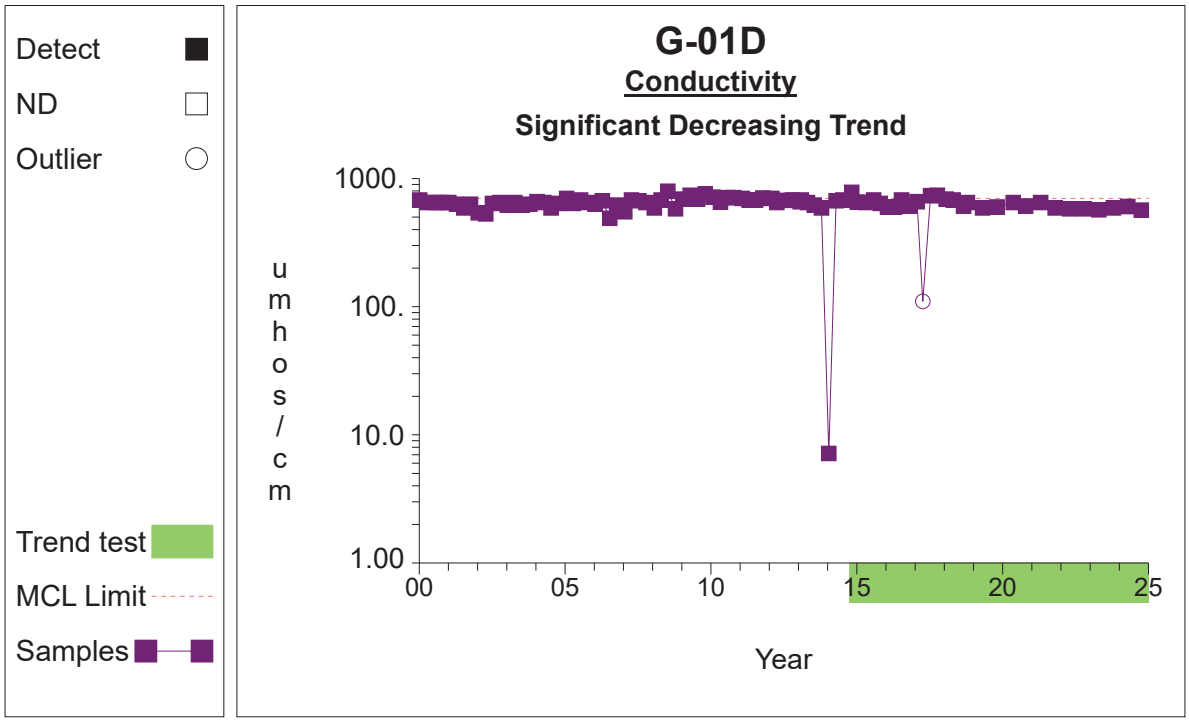
Graph 1

Time Series



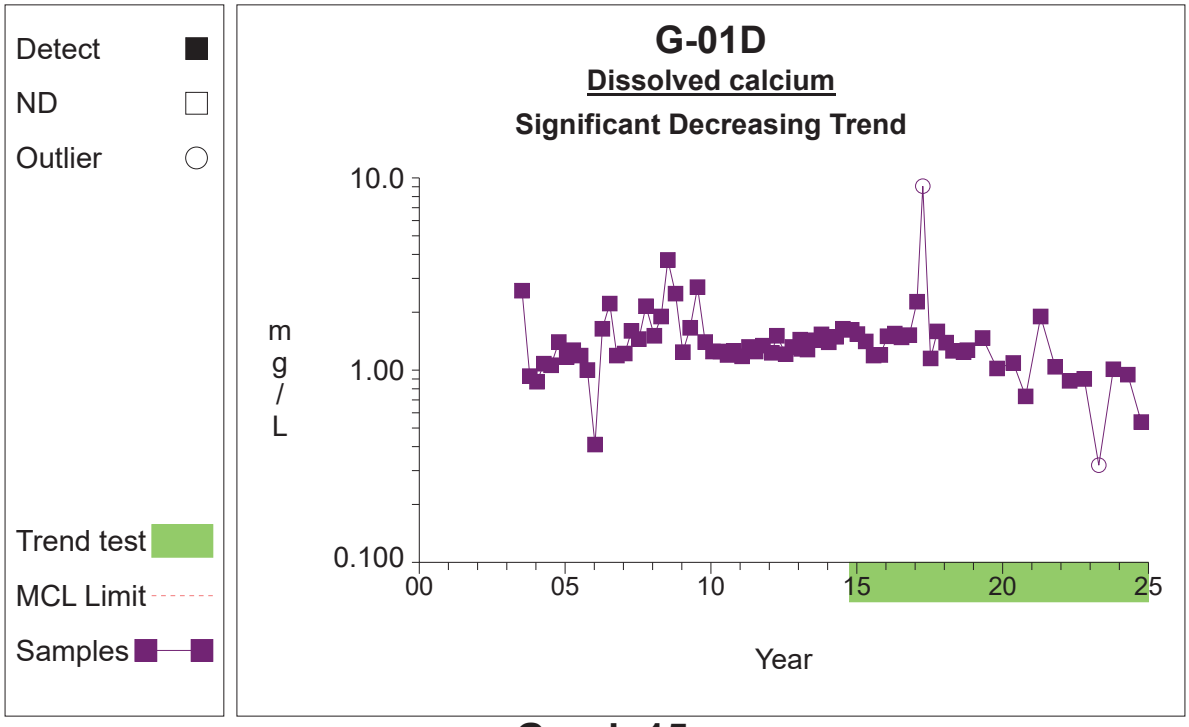
Graph 7

Time Series



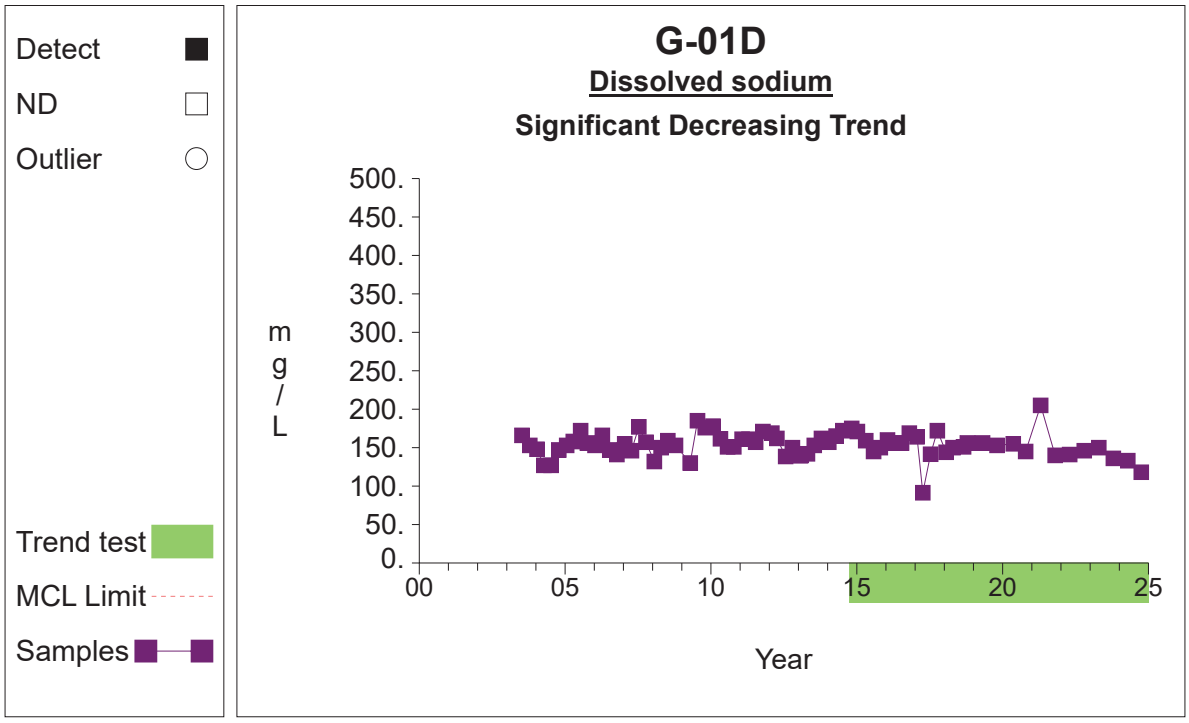
Graph 13

Time Series



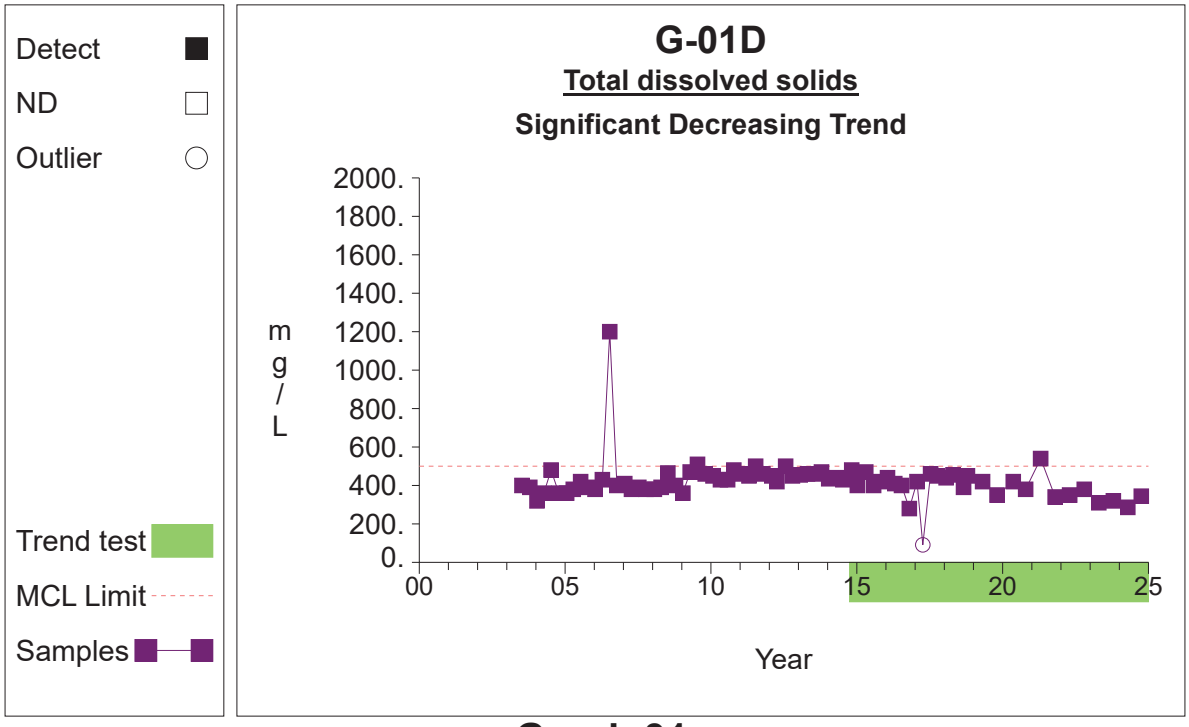
Graph 15

Time Series



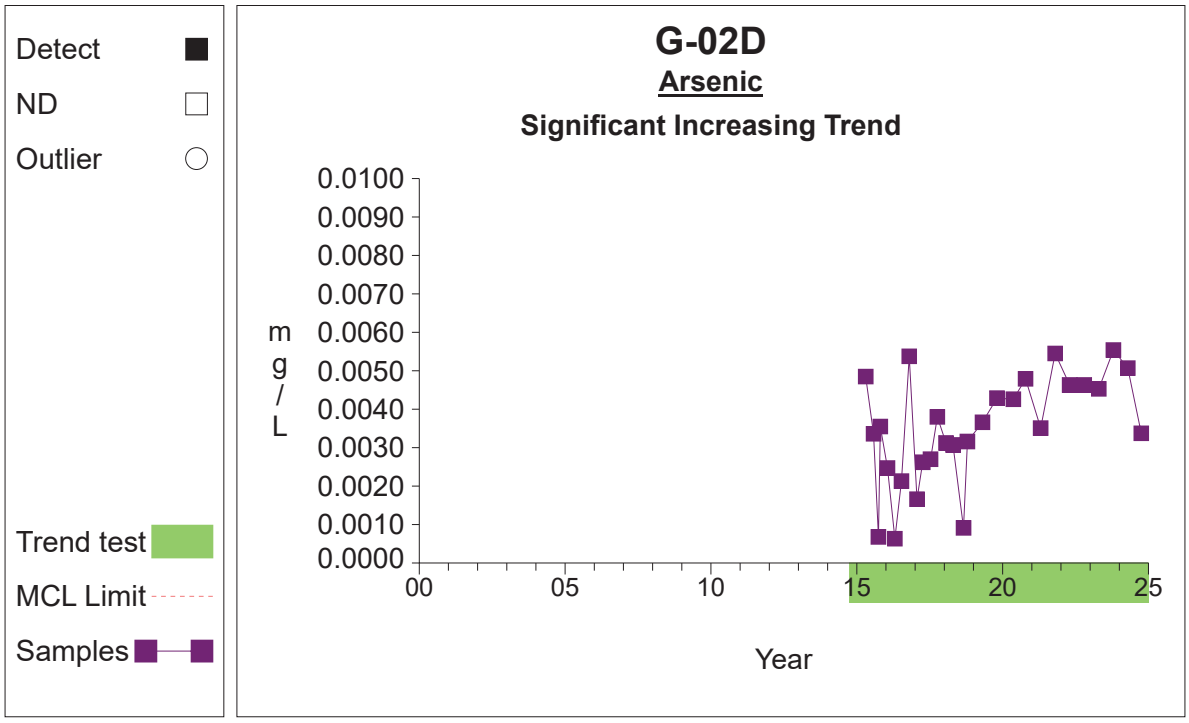
Graph 20

Time Series



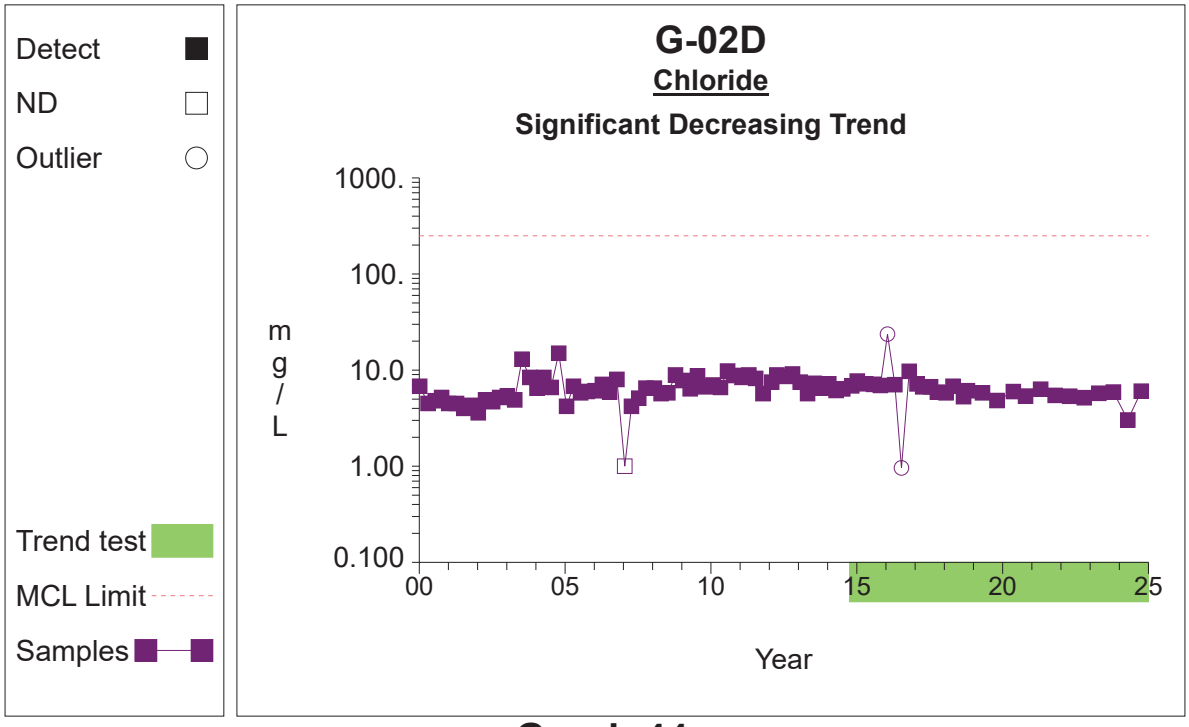
Graph 31

Time Series



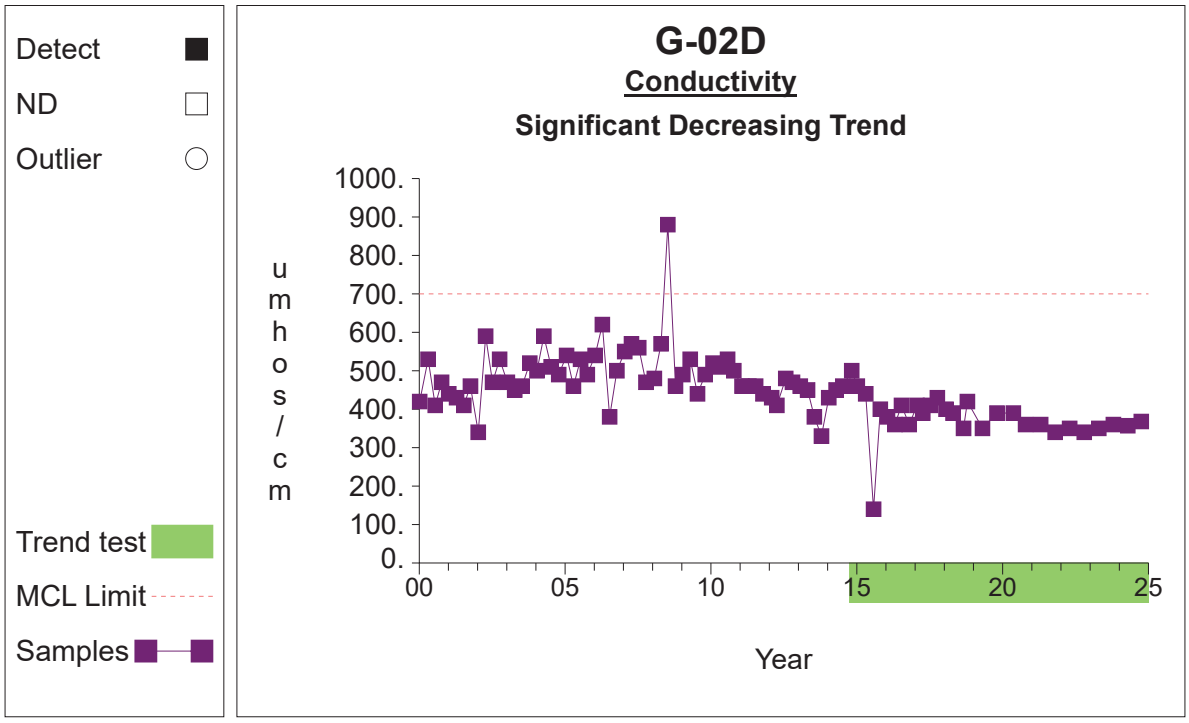
Graph 38

Time Series



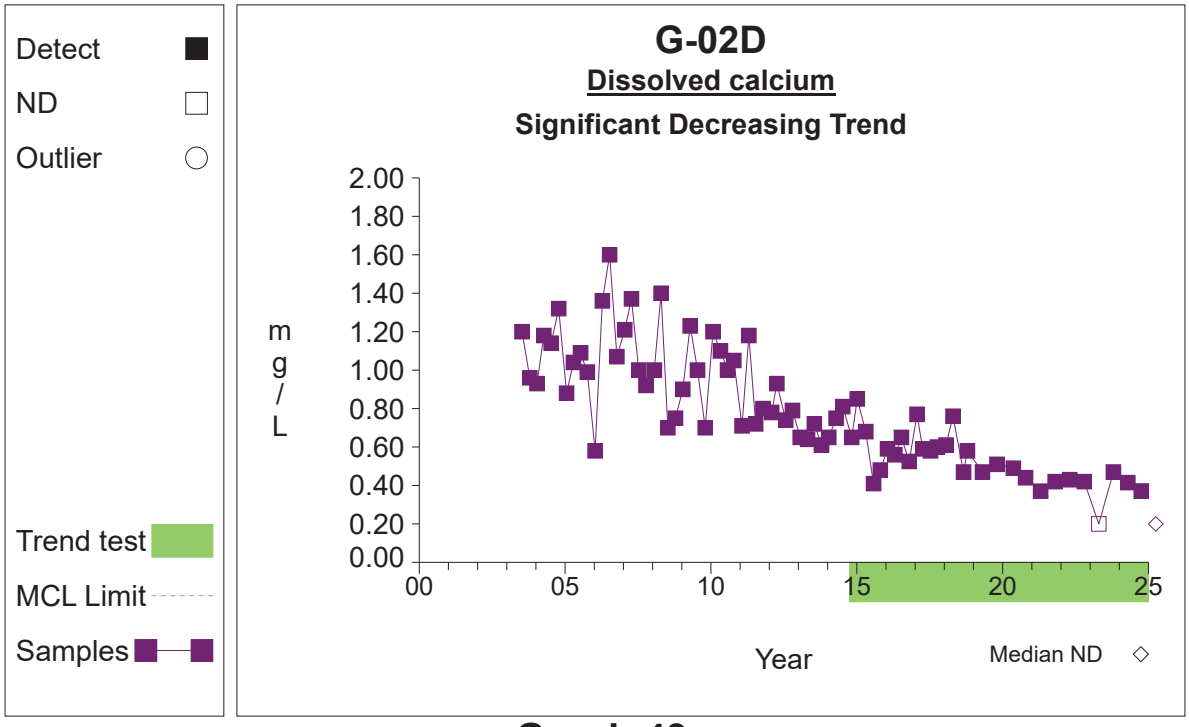
Graph 44

Time Series



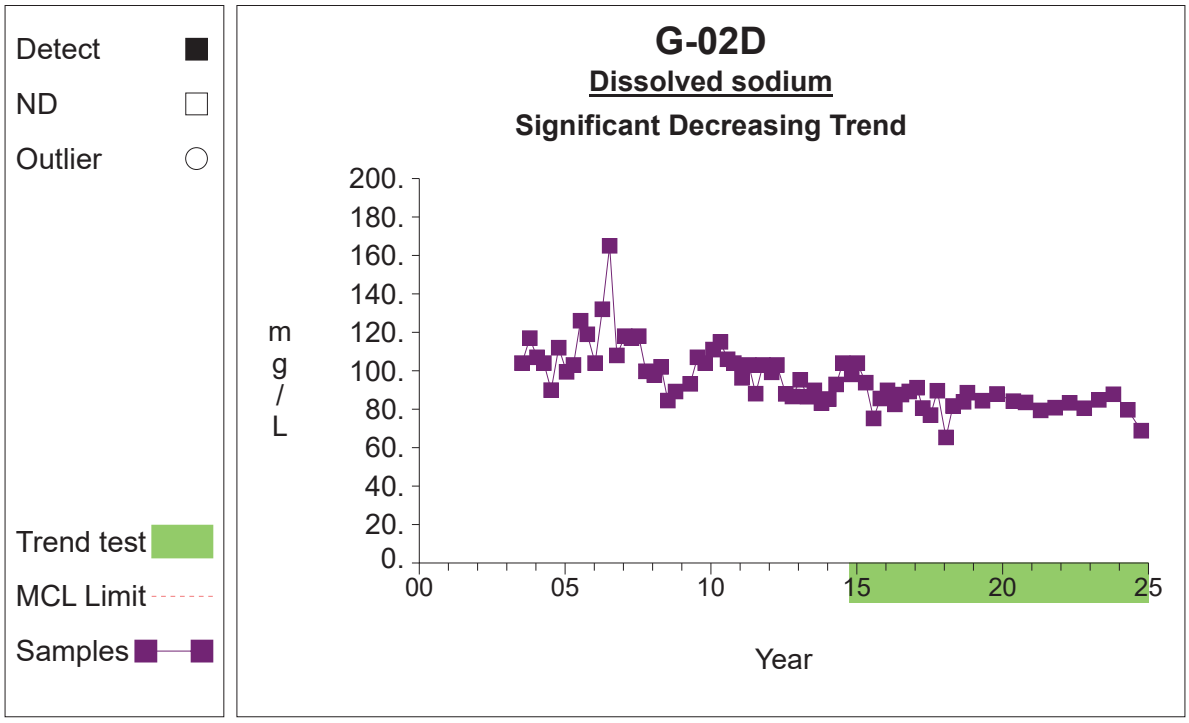
Graph 47

Time Series



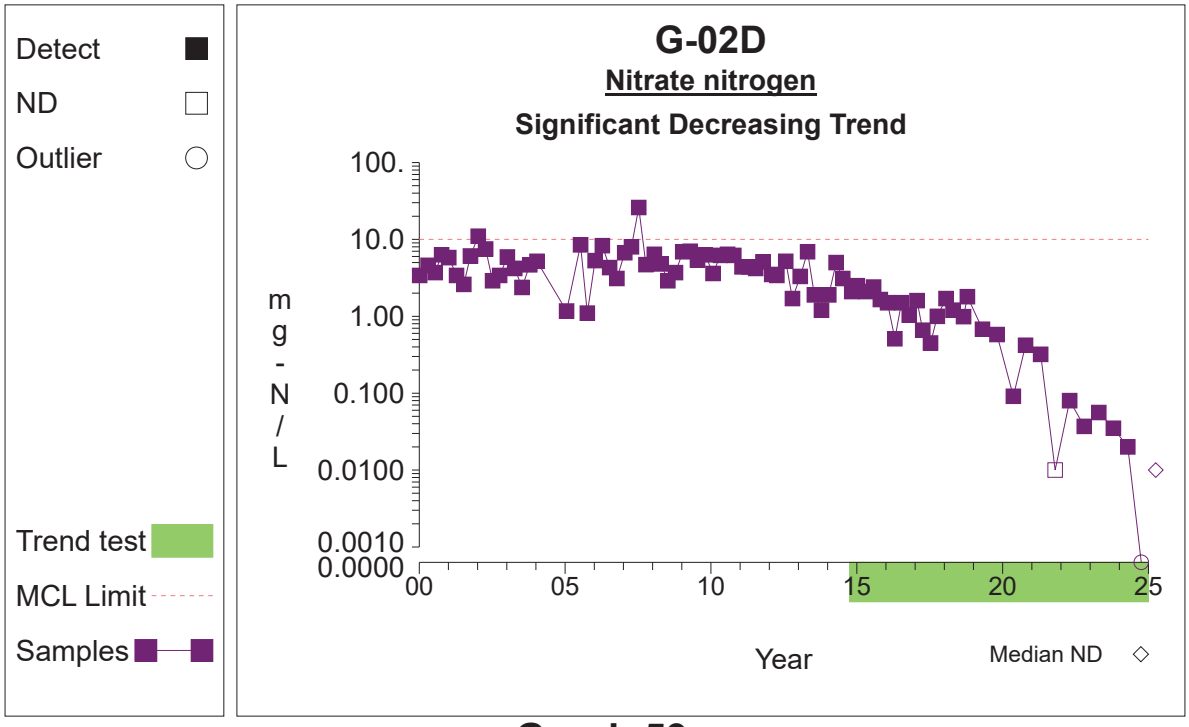
Graph 49

Time Series



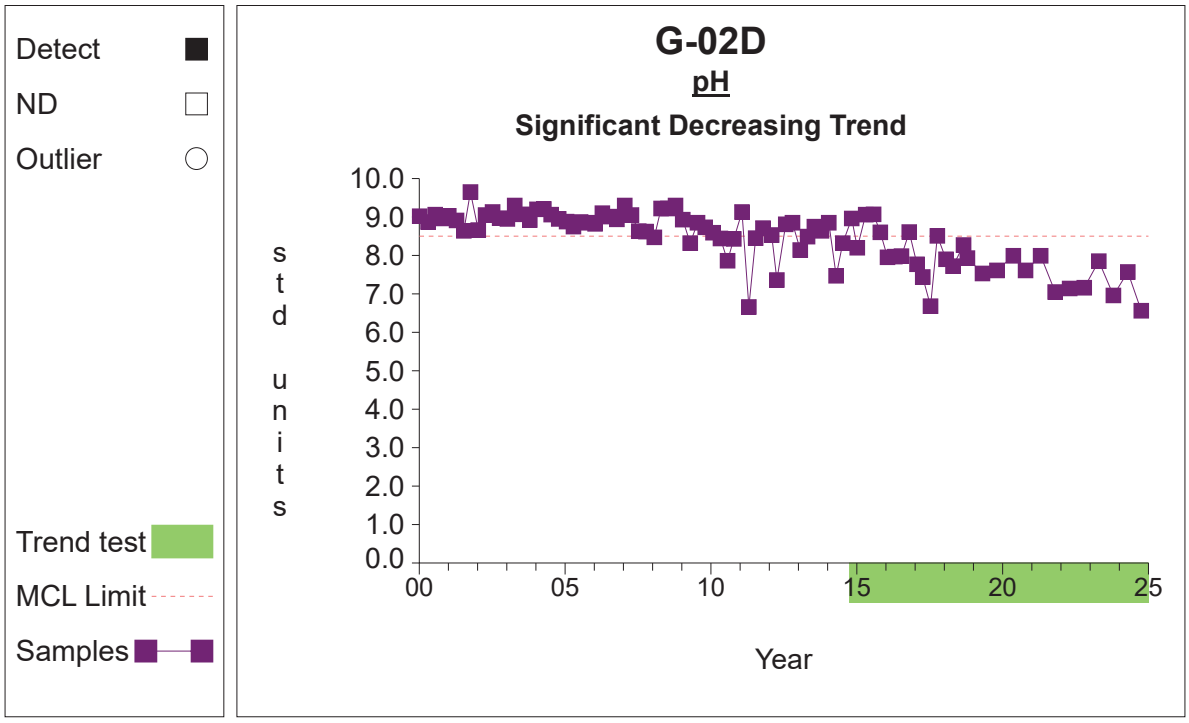
Graph 54

Time Series



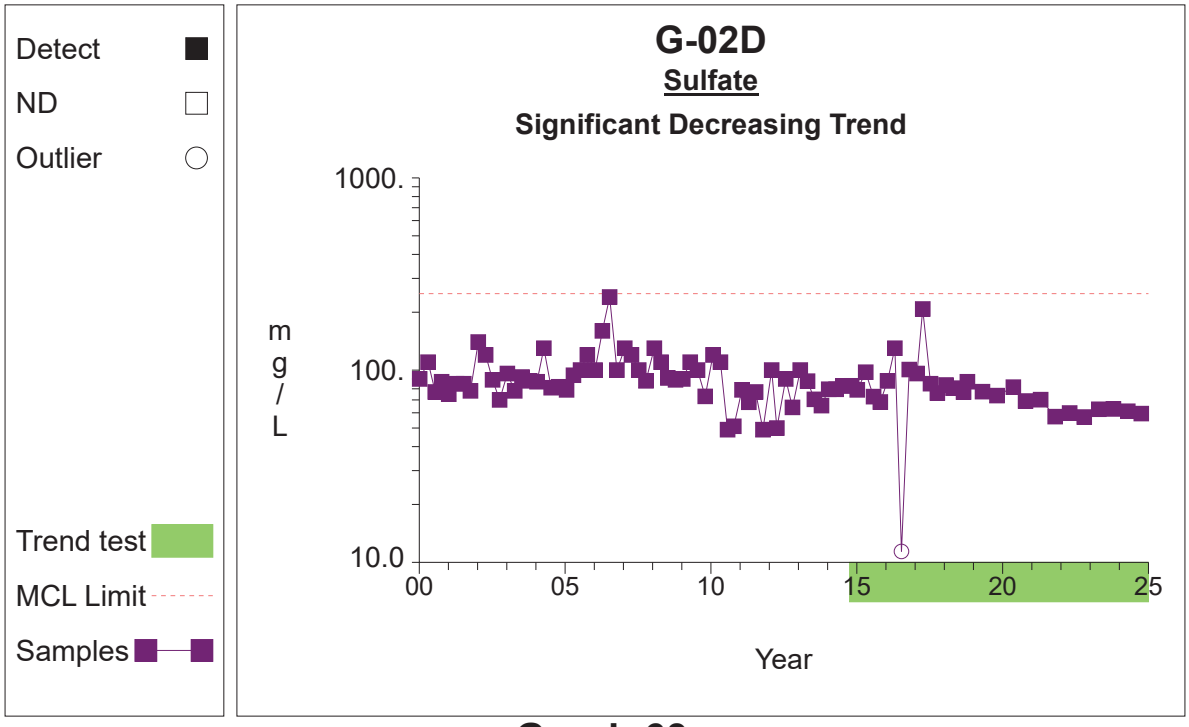
Graph 59

Time Series



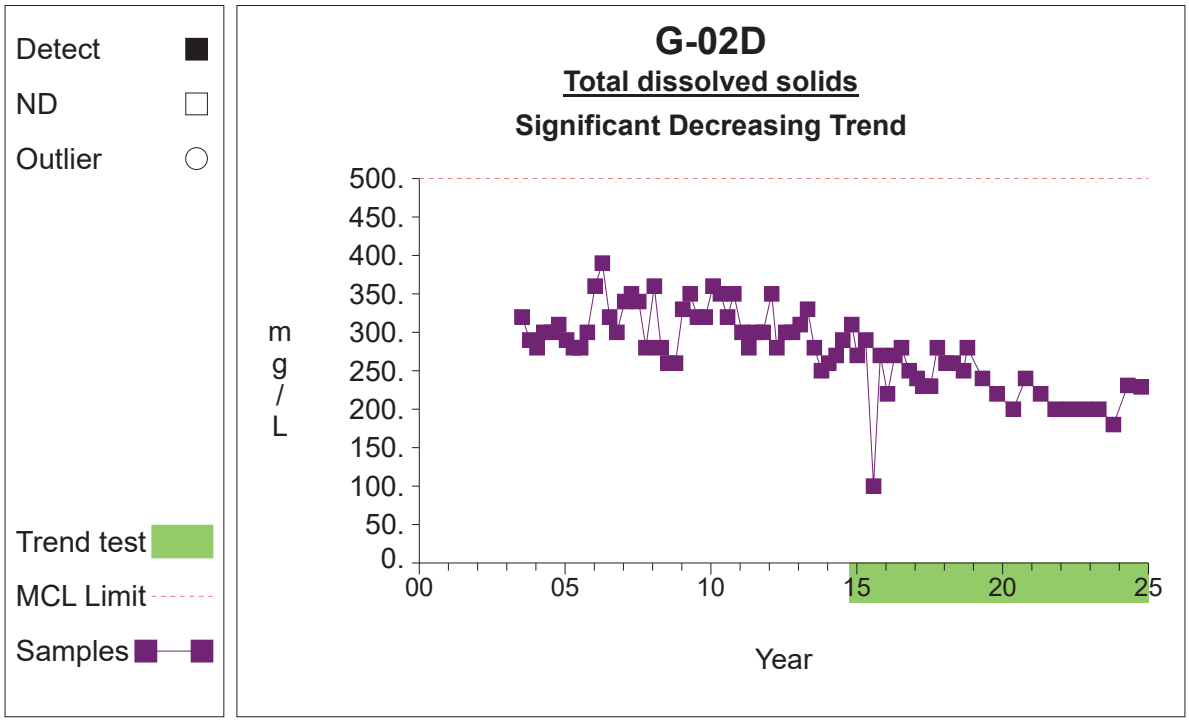
Graph 61

Time Series



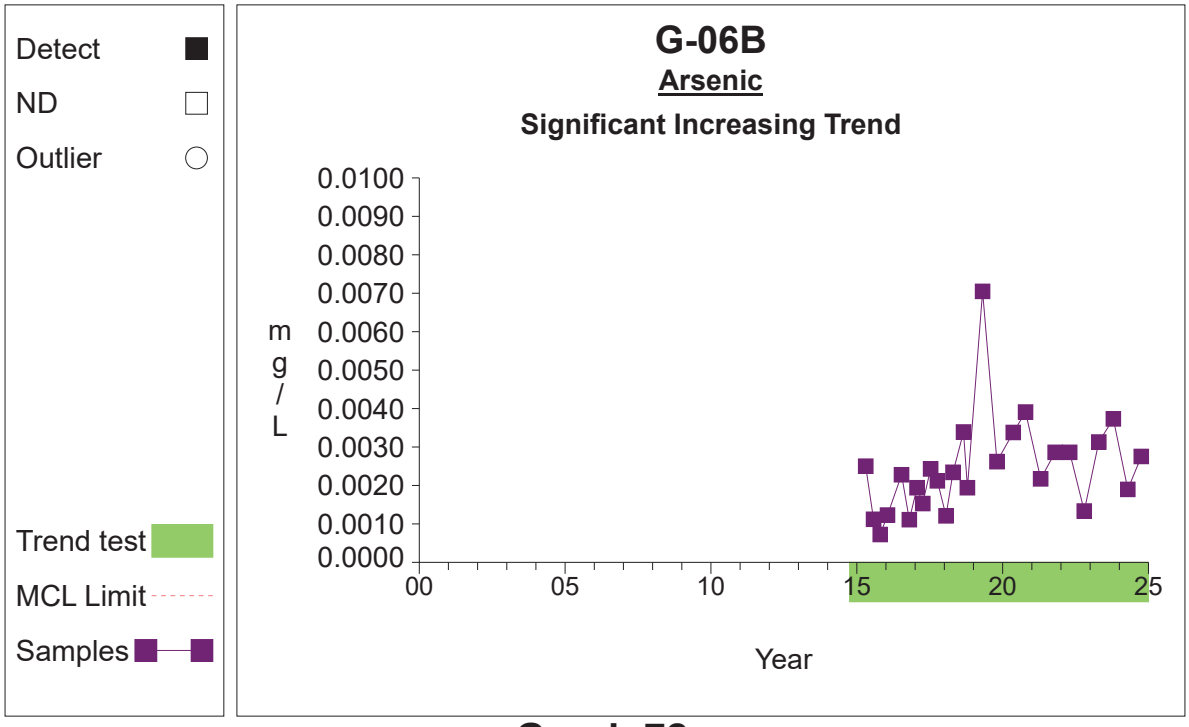
Graph 63

Time Series



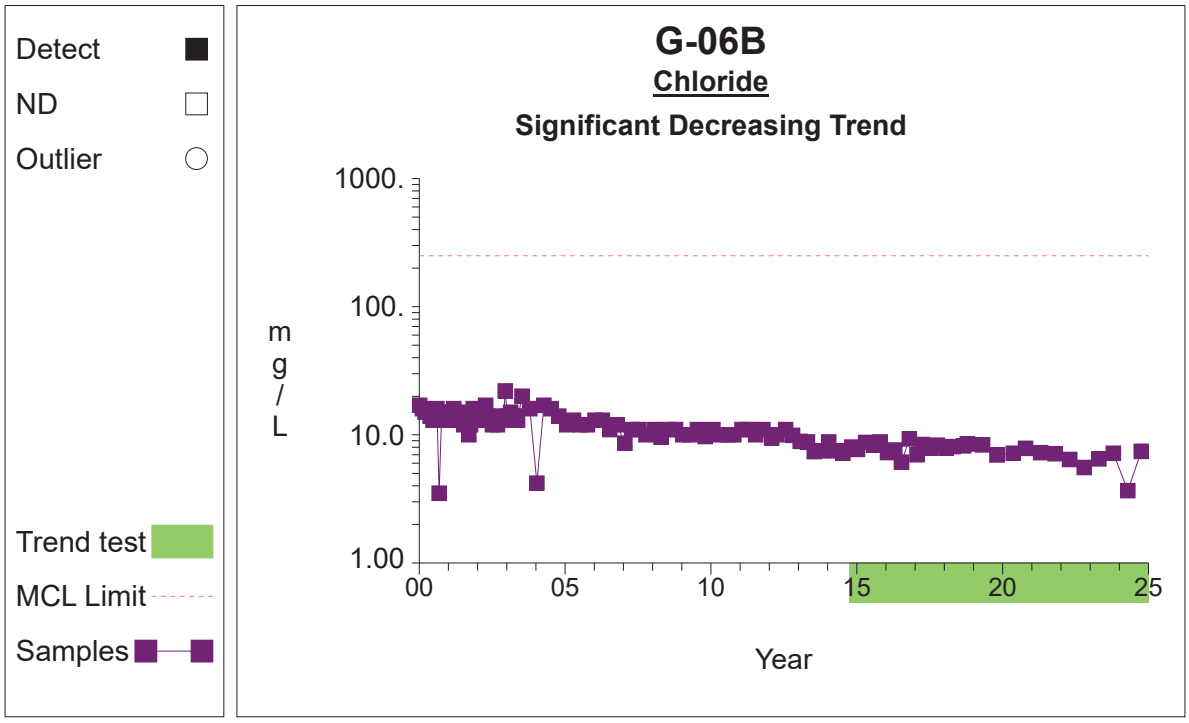
Graph 65

Time Series



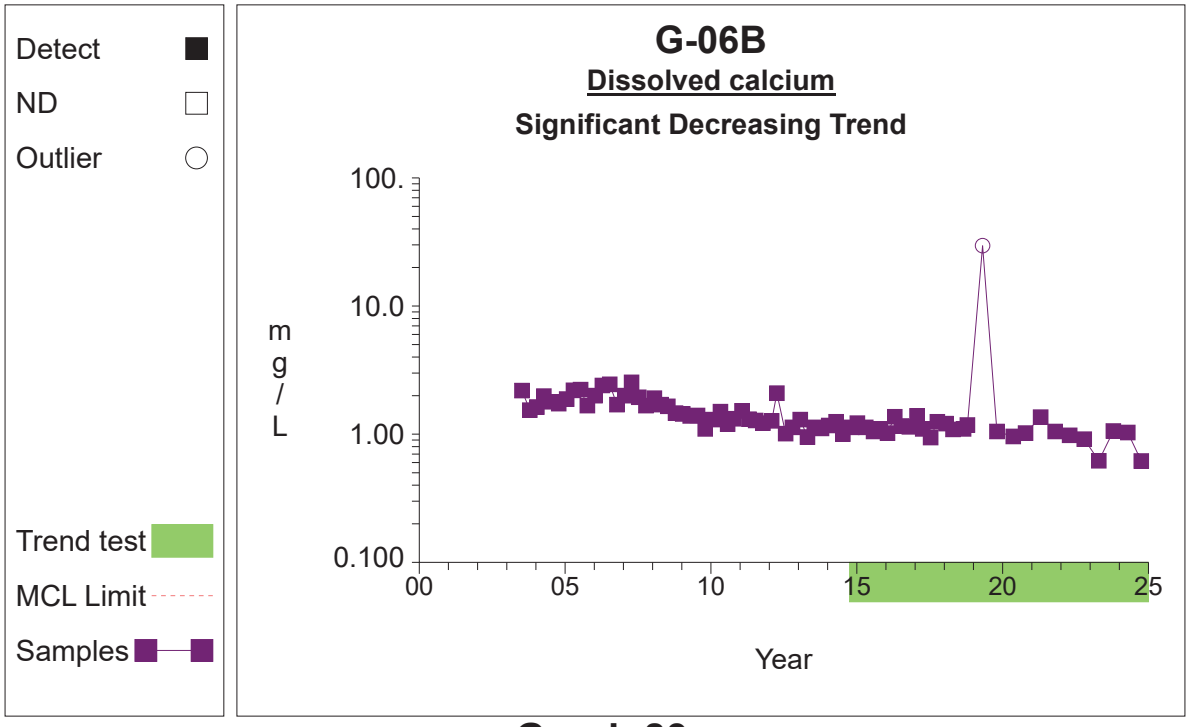
Graph 72

Time Series



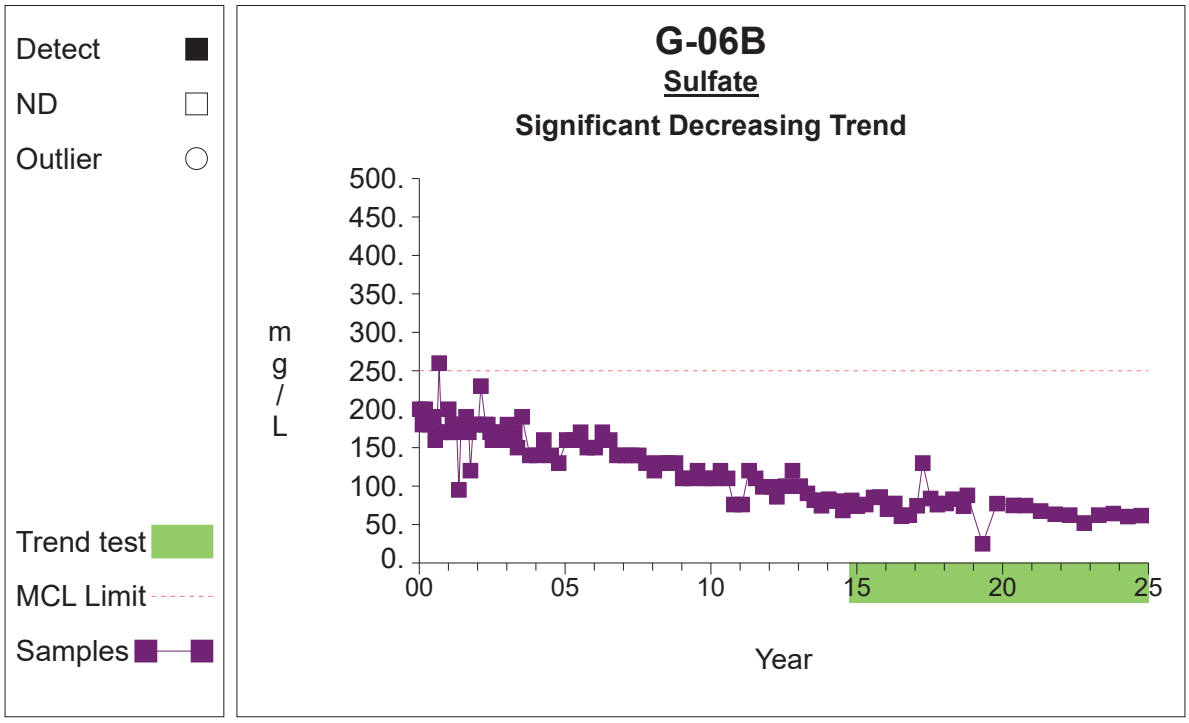
Graph 78

Time Series



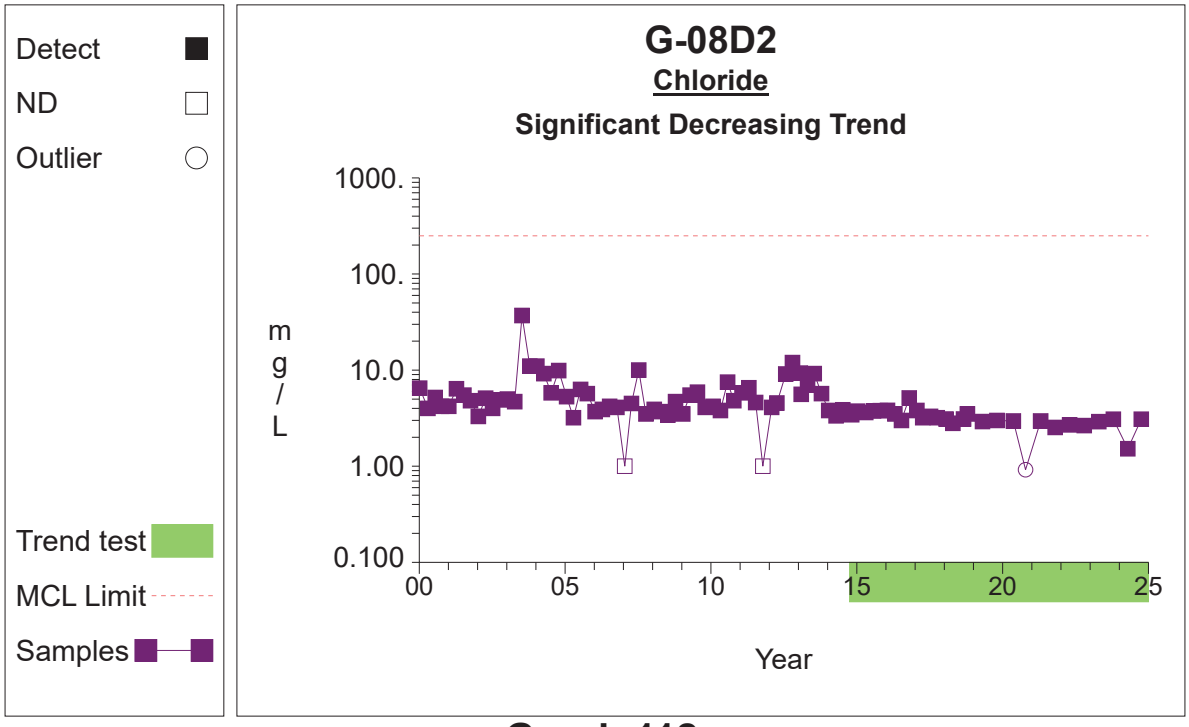
Graph 83

Time Series



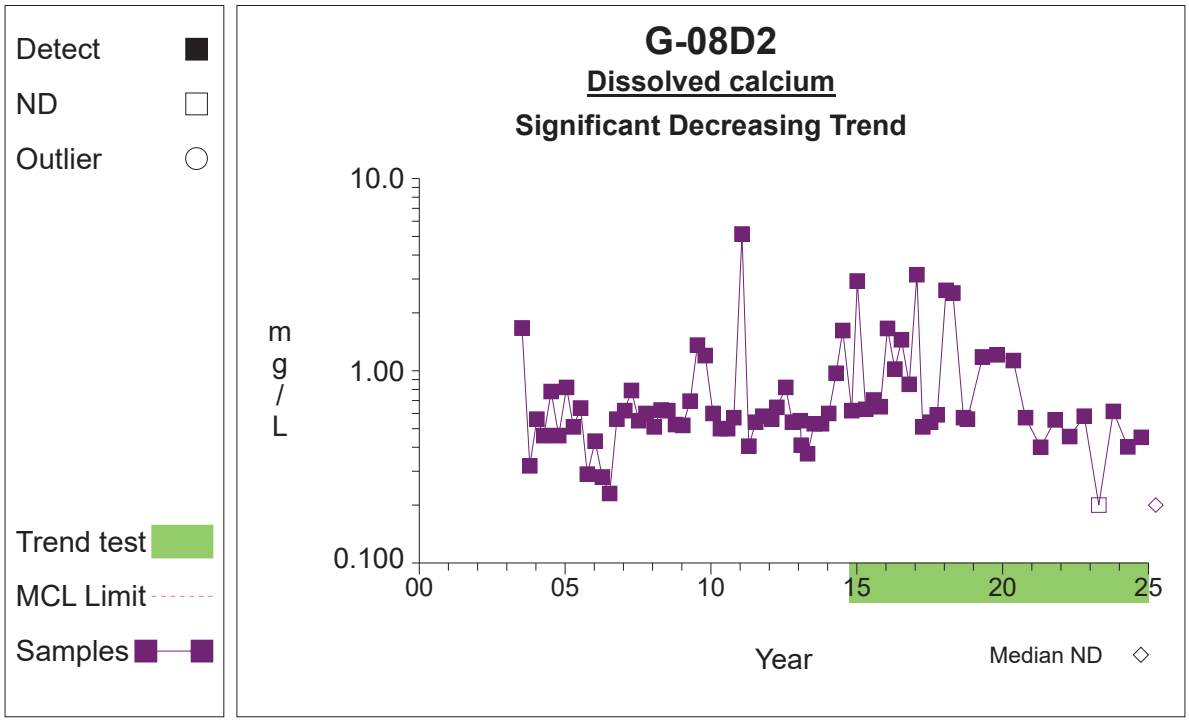
Graph 97

Time Series



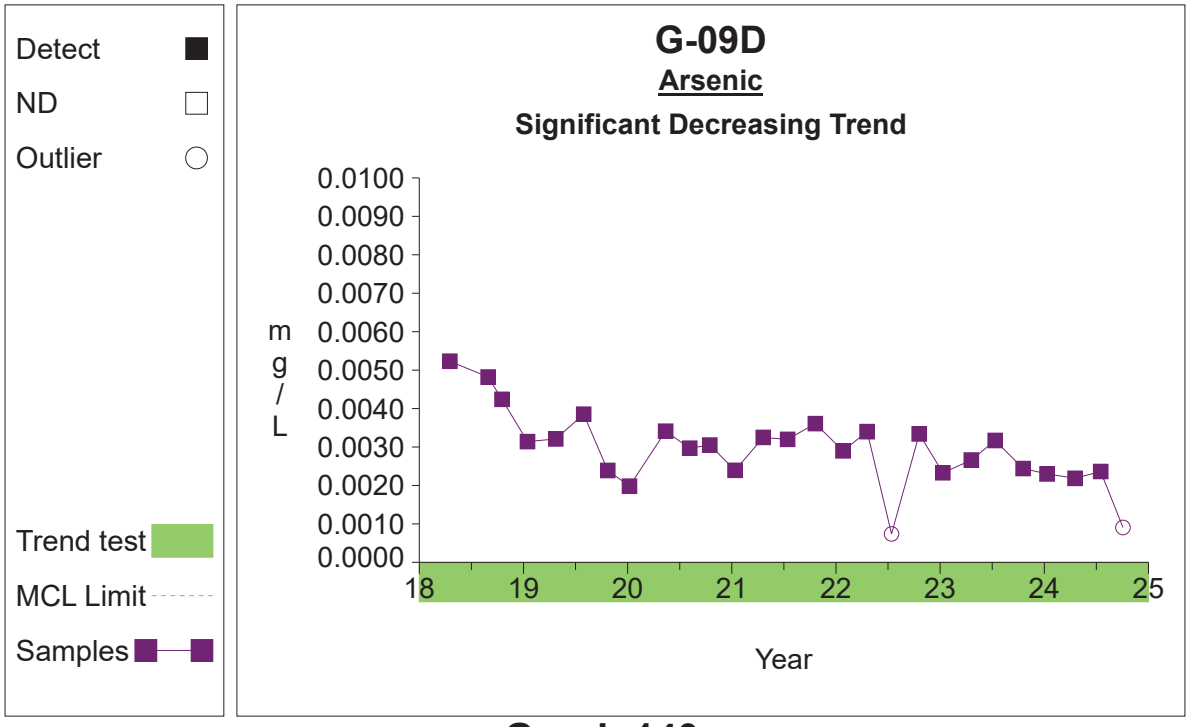
Graph 112

Time Series



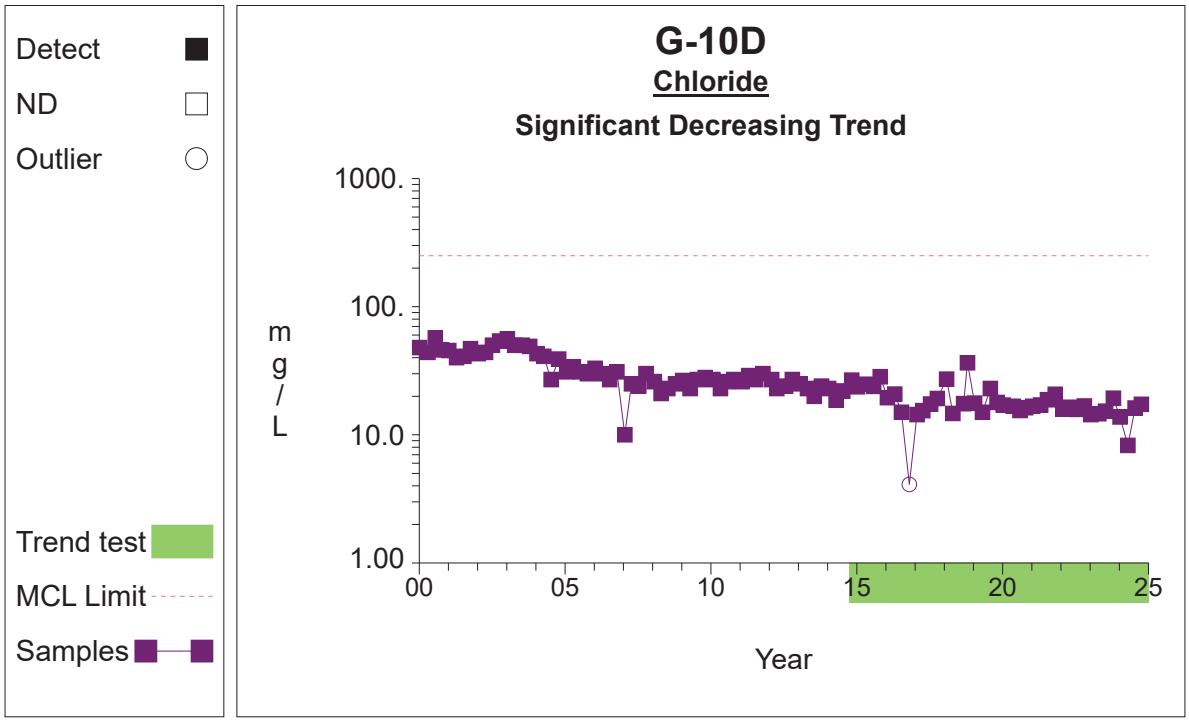
Graph 117

Time Series



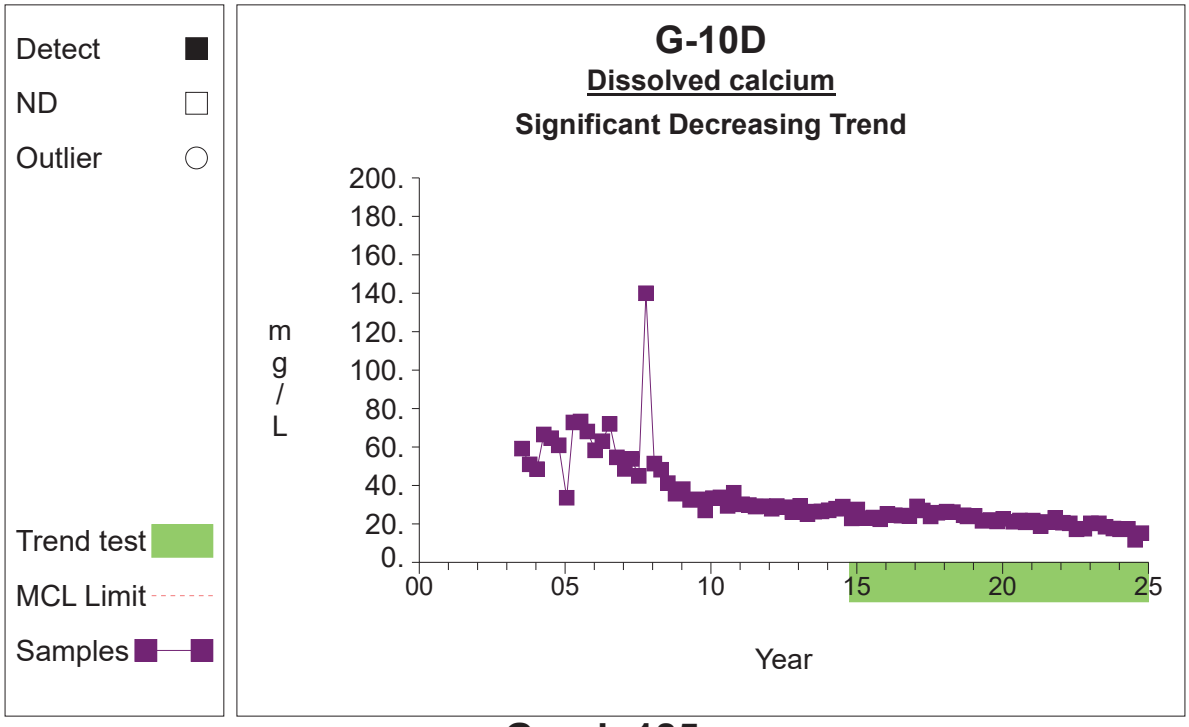
Graph 140

Time Series



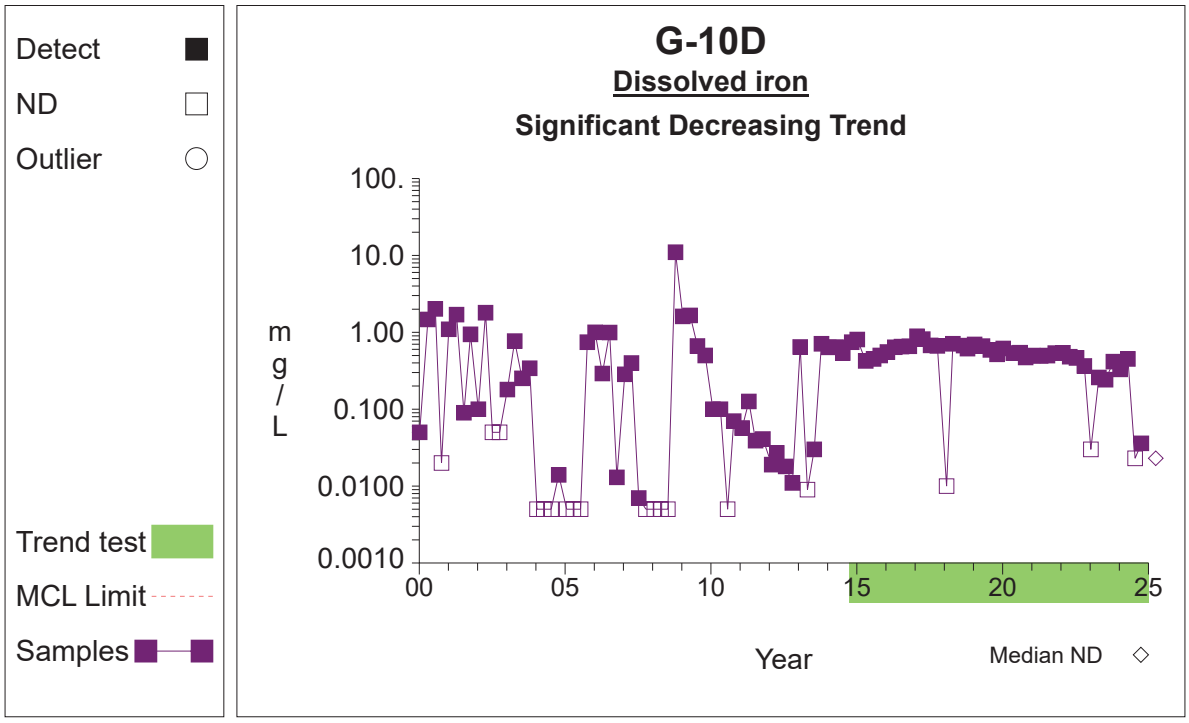
Graph 180

Time Series



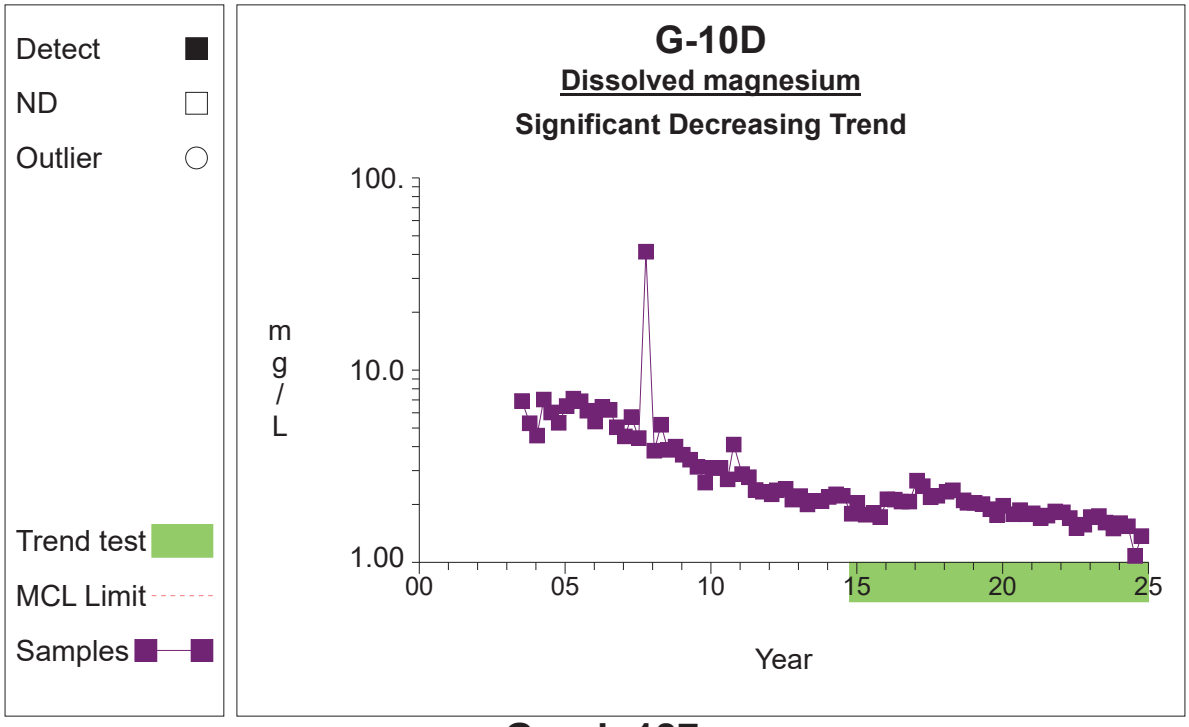
Graph 185

Time Series



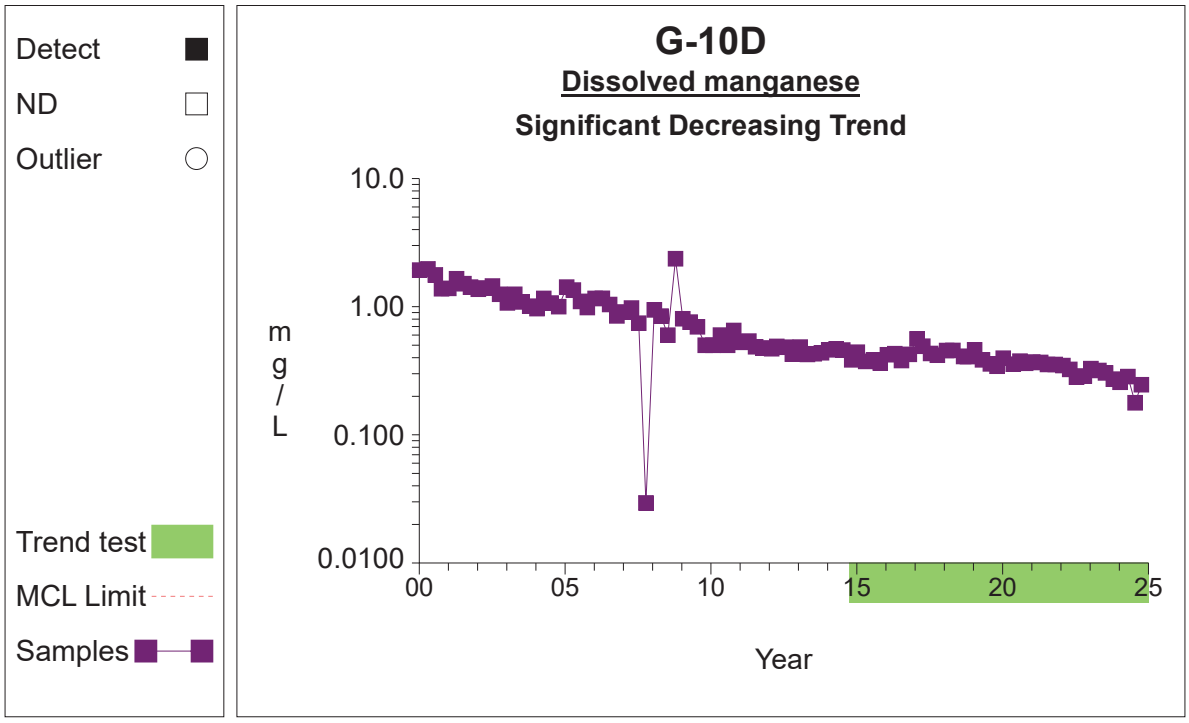
Graph 186

Time Series



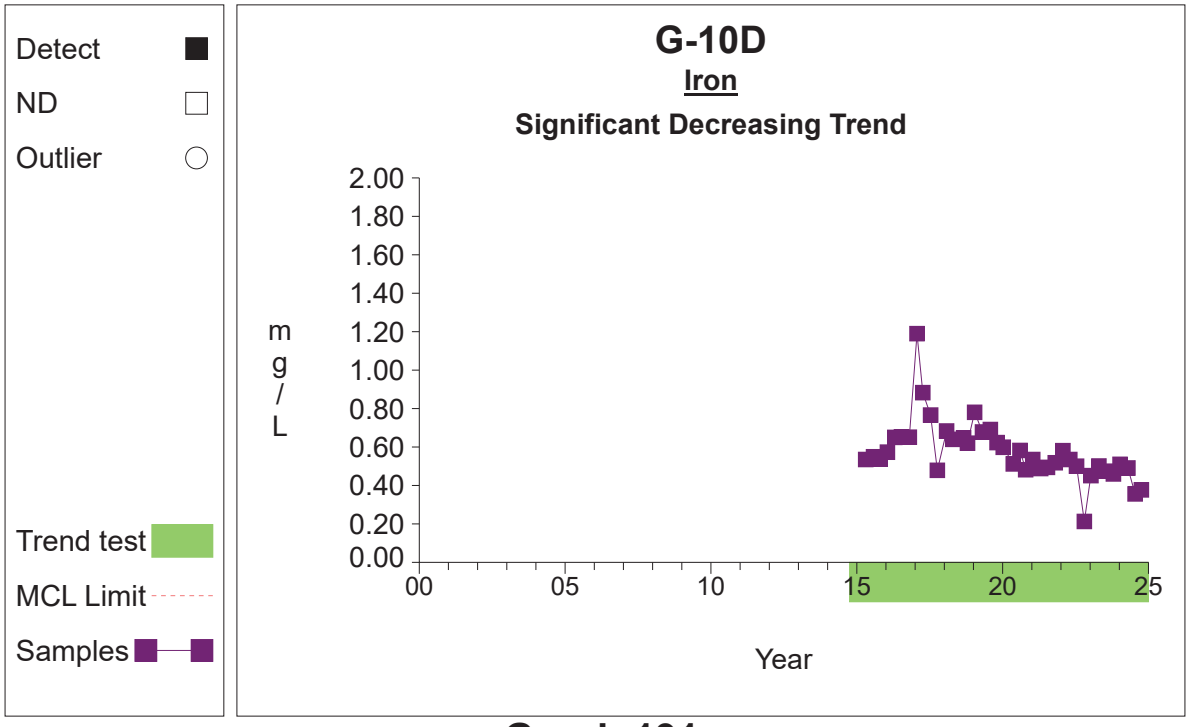
Graph 187

Time Series



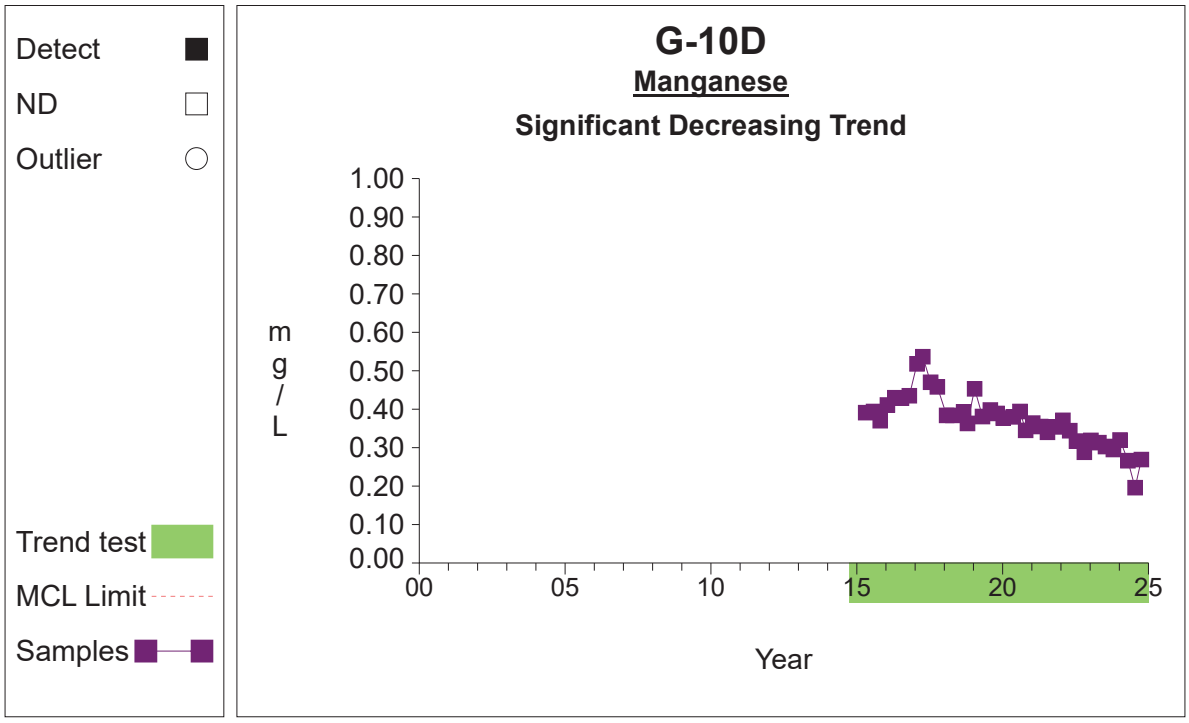
Graph 188

Time Series



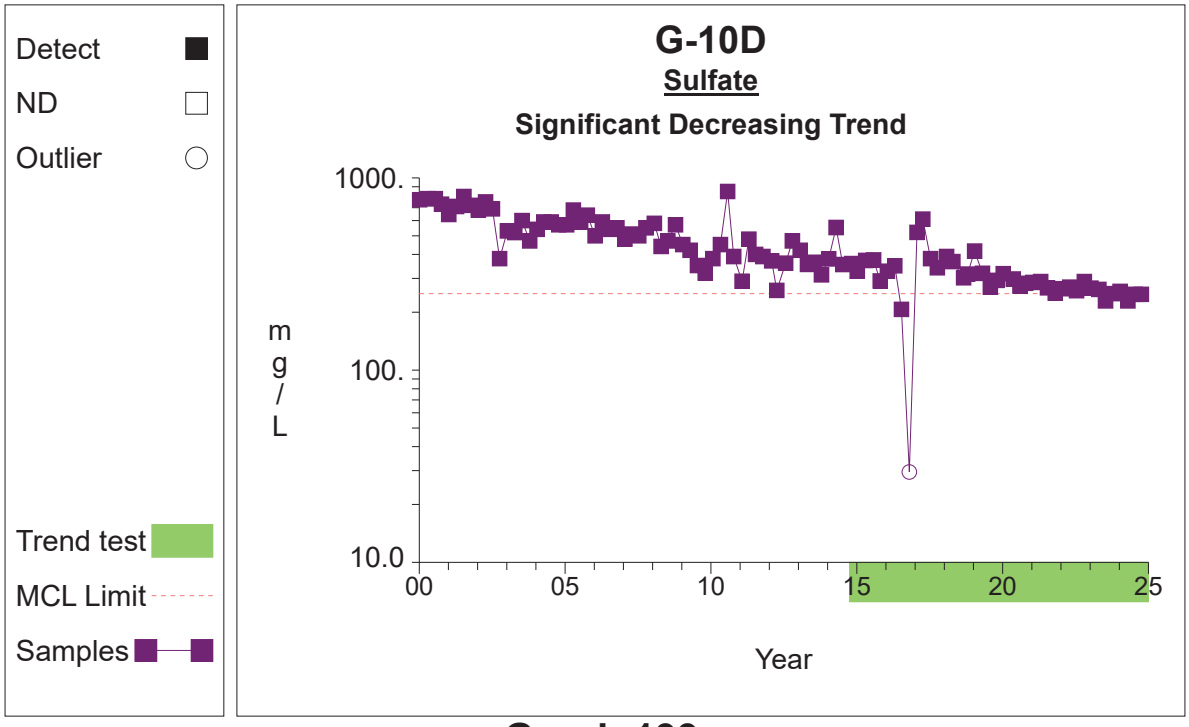
Graph 191

Time Series



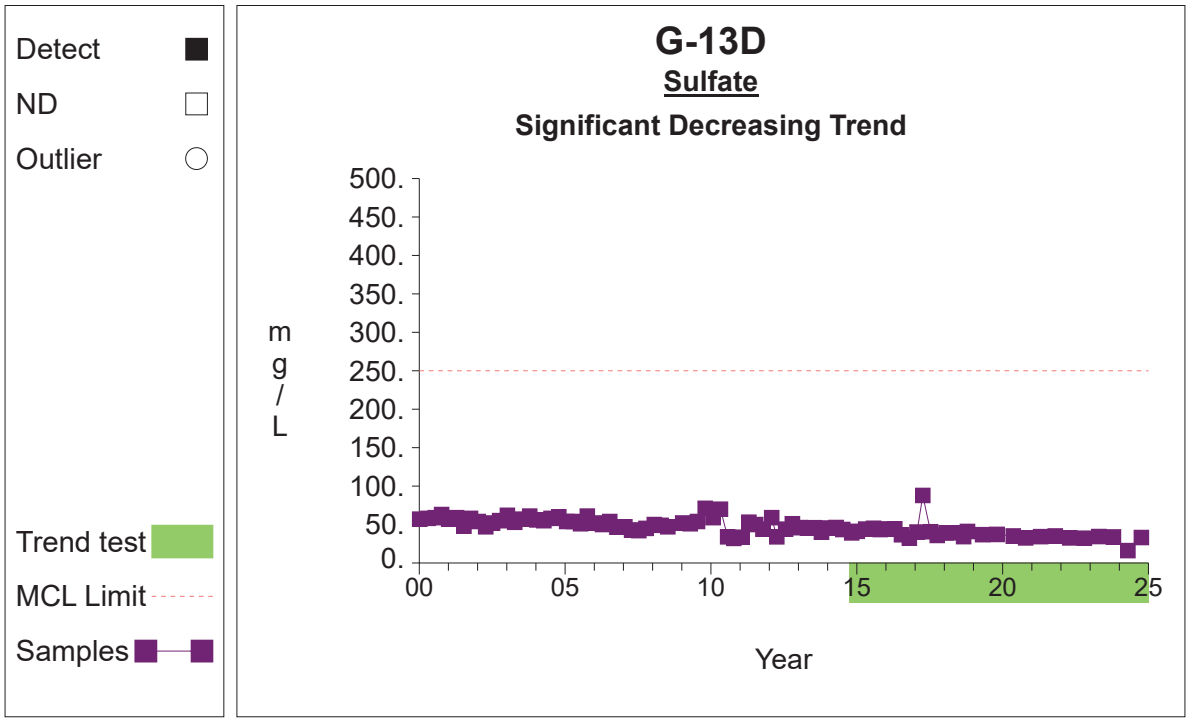
Graph 193

Time Series



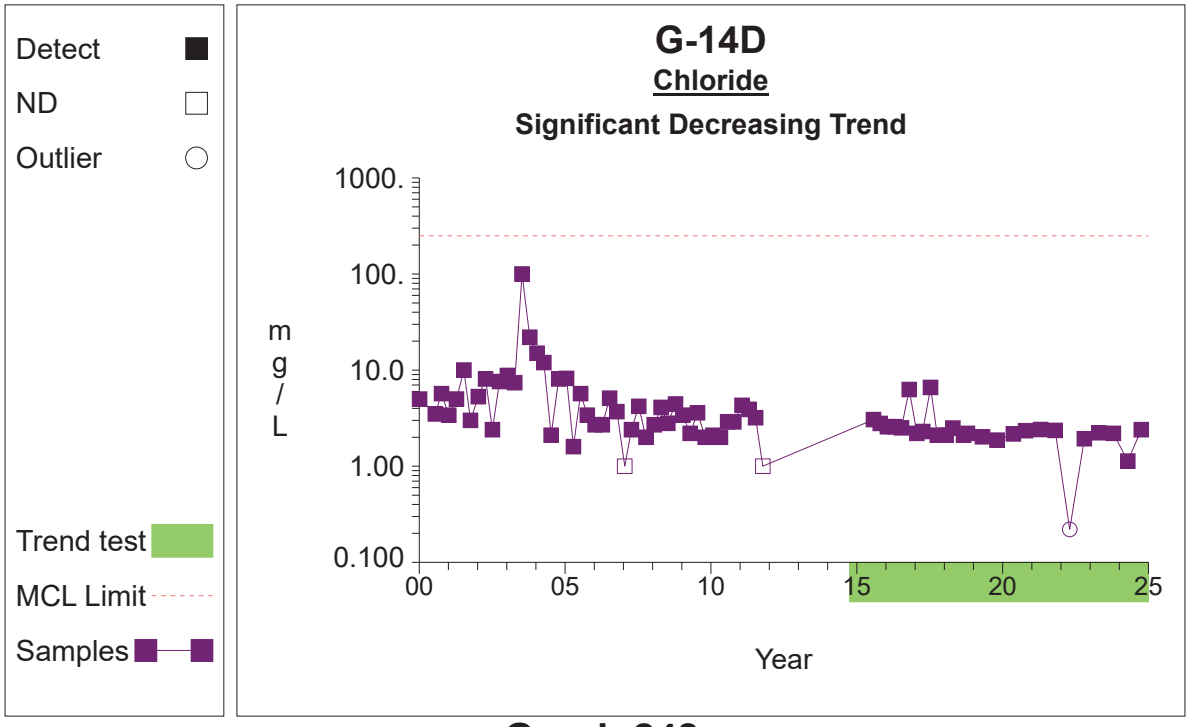
Graph 199

Time Series



Graph 233

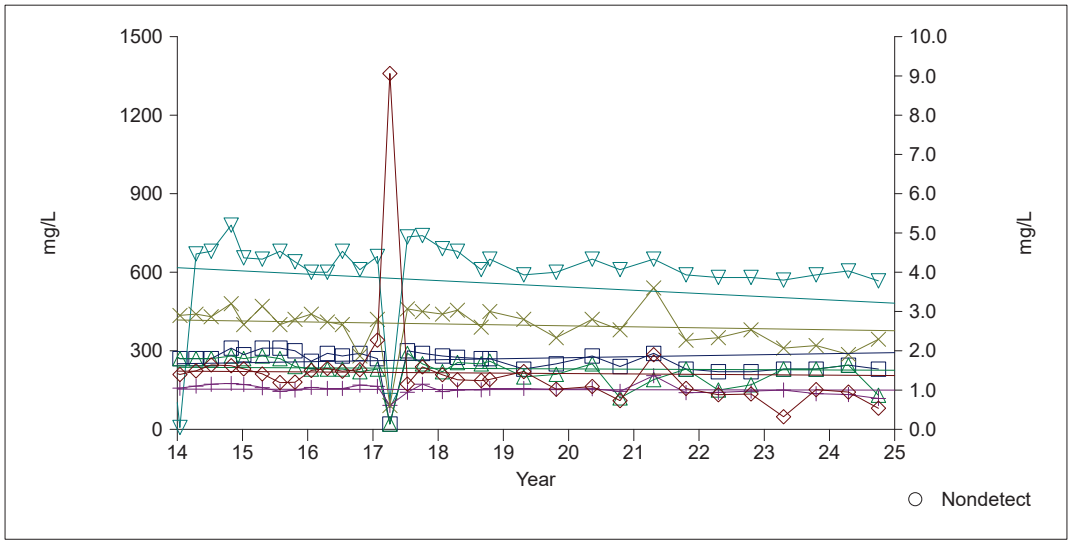
Time Series



Graph 248

Cathcart Landfill

Time Series Plot for G-01D



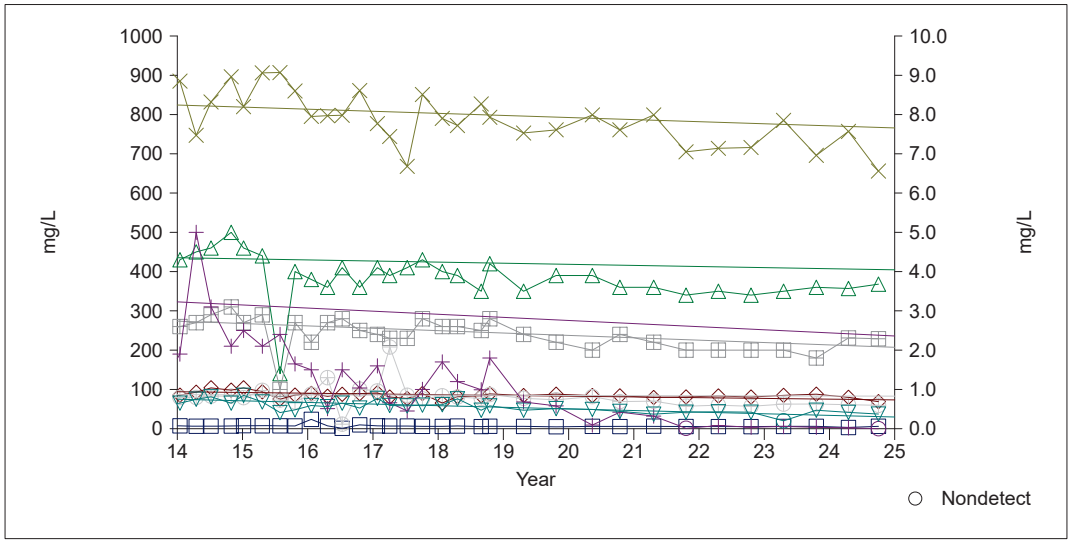
Alkalinity (as caco3)
Bicarbonate
Conductivity
