

November 28, 2023
File No. 27223194.00

Mr. Mick Leat
Iowa Department of Natural Resources
Land Quality Bureau
Wallace State Office Building
502 East 9th Street
Des Moines, Iowa 50319-0034

Subject: 2023 Annual Water Quality Report
2023 Leachate Control System Performance Evaluation Report
Climax Molybdenum Industrial Landfill
Permit No. 56-SDP-06-80P

Dear Mick,

SCS Engineers (SCS) has completed the required groundwater monitoring and statistical analyses at the Climax Molybdenum Industrial Landfill for the 2023 calendar year. Our services were performed in general accordance with Iowa Administrative Code (IAC) 567-115.26 and the landfill permit requirements for implementation of the Hydrologic Monitoring System Plan (HMSP). Please find enclosed a copy of the 2023 Annual Water Quality Report for the above-referenced site.

Additionally, an evaluation of the leachate control system for the site is included in accordance with IAC 567-115.26. The 2023 Leachate Control System Performance Evaluation Report for the site is included as Appendix F to the Annual Water Quality Report.

If you have any questions about this report, please contact us as noted below.

Sincerely,



Kevin Jensen
Senior Project Professional
SCS Engineers
kjensen@scsengineers.com
(515) 368-3155



Timothy C. Buelow, P.E.
Project Director
SCS Engineers
tbuelow@scsengineers.com
(515) 681-5455

KAJ/TCB

cc: David Caskey, Climax Molybdenum Company
Danae Rutherford, Climax Molybdenum Company
Jessi Woods, Climax Molybdenum Company
Libby Boyer, Climax Molybdenum Company



2023 Annual Water Quality Report

Climax Molybdenum Industrial Landfill
Solid Waste Permit No. 56-SDP-06-80P

Prepared for:

Climax Molybdenum Company

SCS ENGINEERS

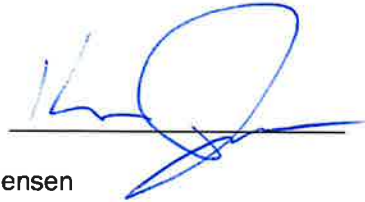
27223194.00 | November 28, 2023

1690 All-State Court, Suite 100
West Des Moines, Iowa 50265
515-631-6160

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CERTIFICATION

Prepared by:



Typed: Kevin Jensen

Date:

11-28-2023

Reviewed by:



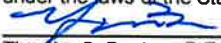
Typed: Timothy C. Buelow, P.E.

Date:

11/28/2023

Certification page (115.26(8)"d")

An annual report summarizing the effect of the facility on groundwater and surface water quality shall be submitted to the department each year. The summary is to be prepared by an engineer registered in the state of Iowa.

	I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.	
		Date: <u>11/28/23</u>
	Timothy C. Buelow, P.E.	
	License No. 14445	
	My license renewal date is December 31, 2023.	
Pages or sheets covered by this seal:		
<u>All except Appendix B-1.</u>		

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EXECUTIVE SUMMARY

ES.1 PERIOD OF REPORT COVERAGE

SCS Engineers (SCS), on behalf of the Climax Molybdenum Company, has completed the required groundwater sampling of the Climax Molybdenum Company Industrial Landfill (Landfill). The purpose of this Annual Water Quality Report (AWQR) is to document and statistically evaluate the groundwater sampling results since the 2022 AWQR up to and including the spring and fall 2023 semiannual sampling events. This AWQR was prepared in accordance with the requirements of Iowa Administrative Code (IAC) 567-115.26, the site permit, and current requirements for implementation of the Hydrologic Monitoring System Plan (HMSP).

ES.2 REPORT PRIORITY

The following summarizes report priorities associated with groundwater compliance at the Monofill:

- Department review urgency: None.
- Department review impact on rules schedule: None.
- Actions or activities on hold pending Department review or comment: None.
- Actions and/or permit amendments needed: None.

ES.3 SITE STATUS AND APPLICABLE RULES

- Monofill Status: Active, Operating Permit.
- Types of waste accepted: Industrial (gypsum waste).
- Applicable IAC rules: 567-115.26.

ES.4 COMMENTS

The following summarizes points of special emphasis: None.

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1.0 ACRONYMS/ABBREVIATIONS

AL = Action Level
CCV = Continuing Calibration Verification
CL = Control Limit - Mean plus Two Standard Deviations
DNR = Iowa Department of Natural Resources
DO = Dissolved Oxygen
GWPS = Groundwater Protection Standard
GWQAP = Groundwater Quality Assessment Plan
LEL = Lower Explosive Limit
LCL = Lower Confidence Limit
LCS = Laboratory Control Sample
LN = Lognormal
M+/-2SD = Mean Plus/Minus Two Standard Deviations
MCL = EPA Maximum Contaminant Level
MDL = Method Detection Limit
N = Normal
NC = No Change
NM = Not Measured
ORP = Oxidation-Reduction Potential
PL = Prediction Limit
QA = Quality Assurance
QC = Quality Control
RL = Reporting Limit
SWS = DNR Statewide Standard for a Protected Groundwater Source
SSI = Statistically Significant Increase Above Background
SSL = Statistically Significant Level Above Groundwater Protection Standard
SSS = Site-Specific Standard (Site-Specific GWPS)
TSS = Total Suspended Solids
UCL = Upper Confidence Limit

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2.0 SITE BACKGROUND

2.1 SITE LOCATION

The Climax Molybdenum Company Industrial Landfill (Landfill) is depicted on Figure 1, Approved Monitoring Network. The Landfill property is located on a 244-acre plot of land west of Iowa Highway 394, 2 miles north of Argyle, Iowa. The legal description is as follows: Northwest $\frac{1}{4}$ and West $\frac{1}{2}$ of the Northeast $\frac{1}{4}$ and South 150 feet of the East $\frac{1}{2}$ of the Northeast $\frac{1}{4}$ of Section 32, Township 67 North, Range 6 West, Lee County, Iowa.

2.2 FACILITY

This Landfill has been a permitted facility since 1980 and has been actively receiving industrial gypsum waste since that time on a periodic basis. According to Janice Calvert, Lee County Assessor, prior to CMC purchasing the Landfill property in 1980, the area was used for agricultural purposes. No county zoning exists within Lee County.

2.3 GEOLOGY AND HYDROGEOLOGY OF THE SITE

The following information pertaining to this section was obtained from the Hydrogeologic Investigation Report and Hydrologic Monitoring System Plan prepared by Green Environmental Service, Inc., February 1992:

The uppermost material is a layer of clayey silt with minor amounts of sand. This material is windblown silt and sand, called loess. It blankets the hilltops to a maximum depth of 13.5 feet. Silty materials that are probably loess were reported at B-4, M-1, MW-2, MW-3, and MW-6. Silty materials at MW-4 and MW-5 may be loess or colluvium (slopewash). Silty alluvium occurs in the valleys, and was encountered at B-1, B-1A, B-2, MW-1, MW-12, and MW-14. A six-inch layer of sand and gravel was encountered in the base of the alluvium at MW-12. Three feet of sand occurred below silt in the alluvium at B-1. The next lower material encountered in the borings is glacial till. The till is a very sandy, clayey silt, trace (<10%) gravel. Material in the gravel size range includes minerals such as quartz; also igneous, sedimentary, and metamorphic rock fragments. A minimum of 80 to 85 feet of till occur below the waste disposal area. Small, isolated sand lenses were encountered in the till in borings M-1, MW-1, and MW-2. None of the other borings encountered sand lenses. Shale bedrock was encountered at 504 feet MSL in MW-1, 526 feet MSL in MW-2, and 519 feet MSL in MW-6. MW-1 penetrated 17 feet of shale (probably of the Warsaw Shale), then encountered 11 feet of limestone, 1.5 feet of shale, and 17.5 feet of limestone. MW-1 was screened in silty material above the shale. MW-2 through MW-6 are screened in sands and silts above the shale.

Southwest and northeast of the landfill, the bedrock rises to an elevation of 600 feet MSL and consists of the Meramec Series (Upper Mississippian aquifer). Thus, the landfill property is situated over the midslope region of the buried landscape, within a broad channel, near its confluence with the Gordon Channel. The Kinderhook Series is the upper unit east of the landfill, along the channel axis. The Keokuk and Burlington limestones and the upper part of the Kinderhook Series comprise the Lower Mississippian aquifer.

2.4 HYDROLOGY OF THE SITE

The following information pertaining to this section was obtained from the Hydrogeologic Investigation Report and Hydrologic Monitoring System Plan prepared by Green Environmental Service, Inc., February 1992:

At MW-11, the alluvium is saturated. Since the water level in MW-12 (which is screened deeper, in the till) is higher than in MW-11, the till is saturated throughout. In other words, the saturated zone in the alluvium is not perched. MW-13 is screened below the alluvium, but the water level has stabilized at a level above the alluvium/till contact. Therefore, the saturated zone in the alluvium is not perched. No perched saturated zone was observed in the immediate vicinity of the waste disposal area. Head differences were calculated between the shallow and mid-level wells and between the mid-level and deep wells of the triple clusters. These were all downward. One gradient was calculated for each double cluster. Flow was upward at the double clusters. The horizontal hydraulic gradients vary from 0.016 to 0.080, and the shallow vertical gradients vary from 0.008 to 0.031, while the deeper vertical gradients were 0.255 and 0.467. Vertical flow rates downward through the deep till are 2.1×10^{-5} and 5.3×10^{-5} f³/d. (The other vertical values are intermediate between the horizontal values and deep unweathered till values). Thus, the groundwater is more likely to flow horizontally in the shallow sediments than vertically downward through the unweathered till.

Transmissivity is defined as the hydraulic conductivity multiplied by the aquifer thickness. For unconfined aquifers, only the saturated thickness is considered. Transmissivities are often reported for aquitards, however, the hydraulic conductivity has more significance. The transmissivities have been calculated using in-situ conductivities. The transmissivities vary from 0.005 to 2.15 f²/d. The lowest values are in deep and mid-level wells screened in till. Good aquifers for domestic use should have a transmissivity of 1,400 f²/d. Aquifers used for municipal water supply, industry, or irrigation should have a transmissivity of 14,000 f²/d or higher. Thus, none of the materials screened at the landfill would serve even as a domestic water supply aquifer.

Flow tends to be nearly horizontal in materials with high conductivity and nearly vertical in materials with low conductivity. There would be a sharp refraction at the contact of till, loess, or alluvium over glacial till. The larger volume of water would flow laterally in the overlying material, and a smaller volume would move downward. The decrease of hydraulic conductivity downward within the glacial till is gradual, as root holes, animal burrows, fractures, etc. die out with depth. Instead of a sharp refraction, the flow lines and equipotential lines would bend gradually. The net result is the same, with flow lines at a shallow angle in materials with higher hydraulic conductivity and nearly vertical in materials with lower conductivity. This scenario, derived from consideration of groundwater flow theory, is observed at the landfill. The shallow flow pattern is nearly parallel to or converging toward the water table or upward. Any leakage from the base of the landfill would be captured in the upper flow pattern.

The deeper part of the glacial till is an aquitard. This is shown by the low in-situ hydraulic conductivities, vertical flow rates, and transmissivities. The steep vertical flow paths also show that the deep till is an aquitard. Over 80 feet of till protect the underlying buried channel and bedrock aquifers. None of the materials present at the site would qualify as aquifers for water supply wells because of low transmissivities.

However, the shallow sediments are 100-fold more conductive to groundwater flow than the deep till. These shallow sediments include alluvium and shallow till. The higher in-situ hydraulic conductivities and horizontal flow rates show that these materials constitute the uppermost aquifer. The shallow vertical flow paths also show that the shallow sediments function as an aquifer. Small, isolated sand lenses are not aquifers.

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3.0 FIGURES DISCUSSION

The following figures are attached.

3.1 FIGURE 1 – APPROVED MONITORING NETWORK

The Landfill property and hydrological monitoring system plan (HMSP) network are depicted in **Figure 1**. **Figure 1** indicates the locations of each monitoring well.

3.2 FIGURE 2 – GROUNDWATER CONTOURS – WATER TABLE AQUIFER

A groundwater contour map based on water levels measured in the water table aquifer during the July 2023 semiannual groundwater sampling event is included as **Figure 2**. **Figure 2** indicates a generally southerly flow direction. Leachate elevations are shown on the figure but were not included in the contour development. The leachate elevations are slightly higher than the interpolated groundwater contours, however, a southerly flow direction is maintained.

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4.0 QA/QC SUMMARY

Date indicates the date(s) of sampling.

4.1 APRIL 7, 2023 (2023 SPRING SAMPLING EVENT)

Based on the QA review, no samples were rejected as unusable due to QC failures. In general, the quality of the analytical data for this reporting period does not appear to have been compromised by analytical irregularities and results affected by QC anomalies are qualified with the appropriate data flags, which are listed in the laboratory report in **Appendix B-1**. Data validation documentation can be found in **Appendix B-2**.

4.2 JULY 27, 2023 (2023 FALL SAMPLING EVENT)

Based on the QA review, no samples were rejected as unusable due to QC failures. In general, the quality of the analytical data for this reporting period does not appear to have been compromised by analytical irregularities and results affected by QC anomalies are qualified with the appropriate data flags, which are listed in the laboratory report in **Appendix B-1**. Data validation documentation can be found in **Appendix B-2**.

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5.0 DATA EVALUATION

Statistical analyses in accordance with the requirements of IAC 567-115.26 were conducted for the groundwater analytical data collected during the April and July 2023 semiannual sampling events. The statistical evaluation for samples collected during the 2023 semiannual sampling events is located in **Appendix D** of this report.

5.1 DATA EVALUATION

Groundwater monitoring for the Landfill consists of samples from two upgradient monitoring wells located on the northeast and northwest corners of the Landfill and from six downgradient monitoring wells, three located along the southern border of the closed landfill cell, one located along the southern border of the active cell, one located adjacent to the leachate collection lift station, and one located southeast of the leachate storage lagoon.

There were 20 control limit exceedances detected based on spring and fall 2023 sampling results as listed in Table 1 compared to 21 control limit exceedances detected based on spring and fall 2022 sampling results reported in the 2022 AWQR, not counting total suspended solids. Most of the control limit exceedances detected based on 2023 sampling results were attributed to monitoring wells MW-11 and MW-21. The control limit exceedances measured in monitoring well MW-11 may have been influenced by total suspended solids (TSS) in the sample.

Exceedances of action or advisory levels were largely associated with lithium, manganese, and sodium as listed in Table 9. The action or advisory levels for lithium, manganese, and sodium were also exceeded in upgradient monitoring well MW-7 and the action or advisory levels for lithium and sodium were exceeded in upgradient monitoring well MW-18R based on a review of concentrations listed in the Summary of Groundwater Chemistry in Appendix C. These three constituents have generally exceeded the regulatory action or advisory levels established for this Landfill at most monitoring wells since sampling for these constituents began. The detection of these constituents above action or advisory levels in the upgradient monitoring wells indicates that these constituents may be naturally occurring at these levels at the site.

Groundwater quality at monitoring well MW-21 has continued to demonstrate stability since modifications were made to the leachate collection system in June 2021 (Doc # 101625). Concentrations of chloride, sodium, specific conductance, and strontium measured at MW-21 during both 2023 sampling events were below concentrations measured in both 2022 sampling events and were well below the recent maximum concentrations measured in 2020 or spring 2021 before the modifications were made.

5.2 TRENDING IN MONITORING WELLS

Statistically significant decreasing trends at a 99% confidence level ($\alpha=0.01$) were identified in three monitoring well/constituent pair by Mann-Kendall analysis during this reporting period. Statistically significant increasing trends at a 99% confidence level ($\alpha=0.01$) were identified in three monitoring well/constituent pairs by Mann-Kendall analysis during this reporting period. The trend analysis is included in **Attachment A** of **Appendix D** of this report. The statistically significant trends were as follows:

Monitoring Point	Constituent	Trend
MW-7 (u)	Strontium	Decreasing
MW-16	Lithium	Decreasing

Monitoring Point	Constituent	Trend
MW-21	Strontium	Decreasing
TW-2	Chloride	Increasing
TW-2	Selenium	Increasing
TW-2	Sulfate	Increasing

As indicated in the above table, the increasing trends are in the analytical data from monitoring well TW-2. The concentrations comprising these trends were reviewed relative to the concentrations in the background monitoring wells and the following indicated:

Monitoring Point	Constituent
TW-2/Chloride:	Concentrations similar to background monitoring well MW-18R.
TW-2/Selenium:	Concentrations less than background monitoring well MW-18R.
TW-2/Sulfate	Concentrations higher than both background monitoring wells, but similar to downgradient monitoring well MW-17 and below downgradient monitoring wells MW-16 and MW-21 .

Although not necessarily statistically significant, the Mann-Kendall statistics can provide an indication of general trending in the data. Trend indications for wells in the monitoring program are shown in the table below. The statistics used to develop the general trending differ from the Mann-Kendall statistics used in the diagnostics section of the statistical evaluation in that a much lower trend threshold is applied for the general trending information ($\alpha=0.20$ versus $\alpha=0.01$). Trends classified as decreasing or increasing exhibited a statistically significant trend with 80% confidence using the most recent eight data points. Trends classified as stable did not exhibit a statistically significant trend with 80% confidence using the eight most recent data points. A summary of Mann-Kendall statistics by constituent in each monitoring point is included in **Appendix E** of this report.

Trending in Assessment Monitoring Wells				
Monitoring Well	Decreasing Trends	Stable Trends	Increasing Trends	Number of Constituents Analyzed
MW-7 (u)	13.33%	80.00%	6.67%	15
MW-11	13.33%	80.00%	6.67%	15
MW-15	9.09%	72.23%	18.18%	11
MW-16	16.67%	75%	8.33%	12
MW-17	15.38%	84.62%	0.00%	13
MW-18R (u)	0.00%	91.67%	8.33%	12
MW-21	28.57%	71.43%	0.00%	14
TW-2	0.00%	30.00%	70.00%	10
Site Wide	12.75%	74.5%	12.75%	102

(u) indicates an upgradient monitoring point.

Review of the Mann-Kendall statistics indicated that approximately 87% of the Mann-Kendall statistics were considered stable or decreasing following the 2023 annual statistical evaluation. There were 13 monitoring well/constituent pairs with generally increasing trends. The monitoring well/constituent pairs with increasing trends are discussed in the following table.

Monitoring Well	Constituent Name	Comments
MW-7 (u)	Molybdenum	Based on seven J flag detections and one non-detect. Maximum concentration in recent trend of 0.00199 mg/L measured in spring 2023.
MW-11	Sodium	Based on eight actual detections. Maximum concentration in recent trend of 88.2 mg/L measured in fall 2022.
MW-15	Chemical Oxygen Demand	Based on six actual detections and eight non-detects which includes duplicate data. Maximum concentration in recent trend of 12.2 mg/L measured in fall 2022.
MW-15	Chloride	Based on 14 actual detections and one J flag detection which includes duplicate data. Maximum concentration in recent trend of 11.2 mg/L measured in fall 2023.
MW-16	Sodium	Based on eight actual detections. Maximum concentration in recent trend of 77.7 mg/L measured in fall 2022.
MW-18R	Sodium	Based on eight actual detections. Maximum concentration in recent trend of 53.6 mg/L measured in spring 2023.
TW-2	Chloride	Based on eight actual detections. Maximum concentration in recent trend of 13.3 mg/L measured in fall 2023.
TW-2	Lithium	Based on eight actual detections. Maximum concentration in recent trend of 0.0482 mg/L measured in spring 2022.
TW-2	Selenium	Based on eight actual detections. Maximum concentration in recent trend of 0.0161 mg/L measured in fall 2023.
TW-2	Sodium	Based on eight actual detections. Maximum concentration in recent trend of 86.2 mg/L measured in spring 2022.
TW-2	Specific Conductance	Based on eight measurements. Measurements in recent trend were between 971.0 and 1,265.9 μ S/cm. Measurements were generally higher in recent half of the data set.
TW-2	Strontium	Based on eight actual detections. Concentrations in recent trend were between 0.393 and 0.493 mg/L. Concentrations were generally higher in the recent half of the data set.
TW-2	Sulfate	Based on eight actual detections. Maximum concentration in recent trend of 368 mg/L measured in fall 2023.

There were 13 increasing trends measured at an 80% confidence level in 2023 compared to 12 increasing trends measured at an 80% confidence level in 2022. It should be noted that monitoring well MW-7 is an upgradient well and the concentrations found to be increasing at an 80% confidence level in monitoring well TW-2 were largely within or comparable to upgradient concentrations, with the exception of sulfate.

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6.0 RECOMMENDATIONS

6.1 SITE IMPACT ON GROUNDWATER

Concentrations of the analyzed parameters in groundwater at the Landfill continue to demonstrate a normalization of concentrations. The total number of control limit exceedances and increasing trends measured at an 80% confidence level based on 2023 sampling results were approximately equivalent to the total number of control limit exceedances and increasing trends measured at an 80% confidence level based on 2022 sampling results. As discussed in Section 5.1, new maximum concentrations in monitoring well MW-21 have not been measured since the repair activities were performed to the leachate collection system in June 2021 (Doc # 101625). Groundwater quality at monitoring well MW-21 will continue to be evaluated in future reports.

6.2 PROPOSED MONITORING

The groundwater monitoring program is summarized in **Table 1**. No changes to the HMSP monitoring program are recommended at this time. It is recommended that sampling continue for calendar year 2024 as summarized in **Table 2**.

6.3 PROPOSED MONITORING WELL CHANGES

Monitoring well performance is summarized in **Table 4**. No proposed changes to the monitoring wells are recommended at this time.

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Tables

- 1 Monitoring Program Summary
- 2 Monitoring Program Implementation Schedule
- 3 Monitoring Well Maintenance and Performance Re-Evaluation Schedule
- 4 Monitoring Well Performance and Maintenance Summary
- 5 Background and GWPS Summary
- 6 Summary of Well/Detected Constituent Pairs with No Immediately Preceding Control Limit Exceedances
- 7 Summary Table of Ongoing and Newly Identified Control Limit Exceedances
- 8 Summary of Groundwater Chemistry (The Summary of Groundwater Chemistry is Located in Appendix C)
- 9 Historical Control and Action Level Exceedances
- 10 Groundwater Quality Assessment Plan Trend Analysis

Table 1
Monitoring Program Summary
2023 Annual Water Quality Report
Climax Molybdenum Company Industrial Landfill
Permit No. 56-SDP-06-80P

Monitoring Well	Formation ⁽¹⁾	Current Monitoring Program	Change for Next Sampling Event	Control Limit Exceedances	Total Number of Samples in Each Monitoring Program Since January 1, 2018		
					Routine	Supplemental	Remedial Action
MW-7 (upgradient)	Yellow-Brown Till	Background	None		12	-	-
MW-11	Fill over Gray Alluvium	Detection	None	Arsenic, Chemical Oxygen Demand, Iron, Manganese, Nitrogen-Ammonia, pH, Sodium	12	-	-
MW-15	Sandy/Clay/Silt - Yellow-Brown Till	Detection	None		12	-	-
MW-16	Fill over Gray Alluvium over Yellow Brown Till	Detection	None	pH, Specific Conductance, Sulfate	12	-	-
MW-17	Boring Log Not Found	Detection	None	Lithium, Sulfate	12	-	-
MW-18R (upgradient)	Brown Silt/Sand over Yellow Brown Till	Background	None		12		
MW-21	Brown Sandy/Clay, Trace Sand/Gravel	Detection	None	Chloride, Sodium, Specific Conductance, Strontium, Sulfate	12	-	-
TW-2	Sandy/Clay/Silt - Yellow-brown	Detection	None	Lithium, Sodium, Sulfate	12	-	-

Notes:

⁽¹⁾ Obtained from screened interval on boring logs.

Table 2
Monitoring Program Implementation Schedule
2023 Annual Water Quality Report
Climax Molybdenum Company Industrial Landfill
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Monitoring Well	Recent Sampling Dates and Constituents		Upcoming Sampling Dates and Constituents	
	4/7/23	7/27/23	2024 Spring Event	2024 Fall Event
MW-7	115.26(4)"e" parameters, supplemental parameters, TSS	115.26(4)"e" parameters, supplemental parameters, TSS	115.26(4)"e" parameters, supplemental parameters, TSS	115.26(4)"e" parameters, supplemental parameters, TSS
MW-11	115.26(4)"e" parameters, supplemental parameters, TSS	115.26(4)"e" parameters, supplemental parameters, TSS	115.26(4)"e" parameters, supplemental parameters, TSS	115.26(4)"e" parameters, supplemental parameters, TSS
MW-15	115.26(4)"e" parameters, supplemental parameters, TSS	115.26(4)"e" parameters, supplemental parameters, TSS	115.26(4)"e" parameters, supplemental parameters, TSS	115.26(4)"e" parameters, supplemental parameters, TSS
MW-16	115.26(4)"e" parameters, supplemental parameters, TSS	115.26(4)"e" parameters, supplemental parameters, TSS	115.26(4)"e" parameters, supplemental parameters, TSS	115.26(4)"e" parameters, supplemental parameters, TSS
MW-17	115.26(4)"e" parameters, supplemental parameters, TSS	115.26(4)"e" parameters, supplemental parameters, TSS	115.26(4)"e" parameters, supplemental parameters, TSS	115.26(4)"e" parameters, supplemental parameters, TSS
MW-18R	115.26(4)"e" parameters, supplemental parameters, TSS	115.26(4)"e" parameters, supplemental parameters, TSS	115.26(4)"e" parameters, supplemental parameters, TSS	115.26(4)"e" parameters, supplemental parameters, TSS
MW-21	115.26(4)"e" parameters, supplemental parameters, TSS	115.26(4)"e" parameters, supplemental parameters, TSS	115.26(4)"e" parameters, supplemental parameters, TSS	115.26(4)"e" parameters, supplemental parameters, TSS
TW-2	115.26(4)"e" parameters, supplemental parameters, TSS	115.26(4)"e" parameters, supplemental parameters, TSS	115.26(4)"e" parameters, supplemental parameters, TSS	115.26(4)"e" parameters, supplemental parameters, TSS

Notes: Supplemental parameters include concentrations of total arsenic, cadmium, iron, lithium, manganese, molybdenum, selenium, sodium, strontium, and sulfate.
TSS – Total Suspended Solids.

Table 3
Monitoring Well Maintenance and Performance Re-Evaluation Schedule
2023 Annual Water Quality Report
Climax Molybdenum Company Industrial Landfill
Permit No. 56-SDP-06-80P

Compliance with:	2021	2022	2023	2024
567 IAC 114.21(2)"a" high and low water levels (annually)	Completed	Completed	Included	Scheduled
567 IAC 114.21(2)"b" changes in the hydrologic setting and flow paths	Completed	Completed	Included	Scheduled
567 IAC 114.21(2)"c" well depths	Completed	Completed	Included	Scheduled
567 IAC 114.21(2)"d" well recharge rates ⁽¹⁾	Completed		Included	

Notes:

⁽¹⁾ In-situ permeability testing was replaced with biennial well recharge rate evaluation in DNR correspondence dated April 29, 2019 (Doc# 95000).

Table 4
Monitoring Well Performance and Maintenance Summary
2023 Annual Water Quality Report
Climax Molybdenum Company Industrial Landfill
Permit No. 56-SDP-06-80P

Well	Top of Casing	Top of Screen	Total Depth		Date of Measurements	Maximum Depth Discrepancy (ft)	Initial Flow Rate (L/min)*	Recent Flow Rate (L/min)	
					7/27/2023			4/11/2017	7/27/2023 % Change
MW-7	669.6	654.1	30.1	Groundwater Level (ft)	12.14	-0.4	0.161	0.204	27%
				Groundwater Elevation (Ft MSL)	657.49				
				Measured Well Depth (ft)	30.52				
				Submerged screen	Y				
MW-11	659.6	637.8	32.5	Groundwater Level (ft)	21.95	-0.5	0.125	0.179	43%
				Groundwater Elevation (Ft MSL)	637.63				
				Measured Well Depth (ft)	33.04				
				Submerged screen	N				
MW-15	659.5	649.5	25.7	Groundwater Level (ft)	17.07	0.5	0.139	0.183	32%
				Groundwater Elevation (Ft MSL)	642.39				
				Measured Well Depth (ft)	25.23				
				Submerged screen	N				
MW-16	659.3	644.6	30.5	Groundwater Level (ft)	21.76	0.0	0.119	0.163	37%
				Groundwater Elevation (Ft MSL)	637.56				
				Measured Well Depth (ft)	30.48				
				Submerged screen	N				
MW-17	664.3	627.3	47.0	Groundwater Level (ft)	28.50	-0.3	0.150	0.200	33%
				Groundwater Elevation (Ft MSL)	635.80				
				Measured Well Depth (ft)	47.30				
				Submerged screen	Y				
MW-18R	686.8	663.7	43.3	Groundwater Level (ft)	32.48	0.0	0.175	0.233	33%
				Groundwater Elevation (Ft MSL)	654.28				
				Measured Well Depth (ft)	43.34				
				Submerged screen	N				
MW-21	660.7	639.2	31.5	Groundwater Level (ft)	18.62	-0.1	0.104	0.167	61%
				Groundwater Elevation (Ft MSL)	642.04				
				Measured Well Depth (ft)	31.65				
				Submerged screen	Y				
TW-2	662.4	644.9	28.0	Groundwater Level (ft)	10.68	-0.1	0.128	0.183	43%
				Groundwater Elevation (Ft MSL)	651.68				
				Measured Well Depth (ft)	28.12				
				Submerged screen	Y				

NM - Not Measured

Comments:

- 1) Measured well depths were within 1.0 foot of the installed depths where measured.
- 2) It should be noted that baseline recharge rates were calculated from the first semi-annual sampling event utilizing low-flow sampling apparatuses and should not be considered necessarily representative of a monitoring well's recharge rate under all water level conditions.

Table 5
Background and GWPS Summary
2023 Annual Water Quality Report
Climax Molybdenum Company Industrial Landfill
Permit No. 56-SDP-06-80P

Interwell Background/GWPS (MW-7, MW-18R)

Constituent	Units	Sampling Events	Detections	Control Limit	Statistical Test	Action Level	Source
Inorganics							
Arsenic	mg/L	37	12	0.0062	M+2SD	0.01 mg/L	MCL/SWS
Cadmium	mg/L	37	8	0.011	M+2SD	0.005 mg/L	MCL/SWS
Chemical Oxygen Demand	mg/L	122	89	20.8	M+2SD		
Chloride	mg/L	128	128	43.6	M+2SD		
Iron	mg/L	38	28	6.638	M+2SD		
Lithium	mg/L	37	38	0.038	M+2SD	0.014 mg/L	SWS
Manganese	mg/L	37	24	3.28	M+2SD	0.3 mg/L	HAL/SWS
Molybdenum	mg/L	38	22	0.031	M+2SD	0.04 mg/L	HAL/SWS
Nitrogen, Ammonia	mg/L	128	49	0.284	M+2SD	30.0 mg/L	HAL
pH	S.U.	127	127	6.44 - 7.47	M+/-2SD		
Selenium	mg/L	38	23	0.104	M+2SD	0.05 mg/L	MCL/SWS
Sodium	mg/L	38	39	77.7	M+2SD	20.0 mg/L	DWA
Specific Conductance	µS/cm	127	127	1425	M+2SD		
Strontium	mg/L	37	38	0.792	M+2SD	4.0 mg/L	HAL/SWS
Sulfate	mg/L	122	123	227.3	M+2SD		

Notes: None.

Acronyms/Abbreviations:

RL = Reporting Limit

GWPS = Groundwater Protection Standard

SSS = Site-Specific GWPS

SWS = Statewide Standard

SD = Standard Deviation

MCL = EPA Maximum Contaminant Level

PL = Prediction Limits

HAL = Health Advisory Level

DWA = Drinking Water Advisory

Comments:

1) **Water quality results and effectiveness of the statistical data evaluation criteria:** Statistical evaluations consist of control limits which consist of the upgradient mean plus two standard deviations (plus and minus two standard deviations for pH).

2) **Changes to the previous statistical method during reporting period:** None.

Table 6
Summary of Well/Detected Constituent Pairs With No Immediately Preceding Control Limit
Exceedances
2023 Annual Water Quality Report
Climax Molybdenum Company Industrial Landfill
Permit No. 56-SDP-06-80P

No new control limit exceedances during the reporting period.

Comments:

- 1) **Problems with the current HMSP network:** None.
- 2) **Schedule to implement remedies:** Not applicable.
- 3) **Alternative constituent or sample frequency changes:** None.
- 4) **Significant changes to prediction limits:** None.

Table 7
Summary Table of Ongoing and Newly Identified Control Limit Exceedances
2023 Annual Water Quality Report
Climax Molybdenum Company Industrial Landfill
Permit No. 56-SDP-06-80P

Key

	Denotes ongoing control limit exceedances that were identified as control limit exceedances during this reporting period and the previous reporting period at least once during each reporting period.
	Denotes newly identified control limit exceedances in the 2023 reporting period. Newly identified is defined as occurring at least once in the current reporting period but not in the immediately preceding reporting period.

Well	Constituent	Units	Most Recent Result	Background Standard	Action Level/ Statewide Standard
MW-11	Arsenic	mg/L	0.00767	0.006166	0.01
	Chemical Oxygen Demand	mg/L	118	20.84	-
	Iron	mg/L	31.4	6.638	-
	Manganese	mg/L	5	3.278	0.3
	Nitrogen-Ammonia	mg/L	6.02	0.2843	30
	pH	S.I.	6.42	6.44 - 7.47	-
	Sodium	mg/L	85.6	77.68	20
MW-16	pH	S.I.	6.37	6.44 - 7.47	-
	Specific Conductance	µS/cm	1490	1425	-
	Sulfate	mg/L	435	227.3	-
MW-17	Lithium	mg/L	0.0668	0.03774	0.014
	Sulfate	mg/L	328	227.3	-
MW-21	Chloride	mg/L	109	43.64	-
	Sodium	mg/L	99.4	77.68	20
	Specific Conductance	µS/cm	2116	1425	-
	Strontium	mg/L	0.809	0.7924	4
	Sulfate	mg/L	704	227.3	-
TW-2	Lithium	mg/L	0.0413	0.03774	0.014
	Sodium	mg/L	84.7	77.68	20
	Sulfate	mg/L	368	227.3	-

Notes: None.

Comments:

- 1) **Problems with the current HMSP network:** None.
- 2) **Proposed remedies:** None.
- 3) **Alternative constituent or sample frequency changes:** None.
- 4) **Plume delineation strategies:** Not Applicable.
- 5) **Property owner notifications:** Not applicable.

Table 8
Summary of Groundwater Chemistry
2023 Annual Water Quality Report
Climax Molybdenum Company Industrial Landfill
Permit No. 56-SDP-06-80P

The Summary of Groundwater Chemistry is located in Appendix C.

Table 9
Historical Control Limit & Action Level Exceedances
2023 Annual Water Quality Report
Climax Molybdenum Company Industrial Landfill
Permit No. 56-SDP-06-80P

Key

	Control Limit Exceedance
X	Action Level Exceedance

Well	Constituent	2020	2021	2022	2023
MW-11	Arsenic				
	Chemical Oxygen Demand				
	Chloride				
	Iron				
	Manganese	X	X	X	X
	Nitrogen-Ammonia				
	pH				
	Sodium	X	X	X	X
	Specific Conductance				
	Sulfate				
MW-15	Lithium	X	X	X	X
	Sodium	X	X	X	X
	Sulfate				
MW-16	Lithium	X	X	X	X
	Manganese		X	X	
	pH				
	Sodium	X	X	X	X
	Specific Conductance				
	Sulfate				
MW-17	Lithium	X	X	X	X
	Manganese	X	X	X	X
	Nitrogen-Ammonia				
	Sodium	X	X	X	X
	Sulfate				
MW-21	Chemical Oxygen Demand				
	Chloride				
	Lithium	X	X	X	X
	Manganese	X	X	X	
	Sodium	X	X	X	X
	Specific Conductance				
	Strontium				
	Sulfate				
TW-2	Lithium	X	X	X	X
	Sodium	X	X	X	X
	Sulfate				

Comments: Action level exceedances for upgradeint monitoring wells not included.

Table 10
Groundwater Quality Assessment Plan Trend Analysis
2023 Annual Water Quality Report
Climax Molybdenum Company Industrial Landfill
Permit No. 56-SDP-06-80P

Monitoring Well	Constituent Name	Calculated Statistic		
		Decreasing Trend	Stable Trend	Increasing Trend
MW-21	Cadmium		8	
	Chemical Oxygen Demand		8	
	Chloride		-10	
	Iron		-5	
	Lithium	-20		
	Manganese		-4	
	Molybdenum		-7	
	Nitrogen, Ammonia		1	
	pH		5	
	Selenium		7	
	Sodium		-10	
	Specific Conductance	-18		
	Strontium	-22		
	Sulfate	-18		

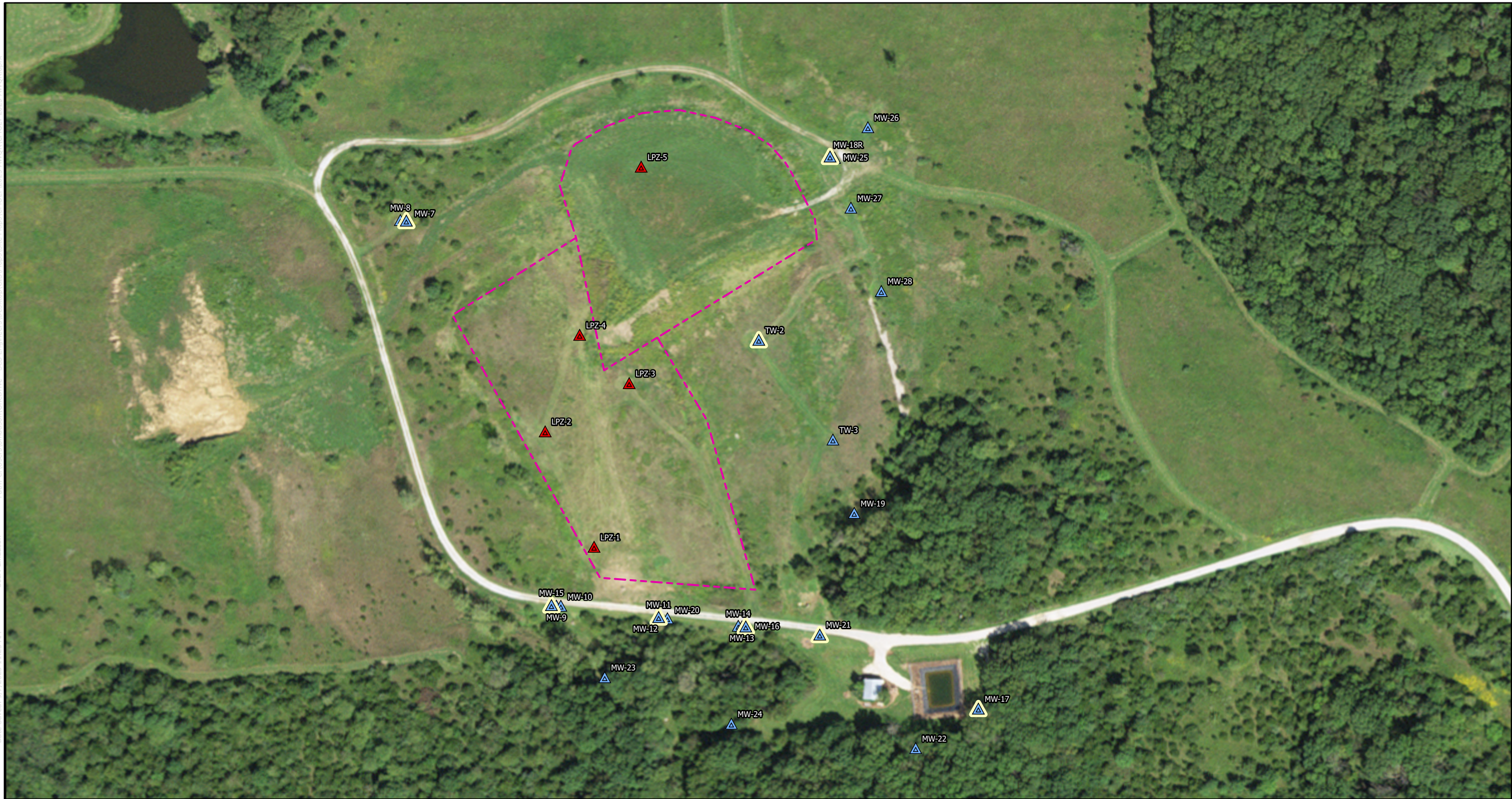
Notes:

- 1) In accordance with the DNR letter dated December 2, 2021 (Doc # 101799), trend analyses for MW-21 have been included to aid in the evaluation of the assessment efforts performed in June 2021.
- 2) Trending was evaluated using Mann-Kendall analysis at 80% confidence ($\alpha=0.2$) for the entire historical dataset.