Dissolved sodium
Total dissolved solids
Dissolved calcium

1

Prepared by: Snohomish County Solid Waste

Cathcart Landfill

Time Series Plot for G-02D



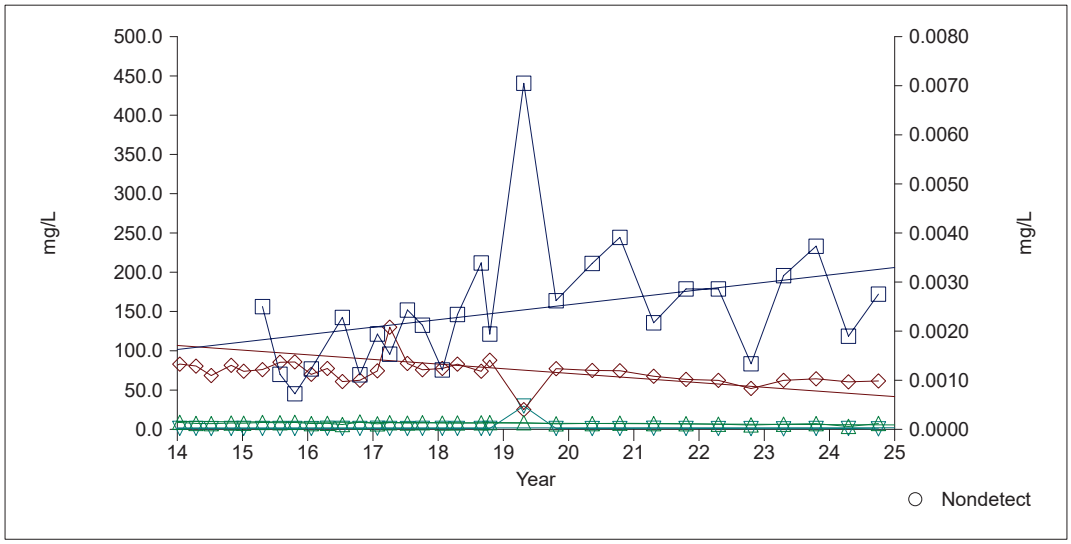
Chloride
Dissolved sodium
Conductivity
Sulfate
Total dissolved solids
Nitrate nitrogen
Dissolved calcium
pH

1

Prepared by: Snohomish County Solid Waste

Cathcart Landfill

Time Series Plot for G-06B

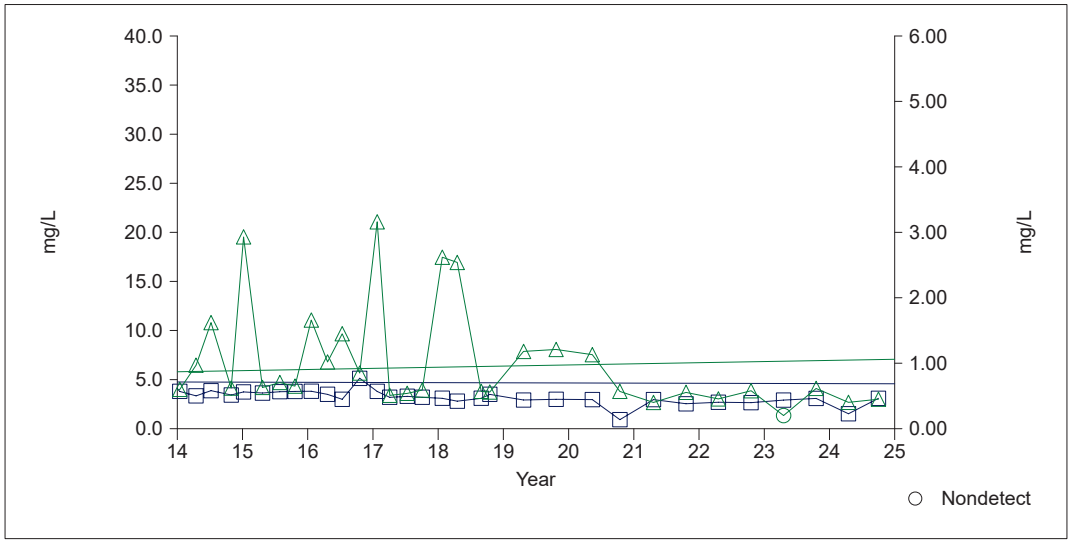


1

Prepared by: Snohomish County Solid Waste

Cathcart Landfill

Time Series Plot for G-08D2

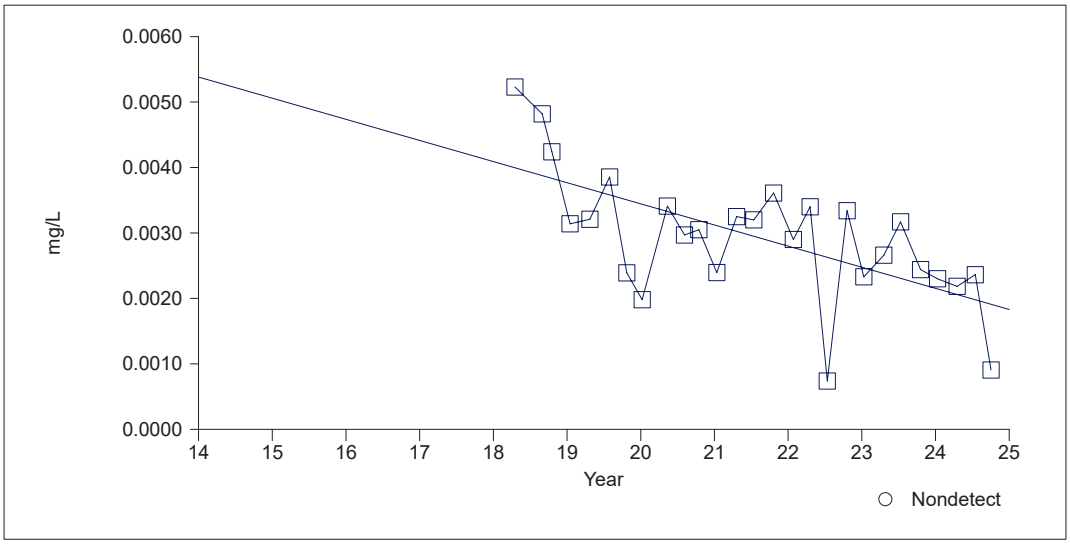


1

Prepared by: Snohomish County Solid Waste

Cathcart Landfill

Time Series Plot for G-09D

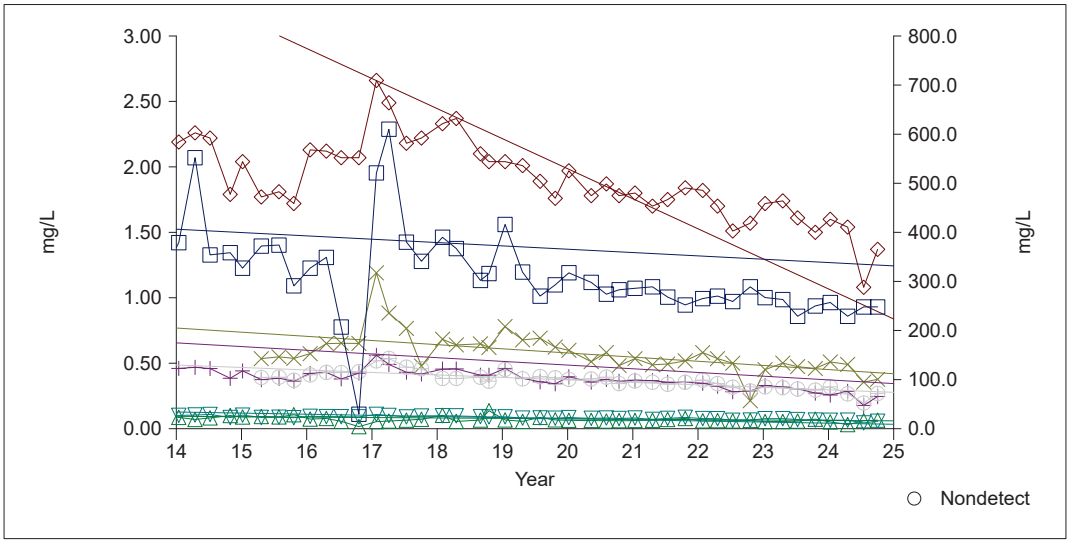


1

Prepared by: Snohomish County Solid Waste

Cathcart Landfill

Time Series Plot for G-10D

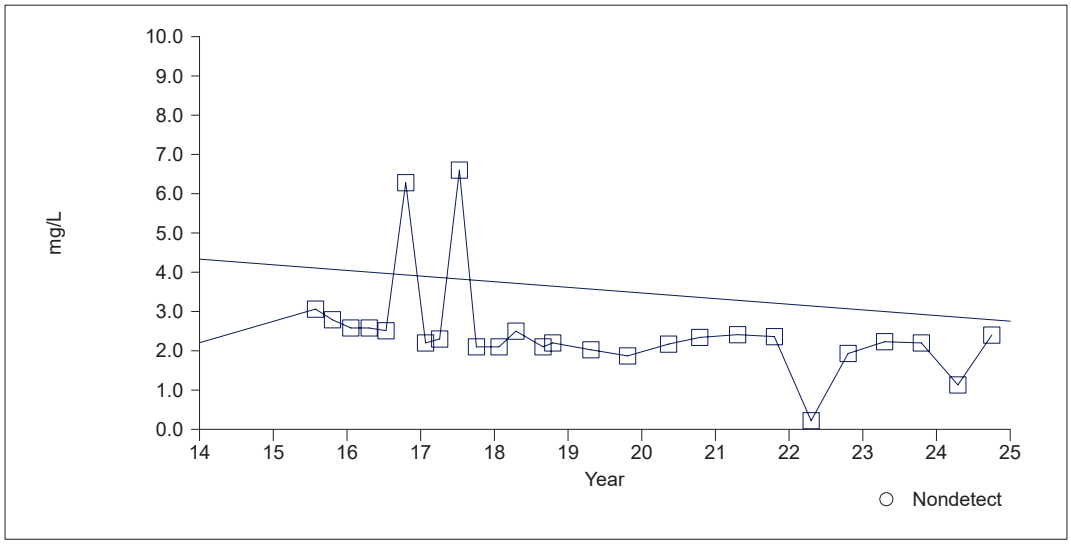


1

Prepared by: Snohomish County Solid Waste

Cathcart Landfill

Time Series Plot for G-14D

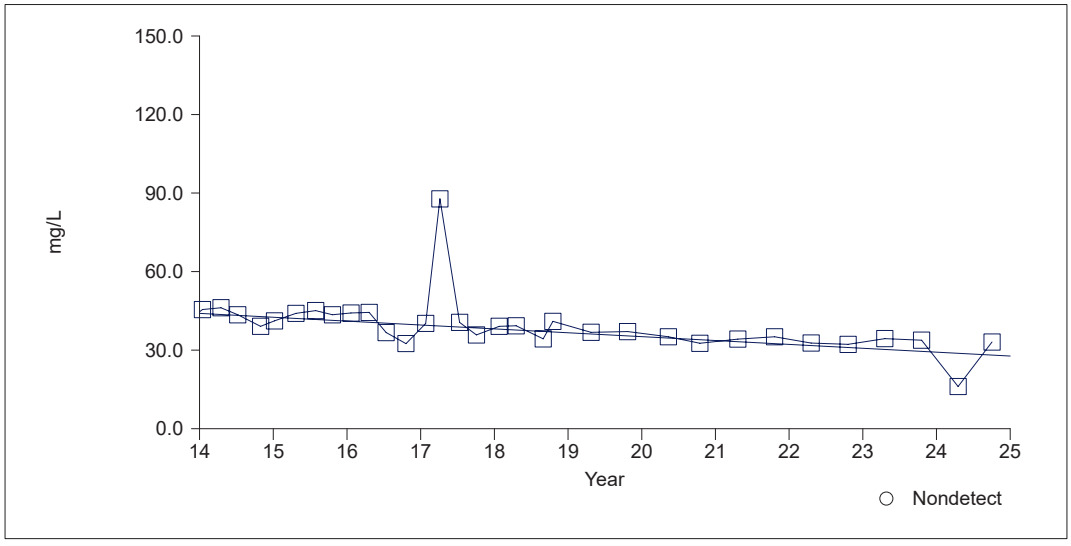


1

Prepared by: Snohomish County Solid Waste

Cathcart Landfill

Time Series Plot for G-13D



1

Prepared by: Snohomish County Solid Waste

Appendix D

Field Monitoring Forms

Snohomish County Solid Waste
Environmental Services Section
8915 Cathcart Way
Snohomish, WA 98296

Field Sampling Data

Sample Number: 22407 **Conditions:** Precip - rain
Date: 1/10/2024 **Site:** Cathcart
Time: 10:00 AM **Location:** G-10S

Well Information:

Well Depth: 44 ft **Water Depth:** 22 ft

Surface Measurements:

Flow Rate: **Measure Method:**

Field Chemistry Tests:

Purge Volume: 3.52 gallons

	Type	pH	Cond	Temp	Color	Turbidity	Purge Vol	Water Depth	ORP	Time
Test 1	Grab	6.03	1390	10.5	Clear	Very Fine				
Test 2	Grab	6.33	1363	11.1	Clear	Very Fine				
Test 3	Grab	6.47	1335	10.9	Clear	Very Fine				

Sampling:

Sample Depth: 24.64 ft **Sample Type:** Standard Ground - Water
Sample Time: 10:10

	Sample Type	Sample Method	Volume	Bottle Type	Preservative
Bottle 1	Grab	Dedicator	1000	Clpl	None
Bottle 2	Grab	Dedicator	250	Clpl	HNO3R
Bottle 3	Grab	Dedicator	250	Clpl	H2SO4
Bottle 4	Grab	Dedicator	250	Clpl	HNO3
Bottle 5	Grab	Dedicator	40	Glass	HCL
Bottle 6	Grab	Dedicator	40	Glass	HCL
Bottle 7	Grab	Dedicator	40	Glass	HCL