Figures

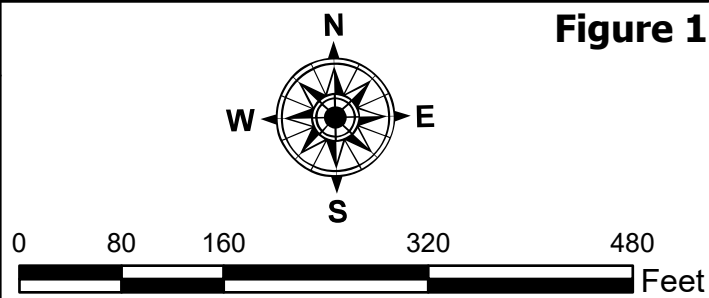
- 1 Approved Monitoring Network
- 2 Groundwater Contours – Water Table Aquifer

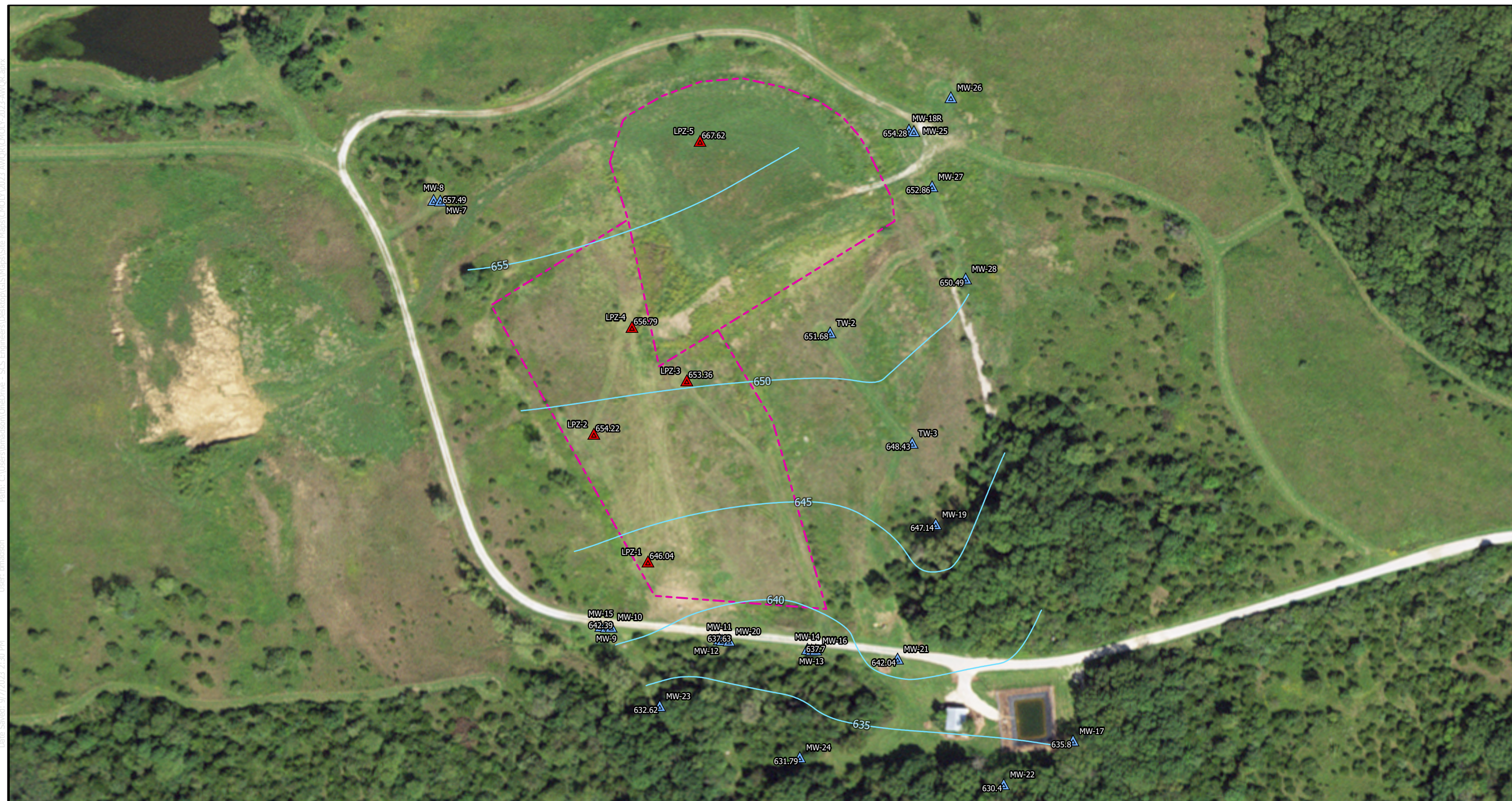
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User: hmadison
Date Saved: 9/7/2023 11:25 AM



Approved Monitoring Network		
Legend		Climax Molybdenum Industrial Landfill Argyle, Iowa Project No: 27223194.00 Drawing Date: November 2023
 HMSP Monitoring Well	 Approximate Waste Boundary	
 Approximate Monitoring Well Location	 Approximate Property Boundary	
 Approximate Leachate Monitoring Location		

GEODATA, Esri, HERE, Garmin, FourSquare, FRC, MITI, NASA, USGS, Esri, COIAR, USGS





SCS
ENGINEERS
environmental consultants and contractors

Groundwater Contours

Legend

-  Approximate Monitoring Well Location
 Approximate Leachate Monitoring Location
 Approximate Waste Boundary
 Approximate Property Boundary
 Approximate Groundwater Contours Based on Field Measurements Taken July 27, 2023

Climax Molybdenum
Industrial Landfill
Argyle, Iowa
Project No: 27223194.00
Drawing Date: November
2023

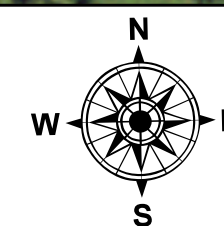


Figure 2





Appendix A

Field Sampling Forms

FORM FOR GROUNDWATER SAMPLING

Project:	CMOLY		
Monitoring Well/Piezometer ID:	MW-7	Date:	4/7/2023
Gradient:	Up	Sampler:	Chad Dentlinger

A. MW/PIEZOMETER CONDITIONS

Well/Piezometer Capped?	Yes
Litter/Standing Water?	No

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Measured Well Total Depth (feet):	30.5
Initial Static Water Level (feet):	7.67
Initial Groundwater Elevation (ft-amsl):	661.96
Equipment Used:	Dedicated Tubing – Peristaltic Pump

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (FNU)	
12:26 PM	Purging start time.						
12:29 PM	12.6	2.7	1039.7	6.78	90.7	5.0	
12:32 PM	12.3	2.0	1042.8	6.72	88.2	4.5	
12:35 PM	12.2	1.7	1040.5	6.71	86.6	4.5	
12:38 PM	12.5	1.6	1041.1	6.70	86.2	4.6	
Parameters stabilized, sample collected.							

Quantity of Water Removed from Well (liters):	1.9
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	154.17

D. WELL MAINTENANCE

Does the well require any future maintenance?		No
If yes, explain:		
Additional Comments:		

FORM FOR GROUNDWATER SAMPLING

Project:	CMOLY		
Monitoring Well/Piezometer ID:	MW-11	Date:	4/7/2023
Gradient:	Down	Sampler:	Chad Dentlinger

A. MW/PIEZOMETER CONDITIONS	
Well/Piezometer Capped?	Yes
Litter/Standing Water?	No

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	33.0
Initial Static Water Level (feet):	19.32
Initial Groundwater Elevation (ft-amsl):	640.26
Equipment Used:	Dedicated Submersible

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES							
Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (FNU)	
10:55 AM	Purging start time.						
10:58 AM	13.3	2.0	1307.8	6.51	-70.9	13.1	
11:01 AM	13.1	1.2	1312.3	6.50	-71.1	11.8	
11:04 AM	13.0	0.8	1309.2	6.50	-72.3	10.4	
11:07 AM	13.3	0.6	1304.9	6.48	-75.4	11.1	
Parameters stabilized, sample collected.							

Quantity of Water Removed from Well (liters):	2.3
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	191.67

D. WELL MAINTENANCE	
Does the well require any future maintenance?	No
If yes, explain:	
Additional Comments:	

FORM FOR GROUNDWATER SAMPLING

Project:	CMOLY		
Monitoring Well/Piezometer ID:	MW-15	Date:	4/7/2023
Gradient:	Down	Sampler:	Chad Dentlinger

A. MW/PIEZOMETER CONDITIONS

Well/Piezometer Capped?	Yes
Litter/Standing Water?	No

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Measured Well Total Depth (feet):	25.2
Initial Static Water Level (feet):	11.79
Initial Groundwater Elevation (ft-amsl):	647.67
Equipment Used:	Dedicated Tubing – Peristaltic Pump

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (FNU)	
11:38 AM	Purging start time.						
11:41 AM	11.7	8.6	701.3	6.95	57.2	4.0	
11:44 AM	12.0	8.5	704.7	6.91	59.3	4.1	
11:47 AM	11.8	8.4	706.9	6.91	61.7	5.0	
11:50 AM	11.9	8.4	706.6	6.92	64.3	5.3	
Parameters stabilized, sample collected.							

Quantity of Water Removed from Well (liters):	2.1
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	170.83

D. WELL MAINTENANCE

Does the well require any future maintenance?		No
If yes, explain:		
Additional Comments:		

FORM FOR GROUNDWATER SAMPLING

Project:	CMOLY		
Monitoring Well/Piezometer ID:	MW-16	Date:	4/7/2023
Gradient:	Down	Sampler:	Chad Dentlinger

A. MW/PIEZOMETER CONDITIONS	
Well/Piezometer Capped?	Yes
Litter/Standing Water?	No

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	30.5
Initial Static Water Level (feet):	18.75
Initial Groundwater Elevation (ft-amsl):	640.71
Equipment Used:	Dedicated Tubing – Peristaltic Pump

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES							
Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (FNU)	
3:25 PM	Purging start time.						
3:28 PM	13.8	2.9	1420.9	6.47	92.0	5.5	
3:31 PM	13.6	2.0	1416.4	6.42	97.1	6.0	
3:34 PM	13.5	1.8	1414.8	6.40	100.9	6.2	
3:37 PM	13.5	1.7	1417.5	6.39	103.8	5.5	
Parameters stabilized, sample collected.							

Quantity of Water Removed from Well (liters):	1.8
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	150.00

D. WELL MAINTENANCE	
Does the well require any future maintenance?	No
If yes, explain:	
Additional Comments:	

FORM FOR GROUNDWATER SAMPLING

Project:	CMOLY		
Monitoring Well/Piezometer ID:	MW-17	Date:	4/7/2023
Gradient:	Down	Sampler:	Chad Dentlinger

A. MW/PIEZOMETER CONDITIONS

Well/Piezometer Capped?	Yes
Litter/Standing Water?	No

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Measured Well Total Depth (feet):	47.3
Initial Static Water Level (feet):	27.68
Initial Groundwater Elevation (ft-amsl):	636.62
Equipment Used:	Dedicated Submersible

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (FNU)	
4:53 PM	Purging start time.						
4:56 PM	12.9	1.4	1324.9	7.20	-104.4	5.2	
4:59 PM	13.4	1.0	1291.9	7.07	-112.8	4.8	
5:02 PM	13.2	0.8	1275.8	7.03	-114.6	4.7	
5:05 PM	13.5	0.8	1265.8	6.99	-112.9	4.8	
Parameters stabilized, sample collected.							

Quantity of Water Removed from Well (liters):	1.8
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	150.00

D. WELL MAINTENANCE

Does the well require any future maintenance?		No
If yes, explain:		
Additional Comments:		

FORM FOR GROUNDWATER SAMPLING

Project:	CMOLY		
Monitoring Well/Piezometer ID:	MW-18R	Date:	4/7/2023
Gradient:	Up	Sampler:	Chad Dentlinger

A. MW/PIEZOMETER CONDITIONS	
Well/Piezometer Capped?	Yes
Litter/Standing Water?	No

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	43.3
Initial Static Water Level (feet):	32.90
Initial Groundwater Elevation (ft-amsl):	653.86
Equipment Used:	Dedicated Submersible

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES							
Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (FNU)	
1:03 PM	Purging start time.						
1:06 PM	12.8	5.9	829.5	7.10	87.3	5.5	
1:09 PM	14.0	5.6	823.5	6.97	81.4	5.2	
1:12 PM	13.6	5.7	819.8	6.94	78.0	4.8	
1:15 PM	13.7	5.7	827.1	6.92	74.7	4.8	
Parameters stabilized, sample collected.							

Quantity of Water Removed from Well (liters):	1.9
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	158.33

D. WELL MAINTENANCE	
Does the well require any future maintenance?	No
If yes, explain:	
Additional Comments:	

FORM FOR GROUNDWATER SAMPLING

Project:	CMOLY		
Monitoring Well/Piezometer ID:	MW-21	Date:	4/7/2023
Gradient:	Down	Sampler:	Chad Dentlinger

A. MW/PIEZOMETER CONDITIONS	
Well/Piezometer Capped?	Yes
Litter/Standing Water?	No

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	31.6
Initial Static Water Level (feet):	12.80
Initial Groundwater Elevation (ft-amsl):	647.86
Equipment Used:	Dedicated Tubing – Peristaltic Pump

C. WELL PURGING							
FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES							
Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (FNU)	
4:02 PM	Purging start time.						
4:05 PM	13.1	2.4	1998.3	6.69	110.9	5.9	
4:08 PM	13.3	2.2	2001.8	6.67	104.7	7.3	
4:11 PM	13.3	2.0	2005.0	6.66	101.9	7.4	
4:14 PM	12.8	1.9	2007.0	6.67	100.8	5.5	
Parameters stabilized, sample collected.							

Quantity of Water Removed from Well (liters):	2.1
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	175.00

D. WELL MAINTENANCE	
Does the well require any future maintenance?	No
If yes, explain:	
Additional Comments:	

FORM FOR GROUNDWATER SAMPLING

Project:	CMOLY		
Monitoring Well/Piezometer ID:	TW-2	Date:	4/7/2023
Gradient:	Down	Sampler:	Chad Dentlinger

A. MW/PIEZOMETER CONDITIONS	
Well/Piezometer Capped?	Yes
Litter/Standing Water?	No

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	28.1
Initial Static Water Level (feet):	6.45
Initial Groundwater Elevation (ft-amsl):	655.91
Equipment Used:	Dedicated Tubing – Peristaltic Pump

C. WELL PURGING							
FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES							
Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (FNU)	
1:51 PM	Purging start time.						
1:54 PM	11.6	6.2	1095.3	7.37	87.9	4.3	
1:57 PM	11.4	5.9	1097.3	7.25	89.9	4.3	
2:00 PM	11.3	5.7	1098.4	7.20	90.1	4.3	
2:03 PM	11.1	5.5	1097.3	7.17	90.1	4.4	
Parameters stabilized, sample collected.							

Quantity of Water Removed from Well (liters):	2.2
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	183.33

D. WELL MAINTENANCE	
Does the well require any future maintenance?	No
If yes, explain:	
Additional Comments:	

FORM FOR GROUNDWATER SAMPLING

Project: CMOLY		
Monitoring Well/Piezometer ID: MW-7	Date: 7/27/2023	
Gradient: Up	Sampler: Chad Dentlinger	

A. MW/PIEZOMETER CONDITIONS	
Well/Piezometer Capped? Yes	
Litter/Standing Water? No	

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	30.5
Initial Static Water Level (feet):	12.14
Initial Groundwater Elevation (ft-amsl):	657.49
Equipment Used:	Dedicated Tubing – Peristaltic Pump

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES							
Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (FNU)	
6:37 PM	Purging start time.						
6:40 PM	16.2	0.4	1124.4	6.66	-18.5	2.7	
6:43 PM	16.1	0.3	1120.9	6.66	-21.4	4.8	
6:46 PM	16.2	0.2	1121.2	6.65	-22.9	8.9	
6:49 PM	16.3	0.1	1120.8	6.65	-24.9	2.9	
Parameters stabilized, sample collected.							

Quantity of Water Removed from Well (liters):	2.5
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	204.17

D. WELL MAINTENANCE	
Does the well require any future maintenance?	No
If yes, explain:	
Additional Comments:	

FORM FOR GROUNDWATER SAMPLING

Project:	CMOLY		
Monitoring Well/Piezometer ID:	MW-11	Date:	7/27/2023
Gradient:	Down	Sampler:	Chad Dentlinger

A. MW/PIEZOMETER CONDITIONS	
Well/Piezometer Capped?	Yes
Litter/Standing Water?	No

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	33.0
Initial Static Water Level (feet):	21.95
Initial Groundwater Elevation (ft-amsl):	637.63
Equipment Used:	Dedicated Submersible

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES							
Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (FNU)	
5:01 PM	Purging start time.						
5:04 PM	18.6	0.9	1343.9	6.37	-104.8	184.7	
5:07 PM	19.6	0.7	1354.9	6.38	-105.8	145.4	
5:10 PM	17.9	0.6	1377.8	6.41	-104.3	101.6	
5:13 PM							
5:16 PM	16.0	0.8	1368.5	6.44	-97.7	117.9	
5:19 PM	17.6	0.5	1330.5	6.45	-98.4	115.4	
5:22 PM	18.2	0.3	1331.4	6.43	-97.3	102.3	
5:25 PM	17.3	0.2	1346.2	6.42	-96.1	92.9	
Parameters stabilized, sample collected.							

Quantity of Water Removed from Well (liters):	4.3
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	24:00
Average Purge Rate (mL/min):	179.17

D. WELL MAINTENANCE	
Does the well require any future maintenance?	No
If yes, explain:	
Additional Comments:	

FORM FOR GROUNDWATER SAMPLING

Project:	CMOLY		
Monitoring Well/Piezometer ID:	MW-15	Date:	7/27/2023
Gradient:	Down	Sampler:	Chad Dentlinger

A. MW/PIEZOMETER CONDITIONS	
Well/Piezometer Capped?	Yes
Litter/Standing Water?	No

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	25.2
Initial Static Water Level (feet):	17.07
Initial Groundwater Elevation (ft-amsl):	642.39
Equipment Used:	Dedicated Tubing – Peristaltic Pump

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES							
Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (FNU)	
5:46 PM	Purging start time.						
5:49 PM	18.1	4.7	930.0	6.96	115.6	2.1	
5:52 PM	17.5	4.5	934.1	6.97	122.6	3.3	
5:55 PM	17.5	4.4	927.8	6.98	127.1	5.6	
5:58 PM	18.1	4.5	923.9	6.98	131.5	5.8	
Parameters stabilized, sample collected.							

Quantity of Water Removed from Well (liters):	2.2
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	183.33

D. WELL MAINTENANCE	
Does the well require any future maintenance?	No
If yes, explain:	
Additional Comments:	

FORM FOR GROUNDWATER SAMPLING

[illegible]

FORM FOR GROUNDWATER SAMPLING

Project: CMOLY		
Monitoring Well/Piezometer ID: MW-17	Date: 7/27/2023	
Gradient: Down	Sampler: Chad Dentlinger	

A. MW/PIEZOMETER CONDITIONS	
Well/Piezometer Capped? Yes	
Litter/Standing Water? No	

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	47.3
Initial Static Water Level (feet):	28.50
Initial Groundwater Elevation (ft-amsl):	635.80
Equipment Used:	Dedicated Submersible

C. WELL PURGING							
FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES							
Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (FNU)	
8:28 PM	Purging start time.						
8:31 PM	15.1	0.4	1434.4	6.99	-109.6	5.2	
8:34 PM	16.0	0.3	1399.8	6.94	-103.7	3.9	
8:37 PM	15.2	0.2	1382.1	6.92	-89.9	3.4	
8:40 PM	15.7	0.2	1341.3	6.90	-80.8	2.9	
Parameters stabilized, sample collected.							

Quantity of Water Removed from Well (liters):	2.4
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	200.00

D. WELL MAINTENANCE	
Does the well require any future maintenance?	No
If yes, explain:	
Additional Comments:	

FORM FOR GROUNDWATER SAMPLING

Project: CMOLY		
Monitoring Well/Piezometer ID: MW-18R	Date: 7/27/2023	
Gradient: Up	Sampler: Chad Dentlinger	

A. MW/PIEZOMETER CONDITIONS	
Well/Piezometer Capped? Yes	
Litter/Standing Water? No	

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	43.3
Initial Static Water Level (feet):	32.48
Initial Groundwater Elevation (ft-amsl):	654.28
Equipment Used:	Dedicated Submersible

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES							
Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (FNU)	
7:14 PM	Purging start time.						
7:17 PM	17.1	5.6	891.7	6.92	159.8	8.4	
7:20 PM	16.8	5.5	882.2	6.91	165.0	4.4	
7:23 PM	16.9	5.4	885.7	6.91	169.9	3.2	
7:26 PM	16.4	5.5	882.7	6.91	175.7	2.8	
Parameters stabilized, sample collected.							

Quantity of Water Removed from Well (liters):	2.8
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	233.33

D. WELL MAINTENANCE	
Does the well require any future maintenance?	No
If yes, explain:	
Additional Comments:	

FORM FOR GROUNDWATER SAMPLING

Project: CMOLY		
Monitoring Well/Piezometer ID: MW-21	Date: 7/28/2023	
Gradient: Down	Sampler: Chad Dentlinger	

A. MW/PIEZOMETER CONDITIONS

Well/Piezometer Capped? Yes	
Litter/Standing Water? No	

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Measured Well Total Depth (feet):	31.7
Initial Static Water Level (feet):	18.62
Initial Groundwater Elevation (ft-amsl):	642.04
Equipment Used:	Dedicated Tubing – Peristaltic Pump

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (FNU)	
7:45 AM	Purging start time.						
7:48 AM	16.6	0.8	2230.9	6.33	254.6	2.8	
7:51 AM	16.1	0.4	2167.5	6.45	245.3	6.1	
7:54 AM	15.8	0.2	2120.2	6.51	238.3	9.0	
7:57 AM	16.1	0.1	2115.9	6.54	233.1	3.6	
Parameters stabilized, sample collected.							

Quantity of Water Removed from Well (liters):	2.0
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	166.67

D. WELL MAINTENANCE

Does the well require any future maintenance?	No
If yes, explain:	
Additional Comments:	

FORM FOR GROUNDWATER SAMPLING

Project: CMOLY		
Monitoring Well/Piezometer ID: TW-2	Date: 7/27/2023	
Gradient: Down	Sampler: Chad Dentlinger	

A. MW/PIEZOMETER CONDITIONS	
Well/Piezometer Capped? Yes	
Litter/Standing Water? No	

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	28.1
Initial Static Water Level (feet):	10.68
Initial Groundwater Elevation (ft-amsl):	651.68
Equipment Used:	Dedicated Tubing – Peristaltic Pump

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES							
Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (FNU)	
7:49 PM	Purging start time.						
7:52 PM	17.7	2.6	1257.2	6.94	193.4	3.5	
7:55 PM	17.1	2.5	1264.8	6.92	191.3	4.0	
7:58 PM	17.0	2.4	1260.2	6.92	190.0	8.6	
8:01 PM	17.6	2.4	1255.5	6.92	189.2	2.4	
Parameters stabilized, sample collected.							

Quantity of Water Removed from Well (liters):	2.2
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	183.33

D. WELL MAINTENANCE	
Does the well require any future maintenance?	No
If yes, explain:	
Additional Comments:	



Appendix B1

Laboratory Analytical Data Sheets

ANALYTICAL REPORT

PREPARED FOR

Attn: Kevin Jensen
SCS Engineers
1690 All State Court
Suite 100

West Des Moines, Iowa 50265

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JOB DESCRIPTION

Climax Molybdenum Landfill - 2023 GW Sampling
SDG NUMBER Climax Molybdenum Landfill - 27223194

JOB NUMBER

310-253166-1

Eurofins Cedar Falls

Job Notes

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of Eurofins Environment Testing North Central, LLC and its client. All questions regarding this report should be directed to the Eurofins Environment Testing North Central, LLC Project Manager who has signed this report.

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Authorization



Authorized for release by
Meredith Liechti, Service Center Manager
meredith.liechti@et.eurofinsus.com
(319)277-2401

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Case Narrative

Client: SCS Engineers
Project/Site: Climax Molybdenum Landfill - 2023 GW Sampling

Job ID: 310-253166-1
SDG: Climax Molybdenum Landfill - 27223194

Job ID: 310-253166-1

Laboratory: Eurofins Cedar Falls

Narrative

Job Narrative
310-253166-1

REVISION

The report being provided is a revision of the original report sent on 4/24/2023. The report (revision 1) is being revised due to MW-2" is listed as being sampled in the report and EDD, however the name (in the COC) was actually "TW-2.

Receipt

The samples were received on 4/10/2023 4:40 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were -0.1°C and 0.8°C

HPLC/IC

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Sample Summary

Client: SCS Engineers

Project/Site: Climax Molybdenum Landfill - 2023 GW Sampling

Job ID: 310-253166-1

SDG: Climax Molybdenum Landfill - 27223194

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-253166-1	MW-7	Ground Water	04/07/23 12:38	04/10/23 16:40
310-253166-2	MW-11	Ground Water	04/07/23 11:07	04/10/23 16:40
310-253166-3	MW-15	Ground Water	04/07/23 11:50	04/10/23 16:40
310-253166-4	MW-16	Ground Water	04/07/23 15:37	04/10/23 16:40
310-253166-5	MW-17	Ground Water	04/07/23 17:05	04/10/23 16:40
310-253166-6	MW-18R	Ground Water	04/07/23 13:15	04/10/23 16:40
310-253166-7	MW-21	Ground Water	04/07/23 16:14	04/10/23 16:40
310-253166-8	TW-2	Ground Water	04/07/23 14:03	04/10/23 16:40
310-253166-9	MW-D	Ground Water	04/07/23 00:00	04/10/23 16:40
310-253166-10	Leachate Sump	Wastewater	04/07/23 00:00	04/10/23 16:40

Detection Summary

Client: SCS Engineers

Project/Site: Climax Molybdenum Landfill - 2023 GW Sampling

Job ID: 310-253166-1

SDG: Climax Molybdenum Landfill - 27223194

Client Sample ID: MW-7

Lab Sample ID: 310-253166-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	3.00	J	5.00	2.25	mg/L	5		9056A	Total/NA
Sulfate	73.6	F1	5.00	2.00	mg/L	5		9056A	Total/NA
Arsenic	0.000721	J	0.00200	0.000530	mg/L	1		6020B	Total/NA
Cadmium	0.000166	J	0.000200	0.000100	mg/L	1		6020B	Total/NA
Iron	0.0509	J	0.100	0.0360	mg/L	1		6020B	Total/NA
Lithium	0.0218		0.0100	0.00250	mg/L	1		6020B	Total/NA
Manganese	1.98		0.0100	0.00360	mg/L	1		6020B	Total/NA
Molybdenum	0.00199	J	0.00200	0.000910	mg/L	1		6020B	Total/NA
Selenium	0.00185	J	0.00500	0.00140	mg/L	1		6020B	Total/NA
Sodium	75.2		1.00	0.460	mg/L	1		6020B	Total/NA
Strontium	0.506		0.00100	0.000530	mg/L	1		6020B	Total/NA
Chemical Oxygen Demand	16.2		5.00	4.80	mg/L	1		5220D LL	Total/NA

Client Sample ID: MW-11

Lab Sample ID: 310-253166-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	18.8		5.00	2.25	mg/L	5		9056A	Total/NA
Sulfate	68.8		5.00	2.00	mg/L	5		9056A	Total/NA
Arsenic	0.00636		0.00200	0.000530	mg/L	1		6020B	Total/NA
Cadmium	0.000106	J	0.000200	0.000100	mg/L	1		6020B	Total/NA
Iron	22.9		0.100	0.0360	mg/L	1		6020B	Total/NA
Lithium	0.00970	J	0.0100	0.00250	mg/L	1		6020B	Total/NA
Manganese	6.06		0.0400	0.0144	mg/L	4		6020B	Total/NA
Molybdenum	0.00390		0.00200	0.000910	mg/L	1		6020B	Total/NA
Selenium	0.00276	J	0.00500	0.00140	mg/L	1		6020B	Total/NA
Sodium	86.6		1.00	0.460	mg/L	1		6020B	Total/NA
Strontium	0.591		0.00100	0.000530	mg/L	1		6020B	Total/NA
Ammonia	2.92		0.200	0.100	mg/L	1		350.1	Total/NA
Chemical Oxygen Demand	59.5		5.00	4.80	mg/L	1		5220D LL	Total/NA
Total Suspended Solids	48.0		15.0	5.10	mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW-15

Lab Sample ID: 310-253166-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	7.93		5.00	2.25	mg/L	5		9056A	Total/NA
Sulfate	79.0		5.00	2.00	mg/L	5		9056A	Total/NA
Lithium	0.0210		0.0100	0.00250	mg/L	1		6020B	Total/NA
Manganese	0.00485	J	0.0100	0.00360	mg/L	1		6020B	Total/NA
Molybdenum	0.00167	J	0.00200	0.000910	mg/L	1		6020B	Total/NA
Selenium	0.00284	J	0.00500	0.00140	mg/L	1		6020B	Total/NA
Sodium	38.4		1.00	0.460	mg/L	1		6020B	Total/NA
Strontium	0.358		0.00100	0.000530	mg/L	1		6020B	Total/NA
Chemical Oxygen Demand	12.2		5.00	4.80	mg/L	1		5220D LL	Total/NA

Client Sample ID: MW-16

Lab Sample ID: 310-253166-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	5.83		5.00	2.25	mg/L	5		9056A	Total/NA
Sulfate	399		5.00	2.00	mg/L	5		9056A	Total/NA
Cadmium	0.000132	J	0.000200	0.000100	mg/L	1		6020B	Total/NA
Lithium	0.0263		0.0100	0.00250	mg/L	1		6020B	Total/NA
Manganese	0.0805		0.0100	0.00360	mg/L	1		6020B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

Detection Summary

Client: SCS Engineers

Project/Site: Climax Molybdenum Landfill - 2023 GW Sampling

Job ID: 310-253166-1

SDG: Climax Molybdenum Landfill - 27223194

Client Sample ID: MW-16 (Continued)

Lab Sample ID: 310-253166-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Molybdenum	0.000998	J	0.00200	0.000910	mg/L	1		6020B	Total/NA
Sodium	70.9		1.00	0.460	mg/L	1		6020B	Total/NA
Strontium	0.610		0.00100	0.000530	mg/L	1		6020B	Total/NA
Chemical Oxygen Demand	9.13		5.00	4.80	mg/L	1		5220D LL	Total/NA

Client Sample ID: MW-17

Lab Sample ID: 310-253166-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	7.78		5.00	2.25	mg/L	5		9056A	Total/NA
Sulfate	319		5.00	2.00	mg/L	5		9056A	Total/NA
Iron	0.0473	J	0.100	0.0360	mg/L	1		6020B	Total/NA
Lithium	0.0718		0.0100	0.00250	mg/L	1		6020B	Total/NA
Manganese	1.39		0.0100	0.00360	mg/L	1		6020B	Total/NA
Molybdenum	0.00251		0.00200	0.000910	mg/L	1		6020B	Total/NA
Selenium	0.00526		0.00500	0.00140	mg/L	1		6020B	Total/NA
Sodium	61.4		1.00	0.460	mg/L	1		6020B	Total/NA
Strontium	0.672		0.00100	0.000530	mg/L	1		6020B	Total/NA
Chemical Oxygen Demand	5.46		5.00	4.80	mg/L	1		5220D LL	Total/NA
Total Suspended Solids	1.13	J	1.88	0.638	mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW-18R

Lab Sample ID: 310-253166-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	8.24		5.00	2.25	mg/L	5		9056A	Total/NA
Sulfate	49.7		5.00	2.00	mg/L	5		9056A	Total/NA
Lithium	0.0329		0.0100	0.00250	mg/L	1		6020B	Total/NA
Molybdenum	0.00130	J	0.00200	0.000910	mg/L	1		6020B	Total/NA
Selenium	0.0580		0.00500	0.00140	mg/L	1		6020B	Total/NA
Sodium	53.6		1.00	0.460	mg/L	1		6020B	Total/NA
Strontium	0.329		0.00100	0.000530	mg/L	1		6020B	Total/NA
Total Suspended Solids	2.38		1.88	0.638	mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW-21

Lab Sample ID: 310-253166-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	127		5.00	2.25	mg/L	5		9056A	Total/NA
Sulfate	723		20.0	8.00	mg/L	20		9056A	Total/NA
Lithium	0.0245		0.0100	0.00250	mg/L	1		6020B	Total/NA
Manganese	0.0306		0.0100	0.00360	mg/L	1		6020B	Total/NA
Sodium	104		1.00	0.460	mg/L	1		6020B	Total/NA
Strontium	0.817		0.00100	0.000530	mg/L	1		6020B	Total/NA
Chemical Oxygen Demand	13.2		5.00	4.80	mg/L	1		5220D LL	Total/NA

Client Sample ID: TW-2

Lab Sample ID: 310-253166-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	11.3		5.00	2.25	mg/L	5		9056A	Total/NA
Sulfate	322		5.00	2.00	mg/L	5		9056A	Total/NA
Lithium	0.0411		0.0100	0.00250	mg/L	1		6020B	Total/NA
Molybdenum	0.00148	J	0.00200	0.000910	mg/L	1		6020B	Total/NA
Selenium	0.0143		0.00500	0.00140	mg/L	1		6020B	Total/NA
Sodium	79.0		1.00	0.460	mg/L	1		6020B	Total/NA
Strontium	0.441		0.00100	0.000530	mg/L	1		6020B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

Detection Summary

Client: SCS Engineers

Job ID: 310-253166-1

Project/Site: Climax Molybdenum Landfill - 2023 GW Sampling

SDG: Climax Molybdenum Landfill - 27223194

Client Sample ID: MW-D

Lab Sample ID: 310-253166-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
Chloride	8.39		5.00	2.25	mg/L	5			9056A	Total/NA
Sulfate	84.8		5.00	2.00	mg/L	5			9056A	Total/NA
Lithium	0.0228		0.0100	0.00250	mg/L	1			6020B	Total/NA
Molybdenum	0.00141	J	0.00200	0.000910	mg/L	1			6020B	Total/NA
Selenium	0.00220	J	0.00500	0.00140	mg/L	1			6020B	Total/NA
Sodium	39.6		1.00	0.460	mg/L	1			6020B	Total/NA
Strontium	0.368		0.00100	0.000530	mg/L	1			6020B	Total/NA
Chemical Oxygen Demand	9.81		5.00	4.80	mg/L	1			5220D LL	Total/NA

Client Sample ID: Leachate Sump

Lab Sample ID: 310-253166-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
Chloride	31.3		5.00	2.25	mg/L	5			9056A	Total/NA
Sulfate	1500		20.0	8.00	mg/L	20			9056A	Total/NA
Arsenic	0.00326		0.00200	0.000530	mg/L	1			6020B	Total/NA
Cadmium	0.00191		0.000200	0.000100	mg/L	1			6020B	Total/NA
Iron	2.48		0.100	0.0360	mg/L	1			6020B	Total/NA
Lithium	0.00710	J	0.0100	0.00250	mg/L	1			6020B	Total/NA
Manganese	1.57		0.0100	0.00360	mg/L	1			6020B	Total/NA
Molybdenum	5.95		0.00800	0.00364	mg/L	4			6020B	Total/NA
Selenium	1.03		0.0200	0.00560	mg/L	4			6020B	Total/NA
Sodium	289		1.00	0.460	mg/L	1			6020B	Total/NA
Strontium	0.665		0.00100	0.000530	mg/L	1			6020B	Total/NA
Chemical Oxygen Demand	25.3		5.00	4.80	mg/L	1			5220D LL	Total/NA
Total Suspended Solids	8.33		5.00	1.70	mg/L	1			I-3765-85	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

Client Sample Results

Client: SCS Engineers

Project/Site: Climax Molybdenum Landfill - 2023 GW Sampling

Job ID: 310-253166-1

SDG: Climax Molybdenum Landfill - 27223194

Client Sample ID: MW-7

Date Collected: 04/07/23 12:38

Date Received: 04/10/23 16:40

Lab Sample ID: 310-253166-1

Matrix: Ground Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3.00	J	5.00	2.25	mg/L			04/17/23 12:24	5
Sulfate	73.6	F1	5.00	2.00	mg/L			04/17/23 12:24	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.000721	J	0.00200	0.000530	mg/L		04/14/23 08:45	04/21/23 14:43	1
Cadmium	0.000166	J	0.000200	0.000100	mg/L		04/14/23 08:45	04/21/23 14:43	1
Iron	0.0509	J	0.100	0.0360	mg/L		04/14/23 08:45	04/21/23 14:43	1
Lithium	0.0218		0.0100	0.00250	mg/L		04/14/23 08:45	04/21/23 14:43	1
Manganese	1.98		0.0100	0.00360	mg/L		04/14/23 08:45	04/21/23 14:43	1
Molybdenum	0.00199	J	0.00200	0.000910	mg/L		04/14/23 08:45	04/21/23 14:43	1
Selenium	0.00185	J	0.00500	0.00140	mg/L		04/14/23 08:45	04/21/23 14:43	1
Sodium	75.2		1.00	0.460	mg/L		04/14/23 08:45	04/21/23 14:43	1
Strontium	0.506		0.00100	0.000530	mg/L		04/14/23 08:45	04/21/23 14:43	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	<0.200	F1	0.200	0.100	mg/L			04/17/23 10:33	1
Chemical Oxygen Demand (SM 5220D LL)	16.2		5.00	4.80	mg/L			04/13/23 08:43	1
Total Suspended Solids (USGS I-3765-85)	<1.88		1.88	0.638	mg/L			04/11/23 11:45	1

Eurofins Cedar Falls

Client Sample Results

Client: SCS Engineers

Project/Site: Climax Molybdenum Landfill - 2023 GW Sampling

Job ID: 310-253166-1

SDG: Climax Molybdenum Landfill - 27223194

Client Sample ID: MW-11

Date Collected: 04/07/23 11:07

Date Received: 04/10/23 16:40

Lab Sample ID: 310-253166-2

Matrix: Ground Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	18.8		5.00	2.25	mg/L			04/17/23 13:11	5
Sulfate	68.8		5.00	2.00	mg/L			04/17/23 13:11	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00636		0.00200	0.000530	mg/L		04/14/23 08:45	04/21/23 14:57	1
Cadmium	0.000106	J	0.000200	0.000100	mg/L		04/14/23 08:45	04/21/23 14:57	1
Iron	22.9		0.100	0.0360	mg/L		04/14/23 08:45	04/21/23 14:57	1
Lithium	0.00970	J	0.0100	0.00250	mg/L		04/14/23 08:45	04/21/23 14:57	1
Manganese	6.06		0.0400	0.0144	mg/L		04/14/23 08:45	04/23/23 15:33	4
Molybdenum	0.00390		0.00200	0.000910	mg/L		04/14/23 08:45	04/21/23 14:57	1
Selenium	0.00276	J	0.00500	0.00140	mg/L		04/14/23 08:45	04/21/23 14:57	1
Sodium	86.6		1.00	0.460	mg/L		04/14/23 08:45	04/21/23 14:57	1
Strontium	0.591		0.00100	0.000530	mg/L		04/14/23 08:45	04/21/23 14:57	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	2.92		0.200	0.100	mg/L			04/17/23 10:35	1
Chemical Oxygen Demand (SM 5220D LL)	59.5		5.00	4.80	mg/L			04/13/23 08:43	1
Total Suspended Solids (USGS I-3765-85)	48.0		15.0	5.10	mg/L			04/11/23 11:45	1

Client Sample Results

Client: SCS Engineers

Project/Site: Climax Molybdenum Landfill - 2023 GW Sampling

Job ID: 310-253166-1

SDG: Climax Molybdenum Landfill - 27223194

Client Sample ID: MW-15

Date Collected: 04/07/23 11:50

Date Received: 04/10/23 16:40

Lab Sample ID: 310-253166-3

Matrix: Ground Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	7.93		5.00	2.25	mg/L			04/17/23 13:26	5
Sulfate	79.0		5.00	2.00	mg/L			04/17/23 13:26	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200	0.000530	mg/L		04/14/23 08:45	04/21/23 15:00	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		04/14/23 08:45	04/21/23 15:00	1
Iron	<0.100		0.100	0.0360	mg/L		04/14/23 08:45	04/21/23 15:00	1
Lithium	0.0210		0.0100	0.00250	mg/L		04/14/23 08:45	04/21/23 15:00	1
Manganese	0.00485	J	0.0100	0.00360	mg/L		04/14/23 08:45	04/21/23 15:00	1
Molybdenum	0.00167	J	0.00200	0.000910	mg/L		04/14/23 08:45	04/21/23 15:00	1
Selenium	0.00284	J	0.00500	0.00140	mg/L		04/14/23 08:45	04/21/23 15:00	1
Sodium	38.4		1.00	0.460	mg/L		04/14/23 08:45	04/21/23 15:00	1
Strontium	0.358		0.00100	0.000530	mg/L		04/14/23 08:45	04/21/23 15:00	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	<0.200		0.200	0.100	mg/L			04/17/23 10:37	1
Chemical Oxygen Demand (SM 5220D LL)	12.2		5.00	4.80	mg/L			04/13/23 08:43	1
Total Suspended Solids (USGS I-3765-85)	<1.88		1.88	0.638	mg/L			04/11/23 09:47	1

Client Sample Results

Client: SCS Engineers

Project/Site: Climax Molybdenum Landfill - 2023 GW Sampling

Job ID: 310-253166-1

SDG: Climax Molybdenum Landfill - 27223194

Client Sample ID: MW-16

Date Collected: 04/07/23 15:37

Date Received: 04/10/23 16:40

Lab Sample ID: 310-253166-4

Matrix: Ground Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.83		5.00	2.25	mg/L			04/17/23 13:42	5
Sulfate	399		5.00	2.00	mg/L			04/17/23 13:42	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200	0.000530	mg/L		04/14/23 08:45	04/21/23 15:03	1
Cadmium	0.000132	J	0.000200	0.000100	mg/L		04/14/23 08:45	04/21/23 15:03	1
Iron	<0.100		0.100	0.0360	mg/L		04/14/23 08:45	04/21/23 15:03	1
Lithium	0.0263		0.0100	0.00250	mg/L		04/14/23 08:45	04/21/23 15:03	1
Manganese	0.0805		0.0100	0.00360	mg/L		04/14/23 08:45	04/21/23 15:03	1
Molybdenum	0.000998	J	0.00200	0.000910	mg/L		04/14/23 08:45	04/21/23 15:03	1
Selenium	<0.00500		0.00500	0.00140	mg/L		04/14/23 08:45	04/21/23 15:03	1
Sodium	70.9		1.00	0.460	mg/L		04/14/23 08:45	04/21/23 15:03	1
Strontium	0.610		0.00100	0.000530	mg/L		04/14/23 08:45	04/21/23 15:03	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	<0.200		0.200	0.100	mg/L			04/17/23 10:39	1
Chemical Oxygen Demand (SM 5220D LL)	9.13		5.00	4.80	mg/L			04/13/23 08:43	1
Total Suspended Solids (USGS I-3765-85)	<1.88		1.88	0.638	mg/L			04/11/23 09:47	1

Client Sample Results

Client: SCS Engineers

Project/Site: Climax Molybdenum Landfill - 2023 GW Sampling

Job ID: 310-253166-1

SDG: Climax Molybdenum Landfill - 27223194

Client Sample ID: MW-17

Date Collected: 04/07/23 17:05

Date Received: 04/10/23 16:40

Lab Sample ID: 310-253166-5

Matrix: Ground Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	7.78		5.00	2.25	mg/L			04/17/23 13:58	5
Sulfate	319		5.00	2.00	mg/L			04/17/23 13:58	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200	0.000530	mg/L		04/14/23 08:45	04/21/23 15:20	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		04/14/23 08:45	04/21/23 15:20	1
Iron	0.0473	J	0.100	0.0360	mg/L		04/14/23 08:45	04/21/23 15:20	1
Lithium	0.0718		0.0100	0.00250	mg/L		04/14/23 08:45	04/21/23 15:20	1
Manganese	1.39		0.0100	0.00360	mg/L		04/14/23 08:45	04/21/23 15:20	1
Molybdenum	0.00251		0.00200	0.000910	mg/L		04/14/23 08:45	04/21/23 15:20	1
Selenium	0.00526		0.00500	0.00140	mg/L		04/14/23 08:45	04/21/23 15:20	1
Sodium	61.4		1.00	0.460	mg/L		04/14/23 08:45	04/21/23 15:20	1
Strontium	0.672		0.00100	0.000530	mg/L		04/14/23 08:45	04/21/23 15:20	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	<0.200		0.200	0.100	mg/L			04/17/23 10:40	1
Chemical Oxygen Demand (SM 5220D LL)	5.46		5.00	4.80	mg/L			04/13/23 08:43	1
Total Suspended Solids (USGS I-3765-85)	1.13	J	1.88	0.638	mg/L			04/11/23 09:47	1

Client Sample Results

Client: SCS Engineers

Project/Site: Climax Molybdenum Landfill - 2023 GW Sampling

Job ID: 310-253166-1

SDG: Climax Molybdenum Landfill - 27223194

Client Sample ID: MW-18R

Date Collected: 04/07/23 13:15

Date Received: 04/10/23 16:40

Lab Sample ID: 310-253166-6

Matrix: Ground Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	8.24		5.00	2.25	mg/L			04/17/23 14:13	5
Sulfate	49.7		5.00	2.00	mg/L			04/17/23 14:13	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200	0.000530	mg/L		04/14/23 08:45	04/21/23 15:23	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		04/14/23 08:45	04/21/23 15:23	1
Iron	<0.100		0.100	0.0360	mg/L		04/14/23 08:45	04/21/23 15:23	1
Lithium	0.0329		0.0100	0.00250	mg/L		04/14/23 08:45	04/21/23 15:23	1
Manganese	<0.0100		0.0100	0.00360	mg/L		04/14/23 08:45	04/21/23 15:23	1
Molybdenum	0.00130	J	0.00200	0.000910	mg/L		04/14/23 08:45	04/21/23 15:23	1
Selenium	0.0580		0.00500	0.00140	mg/L		04/14/23 08:45	04/21/23 15:23	1
Sodium	53.6		1.00	0.460	mg/L		04/14/23 08:45	04/21/23 15:23	1
Strontium	0.329		0.00100	0.000530	mg/L		04/14/23 08:45	04/21/23 15:23	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	<0.200		0.200	0.100	mg/L			04/17/23 10:40	1
Chemical Oxygen Demand (SM 5220D LL)	<5.00		5.00	4.80	mg/L			04/13/23 08:43	1
Total Suspended Solids (USGS I-3765-85)	2.38		1.88	0.638	mg/L			04/11/23 09:47	1

Client Sample Results

Client: SCS Engineers

Project/Site: Climax Molybdenum Landfill - 2023 GW Sampling

Job ID: 310-253166-1

SDG: Climax Molybdenum Landfill - 27223194

Client Sample ID: MW-21

Date Collected: 04/07/23 16:14

Date Received: 04/10/23 16:40

Lab Sample ID: 310-253166-7

Matrix: Ground Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	127		5.00	2.25	mg/L			04/19/23 15:35	5
Sulfate	723		20.0	8.00	mg/L			04/20/23 10:20	20

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200	0.000530	mg/L		04/14/23 08:45	04/21/23 15:25	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		04/14/23 08:45	04/21/23 15:25	1
Iron	<0.100		0.100	0.0360	mg/L		04/14/23 08:45	04/21/23 15:25	1
Lithium	0.0245		0.0100	0.00250	mg/L		04/14/23 08:45	04/21/23 15:25	1
Manganese	0.0306		0.0100	0.00360	mg/L		04/14/23 08:45	04/21/23 15:25	1
Molybdenum	<0.00200		0.00200	0.000910	mg/L		04/14/23 08:45	04/21/23 15:25	1
Selenium	<0.00500		0.00500	0.00140	mg/L		04/14/23 08:45	04/21/23 15:25	1
Sodium	104		1.00	0.460	mg/L		04/14/23 08:45	04/21/23 15:25	1
Strontium	0.817		0.00100	0.000530	mg/L		04/14/23 08:45	04/21/23 15:25	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	<0.200		0.200	0.100	mg/L			04/17/23 10:42	1
Chemical Oxygen Demand (SM 5220D LL)	13.2		5.00	4.80	mg/L			04/13/23 08:43	1
Total Suspended Solids (USGS I-3765-85)	<1.88		1.88	0.638	mg/L			04/11/23 09:47	1

Client Sample Results

Client: SCS Engineers

Project/Site: Climax Molybdenum Landfill - 2023 GW Sampling

Job ID: 310-253166-1

SDG: Climax Molybdenum Landfill - 27223194

Client Sample ID: TW-2

Date Collected: 04/07/23 14:03

Date Received: 04/10/23 16:40

Lab Sample ID: 310-253166-8

Matrix: Ground Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	11.3		5.00	2.25	mg/L			04/19/23 15:51	5
Sulfate	322		5.00	2.00	mg/L			04/19/23 15:51	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200	0.000530	mg/L		04/14/23 08:45	04/21/23 15:28	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		04/14/23 08:45	04/21/23 15:28	1
Iron	<0.100		0.100	0.0360	mg/L		04/14/23 08:45	04/21/23 15:28	1
Lithium	0.0411		0.0100	0.00250	mg/L		04/14/23 08:45	04/21/23 15:28	1
Manganese	<0.0100		0.0100	0.00360	mg/L		04/14/23 08:45	04/21/23 15:28	1
Molybdenum	0.00148	J	0.00200	0.000910	mg/L		04/14/23 08:45	04/21/23 15:28	1
Selenium	0.0143		0.00500	0.00140	mg/L		04/14/23 08:45	04/21/23 15:28	1
Sodium	79.0		1.00	0.460	mg/L		04/14/23 08:45	04/21/23 15:28	1
Strontium	0.441		0.00100	0.000530	mg/L		04/14/23 08:45	04/21/23 15:28	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	<0.200		0.200	0.100	mg/L			04/17/23 10:42	1
Chemical Oxygen Demand (SM 5220D LL)	<5.00		5.00	4.80	mg/L			04/13/23 08:43	1
Total Suspended Solids (USGS I-3765-85)	<1.88		1.88	0.638	mg/L			04/11/23 09:47	1

Client Sample Results

Client: SCS Engineers

Project/Site: Climax Molybdenum Landfill - 2023 GW Sampling

Job ID: 310-253166-1

SDG: Climax Molybdenum Landfill - 27223194

Client Sample ID: MW-D

Date Collected: 04/07/23 00:00

Date Received: 04/10/23 16:40

Lab Sample ID: 310-253166-9

Matrix: Ground Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	8.39		5.00	2.25	mg/L			04/19/23 16:06	5
Sulfate	84.8		5.00	2.00	mg/L			04/19/23 16:06	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200	0.000530	mg/L		04/14/23 08:45	04/21/23 15:31	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		04/14/23 08:45	04/21/23 15:31	1
Iron	<0.100		0.100	0.0360	mg/L		04/14/23 08:45	04/21/23 15:31	1
Lithium	0.0228		0.0100	0.00250	mg/L		04/14/23 08:45	04/21/23 15:31	1
Manganese	<0.0100		0.0100	0.00360	mg/L		04/14/23 08:45	04/21/23 15:31	1
Molybdenum	0.00141	J	0.00200	0.000910	mg/L		04/14/23 08:45	04/21/23 15:31	1
Selenium	0.00220	J	0.00500	0.00140	mg/L		04/14/23 08:45	04/21/23 15:31	1
Sodium	39.6		1.00	0.460	mg/L		04/14/23 08:45	04/21/23 15:31	1
Strontium	0.368		0.00100	0.000530	mg/L		04/14/23 08:45	04/21/23 15:31	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	<0.200		0.200	0.100	mg/L			04/17/23 10:43	1
Chemical Oxygen Demand (SM 5220D LL)	9.81		5.00	4.80	mg/L			04/13/23 08:43	1
Total Suspended Solids (USGS I-3765-85)	<1.88		1.88	0.638	mg/L			04/11/23 09:47	1

Client Sample Results

Client: SCS Engineers

Project/Site: Climax Molybdenum Landfill - 2023 GW Sampling

Job ID: 310-253166-1

SDG: Climax Molybdenum Landfill - 27223194

Client Sample ID: Leachate Sump

Lab Sample ID: 310-253166-10

Date Collected: 04/07/23 00:00

Matrix: Wastewater

Date Received: 04/10/23 16:40

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	31.3		5.00	2.25	mg/L			04/19/23 16:22	5
Sulfate	1500		20.0	8.00	mg/L			04/20/23 10:36	20

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00326		0.00200	0.000530	mg/L		04/14/23 08:45	04/21/23 15:34	1
Cadmium	0.00191		0.000200	0.000100	mg/L		04/14/23 08:45	04/21/23 15:34	1
Iron	2.48		0.100	0.0360	mg/L		04/14/23 08:45	04/21/23 15:34	1
Lithium	0.00710	J	0.0100	0.00250	mg/L		04/14/23 08:45	04/21/23 15:34	1
Manganese	1.57		0.0100	0.00360	mg/L		04/14/23 08:45	04/21/23 15:34	1
Molybdenum	5.95		0.00800	0.00364	mg/L		04/14/23 08:45	04/23/23 15:36	4
Selenium	1.03		0.0200	0.00560	mg/L		04/14/23 08:45	04/23/23 15:36	4
Sodium	289		1.00	0.460	mg/L		04/14/23 08:45	04/21/23 15:34	1
Strontium	0.665		0.00100	0.000530	mg/L		04/14/23 08:45	04/21/23 15:34	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia as N (EPA 350.1)	<0.500		0.500	0.220	mg/L		04/18/23 09:49	04/18/23 22:10	1
Chemical Oxygen Demand (SM 5220D LL)	25.3		5.00	4.80	mg/L			04/13/23 08:43	1
Total Suspended Solids (USGS I-3765-85)	8.33		5.00	1.70	mg/L			04/11/23 09:47	1

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Definitions/Glossary

Client: SCS Engineers

Project/Site: Climax Molybdenum Landfill - 2023 GW Sampling

Job ID: 310-253166-1

SDG: Climax Molybdenum Landfill - 27223194

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

QC Sample Results

Client: SCS Engineers

Project/Site: Climax Molybdenum Landfill - 2023 GW Sampling

Job ID: 310-253166-1

SDG: Climax Molybdenum Landfill - 27223194

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 310-385084/3

Matrix: Water

Analysis Batch: 385084

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.00		1.00	0.450	mg/L			04/17/23 11:53	1
Sulfate	<1.00		1.00	0.400	mg/L			04/17/23 11:53	1

Lab Sample ID: LCS 310-385084/4

Matrix: Water

Analysis Batch: 385084

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	10.0	9.642		mg/L		96	90 - 110
Sulfate	10.0	10.01		mg/L		100	90 - 110

Lab Sample ID: 310-253166-1 MS

Matrix: Ground Water

Analysis Batch: 385084

Client Sample ID: MW-7

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	3.00	J	25.0	23.20		mg/L		81	80 - 120
Sulfate	73.6	F1	25.0	93.06	F1	mg/L		78	80 - 120

Lab Sample ID: 310-253166-1 MSD

Matrix: Ground Water

Analysis Batch: 385084

Client Sample ID: MW-7

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	3.00	J	25.0	23.92		mg/L		84	80 - 120	3	15
Sulfate	73.6	F1	25.0	95.47		mg/L		87	80 - 120	3	15

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-384129/1-A

Matrix: Water

Analysis Batch: 385209

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 384129

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200	0.000530	mg/L		04/14/23 08:45	04/21/23 14:35	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		04/14/23 08:45	04/21/23 14:35	1
Iron	<0.100		0.100	0.0360	mg/L		04/14/23 08:45	04/21/23 14:35	1
Lithium	<0.0100		0.0100	0.00250	mg/L		04/14/23 08:45	04/21/23 14:35	1
Manganese	<0.0100		0.0100	0.00360	mg/L		04/14/23 08:45	04/21/23 14:35	1
Molybdenum	<0.00200		0.00200	0.000910	mg/L		04/14/23 08:45	04/21/23 14:35	1
Selenium	<0.00500		0.00500	0.00140	mg/L		04/14/23 08:45	04/21/23 14:35	1
Sodium	<1.00		1.00	0.460	mg/L		04/14/23 08:45	04/21/23 14:35	1
Strontium	<0.00100		0.00100	0.000530	mg/L		04/14/23 08:45	04/21/23 14:35	1

Lab Sample ID: LCS 310-384129/2-A

Matrix: Water

Analysis Batch: 385209

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 384129

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	0.200	0.2015		mg/L		101	80 - 120

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QC Sample Results

Client: SCS Engineers

Project/Site: Climax Molybdenum Landfill - 2023 GW Sampling

Job ID: 310-253166-1

SDG: Climax Molybdenum Landfill - 27223194

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 310-384129/2-A

Matrix: Water

Analysis Batch: 385209

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 384129

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	0.100	0.1002		mg/L		100	80 - 120
Iron	0.200	0.2205		mg/L		110	80 - 120
Lithium	0.200	0.2126		mg/L		106	80 - 120
Manganese	0.100	0.09702		mg/L		97	80 - 120
Molybdenum	0.200	0.2006		mg/L		100	80 - 120
Selenium	0.400	0.4074		mg/L		102	80 - 120
Sodium	2.00	2.143		mg/L		107	80 - 120
Strontium	0.200	0.2123		mg/L		106	80 - 120

Lab Sample ID: 310-253166-1 MS

Matrix: Ground Water

Analysis Batch: 385209

Client Sample ID: MW-7

Prep Type: Total/NA

Prep Batch: 384129

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	0.000721	J	0.200	0.2032		mg/L		101	75 - 125
Cadmium	0.000166	J	0.100	0.09955		mg/L		99	75 - 125
Iron	0.0509	J	0.200	0.2783		mg/L		114	75 - 125
Lithium	0.0218		0.200	0.2318		mg/L		105	75 - 125
Manganese	1.98		0.100	2.144	4	mg/L		162	75 - 125
Molybdenum	0.00199	J	0.200	0.2125		mg/L		105	75 - 125
Selenium	0.00185	J	0.400	0.4098		mg/L		102	75 - 125
Sodium	75.2		2.00	77.27	4	mg/L		104	75 - 125
Strontium	0.506		0.200	0.7035		mg/L		99	75 - 125

Lab Sample ID: 310-253166-1 MSD

Matrix: Ground Water

Analysis Batch: 385209

Client Sample ID: MW-7

Prep Type: Total/NA

Prep Batch: 384129

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Arsenic	0.000721	J	0.200	0.2070		mg/L		103	75 - 125	2	20
Cadmium	0.000166	J	0.100	0.09953		mg/L		99	75 - 125	0	20
Iron	0.0509	J	0.200	0.2769		mg/L		113	75 - 125	1	20
Lithium	0.0218		0.200	0.2323		mg/L		105	75 - 125	0	20
Manganese	1.98		0.100	2.198	4	mg/L		216	75 - 125	3	20
Molybdenum	0.00199	J	0.200	0.2169		mg/L		107	75 - 125	2	20
Selenium	0.00185	J	0.400	0.4180		mg/L		104	75 - 125	2	20
Sodium	75.2		2.00	78.78	4	mg/L		179	75 - 125	2	20
Strontium	0.506		0.200	0.7044		mg/L		99	75 - 125	0	20

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 310-384511/38

Matrix: Water

Analysis Batch: 384511

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	<0.200		0.200	0.100	mg/L			04/17/23 10:32	1

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QC Sample Results

Client: SCS Engineers
Project/Site: Climax Molybdenum Landfill - 2023 GW Sampling

Job ID: 310-253166-1
SDG: Climax Molybdenum Landfill - 27223194

Method: 350.1 - Nitrogen, Ammonia (Continued)

Lab Sample ID: LCS 310-384511/39
Matrix: Water
Analysis Batch: 384511

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ammonia	7.80	7.833		mg/L		100	90 - 110

Lab Sample ID: 310-253166-1 MS
Matrix: Ground Water
Analysis Batch: 384511

Client Sample ID: MW-7
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ammonia	<0.200	F1	1.00	0.8908	F1	mg/L		89	90 - 110

Lab Sample ID: 310-253166-1 MSD
Matrix: Ground Water
Analysis Batch: 384511

Client Sample ID: MW-7
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Ammonia	<0.200	F1	1.00	0.8860	F1	mg/L		89	90 - 110	1	10

Lab Sample ID: MB 310-384620/1-A
Matrix: Water
Analysis Batch: 384711

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 384620

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia as N	<0.500		0.500	0.220	mg/L		04/18/23 09:49	04/18/23 22:03	1

Lab Sample ID: LCS 310-384620/2-A
Matrix: Water
Analysis Batch: 384711

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 384620

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ammonia as N	4.00	3.891		mg/L		97	90 - 110

Method: 5220D LL - COD

Lab Sample ID: MB 310-384186/32
Matrix: Water
Analysis Batch: 384186

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	<5.00		5.00	4.80	mg/L			04/13/23 08:43	1

Lab Sample ID: MB 310-384186/5
Matrix: Water
Analysis Batch: 384186

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	<5.00		5.00	4.80	mg/L			04/13/23 08:43	1

QC Sample Results

Client: SCS Engineers
Project/Site: Climax Molybdenum Landfill - 2023 GW Sampling

Job ID: 310-253166-1
SDG: Climax Molybdenum Landfill - 27223194

Method: 5220D LL - COD (Continued)

Lab Sample ID: LCS 310-384186/3
Matrix: Water
Analysis Batch: 384186

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chemical Oxygen Demand	125	123.2		mg/L		98	85 - 115

Lab Sample ID: LCS 310-384186/33
Matrix: Water
Analysis Batch: 384186

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chemical Oxygen Demand	125	114.2		mg/L		91	85 - 115

Lab Sample ID: 310-253166-2 MS
Matrix: Ground Water
Analysis Batch: 384186

Client Sample ID: MW-11
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chemical Oxygen Demand	59.5		50.0	114.5		mg/L		110	80 - 148

Lab Sample ID: 310-253166-2 MSD
Matrix: Ground Water
Analysis Batch: 384186

Client Sample ID: MW-11
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chemical Oxygen Demand	59.5		50.0	112.4		mg/L		106	80 - 148	2	10

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-383893/1
Matrix: Water
Analysis Batch: 383893

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.00		5.00	1.70	mg/L			04/11/23 09:47	1

Lab Sample ID: LCS 310-383893/2
Matrix: Water
Analysis Batch: 383893

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	96.00		mg/L		96	75 - 116

Lab Sample ID: MB 310-383923/1
Matrix: Water
Analysis Batch: 383923

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.00		5.00	1.70	mg/L			04/11/23 11:45	1

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QC Sample Results

Client: SCS Engineers

Job ID: 310-253166-1

Project/Site: Climax Molybdenum Landfill - 2023 GW Sampling

SDG: Climax Molybdenum Landfill - 27223194

Method: I-3765-85 - Residue, Non-filterable (TSS) (Continued)

Lab Sample ID: LCS 310-383923/2

Matrix: Water

Analysis Batch: 383923

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	94.00		mg/L		94	75 - 116

Lab Sample ID: 310-253166-2 DU

Matrix: Ground Water

Analysis Batch: 383923

Client Sample ID: MW-11

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Suspended Solids	48.0		44.00		mg/L		9	35

QC Association Summary

Client: SCS Engineers
Project/Site: Climax Molybdenum Landfill - 2023 GW Sampling

Job ID: 310-253166-1
SDG: Climax Molybdenum Landfill - 27223194

HPLC/IC

Analysis Batch: 385084

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-253166-1	MW-7	Total/NA	Ground Water	9056A	
310-253166-2	MW-11	Total/NA	Ground Water	9056A	
310-253166-3	MW-15	Total/NA	Ground Water	9056A	
310-253166-4	MW-16	Total/NA	Ground Water	9056A	
310-253166-5	MW-17	Total/NA	Ground Water	9056A	
310-253166-6	MW-18R	Total/NA	Ground Water	9056A	
310-253166-7	MW-21	Total/NA	Ground Water	9056A	
310-253166-7	MW-21	Total/NA	Ground Water	9056A	
310-253166-8	TW-2	Total/NA	Ground Water	9056A	
310-253166-9	MW-D	Total/NA	Ground Water	9056A	
310-253166-10	Leachate Sump	Total/NA	Wastewater	9056A	
310-253166-10	Leachate Sump	Total/NA	Wastewater	9056A	
MB 310-385084/3	Method Blank	Total/NA	Water	9056A	
LCS 310-385084/4	Lab Control Sample	Total/NA	Water	9056A	
310-253166-1 MS	MW-7	Total/NA	Ground Water	9056A	
310-253166-1 MSD	MW-7	Total/NA	Ground Water	9056A	

Metals

Prep Batch: 384129

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-253166-1	MW-7	Total/NA	Ground Water	3005A	
310-253166-2	MW-11	Total/NA	Ground Water	3005A	
310-253166-3	MW-15	Total/NA	Ground Water	3005A	
310-253166-4	MW-16	Total/NA	Ground Water	3005A	
310-253166-5	MW-17	Total/NA	Ground Water	3005A	
310-253166-6	MW-18R	Total/NA	Ground Water	3005A	
310-253166-7	MW-21	Total/NA	Ground Water	3005A	
310-253166-8	TW-2	Total/NA	Ground Water	3005A	
310-253166-9	MW-D	Total/NA	Ground Water	3005A	
310-253166-10	Leachate Sump	Total/NA	Wastewater	3005A	
MB 310-384129/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-384129/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-253166-1 MS	MW-7	Total/NA	Ground Water	3005A	
310-253166-1 MSD	MW-7	Total/NA	Ground Water	3005A	

Analysis Batch: 385209

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-253166-1	MW-7	Total/NA	Ground Water	6020B	384129
310-253166-2	MW-11	Total/NA	Ground Water	6020B	384129
310-253166-3	MW-15	Total/NA	Ground Water	6020B	384129
310-253166-4	MW-16	Total/NA	Ground Water	6020B	384129
310-253166-5	MW-17	Total/NA	Ground Water	6020B	384129
310-253166-6	MW-18R	Total/NA	Ground Water	6020B	384129
310-253166-7	MW-21	Total/NA	Ground Water	6020B	384129
310-253166-8	TW-2	Total/NA	Ground Water	6020B	384129
310-253166-9	MW-D	Total/NA	Ground Water	6020B	384129
310-253166-10	Leachate Sump	Total/NA	Wastewater	6020B	384129
MB 310-384129/1-A	Method Blank	Total/NA	Water	6020B	384129
LCS 310-384129/2-A	Lab Control Sample	Total/NA	Water	6020B	384129
310-253166-1 MS	MW-7	Total/NA	Ground Water	6020B	384129

Eurofins Cedar Falls

QC Association Summary

Client: SCS Engineers
Project/Site: Climax Molybdenum Landfill - 2023 GW Sampling

Job ID: 310-253166-1
SDG: Climax Molybdenum Landfill - 27223194

Metals (Continued)

Analysis Batch: 385209 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-253166-1 MSD	MW-7	Total/NA	Ground Water	6020B	384129

Analysis Batch: 385266

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-253166-2	MW-11	Total/NA	Ground Water	6020B	384129
310-253166-10	Leachate Sump	Total/NA	Wastewater	6020B	384129

General Chemistry

Analysis Batch: 383893

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-253166-3	MW-15	Total/NA	Ground Water	I-3765-85	
310-253166-4	MW-16	Total/NA	Ground Water	I-3765-85	
310-253166-5	MW-17	Total/NA	Ground Water	I-3765-85	
310-253166-6	MW-18R	Total/NA	Ground Water	I-3765-85	
310-253166-7	MW-21	Total/NA	Ground Water	I-3765-85	
310-253166-8	TW-2	Total/NA	Ground Water	I-3765-85	
310-253166-9	MW-D	Total/NA	Ground Water	I-3765-85	
310-253166-10	Leachate Sump	Total/NA	Wastewater	I-3765-85	
MB 310-383893/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-383893/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Analysis Batch: 383923

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-253166-1	MW-7	Total/NA	Ground Water	I-3765-85	
310-253166-2	MW-11	Total/NA	Ground Water	I-3765-85	
MB 310-383923/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-383923/2	Lab Control Sample	Total/NA	Water	I-3765-85	
310-253166-2 DU	MW-11	Total/NA	Ground Water	I-3765-85	

Analysis Batch: 384186

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-253166-1	MW-7	Total/NA	Ground Water	5220D LL	
310-253166-2	MW-11	Total/NA	Ground Water	5220D LL	
310-253166-3	MW-15	Total/NA	Ground Water	5220D LL	
310-253166-4	MW-16	Total/NA	Ground Water	5220D LL	
310-253166-5	MW-17	Total/NA	Ground Water	5220D LL	
310-253166-6	MW-18R	Total/NA	Ground Water	5220D LL	
310-253166-7	MW-21	Total/NA	Ground Water	5220D LL	
310-253166-8	TW-2	Total/NA	Ground Water	5220D LL	
310-253166-9	MW-D	Total/NA	Ground Water	5220D LL	
310-253166-10	Leachate Sump	Total/NA	Wastewater	5220D LL	
MB 310-384186/32	Method Blank	Total/NA	Water	5220D LL	
MB 310-384186/5	Method Blank	Total/NA	Water	5220D LL	
LCS 310-384186/3	Lab Control Sample	Total/NA	Water	5220D LL	
LCS 310-384186/33	Lab Control Sample	Total/NA	Water	5220D LL	
310-253166-2 MS	MW-11	Total/NA	Ground Water	5220D LL	
310-253166-2 MSD	MW-11	Total/NA	Ground Water	5220D LL	

QC Association Summary

Client: SCS Engineers
Project/Site: Climax Molybdenum Landfill - 2023 GW Sampling

Job ID: 310-253166-1
SDG: Climax Molybdenum Landfill - 27223194

General Chemistry

Analysis Batch: 384511

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-253166-1	MW-7	Total/NA	Ground Water	350.1	
310-253166-2	MW-11	Total/NA	Ground Water	350.1	
310-253166-3	MW-15	Total/NA	Ground Water	350.1	
310-253166-4	MW-16	Total/NA	Ground Water	350.1	
310-253166-5	MW-17	Total/NA	Ground Water	350.1	
310-253166-6	MW-18R	Total/NA	Ground Water	350.1	
310-253166-7	MW-21	Total/NA	Ground Water	350.1	
310-253166-8	TW-2	Total/NA	Ground Water	350.1	
310-253166-9	MW-D	Total/NA	Ground Water	350.1	
MB 310-384511/38	Method Blank	Total/NA	Water	350.1	
LCS 310-384511/39	Lab Control Sample	Total/NA	Water	350.1	
310-253166-1 MS	MW-7	Total/NA	Ground Water	350.1	
310-253166-1 MSD	MW-7	Total/NA	Ground Water	350.1	

Prep Batch: 384620

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-253166-10	Leachate Sump	Total/NA	Wastewater	Distill/Ammonia	
MB 310-384620/1-A	Method Blank	Total/NA	Water	Distill/Ammonia	
LCS 310-384620/2-A	Lab Control Sample	Total/NA	Water	Distill/Ammonia	

Analysis Batch: 384711

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-253166-10	Leachate Sump	Total/NA	Wastewater	350.1	384620
MB 310-384620/1-A	Method Blank	Total/NA	Water	350.1	384620
LCS 310-384620/2-A	Lab Control Sample	Total/NA	Water	350.1	384620

Lab Chronicle

Client: SCS Engineers
Project/Site: Climax Molybdenum Landfill - 2023 GW Sampling

Job ID: 310-253166-1
SDG: Climax Molybdenum Landfill - 27223194

Client Sample ID: MW-7

Date Collected: 04/07/23 12:38

Date Received: 04/10/23 16:40

Lab Sample ID: 310-253166-1

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	385084	DHM5	EET CF	04/17/23 12:24
Total/NA	Prep	3005A			384129	DHM5	EET CF	04/14/23 08:45
Total/NA	Analysis	6020B		1	385209	ZRI4	EET CF	04/21/23 14:43
Total/NA	Analysis	350.1		1	384511	ENB7	EET CF	04/17/23 10:33
Total/NA	Analysis	5220D LL		1	384186	D7CP	EET CF	04/13/23 08:43
Total/NA	Analysis	I-3765-85		1	383923	DGU1	EET CF	04/11/23 11:45

Client Sample ID: MW-11

Date Collected: 04/07/23 11:07

Date Received: 04/10/23 16:40

Lab Sample ID: 310-253166-2

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	385084	DHM5	EET CF	04/17/23 13:11
Total/NA	Prep	3005A			384129	DHM5	EET CF	04/14/23 08:45
Total/NA	Analysis	6020B		1	385209	ZRI4	EET CF	04/21/23 14:57
Total/NA	Prep	3005A			384129	DHM5	EET CF	04/14/23 08:45
Total/NA	Analysis	6020B		4	385266	ZRI4	EET CF	04/23/23 15:33
Total/NA	Analysis	350.1		1	384511	ENB7	EET CF	04/17/23 10:35
Total/NA	Analysis	5220D LL		1	384186	D7CP	EET CF	04/13/23 08:43
Total/NA	Analysis	I-3765-85		1	383923	DGU1	EET CF	04/11/23 11:45

Client Sample ID: MW-15

Date Collected: 04/07/23 11:50

Date Received: 04/10/23 16:40

Lab Sample ID: 310-253166-3

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	385084	DHM5	EET CF	04/17/23 13:26
Total/NA	Prep	3005A			384129	DHM5	EET CF	04/14/23 08:45
Total/NA	Analysis	6020B		1	385209	ZRI4	EET CF	04/21/23 15:00
Total/NA	Analysis	350.1		1	384511	ENB7	EET CF	04/17/23 10:37
Total/NA	Analysis	5220D LL		1	384186	D7CP	EET CF	04/13/23 08:43
Total/NA	Analysis	I-3765-85		1	383893	DGU1	EET CF	04/11/23 09:47

Client Sample ID: MW-16

Date Collected: 04/07/23 15:37

Date Received: 04/10/23 16:40

Lab Sample ID: 310-253166-4

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	385084	DHM5	EET CF	04/17/23 13:42
Total/NA	Prep	3005A			384129	DHM5	EET CF	04/14/23 08:45
Total/NA	Analysis	6020B		1	385209	ZRI4	EET CF	04/21/23 15:03
Total/NA	Analysis	350.1		1	384511	ENB7	EET CF	04/17/23 10:39
Total/NA	Analysis	5220D LL		1	384186	D7CP	EET CF	04/13/23 08:43
Total/NA	Analysis	I-3765-85		1	383893	DGU1	EET CF	04/11/23 09:47

Eurofins Cedar Falls

Lab Chronicle

Client: SCS Engineers
Project/Site: Climax Molybdenum Landfill - 2023 GW Sampling

Job ID: 310-253166-1
SDG: Climax Molybdenum Landfill - 27223194

Client Sample ID: MW-17

Date Collected: 04/07/23 17:05

Date Received: 04/10/23 16:40

Lab Sample ID: 310-253166-5

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	385084	DHM5	EET CF	04/17/23 13:58
Total/NA	Prep	3005A			384129	DHM5	EET CF	04/14/23 08:45
Total/NA	Analysis	6020B		1	385209	ZRI4	EET CF	04/21/23 15:20
Total/NA	Analysis	350.1		1	384511	ENB7	EET CF	04/17/23 10:40
Total/NA	Analysis	5220D LL		1	384186	D7CP	EET CF	04/13/23 08:43
Total/NA	Analysis	I-3765-85		1	383893	DGU1	EET CF	04/11/23 09:47

Client Sample ID: MW-18R

Date Collected: 04/07/23 13:15

Date Received: 04/10/23 16:40

Lab Sample ID: 310-253166-6

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	385084	DHM5	EET CF	04/17/23 14:13
Total/NA	Prep	3005A			384129	DHM5	EET CF	04/14/23 08:45
Total/NA	Analysis	6020B		1	385209	ZRI4	EET CF	04/21/23 15:23
Total/NA	Analysis	350.1		1	384511	ENB7	EET CF	04/17/23 10:40
Total/NA	Analysis	5220D LL		1	384186	D7CP	EET CF	04/13/23 08:43
Total/NA	Analysis	I-3765-85		1	383893	DGU1	EET CF	04/11/23 09:47

Client Sample ID: MW-21

Date Collected: 04/07/23 16:14

Date Received: 04/10/23 16:40

Lab Sample ID: 310-253166-7

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	385084	DHM5	EET CF	04/19/23 15:35
Total/NA	Analysis	9056A		20	385084	DHM5	EET CF	04/20/23 10:20
Total/NA	Prep	3005A			384129	DHM5	EET CF	04/14/23 08:45
Total/NA	Analysis	6020B		1	385209	ZRI4	EET CF	04/21/23 15:25
Total/NA	Analysis	350.1		1	384511	ENB7	EET CF	04/17/23 10:42
Total/NA	Analysis	5220D LL		1	384186	D7CP	EET CF	04/13/23 08:43
Total/NA	Analysis	I-3765-85		1	383893	DGU1	EET CF	04/11/23 09:47

Client Sample ID: TW-2

Date Collected: 04/07/23 14:03

Date Received: 04/10/23 16:40

Lab Sample ID: 310-253166-8

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	385084	DHM5	EET CF	04/19/23 15:51
Total/NA	Prep	3005A			384129	DHM5	EET CF	04/14/23 08:45
Total/NA	Analysis	6020B		1	385209	ZRI4	EET CF	04/21/23 15:28
Total/NA	Analysis	350.1		1	384511	ENB7	EET CF	04/17/23 10:42
Total/NA	Analysis	5220D LL		1	384186	D7CP	EET CF	04/13/23 08:43
Total/NA	Analysis	I-3765-85		1	383893	DGU1	EET CF	04/11/23 09:47

Eurofins Cedar Falls

Lab Chronicle

Client: SCS Engineers
Project/Site: Climax Molybdenum Landfill - 2023 GW Sampling

Job ID: 310-253166-1
SDG: Climax Molybdenum Landfill - 27223194

Client Sample ID: MW-D

Date Collected: 04/07/23 00:00

Date Received: 04/10/23 16:40

Lab Sample ID: 310-253166-9

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	385084	DHM5	EET CF	04/19/23 16:06
Total/NA	Prep	3005A			384129	DHM5	EET CF	04/14/23 08:45
Total/NA	Analysis	6020B		1	385209	ZRI4	EET CF	04/21/23 15:31
Total/NA	Analysis	350.1		1	384511	ENB7	EET CF	04/17/23 10:43
Total/NA	Analysis	5220D LL		1	384186	D7CP	EET CF	04/13/23 08:43
Total/NA	Analysis	I-3765-85		1	383893	DGU1	EET CF	04/11/23 09:47

Client Sample ID: Leachate Sump

Date Collected: 04/07/23 00:00

Date Received: 04/10/23 16:40

Lab Sample ID: 310-253166-10

Matrix: Wastewater

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	385084	DHM5	EET CF	04/19/23 16:22
Total/NA	Analysis	9056A		20	385084	DHM5	EET CF	04/20/23 10:36
Total/NA	Prep	3005A			384129	DHM5	EET CF	04/14/23 08:45
Total/NA	Analysis	6020B		1	385209	ZRI4	EET CF	04/21/23 15:34
Total/NA	Prep	3005A			384129	DHM5	EET CF	04/14/23 08:45
Total/NA	Analysis	6020B		4	385266	ZRI4	EET CF	04/23/23 15:36
Total/NA	Prep	Distill/Ammonia			384620	MQ8M	EET CF	04/18/23 09:49
Total/NA	Analysis	350.1		1	384711	ZJX4	EET CF	04/18/23 22:10
Total/NA	Analysis	5220D LL		1	384186	D7CP	EET CF	04/13/23 08:43
Total/NA	Analysis	I-3765-85		1	383893	DGU1	EET CF	04/11/23 09:47

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Accreditation/Certification Summary

Client: SCS Engineers

Job ID: 310-253166-1

Project/Site: Climax Molybdenum Landfill - 2023 GW Sampling

SDG: Climax Molybdenum Landfill - 27223194

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
6020B	3005A	Ground Water	Lithium
6020B	3005A	Wastewater	Lithium

Method Summary

Client: SCS Engineers

Project/Site: Climax Molybdenum Landfill - 2023 GW Sampling

Job ID: 310-253166-1

SDG: Climax Molybdenum Landfill - 27223194

Method	Method Description	Protocol	Laboratory
9056A	Anions, Ion Chromatography	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
350.1	Nitrogen, Ammonia	EPA	EET CF
5220D LL	COD	SM	EET CF
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
Distill/Ammonia	Distillation, Ammonia	None	EET CF

Protocol References:

EPA = US Environmental Protection Agency

None = None

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

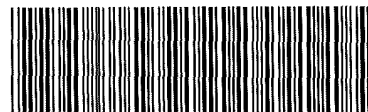
USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401



Environment Testing
America



310-253166 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: <u>SCS Engineers</u>			
City/State:	CITY	STATE	Project:
Receipt Information			
Date/Time Received:	DATE <u>4/10/23</u>	TIME <u>1640</u>	Received By: <u>AM</u>
Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☒ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other: _____			
Condition of Cooler/Containers			
Sample(s) received in Cooler? ☒ Yes ☐ No If yes: Cooler ID: _____			
Multiple Coolers? ☒ Yes ☐ No If yes: Cooler # <u>1</u> of <u>2</u>			
Cooler Custody Seals Present? ☐ Yes ☒ No If yes: Cooler custody seals intact? ☐ Yes ☐ No			
Sample Custody Seals Present? ☐ Yes ☒ No If yes: Sample custody seals intact? ☐ Yes ☐ No			
Trip Blank Present? ☐ Yes ☒ No If yes: Which VOA samples are in cooler? ↓			
Temperature Record			
Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other: _____ ☐ NONE			
Thermometer ID: <u>W</u>		Correction Factor (°C): <u>0</u>	
• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C): <u>0.8</u>		Corrected Temp (°C): <u>0.8</u>	
• Sample Container Temperature			
Container(s) used:	CONTAINER 1		CONTAINER 2
Uncorrected Temp (°C):			
Corrected Temp (°C):			
Exceptions Noted			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No a) If yes: Is there evidence that the chilling process began? ☐ Yes ☐ No			
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No			
NOTE: If yes, contact PM before proceeding If no, proceed with login			
Additional Comments			



Environment Testing
America

Place COC scanning label
here

Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: <u>SCS Engineers</u>			
City/State:	CITY	STATE	Project:
Receipt Information			
Date/Time Received:	DATE <u>4/10/23</u>	TIME <u>1040</u>	Received By: <u>AM</u>
Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☒ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other: _____			
Condition of Cooler/Containers			
Sample(s) received in Cooler?		☒ Yes ☐ No	If yes: Cooler ID: _____
Multiple Coolers?		☒ Yes ☐ No	If yes: Cooler # <u>2</u> of <u>2</u>
Cooler Custody Seals Present?		☐ Yes ☒ No	If yes: Cooler custody seals intact? ☐ Yes ☐ No
Sample Custody Seals Present?		☐ Yes ☒ No	If yes: Sample custody seals intact? ☐ Yes ☐ No
Trip Blank Present?		☐ Yes ☒ No	If yes: Which VOA samples are in cooler? ↓
Temperature Record			
Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other: _____ ☐ NONE			
Thermometer ID: <u>W</u>		Correction Factor (°C): <u>0</u>	
• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C): <u>-0.1</u>		Corrected Temp (°C): <u>-0.1</u>	
• Sample Container Temperature			
Container(s) used:	<u>CONTAINER 1</u>		<u>CONTAINER 2</u>
Uncorrected Temp (°C):			
Corrected Temp (°C):			
Exceptions Noted			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No a) If yes: Is there evidence that the chilling process began? ☐ Yes ☐ No			
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No			
NOTE: If yes, contact PM before proceeding. If no, proceed with login			
Additional Comments			

Eurofins Environment Testing North Central, LLC

3019 Venture Way, Cedar Falls, Iowa 50613

Phone 319-277-2401

Direct: 319-595-2013

SAMPLER:

Chad Dentlinger

SITE NAME: Climax Molybdenum Industrial Landfill

ADDRESS:

CITY/STATE/ZIP.