Bottle 8	Grab	Dedicator	40	Glass	HCL

Notes:

Number of Bottles: 8

Operator/Witness: Trina Arnold **Sampler: Daniel Block**

Snohomish County Solid Waste
Environmental Services Section
8915 Cathcart Way
Snohomish, WA 98296

Field Sampling Data

Sample Number: 22406 **Conditions:** Precip - rain
Date: 1/10/2024 **Site:** Cathcart
Time: 9:59 AM **Location:** G-10D

Well Information:

Well Depth: 82 ft **Water Depth:** 29.84 ft

Surface Measurements:

Flow Rate: **Measure Method:**

Field Chemistry Tests:

Purge Volume: 8.35 gallons

	Type	pH	Cond	Temp	Color	Turbidity	Purge Vol	Water Depth	ORP	Time
Test 1	Grab	6.67	1570	10.5	Clear	Very Fine				

Sampling:

Sample Depth: 35.23 ft **Sample Type:** Standard Ground - Water
Sample Time: 10:45

	Sample Type	Sample Method	Volume	Bottle Type	Preservative
Bottle 1	Grab	Dedicator	1000	Clpl	None
Bottle 2	Grab	Dedicator	250	Clpl	HNO3R
Bottle 3	Grab	Dedicator	250	Clpl	H2SO4
Bottle 4	Grab	Dedicator	250	Clpl	HNO3
Bottle 5	Grab	Dedicator	40	Glass	HCL
Bottle 6	Grab	Dedicator	40	Glass	HCL
Bottle 7	Grab	Dedicator	40	Glass	HCL
Bottle 8	Grab	Dedicator	40	Glass	HCL

Notes:

Number of Bottles: 8

Operator/Witness: Trina Arnold **Sampler: Daniel Block**

Snohomish County Solid Waste
Environmental Services Section
8915 Cathcart Way
Snohomish, WA 98296

Field Sampling Data

Sample Number:	22405	**Conditions:**	Precip - rain
Date:	1/10/2024	**Site:**	Cathcart
Time:	9:38 AM	**Location:**	G-09D

Well Information:

Well Depth: **Water Depth:**

Surface Measurements:

Flow Rate: **Measure Method:**

Field Chemistry Tests:

Purge Volume:

Type	pH	Cond	Temp	Color	Turbidity	Purge Vol	Water Depth	ORP	Time

Sampling:

Sample Depth: 81 ft **Sample Type:** Standard Ground - Water

Sample Time: 09:45

	Sample Type	Sample Method	Volume	Bottle Type	Preservative
Bottle 1	Grab	Dedicator	1000	Clpl	None
Bottle 2	Grab	Dedicator	250	Clpl	HNO3R
Bottle 3	Grab	Dedicator	250	Clpl	H2SO4
Bottle 4	Grab	Dedicator	250	Clpl	HNO3
Bottle 5	Grab	Dedicator	40	Glass	HCL
Bottle 6	Grab	Dedicator	40	Glass	HCL
Bottle 7	Grab	Dedicator	40	Glass	HCL
Bottle 8	Grab	Dedicator	40	Glass	HCL

Notes: Split sample. See field data on 22404. Dry after first purge.

Number of Bottles: 8