TELEPHONE NUMBER:

SIGNATURE OF SAMPLER:

Fax:

David

REPORT TO:

Kevin Jensen (kjensen@scsengineers.com)

SCS Engineers

Climax Molybdenum Landfill - 2023 Spring GW Sampling

Climax Molybdenum Landfill - 27223194

11690 All-State Court, Suite 100

West Des Moines, IA 50265

[illegible]

SAMPLING COMMENTS

SHIPPED VIA.

Relinquished by:

Date: / / Time:

Received by:

Date:

Relinquished by:

Time:

Received for lab by:

Temperature Upon Receipt

LABORATORY COMMENTS:

1.000

1

Received for lab by:	Date:	Time:	Temperature Upon Receipt:	LABORATORY COMMENTS:
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Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-253166-1

SDG Number: Climax Molybdenum Landfill - 27223194

Login Number: 253166

List Number: 1

Creator: Homolar, Dana J

List Source: Eurofins Cedar Falls

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

ANALYTICAL REPORT

PREPARED FOR

Attn: Kevin Jensen
SCS Engineers
1690 All State Court
Suite 100
West Des Moines, Iowa 50265

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JOB DESCRIPTION

Climax Molybdenum IW Landfill
SDG NUMBER 27223194

JOB NUMBER

310-261420-1

Eurofins Cedar Falls

Job Notes

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Authorization



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Authorized for release by
Meredith Liechti, Service Center Manager
meredith.liechti@et.eurofinsus.com
(319)277-2401

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Case Narrative

Client: SCS Engineers
Project/Site: Climax Molybdenum IW Landfill

Job ID: 310-261420-1
SDG: 27223194

Job ID: 310-261420-1

Laboratory: Eurofins Cedar Falls

Narrative

Job Narrative 310-261420-1

Receipt

The samples were received on 7/28/2023 4:15 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.8°C and 5.0°C

HPLC/IC

Method 9056A_ORGFM_28D: The following sample was diluted due to the nature of the sample matrix: MW-7 (310-261420-1). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals

Method 6020B: The reference method requires samples to be preserved to a pH of <2. The following samples were received with insufficient preservation at a pH of >2: MW-11 (310-261420-2), MW-16 (310-261420-4), MW-17 (310-261420-5) and MW-21 (310-261420-7). The sample(s) was preserved to the appropriate pH in the laboratory.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry

Method 5220D_LL: The following samples were analyzed at a dilution due to the chloride pre-screening results: MW-7 (310-261420-1) and MW-11 (310-261420-2). Elevated reporting limits are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Narrative

Job Narrative 310-261420-2

Receipt

The samples were received on 7/28/2023 4:15 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.8°C and 5.0°C

Metals

Method 200.8_CWA: The reference method requires samples to be preserved to a pH of <2. The following sample was received with insufficient preservation at a pH of >2: Leachate Sump (310-261420-10). The sample(s) was preserved to the appropriate pH in the laboratory.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Sample Summary

Client: SCS Engineers
Project/Site: Climax Molybdenum IW Landfill

Job ID: 310-261420-1
SDG: 27223194

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-261420-1	MW-7	Ground Water	07/27/23 18:49	07/28/23 16:15
310-261420-2	MW-11	Ground Water	07/27/23 17:25	07/28/23 16:15
310-261420-3	MW-15	Ground Water	07/27/23 17:58	07/28/23 16:15
310-261420-4	MW-16	Ground Water	07/28/23 08:34	07/28/23 16:15
310-261420-5	MW-17	Ground Water	07/27/23 20:40	07/28/23 16:15
310-261420-6	MW-18R	Ground Water	07/27/23 19:26	07/28/23 16:15
310-261420-7	MW-21	Ground Water	07/28/23 07:57	07/28/23 16:15
310-261420-8	TW-2	Ground Water	07/27/23 20:01	07/28/23 16:15
310-261420-9	MW-D	Ground Water	07/27/23 17:58	07/28/23 16:15
310-261420-10	Leachate Sump	Wastewater	07/28/23 09:15	07/28/23 16:15

Detection Summary

Client: SCS Engineers
Project/Site: Climax Molybdenum IW Landfill

Job ID: 310-261420-1
SDG: 27223194

Client Sample ID: MW-7

Lab Sample ID: 310-261420-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
Chloride	2.59	J	5.00	2.25	mg/L	5			9056A	Total/NA
Sulfate	78.0		5.00	2.10	mg/L	5			9056A	Total/NA
Arsenic	0.000601	J	0.00200	0.000530	mg/L	1			6020B	Total/NA
Cadmium	0.000114	J	0.000200	0.000100	mg/L	1			6020B	Total/NA
Iron	1.13		0.100	0.0360	mg/L	1			6020B	Total/NA
Lithium	0.0219		0.0100	0.00250	mg/L	1			6020B	Total/NA
Manganese	2.46		0.0100	0.00360	mg/L	1			6020B	Total/NA
Molybdenum	0.00165	J	0.00200	0.000910	mg/L	1			6020B	Total/NA
Sodium	69.6		1.00	0.460	mg/L	1			6020B	Total/NA
Strontium	0.538		0.00100	0.000530	mg/L	1			6020B	Total/NA
Chemical Oxygen Demand	20.3		5.00	4.80	mg/L	1			5220D LL	Total/NA
Total Suspended Solids	3.00	J	7.50	2.55	mg/L	1			I-3765-85	Total/NA

Client Sample ID: MW-11

Lab Sample ID: 310-261420-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
Chloride	22.7		5.00	2.25	mg/L	5			9056A	Total/NA
Sulfate	41.0		5.00	2.10	mg/L	5			9056A	Total/NA
Arsenic	0.00767		0.00200	0.000530	mg/L	1			6020B	Total/NA
Iron	31.4		0.100	0.0360	mg/L	1			6020B	Total/NA
Lithium	0.00553	J	0.0100	0.00250	mg/L	1			6020B	Total/NA
Manganese	5.00		0.0400	0.0144	mg/L	4			6020B	Total/NA
Molybdenum	0.00155	J	0.00200	0.000910	mg/L	1			6020B	Total/NA
Selenium	0.00175	J	0.00500	0.00140	mg/L	1			6020B	Total/NA
Sodium	85.6		1.00	0.460	mg/L	1			6020B	Total/NA
Strontium	0.572		0.00100	0.000530	mg/L	1			6020B	Total/NA
Ammonia	6.02		0.200	0.100	mg/L	1			350.1	Total/NA
Chemical Oxygen Demand	118		5.00	4.80	mg/L	1			5220D LL	Total/NA
Total Suspended Solids	80.0		30.0	10.2	mg/L	1			I-3765-85	Total/NA

Client Sample ID: MW-15

Lab Sample ID: 310-261420-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
Chloride	11.1		5.00	2.25	mg/L	5			9056A	Total/NA
Sulfate	117		5.00	2.10	mg/L	5			9056A	Total/NA
Lithium	0.0281		0.0100	0.00250	mg/L	1			6020B	Total/NA
Molybdenum	0.00209		0.00200	0.000910	mg/L	1			6020B	Total/NA
Selenium	0.00328	J	0.00500	0.00140	mg/L	1			6020B	Total/NA
Sodium	52.9		1.00	0.460	mg/L	1			6020B	Total/NA
Strontium	0.435		0.00100	0.000530	mg/L	1			6020B	Total/NA

Client Sample ID: MW-16

Lab Sample ID: 310-261420-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
Chloride	5.50		5.00	2.25	mg/L	5			9056A	Total/NA
Sulfate	435		5.00	2.10	mg/L	5			9056A	Total/NA
Cadmium	0.000101	J	0.000200	0.000100	mg/L	1			6020B	Total/NA
Lithium	0.0256		0.0100	0.00250	mg/L	1			6020B	Total/NA
Manganese	0.106		0.0100	0.00360	mg/L	1			6020B	Total/NA
Sodium	76.0		1.00	0.460	mg/L	1			6020B	Total/NA
Strontium	0.602		0.00100	0.000530	mg/L	1			6020B	Total/NA
Chemical Oxygen Demand	8.36		5.00	4.80	mg/L	1			5220D LL	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

Detection Summary

Client: SCS Engineers
Project/Site: Climax Molybdenum IW Landfill

Job ID: 310-261420-1
SDG: 27223194

Client Sample ID: MW-17

Lab Sample ID: 310-261420-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	8.74		5.00	2.25	mg/L	5		9056A	Total/NA
Sulfate	328		5.00	2.10	mg/L	5		9056A	Total/NA
Lithium	0.0668		0.0100	0.00250	mg/L	1		6020B	Total/NA
Manganese	0.717		0.0100	0.00360	mg/L	1		6020B	Total/NA
Molybdenum	0.00243		0.00200	0.000910	mg/L	1		6020B	Total/NA
Selenium	0.0230		0.00500	0.00140	mg/L	1		6020B	Total/NA
Sodium	62.8		1.00	0.460	mg/L	1		6020B	Total/NA
Strontium	0.627		0.00100	0.000530	mg/L	1		6020B	Total/NA
Chemical Oxygen Demand	6.31		5.00	4.80	mg/L	1		5220D LL	Total/NA
Total Suspended Solids	1.13	J	1.88	0.638	mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW-18R

Lab Sample ID: 310-261420-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	9.01		5.00	2.25	mg/L	5		9056A	Total/NA
Sulfate	53.1		5.00	2.10	mg/L	5		9056A	Total/NA
Lithium	0.0304		0.0100	0.00250	mg/L	1		6020B	Total/NA
Molybdenum	0.00129	J	0.00200	0.000910	mg/L	1		6020B	Total/NA
Selenium	0.0556		0.00500	0.00140	mg/L	1		6020B	Total/NA
Sodium	51.3		1.00	0.460	mg/L	1		6020B	Total/NA
Strontium	0.317		0.00100	0.000530	mg/L	1		6020B	Total/NA
Chemical Oxygen Demand	6.31		5.00	4.80	mg/L	1		5220D LL	Total/NA
Total Suspended Solids	1.25	J	1.88	0.638	mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW-21

Lab Sample ID: 310-261420-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	109		5.00	2.25	mg/L	5		9056A	Total/NA
Sulfate	704		10.0	4.20	mg/L	10		9056A	Total/NA
Cadmium	0.000188	J	0.000200	0.000100	mg/L	1		6020B	Total/NA
Lithium	0.0257		0.0100	0.00250	mg/L	1		6020B	Total/NA
Manganese	0.136		0.0100	0.00360	mg/L	1		6020B	Total/NA
Molybdenum	0.000980	J	0.00200	0.000910	mg/L	1		6020B	Total/NA
Selenium	0.0134		0.00500	0.00140	mg/L	1		6020B	Total/NA
Sodium	99.4		1.00	0.460	mg/L	1		6020B	Total/NA
Strontium	0.809		0.00100	0.000530	mg/L	1		6020B	Total/NA
Chemical Oxygen Demand	9.38		5.00	4.80	mg/L	1		5220D LL	Total/NA

Client Sample ID: TW-2

Lab Sample ID: 310-261420-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	13.3		5.00	2.25	mg/L	5		9056A	Total/NA
Sulfate	368		5.00	2.10	mg/L	5		9056A	Total/NA
Lithium	0.0413		0.0100	0.00250	mg/L	1		6020B	Total/NA
Molybdenum	0.00133	J	0.00200	0.000910	mg/L	1		6020B	Total/NA
Selenium	0.0161		0.00500	0.00140	mg/L	1		6020B	Total/NA
Sodium	84.7		1.00	0.460	mg/L	1		6020B	Total/NA
Strontium	0.465		0.00100	0.000530	mg/L	1		6020B	Total/NA
Chemical Oxygen Demand	8.02		5.00	4.80	mg/L	1		5220D LL	Total/NA

This Detection Summary does not include radiochemical test results.

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Detection Summary

Client: SCS Engineers
Project/Site: Climax Molybdenum IW Landfill

Job ID: 310-261420-1
SDG: 27223194

Client Sample ID: MW-D

Lab Sample ID: 310-261420-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	11.2		5.00	2.25	mg/L	5		9056A	Total/NA
Sulfate	119		5.00	2.10	mg/L	5		9056A	Total/NA
Lithium	0.0289		0.0100	0.00250	mg/L	1		6020B	Total/NA
Molybdenum	0.00205		0.00200	0.000910	mg/L	1		6020B	Total/NA
Selenium	0.00323	J	0.00500	0.00140	mg/L	1		6020B	Total/NA
Sodium	53.5		1.00	0.460	mg/L	1		6020B	Total/NA
Strontium	0.432		0.00100	0.000530	mg/L	1		6020B	Total/NA
Chemical Oxygen Demand	9.72		5.00	4.80	mg/L	1		5220D LL	Total/NA

Client Sample ID: Leachate Sump

Lab Sample ID: 310-261420-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	88.1		5.00	2.25	mg/L	5		300.0	Total/NA
Sulfate	2630		50.0	21.0	mg/L	50		300.0	Total/NA
Arsenic	0.00687		0.00200	0.000530	mg/L	1		200.8	Total/NA
Cadmium	0.00429		0.000200	0.000100	mg/L	1		200.8	Total/NA
Iron	0.793		0.100	0.0360	mg/L	1		200.8	Total/NA
Lithium	0.00974	J	0.0100	0.00250	mg/L	1		200.8	Total/NA
Manganese	0.418		0.0100	0.00360	mg/L	1		200.8	Total/NA
Molybdenum	10.9		0.0400	0.0182	mg/L	20		200.8	Total/NA
Selenium	0.449		0.0200	0.00560	mg/L	4		200.8	Total/NA
Sodium	946		4.00	1.84	mg/L	4		200.8	Total/NA
Strontium	0.738		0.00100	0.000530	mg/L	1		200.8	Total/NA
Ammonia as N	0.223	J	0.500	0.220	mg/L	1		350.1	Total/NA
Chemical Oxygen Demand	43.2		5.00	4.80	mg/L	1		5220D LL	Total/NA
Total Suspended Solids	10.5		7.50	2.55	mg/L	1		I-3765-85	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

Client Sample Results

Client: SCS Engineers
Project/Site: Climax Molybdenum IW Landfill

Job ID: 310-261420-1
SDG: 27223194

Client Sample ID: MW-7

Date Collected: 07/27/23 18:49

Date Received: 07/28/23 16:15

Lab Sample ID: 310-261420-1

Matrix: Ground Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2.59	J	5.00	2.25	mg/L			08/11/23 18:01	5
Sulfate	78.0		5.00	2.10	mg/L			08/11/23 18:01	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.000601	J	0.00200	0.000530	mg/L		08/01/23 08:55	08/11/23 20:42	1
Cadmium	0.000114	J	0.000200	0.000100	mg/L		08/01/23 08:55	08/11/23 20:42	1
Iron	1.13		0.100	0.0360	mg/L		08/01/23 08:55	08/11/23 20:42	1
Lithium	0.0219		0.0100	0.00250	mg/L		08/01/23 08:55	08/11/23 20:42	1
Manganese	2.46		0.0100	0.00360	mg/L		08/01/23 08:55	08/11/23 20:42	1
Molybdenum	0.00165	J	0.00200	0.000910	mg/L		08/01/23 08:55	08/11/23 20:42	1
Selenium	<0.00500		0.00500	0.00140	mg/L		08/01/23 08:55	08/11/23 20:42	1
Sodium	69.6		1.00	0.460	mg/L		08/01/23 08:55	08/11/23 20:42	1
Strontium	0.538		0.00100	0.000530	mg/L		08/01/23 08:55	08/11/23 20:42	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	<0.200		0.200	0.100	mg/L			08/03/23 22:28	1
Chemical Oxygen Demand (SM 5220D LL)	20.3		5.00	4.80	mg/L			08/03/23 09:25	1
Total Suspended Solids (USGS I-3765-85)	3.00	J	7.50	2.55	mg/L			07/31/23 10:59	1

Client Sample Results

Client: SCS Engineers
Project/Site: Climax Molybdenum IW Landfill

Job ID: 310-261420-1
SDG: 27223194

Client Sample ID: MW-11

Date Collected: 07/27/23 17:25

Date Received: 07/28/23 16:15

Lab Sample ID: 310-261420-2

Matrix: Ground Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	22.7		5.00	2.25	mg/L			08/11/23 19:02	5
Sulfate	41.0		5.00	2.10	mg/L			08/11/23 19:02	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00767		0.00200	0.000530	mg/L		08/01/23 08:55	08/11/23 21:00	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		08/01/23 08:55	08/11/23 21:00	1
Iron	31.4		0.100	0.0360	mg/L		08/01/23 08:55	08/11/23 21:00	1
Lithium	0.00553	J	0.0100	0.00250	mg/L		08/01/23 08:55	08/11/23 21:00	1
Manganese	5.00		0.0400	0.0144	mg/L		08/01/23 08:55	08/14/23 16:59	4
Molybdenum	0.00155	J	0.00200	0.000910	mg/L		08/01/23 08:55	08/11/23 21:00	1
Selenium	0.00175	J	0.00500	0.00140	mg/L		08/01/23 08:55	08/11/23 21:00	1
Sodium	85.6		1.00	0.460	mg/L		08/01/23 08:55	08/11/23 21:00	1
Strontium	0.572		0.00100	0.000530	mg/L		08/01/23 08:55	08/11/23 21:00	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	6.02		0.200	0.100	mg/L			08/03/23 22:30	1
Chemical Oxygen Demand (SM 5220D LL)	118		5.00	4.80	mg/L			08/03/23 09:25	1
Total Suspended Solids (USGS I-3765-85)	80.0		30.0	10.2	mg/L			07/31/23 08:46	1

Client Sample Results

Client: SCS Engineers
Project/Site: Climax Molybdenum IW Landfill

Job ID: 310-261420-1
SDG: 27223194

Client Sample ID: MW-15

Date Collected: 07/27/23 17:58

Date Received: 07/28/23 16:15

Lab Sample ID: 310-261420-3

Matrix: Ground Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	11.1		5.00	2.25	mg/L			08/11/23 19:14	5
Sulfate	117		5.00	2.10	mg/L			08/11/23 19:14	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200	0.000530	mg/L		08/01/23 08:55	08/11/23 21:03	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		08/01/23 08:55	08/11/23 21:03	1
Iron	<0.100		0.100	0.0360	mg/L		08/01/23 08:55	08/11/23 21:03	1
Lithium	0.0281		0.0100	0.00250	mg/L		08/01/23 08:55	08/11/23 21:03	1
Manganese	<0.0100		0.0100	0.00360	mg/L		08/01/23 08:55	08/11/23 21:03	1
Molybdenum	0.00209		0.00200	0.000910	mg/L		08/01/23 08:55	08/11/23 21:03	1
Selenium	0.00328	J	0.00500	0.00140	mg/L		08/01/23 08:55	08/11/23 21:03	1
Sodium	52.9		1.00	0.460	mg/L		08/01/23 08:55	08/11/23 21:03	1
Strontium	0.435		0.00100	0.000530	mg/L		08/01/23 08:55	08/11/23 21:03	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	<0.200		0.200	0.100	mg/L			08/03/23 22:30	1
Chemical Oxygen Demand (SM 5220D LL)	<5.00		5.00	4.80	mg/L			08/03/23 09:25	1
Total Suspended Solids (USGS I-3765-85)	<1.88		1.88	0.638	mg/L			07/31/23 08:46	1

Client Sample Results

Client: SCS Engineers
Project/Site: Climax Molybdenum IW Landfill

Job ID: 310-261420-1
SDG: 27223194

Client Sample ID: MW-16

Date Collected: 07/28/23 08:34

Date Received: 07/28/23 16:15

Lab Sample ID: 310-261420-4

Matrix: Ground Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.50		5.00	2.25	mg/L			08/11/23 19:26	5
Sulfate	435		5.00	2.10	mg/L			08/11/23 19:26	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200	0.000530	mg/L		08/01/23 08:55	08/11/23 21:05	1
Cadmium	0.000101	J	0.000200	0.000100	mg/L		08/01/23 08:55	08/11/23 21:05	1
Iron	<0.100		0.100	0.0360	mg/L		08/01/23 08:55	08/11/23 21:05	1
Lithium	0.0256		0.0100	0.00250	mg/L		08/01/23 08:55	08/11/23 21:05	1
Manganese	0.106		0.0100	0.00360	mg/L		08/01/23 08:55	08/11/23 21:05	1
Molybdenum	<0.00200		0.00200	0.000910	mg/L		08/01/23 08:55	08/11/23 21:05	1
Selenium	<0.00500		0.00500	0.00140	mg/L		08/01/23 08:55	08/11/23 21:05	1
Sodium	76.0		1.00	0.460	mg/L		08/01/23 08:55	08/11/23 21:05	1
Strontium	0.602		0.00100	0.000530	mg/L		08/01/23 08:55	08/11/23 21:05	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	<0.200		0.200	0.100	mg/L			08/03/23 22:31	1
Chemical Oxygen Demand (SM 5220D LL)	8.36		5.00	4.80	mg/L			08/03/23 09:25	1
Total Suspended Solids (USGS I-3765-85)	<1.88		1.88	0.638	mg/L			07/31/23 08:46	1

Client Sample Results

Client: SCS Engineers
Project/Site: Climax Molybdenum IW Landfill

Job ID: 310-261420-1
SDG: 27223194

Client Sample ID: MW-17

Date Collected: 07/27/23 20:40

Date Received: 07/28/23 16:15

Lab Sample ID: 310-261420-5

Matrix: Ground Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	8.74		5.00	2.25	mg/L			08/11/23 19:38	5
Sulfate	328		5.00	2.10	mg/L			08/11/23 19:38	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200	0.000530	mg/L		08/01/23 08:55	08/11/23 21:08	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		08/01/23 08:55	08/11/23 21:08	1
Iron	<0.100		0.100	0.0360	mg/L		08/01/23 08:55	08/11/23 21:08	1
Lithium	0.0668		0.0100	0.00250	mg/L		08/01/23 08:55	08/11/23 21:08	1
Manganese	0.717		0.0100	0.00360	mg/L		08/01/23 08:55	08/11/23 21:08	1
Molybdenum	0.00243		0.00200	0.000910	mg/L		08/01/23 08:55	08/11/23 21:08	1
Selenium	0.0230		0.00500	0.00140	mg/L		08/01/23 08:55	08/11/23 21:08	1
Sodium	62.8		1.00	0.460	mg/L		08/01/23 08:55	08/11/23 21:08	1
Strontium	0.627		0.00100	0.000530	mg/L		08/01/23 08:55	08/11/23 21:08	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	<0.200		0.200	0.100	mg/L			08/03/23 22:33	1
Chemical Oxygen Demand (SM 5220D LL)	6.31		5.00	4.80	mg/L			08/03/23 09:25	1
Total Suspended Solids (USGS I-3765-85)	1.13 J		1.88	0.638	mg/L			07/31/23 08:46	1

Client Sample Results

Client: SCS Engineers
Project/Site: Climax Molybdenum IW Landfill

Job ID: 310-261420-1
SDG: 27223194

Client Sample ID: MW-18R

Lab Sample ID: 310-261420-6

Date Collected: 07/27/23 19:26

Matrix: Ground Water

Date Received: 07/28/23 16:15

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	9.01		5.00	2.25	mg/L			08/11/23 19:50	5
Sulfate	53.1		5.00	2.10	mg/L			08/11/23 19:50	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200	0.000530	mg/L		08/01/23 08:55	08/11/23 21:11	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		08/01/23 08:55	08/11/23 21:11	1
Iron	<0.100		0.100	0.0360	mg/L		08/01/23 08:55	08/11/23 21:11	1
Lithium	0.0304		0.0100	0.00250	mg/L		08/01/23 08:55	08/11/23 21:11	1
Manganese	<0.0100		0.0100	0.00360	mg/L		08/01/23 08:55	08/11/23 21:11	1
Molybdenum	0.00129	J	0.00200	0.000910	mg/L		08/01/23 08:55	08/11/23 21:11	1
Selenium	0.0556		0.00500	0.00140	mg/L		08/01/23 08:55	08/11/23 21:11	1
Sodium	51.3		1.00	0.460	mg/L		08/01/23 08:55	08/11/23 21:11	1
Strontium	0.317		0.00100	0.000530	mg/L		08/01/23 08:55	08/11/23 21:11	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	<0.200		0.200	0.100	mg/L			08/03/23 22:33	1
Chemical Oxygen Demand (SM 5220D LL)	6.31		5.00	4.80	mg/L			08/03/23 09:25	1
Total Suspended Solids (USGS I-3765-85)	1.25	J	1.88	0.638	mg/L			07/31/23 08:46	1

Client Sample Results

Client: SCS Engineers
Project/Site: Climax Molybdenum IW Landfill

Job ID: 310-261420-1
SDG: 27223194

Client Sample ID: MW-21

Date Collected: 07/28/23 07:57

Date Received: 07/28/23 16:15

Lab Sample ID: 310-261420-7

Matrix: Ground Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	109		5.00	2.25	mg/L			08/11/23 20:02	5
Sulfate	704		10.0	4.20	mg/L			08/14/23 09:28	10

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200	0.000530	mg/L		08/01/23 08:55	08/11/23 21:13	1
Cadmium	0.000188	J	0.000200	0.000100	mg/L		08/01/23 08:55	08/11/23 21:13	1
Iron	<0.100		0.100	0.0360	mg/L		08/01/23 08:55	08/11/23 21:13	1
Lithium	0.0257		0.0100	0.00250	mg/L		08/01/23 08:55	08/11/23 21:13	1
Manganese	0.136		0.0100	0.00360	mg/L		08/01/23 08:55	08/11/23 21:13	1
Molybdenum	0.000980	J	0.00200	0.000910	mg/L		08/01/23 08:55	08/11/23 21:13	1
Selenium	0.0134		0.00500	0.00140	mg/L		08/01/23 08:55	08/11/23 21:13	1
Sodium	99.4		1.00	0.460	mg/L		08/01/23 08:55	08/11/23 21:13	1
Strontium	0.809		0.00100	0.000530	mg/L		08/01/23 08:55	08/11/23 21:13	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	<0.200		0.200	0.100	mg/L			08/03/23 22:35	1
Chemical Oxygen Demand (SM 5220D LL)	9.38		5.00	4.80	mg/L			08/03/23 09:25	1
Total Suspended Solids (USGS I-3765-85)	<5.00		5.00	1.70	mg/L			07/31/23 10:59	1

Client Sample Results

Client: SCS Engineers
Project/Site: Climax Molybdenum IW Landfill

Job ID: 310-261420-1
SDG: 27223194

Client Sample ID: TW-2

Date Collected: 07/27/23 20:01

Date Received: 07/28/23 16:15

Lab Sample ID: 310-261420-8

Matrix: Ground Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	13.3		5.00	2.25	mg/L			08/11/23 20:14	5
Sulfate	368		5.00	2.10	mg/L			08/11/23 20:14	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200	0.000530	mg/L		08/01/23 08:55	08/11/23 21:16	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		08/01/23 08:55	08/11/23 21:16	1
Iron	<0.100		0.100	0.0360	mg/L		08/01/23 08:55	08/11/23 21:16	1
Lithium	0.0413		0.0100	0.00250	mg/L		08/01/23 08:55	08/11/23 21:16	1
Manganese	<0.0100		0.0100	0.00360	mg/L		08/01/23 08:55	08/11/23 21:16	1
Molybdenum	0.00133	J	0.00200	0.000910	mg/L		08/01/23 08:55	08/11/23 21:16	1
Selenium	0.0161		0.00500	0.00140	mg/L		08/01/23 08:55	08/11/23 21:16	1
Sodium	84.7		1.00	0.460	mg/L		08/01/23 08:55	08/11/23 21:16	1
Strontium	0.465		0.00100	0.000530	mg/L		08/01/23 08:55	08/11/23 21:16	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	<0.200		0.200	0.100	mg/L			08/03/23 22:36	1
Chemical Oxygen Demand (SM 5220D LL)	8.02		5.00	4.80	mg/L			08/03/23 09:25	1
Total Suspended Solids (USGS I-3765-85)	<5.00		5.00	1.70	mg/L			07/31/23 10:59	1

Client Sample Results

Client: SCS Engineers
Project/Site: Climax Molybdenum IW Landfill

Job ID: 310-261420-1
SDG: 27223194

Client Sample ID: MW-D

Date Collected: 07/27/23 17:58

Date Received: 07/28/23 16:15

Lab Sample ID: 310-261420-9

Matrix: Ground Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	11.2		5.00	2.25	mg/L			08/11/23 20:26	5
Sulfate	119		5.00	2.10	mg/L			08/11/23 20:26	5

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200	0.000530	mg/L		08/01/23 08:55	08/11/23 21:18	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		08/01/23 08:55	08/11/23 21:18	1
Iron	<0.100		0.100	0.0360	mg/L		08/01/23 08:55	08/11/23 21:18	1
Lithium	0.0289		0.0100	0.00250	mg/L		08/01/23 08:55	08/11/23 21:18	1
Manganese	<0.0100		0.0100	0.00360	mg/L		08/01/23 08:55	08/11/23 21:18	1
Molybdenum	0.00205		0.00200	0.000910	mg/L		08/01/23 08:55	08/11/23 21:18	1
Selenium	0.00323	J	0.00500	0.00140	mg/L		08/01/23 08:55	08/11/23 21:18	1
Sodium	53.5		1.00	0.460	mg/L		08/01/23 08:55	08/11/23 21:18	1
Strontium	0.432		0.00100	0.000530	mg/L		08/01/23 08:55	08/11/23 21:18	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	<0.200		0.200	0.100	mg/L			08/03/23 22:37	1
Chemical Oxygen Demand (SM 5220D LL)	9.72		5.00	4.80	mg/L			08/03/23 09:25	1
Total Suspended Solids (USGS I-3765-85)	<5.00		5.00	1.70	mg/L			07/31/23 10:59	1

Client Sample Results

Client: SCS Engineers
Project/Site: Climax Molybdenum IW Landfill

Job ID: 310-261420-1
SDG: 27223194

Client Sample ID: Leachate Sump

Lab Sample ID: 310-261420-10

Date Collected: 07/28/23 09:15

Matrix: Wastewater

Date Received: 07/28/23 16:15

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	88.1		5.00	2.25	mg/L			08/11/23 20:38	5
Sulfate	2630		50.0	21.0	mg/L			08/14/23 09:40	50

Method: EPA 200.8 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00687		0.00200	0.000530	mg/L		08/01/23 08:55	08/11/23 21:21	1
Cadmium	0.00429		0.000200	0.000100	mg/L		08/01/23 08:55	08/11/23 21:21	1
Iron	0.793		0.100	0.0360	mg/L		08/01/23 08:55	08/11/23 21:21	1
Lithium	0.00974	J	0.0100	0.00250	mg/L		08/01/23 08:55	08/11/23 21:21	1
Manganese	0.418		0.0100	0.00360	mg/L		08/01/23 08:55	08/11/23 21:21	1
Molybdenum	10.9		0.0400	0.0182	mg/L		08/01/23 08:55	08/15/23 14:37	20
Selenium	0.449		0.0200	0.00560	mg/L		08/01/23 08:55	08/14/23 17:12	4
Sodium	946		4.00	1.84	mg/L		08/01/23 08:55	08/14/23 17:12	4
Strontium	0.738		0.00100	0.000530	mg/L		08/01/23 08:55	08/11/23 21:21	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia as N (EPA 350.1)	0.223	J	0.500	0.220	mg/L		08/08/23 09:38	08/08/23 22:28	1
Chemical Oxygen Demand (SM 5220D LL)	43.2		5.00	4.80	mg/L			08/03/23 09:25	1
Total Suspended Solids (USGS I-3765-85)	10.5		7.50	2.55	mg/L			07/31/23 08:46	1

Definitions/Glossary

Client: SCS Engineers
Project/Site: Climax Molybdenum IW Landfill

Job ID: 310-261420-1
SDG: 27223194

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

QC Sample Results

Client: SCS Engineers
Project/Site: Climax Molybdenum IW Landfill

Job ID: 310-261420-1
SDG: 27223194

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 310-396539/3

Matrix: Water

Analysis Batch: 396539

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.00		1.00	0.450	mg/L			08/11/23 16:24	1
Sulfate	<1.00		1.00	0.420	mg/L			08/11/23 16:24	1

Lab Sample ID: LCS 310-396539/4

Matrix: Water

Analysis Batch: 396539

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	10.0	9.943		mg/L		99	90 - 110
Sulfate	10.0	10.47		mg/L		105	90 - 110

Lab Sample ID: 310-261420-1 MS

Matrix: Ground Water

Analysis Batch: 396539

Client Sample ID: MW-7

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	2.59	J	25.0	27.53		mg/L		100	80 - 120
Sulfate	78.0		25.0	102.8		mg/L		99	80 - 120

Lab Sample ID: 310-261420-1 MSD

Matrix: Ground Water

Analysis Batch: 396539

Client Sample ID: MW-7

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	2.59	J	25.0	27.56		mg/L		100	80 - 120	0	15
Sulfate	78.0		25.0	102.4		mg/L		98	80 - 120	0	15

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-395209/1-A

Matrix: Water

Analysis Batch: 396703

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 395209

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200	0.000530	mg/L		08/01/23 08:55	08/15/23 14:33	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		08/01/23 08:55	08/15/23 14:33	1
Iron	<0.100		0.100	0.0360	mg/L		08/01/23 08:55	08/15/23 14:33	1
Lithium	<0.0100		0.0100	0.00250	mg/L		08/01/23 08:55	08/15/23 14:33	1
Manganese	<0.0100		0.0100	0.00360	mg/L		08/01/23 08:55	08/15/23 14:33	1
Molybdenum	<0.00200		0.00200	0.000910	mg/L		08/01/23 08:55	08/15/23 14:33	1
Selenium	<0.00500		0.00500	0.00140	mg/L		08/01/23 08:55	08/15/23 14:33	1
Sodium	<1.00		1.00	0.460	mg/L		08/01/23 08:55	08/15/23 14:33	1
Strontium	<0.00100		0.00100	0.000530	mg/L		08/01/23 08:55	08/15/23 14:33	1

Lab Sample ID: LCS 310-395209/2-A

Matrix: Water

Analysis Batch: 396703

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 395209

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	0.200	0.1919		mg/L		96	80 - 120

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QC Sample Results

Client: SCS Engineers
Project/Site: Climax Molybdenum IW Landfill

Job ID: 310-261420-1
SDG: 27223194

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 310-395209/2-A
Matrix: Water
Analysis Batch: 396703

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 395209

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	0.100	0.09222		mg/L		92	80 - 120
Iron	0.200	0.2192		mg/L		110	80 - 120
Lithium	0.200	0.2112		mg/L		106	80 - 120
Manganese	0.100	0.08730		mg/L		87	80 - 120
Molybdenum	0.200	0.1861		mg/L		93	80 - 120
Selenium	0.400	0.3771		mg/L		94	80 - 120
Sodium	2.00	2.066		mg/L		103	80 - 120
Strontium	0.200	0.1995		mg/L		100	80 - 120

Lab Sample ID: 310-261420-1 DU
Matrix: Ground Water
Analysis Batch: 396451

Client Sample ID: MW-7
Prep Type: Total/NA
Prep Batch: 395209

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Arsenic	0.000601	J	0.0005660	J	mg/L		6	20
Cadmium	0.000114	J	0.0001130	J	mg/L		0.9	20
Iron	1.13		1.118		mg/L		1	20
Lithium	0.0219		0.02090		mg/L		4	20
Manganese	2.46		2.484		mg/L		1	20
Molybdenum	0.00165	J	0.001536	J	mg/L		7	20
Selenium	<0.00500		<0.00500		mg/L		NC	20
Sodium	69.6		67.19		mg/L		4	20
Strontium	0.538		0.5360		mg/L		0.4	20

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 310-395567/203
Matrix: Water
Analysis Batch: 395567

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	<0.200		0.200	0.100	mg/L			08/03/23 22:26	1

Lab Sample ID: LCS 310-395567/204
Matrix: Water
Analysis Batch: 395567

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ammonia	8.55	8.507		mg/L		99	90 - 110

Lab Sample ID: 310-261420-1 MS
Matrix: Ground Water
Analysis Batch: 395567

Client Sample ID: MW-7
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ammonia	<0.200		1.00	1.083		mg/L		108	90 - 110

Eurofins Cedar Falls

QC Sample Results

Client: SCS Engineers
Project/Site: Climax Molybdenum IW Landfill

Job ID: 310-261420-1
SDG: 27223194

Method: 350.1 - Nitrogen, Ammonia (Continued)

Lab Sample ID: 310-261420-1 MSD
Matrix: Ground Water
Analysis Batch: 395567

Client Sample ID: MW-7
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Ammonia	<0.200		1.00	0.9922		mg/L		99	90 - 110	9	10

Lab Sample ID: MB 310-395895/1-A
Matrix: Water
Analysis Batch: 395985

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 395895

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia as N	<0.500		0.500	0.220	mg/L		08/08/23 09:38	08/08/23 22:22	1

Lab Sample ID: LCS 310-395895/2-A
Matrix: Water
Analysis Batch: 395985

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 395895

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ammonia as N	4.00	4.028		mg/L		101	90 - 110

Method: 5220D LL - COD

Lab Sample ID: MB 310-395489/32
Matrix: Water
Analysis Batch: 395489

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	<5.00		5.00	4.80	mg/L			08/03/23 09:25	1

Lab Sample ID: MB 310-395489/60
Matrix: Water
Analysis Batch: 395489

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	<5.00		5.00	4.80	mg/L			08/03/23 09:25	1

Lab Sample ID: LCS 310-395489/33
Matrix: Water
Analysis Batch: 395489

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chemical Oxygen Demand	125	125.5		mg/L		100	85 - 115

Lab Sample ID: LCS 310-395489/63
Matrix: Water
Analysis Batch: 395489

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chemical Oxygen Demand	125	121.4		mg/L		97	85 - 115

Eurofins Cedar Falls

QC Sample Results

Client: SCS Engineers
Project/Site: Climax Molybdenum IW Landfill

Job ID: 310-261420-1
SDG: 27223194

Method: 5220D LL - COD (Continued)

Lab Sample ID: 310-261420-8 MS

Matrix: Ground Water

Analysis Batch: 395489

Client Sample ID: TW-2

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chemical Oxygen Demand	8.02		50.0	69.14		mg/L		122	80 - 148

Lab Sample ID: 310-261420-8 MSD

Matrix: Ground Water

Analysis Batch: 395489

Client Sample ID: TW-2

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chemical Oxygen Demand	8.02		50.0	66.07		mg/L		116	80 - 148	5	10

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-395116/1

Matrix: Water

Analysis Batch: 395116

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.00		5.00	1.70	mg/L			07/31/23 08:46	1

Lab Sample ID: LCS 310-395116/2

Matrix: Water

Analysis Batch: 395116

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	95.00		mg/L		95	75 - 116

Lab Sample ID: MB 310-395156/1

Matrix: Water

Analysis Batch: 395156

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.00		5.00	1.70	mg/L			07/31/23 10:59	1

Lab Sample ID: LCS 310-395156/2

Matrix: Water

Analysis Batch: 395156

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	95.00		mg/L		95	75 - 116

QC Association Summary

Client: SCS Engineers
Project/Site: Climax Molybdenum IW Landfill

Job ID: 310-261420-1
SDG: 27223194

HPLC/IC

Analysis Batch: 396539

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-261420-1	MW-7	Total/NA	Ground Water	9056A	
310-261420-2	MW-11	Total/NA	Ground Water	9056A	
310-261420-3	MW-15	Total/NA	Ground Water	9056A	
310-261420-4	MW-16	Total/NA	Ground Water	9056A	
310-261420-5	MW-17	Total/NA	Ground Water	9056A	
310-261420-6	MW-18R	Total/NA	Ground Water	9056A	
310-261420-7	MW-21	Total/NA	Ground Water	9056A	
310-261420-7	MW-21	Total/NA	Ground Water	9056A	
310-261420-8	TW-2	Total/NA	Ground Water	9056A	
310-261420-9	MW-D	Total/NA	Ground Water	9056A	
310-261420-10	Leachate Sump	Total/NA	Wastewater	300.0	
310-261420-10	Leachate Sump	Total/NA	Wastewater	300.0	
MB 310-396539/3	Method Blank	Total/NA	Water	9056A	
LCS 310-396539/4	Lab Control Sample	Total/NA	Water	9056A	
310-261420-1 MS	MW-7	Total/NA	Ground Water	9056A	
310-261420-1 MSD	MW-7	Total/NA	Ground Water	9056A	

Metals

Prep Batch: 395209

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-261420-1	MW-7	Total/NA	Ground Water	3005A	
310-261420-2	MW-11	Total/NA	Ground Water	3005A	
310-261420-3	MW-15	Total/NA	Ground Water	3005A	
310-261420-4	MW-16	Total/NA	Ground Water	3005A	
310-261420-5	MW-17	Total/NA	Ground Water	3005A	
310-261420-6	MW-18R	Total/NA	Ground Water	3005A	
310-261420-7	MW-21	Total/NA	Ground Water	3005A	
310-261420-8	TW-2	Total/NA	Ground Water	3005A	
310-261420-9	MW-D	Total/NA	Ground Water	3005A	
310-261420-10	Leachate Sump	Total/NA	Wastewater	200.8	
MB 310-395209/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-395209/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-261420-1 DU	MW-7	Total/NA	Ground Water	3005A	

Analysis Batch: 396451

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-261420-1	MW-7	Total/NA	Ground Water	6020B	395209
310-261420-2	MW-11	Total/NA	Ground Water	6020B	395209
310-261420-3	MW-15	Total/NA	Ground Water	6020B	395209
310-261420-4	MW-16	Total/NA	Ground Water	6020B	395209
310-261420-5	MW-17	Total/NA	Ground Water	6020B	395209
310-261420-6	MW-18R	Total/NA	Ground Water	6020B	395209
310-261420-7	MW-21	Total/NA	Ground Water	6020B	395209
310-261420-8	TW-2	Total/NA	Ground Water	6020B	395209
310-261420-9	MW-D	Total/NA	Ground Water	6020B	395209
310-261420-10	Leachate Sump	Total/NA	Wastewater	200.8	395209
310-261420-1 DU	MW-7	Total/NA	Ground Water	6020B	395209

QC Association Summary

Client: SCS Engineers
Project/Site: Climax Molybdenum IW Landfill

Job ID: 310-261420-1
SDG: 27223194

Metals

Analysis Batch: 396587

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-261420-2	MW-11	Total/NA	Ground Water	6020B	395209
310-261420-10	Leachate Sump	Total/NA	Wastewater	200.8	395209

Analysis Batch: 396703

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-261420-10	Leachate Sump	Total/NA	Wastewater	200.8	395209
MB 310-395209/1-A	Method Blank	Total/NA	Water	6020B	395209
LCS 310-395209/2-A	Lab Control Sample	Total/NA	Water	6020B	395209

General Chemistry

Analysis Batch: 395116

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-261420-2	MW-11	Total/NA	Ground Water	I-3765-85	
310-261420-3	MW-15	Total/NA	Ground Water	I-3765-85	
310-261420-4	MW-16	Total/NA	Ground Water	I-3765-85	
310-261420-5	MW-17	Total/NA	Ground Water	I-3765-85	
310-261420-6	MW-18R	Total/NA	Ground Water	I-3765-85	
310-261420-10	Leachate Sump	Total/NA	Wastewater	I-3765-85	
MB 310-395116/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-395116/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Analysis Batch: 395156

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-261420-1	MW-7	Total/NA	Ground Water	I-3765-85	
310-261420-7	MW-21	Total/NA	Ground Water	I-3765-85	
310-261420-8	TW-2	Total/NA	Ground Water	I-3765-85	
310-261420-9	MW-D	Total/NA	Ground Water	I-3765-85	
MB 310-395156/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-395156/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Analysis Batch: 395489

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-261420-1	MW-7	Total/NA	Ground Water	5220D LL	
310-261420-2	MW-11	Total/NA	Ground Water	5220D LL	
310-261420-3	MW-15	Total/NA	Ground Water	5220D LL	
310-261420-4	MW-16	Total/NA	Ground Water	5220D LL	
310-261420-5	MW-17	Total/NA	Ground Water	5220D LL	
310-261420-6	MW-18R	Total/NA	Ground Water	5220D LL	
310-261420-7	MW-21	Total/NA	Ground Water	5220D LL	
310-261420-8	TW-2	Total/NA	Ground Water	5220D LL	
310-261420-9	MW-D	Total/NA	Ground Water	5220D LL	
310-261420-10	Leachate Sump	Total/NA	Wastewater	5220D LL	
MB 310-395489/32	Method Blank	Total/NA	Water	5220D LL	
MB 310-395489/60	Method Blank	Total/NA	Water	5220D LL	
LCS 310-395489/33	Lab Control Sample	Total/NA	Water	5220D LL	
LCS 310-395489/63	Lab Control Sample	Total/NA	Water	5220D LL	
310-261420-8 MS	TW-2	Total/NA	Ground Water	5220D LL	
310-261420-8 MSD	TW-2	Total/NA	Ground Water	5220D LL	

QC Association Summary

Client: SCS Engineers
Project/Site: Climax Molybdenum IW Landfill

Job ID: 310-261420-1
SDG: 27223194

General Chemistry

Analysis Batch: 395567

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-261420-1	MW-7	Total/NA	Ground Water	350.1	
310-261420-2	MW-11	Total/NA	Ground Water	350.1	
310-261420-3	MW-15	Total/NA	Ground Water	350.1	
310-261420-4	MW-16	Total/NA	Ground Water	350.1	
310-261420-5	MW-17	Total/NA	Ground Water	350.1	
310-261420-6	MW-18R	Total/NA	Ground Water	350.1	
310-261420-7	MW-21	Total/NA	Ground Water	350.1	
310-261420-8	TW-2	Total/NA	Ground Water	350.1	
310-261420-9	MW-D	Total/NA	Ground Water	350.1	
MB 310-395567/203	Method Blank	Total/NA	Water	350.1	
LCS 310-395567/204	Lab Control Sample	Total/NA	Water	350.1	
310-261420-1 MS	MW-7	Total/NA	Ground Water	350.1	
310-261420-1 MSD	MW-7	Total/NA	Ground Water	350.1	

Prep Batch: 395895

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-261420-10	Leachate Sump	Total/NA	Wastewater	Distill/Ammonia	
MB 310-395895/1-A	Method Blank	Total/NA	Water	Distill/Ammonia	
LCS 310-395895/2-A	Lab Control Sample	Total/NA	Water	Distill/Ammonia	

Analysis Batch: 395985

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-261420-10	Leachate Sump	Total/NA	Wastewater	350.1	395895
MB 310-395895/1-A	Method Blank	Total/NA	Water	350.1	395895
LCS 310-395895/2-A	Lab Control Sample	Total/NA	Water	350.1	395895

Lab Chronicle

Client: SCS Engineers
Project/Site: Climax Molybdenum IW Landfill

Job ID: 310-261420-1
SDG: 27223194

Client Sample ID: MW-7

Date Collected: 07/27/23 18:49

Date Received: 07/28/23 16:15

Lab Sample ID: 310-261420-1

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	396539	QTZ5	EET CF	08/11/23 18:01
Total/NA	Prep	3005A			395209	DHM5	EET CF	08/01/23 08:55
Total/NA	Analysis	6020B		1	396451	DHM5	EET CF	08/11/23 20:42
Total/NA	Analysis	350.1		1	395567	ZJX4	EET CF	08/03/23 22:28
Total/NA	Analysis	5220D LL		1	395489	ENB7	EET CF	08/03/23 09:25
Total/NA	Analysis	I-3765-85		1	395156	T8GC	EET CF	07/31/23 10:59

Client Sample ID: MW-11

Date Collected: 07/27/23 17:25

Date Received: 07/28/23 16:15

Lab Sample ID: 310-261420-2

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	396539	QTZ5	EET CF	08/11/23 19:02
Total/NA	Prep	3005A			395209	DHM5	EET CF	08/01/23 08:55
Total/NA	Analysis	6020B		1	396451	DHM5	EET CF	08/11/23 21:00
Total/NA	Prep	3005A			395209	DHM5	EET CF	08/01/23 08:55
Total/NA	Analysis	6020B		4	396587	A6US	EET CF	08/14/23 16:59
Total/NA	Analysis	350.1		1	395567	ZJX4	EET CF	08/03/23 22:30
Total/NA	Analysis	5220D LL		1	395489	ENB7	EET CF	08/03/23 09:25
Total/NA	Analysis	I-3765-85		1	395116	T8GC	EET CF	07/31/23 08:46

Client Sample ID: MW-15

Date Collected: 07/27/23 17:58

Date Received: 07/28/23 16:15

Lab Sample ID: 310-261420-3

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	396539	QTZ5	EET CF	08/11/23 19:14
Total/NA	Prep	3005A			395209	DHM5	EET CF	08/01/23 08:55
Total/NA	Analysis	6020B		1	396451	DHM5	EET CF	08/11/23 21:03
Total/NA	Analysis	350.1		1	395567	ZJX4	EET CF	08/03/23 22:30
Total/NA	Analysis	5220D LL		1	395489	ENB7	EET CF	08/03/23 09:25
Total/NA	Analysis	I-3765-85		1	395116	T8GC	EET CF	07/31/23 08:46

Client Sample ID: MW-16

Date Collected: 07/28/23 08:34

Date Received: 07/28/23 16:15

Lab Sample ID: 310-261420-4

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	396539	QTZ5	EET CF	08/11/23 19:26
Total/NA	Prep	3005A			395209	DHM5	EET CF	08/01/23 08:55
Total/NA	Analysis	6020B		1	396451	DHM5	EET CF	08/11/23 21:05
Total/NA	Analysis	350.1		1	395567	ZJX4	EET CF	08/03/23 22:31
Total/NA	Analysis	5220D LL		1	395489	ENB7	EET CF	08/03/23 09:25
Total/NA	Analysis	I-3765-85		1	395116	T8GC	EET CF	07/31/23 08:46

Eurofins Cedar Falls

Lab Chronicle

Client: SCS Engineers
Project/Site: Climax Molybdenum IW Landfill

Job ID: 310-261420-1
SDG: 27223194

Client Sample ID: MW-17

Date Collected: 07/27/23 20:40

Date Received: 07/28/23 16:15

Lab Sample ID: 310-261420-5

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	396539	QTZ5	EET CF	08/11/23 19:38
Total/NA	Prep	3005A			395209	DHM5	EET CF	08/01/23 08:55
Total/NA	Analysis	6020B		1	396451	DHM5	EET CF	08/11/23 21:08
Total/NA	Analysis	350.1		1	395567	ZJX4	EET CF	08/03/23 22:33
Total/NA	Analysis	5220D LL		1	395489	ENB7	EET CF	08/03/23 09:25
Total/NA	Analysis	I-3765-85		1	395116	T8GC	EET CF	07/31/23 08:46

Client Sample ID: MW-18R

Date Collected: 07/27/23 19:26

Date Received: 07/28/23 16:15

Lab Sample ID: 310-261420-6

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	396539	QTZ5	EET CF	08/11/23 19:50
Total/NA	Prep	3005A			395209	DHM5	EET CF	08/01/23 08:55
Total/NA	Analysis	6020B		1	396451	DHM5	EET CF	08/11/23 21:11
Total/NA	Analysis	350.1		1	395567	ZJX4	EET CF	08/03/23 22:33
Total/NA	Analysis	5220D LL		1	395489	ENB7	EET CF	08/03/23 09:25
Total/NA	Analysis	I-3765-85		1	395116	T8GC	EET CF	07/31/23 08:46

Client Sample ID: MW-21

Date Collected: 07/28/23 07:57

Date Received: 07/28/23 16:15

Lab Sample ID: 310-261420-7

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	396539	QTZ5	EET CF	08/11/23 20:02
Total/NA	Analysis	9056A		10	396539	QTZ5	EET CF	08/14/23 09:28
Total/NA	Prep	3005A			395209	DHM5	EET CF	08/01/23 08:55
Total/NA	Analysis	6020B		1	396451	DHM5	EET CF	08/11/23 21:13
Total/NA	Analysis	350.1		1	395567	ZJX4	EET CF	08/03/23 22:35
Total/NA	Analysis	5220D LL		1	395489	ENB7	EET CF	08/03/23 09:25
Total/NA	Analysis	I-3765-85		1	395156	T8GC	EET CF	07/31/23 10:59

Client Sample ID: TW-2

Date Collected: 07/27/23 20:01

Date Received: 07/28/23 16:15

Lab Sample ID: 310-261420-8

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	396539	QTZ5	EET CF	08/11/23 20:14
Total/NA	Prep	3005A			395209	DHM5	EET CF	08/01/23 08:55
Total/NA	Analysis	6020B		1	396451	DHM5	EET CF	08/11/23 21:16
Total/NA	Analysis	350.1		1	395567	ZJX4	EET CF	08/03/23 22:36
Total/NA	Analysis	5220D LL		1	395489	ENB7	EET CF	08/03/23 09:25
Total/NA	Analysis	I-3765-85		1	395156	T8GC	EET CF	07/31/23 10:59

Eurofins Cedar Falls

Lab Chronicle

Client: SCS Engineers
Project/Site: Climax Molybdenum IW Landfill

Job ID: 310-261420-1
SDG: 27223194

Client Sample ID: MW-D

Date Collected: 07/27/23 17:58

Date Received: 07/28/23 16:15

Lab Sample ID: 310-261420-9

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	396539	QTZ5	EET CF	08/11/23 20:26
Total/NA	Prep	3005A			395209	DHM5	EET CF	08/01/23 08:55
Total/NA	Analysis	6020B		1	396451	DHM5	EET CF	08/11/23 21:18
Total/NA	Analysis	350.1		1	395567	ZJX4	EET CF	08/03/23 22:37
Total/NA	Analysis	5220D LL		1	395489	ENB7	EET CF	08/03/23 09:25
Total/NA	Analysis	I-3765-85		1	395156	T8GC	EET CF	07/31/23 10:59

Client Sample ID: Leachate Sump

Date Collected: 07/28/23 09:15

Date Received: 07/28/23 16:15

Lab Sample ID: 310-261420-10

Matrix: Wastewater

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		5	396539	QTZ5	EET CF	08/11/23 20:38
Total/NA	Analysis	300.0		50	396539	QTZ5	EET CF	08/14/23 09:40
Total/NA	Prep	200.8			395209	DHM5	EET CF	08/01/23 08:55
Total/NA	Analysis	200.8		1	396451	DHM5	EET CF	08/11/23 21:21
Total/NA	Prep	200.8			395209	DHM5	EET CF	08/01/23 08:55
Total/NA	Analysis	200.8		4	396587	A6US	EET CF	08/14/23 17:12
Total/NA	Prep	200.8			395209	DHM5	EET CF	08/01/23 08:55
Total/NA	Analysis	200.8		20	396703	A6US	EET CF	08/15/23 14:37
Total/NA	Prep	Distill/Ammonia			395895	MQ8M	EET CF	08/08/23 09:38
Total/NA	Analysis	350.1		1	395985	ZJX4	EET CF	08/08/23 22:28
Total/NA	Analysis	5220D LL		1	395489	ENB7	EET CF	08/03/23 09:25
Total/NA	Analysis	I-3765-85		1	395116	T8GC	EET CF	07/31/23 08:46

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Accreditation/Certification Summary

Client: SCS Engineers
Project/Site: Climax Molybdenum IW Landfill

Job ID: 310-261420-1
SDG: 27223194

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-23
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.			
Analysis Method	Prep Method	Matrix	Analyte
6020B	3005A	Ground Water	Lithium

Method Summary

Client: SCS Engineers
Project/Site: Climax Molybdenum IW Landfill

Job ID: 310-261420-1
SDG: 27223194

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	EPA	EET CF
9056A	Anions, Ion Chromatography	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
350.1	Nitrogen, Ammonia	EPA	EET CF
5220D LL	COD	SM	EET CF
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
Distill/Ammonia	Distillation, Ammonia	None	EET CF

Protocol References:

EPA = US Environmental Protection Agency

None = None

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401



Environment Testing
America



310-261420 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: <u>SCS Engineers</u>			
City/State:	CITY	STATE	Project:
Receipt Information			
Date/Time Received:	DATE <u>7/28/23</u>	TIME <u>1145</u>	Received By: <u>Am</u>
Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☒ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other: _____			
Condition of Cooler/Containers			
Sample(s) received in Cooler?		☒ Yes ☐ No If yes: Cooler ID: <u>7/28/23 Am</u>	
Multiple Coolers?		☒ Yes ☒ No If yes: Cooler # <u>1</u> of <u>2</u>	
Cooler Custody Seals Present?		☐ Yes ☒ No If yes: Cooler custody seals intact? ☐ Yes ☐ No	
Sample Custody Seals Present?		☐ Yes ☒ No If yes: Sample custody seals intact? ☐ Yes ☐ No	
Trip Blank Present?		☐ Yes ☒ No If yes: Which VOA samples are in cooler? ↓	
Temperature Record			
Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other: _____ ☐ NONE			
Thermometer ID: <u>R</u>		Correction Factor (°C): <u>0</u>	
• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C): <u>5.0</u>		Corrected Temp (°C) <u>5.0</u>	
• Sample Container Temperature			
Container(s) used:	CONTAINER 1		CONTAINER 2
Uncorrected Temp (°C):			
Corrected Temp (°C):			
Exceptions Noted			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No a) If yes: Is there evidence that the chilling process began? ☐ Yes ☐ No			
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No			
NOTE: If yes, contact PM before proceeding If no, proceed with login			
Additional Comments			



Environment Testing
America

Place COC scanning label
here

Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: <u>SCS</u>			
City/State:	CITY	STATE	Project:
		<u>IA</u>	
Receipt Information			
Date/Time Received:	DATE	TIME	Received By:
	<u>7/28/23</u>	<u>1615</u>	<u>ST/AM</u>
Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee			
☒ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other: _____			
Condition of Cooler/Containers			
Sample(s) received in Cooler? ☒ Yes ☐ No If yes: Cooler ID: _____			
Multiple Coolers? ☒ Yes ☐ No If yes: Cooler # <u>2</u> of <u>2</u>			
Cooler Custody Seals Present? ☐ Yes ☒ No If yes: Cooler custody seals intact? ☐ Yes ☐ No			
Sample Custody Seals Present? ☐ Yes ☒ No If yes: Sample custody seals intact? ☐ Yes ☐ No			
Trip Blank Present? ☐ Yes ☐ No If yes: Which VOA samples are in cooler? ↓			
Temperature Record			
Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other: _____ ☐ NONE			
Thermometer ID: <u>R</u>		Correction Factor (°C): <u>0</u>	
• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C): <u>7.3</u>		Corrected Temp (°C): <u>7.3</u>	
• Sample Container Temperature			
Container(s) used:	CONTAINER 1	CONTAINER 2	
	<u>1L plastic</u>		
Uncorrected Temp (°C):	<u>1.8</u>		
Corrected Temp (°C):	<u>1.8</u>		
Exceptions Noted			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No			
a) If yes: Is there evidence that the chilling process began? ☐ Yes ☐ No			
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No			
NOTE If yes, contact PM before proceeding If no, proceed with login			
Additional Comments			

Eurofins Environment Testing North Central, LLC

3019 Venture Way Cedar Falls, Iowa 50613

Phone 319-277 2401

Direct 319 595-2013

SAMPLER

Chad Dentinger

REPORT TO:

Kevin Jensen (kjensen@scsengineers.com)

SITE NAME Climax Molybdenum Industrial Landfill

COMPANY NAME

SCS Engineers

ADDRESS:

PROJECT NAME:

Climax Molybdenum Landfill 2023 Fall GW Sampling

CITY/STATE/ZIP:

PROJECT NUMBER:

Climax Molybdenum Landfill 27223194

TELEPHONE NUMBER:

ADDRESS:

1650 All-State Court, Suite 100

SIGNATURE OF SAMPLER:

CITY/STATE/ZIP:

West Des Moines, IA 50265

Fax:

Sample ID	# of Containers Ordered	Date Sampled	Time Sampled	# of Containers Shipped	Grab	Composite	Field Filtered	Preservative						Matrix						Analyze For																	
								Ice	NO ₃ (Red & White Label)	HCl (Blue & White Label)	NaOH (Orange & White Label)	H ₂ SO ₄ Plastic (Yellow & White Label)	H ₂ SO ₄ Glass (Yellow & White Label)	None (Black & White Label)	Trip Blank	Groundwater	Wastewater	Drinking Water	Sediment	Soil	Trip Blank	Total Arsenic	Total Cadmium	Total Iron	Total Lithium	Total Manganese	Total Molybdenum	Total Selenium	Total Sodium	Total Strontium	Total Sulfate	Total Suspended Solids			Ammonia Nitrogen	Chloride	Chemical Oxygen Demand
MW 7		7-27	18:49		X													X																X	X	X	
MW 11		7-27	17:25		X													X																	X	X	X
MW 15		7-27	17:58		X													X																	X	X	X
MW 16		7-28	08:34		X													X																	X	X	X
MW 17		7-27	20:40		X													X																	X	X	X
MW 18R		7-27	19:26		X													X																	X	X	X
MW-21		7-28	08:57		X													X																	X	X	X
TW-2		7-27	20:01		X													X																	X	X	X
MW-D		7-27	17:53		X													X																	X	X	X
Leachate Sump		7-28	09:15		X														X																X	X	X

SAMPLING COMMENTS:

SHIPPED VIA:

Relinquished by:	Date:	7-28-23	Time:	12:45	Received by:	Date:		Time:	
Received per lab by:	Date:	7-28-23	Time:	16:15	Temperature Upon Receipt:				
LABORATORY COMMENTS									

Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-261420-1

SDG Number: 27223194

Login Number: 261420

List Number: 1

Creator: Muehling, Angela C

List Source: Eurofins Cedar Falls

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



Appendix B2

Data Validation

Completed by: Sean Marczewski
 Sampling Date: 4/7/2023
 Lab Report Date: 8/28/2023 (Revision 1)
 Site Name: Climax Molybdenum Landfill
 Lab Report Number: 310-253166-1

OK NO N/A NOTES

Sample Collection and Sample Handling

Chain of Custody
 Temperature
 Preservation
 Condition
 Case Narrative
 Reporting Limits
 Holding Times

X			
X			
X			
X			
X			
X			
X			

Analytical Sensitivity and Blanks

Method Blank Detections
 Trip Blank Detections

X			
		X	

Accuracy

ICV/CCV
 LCS/LCSD

X			
X			

MS/MSD

	X		Percent recovery for sulfate below limits associated with analysis batch 385084.
			Percent recovery for ammonia below limits associated with analysis batch 384711.
		X	

Surrogates (organics only)

Precision

QA/QC Sample RPDs

X			
X			The duplicate sample was collected from MW-15 during the spring 2023 sampling event. All parameters had <50% relative difference. Constituents with J flag concentrations were not considered for the duplicate sample comparisons.

Field Duplicates



Appendix C

Summary of Groundwater Chemistry

SCS ENGINEERS

Summary of Groundwater Chemistry
Climax Molybdenum Industrial Landfill (56-SDP-06-80P)

	Sample Date	MW-7 UPG	MW-18R UPG	MW-11 DNG	MW-15 DNG	MW-16 DNG	MW-17 DNG	MW-21 DNG	TW-2 DNG
Total Metals Constituents									
Arsenic, mg/L (CAS NO - 7440-38-2)	4/14/2015	< 0.001	0.006	0.008	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
	7/15/2015	N/A	0.004	N/A	N/A	N/A	N/A	N/A	N/A
	10/13/2015	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
	5/24/2016	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
	10/10/2016	< 0.01	< 0.01	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
	4/11/2017	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
	10/18/2017	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
	4/12/2018	0.000854	< 0.002	0.00385	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
	8/2/2018	0.00124	< 0.002	0.00675	< 0.002	< 0.002	0.000583	< 0.002	< 0.002
	4/9/2019	< 0.002	< 0.002	0.00639	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
	8/28/2019	0.000836	< 0.002	0.00721	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
	3/16/2020	< 0.002	< 0.002	0.00599	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
	3/16/2020	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.002
	7/28/2020	0.00169*	< 0.002	0.00505	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
	7/28/2020	N/A	N/A	N/A	< 0.002	N/A	N/A	N/A	N/A
	3/18/2021	0.000951*	< 0.002	0.00821	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
	3/18/2021	< 0.002	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	9/1/2021	0.000799*	< 0.002	0.00651	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
	9/1/2021	N/A	N/A	N/A	< 0.002	N/A	N/A	N/A	N/A
	6/29/2022	0.00259	< 0.002	0.00434	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
	6/29/2022	N/A	N/A	N/A	< 0.002	N/A	N/A	N/A	N/A
	8/16/2022	0.00113*	< 0.002	0.00944	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
	8/16/2022	N/A	N/A	N/A	< 0.002	N/A	N/A	N/A	N/A
	4/7/2023	0.000721*	< 0.002	0.00636	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
	4/7/2023	N/A	N/A	N/A	< 0.002	N/A	N/A	N/A	N/A
	7/27/2023	0.000601*	< 0.002	0.00767	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
	7/27/2023	N/A	N/A	N/A	< 0.002	N/A	N/A	N/A	N/A
Cadmium, mg/L (CAS NO - 7440-43-9)	4/14/2015	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
	7/15/2015	N/A	< 0.001	N/A	N/A	N/A	N/A	N/A	N/A
	10/13/2015	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
	5/24/2016	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
	10/10/2016	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
	4/11/2017	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
	10/18/2017	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
	4/12/2018	0.0001	< 0.0005	< 0.0005	< 0.0005	0.000189	< 0.0005	< 0.0005	< 0.0005
	8/2/2018	0.000144	< 0.0005	0.000246	< 0.0005	0.000129	< 0.0005	< 0.0005	< 0.0005
	4/9/2019	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.000191	< 0.0005	< 0.0005	< 0.0005
	8/28/2019	< 0.0001	< 0.0001	< 0.0001	< 0.0001	0.000078	< 0.0001	0.000145	< 0.0001
	3/16/2020	0.000054*	< 0.0001	< 0.0001	< 0.0001	0.000044*	< 0.0001	0.000051*	< 0.0001
	3/16/2020	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.0001
	7/28/2020	< 0.0001	< 0.0001	< 0.0001	< 0.0001	0.000125	< 0.0001	0.000184	< 0.0001
	7/28/2020	N/A	N/A	N/A	< 0.0001	N/A	N/A	N/A	N/A
	3/18/2021	0.000091*	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
	3/18/2021	0.000114	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	9/1/2021	0.000075*	< 0.0001	< 0.0001	< 0.0001	0.000218	< 0.0001	0.000145	< 0.0001
	9/1/2021	N/A	N/A	N/A	< 0.0001	N/A	N/A	N/A	N/A
	6/29/2022	< 0.0001	< 0.0001	< 0.0001	< 0.0001	0.000381	< 0.0001	0.000201	< 0.0001
	6/29/2022	N/A	N/A	N/A	< 0.0001	N/A	N/A	N/A	N/A
	8/16/2022	< 0.0001	< 0.0001	< 0.0001	< 0.0001	0.000169	< 0.0001	0.000155	< 0.0001
	8/16/2022	N/A	N/A	N/A	< 0.0001	N/A	N/A	N/A	N/A
	4/7/2023	0.000166*	< 0.0002	0.000166*	< 0.0002	0.000132*	< 0.0002	< 0.0002	< 0.0002
	4/7/2023	N/A	N/A	N/A	< 0.0002	N/A	N/A	N/A	N/A
	7/27/2023	0.000114*	< 0.0002	< 0.0002	< 0.0002	0.000101*	< 0.0002	0.000188*	< 0.0002
	7/27/2023	N/A	N/A	N/A	< 0.0002	N/A	N/A	N/A	N/A

SCS ENGINEERS

Summary of Groundwater Chemistry
Climax Molybdenum Industrial Landfill (56-SDP-06-80P)

	Sample Date	MW-7 UPG	MW-18R UPG	MW-11 DNG	MW-15 DNG	MW-16 DNG	MW-17 DNG	MW-21 DNG	TW-2 DNG
Total Metals Constituents									
Iron, mg/L (CAS NO - 7439-89-6)	1/15/2015	N/A	< 0.02	N/A	N/A	N/A	N/A	N/A	N/A
	4/14/2015	0.13	14	8.5	0.13	0.29	0.12	1.2	0.21
	7/15/2015	N/A	9.6	N/A	N/A	N/A	N/A	N/A	N/A
	10/13/2015	0.9	1.4	13	0.22	0.44	0.57	1.4	1.7
	5/24/2016	0.1	0.05	39	< 0.02	0.37	< 0.02	< 0.02	0.08
	10/10/2016	0.03	0.37	58	< 0.02	0.03	0.1	0.18	0.04
	4/11/2017	0.14	0.12	40	0.09	0.17	0.14	0.26	0.08
	10/18/2017	0.03	0.07	37	0.03	0.06	0.07	0.1	< 0.02
	4/12/2018	0.0948	< 0.1	40.9	< 0.1	< 0.1	0.171	< 0.1	< 0.1
	8/2/2018	< 0.1	0.303	54.6	0.163	< 0.1	0.24	< 0.1	< 0.1
	4/9/2019	0.292	< 0.1	20.6	< 0.1	< 0.1	0.0691	< 0.1	< 0.1
	8/28/2019	0.327	< 0.1	35.9	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
	3/16/2020	0.817	< 0.1	40.1	< 0.1	< 0.1	0.116	< 0.1	< 0.1
	3/16/2020	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.1
	7/28/2020	3.42	0.0717*	9.6	< 0.1	< 0.1	0.177	0.627	< 0.1
	7/28/2020	N/A	N/A	N/A	< 0.1	N/A	N/A	N/A	N/A
	3/18/2021	1.46	0.0812*	47.8	< 0.1	< 0.1	0.0598*	< 0.1	< 0.1
	3/18/2021	0.202	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	9/1/2021	1.2	< 0.1	36.7	< 0.1	< 0.1	0.0371*	< 0.1	< 0.1
	9/1/2021	N/A	N/A	N/A	< 0.1	N/A	N/A	N/A	N/A
	6/29/2022	4.61	< 0.1	27.8	< 0.1	0.0622*	0.0954*	< 0.1	< 0.1
	6/29/2022	N/A	N/A	N/A	< 0.1	N/A	N/A	N/A	N/A
	8/16/2022	1.08	< 0.1	35.2	< 0.1	< 0.1	0.0782*	< 0.1	< 0.1
	8/16/2022	N/A	N/A	N/A	< 0.1	N/A	N/A	N/A	N/A
	4/7/2023	0.0509*	< 0.1	22.9	< 0.1	< 0.1	0.0473*	< 0.1	< 0.1
	4/7/2023	N/A	N/A	N/A	< 0.1	N/A	N/A	N/A	N/A
	7/27/2023	1.13	< 0.1	31.4	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
	7/27/2023	N/A	N/A	N/A	< 0.1	N/A	N/A	N/A	N/A
Lithium, mg/L (CAS NO - 7439-93-2)	4/14/2015	0.03	0.04	0.01	0.04	0.04	0.07	0.04	0.03
	7/15/2015	N/A	0.04	N/A	N/A	N/A	N/A	N/A	N/A
	10/13/2015	0.03	0.03	0.01	0.04	0.04	0.07	0.05	0.04
	5/24/2016	0.02	0.03	< 0.01	0.02	0.03	0.07	0.03	0.03
	10/10/2016	0.03	0.03	< 0.01	0.03	0.03	0.06	0.04	0.03
	4/11/2017	0.03	0.03	0.01	0.02	0.04	0.07	0.02	0.04
	10/18/2017	0.03	0.03	< 0.01	0.03	0.03	0.07	0.04	0.03
	4/12/2018	0.0295	0.0311	0.00485	0.0313	0.0368	0.0582	0.0165	0.0346
	8/2/2018	0.032	0.0289	0.00412	0.032	0.0466	0.0641	0.0366	0.0365
	4/9/2019	0.0278	0.0305	0.0103	0.0263	0.0369	0.0668	0.033	0.0352
	8/28/2019	0.0263	0.0301	0.00496	0.0298	0.0354	0.0669	0.0393	0.0388
	3/16/2020	0.0251	0.0308	0.00875*	0.0275	0.0384	0.0707	0.0375	0.036
	3/16/2020	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0338
	7/28/2020	0.0227	0.0294	0.014	0.0347	0.0383	0.0651	0.0364	0.0363
	7/28/2020	N/A	N/A	N/A	0.0342	N/A	N/A	N/A	N/A
	3/18/2021	0.0247	0.0303	0.00998*	0.0304	0.0378	0.0709	0.0343	0.0377
	3/18/2021	0.0247	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	9/1/2021	0.0219	0.0284	0.0085*	0.0315	0.0307	0.0648	0.0285	0.0365
	9/1/2021	N/A	N/A	N/A	0.0275	N/A	N/A	N/A	N/A
	6/29/2022	0.0264	0.0358	0.0126*	0.0344	0.0273	0.0779	0.0279	0.0482
	6/29/2022	N/A	N/A	N/A	0.035	N/A	N/A	N/A	N/A
	8/16/2022	0.024	0.0303	0.00538*	0.0288	0.0299	0.0636	0.0348	0.0392
	8/16/2022	N/A	N/A	N/A	0.0318	N/A	N/A	N/A	N/A
	4/7/2023	0.0218	0.0329	0.0097*	0.021	0.0263	0.0718	0.0245	0.0411
	4/7/2023	N/A	N/A	N/A	0.0228	N/A	N/A	N/A	N/A
	7/27/2023	0.0219	0.0304	0.00553*	0.0289	0.0256	0.0668	0.0257	0.0413
	7/27/2023	N/A	N/A	N/A	0.0281	N/A	N/A	N/A	N/A

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Climax Molybdenum Industrial Landfill (56-SDP-06-80P)

	Sample Date	MW-7 UPG	MW-18R UPG	MW-11 DNG	MW-15 DNG	MW-16 DNG	MW-17 DNG	MW-21 DNG	TW-2 DNG
Total Metals Constituents									
Manganese, mg/L (CAS NO - 7439-96-5)	4/14/2015	0.14	0.35	6.8	< 0.02	0.47	0.04	1.6	0.03
	7/15/2015	N/A	0.25	N/A	N/A	N/A	N/A	N/A	N/A
	10/13/2015	< 0.02	< 0.02	5.9	< 0.02	0.46	< 0.02	0.76	< 0.02
	5/24/2016	0.38	< 0.02	4.3	< 0.02	1	< 0.02	0.34	< 0.02
	10/10/2016	1.2	< 0.02	4.6	< 0.02	0.72	0.16	1.2	< 0.02
	4/11/2017	1.6	< 0.02	5.2	< 0.02	0.44	0.11	0.4	< 0.02
	10/18/2017	1.4	< 0.02	3.5	< 0.02	0.5	0.56	0.17	< 0.02
	4/12/2018	2.3	0.00678	4.01	< 0.01	0.411	0.923	0.0906	< 0.01
	8/2/2018	2.72	0.00698	4.71	0.0128	0.29	0.642	0.0235	< 0.01
	4/9/2019	2.49	< 0.01	6.6	< 0.01	0.795	0.0644	0.135	< 0.01
	8/28/2019	3.01	< 0.01	5.12	< 0.01	0.224	0.107	0.518	< 0.01
	3/16/2020	2.4	< 0.01	5.25	< 0.01	0.184	0.475	0.128	< 0.01
	3/16/2020	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.01
	7/28/2020	3.22	0.0111	6.37	< 0.01	0.218	0.837	0.905	< 0.01
	7/28/2020	N/A	N/A	N/A	< 0.01	N/A	N/A	N/A	N/A
	3/18/2021	2.32	0.0151	4.49	< 0.01	0.0432	1.35	0.0389	< 0.01
	3/18/2021	2.27	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	9/1/2021	2.33	< 0.01	4.45	< 0.01	0.339	1.07	0.34	< 0.01
	9/1/2021	N/A	N/A	N/A	< 0.01	N/A	N/A	N/A	N/A
	6/29/2022	2.52	< 0.01	4.48	< 0.01	0.755	0.955	0.452	< 0.01
	6/29/2022	N/A	N/A	N/A	< 0.01	N/A	N/A	N/A	N/A
	8/16/2022	2.23	< 0.01	4.96	< 0.01	0.438	1.09	0.43	< 0.01
	8/16/2022	N/A	N/A	N/A	0.00606*	N/A	N/A	N/A	N/A
	4/7/2023	1.98	< 0.01	6.06	0.00485*	0.0805	1.39	0.0306	< 0.01
	4/7/2023	N/A	N/A	N/A	< 0.01	N/A	N/A	N/A	N/A
	7/27/2023	2.46	< 0.01	5	< 0.01	0.106	0.717	0.136	< 0.01
	7/27/2023	N/A	N/A	N/A	< 0.01	N/A	N/A	N/A	N/A
Molybdenum, mg/L (CAS NO - 7439-98-7)	1/15/2015	N/A	< 0.05	N/A	N/A	N/A	N/A	N/A	N/A
	4/14/2015	< 0.01	0.02	< 0.01	0.01	< 0.01	< 0.01	0.02	< 0.01
	7/15/2015	N/A	0.02	N/A	N/A	N/A	N/A	N/A	N/A
	10/13/2015	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	5/24/2016	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	10/10/2016	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	4/11/2017	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	10/18/2017	< 0.04	< 0.05	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04
	4/12/2018	0.00447	0.00296	0.00306	0.00293	0.00304	0.00417	0.00085	0.00305
	8/2/2018	0.0023	0.00173	< 0.004	0.00273	0.00229	0.00382	< 0.002	0.00155
	4/9/2019	< 0.002	0.0013	0.00208	0.00187	0.00126	0.00329	< 0.002	0.0015
	8/28/2019	0.00129	0.00138	< 0.002	0.00216	0.00138	0.00175	< 0.002	0.00141
	3/16/2020	< 0.002	0.00114*	< 0.002	0.00161*	< 0.002	0.00165*	< 0.002	0.00144*
	3/16/2020	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.00165*
	7/28/2020	0.0015*	0.00121*	0.0026	0.00191*	0.00141*	0.00136*	< 0.002	0.00138*
	7/28/2020	N/A	N/A	N/A	0.00192*	N/A	N/A	N/A	N/A
	3/18/2021	0.00136*	< 0.002	< 0.002	0.00182*	< 0.002	0.00281	< 0.002	0.00146*
	3/18/2021	0.00155*	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	9/1/2021	0.00148*	< 0.002	< 0.002	0.00197*	< 0.002	0.00254	< 0.002	< 0.002
	9/1/2021	N/A	N/A	N/A	0.00198*	N/A	N/A	N/A	N/A
	6/29/2022	< 0.002	0.00132*	0.00138*	0.002	< 0.002	0.00199*	< 0.002	0.0013*
	6/29/2022	N/A	N/A	N/A	0.002	N/A	N/A	N/A	N/A
	8/16/2022	0.00158*	0.0014*	0.00131*	0.00207	0.00122*	0.00206	< 0.002	0.00128*
	8/16/2022	N/A	N/A	N/A	0.00215	N/A	N/A	N/A	N/A
	4/7/2023	0.00199*	0.0013*	0.0039	0.00167*	0.000998*	0.00251	< 0.002	0.00148*
	4/7/2023	N/A	N/A	N/A	0.00141*	N/A	N/A	N/A	N/A
	7/27/2023	0.00165*	0.00129*	0.00155*	0.00205	< 0.002	0.00243	0.00098*	0.00133*
	7/27/2023	N/A	N/A	N/A	0.00209	N/A	N/A	N/A	N/A