Operator/Witness: Trina Arnold **Sampler: Daniel Block**

Snohomish County Solid Waste
Environmental Services Section
8915 Cathcart Way
Snohomish, WA 98296

Field Sampling Data

Sample Number: 22404 **Conditions:** Precip - rain
Date: 1/10/2024 **Site:** Cathcart
Time: 9:38 AM **Location:** G-09D

Well Information:

Well Depth: 81 ft **Water Depth:** 54.31 ft

Surface Measurements:

Flow Rate: **Measure Method:**

Field Chemistry Tests:

Purge Volume: 4.27 gallons

	Type	pH	Cond	Temp	Color	Turbidity	Purge Vol	Water Depth	ORP	Time
Test 1	Grab	8.75	810	12.9	Clear	Very Fine				

Sampling:

Sample Depth: 81 ft **Sample Type:** Standard Ground - Water
Sample Time: 09:45

	Sample Type	Sample Method	Volume	Bottle Type	Preservative
Bottle 1	Grab	Dedicator	1000	Clpl	None
Bottle 2	Grab	Dedicator	250	Clpl	HNO3R
Bottle 3	Grab	Dedicator	250	Clpl	H2SO4
Bottle 4	Grab	Dedicator	250	Clpl	HNO3
Bottle 5	Grab	Dedicator	40	Glass	HCL
Bottle 6	Grab	Dedicator	40	Glass	HCL
Bottle 7	Grab	Dedicator	40	Glass	HCL
Bottle 8	Grab	Dedicator	40	Glass	HCL

Notes: Split sample with 22405. Dry after first purge.

Number of Bottles: 8

Operator/Witness: Trina Arnold **Sampler: Daniel Block**

Snohomish County Solid Waste
Environmental Services Section
8915 Cathcart Way
Snohomish, WA 98296

Field Sampling Data

Sample Number: 22403 **Conditions:** Precip - rain
Date: 1/10/2024 **Site:** Cathcart
Time: 9:27 AM **Location:** G-09S

Well Information:

Well Depth: 51.5 ft **Water Depth:** 30.03 ft

Surface Measurements:

Flow Rate: **Measure Method:**

Field Chemistry Tests:

Purge Volume: 3.44 gallons

	Type	pH	Cond	Temp	Color	Turbidity	Purge Vol	Water Depth	ORP	Time
Test 1	Grab	5.75	970	11.6	Clear	Fine				

Sampling:

Sample Depth: 51.5 ft **Sample Type:** Standard Ground - Water
Sample Time: 09:50

	Sample Type	Sample Method	Volume	Bottle Type	Preservative
Bottle 1	Grab	Dedicator	1000	Clpl	None
Bottle 2	Grab	Dedicator	250	Clpl	HNO3R
Bottle 3	Grab	Dedicator	250	Clpl	H2SO4
Bottle 4	Grab	Dedicator	250	Clpl	HNO3
Bottle 5	Grab	Dedicator	40	Glass	HCL
Bottle 6	Grab	Dedicator	40	Glass	HCL
Bottle 7	Grab	Dedicator	40	Glass	HCL
Bottle 8	Grab	Dedicator	40	Glass	HCL

Notes: Dry after 1 gallon of second purge.

Number of Bottles: 8

Operator/Witness: Trina Arnold **Sampler: Daniel Block**

Snohomish County Solid Waste
Environmental Services Section
8915 Cathcart Way
Snohomish, WA 98296

Field Sampling Data

Sample Number: 22500 **Conditions:** Overcast
Date: 4/17/2024 **Site:** Cathcart
Time: 8:49 AM **Location:** G-04A

Well Information:

Well Depth: 20 ft **Water Depth:** 13.61 ft

Surface Measurements:

Flow Rate: **Measure Method:**

Field Chemistry Tests:

Purge Volume: 1.02 gallons

	Type	pH	Cond	Temp	Color	Turbidity	Purge Vol	Water Depth	ORP	Time
Test 1	Grab	5.82	669 µS	10.3	Clear	Very Fine				

Sampling:

Sample Depth: 14.01 ft **Sample Type:** Standard Ground - Water
Sample Time: 01:15

	Sample Type	Sample Method	Volume	Bottle Type	Preservative
Bottle 1	Grab	Dedicator	1000	Clpl	None
Bottle 2	Grab	Dedicator	250	Clpl	HNO3R
Bottle 3	Grab	Dedicator	250	Clpl	H2SO4
Bottle 4	Grab	Dedicator	250	Clpl	HNO3
Bottle 5	Grab	Dedicator	40	Glass	HCL
Bottle 6	Grab	Dedicator	40	Glass	HCL
Bottle 7	Grab	Dedicator	40	Glass	HCL
Bottle 8	Grab	Dedicator	40	Glass	HCL

Notes: dry after one purge

Number of Bottles: 8

Operator/Witness: Daniel Block **Sampler: Matt Lawless**

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Environmental Services Section
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Field Sampling Data

Sample Number: 22499 **Conditions:** Sunny
Date: 4/17/2024 **Site:** Cathcart
Time: 9:30 AM **Location:** G-10D

Well Information:

Well Depth: 82 ft **Water Depth:** 30.47 ft

Surface Measurements:

Flow Rate: **Measure Method:**

Field Chemistry Tests:

Purge Volume: 8.24 gallons

	Type	pH	Cond	Temp	Color	Turbidity	Purge Vol	Water Depth	ORP	Time
Test 1	Grab	7	1501 µS	12.4	Clear	Very Fine				

Sampling:

Sample Depth: 36.03 ft **Sample Type:** Standard Ground - Water
Sample Time: 10:10

	Sample Type	Sample Method	Volume	Bottle Type	Preservative
Bottle 1	Grab	Dedicator	1000	Clpl	None
Bottle 2	Grab	Dedicator	250	Clpl	HNO3R
Bottle 3	Grab	Dedicator	250	Clpl	H2SO4
Bottle 4	Grab	Dedicator	250	Clpl	HNO3
Bottle 5	Grab	Dedicator	40	Glass	HCL
Bottle 6	Grab	Dedicator	40	Glass	HCL
Bottle 7	Grab	Dedicator	40	Glass	HCL
Bottle 8	Grab	Dedicator	40	Glass	HCL

Notes:

Number of Bottles: 8

Operator/Witness: Daniel Block **Sampler: Matt Lawless**

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Environmental Services Section
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Field Sampling Data

Sample Number: 22498 **Conditions:** Sunny
Date: 4/17/2024 **Site:** Cathcart
Time: 9:31 AM **Location:** G-10S

Well Information:

Well Depth: 44 ft **Water Depth:** 23.21 ft

Surface Measurements:

Flow Rate: **Measure Method:**

Field Chemistry Tests:

Purge Volume: 3.33 gallons

	Type	pH	Cond	Temp	Color	Turbidity	Purge Vol	Water Depth	ORP	Time
Test 1	Grab	6.32	1313 µS	12.1	Clear	Very Fine				
Test 2	Grab	6.39	1316 µS	11.8	Clear	Very Fine				
Test 3	Grab	6.45	1316 µS	11.7	Clear	Very Fine				

Sampling:

Sample Depth: 24.91 ft **Sample Type:** Standard Ground - Water
Sample Time: 09:45

	Sample Type	Sample Method	Volume	Bottle Type	Preservative
Bottle 1	Grab	Dedicator	1000	Clpl	None
Bottle 2	Grab	Dedicator	250	Clpl	HNO3R
Bottle 3	Grab	Dedicator	250	Clpl	H2SO4
Bottle 4	Grab	Dedicator	250	Clpl	HNO3
Bottle 5	Grab	Dedicator	40	Glass	HCL
Bottle 6	Grab	Dedicator	40	Glass	HCL
Bottle 7	Grab	Dedicator	40	Glass	HCL
Bottle 8	Grab	Dedicator	40	Glass	HCL

Notes:

Number of Bottles: 8

Operator/Witness: Daniel Block **Sampler: Matt Lawless**

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Environmental Services Section
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Field Sampling Data

Sample Number: 22497 **Conditions:** Sunny
Date: 4/17/2024 **Site:** Cathcart
Time: 9:11 AM **Location:** G-09D

Well Information:

Well Depth: 81 ft **Water Depth:** 51.15 ft

Surface Measurements:

Flow Rate: **Measure Method:**

Field Chemistry Tests:

Purge Volume: 4.78 gallons

	Type	pH	Cond	Temp	Color	Turbidity	Purge Vol	Water Depth	ORP	Time
Test 1	Grab	8.64	770 µS	13.5	Clear	Very Fine				
Test 2	Grab	8.99	745 µS	13.9	Clear	Medium				

Sampling:

Sample Depth: 81 ft **Sample Type:** Standard Ground - Water
Sample Time: 09:30

	Sample Type	Sample Method	Volume	Bottle Type	Preservative
Bottle 1	Grab	Dedicator	1000	Clpl	None
Bottle 2	Grab	Dedicator	250	Clpl	HNO3R
Bottle 3	Grab	Dedicator	250	Clpl	H2SO4
Bottle 4	Grab	Dedicator	250	Clpl	HNO3
Bottle 5	Grab	Dedicator	40	Glass	HCL
Bottle 6	Grab	Dedicator	40	Glass	HCL
Bottle 7	Grab	Dedicator	40	Glass	HCL
Bottle 8	Grab	Dedicator	40	Glass	HCL

Notes: dry after 2 gallons on 2nd purge

Number of Bottles: 8

Operator/Witness: Daniel Block **Sampler: Matt Lawless**

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Field Sampling Data

Sample Number: 22496 **Conditions:** Sunny
Date: 4/17/2024 **Site:** Cathcart
Time: 9:05 AM **Location:** G-09S

Well Information:

Well Depth: 51.5 ft **Water Depth:** 29.7 ft

Surface Measurements:

Flow Rate: **Measure Method:**

Field Chemistry Tests:

Purge Volume: 3.49 gallons

	Type	pH	Cond	Temp	Color	Turbidity	Purge Vol	Water Depth	ORP	Time
Test 1	Grab	6.03	1077 µS	13.6	Clear	Very Fine				

Sampling:

Sample Depth: 51.5 ft **Sample Type:** Standard Ground - Water
Sample Time: 09:35

	Sample Type	Sample Method	Volume	Bottle Type	Preservative
Bottle 1	Grab	Dedicator	1000	Clpl	None
Bottle 2	Grab	Dedicator	250	Clpl	HNO3R
Bottle 3	Grab	Dedicator	250	Clpl	H2SO4
Bottle 4	Grab	Dedicator	250	Clpl	HNO3
Bottle 5	Grab	Dedicator	40	Glass	HCL
Bottle 6	Grab	Dedicator	40	Glass	HCL
Bottle 7	Grab	Dedicator	40	Glass	HCL
Bottle 8	Grab	Dedicator	40	Glass	HCL

Notes: dry after one purge

Number of Bottles: 8

Operator/Witness: Daniel Block **Sampler: Matt Lawless**

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Field Sampling Data

Sample Number: 22495 **Conditions:** Sunny
Date: 4/17/2024 **Site:** Cathcart
Time: 10:25 AM **Location:** G-11S

Well Information:

Well Depth: 41.2 ft **Water Depth:** 18.31 ft

Surface Measurements:

Flow Rate: **Measure Method:**

Field Chemistry Tests:

Purge Volume: 3.66 gallons

	Type	pH	Cond	Temp	Color	Turbidity	Purge Vol	Water Depth	ORP	Time
Test 1	Grab	6.24	190.5 µS	11.6	Clear	Very Fine				
Test 2	Grab	6.26	202.1 µS	11.4	Clear	Very Fine				
Test 3	Grab	6.39	219.5 µS	11.4	Clear	Very Fine				

Sampling:

Sample Depth: 41.2 ft **Sample Type:** Standard Ground - Water
Sample Time: 10:40

	Sample Type	Sample Method	Volume	Bottle Type	Preservative
Bottle 1	Grab	Dedicator	1000	Clpl	None
Bottle 2	Grab	Dedicator	250	Clpl	HNO3R
Bottle 3	Grab	Dedicator	250	Clpl	H2SO4
Bottle 4	Grab	Dedicator	250	Clpl	HNO3
Bottle 5	Grab	Dedicator	40	Glass	HCL
Bottle 6	Grab	Dedicator	40	Glass	HCL
Bottle 7	Grab	Dedicator	40	Glass	HCL
Bottle 8	Grab	Dedicator	40	Glass	HCL

Notes: dry after 2 gallons of 3rd purge

Number of Bottles: 8

Operator/Witness: Daniel Block **Sampler: Matt Lawless**

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Environmental Services Section
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Field Sampling Data

Sample Number: 22494 **Conditions:** Sunny
Date: 4/17/2024 **Site:** Cathcart
Time: 10:45 AM **Location:** G-13D

Well Information:

Well Depth: 44.9 ft **Water Depth:** 11.36 ft

Surface Measurements:

Flow Rate: **Measure Method:**

Field Chemistry Tests:

Purge Volume: 5.37 gallons

	Type	pH	Cond	Temp	Color	Turbidity	Purge Vol	Water Depth	ORP	Time
Test 1	Grab	8.84	464 µS	11	Clear	Very Fine				
Test 2	Grab	8.88	462 µS	10.7	Clear	Very Fine				
Test 3	Grab	8.83	462 µS	10.8	Clear	Fine				

Sampling:

Sample Depth: 17.21 ft **Sample Type:** Standard Ground - Water
Sample Time: 11:00

	Sample Type	Sample Method	Volume	Bottle Type	Preservative
Bottle 1	Grab	Dedicator	1000	Clpl	None
Bottle 2	Grab	Dedicator	250	Clpl	HNO3R
Bottle 3	Grab	Dedicator	250	Clpl	H2SO4
Bottle 4	Grab	Dedicator	250	Clpl	HNO3
Bottle 5	Grab	Dedicator	40	Glass	HCL
Bottle 6	Grab	Dedicator	40	Glass	HCL
Bottle 7	Grab	Dedicator	40	Glass	HCL
Bottle 8	Grab	Dedicator	40	Glass	HCL

Notes:

Number of Bottles: 8

Operator/Witness: Daniel Block **Sampler: Matt Lawless**

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Field Sampling Data

Sample Number: 22493 **Conditions:** Precip - rain
Date: 4/16/2024 **Site:** Cathcart
Time: 10:59 AM **Location:** G-02D

Well Information:

Well Depth: 56.5 ft **Water Depth:** 29.9 ft

Surface Measurements:

Flow Rate: **Measure Method:**

Field Chemistry Tests:

Purge Volume: 4.26 gallons

	Type	pH	Cond	Temp	Color	Turbidity	Purge Vol	Water Depth	ORP	Time
Test 1	Grab	7.57	369 µS	9.7	Clear	Fine				

Sampling:

Sample Depth: 56.5 ft **Sample Type:** Standard Ground - Water
Sample Time: 11:55

	Sample Type	Sample Method	Volume	Bottle Type	Preservative
Bottle 1	Grab	Dedicator	1000	Clpl	None
Bottle 2	Grab	Dedicator	250	Clpl	HNO3R
Bottle 3	Grab	Dedicator	250	Clpl	H2SO4
Bottle 4	Grab	Dedicator	250	Clpl	HNO3
Bottle 5	Grab	Dedicator	40	Glass	HCL
Bottle 6	Grab	Dedicator	40	Glass	HCL
Bottle 7	Grab	Dedicator	40	Glass	HCL
Bottle 8	Grab	Dedicator	40	Glass	HCL

Notes: dry after 1st purge

Number of Bottles: 8

Operator/Witness: Daniel Block **Sampler: Matt Lawless**

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Field Sampling Data

Sample Number: 22492 **Conditions:** Overcast
Date: 4/16/2024 **Site:** Cathcart
Time: 10:51 AM **Location:** G-08D1

Well Information:

Well Depth: 56.4 ft **Water Depth:** 22.55 ft

Surface Measurements:

Flow Rate: **Measure Method:**

Field Chemistry Tests:

Purge Volume: 5.42 gallons

	Type	pH	Cond	Temp	Color	Turbidity	Purge Vol	Water Depth	ORP	Time
Test 1	Grab	8.56	468 µS	10.2	Clear	Very Fine				
Test 2	Grab	8.96	452 µS	10.5	Clear	Medium				

Sampling:

Sample Depth: 56.4 ft **Sample Type:** Standard Ground - Water
Sample Time: 11:15

	Sample Type	Sample Method	Volume	Bottle Type	Preservative
Bottle 1	Grab	Dedicator	1000	Clpl	None
Bottle 2	Grab	Dedicator	250	Clpl	HNO3R
Bottle 3	Grab	Dedicator	250	Clpl	H2SO4
Bottle 4	Grab	Dedicator	250	Clpl	HNO3
Bottle 5	Grab	Dedicator	40	Glass	HCL
Bottle 6	Grab	Dedicator	40	Glass	HCL
Bottle 7	Grab	Dedicator	40	Glass	HCL
Bottle 8	Grab	Dedicator	40	Glass	HCL

Notes: dry after 3 gallons during 2nd purge

Number of Bottles: 8

Operator/Witness: Daniel Block **Sampler: Matt Lawless**

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Field Sampling Data

Sample Number: 22491 **Conditions:** Precip - rain
Date: 4/16/2024 **Site:** Cathcart
Time: 10:51 AM **Location:** G-08D2

Well Information:

Well Depth: 112.5 ft **Water Depth:** 4.71 ft

Surface Measurements:

Flow Rate: **Measure Method:**

Field Chemistry Tests:

Purge Volume: 17.25 gallons

	Type	pH	Cond	Temp	Color	Turbidity	Purge Vol	Water Depth	ORP	Time
Test 1	Grab	9.21	491 µS	10	Clear	Fine				
Test 2	Grab	9.24	485 µS	9.9	Clear	Medium				
Test 3	Grab	9.23	474 µS	10	Clear	Medium				

Sampling:

Sample Depth: 62.8 ft **Sample Type:** Standard Ground - Water
Sample Time: 10:35

	Sample Type	Sample Method	Volume	Bottle Type	Preservative
Bottle 1	Grab	Dedicator	1000	Clpl	None
Bottle 2	Grab	Dedicator	250	Clpl	HNO3R
Bottle 3	Grab	Dedicator	250	Clpl	H2SO4
Bottle 4	Grab	Dedicator	250	Clpl	HNO3
Bottle 5	Grab	Dedicator	40	Glass	HCL
Bottle 6	Grab	Dedicator	40	Glass	HCL
Bottle 7	Grab	Dedicator	40	Glass	HCL
Bottle 8	Grab	Dedicator	40	Glass	HCL

Notes:

Number of Bottles: 8

Operator/Witness: Daniel Block **Sampler: Matt Lawless**

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Environmental Services Section
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Field Sampling Data

Sample Number: 22490 **Conditions:** Overcast
Date: 4/16/2024 **Site:** Cathcart
Time: 10:36 AM **Location:** G-06B

Well Information:

Well Depth: 88 ft **Water Depth:** 35.03 ft

Surface Measurements:

Flow Rate: **Measure Method:**

Field Chemistry Tests:

Purge Volume: 8.48 gallons

	Type	pH	Cond	Temp	Color	Turbidity	Purge Vol	Water Depth	ORP	Time
Test 1	Grab	7.41	612 µS	11.4	Clear	Very Fine				
Test 2	Grab	7.63	716 µS	12.1	Clear	Very Fine				

Sampling:

Sample Depth: 88 ft **Sample Type:** Standard Ground - Water
Sample Time: 10:50

	Sample Type	Sample Method	Volume	Bottle Type	Preservative
Bottle 1	Grab	Dedicator	1000	Clpl	None
Bottle 2	Grab	Dedicator	250	Clpl	HNO3R
Bottle 3	Grab	Dedicator	250	Clpl	H2SO4
Bottle 4	Grab	Dedicator	250	Clpl	HNO3
Bottle 5	Grab	Dedicator	40	Glass	HCL
Bottle 6	Grab	Dedicator	40	Glass	HCL
Bottle 7	Grab	Dedicator	40	Glass	HCL
Bottle 8	Grab	Dedicator	40	Glass	HCL

Notes: dry after 2 purges

Number of Bottles: 8

Operator/Witness: Daniel Block **Sampler: Matt Lawless**

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Field Sampling Data

Sample Number:	22489	**Conditions:**	Precip - rain
Date:	4/16/2024	**Site:**	Cathcart
Time:	10:03 AM	**Location:**	G-01D

Well Information:

Well Depth: **Water Depth:**

Surface Measurements:

Flow Rate: **Measure Method:**

Field Chemistry Tests:

Purge Volume:

Type	pH	Cond	Temp	Color	Turbidity	Purge Vol	Water Depth	ORP	Time

Sampling:

Sample Depth: 46.31 ft **Sample Type:** Standard Ground - Water

Sample Time: 10:15

	Sample Type	Sample Method	Volume	Bottle Type	Preservative
Bottle 1	Grab	Dedicator	1000	Clpl	None
Bottle 2	Grab	Dedicator	250	Clpl	HNO3R
Bottle 3	Grab	Dedicator	250	Clpl	H2SO4
Bottle 4	Grab	Dedicator	250	Clpl	HNO3
Bottle 5	Grab	Dedicator	40	Glass	HCL
Bottle 6	Grab	Dedicator	40	Glass	HCL
Bottle 7	Grab	Dedicator	40	Glass	HCL
Bottle 8	Grab	Dedicator	40	Glass	HCL

Notes: Split Sample, Field Chemistry data on SN#22488

Number of Bottles: 8

Operator/Witness: Daniel Block **Sampler: Matt Lawless**

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Field Sampling Data

Sample Number: 22488 **Conditions:** Precip - rain
Date: 4/16/2024 **Site:** Cathcart
Time: 9:56 AM **Location:** G-01D

Well Information:

Well Depth: 67.2 ft **Water Depth:** 23.77 ft

Surface Measurements:

Flow Rate: **Measure Method:**

Field Chemistry Tests:

Purge Volume: 6.95 gallons

	Type	pH	Cond	Temp	Color	Turbidity	Purge Vol	Water Depth	ORP	Time
Test 1	Grab	8.88	595 µS	10.3	Clear	Very Fine				
Test 2	Grab	8.77	596 µS	10.8	Clear	Very Fine				
Test 3	Grab	8.87	601 µS	10.6	Clear	Very Fine				

Sampling:

Sample Depth: 46.31 ft **Sample Type:** Standard Ground - Water
Sample Time: 10:15

	Sample Type	Sample Method	Volume	Bottle Type	Preservative
Bottle 1	Grab	Dedicator	1000	Clpl	None
Bottle 2	Grab	Dedicator	250	Clpl	HNO3R
Bottle 3	Grab	Dedicator	250	Clpl	H2SO4
Bottle 4	Grab	Dedicator	250	Clpl	HNO3
Bottle 5	Grab	Dedicator	40	Glass	HCL
Bottle 6	Grab	Dedicator	40	Glass	HCL
Bottle 7	Grab	Dedicator	40	Glass	HCL
Bottle 8	Grab	Dedicator	40	Glass	HCL

Notes: split sample with 22489

Number of Bottles: 8

Operator/Witness: Daniel Block **Sampler: Matt Lawless**

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Field Sampling Data

Sample Number: 22487 **Conditions:** Precip - rain
Date: 4/16/2024 **Site:** Cathcart
Time: 9:54 AM **Location:** G-01A

Well Information:

Well Depth: 15.65 ft **Water Depth:** 8.95 ft

Surface Measurements:

Flow Rate: **Measure Method:**

Field Chemistry Tests:

Purge Volume: 1.07 gallons

	Type	pH	Cond	Temp	Color	Turbidity	Purge Vol	Water Depth	ORP	Time
Test 1	Grab	6.45	135.2 µS	9.2	Clear	Very Fine				
Test 2	Grab	6.15	134 µS	9	Clear	Fine				
Test 3	Grab	5.95	125.9 µS	9.1	Clear	Very Fine				

Sampling:

Sample Depth: 12.21 ft **Sample Type:** Standard Ground - Water
Sample Time: 10:25

	Sample Type	Sample Method	Volume	Bottle Type	Preservative
Bottle 1	Grab	Dedicator	1000	Clpl	None
Bottle 2	Grab	Dedicator	250	Clpl	HNO3R
Bottle 3	Grab	Dedicator	250	Clpl	H2SO4
Bottle 4	Grab	Dedicator	250	Clpl	HNO3
Bottle 5	Grab	Dedicator	40	Glass	HCL
Bottle 6	Grab	Dedicator	40	Glass	HCL
Bottle 7	Grab	Dedicator	40	Glass	HCL
Bottle 8	Grab	Dedicator	40	Glass	HCL

Notes:

Number of Bottles: 8

Operator/Witness: Daniel Block **Sampler: Matt Lawless**

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Field Sampling Data

Sample Number: 22486 **Conditions:** Overcast
Date: 4/16/2024 **Site:** Cathcart
Time: 9:14 AM **Location:** G-14D

Well Information:

Well Depth: 110 ft **Water Depth:** 30.85 ft

Surface Measurements:

Flow Rate: **Measure Method:**

Field Chemistry Tests:

Purge Volume: 12.66 gallons

	Type	pH	Cond	Temp	Color	Turbidity	Purge Vol	Water Depth	ORP	Time
Test 1	Grab	8.95	494 µS	11	Clear	Fine				
Test 2	Grab	9.06	497 µS	10.6	Lt Brown	Medium				

Sampling:

Sample Depth: 110 ft **Sample Type:** Standard Ground - Water
Sample Time: 09:45

	Sample Type	Sample Method	Volume	Bottle Type	Preservative
Bottle 1	Grab	Dedicator	1000	Clpl	None
Bottle 2	Grab	Dedicator	250	Clpl	HNO3R
Bottle 3	Grab	Dedicator	250	Clpl	H2SO4
Bottle 4	Grab	Dedicator	250	Clpl	HNO3
Bottle 5	Grab	Dedicator	40	Glass	HCL
Bottle 6	Grab	Dedicator	40	Glass	HCL
Bottle 7	Grab	Dedicator	40	Glass	HCL
Bottle 8	Grab	Dedicator	40	Glass	HCL

Notes: dry after 10 gallons on second purge

Number of Bottles: 8

Operator/Witness: Daniel Block **Sampler: Matt Lawless**

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Field Sampling Data

Sample Number: 22485 **Conditions:** Overcast
Date: 4/16/2024 **Site:** Cathcart
Time: 9:14 AM **Location:** G-14S

Well Information:

Well Depth: 68.5 ft **Water Depth:** 9.25 ft

Surface Measurements:

Flow Rate: **Measure Method:**

Field Chemistry Tests:

Purge Volume: 9.48 gallons

	Type	pH	Cond	Temp	Color	Turbidity	Purge Vol	Water Depth	ORP	Time
Test 1	Grab	8.59	381 µS	10.9	Clear	Very Fine				
Test 2	Grab	8.61	381 µS	11.1	Clear	Very Fine				

Sampling:

Sample Depth: 68.5 ft **Sample Type:** Standard Ground - Water
Sample Time: 09:40

	Sample Type	Sample Method	Volume	Bottle Type	Preservative
Bottle 1	Grab	Dedicator	1000	Clpl	None
Bottle 2	Grab	Dedicator	250	Clpl	HNO3R
Bottle 3	Grab	Dedicator	250	Clpl	H2SO4
Bottle 4	Grab	Dedicator	250	Clpl	HNO3
Bottle 5	Grab	Dedicator	40	Glass	HCL
Bottle 6	Grab	Dedicator	40	Glass	HCL
Bottle 7	Grab	Dedicator	40	Glass	HCL
Bottle 8	Grab	Dedicator	40	Glass	HCL

Notes: dry after 2 gallons into 2nd purge

Number of Bottles: 8

Operator/Witness: Daniel Block **Sampler: Matt Lawless**

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Field Sampling Data

Sample Number: 22484 **Conditions:** Overcast
Date: 4/16/2024 **Site:** Cathcart
Time: 8:40 AM **Location:** G-24D

Well Information:

Well Depth: 85 ft **Water Depth:** 18.71 ft

Surface Measurements:

Flow Rate: **Measure Method:**

Field Chemistry Tests:

Purge Volume: 10.61 gallons

	Type	pH	Cond	Temp	Color	Turbidity	Purge Vol	Water Depth	ORP	Time
Test 1	Grab	8.14	517 µS	11.5	Clear	Very Fine				08:51
Test 2	Grab	8.17	510 µS	10.9	Clear	Very Fine				
Test 3	Grab	8.15	507 µS	10.7	Clear	Very Fine				

Sampling:

Sample Depth: 34.69 ft **Sample Type:** Standard Ground - Water
Sample Time: 08:52

	Sample Type	Sample Method	Volume	Bottle Type	Preservative
Bottle 1	Grab	Dedicator	1000	Clpl	None
Bottle 2	Grab	Dedicator	250	Clpl	HNO3R
Bottle 3	Grab	Dedicator	250	Clpl	H2SO4
Bottle 4	Grab	Dedicator	250	Clpl	HNO3
Bottle 5	Grab	Dedicator	40	Glass	HCL
Bottle 6	Grab	Dedicator	40	Glass	HCL
Bottle 7	Grab	Dedicator	40	Glass	HCL
Bottle 8	Grab	Dedicator	40	Glass	HCL

Notes:

Number of Bottles: 8

Operator/Witness: Daniel Block **Sampler: Matt Lawless**

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Field Sampling Data

Sample Number: 22483 **Conditions:** Overcast
Date: 4/16/2024 **Site:** Cathcart
Time: 8:37 AM **Location:** G-24S

Well Information:

Well Depth: 26.5 ft **Water Depth:** 13.13 ft

Surface Measurements:

Flow Rate: **Measure Method:**

Field Chemistry Tests:

Purge Volume: 2.14 gallons

	Type	pH	Cond	Temp	Color	Turbidity	Purge Vol	Water Depth	ORP	Time
Test 1	Grab	7.04	434 µS	11.2	Clear	Very Fine				08:44

Sampling:

Sample Depth: 21.21 ft **Sample Type:** Standard Ground - Water
Sample Time: 01:05

	Sample Type	Sample Method	Volume	Bottle Type	Preservative
Bottle 1	Grab	Dedicator	1000	Clpl	None
Bottle 2	Grab	Dedicator	250	Clpl	HNO3R
Bottle 3	Grab	Dedicator	250	Clpl	H2SO4
Bottle 4	Grab	Dedicator	250	Clpl	HNO3
Bottle 5	Grab	Dedicator	40	Glass	HCL
Bottle 6	Grab	Dedicator	40	Glass	HCL
Bottle 7	Grab	Dedicator	40	Glass	HCL
Bottle 8	Grab	Dedicator	40	Glass	HCL

Notes: dry after one purge

Number of Bottles: 8

Operator/Witness: Daniel Block **Sampler: Matt Lawless**

Snohomish County Solid Waste
Environmental Services Section
8915 Cathcart Way
Snohomish, WA 98296

Field Sampling Data

Sample Number: 22569 **Conditions:** Sunny
Date: 7/16/2024 **Site:** Cathcart
Time: 9:40 AM **Location:** G-10D

Well Information:

Well Depth: 82 ft **Water Depth:** 30.59 ft

Surface Measurements:

Flow Rate: **Measure Method:**

Field Chemistry Tests:

Purge Volume: 8.23 gallons

	Type	pH	Cond	Temp	Color	Turbidity	Purge Vol	Water Depth	ORP	Time
Test 1	Grab	6.89	1498 µS	15.2	Clear	Very Fine				

Sampling:

Sample Depth: 35.33 ft **Sample Type:** Standard Ground - Water
Sample Time: 10:30

	Sample Type	Sample Method	Volume	Bottle Type	Preservative
Bottle 1	Grab	Dedicator	1000	Clpl	None
Bottle 2	Grab	Dedicator	250	Clpl	HNO3R
Bottle 3	Grab	Dedicator	250	Clpl	H2SO4
Bottle 4	Grab	Dedicator	250	Clpl	HNO3
Bottle 5	Grab	Dedicator	40	Glass	HCL
Bottle 6	Grab	Dedicator	40	Glass	HCL
Bottle 7	Grab	Dedicator	40	Glass	HCL
Bottle 8	Grab	Dedicator	40	Glass	HCL

Notes:

Number of Bottles: 8

Operator/Witness: Trina Arnold **Sampler: Matt Lawless**

Snohomish County Solid Waste
Environmental Services Section
8915 Cathcart Way
Snohomish, WA 98296

Field Sampling Data

Sample Number: 22568 **Conditions:** Sunny
Date: 7/16/2024 **Site:** Cathcart
Time: 9:45 AM **Location:** G-10S

Well Information:

Well Depth: 44 ft **Water Depth:** 23.78 ft

Surface Measurements:

Flow Rate: **Measure Method:**

Field Chemistry Tests:

Purge Volume: 3.24 gallons

	Type	pH	Cond	Temp	Color	Turbidity	Purge Vol	Water Depth	ORP	Time
Test 1	Grab	6.24	1232 µS	14.2	Clear	Very Fine				
Test 2	Grab	6.21	1265 µS	12.7	Clear	Very Fine				
Test 3	Grab	6.3	1274 µS	12.3	Clear	Very Fine				

Sampling:

Sample Depth: 24.85 ft **Sample Type:** Standard Ground - Water
Sample Time: 10:00

	Sample Type	Sample Method	Volume	Bottle Type	Preservative
Bottle 1	Grab	Dedicator	1000	Clpl	None
Bottle 2	Grab	Dedicator	250	Clpl	HNO3R
Bottle 3	Grab	Dedicator	250	Clpl	H2SO4
Bottle 4	Grab	Dedicator	250	Clpl	HNO3
Bottle 5	Grab	Dedicator	40	Glass	HCL
Bottle 6	Grab	Dedicator	40	Glass	HCL
Bottle 7	Grab	Dedicator	40	Glass	HCL
Bottle 8	Grab	Dedicator	40	Glass	HCL

Notes:

Number of Bottles: 8

Operator/Witness: Trina Arnold **Sampler: Matt Lawless**

Snohomish County Solid Waste
Environmental Services Section
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Field Sampling Data

Sample Number:	22567	**Conditions:**	Sunny
Date:	7/16/2024	**Site:**	Cathcart
Time:	9:15 AM	**Location:**	G-09D

Well Information:

Well Depth: **Water Depth:**

Surface Measurements:

Flow Rate: **Measure Method:**

Field Chemistry Tests:

Purge Volume:

Type	pH	Cond	Temp	Color	Turbidity	Purge Vol	Water Depth	ORP	Time

Sampling:

Sample Depth: 81 ft **Sample Type:** Standard Ground - Water

Sample Time: 09:30

	Sample Type	Sample Method	Volume	Bottle Type	Preservative
Bottle 1	Grab	Dedicator	1000	Clpl	None
Bottle 2	Grab	Dedicator	250	Clpl	HNO3R
Bottle 3	Grab	Dedicator	250	Clpl	H2SO4
Bottle 4	Grab	Dedicator	250	Clpl	HNO3
Bottle 5	Grab	Dedicator	40	Glass	HCL
Bottle 6	Grab	Dedicator	40	Glass	HCL
Bottle 7	Grab	Dedicator	40	Glass	HCL
Bottle 8	Grab	Dedicator	40	Glass	HCL

Notes: Split sample. See field data on 22566.

Number of Bottles: 8

Operator/Witness: Trina Arnold **Sampler: Matt Lawless**

Snohomish County Solid Waste
Environmental Services Section
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Snohomish, WA 98296

Field Sampling Data

Sample Number: 22566 **Conditions:** Sunny
Date: 7/16/2024 **Site:** Cathcart
Time: 9:15 AM **Location:** G-09D

Well Information:

Well Depth: 81 ft **Water Depth:** 51.29 ft

Surface Measurements:

Flow Rate: **Measure Method:**

Field Chemistry Tests:

Purge Volume: 4.75 gallons

	Type	pH	Cond	Temp	Color	Turbidity	Purge Vol	Water Depth	ORP	Time
Test 1	Grab	8.54	715 µS	15.6	Clear	Very Fine				
Test 2	Grab	8.65	712 µS	15.2	Clear	Very Fine				

Sampling:

Sample Depth: 81 ft **Sample Type:** Standard Ground - Water
Sample Time: 09:30

	Sample Type	Sample Method	Volume	Bottle Type	Preservative
Bottle 1	Grab	Dedicator	1000	Clpl	None
Bottle 2	Grab	Dedicator	250	Clpl	HNO3R
Bottle 3	Grab	Dedicator	250	Clpl	H2SO4
Bottle 4	Grab	Dedicator	250	Clpl	HNO3
Bottle 5	Grab	Dedicator	40	Glass	HCL
Bottle 6	Grab	Dedicator	40	Glass	HCL
Bottle 7	Grab	Dedicator	40	Glass	HCL
Bottle 8	Grab	Dedicator	40	Glass	HCL

Notes: Split sample with 22567. Dry 1.5 gallons into second purge.

Number of Bottles: 8

Operator/Witness: Trina Arnold **Sampler: Matt Lawless**

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Field Sampling Data

Sample Number: 22565 **Conditions:** Sunny
Date: 7/16/2024 **Site:** Cathcart
Time: 9:05 AM **Location:** G-09S

Well Information:

Well Depth: 51.5 ft **Water Depth:** 30.77 ft

Surface Measurements:

Flow Rate: **Measure Method:**

Field Chemistry Tests:

Purge Volume: 3.32 gallons

	Type	pH	Cond	Temp	Color	Turbidity	Purge Vol	Water Depth	ORP	Time
Test 1	Grab	5.74	1043 µS	15.7	Clear	Very Fine				

Sampling:

Sample Depth: 51.5 ft **Sample Type:** Standard Ground - Water
Sample Time: 09:35

	Sample Type	Sample Method	Volume	Bottle Type	Preservative
Bottle 1	Grab	Dedicator	1000	Clpl	None
Bottle 2	Grab	Dedicator	250	Clpl	HNO3R
Bottle 3	Grab	Dedicator	250	Clpl	H2SO4
Bottle 4	Grab	Dedicator	250	Clpl	HNO3
Bottle 5	Grab	Dedicator	40	Glass	HCL
Bottle 6	Grab	Dedicator	40	Glass	HCL
Bottle 7	Grab	Dedicator	40	Glass	HCL
Bottle 8	Grab	Dedicator	40	Glass	HCL

Notes: Dry after first purge.

Number of Bottles: 8

Operator/Witness: Trina Arnold **Sampler: Matt Lawless**

Snohomish County Solid Waste
Environmental Services Section
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Snohomish, WA 98296

Field Sampling Data

Sample Number: 22655 **Conditions:** Sunny
Date: 10/2/2024 **Site:** Cathcart
Time: 10:27 AM **Location:** G-11S

Well Information:

Well Depth: 41.2 ft **Water Depth:** 19.24 ft

Surface Measurements:

Flow Rate: **Measure Method:**

Field Chemistry Tests:

Purge Volume: 3.51 gallons

	Type	pH	Cond	Temp	Color	Turbidity	Purge Vol	Water Depth	ORP	Time
Test 1	Grab	5.45	233 µS	11.6	Clear	Very Fine				
Test 2	Grab	5.73	240 µS	11.4	Clear	Very Fine				
Test 3	Grab	5.92	253 µS	11.4	Clear	Very Fine				

Sampling:

Sample Depth: 41.2 ft **Sample Type:** Standard Ground - Water
Sample Time: 10:35

	Sample Type	Sample Method	Volume	Bottle Type	Preservative
Bottle 1	Grab	Dedicator	1000	Clpl	None
Bottle 2	Grab	Dedicator	250	Clpl	HNO3R
Bottle 3	Grab	Dedicator	250	Clpl	H2SO4
Bottle 4	Grab	Dedicator	250	Clpl	HNO3
Bottle 5	Grab	Dedicator	40	Glass	HCL
Bottle 6	Grab	Dedicator	40	Glass	HCL
Bottle 7	Grab	Dedicator	40	Glass	HCL
Bottle 8	Grab	Dedicator	40	Glass	HCL

Notes: Dry 2 gallons into third purge.

Number of Bottles: 8

Operator/Witness: Trina Arnold **Sampler: Matt Lawless**

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Environmental Services Section
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Field Sampling Data

Sample Number: 22654 **Conditions:** Sunny
Date: 10/2/2024 **Site:** Cathcart
Time: 10:08 AM **Location:** G-13D

Well Information:

Well Depth: 44.9 ft **Water Depth:** 12 ft

Surface Measurements:

Flow Rate: **Measure Method:**

Field Chemistry Tests:

Purge Volume: 5.26 gallons

	Type	pH	Cond	Temp	Color	Turbidity	Purge Vol	Water Depth	ORP	Time
Test 1	Grab	8.64	462 µS	10.9	Clear	Very Fine				
Test 2	Grab	8.66	459 µS	10.8	Clear	Very Fine				
Test 3	Grab	8.63	459 µS	11.1	Clear	Very Fine				

Sampling:

Sample Depth: 16.88 ft **Sample Type:** Standard Ground - Water
Sample Time: 10:15

	Sample Type	Sample Method	Volume	Bottle Type	Preservative
Bottle 1	Grab	Dedicator	1000	Clpl	None
Bottle 2	Grab	Dedicator	250	Clpl	HNO3R
Bottle 3	Grab	Dedicator	250	Clpl	H2SO4
Bottle 4	Grab	Dedicator	250	Clpl	HNO3
Bottle 5	Grab	Dedicator	40	Glass	HCL
Bottle 6	Grab	Dedicator	40	Glass	HCL
Bottle 7	Grab	Dedicator	40	Glass	HCL
Bottle 8	Grab	Dedicator	40	Glass	HCL

Notes:

Number of Bottles: 8

Operator/Witness: Trina Arnold **Sampler: Matt Lawless**

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Environmental Services Section
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Field Sampling Data

Sample Number: 22653 **Conditions:** Sunny
Date: 10/2/2024 **Site:** Cathcart
Time: 9:18 AM **Location:** G-10S

Well Information:

Well Depth: 44 ft **Water Depth:** 24.9 ft

Surface Measurements:

Flow Rate: **Measure Method:**

Field Chemistry Tests:

Purge Volume: 3.06 gallons

	Type	pH	Cond	Temp	Color	Turbidity	Purge Vol	Water Depth	ORP	Time
Test 1	Grab	6.02	1320 µS	12	Clear	Very Fine				
Test 2	Grab	6.16	1311 µS	12	Clear	Very Fine				

Sampling:

Sample Depth: 44 ft **Sample Type:** Standard Ground - Water
Sample Time: 09:25

	Sample Type	Sample Method	Volume	Bottle Type	Preservative
Bottle 1	Grab	Dedicator	1000	Clpl	None
Bottle 2	Grab	Dedicator	250	Clpl	HNO3R
Bottle 3	Grab	Dedicator	250	Clpl	H2SO4
Bottle 4	Grab	Dedicator	250	Clpl	HNO3
Bottle 5	Grab	Dedicator	40	Glass	HCL
Bottle 6	Grab	Dedicator	40	Glass	HCL
Bottle 7	Grab	Dedicator	40	Glass	HCL
Bottle 8	Grab	Dedicator	40	Glass	HCL

Notes: Dry 1 gallon into second purge.

Number of Bottles: 8

Operator/Witness: Trina Arnold **Sampler: Matt Lawless**

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Environmental Services Section
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Field Sampling Data

Sample Number: 22652 **Conditions:** Sunny
Date: 10/2/2024 **Site:** Cathcart
Time: 9:17 AM **Location:** G-10D

Well Information:

Well Depth: 82 ft **Water Depth:** 30.99 ft

Surface Measurements:

Flow Rate: **Measure Method:**

Field Chemistry Tests:

Purge Volume: 8.16 gallons

	Type	pH	Cond	Temp	Color	Turbidity	Purge Vol	Water Depth	ORP	Time
Test 1	Grab	6.84	1510 µS	12.4	Clear	Very Fine				

Sampling:

Sample Depth: 34.19 ft **Sample Type:** Standard Ground - Water
Sample Time: 09:55

	Sample Type	Sample Method	Volume	Bottle Type	Preservative
Bottle 1	Grab	Dedicator	1000	Clpl	None
Bottle 2	Grab	Dedicator	250	Clpl	HNO3R
Bottle 3	Grab	Dedicator	250	Clpl	H2SO4
Bottle 4	Grab	Dedicator	250	Clpl	HNO3
Bottle 5	Grab	Dedicator	40	Glass	HCL
Bottle 6	Grab	Dedicator	40	Glass	HCL
Bottle 7	Grab	Dedicator	40	Glass	HCL
Bottle 8	Grab	Dedicator	40	Glass	HCL

Notes:

Number of Bottles: 8

Operator/Witness: Trina Arnold **Sampler: Matt Lawless**

Snohomish County Solid Waste
Environmental Services Section
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Field Sampling Data

Sample Number: 22651 **Conditions:** Sunny
Date: 10/2/2024 **Site:** Cathcart
Time: 8:47 AM **Location:** G-09D

Well Information:

Well Depth: 81 ft **Water Depth:** 53.61 ft

Surface Measurements:

Flow Rate: **Measure Method:**

Field Chemistry Tests:

Purge Volume: 4.38 gallons

	Type	pH	Cond	Temp	Color	Turbidity	Purge Vol	Water Depth	ORP	Time
Test 1	Grab	8.45	720 µS	13.5	Clear	Very Fine				
Test 2	Grab	8.71	714 µS	13.5	Clear	Very Fine				

Sampling:

Sample Depth: 81 ft **Sample Type:** Standard Ground - Water
Sample Time: 09:05

	Sample Type	Sample Method	Volume	Bottle Type	Preservative
Bottle 1	Grab	Dedicator	1000	Clpl	None
Bottle 2	Grab	Dedicator	250	Clpl	HNO3R
Bottle 3	Grab	Dedicator	250	Clpl	H2SO4
Bottle 4	Grab	Dedicator	250	Clpl	HNO3
Bottle 5	Grab	Dedicator	40	Glass	HCL
Bottle 6	Grab	Dedicator	40	Glass	HCL
Bottle 7	Grab	Dedicator	40	Glass	HCL
Bottle 8	Grab	Dedicator	40	Glass	HCL

Notes: Dry after 1.5 gallon of second purge.

Number of Bottles: 8

Operator/Witness: Trina Arnold **Sampler: Matt Lawless**

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Environmental Services Section
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Field Sampling Data

Sample Number: 22650 **Conditions:** Sunny
Date: 10/2/2024 **Site:** Cathcart
Time: 8:43 AM **Location:** G-09S

Well Information:

Well Depth: 51.5 ft **Water Depth:** 32.35 ft

Surface Measurements:

Flow Rate: **Measure Method:**

Field Chemistry Tests:

Purge Volume: 3.06 gallons

	Type	pH	Cond	Temp	Color	Turbidity	Purge Vol	Water Depth	ORP	Time
Test 1	Grab	5.72	1021 µS	13.2	Clear	Very Fine				
Test 2	Grab	5.88	1025 µS	13.2	Clear	Very Fine				

Sampling:

Sample Depth: 51.5 ft **Sample Type:** Standard Ground - Water
Sample Time: 09:10

	Sample Type	Sample Method	Volume	Bottle Type	Preservative
Bottle 1	Grab	Dedicator	1000	Clpl	None
Bottle 2	Grab	Dedicator	250	Clpl	HNO3R
Bottle 3	Grab	Dedicator	250	Clpl	H2SO4
Bottle 4	Grab	Dedicator	250	Clpl	HNO3
Bottle 5	Grab	Dedicator	40	Glass	HCL
Bottle 6	Grab	Dedicator	40	Glass	HCL
Bottle 7	Grab	Dedicator	40	Glass	HCL
Bottle 8	Grab	Dedicator	40	Glass	HCL

Notes: Dry after 1.5 gallons of second purge.

Number of Bottles: 8

Operator/Witness: Trina Arnold **Sampler: Matt Lawless**

Snohomish County Solid Waste
Environmental Services Section
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Snohomish, WA 98296

Field Sampling Data

Sample Number: 22649 **Conditions:** Sunny
Date: 10/1/2024 **Site:** Cathcart
Time: 11:44 AM **Location:** G-02D

Well Information:

Well Depth: 56.5 ft **Water Depth:** 29.98 ft

Surface Measurements:

Flow Rate: **Measure Method:**

Field Chemistry Tests:

Purge Volume: 4.24 gallons

	Type	pH	Cond	Temp	Color	Turbidity	Purge Vol	Water Depth	ORP	Time
Test 1	Grab	6.56	366 µS	10.7	Clear	Very Fine				

Sampling:

Sample Depth: 56.5 ft **Sample Type:** Standard Ground - Water
Sample Time: 11:50

	Sample Type	Sample Method	Volume	Bottle Type	Preservative
Bottle 1	Grab	Dedicator	1000	Clpl	None
Bottle 2	Grab	Dedicator	250	Clpl	HNO3R
Bottle 3	Grab	Dedicator	250	Clpl	H2SO4
Bottle 4	Grab	Dedicator	250	Clpl	HNO3
Bottle 5	Grab	Dedicator	40	Glass	HCL
Bottle 6	Grab	Dedicator	40	Glass	HCL
Bottle 7	Grab	Dedicator	40	Glass	HCL
Bottle 8	Grab	Dedicator	40	Glass	HCL

Notes: Dry after first purge.

Number of Bottles: 8

Operator/Witness: Trina Arnold **Sampler: Matt Lawless**

Snohomish County Solid Waste
Environmental Services Section
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Snohomish, WA 98296

Field Sampling Data

Sample Number: 22648 **Conditions:** Sunny
Date: 10/1/2024 **Site:** Cathcart
Time: 11:30 AM **Location:** G-08D1

Well Information:

Well Depth: 56.4 ft **Water Depth:** 28.38 ft

Surface Measurements:

Flow Rate: **Measure Method:**

Field Chemistry Tests:

Purge Volume: 4.48 gallons

	Type	pH	Cond	Temp	Color	Turbidity	Purge Vol	Water Depth	ORP	Time
Test 1	Grab	8.29	450 µS	11	Clear	Very Fine				
Test 2	Grab	8.81	462 µS	11	Clear	Very Fine				

Sampling:

Sample Depth: 56.4 ft **Sample Type:** Standard Ground - Water
Sample Time: 11:40

	Sample Type	Sample Method	Volume	Bottle Type	Preservative
Bottle 1	Grab	Dedicator	1000	Clpl	None
Bottle 2	Grab	Dedicator	250	Clpl	HNO3R
Bottle 3	Grab	Dedicator	250	Clpl	H2SO4
Bottle 4	Grab	Dedicator	250	Clpl	HNO3
Bottle 5	Grab	Dedicator	40	Glass	HCL
Bottle 6	Grab	Dedicator	40	Glass	HCL
Bottle 7	Grab	Dedicator	40	Glass	HCL
Bottle 8	Grab	Dedicator	40	Glass	HCL

Notes: Dry 1 gallon into third purge.

Number of Bottles: 8

Operator/Witness: Trina Arnold **Sampler: Matt Lawless**

Snohomish County Solid Waste
Environmental Services Section
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Snohomish, WA 98296

Field Sampling Data

Sample Number:	22647	**Conditions:**	Sunny
Date:	10/1/2024	**Site:**	Cathcart
Time:	11:03 AM	**Location:**	G-08D2

Well Information:

Well Depth: **Water Depth:**

Surface Measurements:

Flow Rate: **Measure Method:**

Field Chemistry Tests:

Purge Volume:

Type	pH	Cond	Temp	Color	Turbidity	Purge Vol	Water Depth	ORP	Time

Sampling:

Sample Depth: 58.11 ft **Sample Type:** Standard Ground - Water

Sample Time: 11:25

	Sample Type	Sample Method	Volume	Bottle Type	Preservative
Bottle 1	Grab	Dedicator	1000	Clpl	None
Bottle 2	Grab	Dedicator	250	Clpl	HNO3R
Bottle 3	Grab	Dedicator	250	Clpl	H2SO4
Bottle 4	Grab	Dedicator	250	Clpl	HNO3
Bottle 5	Grab	Dedicator	40	Glass	HCL
Bottle 6	Grab	Dedicator	40	Glass	HCL
Bottle 7	Grab	Dedicator	40	Glass	HCL
Bottle 8	Grab	Dedicator	40	Glass	HCL

Notes: Split sample. See field measurements on 22646.

Number of Bottles: 8

Operator/Witness: Trina Arnold **Sampler: Matt Lawless**

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Environmental Services Section
8915 Cathcart Way
Snohomish, WA 98296

Field Sampling Data

Sample Number: 22646 **Conditions:** Sunny
Date: 10/1/2024 **Site:** Cathcart
Time: 11:03 AM **Location:** G-08D2

Well Information:

Well Depth: 112.5 ft **Water Depth:** 9.24 ft

Surface Measurements:

Flow Rate: **Measure Method:**

Field Chemistry Tests:

Purge Volume: 16.52 gallons

	Type	pH	Cond	Temp	Color	Turbidity	Purge Vol	Water Depth	ORP	Time
Test 1	Grab	8.96	479 µS	11.3	Clear	Very Fine				
Test 2	Grab	9.02	474 µS	11.6	Clear	Very Fine				
Test 3	Grab	9.06	471 µS	11.4	Clear	Very Fine				

Sampling:

Sample Depth: 58.11 ft **Sample Type:** Standard Ground - Water
Sample Time: 11:25

	Sample Type	Sample Method	Volume	Bottle Type	Preservative
Bottle 1	Grab	Dedicator	1000	Clpl	None
Bottle 2	Grab	Dedicator	250	Clpl	HNO3R
Bottle 3	Grab	Dedicator	250	Clpl	H2SO4
Bottle 4	Grab	Dedicator	250	Clpl	HNO3
Bottle 5	Grab	Dedicator	40	Glass	HCL
Bottle 6	Grab	Dedicator	40	Glass	HCL
Bottle 7	Grab	Dedicator	40	Glass	HCL
Bottle 8	Grab	Dedicator	40	Glass	HCL

Notes: Split sample with 22647.

Number of Bottles: 8

Operator/Witness: Trina Arnold **Sampler: Matt Lawless**

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Field Sampling Data

Sample Number: 22645 **Conditions:** Sunny
Date: 10/1/2024 **Site:** Cathcart
Time: 10:44 AM **Location:** G-06B

Well Information:

Well Depth: 88 ft **Water Depth:** 33.22 ft

Surface Measurements:

Flow Rate: **Measure Method:**

Field Chemistry Tests:

Purge Volume: 8.76 gallons

	Type	pH	Cond	Temp	Color	Turbidity	Purge Vol	Water Depth	ORP	Time
Test 1	Grab	7.31	651 µS	12.7	Clear	Very Fine				
Test 2	Grab	7.29	708 µS	12.8	Clear	Very Fine				

Sampling:

Sample Depth: 88 ft **Sample Type:** Standard Ground - Water
Sample Time: 10:55

	Sample Type	Sample Method	Volume	Bottle Type	Preservative
Bottle 1	Grab	Dedicator	1000	Clpl	None
Bottle 2	Grab	Dedicator	250	Clpl	HNO3R
Bottle 3	Grab	Dedicator	250	Clpl	H2SO4
Bottle 4	Grab	Dedicator	250	Clpl	HNO3
Bottle 5	Grab	Dedicator	40	Glass	HCL
Bottle 6	Grab	Dedicator	40	Glass	HCL
Bottle 7	Grab	Dedicator	40	Glass	HCL
Bottle 8	Grab	Dedicator	40	Glass	HCL

Notes: Dry after second purge.