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	Sample Date	MW-7 UPG	MW-18R UPG	MW-11 DNG	MW-15 DNG	MW-16 DNG	MW-17 DNG	MW-21 DNG	TW-2 DNG
Total Metals Constituents									
Selenium, mg/L (CAS NO - 7782-49-2)									
	1/15/2015	N/A	0.05	N/A	N/A	N/A	N/A	N/A	N/A
	4/14/2015	< 0.01	0.05	< 0.01	0.02	< 0.01	0.02	< 0.01	< 0.01
	7/15/2015	N/A	0.05	N/A	N/A	N/A	N/A	N/A	N/A
	10/13/2015	0.18	0.05	< 0.01	0.02	< 0.01	0.12	< 0.01	0.31
	5/24/2016	< 0.01	0.06	< 0.01	0.01	< 0.01	0.04	< 0.01	0.01
	10/10/2016	< 0.01	0.05	< 0.01	< 0.01	< 0.01	0.01	< 0.01	< 0.01
	4/11/2017	< 0.01	0.05	< 0.01	< 0.01	< 0.01	0.02	< 0.01	< 0.01
	10/18/2017	< 0.01	0.05	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01
	4/12/2018	< 0.005	0.0543	0.00189	0.00816	< 0.005	0.00477	< 0.005	0.0113
	8/2/2018	0.000969	0.0473	0.00263	0.00735	< 0.005	0.00476	< 0.005	0.0106
	4/9/2019	< 0.005	0.054	< 0.005	0.00273	< 0.005	0.0669	< 0.005	0.0106
	8/28/2019	< 0.005	0.049	0.0019	0.00261	< 0.005	0.0171	< 0.005	0.0103
	3/16/2020	< 0.005	0.0555	0.0012*	0.00286*	< 0.005	0.00743	< 0.005	0.0113
	3/16/2020	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0115
	7/28/2020	< 0.005	0.0555	< 0.005	0.00574	< 0.005	0.0023*	< 0.005	0.0113
	7/28/2020	N/A	N/A	N/A	0.00489*	N/A	N/A	N/A	N/A
	3/18/2021	< 0.005	0.054	0.00111*	0.00327*	< 0.005	0.00475*	< 0.005	0.0127
	3/18/2021	< 0.005	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	9/1/2021	< 0.005	0.0557	0.00171*	0.00302*	< 0.005	0.00666	< 0.005	0.0134
	9/1/2021	N/A	N/A	N/A	0.00266*	N/A	N/A	N/A	N/A
	6/29/2022	< 0.005	0.0548	< 0.005	0.00198*	< 0.005	0.0031*	< 0.005	0.0137
	6/29/2022	N/A	N/A	N/A	0.00205*	N/A	N/A	N/A	N/A
	8/16/2022	< 0.005	0.0555	0.00164*	0.00194*	< 0.005	0.00262*	< 0.005	0.0139
	8/16/2022	N/A	N/A	N/A	0.00244*	N/A	N/A	N/A	N/A
	4/7/2023	0.00185*	0.058	0.00276*	0.00284*	< 0.005	0.00526	< 0.005	0.0143
	4/7/2023	N/A	N/A	N/A	0.0022*	N/A	N/A	N/A	N/A
	7/27/2023	< 0.005	0.0556	0.00175*	0.00323*	< 0.005	0.023	0.0134	0.0161
	7/27/2023	N/A	N/A	N/A	0.00328*	N/A	N/A	N/A	N/A
Sodium, mg/L (CAS NO - 7440-23-5)									
	1/15/2015	N/A	53	N/A	N/A	N/A	N/A	N/A	N/A
	4/14/2015	45	52	70	63	69	67	9.3	55
	7/15/2015	N/A	50	N/A	N/A	N/A	N/A	N/A	N/A
	10/13/2015	44	52	77	65	74	68	95	58
	5/24/2016	50	55	74	49	75	68	90	64
	10/10/2016	64	56	90	64	75	72	94	66
	4/11/2017	60	54	79	41	73	67	72	63
	10/18/2017	56	50	89	61	73	65	86	65
	4/12/2018	60.1	47.3	71.7	54.3	76.4	61.1	63.8	62.7
	8/2/2018	61.7	49.9	71.3	60.1	67.5	64.2	81.1	61.8
	4/9/2019	64	52.6	76.7	48.8	71.9	65.5	100	60.8
	8/28/2019	59.1	49.4	86.7	49.6	67.4	62.2	103	65.8
	3/16/2020	76.3	48.2	69.8	46.4	66.1	59.7	105	61.9
	3/16/2020	N/A	N/A	N/A	N/A	N/A	N/A	N/A	60
	7/28/2020	76.1	50.4	80.3	61.2	69.7	62.6	112	70.8
	7/28/2020	N/A	N/A	N/A	61.2	N/A	N/A	N/A	N/A
	3/18/2021	65.3	49.5	77.8	51.1	68.6	62.2	124	70.5
	3/18/2021	70	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	9/1/2021	72.8	49.8	86.4	50.4	73	62.3	120	73.5
	9/1/2021	N/A	N/A	N/A	57	N/A	N/A	N/A	N/A
	6/29/2022	84.2	53.6	81.4	53.2	72.6	65.9	118	86.2
	6/29/2022	N/A	N/A	N/A	54.1	N/A	N/A	N/A	N/A
	8/16/2022	71.6	51.9	88.2	51.6	77.7	64.1	115	80.8
	8/16/2022	N/A	N/A	N/A	51.1	N/A	N/A	N/A	N/A
	4/7/2023	75.2	53.6	86.6	38.4	70.9	61.4	104	79
	4/7/2023	N/A	N/A	N/A	39.6	N/A	N/A	N/A	N/A
	7/27/2023	69.6	51.3	85.6	53.5	76	62.8	99.4	84.7
	7/27/2023	N/A	N/A	N/A	52.9	N/A	N/A	N/A	N/A

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	Sample Date	MW-7 UPG	MW-18R UPG	MW-11 DNG	MW-15 DNG	MW-16 DNG	MW-17 DNG	MW-21 DNG	TW-2 DNG
Total Metals Constituents									
Strontium, mg/L (CAS NO - 7440-24-6)	4/14/2015	0.62	0.35	0.63	0.44	0.57	0.7	1.2	0.32
	7/15/2015	N/A	0.3	N/A	N/A	N/A	N/A	N/A	N/A
	10/13/2015	0.62	0.31	0.65	0.45	0.62	0.73	1	0.32
	5/24/2016	0.58	0.31	0.64	0.4	0.54	0.61	0.99	0.32
	10/10/2016	0.73	0.32	0.65	0.44	0.55	0.65	1.1	0.32
	4/11/2017	0.64	0.31	0.62	0.33	0.57	0.63	0.99	0.33
	10/18/2017	0.68	0.3	0.62	0.39	0.54	0.7	1.1	0.34
	4/12/2018	0.652	0.293	0.606	0.391	0.615	0.596	0.776	0.362
	8/2/2018	0.795	0.34	0.651	0.441	0.7	0.691	1.12	0.381
	4/9/2019	0.752	0.37	0.711	0.499	0.727	0.693	1.34	0.412
	8/28/2019	0.668	0.303	0.689	0.457	0.632	0.601	1.25	0.369
	3/16/2020	0.597	0.325	0.643	0.458	0.648	0.711	1.29	0.386
	3/16/2020	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.393
	7/28/2020	0.584	0.336	0.589	0.507	0.628	0.651	1.34	0.432
	7/28/2020	N/A	N/A	N/A	0.481	N/A	N/A	N/A	N/A
	3/18/2021	0.591	0.326	0.664	0.458	0.654	0.71	1.2	0.423
	3/18/2021	0.588	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	9/1/2021	0.558	0.324	0.603	0.457	0.649	0.688	1.08	0.461
	9/1/2021	N/A	N/A	N/A	0.432	N/A	N/A	N/A	N/A
	6/29/2022	0.544	0.332	0.592	0.434	0.646	0.656	0.892	0.493
	6/29/2022	N/A	N/A	N/A	0.42	N/A	N/A	N/A	N/A
	8/16/2022	0.549	0.325	0.613	0.433	0.625	0.674	1.14	0.476
	8/16/2022	N/A	N/A	N/A	0.405	N/A	N/A	N/A	N/A
	4/7/2023	0.506	0.329	0.591	0.358	0.61	0.672	0.817	0.441
	4/7/2023	N/A	N/A	N/A	0.368	N/A	N/A	N/A	N/A
	7/27/2023	0.538	0.317	0.572	0.432	0.602	0.627	0.809	0.465
	7/27/2023	N/A	N/A	N/A	0.435	N/A	N/A	N/A	N/A
Total Suspended Solids, mg/L (CAS NO - TSS)	4/14/2015	9.5	279	22	4	5	9	30	9
	10/10/2016	2	18	88	< 1	3	3	6	2
	4/11/2017	< 1	2	95	2	1	3	3	< 1
	10/18/2017	< 1	3	28	1	< 1	1	12	< 1
	4/12/2018	5	1.13	66	1.25	< 1.88	18	1	< 1.88
	8/2/2018	< 1.88	4.25	340	< 1.88	< 1.88	32.5	7.62	2.13
	4/9/2019	2	1	39.6	< 1.88	< 1.88	< 1.88	< 1.88	< 1.88
	8/28/2019	1.13	0.75	71.4	< 1.88	0.75	2.63	2	0.875
	3/16/2020	2	3	59	< 1.88	< 5	5.88	0.75*	< 1.88
	3/16/2020	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1.88
	7/28/2020	7.25	10.5	22.1	< 1.88	2.75	4.5	< 1.88	< 1.88
	7/28/2020	N/A	N/A	N/A	< 1.88	N/A	N/A	N/A	N/A
	3/18/2021	5.63	12	86.5	< 1.88	< 1.88	1.25*	0.75*	< 1.88
	3/18/2021	< 1.88	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	9/1/2021	2.38	1.75*	57.9	< 1.88	< 1.88	1.88	< 1.88	< 1.88
	9/1/2021	N/A	N/A	N/A	< 1.88	N/A	N/A	N/A	N/A
	6/29/2022	9.67	0.75*	58	< 1.88	< 1.88	1.88	< 1.88	< 1.88
	6/29/2022	N/A	N/A	N/A	< 1.88	N/A	N/A	N/A	N/A
	8/16/2022	6	0.875*	74	< 1.88	< 1.88	1*	< 1.88	< 1.88
	8/16/2022	N/A	N/A	N/A	< 1.88	N/A	N/A	N/A	N/A
	4/7/2023	< 1.88	2.38	48	< 1.88	< 1.88	1.13*	< 1.88	< 1.88
	4/7/2023	N/A	N/A	N/A	< 1.88	N/A	N/A	N/A	N/A
	7/27/2023	3*	1.25*	80	< 5	< 1.88	1.13*	< 5	< 5
	7/27/2023	N/A	N/A	N/A	< 1.88	N/A	N/A	N/A	N/A

Note: * indicates 'J flag'. Detection is below the reporting limit, but greater than the MDL (Method Detection Limit). The concentration is estimated.

Denotes Detection.

Denotes Confirmed Outlier. Statistically Excluded.

Sampling performed over multiple dates is recorded on the first date sampled. Refer to field forms for exact sample date.

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Summary of Groundwater Chemistry
Climax Molybdenum Industrial Landfill (56-SDP-06-80P)

Other Constituents	Sample Date	MW-7 UPG	MW-18R UPG	MW-11 DNG	MW-15 DNG	MW-16 DNG	MW-17 DNG	MW-21 DNG	TW-2 DNG
Chemical Oxygen Demand, mg/L (CAS NO - COD)	10/21/1992	N/A	N/A	16	5	17	16	N/A	N/A
	1/13/1993	< 1	N/A	1	< 1	4	1	N/A	N/A
	4/14/1993	< 1	N/A	3	5	3	3	N/A	N/A
	7/14/1993	5	N/A	9	2	4	9	N/A	N/A
	10/14/1993	5.9	N/A	16.8	0.9	5.5	N/A	N/A	N/A
	4/13/1994	12.8	N/A	16.3	5.2	14.3	13.8	N/A	N/A
	10/6/1994	8.1	N/A	14.8	4	10	10.9	N/A	N/A
	4/18/1995	4.6	N/A	5.4	1	1	1	N/A	N/A
	10/11/1995	10	N/A	14	6	12	6	N/A	N/A
	4/11/1996	5	4	9	3	8	3	N/A	N/A
	10/28/1996	6.3	3.1	14.4	4.5	2.4	2.7	N/A	N/A
	4/25/1997	15.2	1.1	14.7	7.9	12.8	3.5	N/A	N/A
	10/20/1997	9.6	2	12.2	7.2	9.8	2.2	N/A	N/A
	3/26/1998	11.6	8.1	12.4	3.7	19.9	8.9	N/A	N/A
	10/13/1998	5.6	< 0.4	8.7	4.1	< 0.4	0.4	N/A	N/A
	3/25/1999	9.2	3.8	8.5	2.5	8.1	2.5	N/A	N/A
	4/26/1999	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.6
	8/6/1999	N/A	N/A	N/A	N/A	N/A	N/A	N/A	12.3
	10/14/1999	6.3	2.8	0.78	6.3	5.3	1.2	N/A	1.8
	3/23/2000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.4
	4/13/2000	< 1	< 1	2.3	< 1	< 1	< 1	N/A	< 1
	10/20/2000	2.9	< 1	8.8	< 1	2.9	1.3	N/A	< 1
	4/20/2001	6.2	4.5	8.9	4.9	5.8	3.2	N/A	3.2
	10/3/2001	5.1	2.1	10.7	1.3	5.6	1.3	N/A	3.9
	4/18/2002	3.4	< 1	3.6	< 1	3.1	< 1	N/A	1.2
	10/15/2002	6.2	1.3	9.5	1.3	2.3	< 1	N/A	2.3
	4/15/2003	6.2	3.6	9.9	4.4	6	2.8	N/A	3.6
	10/8/2003	8.23	0.8	9.29	2.9	1.2	1.2	N/A	5.5
	4/26/2004	11.4	3.7	6.2	4.1	4.5	22.1	N/A	5.4
	10/21/2004	7.2	< 1	1.5	< 1	< 1	< 1	N/A	< 1
	4/26/2005	5.1	1	3.5	1.8	6.3	< 1	N/A	1
	10/5/2005	3.8	10.5	6.2	1	3.2	< 3.6	N/A	2.8
	4/26/2006	8	2.7	9.2	2.3	6.8	5.6	N/A	3.9
	10/10/2006	3.6	< 1	13.5	1.2	2.2	< 1	N/A	< 1
	4/19/2007	8.7	1.3	10.2	0.9	3.9	< 1	N/A	8.7
	10/10/2007	6	< 1	12.6	5.1	< 1	< 1	N/A	2.5
	4/23/2008	16.7	< 1	15.9	4.3	3.1	2.7	N/A	9.5
	10/14/2008	16.7	2.3	10.3	9.8	< 7.6	5.5	N/A	9.5
	4/22/2009	13.8	3	11.5	6.7	9.6	1.5	N/A	< 1
	10/19/2009	14.3	17	10.9	4.4	10.5	9	N/A	< 5.6
	11/23/2009	N/A	N/A	N/A	N/A	N/A	N/A	8.3	N/A
	1/14/2010	N/A	N/A	N/A	N/A	N/A	N/A	11	N/A
	4/14/2010	10.4	0.6	< 1	< 1	10.7	9.4	1	2.8
	7/27/2010	N/A	N/A	N/A	N/A	N/A	N/A	13.1	N/A
	10/7/2010	13.9	< 3	12.8	< 3	9.6	4.7	10	3.9
	4/13/2011	13	3.6	15.3	< 3	9.2	< 3	12.6	5.8
	10/6/2011	11.5	4.3	31.1	4.3	8.7	< 3	13	3.8
	4/12/2012	16.6	< 3	28.5	5.4	< 3	5.4	13.2	< 3
	10/10/2012	10.8	3.2	32.9	3.6	< 3	< 3	13.2	3.2
	4/25/2013	17.1	< 3	32.7	5	< 3	< 3	12.3	< 3
	10/9/2013	12.6	< 3	36.2	< 3	< 3	< 3	4.1	< 3
	4/10/2014	21	< 10	39	< 10	< 10	< 10	10	< 10
	10/7/2014	11.8	< 3	22	< 3	< 3	< 3	6.3	10.4
	1/15/2015	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A
	4/14/2015	< 10	< 10	35	< 10	< 10	< 10	< 10	< 10
	7/15/2015	N/A	12	N/A	N/A	N/A	N/A	N/A	N/A
	10/13/2015	24	15	55	10	12	< 10	24	< 10
	5/24/2016	11	< 10	100	< 10	< 10	< 10	< 10	< 10
	10/10/2016	28	< 10	190	< 10	10	< 10	19	< 10
	4/11/2017	24	2	87	< 10	< 10	< 10	17	< 10
	10/18/2017	26	< 10	200	< 10	< 10	< 10	11	< 10
	4/12/2018	20	< 5	105	< 5	5.57	< 5	< 5	< 5
	8/2/2018	11.1	< 5	134	< 5	< 5	131	< 5	< 5
	4/9/2019	23.6	< 5	27.5	16.9	8.09	< 5	< 5	7.01
	8/28/2019	13.3	< 5	122	< 5	5.67	< 5	11	< 5
	3/16/2020	14.8	< 5	60.9	< 5	< 5	< 5	7.64	< 5
	3/16/2020	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 5
	7/28/2020	18.6	< 5	23	< 5	< 5	13.8	21	5.58
	7/28/2020	N/A	N/A	N/A	< 5	N/A	N/A	N/A	N/A

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Summary of Groundwater Chemistry
Climax Molybdenum Industrial Landfill (56-SDP-06-80P)

Other Constituents	Sample Date	MW-7 UPG	MW-18R UPG	MW-11 DNG	MW-15 DNG	MW-16 DNG	MW-17 DNG	MW-21 DNG	TW-2 DNG
Chemical Oxygen Demand, mg/L (CAS NO - COD)	3/18/2021	12.2	< 5	91.8	< 5	7.94	8.99	5.82	6.53
	3/18/2021	25.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	9/1/2021	15.6	< 5	108	5.39	< 5	< 5	6.07	< 5
	9/1/2021	N/A	N/A	N/A	< 5	N/A	N/A	N/A	N/A
	6/29/2022	15.9	< 5	78.2	< 5	10.4	7.08	9	18
	6/29/2022	N/A	N/A	N/A	9.95	N/A	N/A	N/A	N/A
	8/16/2022	15.6	< 5	126	10.5	10.2	9.86	11.2	< 5
	8/16/2022	N/A	N/A	N/A	< 5	N/A	N/A	N/A	N/A
	4/7/2023	16.2	< 5	59.5	12.2	9.13	5.46	13.2	< 5
	4/7/2023	N/A	N/A	N/A	9.81	N/A	N/A	N/A	N/A
	7/27/2023	20.3	6.31	118	9.72	8.36	6.31	9.38	8.02
	7/27/2023	N/A	N/A	N/A	< 5	N/A	N/A	N/A	N/A
Chloride, mg/L (CAS NO - 16887-00-6)	10/21/1992	42	42	60	24	27	60	N/A	N/A
	1/13/1993	33	33	60	20	27	60	N/A	N/A
	4/14/1993	25	25	60	17	23	60	N/A	N/A
	7/14/1993	27	27	65	16	22	65	N/A	N/A
	10/14/1993	16	N/A	52	10	14	N/A	N/A	N/A
	4/13/1994	17	N/A	61	7	15	15	N/A	N/A
	10/6/1994	29	N/A	86	12	38	21	N/A	N/A
	4/18/1995	24	N/A	70	14	30	21	N/A	N/A
	10/11/1995	25	N/A	79	9	23	13	N/A	N/A
	4/11/1996	22	10	56	9	13	12	N/A	N/A
	10/28/1996	31	23	96	19	33	28	N/A	N/A
	4/25/1997	27	10	67	8.7	19	14	N/A	N/A
	10/20/1997	23	12	52	10	16	17	N/A	N/A
	3/26/1998	21	11	61	8	26	15	N/A	N/A
	10/13/1998	21	14	84	12	21	20	N/A	N/A
	3/25/1999	18	6	46	5	8	9	N/A	N/A
	4/26/1999	N/A	6	N/A	N/A	N/A	N/A	N/A	3
	8/6/1999	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3
	10/14/1999	31	11	64	35	24	16	N/A	7
	3/23/2000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4
	4/13/2000	33	13	55	10	15	18	N/A	4
	10/20/2000	26	14	58	12	15	21	N/A	4
	4/20/2001	27	15	65	12	15	20	N/A	4
	10/3/2001	40	15	68	11	16	20	N/A	4
	4/18/2002	20	13	56	10	14	17	N/A	3
	10/15/2002	28	12	39	10	12	16	N/A	7
	4/15/2003	32	11	59	8	11	16	N/A	4
	10/8/2003	22	12	39	7	11	15	N/A	4
	4/26/2004	32	17	82	7	13	24	N/A	3
	10/21/2004	56	12	67	9	23	17	N/A	7
	4/26/2005	17	9	38	4	7	11	N/A	3
	10/5/2005	32	14	58	9	13	18	N/A	4
	4/26/2006	11.4	5	34	2	3	7	N/A	1
	10/10/2006	28	11	56	8	8	14	N/A	5
	4/19/2007	38	13	52	9	13	15	N/A	7
	10/10/2007	30	14.4	63.7	9.4	10.4	17.2	N/A	5.4
	4/23/2008	4.8	10.4	48	6	8.3	12.3	N/A	3.7
	10/14/2008	62.6	16.6	114.8	11.6	22	27	N/A	6.5
	4/22/2009	72	24	159	16	53	30	N/A	8.3
	10/19/2009	33	25	82	8	18	16	N/A	7
	11/23/2009	N/A	N/A	N/A	N/A	N/A	N/A	11	N/A
	1/14/2010	N/A	N/A	N/A	N/A	N/A	N/A	119.4	N/A
	4/14/2010	28	18	18	11	7	19	69	4
	7/27/2010	N/A	N/A	N/A	N/A	N/A	N/A	101	N/A
	10/7/2010	34	17	73	9	24	16	101	2
	4/13/2011	39	17	74	8	20	16	123	3.3
	10/6/2011	33	16	72	11	14	18	103	4
	4/12/2012	30	17	103	22	16	18	88	6
	10/10/2012	33	14	95	8	12	15	92	6
	4/25/2013	37	14	94	6	13	15	68	5
	10/9/2013	40	14	104	7	13	16	69	4
	4/10/2014	28	17	116	10	15	19	69	6
	10/7/2014	27	15	73	8	11	15	69	9
	1/15/2015	N/A	7.8	N/A	N/A	N/A	N/A	N/A	N/A
	4/14/2015	6	8.7	30	3.7	6.4	9.2	60	4.1
	7/15/2015	N/A	7.4	N/A	N/A	N/A	N/A	N/A	N/A
	10/13/2015	5.9	7.9	26	3.6	5.7	8.9	41	3.9
	5/24/2016	4.7	7.6	27	2	5.6	8.7	44	3.7

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Summary of Groundwater Chemistry Climax Molybdenum Industrial Landfill (56-SDP-06-80P)

Other Constituents	Sample Date	MW-7 UPG	MW-18R UPG	MW-11 DNG	MW-15 DNG	MW-16 DNG	MW-17 DNG	MW-21 DNG	TW-2 DNG
Chloride, mg/L (CAS NO - 16887-00-6)	10/10/2016	5.7	8	24	1.9	5.3	8.9	41	4.8
	4/11/2017	4.1	17	25	< 0.5	5.2	8.8	56	5
	10/18/2017	5.9	8.5	24	< 2	5	8.5	51	5.4
	4/12/2018	6.5	8.19	149	2.98	5.83	9	65.2	6.5
	8/2/2018	6.23	8.31	22.6	2.19	5.25	8.88	62.3	5.87
	4/9/2019	3.23	8	23.8	1.92	4.81	7.89	110	5.23
	8/28/2019	2.62	7.41	21.1	3.31	4.51	7.52	126	5.1
	3/16/2020	4.01*	8.08	21.1	5.87	5.53	9.32	123	6.54
	3/16/2020	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.91
	7/28/2020	3.46*	8.2	21.3	5.45	5.54	8.16	201	7.36
	7/28/2020	N/A	N/A	N/A	4.33*	N/A	N/A	N/A	N/A
	3/18/2021	4.49*	8.77	21.5	10.4	6.21	9.65	315	8.83
	3/18/2021	4.29*	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	9/1/2021	2.26*	7.99	21.4	10.4	5.12	7.96	208	8.07
	9/1/2021	N/A	N/A	N/A	11.1	N/A	N/A	N/A	N/A
	6/29/2022	< 5	7.35	18.3	9.71	5.21	7.36	140	8.72
	6/29/2022	N/A	N/A	N/A	9.72	N/A	N/A	N/A	N/A
	8/16/2022	2.71*	8.35	20.6	10.8	5.7	< 5	152	10.6
	8/16/2022	N/A	N/A	N/A	10.9	N/A	N/A	N/A	N/A
	4/7/2023	3*	8.24	18.8	7.93	5.83	7.78	127	11.3
	4/7/2023	N/A	N/A	N/A	8.39	N/A	N/A	N/A	N/A
	7/27/2023	2.59*	9.01	22.7	11.2	5.5	8.74	109	13.3
	7/27/2023	N/A	N/A	N/A	11.1	N/A	N/A	N/A	N/A
Nitrogen, Ammonia, mg/L (CAS NO - 7664-41-7)	10/21/1992	< 0.04	< 0.04	0.29	< 0.04	< 0.04	< 0.29	N/A	N/A
	1/13/1993	< 0.04	< 0.04	0.19	< 0.04	< 0.04	< 0.19	N/A	N/A
	4/14/1993	< 0.04	< 0.04	0.27	< 0.04	< 0.04	< 0.27	N/A	N/A
	7/14/1993	< 0.04	< 0.04	0.31	< 0.04	< 0.04	< 0.31	N/A	N/A
	10/14/1993	< 0.04	N/A	0.23	< 0.04	< 0.04	N/A	N/A	N/A
	4/13/1994	< 0.05	N/A	0.35	0.07	0.12	0.05	N/A	N/A
	10/6/1994	< 0.04	N/A	0.26	< 0.04	< 0.04	< 0.04	N/A	N/A
	4/18/1995	< 0.05	N/A	0.21	0.06	0.17	0.11	N/A	N/A
	10/11/1995	< 0.04	N/A	0.12	< 0.04	0.13	< 0.04	N/A	N/A
	4/11/1996	0.48	< 0.04	0.12	0.12	0.07	0.08	N/A	N/A
	10/28/1996	0.08	0.06	0.74	0.08	0.13	0.1	N/A	N/A
	4/25/1997	0.06	0.12	0.29	0.08	0.11	0.05	N/A	N/A
	10/20/1997	0.05	0.04	0.43	0.04	0.08	0.05	N/A	N/A
	3/26/1998	< 0.04	0.05	0.49	0.05	0.1	0.05	N/A	N/A
	10/13/1998	0.06	0.06	0.52	0.06	0.11	0.06	N/A	N/A
	3/25/1999	0.04	0.08	0.68	0.05	0.13	0.05	N/A	N/A
	4/26/1999	N/A	0.08	N/A	N/A	N/A	N/A	N/A	< 0.04
	8/6/1999	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.04
	10/14/1999	< 0.04	0.05	0.46	0.08	0.06	0.05	N/A	0.17
	3/23/2000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.06
	4/13/2000	< 0.04	< 0.04	0.48	0.06	0.05	0.04	N/A	< 0.04
	10/20/2000	0.12	0.07	0.49	0.08	0.1	0.08	N/A	0.13
	4/20/2001	0.15	0.08	0.58	0.08	0.16	0.13	N/A	< 0.04
	10/3/2001	0.07	< 0.04	0.57	< 0.04	0.06	< 0.04	N/A	< 0.04
	4/18/2002	< 0.04	0.06	0.32	0.07	0.07	0.07	N/A	< 0.04
	10/15/2002	0.09	0.08	0.59	0.09	< 0.03	0.08	N/A	0.1
	4/15/2003	< 0.05	< 0.05	0.99	< 0.05	< 0.05	< 0.05	N/A	< 0.05
	10/8/2003	< 0.05	0.09	0.72	0.09	< 0.13	0.16	N/A	< 0.05
	4/26/2004	< 0.05	< 0.05	0.31	< 0.05	< 0.05	< 0.05	N/A	< 0.05
	10/21/2004	< 0.05	0.2	< 0.05	< 0.05	< 0.05	0.07	N/A	< 0.05
	4/26/2005	< 0.05	< 0.05	0.25	< 0.05	0.11	< 0.05	N/A	< 0.05
	10/5/2005	< 0.05	< 0.05	0.55	< 0.05	0.05	< 0.05	N/A	0.11
	4/26/2006	0.31	0.24	1.45	0.16	0.24	0.24	N/A	0.33
	10/10/2006	< 0.05	0.15	1.79	< 0.19	0.25	0.1	N/A	< 0.05
	4/19/2007	0.11	0.17	0.8	0.14	0.16	0.18	N/A	0.08
	10/10/2007	< 0.05	< 0.05	1.56	< 0.05	0.08	< 0.05	N/A	< 0.05
	4/23/2008	0.08	< 0.11	2.09	0.14	0.2	0.06	N/A	< 0.05
	10/14/2008	0.08	< 0.04	1.46	< 0.04	< 0.04	< 0.04	N/A	< 0.04
	4/22/2009	< 0.05	0.11	2.09	0.14	0.2	0.06	N/A	< 0.05
	10/19/2009	< 0.05	< 0.05	0.4	< 0.05	< 0.05	< 0.05	N/A	< 0.13
	11/23/2009	N/A	N/A	N/A	N/A	N/A	N/A	0.1	N/A
	1/14/2010	N/A	N/A	N/A	N/A	N/A	N/A	0.05	N/A
	4/14/2010	0.26	0.54	0.34	0.62	0.06	0.12	0.3	0.14
	7/27/2010	N/A	N/A	N/A	N/A	N/A	N/A	0.04	N/A
	10/7/2010	0.12	0.31	1.75	0.26	0.57	0.31	0.32	0.09
	4/13/2011	< 0.05	< 0.05	1.36	0.12	0.18	< 0.05	< 0.05	< 0.05
	10/6/2011	< 0.05	0.65	2.5	< 0.05	0.18	0.23	0.06	< 0.05

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Summary of Groundwater Chemistry
Climax Molybdenum Industrial Landfill (56-SDP-06-80P)

Other Constituents	Sample Date	MW-7 UPG	MW-18R UPG	MW-11 DNG	MW-15 DNG	MW-16 DNG	MW-17 DNG	MW-21 DNG	TW-2 DNG
Nitrogen, Ammonia, mg/L (CAS NO - 7664-41-7)	4/12/2012	0.1	0.17	3.51	0.14	0.24	0.14	0.07	0.06
	10/10/2012	< 0.05	0.12	3.18	0.08	0.18	0.08	0.07	< 0.05
	4/25/2013	0.17	0.18	2.53	0.21	0.23	0.18	0.17	0.06
	10/9/2013	0.13	0.14	3.17	0.15	0.22	0.13	0.14	< 0.05
	4/10/2014	< 0.04	0.08	2.03	0.06	< 0.04	0.06	0.13	< 0.04
	10/7/2014	0.13	0.15	1.97	0.15	0.15	0.15	0.21	0.12
	1/15/2015	N/A	0.27	N/A	N/A	N/A	N/A	N/A	N/A
	4/14/2015	< 0.05	< 0.05	2	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	7/15/2015	N/A	< 0.05	N/A	N/A	N/A	N/A	N/A	N/A
	10/13/2015	< 0.05	< 0.05	1.8	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	5/24/2016	< 0.05	< 0.05	5.6	< 0.05	0.07	< 0.05	< 0.05	< 0.05
	10/10/2016	< 0.05	< 0.05	8	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	4/11/2017	< 0.05	< 0.05	3.4	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	10/18/2017	< 0.05	< 0.05	7.1	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	4/12/2018	< 0.2	< 0.2	5.84	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
	8/2/2018	< 0.2	< 0.2	6.4	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
	4/9/2019	< 0.2	< 0.2	2.71	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
	8/28/2019	< 0.2	< 0.2	6.64	< 0.2	< 0.2	< 0.2	0.153	< 0.2
	3/16/2020	< 0.2	< 0.2	4.33	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
	3/16/2020	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.2
	7/28/2020	< 0.2	< 0.2	0.983	< 0.2	< 0.2	1.19	< 0.2	< 0.2
	7/28/2020	N/A	N/A	N/A	< 0.2	N/A	N/A	N/A	N/A
	3/18/2021	< 0.2	< 0.2	4.47	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
	3/18/2021	< 0.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	9/1/2021	< 0.2	< 0.2	5.83	< 0.2	< 0.2	0.0786*	0.0921*	< 0.2
	9/1/2021	N/A	N/A	N/A	< 0.2	N/A	N/A	N/A	N/A
	6/29/2022	0.353	< 0.2	4.3	< 0.2	< 0.2	0.174*	< 0.2	< 0.2
	6/29/2022	N/A	N/A	N/A	< 0.2	N/A	N/A	N/A	N/A
	8/16/2022	< 0.2	< 0.2	6.05	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
	8/16/2022	N/A	N/A	N/A	< 0.2	N/A	N/A	N/A	N/A
	4/7/2023	< 0.2	< 0.2	2.92	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
	4/7/2023	N/A	N/A	N/A	< 0.2	N/A	N/A	N/A	N/A
	7/27/2023	< 0.2	< 0.2	6.02	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
	7/27/2023	N/A	N/A	N/A	< 0.2	N/A	N/A	N/A	N/A
pH, S.U. (CAS NO - PH)	10/21/1992	7.12	7.12	6.67	7.24	6.78	6.67	N/A	N/A
	1/13/1993	7.19	7.19	6.68	7.05	6.76	6.68	N/A	N/A
	4/14/1993	7.13	7.13	6.68	7.02	6.65	6.68	N/A	N/A
	7/14/1993	7.18	7.18	6.65	6.95	6.66	6.65	N/A	N/A
	10/14/1993	6.98	N/A	6.7	6.95	6.7	N/A	N/A	N/A
	4/13/1994	7.24	N/A	6.68	7.08	6.65	7.06	N/A	N/A
	10/6/1994	7.1	N/A	6.64	6.98	6.6	7.12	N/A	N/A
	4/18/1995	7.12	N/A	6.91	7.13	6.76	7.32	N/A	N/A
	10/11/1995	7.37	N/A	6.81	7.46	6.58	7.26	N/A	N/A
	4/11/1996	8.42	7.38	8.08	8.2	7.85	7.4	N/A	N/A
	10/28/1996	6.97	6.9	6.63	6.92	6.43	6.96	N/A	N/A
	4/25/1997	7.03	7.03	6.67	7.03	6.59	6.94	N/A	N/A
	10/20/1997	6.92	7	6.65	6.99	6.54	7.06	N/A	N/A
	3/26/1998	6.98	7.27	6.83	7.16	6.74	7.25	N/A	N/A
	10/13/1998	7.06	7.04	6.69	6.99	6.55	7.11	N/A	N/A
	3/25/1999	6.93	7.09	6.67	7.01	6.64	7.15	N/A	N/A
	4/26/1999	N/A	7.09	N/A	N/A	N/A	N/A	N/A	7.1
	8/6/1999	N/A	N/A	N/A	N/A	N/A	N/A	N/A	7.47
	10/14/1999	6.97	7.04	6.73	6.5	6.58	7.09	N/A	7.06
	3/23/2000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	7.29
	4/13/2000	6.92	6.92	6.69	6.69	6.63	7.02	N/A	7.05
	10/20/2000	6.91	7.08	6.79	7.05	6.55	7.23	N/A	7.1
	4/20/2001	7.05	7.3	6.93	7.34	6.84	7.37	N/A	7.5
	10/3/2001	6.89	7.15	6.88	7.14	6.65	7.07	N/A	7.1
	4/18/2002	6.73	7.02	6.75	7.05	6.73	7.11	N/A	7.09
	10/15/2002	6.75	6.95	6.6	6.95	6.56	7.05	N/A	7.06
	4/15/2003	6.78	7.02	6.59	7.01	6.57	7.07	N/A	7
	10/8/2003	6.56	6.72	6.45	6.74	6.36	6.88	N/A	6.96
	4/26/2004	6.83	7.17	6.79	7.13	6.74	7.19	N/A	7.28
	10/21/2004	6.68	7.03	6.73	7.07	6.56	7.14	N/A	7.15
	4/26/2005	6.77	7.07	6.73	7.08	6.66	7.02	N/A	7.09
	10/5/2005	6.82	7.08	6.73	7.05	6.64	7.11	N/A	7.14
	4/26/2006	6.95	7.17	6.85	7.2	6.87	7.34	N/A	7.95
	10/10/2006	6.7	6.92	6.57	6.89	6.52	6.94	N/A	6.96
	4/19/2007	6.87	6.9	6.67	7.06	6.59	7.12	N/A	7.17
	10/10/2007	6.58	7.13	6.7	7.1	6.58	7.22	N/A	7.13

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Summary of Groundwater Chemistry
Climax Molybdenum Industrial Landfill (56-SDP-06-80P)

Other Constituents	Sample Date	MW-7 UPG	MW-18R UPG	MW-11 DNG	MW-15 DNG	MW-16 DNG	MW-17 DNG	MW-21 DNG	TW-2 DNG
pH, S.U. (CAS NO - PH)	4/23/2008	6.82	7.07	6.74	7.04	6.65	7.08	N/A	7.16
	10/14/2008	6.77	7	6.61	7.01	6.69	7.15	N/A	7.16
	4/22/2009	6.58	6.92	6.46	6.9	6.65	6.9	N/A	6.95
	10/19/2009	6.77	6.64	6.53	7	6.64	6.74	N/A	6.96
	11/23/2009	N/A	N/A	N/A	N/A	N/A	N/A	6.82	N/A
	1/14/2010	N/A	N/A	N/A	N/A	N/A	N/A	6.44	N/A
	4/14/2010	7.24	7.38	7.08	7.31	7.28	7.64	7.14	7.6
	7/27/2010	N/A	N/A	N/A	N/A	N/A	N/A	6.71	N/A
	10/7/2010	6.77	7.1	6.51	7.04	6.46	7.17	6.55	7.13
	4/13/2011	6.71	6.96	6.54	7.09	6.44	7.02	6.41	7.11
	10/6/2011	6.61	7.12	6.36	6.92	6.35	7.03	6.47	6.95
	4/12/2012	6.4	6.84	6.39	6.71	6.35	6.83	6.36	6.85
	10/10/2012	6.63	6.91	6.43	6.78	6.47	6.91	6.32	6.9
	4/25/2013	6.48	6.78	6.46	6.72	6.42	6.95	6.58	6.91
	10/9/2013	6.69	7.06	6.77	7.06	6.71	7.09	6.8	6.99
	4/10/2014	6.69	7.15	6.61	6.96	6.57	7.03	6.7	7.06
	10/7/2014	6.84	7.17	6.71	7.12	6.6	7.16	6.63	7.13
	4/14/2015	6.73	7.03	6.45	6.89	6.48	7.18	6.5	7.18
	7/15/2015	N/A	6.87	N/A	N/A	N/A	N/A	N/A	N/A
	10/13/2015	6.78	7.16	6.52	7.18	6.58	7.08	6.61	7.1
	5/24/2016	6.96	7.7	6.59	7.39	6.61	7.33	6.91	7.94
	10/10/2016	6.63	7.11	6.39	7.18	6.43	7.14	6.52	7.09
	4/11/2017	6.89	7.19	6.61	7.38	6.67	7.23	6.9	7.54
	10/18/2017	6.83	7.16	6.64	7.28	6.62	7.38	6.69	7.25
	4/12/2018	6.96	7.19	6.77	7.36	6.76	7.44	6.97	7.35
	8/2/2018	7.32	7.09	6.84	7.22	6.8	7.11	7.48	7.96
	4/9/2019	6.46	6.82	6.43	6.94	6.39	6.73	6.45	7.03
	8/28/2019	6.55	7.04	6.43	7.02	6.51	6.94	6.49	7.06
	3/16/2020	6.66	6.9	6.52	6.96	6.47	7.03	6.54	7.15
	7/28/2020	6.6	6.83	6.22	6.87	6.37	6.87	6.34	6.54
	3/18/2021	6.86	7.11	6.67	7.22	6.65	7.14	6.74	7.28
	9/1/2021	6.62	6.93	6.4	6.94	6.36	7.04	6.46	6.93
	6/29/2022	6.66	6.83	6.3	6.93	6.3	6.79	6.54	6.96
	8/16/2022	6.61	6.88	6.36	7.04	6.46	6.88	6.48	6.9
	4/7/2023	6.7	6.92	6.48	6.92	6.39	6.99	6.67	7.17
	7/27/2023	6.65	6.91	6.42	6.98	6.37	6.9	6.54	6.92
Specific Conductance, umhos/cm (CAS NO - SC)	10/21/1992	900	900	950	900	1300	950	N/A	N/A
	1/13/1993	812	812	1064	1022	1434	1064	N/A	N/A
	4/14/1993	829	829	1072	1009	1418	1072	N/A	N/A
	7/14/1993	862	862	1104	998	1412	1104	N/A	N/A
	10/14/1993	837	N/A	1019	913	1283	N/A	N/A	N/A
	4/13/1994	886	N/A	1200	1013	1428	1115	N/A	N/A
	10/6/1994	787	N/A	1112	912	1273	1032	N/A	N/A
	4/18/1995	812	N/A	1160	908	1287	1123	N/A	N/A
	10/11/1995	1040	N/A	1330	1015	1434	1162	N/A	N/A
	4/11/1996	974	915	1285	1030	1417	1150	N/A	N/A
	10/28/1996	947	900	1388	1012	1415	1169	N/A	N/A
	4/25/1997	991	884	1371	1004	1403	1171	N/A	N/A
	10/20/1997	1040	882	1351	996	1421	1165	N/A	N/A
	3/26/1998	1029	881	1329	1006	1412	1174	N/A	N/A
	10/13/1998	1074	877	1365	1012	1450	1216	N/A	N/A
	3/25/1999	1061	881	1353	1008	1421	1209	N/A	N/A
	4/26/1999	N/A	881	N/A	N/A	N/A	N/A	N/A	856
	8/6/1999	N/A	N/A	N/A	N/A	N/A	N/A	N/A	868
	10/14/1999	964	777	1216	2470	1263	1077	N/A	765
	3/23/2000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	842
	4/13/2000	1099	875	1330	1035	1400	1212	N/A	849
	10/20/2000	1141	875	1311	1000	1429	1210	N/A	846
	4/20/2001	1202	887	1287	1081	1407	1261	N/A	851
	10/3/2001	1233	888	1099	1020	1490	1326	N/A	852
	4/18/2002	1213	888	1317	1046	1442	1217	N/A	846
	10/15/2002	1230	895	1302	1025	1495	1230	N/A	855
	4/15/2003	1158	889	1285	1000	1444	1217	N/A	843
	10/8/2003	1217	884	1299	1034	1451	1250	N/A	858
	4/26/2004	1200	889	1318	1041	1449	1250	N/A	855
	10/21/2004	1154	892	1365	1042	1465	1334	N/A	851
	4/26/2005	1138	891	1359	1026	1444	1258	N/A	856
	10/5/2005	993	800	1226	906	1275	1132	N/A	754
	4/26/2006	1039	790	2080	911	1273	1136	N/A	763
	10/10/2006	1104	910	1438	1008	1425	1456	N/A	845

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Summary of Groundwater Chemistry
Climax Molybdenum Industrial Landfill (56-SDP-06-80P)

Other Constituents	Sample Date	MW-7 UPG	MW-18R UPG	MW-11 DNG	MW-15 DNG	MW-16 DNG	MW-17 DNG	MW-21 DNG	TW-2 DNG
Specific Conductance, umhos/cm (CAS NO - SC)	4/19/2007	1212	888	1379	986	1449	1281	N/A	840
	10/10/2007	1139	939	1416	990	1452	1246	N/A	849
	4/23/2008	1271	914	1397	1043	1480	1261	N/A	870
	10/14/2008	1236	922	1467	1017	1477	1288	N/A	867
	4/22/2009	1220	932	1555	1061	1578	1323	N/A	882
	10/19/2009	1101	2348	1632	1007	1550	1408	N/A	863
	11/23/2009	N/A	N/A	N/A	N/A	N/A	N/A	1468	N/A
	1/14/2010	N/A	N/A	N/A	N/A	N/A	N/A	3075	N/A
	4/14/2010	1130	1012	1612	972	1499	1262	3350	829
	7/27/2010	N/A	N/A	N/A	N/A	N/A	N/A	3200	N/A
	10/7/2010	1180	1002	1492	984	1554	1308	2918	836
	4/13/2011	1173	1595	1462	957	1526	1196	3162	823
	10/6/2011	1168	946	1389	966	1530	1363	2951	827
	4/12/2012	1205	966	1452	982	1501	1455	2653	824
	10/10/2012	1159	941	1469	971	1488	1322	2470	836
	4/25/2013	1235	951	1554	959	1516	1336	2086	841
	10/9/2013	1208	941	1482	966	1488	1360	2326	844
	4/10/2014	1245	953	1430	946	1497	1308	1836	830
	10/7/2014	1223	885	1492	962	1481	1353	2114	843
	4/14/2015	1166	882	1488	944.7	1453	1339	2311	808.6
	7/15/2015	N/A	869	N/A	N/A	N/A	N/A	N/A	N/A
	10/13/2015	1158	884	1524	959	1519	1393	2191	839
	5/24/2016	1094	823	1327	857	1337	1154	1782	770
	10/10/2016	1208	724	1301	905	1360	1101	194	745
	4/11/2017	1099	819	1288	548	1371	1127	1793	820
	10/18/2017	1227	835	1292	772	1313	1280	1885	887
	4/12/2018	1386	921	1432	984	1589	1434	1915	1036
	8/2/2018	1434	1000	1411	1011	1563	1431	2200	961
	4/9/2019	1233.4	860.1	1388.5	876.7	1451.7	1207	2416.2	916.2
	8/28/2019	1165	848	1220.6	882.3	1340.8	1148.4	2154.6	946.6
	3/16/2020	1204	883	1413	900	1490	1397	2672	971
	7/28/2020	1286.5	938	1582.9	1062.5	1578.8	1447.3	3179	1172.8
	3/18/2021	1212.4	897.7	1442.4	959.9	1532.9	1386.1	2898.6	1063.7
	9/1/2021	1189.5	913.4	1435.2	996.5	1530.2	1390.9	2705.6	1227.8
	6/29/2022	1128.9	878.2	1327.6	931.3	1463.3	1312.3	2190.6	1265.9
	8/16/2022	1137.9	890.4	1352.6	892.7	1492	1337.2	2487.5	1246.8
	4/7/2023	1041.1	827.1	1304.9	706.6	1417.5	1265.8	2007	1097.3
	7/27/2023	1120.8	882.7	1346.2	923.9	1490.1	1341.3	2115.9	1255.5
Sulfate, mg/L (CAS NO - 14808-79-8)	10/21/1992	N/A	N/A	101	117	346	101	N/A	N/A
	1/13/1993	40	N/A	67	72	246	67	N/A	N/A
	4/14/1993	40	N/A	70	71	262	70	N/A	N/A
	7/14/1993	40	N/A	70	71	262	70	N/A	N/A
	10/14/1993	43	N/A	78	77	252	N/A	N/A	N/A
	4/13/1994	47	N/A	98	86	299	208	N/A	N/A
	10/6/1994	45	N/A	108	101	236	96	N/A	N/A
	4/18/1995	43	N/A	116	77	230	285	N/A	N/A
	10/11/1995	46	N/A	257	79	214	196	N/A	N/A
	4/11/1996	44	46	121	77	218	191	N/A	N/A
	10/28/1996	41	38	109	67	170	179	N/A	N/A
	4/25/1997	44	49	137	80	224	49	N/A	N/A
	10/20/1997	44	50	125	90	234	275	N/A	N/A
	3/26/1998	50	73	128	121	267	325	N/A	N/A
	10/13/1998	66	56	93	83	195	229	N/A	N/A
	3/25/1999	88	55	221	190	569	572	N/A	N/A
	4/26/1999	N/A	N/A	N/A	N/A	N/A	N/A	N/A	53
	8/6/1999	N/A	N/A	N/A	N/A	N/A	N/A	N/A	45
	10/14/1999	32	44	81	83	245	240	N/A	33
	3/23/2000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	46
	4/13/2000	45	60	108	102	263	225	N/A	48
	10/20/2000	40	52	96	93	341	302	N/A	48
	4/20/2001	40	54	88	126	330	330	N/A	50
	10/3/2001	36	57	92	159	346	319	N/A	47
	4/18/2002	39	54	95	118	388	320	N/A	48
	10/15/2002	39	51	65	119	340	290	N/A	42
	4/15/2003	44	60	44	55	390	327	N/A	56
	10/8/2003	39	52	84	100	345	310	N/A	51
	4/26/2004	32	119	102	114	298	328	N/A	46
	10/21/2004	52	61	93	85	292	272	N/A	55
	4/26/2005	38	43	114	112	304	178	N/A	45
	10/5/2005	34	53	109	103	429	306	N/A	48

SCS ENGINEERS

Summary of Groundwater Chemistry
Climax Molybdenum Industrial Landfill (56-SDP-06-80P)

Other Constituents	Sample Date	MW-7 UPG	MW-18R UPG	MW-11 DNG	MW-15 DNG	MW-16 DNG	MW-17 DNG	MW-21 DNG	TW-2 DNG
Sulfate, mg/L (CAS NO - 14808-79-8)	4/26/2006	62	51	86	131	333	320	N/A	43
	10/10/2006	38	59	115	124	330	325	N/A	50
	4/19/2007	40	55	118	90	323	326	N/A	47
	10/10/2007	42	58	95	94	319	281	301	54
	4/23/2008	40	54	115	104	341	260	360	52
	10/14/2008	36	54	165	109	350	286	474	48
	4/22/2009	41	53	148	101	433	300	N/A	50
	10/19/2009	46	884	184	35	317	317	N/A	64
	11/23/2009	N/A	N/A	N/A	N/A	N/A	N/A	442	N/A
	1/14/2010	N/A	N/A	N/A	N/A	N/A	N/A	1437	N/A
	4/14/2010	40	168	229	67	356	279	1510	57
	7/27/2010	N/A	N/A	N/A	N/A	N/A	N/A	1313	N/A
	10/7/2010	39	184	138	87	391	327	1224	55
	4/13/2011	28	226	190	122	407	289	1389	62
	10/6/2011	38	145	167	118	366	432	1316	60
	4/12/2012	45	159	157	128	433	427	986	62
	10/10/2012	40	77	166	91	434	355	986	52
	4/25/2013	48	77	194	74	323	276	1041	63
	10/9/2013	43	94	171	106	437	371	486	56
	4/10/2014	73	96	153	88	351	271	477	52
	10/7/2014	57	64	201	113	450	377	728	66
	1/15/2015	N/A	51	N/A	N/A	N/A	N/A	N/A	N/A
	4/14/2015	49	47	160	100	380	360	840	54
	7/15/2015	N/A	48	N/A	N/A	N/A	N/A	N/A	N/A
	10/13/2015	64	47	160	110	360	390	640	60
	5/24/2016	100	47	52	110	400	320	850	83
	10/10/2016	74	48	11	110	400	340	710	89
	4/11/2017	72	44	58	71	400	320	810	110
	10/18/2017	46	43	< 8	95	430	370	850	120
	4/12/2018	138	52.3	15.3	115	460	348	700	144
	8/2/2018	94.2	49.9	38.9	111	460	304	782	135
	4/9/2019	82.3	53.5	100	120	468	289	944	138
	8/28/2019	60.9	48.5	39	101	410	292	1050	144
	3/16/2020	78.7	49.9	67.3	113	403	323	969	157
	3/16/2020	N/A	N/A	N/A	N/A	N/A	N/A	N/A	157
	7/28/2020	75	46.4	139	127	396	293	1070	229
	7/28/2020	N/A	N/A	N/A	119	N/A	N/A	N/A	N/A
	3/18/2021	81	48.5	72.1	123	441	325	874	216
	3/18/2021	84.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	9/1/2021	84.7	51.1	57.6	108	407	323	844	303
	9/1/2021	N/A	N/A	N/A	119	N/A	N/A	N/A	N/A
	6/29/2022	57	45.6	55.1	82	345	276	648	321
	6/29/2022	N/A	N/A	N/A	83.2	N/A	N/A	N/A	N/A
	8/16/2022	67.1	49.9	39.9	94.8	397	305	845	323
	8/16/2022	N/A	N/A	N/A	94.7	N/A	N/A	N/A	N/A
	4/7/2023	73.6	49.7	68.8	84.8	399	319	723	322
	4/7/2023	N/A	N/A	N/A	79	N/A	N/A	N/A	N/A
	7/27/2023	78	53.1	41	119	435	328	704	368
	7/27/2023	N/A	N/A	N/A	117	N/A	N/A	N/A	N/A

Note: * indicates 'J flag'. Detection is below the reporting limit, but greater than the MDL (Method Detection Limit). The concentration is estimated.

Denotes Detection.

Denotes Confirmed Outlier. Statistically Excluded.

Sampling performed over multiple dates is recorded on the first date sampled. Refer to field forms for exact sample date.



Appendix D

Statistical Report

Attachment A

Trend Test ($\alpha=0.01$)

Trend Test

Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY 2023AWQR-AM Printed 8/29/2023, 2:27 PM

<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Alpha</u>	<u>Method</u>
Arsenic (mg/L)	MW-11	0.0004929	6	21	No	8	0	0.01	NP
Arsenic (mg/L)	MW-7 (bg)	-0.0001306	-12	-21	No	8	12.5	0.01	NP
Cadmium (mg/L)	MW-11	0	11	21	No	8	87.5	0.01	NP
Cadmium (mg/L)	MW-16	0.00001919	6	21	No	8	12.5	0.01	NP
Cadmium (mg/L)	MW-21	0.00001931	8	21	No	8	25	0.01	NP
Cadmium (mg/L)	MW-7 (bg)	0.00001609	7	21	No	8	37.5	0.01	NP
Chemical Oxygen Demand (mg/L)	MW-11	17.9	10	21	No	8	0	0.01	NP
Chemical Oxygen Demand (mg/L)	MW-15	1.797	19	21	No	8	37.5	0.01	NP
Chemical Oxygen Demand (mg/L)	MW-16	1.83	11	21	No	8	37.5	0.01	NP
Chemical Oxygen Demand (mg/L)	MW-17	-0.3576	-1	-21	No	8	25	0.01	NP
Chemical Oxygen Demand (mg/L)	MW-18R (bg)	0	7	21	No	8	87.5	0.01	NP
Chemical Oxygen Demand (mg/L)	MW-21	1.033	8	21	No	8	0	0.01	NP
Chemical Oxygen Demand (mg/L)	MW-7 (bg)	0.382	9	21	No	8	0	0.01	NP
Chemical Oxygen Demand (mg/L)	TW-2	0	4	21	No	8	50	0.01	NP
Chloride (mg/L)	MW-11	-0.05772	0	21	No	8	0	0.01	NP
Chloride (mg/L)	MW-15	0.9896	14	21	No	8	0	0.01	NP
Chloride (mg/L)	MW-16	0.04876	2	21	No	8	0	0.01	NP
Chloride (mg/L)	MW-17	-0.4012	-10	-21	No	8	12.5	0.01	NP
Chloride (mg/L)	MW-18R (bg)	0.1067	8	21	No	8	0	0.01	NP
Chloride (mg/L)	MW-21	-29.74	-10	-21	No	8	0	0.01	NP
Chloride (mg/L)	MW-7 (bg)	-0.3478	-8	-21	No	8	12.5	0.01	NP
Chloride (mg/L)	TW-2	1.852	24	21	Yes	8	0	0.01	NP
Iron (mg/L)	MW-11	-2.687	-8	-21	No	8	0	0.01	NP
Iron (mg/L)	MW-16	0	1	21	No	8	87.5	0.01	NP
Iron (mg/L)	MW-17	-0.02614	-12	-21	No	8	12.5	0.01	NP
Iron (mg/L)	MW-18R (bg)	0	-7	-21	No	8	75	0.01	NP
Iron (mg/L)	MW-21	0	-5	-21	No	8	87.5	0.01	NP
Iron (mg/L)	MW-7 (bg)	-0.01145	0	21	No	8	0	0.01	NP
Lithium (mg/L)	MW-11	-0.001478	-10	-21	No	8	0	0.01	NP
Lithium (mg/L)	MW-15	-0.001318	-6	-21	No	8	0	0.01	NP
Lithium (mg/L)	MW-16	-0.004108	-26	-21	Yes	8	0	0.01	NP
Lithium (mg/L)	MW-17	-0.00003742	0	21	No	8	0	0.01	NP
Lithium (mg/L)	MW-18R (bg)	0.0002197	5	21	No	8	0	0.01	NP
Lithium (mg/L)	MW-21	-0.003539	-20	-21	No	8	0	0.01	NP
Lithium (mg/L)	MW-7 (bg)	-0.0004749	-11	-21	No	8	0	0.01	NP
Lithium (mg/L)	TW-2	0.001842	20	21	No	8	0	0.01	NP
Manganese (mg/L)	MW-11	0.01429	0	21	No	8	0	0.01	NP
Manganese (mg/L)	MW-15	0	-1	-21	No	8	75	0.01	NP
Manganese (mg/L)	MW-16	0.02239	2	21	No	8	0	0.01	NP
Manganese (mg/L)	MW-17	0.09761	8	21	No	8	0	0.01	NP
Manganese (mg/L)	MW-18R (bg)	0	-7	-21	No	8	75	0.01	NP
Manganese (mg/L)	MW-21	-0.06022	-4	-21	No	8	0	0.01	NP
Manganese (mg/L)	MW-7 (bg)	-0.08735	-8	-21	No	8	0	0.01	NP
Molybdenum (mg/L)	MW-11	0.0001927	11	21	No	8	37.5	0.01	NP
Molybdenum (mg/L)	MW-15	0.00008002	12	21	No	8	0	0.01	NP
Molybdenum (mg/L)	MW-16	0	-6	-21	No	8	62.5	0.01	NP
Molybdenum (mg/L)	MW-17	0.0002564	6	21	No	8	0	0.01	NP
Molybdenum (mg/L)	MW-18R (bg)	0.00005478	9	21	No	8	25	0.01	NP
Molybdenum (mg/L)	MW-21	0	-7	-21	No	8	87.5	0.01	NP
Molybdenum (mg/L)	MW-7 (bg)	0.000097	15	21	No	8	25	0.01	NP

Trend Test

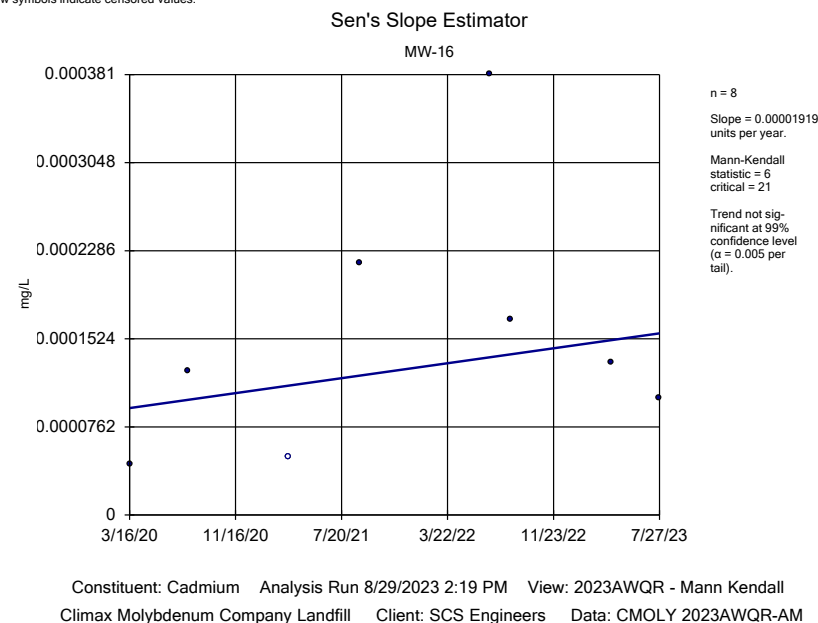
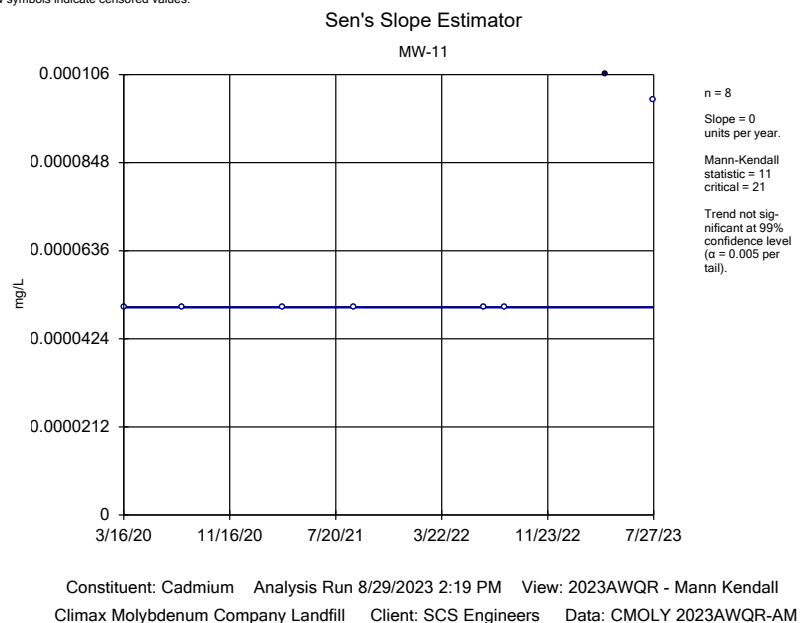
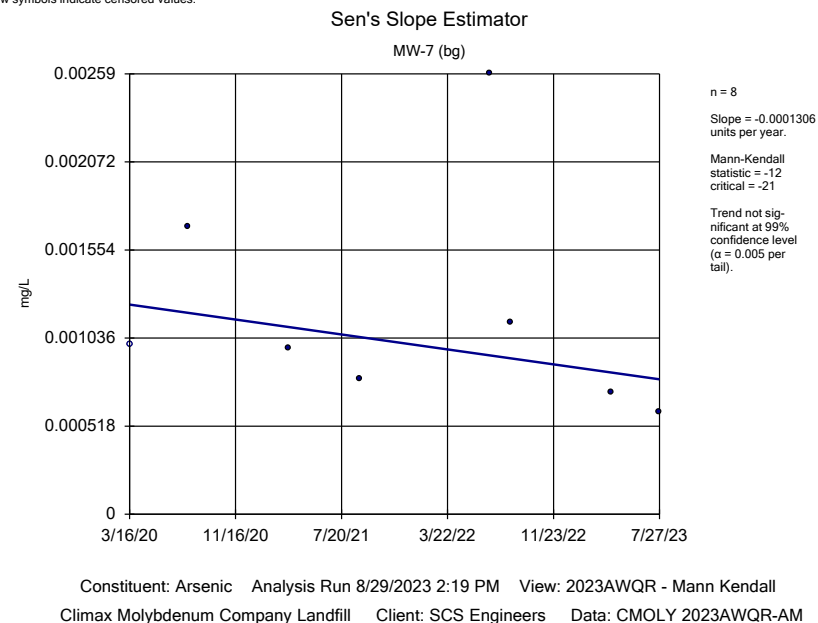
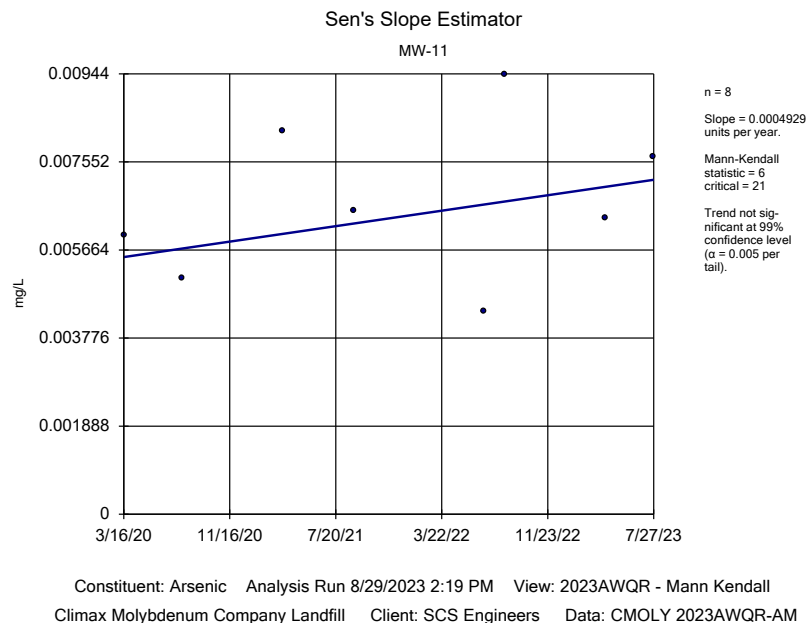
Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY 2023AWQR-AM Printed 8/29/2023, 2:27 PM

<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Alpha</u>	<u>Method</u>
Molybdenum (mg/L)	TW-2	-0.00004519	-6	-21	No	8	12.5	0.01	NP
Nitrogen, Ammonia (mg/L)	MW-11	0.5797	8	21	No	8	0	0.01	NP
Nitrogen, Ammonia (mg/L)	MW-17	0	-4	-21	No	8	62.5	0.01	NP
Nitrogen, Ammonia (mg/L)	MW-21	0	1	21	No	8	87.5	0.01	NP
Nitrogen, Ammonia (mg/L)	MW-7 (bg)	0	1	21	No	8	87.5	0.01	NP
pH (S.U.)	MW-11	-0.001276	0	21	No	8	0	0.01	NP
pH (S.U.)	MW-15	-0.003091	0	21	No	8	0	0.01	NP
pH (S.U.)	MW-16	-0.02793	-7	-21	No	8	0	0.01	NP
pH (S.U.)	MW-17	-0.03497	-4	-21	No	8	0	0.01	NP
pH (S.U.)	MW-18R (bg)	0.001486	1	21	No	8	0	0.01	NP
pH (S.U.)	MW-21	0.0315	5	21	No	8	0	0.01	NP
pH (S.U.)	MW-7 (bg)	0.002437	1	21	No	8	0	0.01	NP
pH (S.U.)	TW-2	-0.01832	-2	-21	No	8	0	0.01	NP
Selenium (mg/L)	MW-11	0.0001727	9	21	No	8	25	0.01	NP
Selenium (mg/L)	MW-15	-0.0002386	-8	-21	No	8	0	0.01	NP
Selenium (mg/L)	MW-17	0.0003324	4	21	No	8	0	0.01	NP
Selenium (mg/L)	MW-18R (bg)	0.0001213	9	21	No	8	0	0.01	NP
Selenium (mg/L)	MW-21	0	7	21	No	8	87.5	0.01	NP
Selenium (mg/L)	MW-7 (bg)	0	-5	-21	No	8	87.5	0.01	NP
Selenium (mg/L)	TW-2	0.001258	26	21	Yes	8	0	0.01	NP
Sodium (mg/L)	MW-11	3.875	16	21	No	8	0	0.01	NP
Sodium (mg/L)	MW-15	-0.3405	-4	-21	No	8	0	0.01	NP
Sodium (mg/L)	MW-16	2.892	16	21	No	8	0	0.01	NP
Sodium (mg/L)	MW-17	0.4092	8	21	No	8	0	0.01	NP
Sodium (mg/L)	MW-18R (bg)	1.141	15	21	No	8	0	0.01	NP
Sodium (mg/L)	MW-21	-4.442	-10	-21	No	8	0	0.01	NP
Sodium (mg/L)	MW-7 (bg)	-1.469	-8	-21	No	8	0	0.01	NP
Sodium (mg/L)	TW-2	5.959	18	21	No	8	0	0.01	NP
Specific Conductance (umhos/cm)	MW-11	-43.8	-16	-21	No	8	0	0.01	NP
Specific Conductance (umhos/cm)	MW-15	-46.89	-12	-21	No	8	0	0.01	NP
Specific Conductance (umhos/cm)	MW-16	-26.31	-12	-21	No	8	0	0.01	NP
Specific Conductance (umhos/cm)	MW-17	-36.2	-16	-21	No	8	0	0.01	NP
Specific Conductance (umhos/cm)	MW-18R (bg)	-15.68	-12	-21	No	8	0	0.01	NP
Specific Conductance (umhos/cm)	MW-21	-321	-18	-21	No	8	0	0.01	NP
Specific Conductance (umhos/cm)	MW-7 (bg)	-52.96	-20	-21	No	8	0	0.01	NP
Specific Conductance (umhos/cm)	TW-2	43.74	14	21	No	8	0	0.01	NP
Strontium (mg/L)	MW-11	-0.01665	-12	-21	No	8	0	0.01	NP
Strontium (mg/L)	MW-15	-0.02542	-19	-21	No	8	0	0.01	NP
Strontium (mg/L)	MW-16	-0.01304	-18	-21	No	8	0	0.01	NP
Strontium (mg/L)	MW-17	-0.01551	-14	-21	No	8	0	0.01	NP
Strontium (mg/L)	MW-18R (bg)	-0.00223	-7	-21	No	8	0	0.01	NP
Strontium (mg/L)	MW-21	-0.1596	-22	-21	Yes	8	0	0.01	NP
Strontium (mg/L)	MW-7 (bg)	-0.02133	-22	-21	Yes	8	0	0.01	NP
Strontium (mg/L)	TW-2	0.01962	14	21	No	8	0	0.01	NP
Sulfate (mg/L)	MW-11	-12.21	-14	-21	No	8	0	0.01	NP
Sulfate (mg/L)	MW-15	-8.106	-9	-21	No	8	0	0.01	NP
Sulfate (mg/L)	MW-16	0.8006	2	21	No	8	0	0.01	NP
Sulfate (mg/L)	MW-17	1.379	3	21	No	8	0	0.01	NP
Sulfate (mg/L)	MW-18R (bg)	0.9707	7	21	No	8	0	0.01	NP
Sulfate (mg/L)	MW-21	-79.58	-18	-21	No	8	0	0.01	NP

Trend Test

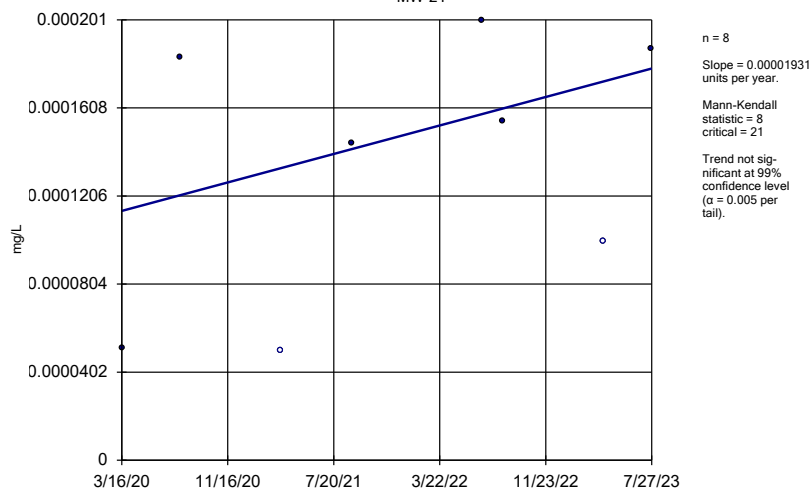
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<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Alpha</u>	<u>Method</u>
Sulfate (mg/L)	MW-7 (bg)	-1.093	-4	-21	No	8	0	0.01	NP
Sulfate (mg/L)	TW-2	49.74	24	21	Yes	8	0	0.01	NP



Sen's Slope Estimator

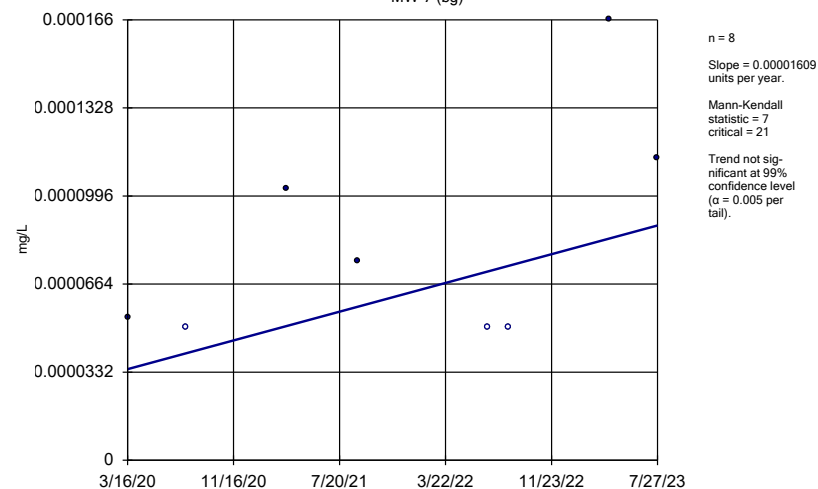
MW-21



Constituent: Cadmium Analysis Run 8/29/2023 2:19 PM View: 2023AWQR - Mann Kendall
Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY 2023AWQR-AM

Sen's Slope Estimator

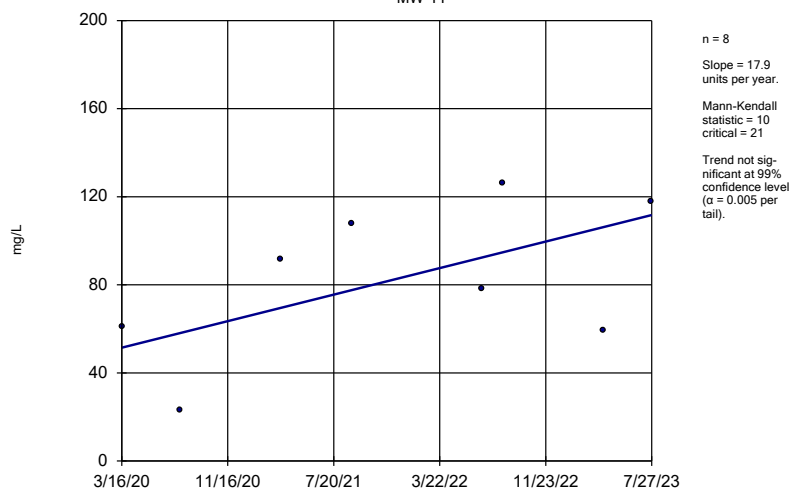
MW-7 (bg)



Constituent: Cadmium Analysis Run 8/29/2023 2:19 PM View: 2023AWQR - Mann Kendall
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Sen's Slope Estimator

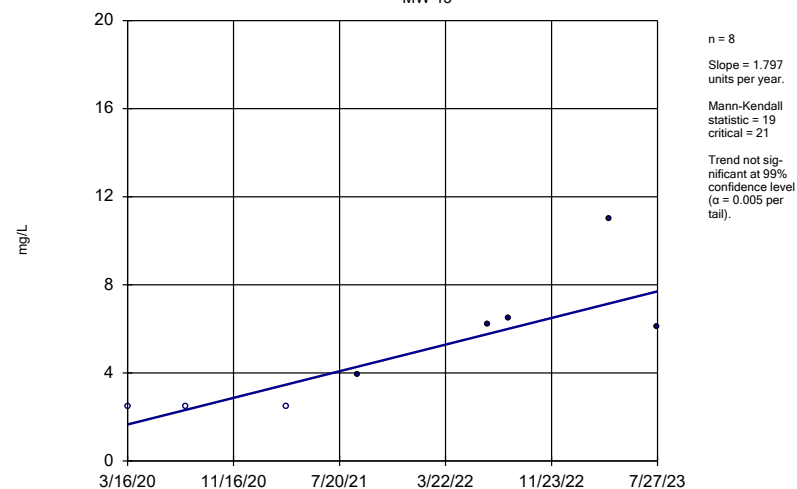
MW-11



Constituent: Chemical Oxygen Demand Analysis Run 8/29/2023 2:19 PM View: 2023AWQR - Mann Kend
Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY 2023AWQR-AM

Sen's Slope Estimator

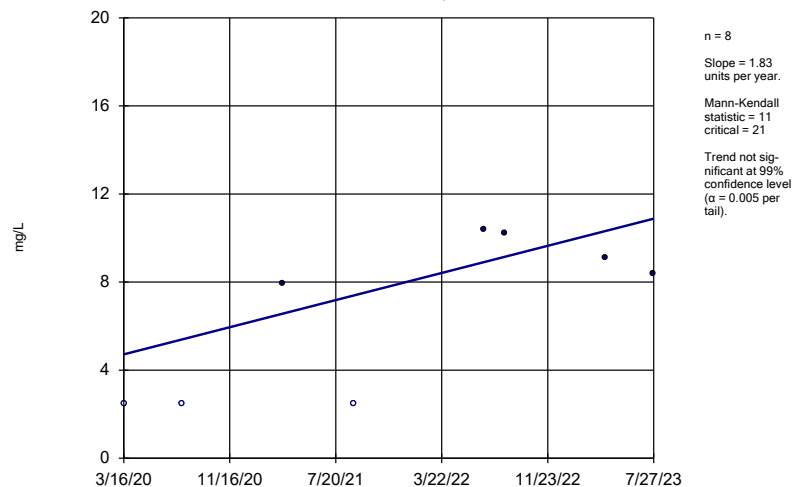
MW-15



Constituent: Chemical Oxygen Demand Analysis Run 8/29/2023 2:19 PM View: 2023AWQR - Mann Kend
Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY 2023AWQR-AM

Sen's Slope Estimator

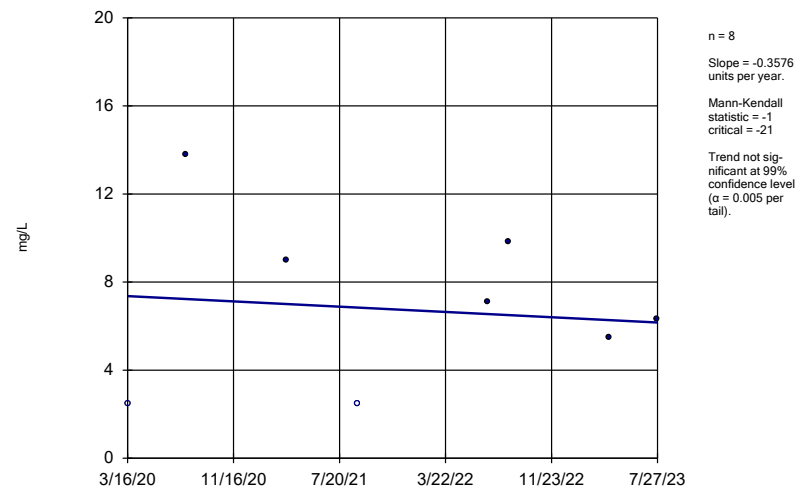
MW-16



Constituent: Chemical Oxygen Demand Analysis Run 8/29/2023 2:19 PM View: 2023AWQR - Mann Kend
Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY 2023AWQR-AM

Sen's Slope Estimator

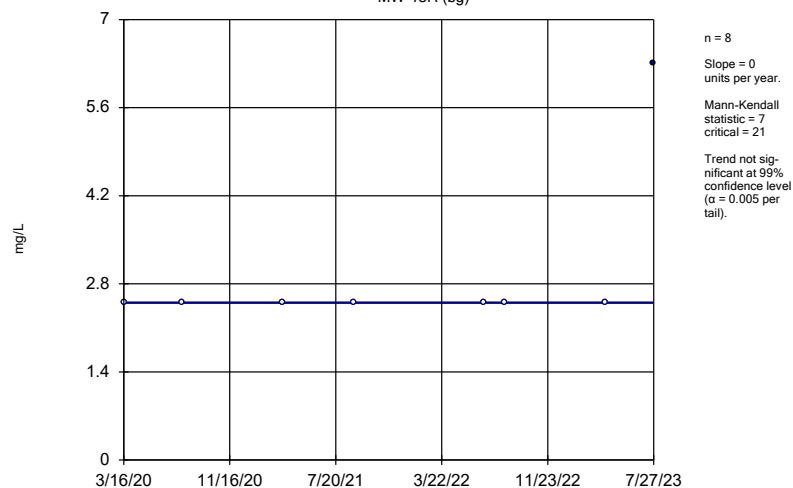
MW-17



Constituent: Chemical Oxygen Demand Analysis Run 8/29/2023 2:19 PM View: 2023AWQR - Mann Kend
Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY 2023AWQR-AM

Sen's Slope Estimator

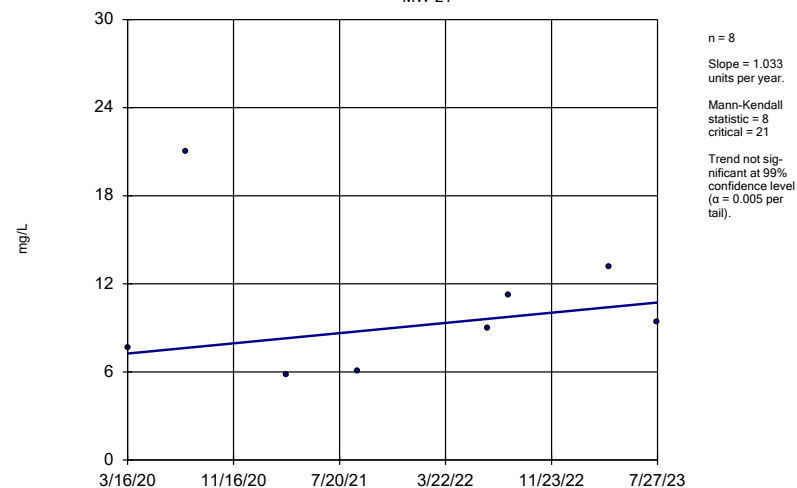
MW-18R (bg)



Constituent: Chemical Oxygen Demand Analysis Run 8/29/2023 2:19 PM View: 2023AWQR - Mann Kend
Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY 2023AWQR-AM

Sen's Slope Estimator

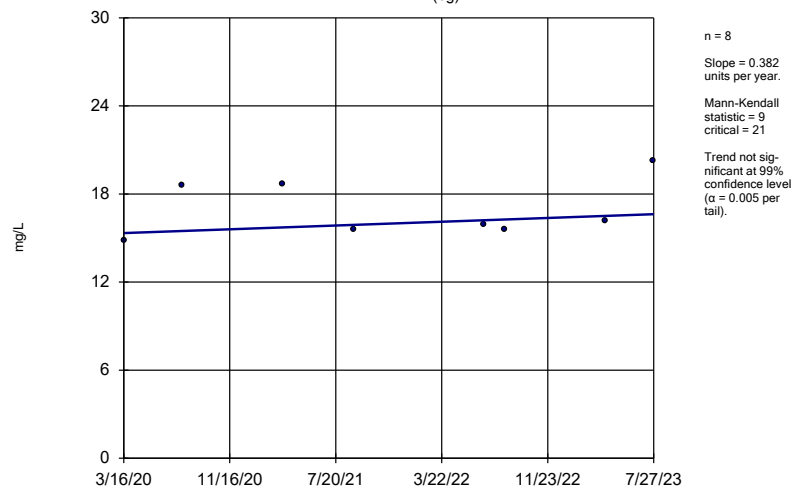
MW-21



Constituent: Chemical Oxygen Demand Analysis Run 8/29/2023 2:19 PM View: 2023AWQR - Mann Kend
Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY 2023AWQR-AM

Sen's Slope Estimator

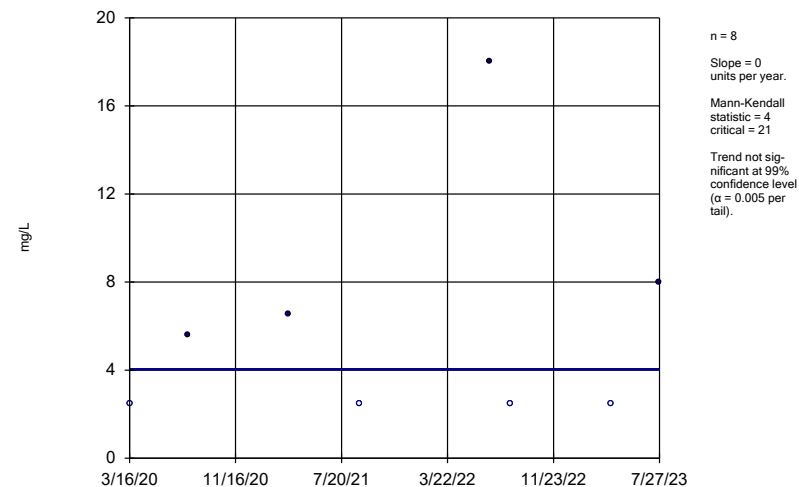
MW-7 (bg)



Constituent: Chemical Oxygen Demand Analysis Run 8/29/2023 2:19 PM View: 2023AWQR - Mann Kend
Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY 2023AWQR-AM

Sen's Slope Estimator

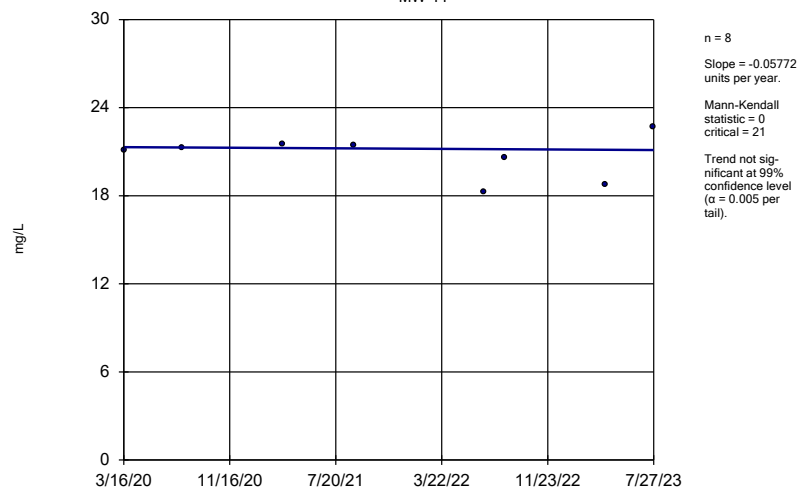
TW-2



Constituent: Chemical Oxygen Demand Analysis Run 8/29/2023 2:19 PM View: 2023AWQR - Mann Kend
Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY 2023AWQR-AM

Sen's Slope Estimator

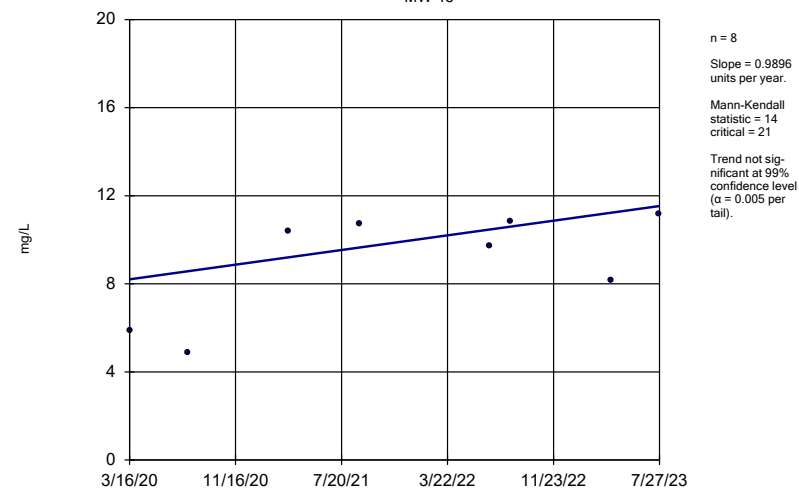
MW-11



Constituent: Chloride Analysis Run 8/29/2023 2:19 PM View: 2023AWQR - Mann Kendall
Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY 2023AWQR-AM

Sen's Slope Estimator

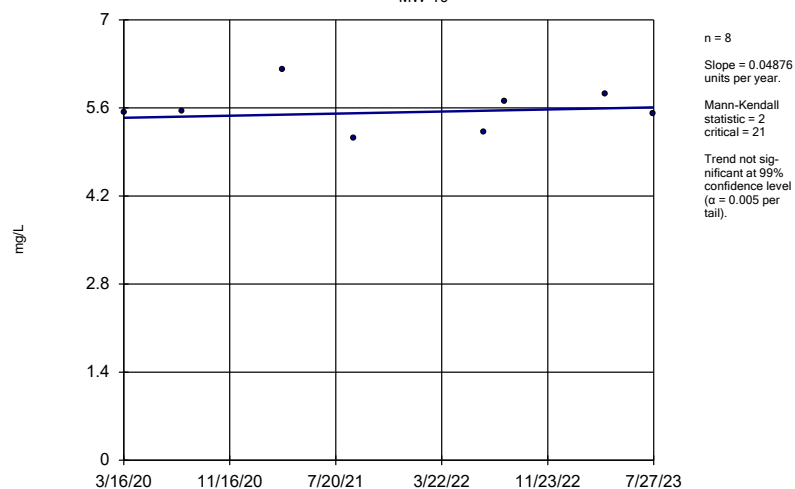
MW-15



Constituent: Chloride Analysis Run 8/29/2023 2:19 PM View: 2023AWQR - Mann Kendall
Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY 2023AWQR-AM

Sen's Slope Estimator

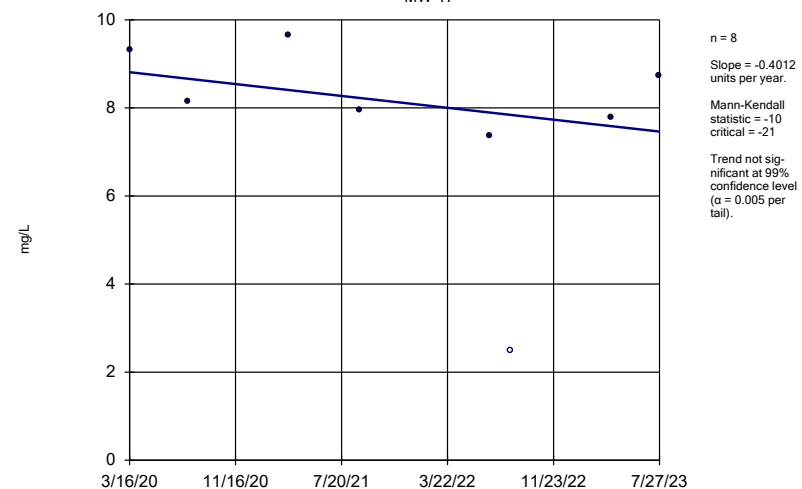
MW-16



Constituent: Chloride Analysis Run 8/29/2023 2:19 PM View: 2023AWQR - Mann Kendall
Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY 2023AWQR-AM

Sen's Slope Estimator

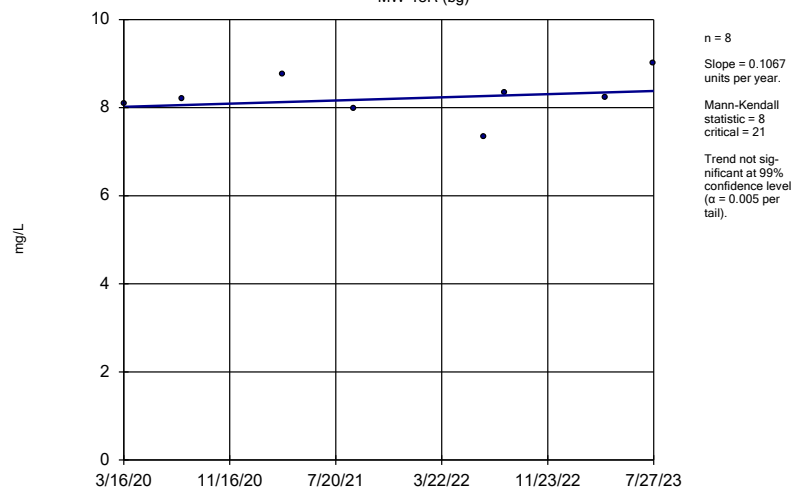
MW-17



Constituent: Chloride Analysis Run 8/29/2023 2:19 PM View: 2023AWQR - Mann Kendall
Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY 2023AWQR-AM

Sen's Slope Estimator

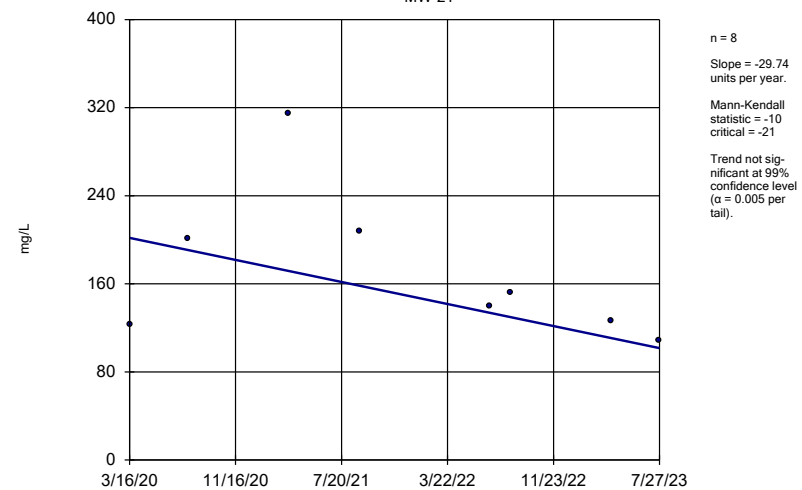
MW-18R (bg)



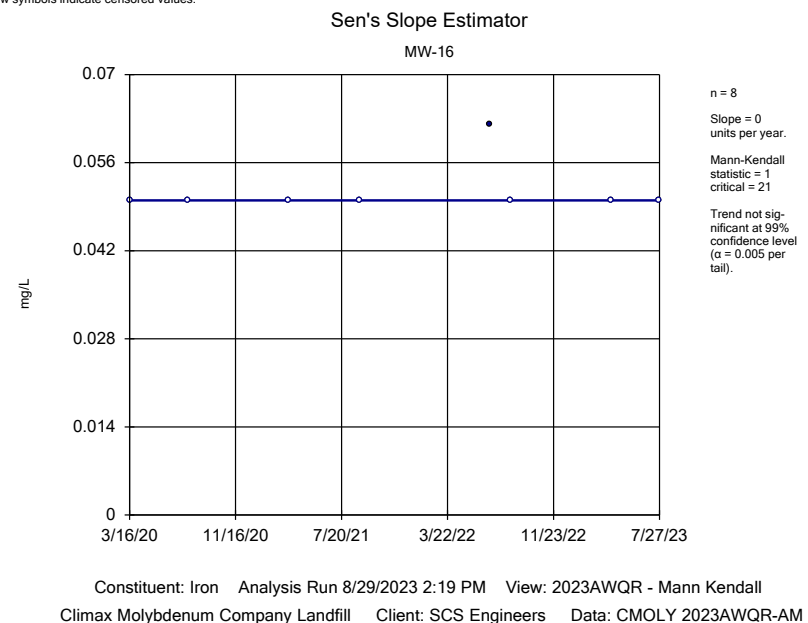
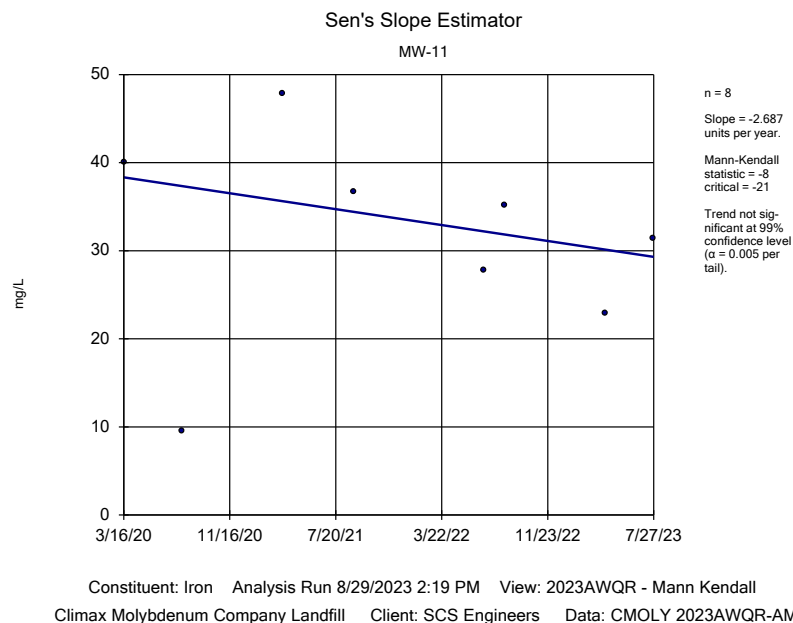
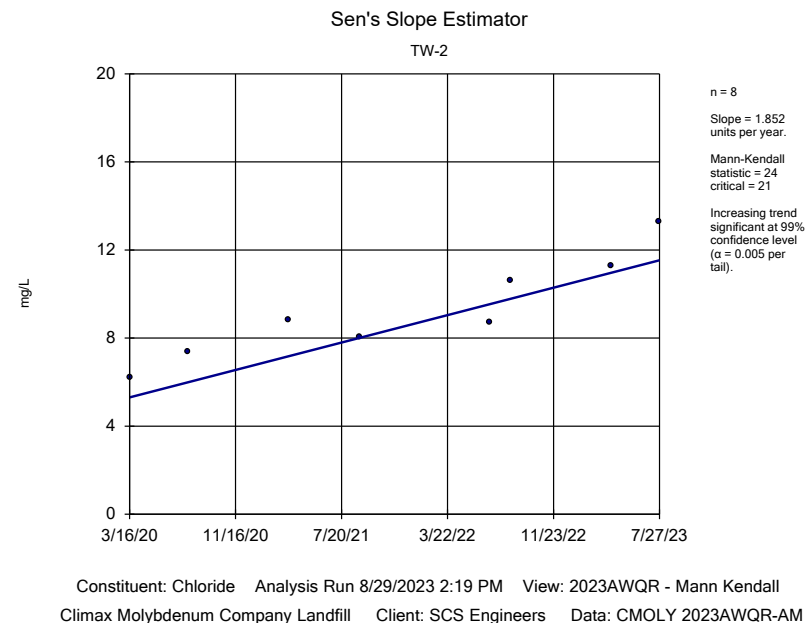
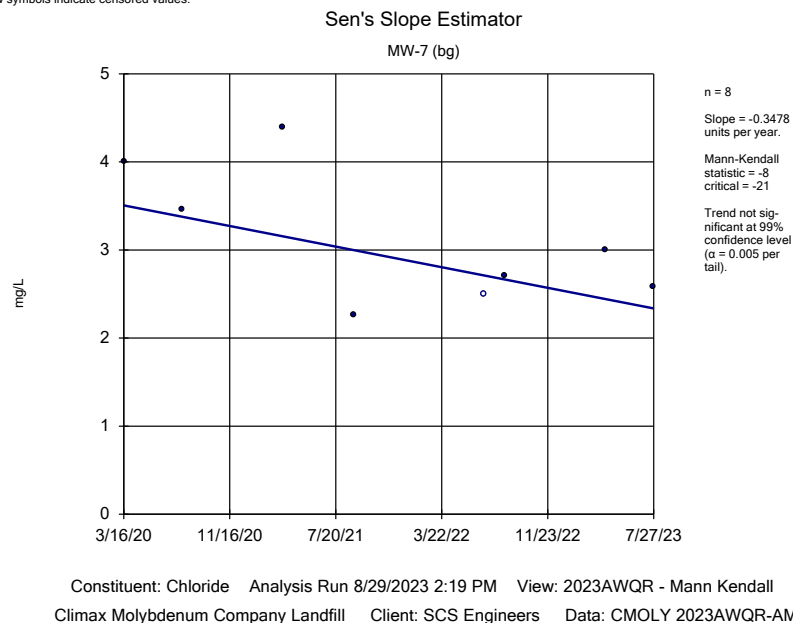
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Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY 2023AWQR-AM

Sen's Slope Estimator

MW-21

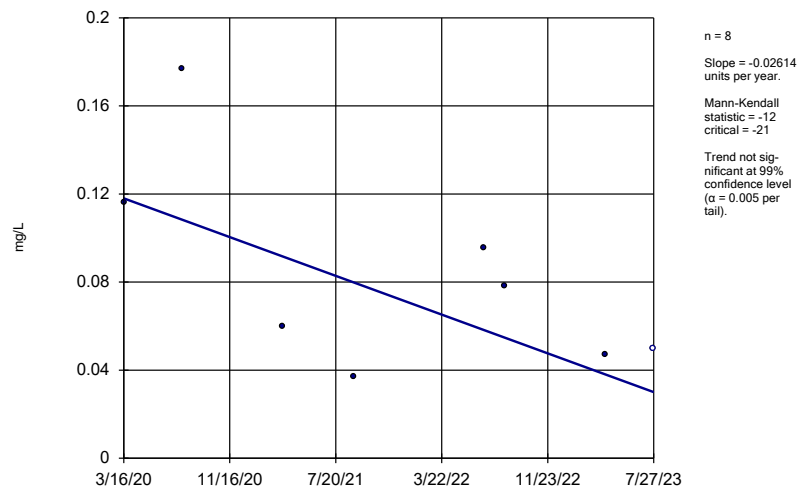


Constituent: Chloride Analysis Run 8/29/2023 2:19 PM View: 2023AWQR - Mann Kendall
Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY 2023AWQR-AM



Sen's Slope Estimator

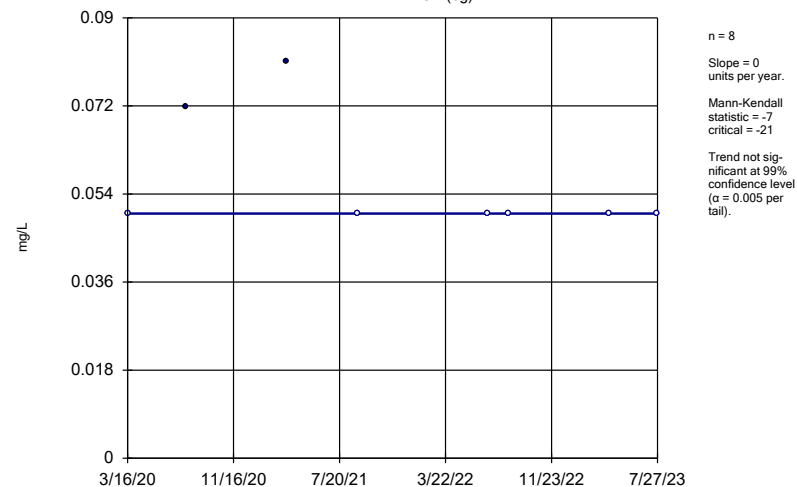
MW-17



Constituent: Iron Analysis Run 8/29/2023 2:19 PM View: 2023AWQR - Mann Kendall
Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY 2023AWQR-AM

Sen's Slope Estimator

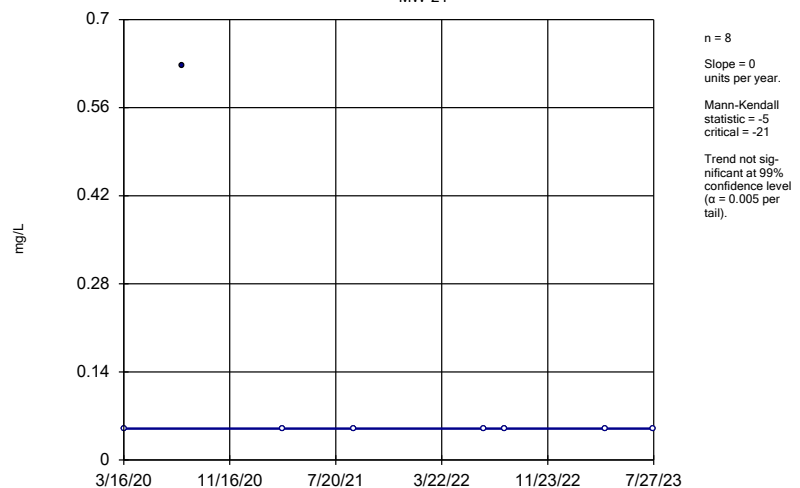
MW-18R (bg)



Constituent: Iron Analysis Run 8/29/2023 2:19 PM View: 2023AWQR - Mann Kendall
Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY 2023AWQR-AM

Sen's Slope Estimator

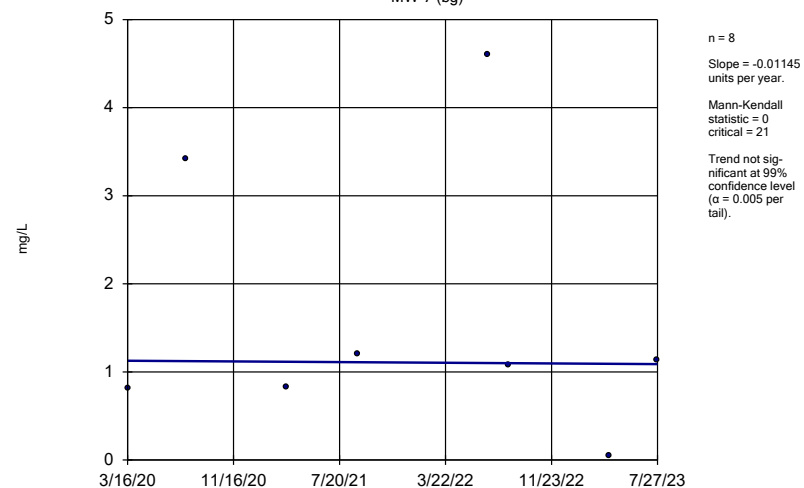
MW-21



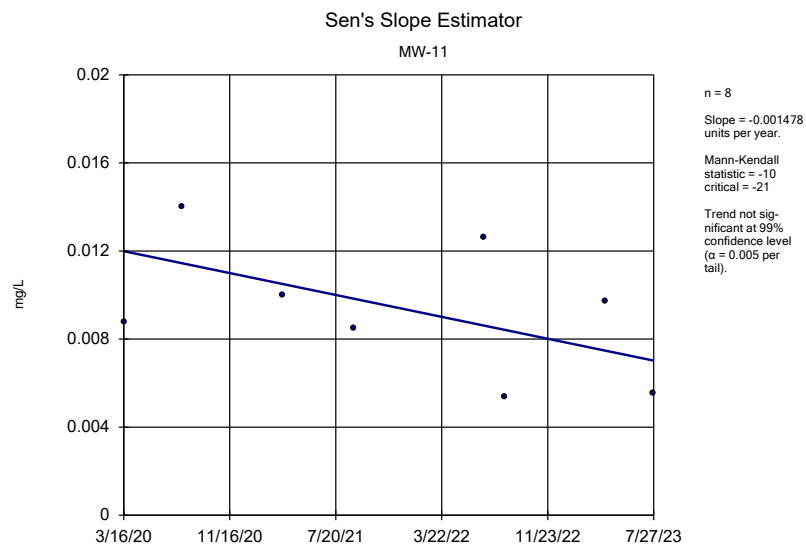
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Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY 2023AWQR-AM

Sen's Slope Estimator

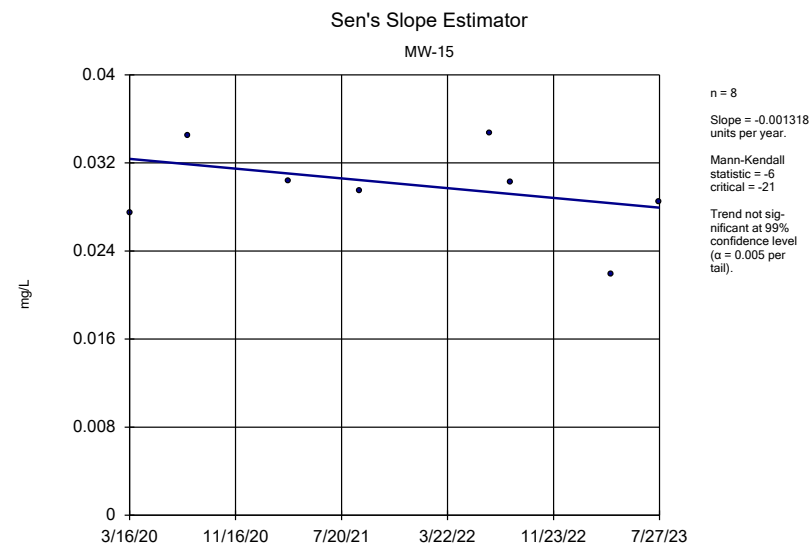
MW-7 (bg)



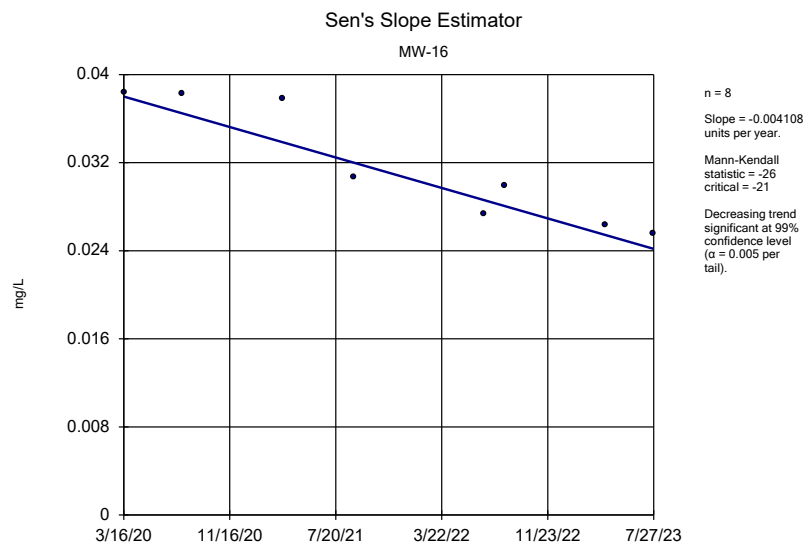
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Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY 2023AWQR-AM



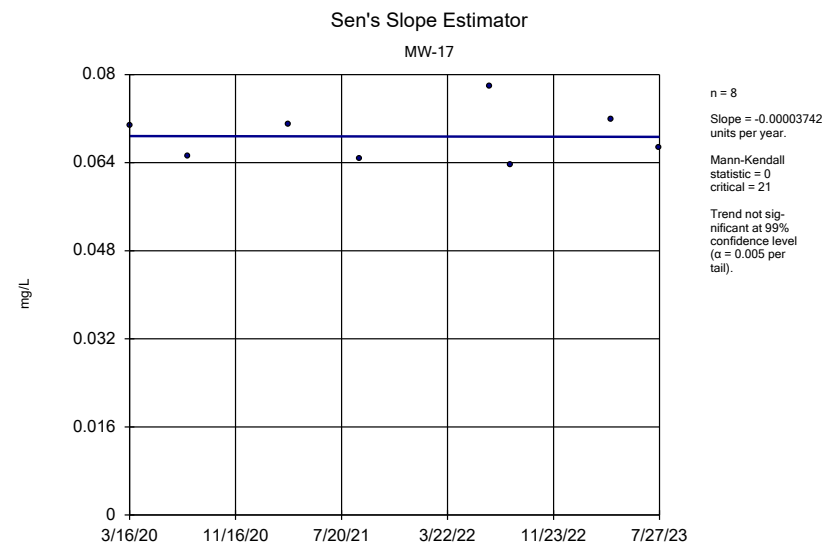
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Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY 2023AWQR-AM



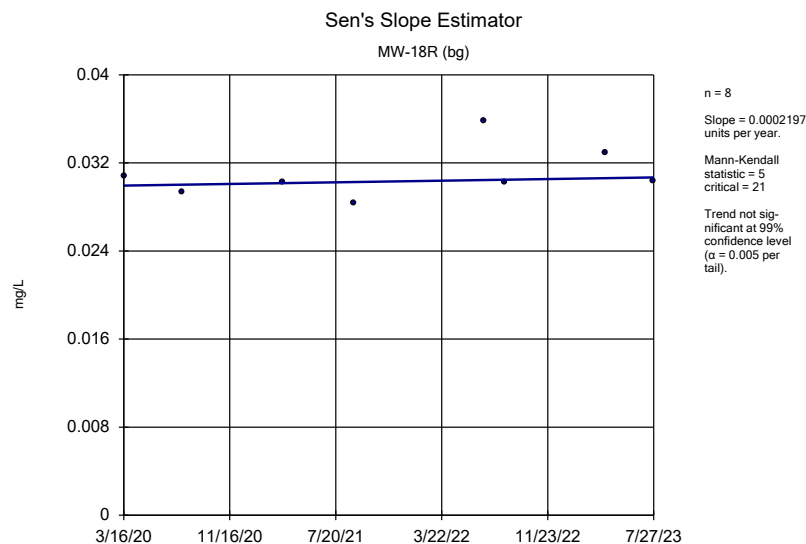
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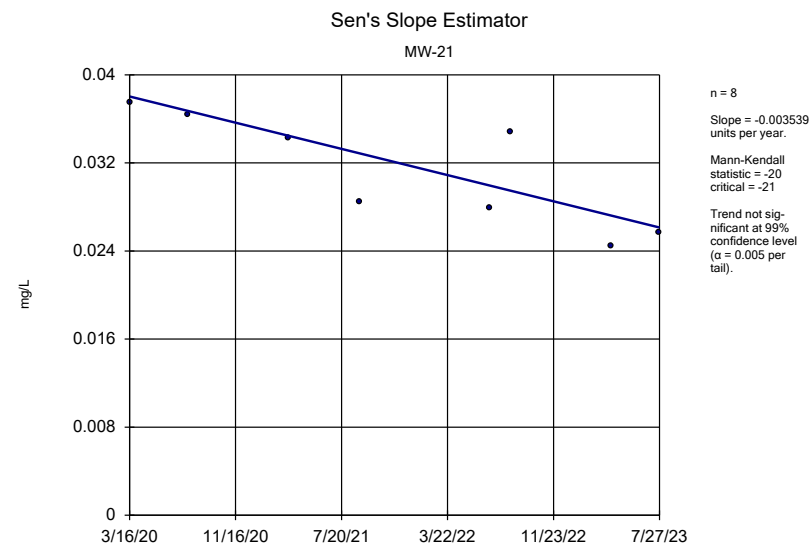
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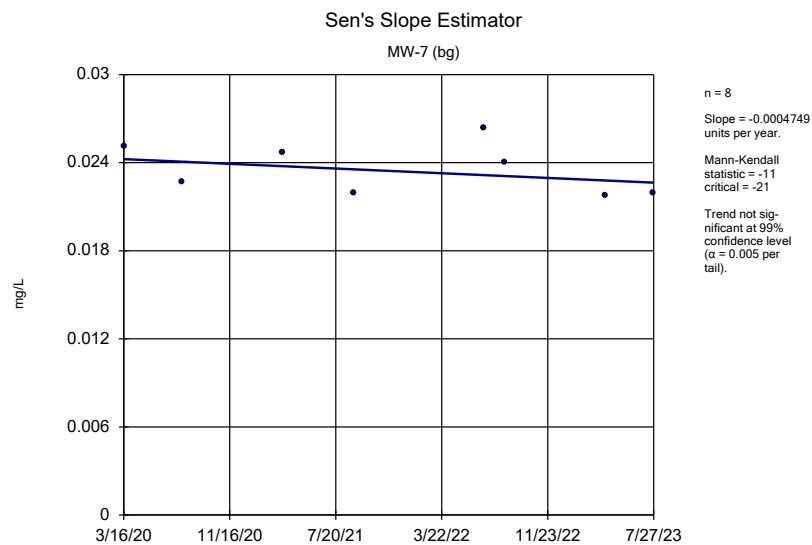
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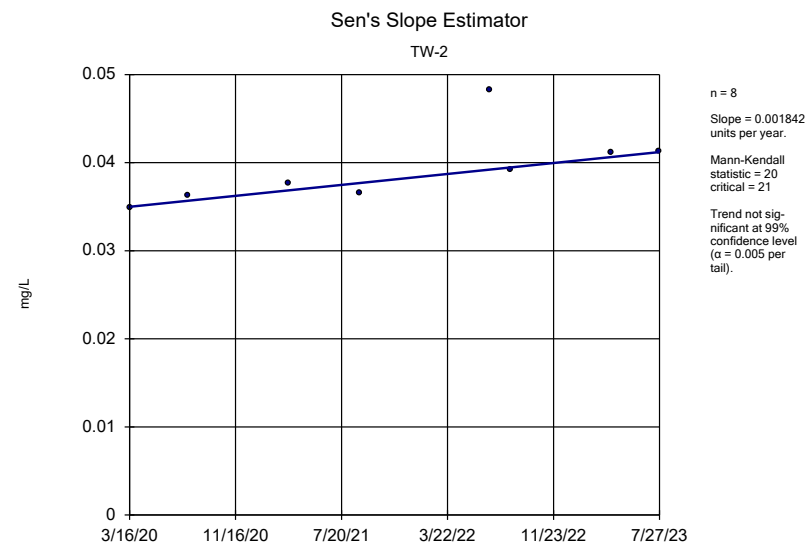
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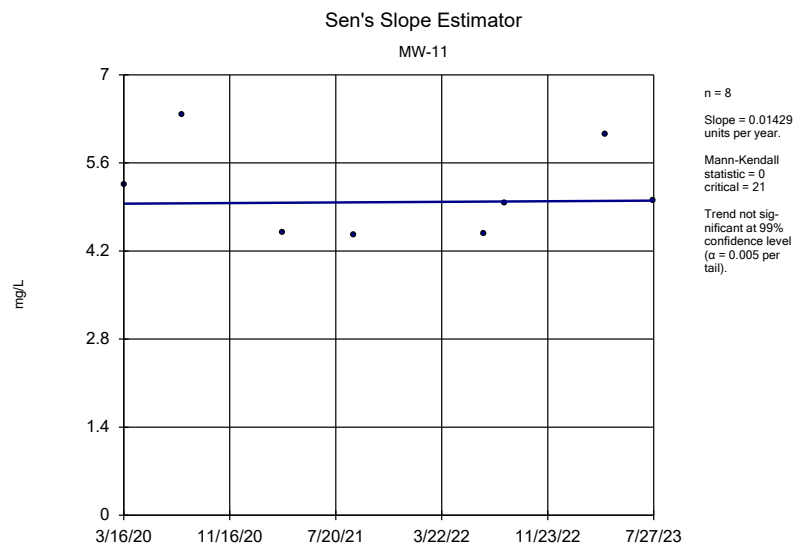
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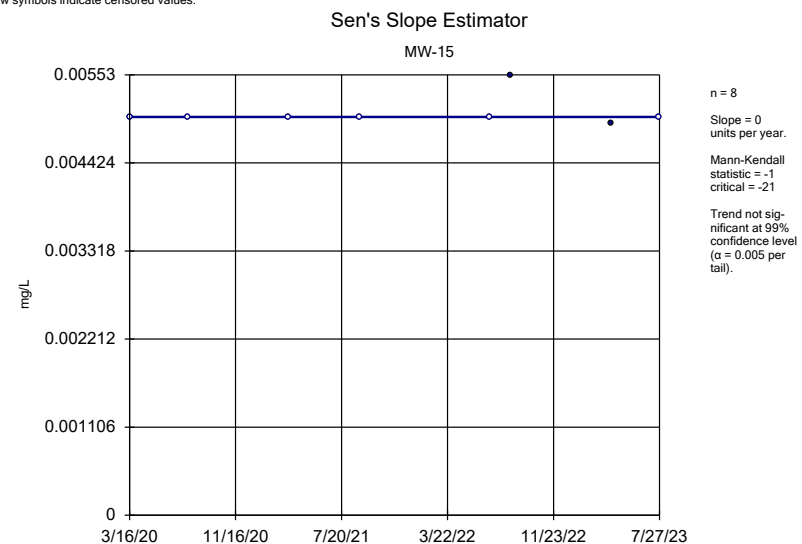
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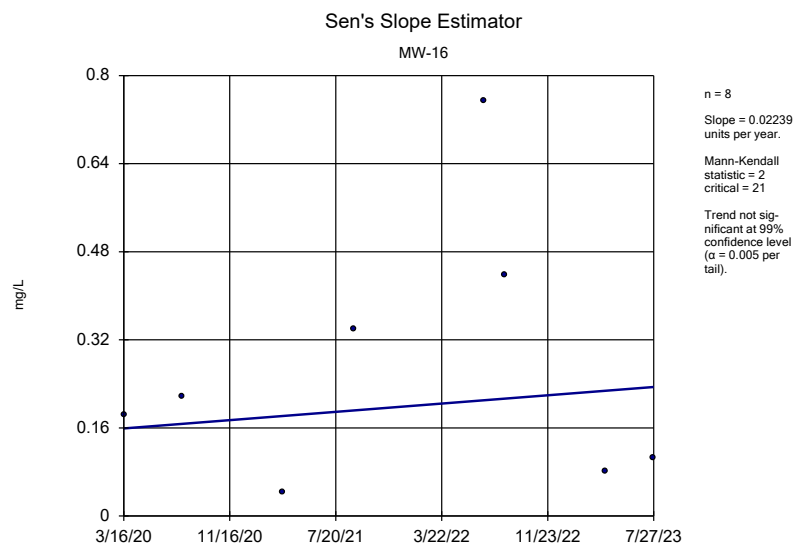
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