Number of Bottles: 8

Operator/Witness: Trina Arnold **Sampler: Matt Lawless**

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Environmental Services Section
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Snohomish, WA 98296

Field Sampling Data

Sample Number: 22644 **Conditions:** Sunny
Date: 10/1/2024 **Site:** Cathcart
Time: 10:25 AM **Location:** G-01D

Well Information:

Well Depth: 67.2 ft **Water Depth:** 25.25 ft

Surface Measurements:

Flow Rate: **Measure Method:**

Field Chemistry Tests:

Purge Volume: 6.71 gallons

	Type	pH	Cond	Temp	Color	Turbidity	Purge Vol	Water Depth	ORP	Time
Test 1	Grab	8.83	588 µS	11.7	Clear	Very Fine				
Test 2	Grab	8.82	580 µS	11.6	Clear	Very Fine				
Test 3	Grab	8.81	584 µS	11.6	Clear	Very Fine				

Sampling:

Sample Depth: 47.96 ft **Sample Type:** Standard Ground - Water
Sample Time: 10:40

	Sample Type	Sample Method	Volume	Bottle Type	Preservative
Bottle 1	Grab	Dedicator	1000	Clpl	None
Bottle 2	Grab	Dedicator	250	Clpl	HNO3R
Bottle 3	Grab	Dedicator	250	Clpl	H2SO4
Bottle 4	Grab	Dedicator	250	Clpl	HNO3
Bottle 5	Grab	Dedicator	40	Glass	HCL
Bottle 6	Grab	Dedicator	40	Glass	HCL
Bottle 7	Grab	Dedicator	40	Glass	HCL
Bottle 8	Grab	Dedicator	40	Glass	HCL

Notes:

Number of Bottles: 8

Operator/Witness: Trina Arnold **Sampler: Matt Lawless**

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Environmental Services Section
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Field Sampling Data

Sample Number: 22643 **Conditions:** Sunny
Date: 10/1/2024 **Site:** Cathcart
Time: 10:02 AM **Location:** G-01A

Well Information:

Well Depth: 15.65 ft **Water Depth:** 10.61 ft

Surface Measurements:

Flow Rate: **Measure Method:**

Field Chemistry Tests:

Purge Volume: 0.81 gallons

	Type	pH	Cond	Temp	Color	Turbidity	Purge Vol	Water Depth	ORP	Time
Test 1	Grab	4.65	181 µS	12.9	Clear	Very Fine				
Test 2	Grab	4.95	180 µS	13.1	Clear	Very Fine				
Test 3	Grab	5.14	183 µS	13.1	Clear	Very Fine				

Sampling:

Sample Depth: 13.21 ft **Sample Type:** Standard Ground - Water
Sample Time: 10:25

	Sample Type	Sample Method	Volume	Bottle Type	Preservative
Bottle 1	Grab	Dedicator	1000	Clpl	None
Bottle 2	Grab	Dedicator	250	Clpl	HNO3R
Bottle 3	Grab	Dedicator	250	Clpl	H2SO4
Bottle 4	Grab	Dedicator	250	Clpl	HNO3
Bottle 5	Grab	Dedicator	40	Glass	HCL
Bottle 6	Grab	Dedicator	40	Glass	HCL
Bottle 7	Grab	Dedicator	40	Glass	HCL
Bottle 8	Grab	Dedicator	40	Glass	HCL

Notes:

Number of Bottles: 8

Operator/Witness: Trina Arnold **Sampler: Matt Lawless**

Snohomish County Solid Waste
Environmental Services Section
8915 Cathcart Way
Snohomish, WA 98296

Field Sampling Data

Sample Number: 22642 **Conditions:** Sunny
Date: 10/1/2024 **Site:** Cathcart
Time: 9:27 AM **Location:** G-14D

Well Information:

Well Depth: 110 ft **Water Depth:** 31.74 ft

Surface Measurements:

Flow Rate: **Measure Method:**

Field Chemistry Tests:

Purge Volume: 12.52 gallons

	Type	pH	Cond	Temp	Color	Turbidity	Purge Vol	Water Depth	ORP	Time
Test 1	Grab	8.59	500 µS	11.7	Clear	Very Fine				
Test 2	Grab	8.8	497 µS	11.7	Clear	Very Heavy				

Sampling:

Sample Depth: 110 ft **Sample Type:** Standard Ground - Water
Sample Time: 09:45

	Sample Type	Sample Method	Volume	Bottle Type	Preservative
Bottle 1	Grab	Dedicator	1000	Clpl	None
Bottle 2	Grab	Dedicator	250	Clpl	HNO3R
Bottle 3	Grab	Dedicator	250	Clpl	H2SO4
Bottle 4	Grab	Dedicator	250	Clpl	HNO3
Bottle 5	Grab	Dedicator	40	Glass	HCL
Bottle 6	Grab	Dedicator	40	Glass	HCL
Bottle 7	Grab	Dedicator	40	Glass	HCL
Bottle 8	Grab	Dedicator	40	Glass	HCL

Notes: Dry 9.5 gallons into second purge.

Number of Bottles: 8

Operator/Witness: Trina Arnold **Sampler: Matt Lawless**

Snohomish County Solid Waste
Environmental Services Section
8915 Cathcart Way
Snohomish, WA 98296

Field Sampling Data

Sample Number: 22641 **Conditions:** Sunny
Date: 10/1/2024 **Site:** Cathcart
Time: 9:24 AM **Location:** G-14S

Well Information:

Well Depth: 68.5 ft **Water Depth:** 14.92 ft

Surface Measurements:

Flow Rate: **Measure Method:**

Field Chemistry Tests:

Purge Volume: 8.57 gallons

	Type	pH	Cond	Temp	Color	Turbidity	Purge Vol	Water Depth	ORP	Time
Test 1	Grab	8.11	382 µS	11.5	Clear	Very Fine				
Test 2	Grab	8.15	389 µS	11.4	Clear	Very Fine				

Sampling:

Sample Depth: 68.5 ft **Sample Type:** Standard Ground - Water
Sample Time: 09:50

	Sample Type	Sample Method	Volume	Bottle Type	Preservative
Bottle 1	Grab	Dedicator	1000	Clpl	None
Bottle 2	Grab	Dedicator	250	Clpl	HNO3R
Bottle 3	Grab	Dedicator	250	Clpl	H2SO4
Bottle 4	Grab	Dedicator	250	Clpl	HNO3
Bottle 5	Grab	Dedicator	40	Glass	HCL
Bottle 6	Grab	Dedicator	40	Glass	HCL
Bottle 7	Grab	Dedicator	40	Glass	HCL
Bottle 8	Grab	Dedicator	40	Glass	HCL

Notes: Dry after 2 gallons of second purge.

Number of Bottles: 8

Operator/Witness: Trina Arnold **Sampler: Matt Lawless**

Snohomish County Solid Waste
Environmental Services Section
8915 Cathcart Way
Snohomish, WA 98296

Field Sampling Data

Sample Number: 22640 **Conditions:** Sunny
Date: 10/1/2024 **Site:** Cathcart
Time: 8:46 AM **Location:** G-24D

Well Information:

Well Depth: 85 ft **Water Depth:** 18.9 ft

Surface Measurements:

Flow Rate: **Measure Method:**

Field Chemistry Tests:

Purge Volume: 10.58 gallons

	Type	pH	Cond	Temp	Color	Turbidity	Purge Vol	Water Depth	ORP	Time
Test 1	Grab	7.73	517 µS	11.8	Clear	Very Fine				
Test 2	Grab	7.89	508 µS	11.6	Clear	Very Fine				
Test 3	Grab	7.87	506 µS	11.5	Clear	Very Fine				

Sampling:

Sample Depth: 33.96 ft **Sample Type:** Standard Ground - Water
Sample Time: 09:10

	Sample Type	Sample Method	Volume	Bottle Type	Preservative
Bottle 1	Grab	Dedicator	1000	Clpl	None
Bottle 2	Grab	Dedicator	250	Clpl	HNO3R
Bottle 3	Grab	Dedicator	250	Clpl	H2SO4
Bottle 4	Grab	Dedicator	250	Clpl	HNO3
Bottle 5	Grab	Dedicator	40	Glass	HCL
Bottle 6	Grab	Dedicator	40	Glass	HCL
Bottle 7	Grab	Dedicator	40	Glass	HCL
Bottle 8	Grab	Dedicator	40	Glass	HCL

Notes:

Number of Bottles: 8

Operator/Witness: Trina Arnold **Sampler: Matt Lawless**

Snohomish County Solid Waste
Environmental Services Section
8915 Cathcart Way
Snohomish, WA 98296

Field Sampling Data

Sample Number: 22639 **Conditions:** Sunny
Date: 10/1/2024 **Site:** Cathcart
Time: 8:45 AM **Location:** G-24S

Well Information:

Well Depth: 26.5 ft **Water Depth:** 14.31 ft

Surface Measurements:

Flow Rate: **Measure Method:**

Field Chemistry Tests:

Purge Volume: 1.95 gallons

	Type	pH	Cond	Temp	Color	Turbidity	Purge Vol	Water Depth	ORP	Time
Test 1	Grab	5.85	387 µS	11.4	Clear	Very Fine				

Sampling:

Sample Depth: 22.75 ft **Sample Type:** Standard Ground - Water
Sample Time: 01:10

	Sample Type	Sample Method	Volume	Bottle Type	Preservative
Bottle 1	Grab	Dedicator	1000	Clpl	None
Bottle 2	Grab	Dedicator	250	Clpl	HNO3R
Bottle 3	Grab	Dedicator	250	Clpl	H2SO4
Bottle 4	Grab	Dedicator	250	Clpl	HNO3
Bottle 5	Grab	Dedicator	40	Glass	HCL
Bottle 6	Grab	Dedicator	40	Glass	HCL
Bottle 7	Grab	Dedicator	40	Glass	HCL
Bottle 8	Grab	Dedicator	40	Glass	HCL

Notes: Dry after second purge.

Number of Bottles: 8

Operator/Witness: Trina Arnold **Sampler: Matt Lawless**

Snohomish County Solid Waste
Environmental Services Section
8915 Cathcart Way
Snohomish, WA 98296

Field Sampling Data

Sample Number:	22638	**Conditions:**	Sunny
Date:	10/1/2024	**Site:**	Cathcart
Time:	8:38 AM	**Location:**	G-04A

Well Information:

Well Depth: **Water Depth:**

Surface Measurements:

Flow Rate: **Measure Method:**

Field Chemistry Tests:

Purge Volume:

Type	pH	Cond	Temp	Color	Turbidity	Purge Vol	Water Depth	ORP	Time

Sampling:

Sample Depth: **Sample Type:**

Sample Time:

Sample Type	Sample Method	Volume	Bottle Type	Preservative

Notes: Hitting top of pump. Not enough water to sample.

Number of Bottles:

Operator/Witness: Trina Arnold **Sampler: Matt Lawless**

Snohomish County Department of Public Works

Solid Waste Division

Gas Probe Monitoring Data

QUARTERLY GAS ROUND
DATE: 02/16/24

Site	Location: Probe	Time (Military)	Methane (% VOL)	Oxygen (% VOL, % LEL, PPM)	Carbon Diox. (% VOL)	Velocity	Pressure	Comments
CATHCART	GP-4	1415	0%	21%	0%		29.76	
	GP-5(1)	1418	0%	18%	3%		"	
	GP-5(2)	1420	0%	21%	0%		"	
	GP-1(1)	1432	0%	19%	1%		"	
	GP-1(2)	1433	0%	21%	0%		"	
	GP-2(1)	1435	0%	13%	7%		"	
	GP-2(2)	1436	0%	13%	6%		"	
	GP-3	1451	0%	21%	0%		"	
	GP-6	1448	0%	21%	0%		"	
	Main Man	1405	53%	0%	27%	250	"	
Site	**Location: Barhole**	**Time (Military)**	**Methane (% VOL)**	**Oxygen (% VOL, % LEL, PPM)**	**Carbon Diox. (% VOL)**	**Velocity**	**Pressure**	**Comments**
CATHCART	BH-3	1416	0%	21%	0%		29.76	
	BH-4	1422	0%	21%	1%		"	
	BH-5	1425	0%	21%	0%		"	
	BH-6	1427	0%	20%	1%		"	
	BH-7	1431	0%	21%	0%		"	
	BH-8	1429	0%	21%	0%		"	
Site	**Location: Structure**	**Time (Military)**	**Methane (% VOL)**	**Oxygen (% VOL, % LEL, PPM)**	**Carbon Diox. (% VOL)**	**Velocity**	**Pressure**	**Comments**
CATHCART	SP-4	1437	0%	21%	0%		29.76	
	C-FV-1`	1438	0%	21%	0%		"	
	C-COV-2	1439	0%	21%	0%		"	
	C-VV-2	1440	0%	21%	0%		"	
	SP-1	1441	0%	21%	2%		"	
	C-VV-3	1442	0%	21%	0%		"	
	Grit Chamber	1443	0%	21%	2%		"	
	C-FV-2	1444	0%	21%	0%		"	
	C-VV-5	1445	0%	21%	0%		"	

Methane/Oxygen Meter Used =	GEM 5000
Technician Name =	ML
Page =	**2 of 2**

Snohomish County Department of Public Works

Solid Waste Division

Gas Probe Monitoring Data

QUARTERLY GAS ROUND	
DATE:	**05/10/24**

Site	Location: Probe	Time (Military)	Methane (% VOL)	Oxygen (% VOL, % LEL, PPM)	Carbon Diox. (% VOL)	Velocity	Pressure	Comments
CATHCART	GP-4	1317	0%	21%	0%		29.72	
	GP-5(1)	1329	0%	19%	2%		"	
	GP-5(2)	1330	0%	20%	0%		"	
	GP-1(1)	1345	0%	20%	0%		"	
	GP-1(2)	1346	0%	20%	0%		"	
	GP-2(1)	1352	0%	10%	4%		"	
	GP-2(2)	1353	0%	13%	5%		"	
	GP-3	1406	0%	18%	1%		"	
	GP-6	1403	0%	20%	0%		"	
	Main Man	1304	61%	1%	25%	-	"	Velocity Meter not working
Site	**Location: Barhole**	**Time (Military)**	**Methane (% VOL)**	**Oxygen (% VOL, % LEL, PPM)**	**Carbon Diox. (% VOL)**	**Velocity**	**Pressure**	**Comments**
CATHCART	BH-3	1322	0%	20%	1%		29.72	
	BH-4	1326	0%	20%	2%		"	
	BH-5	1335	0%	21%	0%		"	
	BH-6	1343	0%	18%	2%		"	
	BH-7	1348	0%	19%	1%		"	
	BH-8	1340	0%	20%	1%		"	
Site	**Location: Structure**	**Time (Military)**	**Methane (% VOL)**	**Oxygen (% VOL, % LEL, PPM)**	**Carbon Diox. (% VOL)**	**Velocity**	**Pressure**	**Comments**
CATHCART	SP-4	1354	0%	20%	0%		29.72	
	C-FV-1`	1355	0%	20%	0%		"	
	C-COV-2	1356	0%	21%	0%		"	
	C-VV-2	1400	0%	20%	0%		"	
	SP-1	1358	0%	21%	0%		"	
	C-VV-3	1359	0%	20%	0%		"	
	Grit Chamber	1357	0%	20%	1%		"	
	C-FV-2	1401	0%	20%	0%		"	
	C-VV-5	1402	0%	20%	0%		"	

Methane/Oxygen Meter Used =	GEM 5000
Technician Name =	TA/DB
Page =	**2 of 2**

Snohomish County Department of Public Works

Solid Waste Division

Gas Probe Monitoring Data

QUARTERLY GAS ROUND
DATE: 08/16/24

Site	Location: Probe	Time (Military)	Methane (% VOL)	Oxygen (% VOL, % LEL, PPM)	Carbon Diox. (% VOL)	Velocity	Pressure	Comments
CATHCART	GP-4	1257	0%	21%	0%		29.66	
	GP-5(1)	1302	0%	19%	3%			
	GP-5(2)	1303	0%	21%	0%			
	GP-1(1)	1313	0%	21%	0%			
	GP-1(2)	1314	0%	21%	0%			
	GP-2(1)	1318	0%	11%	6%			
	GP-2(2)	1319	0%	14%	5%			
	GP-3	1330	0%	20%	0%			
	GP-6	1325	0%	20%	1%			
	Main Man	1335	53%	4%	23%	263	29.66	
Site	**Location: Barhole**	**Time (Military)**	**Methane (% VOL)**	**Oxygen (% VOL, % LEL, PPM)**	**Carbon Diox. (% VOL)**	**Velocity**	**Pressure**	**Comments**
CATHCART	BH-3	1259	0%	21%	0%		29.66	
	BH-4	1301	0%	20%	2%			
	BH-5	1306	0%	21%	0%			
	BH-6	1310	0%	20%	1%			
	BH-7	1312	0%	21%	0%			
	BH-8	1307	0%	21%	0%		29.66	
Site	**Location: Structure**	**Time (Military)**	**Methane (% VOL)**	**Oxygen (% VOL, % LEL, PPM)**	**Carbon Diox. (% VOL)**	**Velocity**	**Pressure**	**Comments**
CATHCART	SP-4	1320	0%	21%	0%		29.66	
	C-FV-1`	1321	0%	21%	0%			
	C-COV-2	1322	0%	21%	0%			
	C-VV-2	1323	0%	21%	0%			
	SP-1	1322	0%	21%	3%			
	C-VV-3	1322	0%	21%	1%			
	Grit Chamber	1323	0%	21%	0%			
	C-FV-2	1324	0%	21%	0%			
	C-VV-5	1324	0%	21%	0%		29.66	

Methane/Oxygen Meter Used =	GEM 5000
Technician Name =	ML/TA
Page =	**2 of 2**

Snohomish County Department of Public Works

Solid Waste Division

Gas Probe Monitoring Data

QUARTERLY GAS ROUND
DATE: **11/22/24**

Site	Location: Probe	Time (Military)	Methane (% VOL)	Oxygen (% VOL, % LEL, PPM)	Carbon Diox. (% VOL)	Velocity	Pressure	Comments
CATHCART GAS PROBES/FLARE	GP-4	1152	0%	21%	0%		29.03	
	GP-5(1)	1200	0%	21%	4%		"	
	GP-5(2)	1202	0%	21%	0%		"	
	GP-1(1)	1212	0%	20%	0%		"	
	GP-1(2)	1214	0%	20%	1%		"	
	GP-2(1)	1216	0%	8%	8%		"	
	GP-2(2)	1218	0%	12%	6%		"	
	GP-3	1232	0%	21%	0%		"	
	GP-6	1230	0%	21%	1%		"	
	Main Man	1238	52%	3%	24%	225	"	
CATHCART BARHOLES	BH-3	1154	0%	21%	1%		29.03	
	BH-4	1156	0%	21%	0%		"	
	BH-5	1204	0%	21%	1%		"	
	BH-6	1208	0%	21%	2%		"	
	BH-7	1210	0%	21%	1%		"	
	BH-8	1206	0%	21%	1%		"	
CATHCART VAULTS	SP-4	1220	0%	21%	0%		29.03	
	C-FV-1`	1221	0%	21%	0%		"	
	C-COV-2	1222	0%	21%	0%		"	
	C-VV-2	1223	0%	21%	0%		"	
	SP-1	1224	0%	21%	1%		"	
	C-VV-3	1225	0%	21%	0%		"	
	Grit Chamber	1226	0%	21%	1%		"	
	C-FV-2	1227	0%	21%	0%		"	
	C-VV-5	1228	0%	21%	0%		"	

Methane/Oxygen Meter Used =	GEM 5000
Technician Name =	ML/TA
Page =	**2 of 2**

LEACHATE PRETREATMENT FACILITY
CLARIFIER LEVEL
MONTHLY INSPECTION:

DATE: **January 31, 2023**			**INSPECTOR(S):**		**ML/DB**		
LOCATION:	CONFINED SPACE (TYPE)	FLUID DEPTH (INCHES)	CONDITION: ODORS	CONDITION: DEFECTS	SUMP PUMP?	SUMP PUMP WORKING?	COMMENTS:
FD-1	Flow Distribution	Full	No	NONE	___	___	
P-FV-2	FLOW METER VAULT	0"	NO	NONE	YES	YES	
P-MH-3	MAN HOLE	0"	NO	NONE	NO		
P-MH-4	MAN HOLE	0"	NO	NONE	NO		
P-MH-9	MAN HOLE	12"	NO	NONE	___	--------	
P-VV-10	VALVE VAULT	0"	NO	NONE	___	--------	
P-VV-11	VALVE VAULT	0"	NO	NONE	___	--------	
P-VV-12	VALVE VAULT	0"	NO	NONE	___	--------	
P-VV-9	VALVE VAULT	0"	NO	NONE	___	--------	
SP-7	SUMP PUMP	~12"	NO	NONE	YES	YES	
SP-8	SUMP PUMP	~12"	NO	NONE	YES	YES	
CLARIFIER LEVEL ANNUAL INSPECTION							
P-BV-1	BLOWER VAULT	0"	NO	NONE	___	-------	
P-MH-8	MAN HOLE (needs 7 poles)	0"	NO	NONE	___	___	
COMMENTS:							

LEACHATE PRETREATMENT FACILITY
LAGOON LEVEL
MONTHLY INSPECTION:

DATE: **January 31, 2023** **INSPECTOR:** **ML/DB**

LOCATION:	CONFINED SPACE (TYPE)	FLUID DEPTH (INCHES)	CONDITION: ODORS	CONDITION: DEFECTS	SUMP PUMP?	SUMP PUMP WORKING?	COMMENTS:
P-FV-1	FLOW METER VAULT	0"	NO	NONE	YES	YES	
P-MH-1	MAN HOLE	6"	NO	NONE	___	--------	
P-VV-1	VALVE VAULT	0"	NO	NONE	YES	YES	
P-VV-13	VALVE VAULT	0"	NO	NONE	___	--------	
P-VV-2	VALVE VAULT	0"	NO	NONE	YES	Yes	
P-VV-3	VALVE VAULT	0"	NO	NONE	YES	Yes	**Hinges loose and handle bent**
P-VV-4	VALVE VAULT	3'	NO	NONE	YES	No	**Sump pump not working. Notify electrician 2/2**
P-VV-5	VALVE VAULT	0"	NO	NONE	YES	NO	
P-VV-6	VALVE VAULT	0"	NO	NONE	YES	YES	
P-VV-7	VALVE VAULT	0"	NO	NONE	___	--------	
P-VV-8	VALVE VAULT	0"	NO	NONE	___	--------	
SP-6	SUMP PUMP	**Full**	NO	NONE	YES	NO	**Needs more floats installed.**
SP-9	SUMP PUMP	~12"	NO	NONE	YES	YES	
LAGOON LEVEL ANNUAL INSPECTION							
P-MH-2	MAN HOLE	3'	NO	NONE	___	--------	

COMMENTS:

LEACHATE PRETREATMENT FACILITY
CLARIFIER LEVEL
MONTHLY INSPECTION:

DATE: **March 1, 2024**			**INSPECTOR(S):**		**DB**		
LOCATION:	CONFINED SPACE (TYPE)	FLUID DEPTH (INCHES)	CONDITION: ODORS	CONDITION: DEFECTS	SUMP PUMP?	SUMP PUMP WORKING?	COMMENTS:
FD-1	Flow Distribution	Full	No	NONE	___	___	
P-FV-2	FLOW METER VAULT	0"	NO	NONE	YES	YES	
P-MH-3	MAN HOLE	0"	NO	NONE	NO		
P-MH-4	MAN HOLE	0"	NO	NONE	NO		
P-MH-9	MAN HOLE	12"	NO	NONE	___	--------	
P-VV-10	VALVE VAULT	0"	NO	NONE	___	--------	
P-VV-11	VALVE VAULT	0"	NO	NONE	___	--------	
P-VV-12	VALVE VAULT	0"	NO	NONE	___	--------	
P-VV-9	VALVE VAULT	0"	NO	NONE	___	--------	
SP-7	SUMP PUMP	~12"	NO	NONE	YES	YES	
SP-8	SUMP PUMP	~12"	NO	NONE	YES	YES	
CLARIFIER LEVEL ANNUAL INSPECTION							
P-BV-1	BLOWER VAULT	0"	NO	NONE	___	-------	
P-MH-8	MAN HOLE (needs 7 poles)	0"	NO	NONE	___	___	
COMMENTS:							

LEACHATE PRETREATMENT FACILITY
LAGOON LEVEL
MONTHLY INSPECTION:

DATE: **March 1, 2024** **INSPECTOR:** **DB**

LOCATION:	CONFINED SPACE (TYPE)	FLUID DEPTH (INCHES)	CONDITION: ODORS	CONDITION: DEFECTS	SUMP PUMP?	SUMP PUMP WORKING?	COMMENTS:
P-FV-1	FLOW METER VAULT	0"	NO	NONE	YES	YES	
P-MH-1	MAN HOLE	6"	NO	NONE	___	--------	
P-VV-1	VALVE VAULT	0"	NO	NONE	YES	YES	
P-VV-13	VALVE VAULT	0"	NO	NONE	___	--------	
P-VV-2	VALVE VAULT	0"	NO	NONE	YES	Yes	
P-VV-3	VALVE VAULT	0"	NO	NONE	YES	Yes	**Hinges loose and handle bent**
P-VV-4	VALVE VAULT	3'	NO	NONE	YES	No	**Sump pump not working. Notify electrician 2/2**
P-VV-5	VALVE VAULT	0"	NO	NONE	YES	NO	
P-VV-6	VALVE VAULT	0"	NO	NONE	YES	YES	
P-VV-7	VALVE VAULT	0"	NO	NONE	___	--------	
P-VV-8	VALVE VAULT	0"	NO	NONE	___	--------	
SP-6	SUMP PUMP	**Full**	NO	NONE	YES	NO	**Needs more floats installed.**
SP-9	SUMP PUMP	~12"	NO	NONE	YES	YES	
LAGOON LEVEL ANNUAL INSPECTION							
P-MH-2	MAN HOLE	3'	NO	NONE	___	--------	

COMMENTS:

LEACHATE PRETREATMENT FACILITY
CLARIFIER LEVEL
MONTHLY INSPECTION:

DATE: April 30, 2024			**INSPECTOR(S):** ML/TA				
LOCATION:	CONFINED SPACE (TYPE)	FLUID DEPTH (INCHES)	CONDITION: ODORS	CONDITION: DEFECTS	SUMP PUMP?	SUMP PUMP WORKING?	COMMENTS:
FD-1	Flow Distribution	0	No	NONE	___	___	**PVV-10 Closed**
P-FV-2	FLOW METER VAULT	0"	NO	NONE	YES	YES	
P-MH-3	MAN HOLE	0"	NO	NONE	NO		
P-MH-4	MAN HOLE	0"	NO	NONE	NO		
P-MH-9	MAN HOLE	12"	NO	NONE	___	--------	
P-VV-10	VALVE VAULT	0"	NO	NONE	___	--------	
P-VV-11	VALVE VAULT	0"	NO	NONE	___	--------	
P-VV-12	VALVE VAULT	0"	NO	NONE	___	--------	
P-VV-9	VALVE VAULT	0"	NO	NONE	___	--------	
SP-7	SUMP PUMP	~12"	NO	NONE	YES	YES	
SP-8	SUMP PUMP	~12"	NO	NONE	YES	YES	
CLARIFIER LEVEL ANNUAL INSPECTION							
P-BV-1	BLOWER VAULT	0"	NO	NONE	___	-------	
P-MH-8	MAN HOLE (needs 7 poles)	0"	NO	NONE	___	___	
COMMENTS:							

LEACHATE PRETREATMENT FACILITY
LAGOON LEVEL
MONTHLY INSPECTION:

DATE: **April 30, 2024** **INSPECTOR:** **ML/TA**

LOCATION:	CONFINED SPACE (TYPE)	FLUID DEPTH (INCHES)	CONDITION:		SUMP PUMP?	SUMP PUMP WORKING?	COMMENTS:
			ODORS	DEFECTS			
P-FV-1	FLOW METER VAULT	0"	NO	NONE	YES	YES	
P-MH-1	MAN HOLE	6"	NO	NONE	___	--------	
P-VV-1	VALVE VAULT	0"	NO	NONE	YES	YES	
P-VV-13	VALVE VAULT	0"	NO	NONE	___	--------	
P-VV-2	VALVE VAULT	0"	NO	NONE	YES	Yes	
P-VV-3	VALVE VAULT	0"	NO	NONE	YES	Yes	**Hinges loose and handle bent**
P-VV-4	VALVE VAULT	3'	NO	NONE	YES	Yes	
P-VV-5	VALVE VAULT	0"	NO	NONE	YES	NO	
P-VV-6	VALVE VAULT	0"	NO	NONE	YES	YES	
P-VV-7	VALVE VAULT	0"	NO	NONE	___	--------	
P-VV-8	VALVE VAULT	0"	NO	NONE	___	--------	
SP-6	SUMP PUMP	18"	NO	NONE	YES	NO	**Needs more floats installed.**
SP-9	SUMP PUMP	~12"	NO	NONE	YES	YES	
LAGOON LEVEL ANNUAL INSPECTION							
P-MH-2	MAN HOLE	3'	NO	NONE	___	--------	

COMMENTS:

LEACHATE PRETREATMENT FACILITY
CLARIFIER LEVEL
MONTHLY INSPECTION:

DATE: **May 31, 2024** **INSPECTOR(S):** **ML/TA**

LOCATION:	CONFINED SPACE (TYPE)	FLUID DEPTH (INCHES)	CONDITION: ODORS	CONDITION: DEFECTS	SUMP PUMP?	SUMP PUMP WORKING?	COMMENTS:
FD-1	Flow Distribution	0	No	NONE	___	___	**PVV-10 Closed**
P-FV-2	FLOW METER VAULT	0"	NO	NONE	YES	YES	
P-MH-3	MAN HOLE	0"	NO	NONE	NO		
P-MH-4	MAN HOLE	0"	NO	NONE	NO		
P-MH-9	MAN HOLE	12"	NO	NONE	___	--------	
P-VV-10	VALVE VAULT	0"	NO	NONE	___	--------	
P-VV-11	VALVE VAULT	0"	NO	NONE	___	--------	
P-VV-12	VALVE VAULT	0"	NO	NONE	___	--------	
P-VV-9	VALVE VAULT	0"	NO	NONE	___	--------	
SP-7	SUMP PUMP	~12"	NO	NONE	YES	YES	
SP-8	SUMP PUMP	~12"	NO	NONE	YES	YES	
CLARIFIER LEVEL ANNUAL INSPECTION							
P-BV-1	BLOWER VAULT	0"	NO	NONE	___	-------	
P-MH-8	MAN HOLE (needs 7 poles)	0"	NO	NONE	___	___	

COMMENTS:

LEACHATE PRETREATMENT FACILITY
LAGOON LEVEL
MONTHLY INSPECTION:

DATE: **May 31, 2024** **INSPECTOR:** **ML/TA**

LOCATION:	CONFINED SPACE (TYPE)	FLUID DEPTH (INCHES)	CONDITION:		SUMP PUMP?	SUMP PUMP WORKING?	COMMENTS:
			ODORS	DEFECTS			
P-FV-1	FLOW METER VAULT	0"	NO	NONE	YES	YES	
P-MH-1	MAN HOLE	6"	NO	NONE	___	--------	
P-VV-1	VALVE VAULT	0"	NO	NONE	YES	YES	
P-VV-13	VALVE VAULT	0"	NO	NONE	___	--------	
P-VV-2	VALVE VAULT	0"	NO	NONE	YES	Yes	
P-VV-3	VALVE VAULT	0"	NO	NONE	YES	Yes	
P-VV-4	VALVE VAULT	0"	NO	NONE	YES	Yes	
P-VV-5	VALVE VAULT	0"	NO	NONE	YES	NO	
P-VV-6	VALVE VAULT	0"	NO	NONE	YES	YES	
P-VV-7	VALVE VAULT	0"	NO	NONE	___	--------	
P-VV-8	VALVE VAULT	0"	NO	NONE	___	--------	
SP-6	SUMP PUMP	18"	NO	NONE	YES	NO	
SP-9	SUMP PUMP	~12"	NO	NONE	YES	YES	
LAGOON LEVEL ANNUAL INSPECTION							
P-MH-2	MAN HOLE	3'	NO	NONE	___	--------	

COMMENTS:

LEACHATE PRETREATMENT FACILITY
CLARIFIER LEVEL
MONTHLY INSPECTION:

DATE: June 26, 2024			**INSPECTOR(S):** ML/TA				
LOCATION:	CONFINED SPACE (TYPE)	FLUID DEPTH (INCHES)	CONDITION: ODORS	CONDITION: DEFECTS	SUMP PUMP?	SUMP PUMP WORKING?	COMMENTS:
FD-1	Flow Distribution	0	No	NONE	___	___	**PVV-10 Closed**
P-FV-2	FLOW METER VAULT	0"	NO	NONE	YES	YES	
P-MH-3	MAN HOLE	0"	NO	NONE	NO		
P-MH-4	MAN HOLE	0"	NO	NONE	NO		
P-MH-9	MAN HOLE	12"	NO	NONE	___	--------	
P-VV-10	VALVE VAULT	0"	NO	NONE	___	--------	
P-VV-11	VALVE VAULT	0"	NO	NONE	___	--------	
P-VV-12	VALVE VAULT	0"	NO	NONE	___	--------	
P-VV-9	VALVE VAULT	0"	NO	NONE	___	--------	
SP-7	SUMP PUMP	~12"	NO	NONE	YES	YES	
SP-8	SUMP PUMP	~12"	NO	NONE	YES	YES	
CLARIFIER LEVEL ANNUAL INSPECTION							
P-BV-1	BLOWER VAULT	0"	NO	NONE	___	-------	
P-MH-8	MAN HOLE (needs 7 poles)	0"	NO	NONE	___	___	
COMMENTS:							

LEACHATE PRETREATMENT FACILITY
LAGOON LEVEL
MONTHLY INSPECTION:

DATE: **June 26, 2024** **INSPECTOR:** **ML/TA**

LOCATION:	CONFINED SPACE (TYPE)	FLUID DEPTH (INCHES)	CONDITION:		SUMP PUMP?	SUMP PUMP WORKING?	COMMENTS:
			ODORS	DEFECTS			
P-FV-1	FLOW METER VAULT	0"	NO	NONE	YES	YES	
P-MH-1	MAN HOLE	0"	NO	NONE	___	--------	
P-VV-1	VALVE VAULT	0"	NO	NONE	YES	YES	
P-VV-13	VALVE VAULT	0"	NO	NONE	___	--------	
P-VV-2	VALVE VAULT	0"	NO	NONE	YES	Yes	
P-VV-3	VALVE VAULT	0"	NO	NONE	YES	Yes	
P-VV-4	VALVE VAULT	0"	NO	NONE	YES	Yes	
P-VV-5	VALVE VAULT	0"	NO	NONE	YES	NO	
P-VV-6	VALVE VAULT	0"	NO	NONE	YES	YES	
P-VV-7	VALVE VAULT	0"	NO	NONE	___	--------	
P-VV-8	VALVE VAULT	0"	NO	NONE	___	--------	
SP-6	SUMP PUMP	18"	NO	NONE	YES	NO	
SP-9	SUMP PUMP	~12"	NO	NONE	YES	YES	
LAGOON LEVEL ANNUAL INSPECTION							
P-MH-2	MAN HOLE	3'	NO	NONE	___	--------	

COMMENTS:

LEACHATE PRETREATMENT FACILITY
CLARIFIER LEVEL
MONTHLY INSPECTION:

DATE: July 31, 2024			**INSPECTOR(S):** ML				
LOCATION:	CONFINED SPACE (TYPE)	FLUID DEPTH (INCHES)	CONDITION: ODORS	CONDITION: DEFECTS	SUMP PUMP?	SUMP PUMP WORKING?	COMMENTS:
FD-1	Flow Distribution	0	No	NONE	___	___	**PVV-10 Closed**
P-FV-2	FLOW METER VAULT	0"	NO	NONE	YES	YES	
P-MH-3	MAN HOLE	0"	NO	NONE	NO		
P-MH-4	MAN HOLE	0"	NO	NONE	NO		
P-MH-9	MAN HOLE	12"	NO	NONE	___	--------	
P-VV-10	VALVE VAULT	0"	NO	NONE	___	--------	
P-VV-11	VALVE VAULT	0"	NO	NONE	___	--------	
P-VV-12	VALVE VAULT	0"	NO	NONE	___	--------	
P-VV-9	VALVE VAULT	0"	NO	NONE	___	--------	
SP-7	SUMP PUMP	~12"	NO	NONE	YES	YES	
SP-8	SUMP PUMP	~12"	NO	NONE	YES	YES	
CLARIFIER LEVEL ANNUAL INSPECTION							
P-BV-1	BLOWER VAULT	0"	NO	NONE	___	-------	
P-MH-8	MAN HOLE (needs 7 poles)	0"	NO	NONE	___	___	
COMMENTS:							

LEACHATE PRETREATMENT FACILITY
LAGOON LEVEL
MONTHLY INSPECTION:

DATE: **July 31, 2024** **INSPECTOR:** **ML**

LOCATION:	CONFINED SPACE (TYPE)	FLUID DEPTH (INCHES)	CONDITION: ODORS	CONDITION: DEFECTS	SUMP PUMP?	SUMP PUMP WORKING?	COMMENTS:
P-FV-1	FLOW METER VAULT	0"	NO	NONE	YES	YES	
P-MH-1	MAN HOLE	0"	NO	NONE	___	--------	
P-VV-1	VALVE VAULT	0"	NO	NONE	YES	YES	
P-VV-13	VALVE VAULT	0"	NO	NONE	___	--------	
P-VV-2	VALVE VAULT	0"	NO	NONE	YES	Yes	
P-VV-3	VALVE VAULT	0"	NO	NONE	YES	Yes	
P-VV-4	VALVE VAULT	0"	NO	NONE	YES	Yes	
P-VV-5	VALVE VAULT	0"	NO	NONE	YES	NO	
P-VV-6	VALVE VAULT	0"	NO	NONE	YES	YES	
P-VV-7	VALVE VAULT	0"	NO	NONE	___	--------	
P-VV-8	VALVE VAULT	0"	NO	NONE	___	--------	
SP-6	SUMP PUMP	18"	NO	NONE	YES	NO	
SP-9	SUMP PUMP	~12"	NO	NONE	YES	YES	
LAGOON LEVEL ANNUAL INSPECTION							
P-MH-2	MAN HOLE	3'	NO	NONE	___	--------	

COMMENTS:

LEACHATE PRETREATMENT FACILITY
CLARIFIER LEVEL
MONTHLY INSPECTION:

DATE:	**August 31, 2024**		**INSPECTOR(S):**		**ML / TA**		
LOCATION:	CONFINED SPACE (TYPE)	FLUID DEPTH (INCHES)	CONDITION: ODORS	CONDITION: DEFECTS	SUMP PUMP?	SUMP PUMP WORKING?	COMMENTS:
FD-1	Flow Distribution	0	No	NONE	___	___	**PVV-10 Closed**
P-FV-2	FLOW METER VAULT	0"	NO	NONE	YES	YES	
P-MH-3	MAN HOLE	0"	NO	NONE	NO		
P-MH-4	MAN HOLE	0"	NO	NONE	NO		
P-MH-9	MAN HOLE	12"	NO	NONE	___	--------	
P-VV-10	VALVE VAULT	0"	NO	NONE	___	--------	
P-VV-11	VALVE VAULT	0"	NO	NONE	___	--------	
P-VV-12	VALVE VAULT	0"	NO	NONE	___	--------	
P-VV-9	VALVE VAULT	0"	NO	NONE	___	--------	
SP-7	SUMP PUMP	~12"	NO	NONE	YES	YES	
SP-8	SUMP PUMP	~12"	NO	NONE	YES	YES	
CLARIFIER LEVEL ANNUAL INSPECTION							
P-BV-1	BLOWER VAULT	0"	NO	NONE	___	-------	
P-MH-8	MAN HOLE (needs 7 poles)	0"	NO	NONE	___	___	

COMMENTS:

LEACHATE PRETREATMENT FACILITY
LAGOON LEVEL
MONTHLY INSPECTION:

DATE: **August 31, 2024** **INSPECTOR:** **ML / TA**

LOCATION:	CONFINED SPACE (TYPE)	FLUID DEPTH (INCHES)	CONDITION:		SUMP PUMP?	SUMP PUMP WORKING?	COMMENTS:
			ODORS	DEFECTS			
P-FV-1	FLOW METER VAULT	0"	NO	NONE	YES	YES	
P-MH-1	MAN HOLE	0"	NO	NONE	___	--------	
P-VV-1	VALVE VAULT	0"	NO	NONE	YES	YES	
P-VV-13	VALVE VAULT	0"	NO	NONE	___	--------	
P-VV-2	VALVE VAULT	0"	NO	NONE	YES	Yes	
P-VV-3	VALVE VAULT	0"	NO	NONE	YES	Yes	
P-VV-4	VALVE VAULT	0"	NO	NONE	YES	Yes	
P-VV-5	VALVE VAULT	0"	NO	NONE	YES	NO	
P-VV-6	VALVE VAULT	0"	NO	NONE	YES	YES	
P-VV-7	VALVE VAULT	0"	NO	NONE	___	--------	
P-VV-8	VALVE VAULT	0"	NO	NONE	___	--------	
SP-6	SUMP PUMP	18"	NO	NONE	YES	NO	
SP-9	SUMP PUMP	~12"	NO	NONE	YES	YES	
LAGOON LEVEL ANNUAL INSPECTION							
P-MH-2	MAN HOLE	3'	NO	NONE	___	--------	

COMMENTS:

LEACHATE PRETREATMENT FACILITY
CLARIFIER LEVEL
MONTHLY INSPECTION:

DATE:	**September 30, 2024**		**INSPECTOR(S):**		**ML / TA**		
LOCATION:	CONFINED SPACE (TYPE)	FLUID DEPTH (INCHES)	CONDITION: ODORS	CONDITION: DEFECTS	SUMP PUMP?	SUMP PUMP WORKING?	COMMENTS:
FD-1	Flow Distribution	0	No	NONE	___	___	**PVV-10 Closed**
P-FV-2	FLOW METER VAULT	0"	NO	NONE	YES	YES	
P-MH-3	MAN HOLE	0"	NO	NONE	NO		
P-MH-4	MAN HOLE	0"	NO	NONE	NO		
P-MH-9	MAN HOLE	12"	NO	NONE	___	--------	
P-VV-10	VALVE VAULT	0"	NO	NONE	___	--------	
P-VV-11	VALVE VAULT	0"	NO	NONE	___	--------	
P-VV-12	VALVE VAULT	0"	NO	NONE	___	--------	
P-VV-9	VALVE VAULT	0"	NO	NONE	___	--------	
SP-7	SUMP PUMP	~12"	NO	NONE	YES	YES	
SP-8	SUMP PUMP	~12"	NO	NONE	YES	YES	
CLARIFIER LEVEL ANNUAL INSPECTION							
P-BV-1	BLOWER VAULT	0"	NO	NONE	___	-------	
P-MH-8	MAN HOLE (needs 7 poles)	0"	NO	NONE	___	___	
COMMENTS:							

LEACHATE PRETREATMENT FACILITY
LAGOON LEVEL
MONTHLY INSPECTION:

DATE: **September 30, 2024** **INSPECTOR:** **ML / TA**

LOCATION:	CONFINED SPACE (TYPE)	FLUID DEPTH (INCHES)	CONDITION: ODORS	CONDITION: DEFECTS	SUMP PUMP?	SUMP PUMP WORKING?	COMMENTS:
P-FV-1	FLOW METER VAULT	0"	NO	NONE	YES	YES	
P-MH-1	MAN HOLE	0"	NO	NONE	___	--------	
P-VV-1	VALVE VAULT	0"	NO	NONE	YES	YES	
P-VV-13	VALVE VAULT	0"	NO	NONE	___	--------	
P-VV-2	VALVE VAULT	0"	NO	NONE	YES	Yes	
P-VV-3	VALVE VAULT	0"	NO	NONE	YES	Yes	
P-VV-4	VALVE VAULT	0"	NO	NONE	YES	Yes	
P-VV-5	VALVE VAULT	0"	NO	NONE	YES	NO	
P-VV-6	VALVE VAULT	0"	NO	NONE	YES	YES	
P-VV-7	VALVE VAULT	0"	NO	NONE	___	--------	
P-VV-8	VALVE VAULT	0"	NO	NONE	___	--------	
SP-6	SUMP PUMP	18"	NO	NONE	YES	NO	
SP-9	SUMP PUMP	~12"	NO	NONE	YES	YES	
LAGOON LEVEL ANNUAL INSPECTION							
P-MH-2	MAN HOLE	3'	NO	NONE	___	--------	

COMMENTS:

LEACHATE PRETREATMENT FACILITY
CLARIFIER LEVEL
MONTHLY INSPECTION:

DATE:	**October 30, 2024**		**INSPECTOR(S):**		**ML / TA**		
LOCATION:	CONFINED SPACE (TYPE)	FLUID DEPTH (INCHES)	CONDITION: ODORS	CONDITION: DEFECTS	SUMP PUMP?	SUMP PUMP WORKING?	COMMENTS:
FD-1	Flow Distribution	Full	No	NONE	___	___	**PVV-10 Open**
P-FV-2	FLOW METER VAULT	0"	NO	NONE	YES	YES	
P-MH-3	MAN HOLE	0"	NO	NONE	NO		
P-MH-4	MAN HOLE	0"	NO	NONE	NO		
P-MH-9	MAN HOLE	12"	NO	NONE	___	--------	
P-VV-10	VALVE VAULT	0"	NO	NONE	___	--------	
P-VV-11	VALVE VAULT	0"	NO	NONE	___	--------	
P-VV-12	VALVE VAULT	0"	NO	NONE	___	--------	
P-VV-9	VALVE VAULT	0"	NO	NONE	___	--------	
SP-7	SUMP PUMP	~12"	NO	NONE	YES	YES	
SP-8	SUMP PUMP	~12"	NO	NONE	YES	YES	
CLARIFIER LEVEL ANNUAL INSPECTION							
P-BV-1	BLOWER VAULT	0"	NO	NONE	___	-------	
P-MH-8	MAN HOLE (needs 7 poles)	0"	NO	NONE	___	___	

COMMENTS:

LEACHATE PRETREATMENT FACILITY
LAGOON LEVEL
MONTHLY INSPECTION:

DATE: **October 30, 2024** **INSPECTOR:** **ML / TA**

LOCATION:	CONFINED SPACE (TYPE)	FLUID DEPTH (INCHES)	CONDITION: ODORS	CONDITION: DEFECTS	SUMP PUMP?	SUMP PUMP WORKING?	COMMENTS:
P-FV-1	FLOW METER VAULT	0"	NO	NONE	YES	YES	
P-MH-1	MAN HOLE	0"	NO	NONE	___	--------	
P-VV-1	VALVE VAULT	0"	NO	NONE	YES	YES	
P-VV-13	VALVE VAULT	0"	NO	NONE	___	--------	
P-VV-2	VALVE VAULT	0"	NO	NONE	YES	Yes	
P-VV-3	VALVE VAULT	0"	NO	NONE	YES	Yes	
P-VV-4	VALVE VAULT	0"	NO	NONE	YES	Yes	
P-VV-5	VALVE VAULT	0"	NO	NONE	YES	NO	
P-VV-6	VALVE VAULT	0"	NO	NONE	YES	YES	
P-VV-7	VALVE VAULT	0"	NO	NONE	___	--------	
P-VV-8	VALVE VAULT	0"	NO	NONE	___	--------	
SP-6	SUMP PUMP	18"	NO	NONE	YES	NO	
SP-9	SUMP PUMP	~12"	NO	NONE	YES	YES	
LAGOON LEVEL ANNUAL INSPECTION							
P-MH-2	MAN HOLE	3'	NO	NONE	___	--------	

COMMENTS:

LEACHATE PRETREATMENT FACILITY
CLARIFIER LEVEL
MONTHLY INSPECTION:

DATE: **November 25, 2024** **INSPECTOR(S):** **TA**

LOCATION:	CONFINED SPACE (TYPE)	FLUID DEPTH (INCHES)	CONDITION:		SUMP PUMP?	SUMP PUMP WORKING?	COMMENTS:
			ODORS	DEFECTS			
FD-1	Flow Distribution	Full	No	NONE	___	___	**PVV-10 Open**
P-FV-2	FLOW METER VAULT	0"	NO	NONE	YES	YES	
P-MH-3	MAN HOLE	0"	NO	NONE	NO		
P-MH-4	MAN HOLE	0"	NO	NONE	NO		
P-MH-9	MAN HOLE	12"	NO	NONE	___	--------	
P-VV-10	VALVE VAULT	0"	NO	NONE	___	--------	
P-VV-11	VALVE VAULT	0"	NO	NONE	___	--------	
P-VV-12	VALVE VAULT	0"	NO	NONE	___	--------	
P-VV-9	VALVE VAULT	0"	NO	NONE	___	--------	
SP-7	SUMP PUMP	~12"	NO	NONE	YES	YES	
SP-8	SUMP PUMP	~12"	NO	NONE	YES	YES	
CLARIFIER LEVEL ANNUAL INSPECTION							
P-BV-1	BLOWER VAULT	0"	NO	NONE	___	-------	
P-MH-8	MAN HOLE (needs 7 poles)	0"	NO	NONE	___	___	

COMMENTS:

LEACHATE PRETREATMENT FACILITY
LAGOON LEVEL
MONTHLY INSPECTION:

DATE: **November 25, 2024** **INSPECTOR:** **TA**

LOCATION:	CONFINED SPACE (TYPE)	FLUID DEPTH (INCHES)	CONDITION: ODORS	CONDITION: DEFECTS	SUMP PUMP?	SUMP PUMP WORKING?	COMMENTS:
P-FV-1	FLOW METER VAULT	0"	NO	NONE	YES	YES	
P-MH-1	MAN HOLE	0"	NO	NONE	___	--------	
P-VV-1	VALVE VAULT	0"	NO	NONE	YES	YES	
P-VV-13	VALVE VAULT	0"	NO	NONE	___	--------	
P-VV-2	VALVE VAULT	0"	NO	NONE	YES	Yes	
P-VV-3	VALVE VAULT	0"	NO	NONE	YES	Yes	
P-VV-4	VALVE VAULT	0"	NO	NONE	YES	Yes	
P-VV-5	VALVE VAULT	0"	NO	NONE	YES	NO	
P-VV-6	VALVE VAULT	0"	NO	NONE	YES	YES	
P-VV-7	VALVE VAULT	0"	NO	NONE	___	--------	
P-VV-8	VALVE VAULT	0"	NO	NONE	___	--------	
SP-6	SUMP PUMP	18"	NO	NONE	YES	NO	
SP-9	SUMP PUMP	~12"	NO	NONE	YES	YES	
LAGOON LEVEL ANNUAL INSPECTION							
P-MH-2	MAN HOLE	3'	NO	NONE	___	--------	

COMMENTS:

LEACHATE PRETREATMENT FACILITY
CLARIFIER LEVEL
MONTHLY INSPECTION: DECEMBER

DATE: **December 30, 2024** **INSPECTOR(S):** **TA / AW**

LOCATION:	CONFINED SPACE (TYPE)	FLUID DEPTH (INCHES)	CONDITION: ODORS	CONDITION: DEFECTS	SUMP PUMP?	SUMP PUMP WORKING?	COMMENTS:
FD-1	Flow Distribution	Full	No	NONE	___	___	
P-FV-2	FLOW METER VAULT	0"	NO	NONE	YES	YES	
P-MH-3	MAN HOLE	0"	NO	NONE	NO		
P-MH-4	MAN HOLE	0"	NO	NONE	NO		
P-MH-9	MAN HOLE	12"	NO	NONE	___	--------	
P-VV-10	VALVE VAULT	0"	NO	NONE	___	--------	
P-VV-11	VALVE VAULT	0"	NO	NONE	___	--------	
P-VV-12	VALVE VAULT	0"	NO	NONE	___	--------	
P-VV-9	VALVE VAULT	0"	NO	NONE	___	--------	
SP-7	SUMP PUMP	~12"	NO	NONE	YES	YES	
SP-8	SUMP PUMP	~12"	NO	NONE	YES	YES	
CLARIFIER LEVEL ANNUAL INSPECTION							
P-BV-1	BLOWER VAULT	0"	NO	NONE	___	-------	
P-MH-8	MAN HOLE (needs 7 poles)	0"	NO	NONE	___	___	

COMMENTS:

LEACHATE PRETREATMENT FACILITY
LAGOON LEVEL
MONTHLY INSPECTION: DECEMBER

DATE: **December 30, 2024** **INSPECTOR:** **TA / AW**

LOCATION:	CONFINED SPACE (TYPE)	FLUID DEPTH (INCHES)	CONDITION: ODORS	CONDITION: DEFECTS	SUMP PUMP?	SUMP PUMP WORKING?	COMMENTS:
P-FV-1	FLOW METER VAULT	0"	NO	NONE	YES	YES	
P-MH-1	MAN HOLE	0"	NO	NONE	___	--------	**3/4 full.**
P-VV-1	VALVE VAULT	0"	NO	NONE	YES	YES	
P-VV-13	VALVE VAULT	0"	NO	NONE	___	--------	
P-VV-2	VALVE VAULT	0"	NO	NONE	YES	Yes	
P-VV-3	VALVE VAULT	0"	NO	NONE	YES	Yes	
P-VV-4	VALVE VAULT	0"	NO	NONE	YES	Yes	
P-VV-5	VALVE VAULT	0"	NO	NONE	YES	NO	
P-VV-6	VALVE VAULT	0"	NO	NONE	YES	YES	
P-VV-7	VALVE VAULT	0"	NO	NONE	___	--------	
P-VV-8	VALVE VAULT	0"	NO	NONE	___	--------	
SP-6	SUMP PUMP	18"	NO	NONE	YES	NO	**Drained.**
SP-9	SUMP PUMP	~12"	NO	NONE	YES	YES	
LAGOON LEVEL ANNUAL INSPECTION							
P-MH-2	MAN HOLE	3'	NO	NONE	___	--------	

COMMENTS: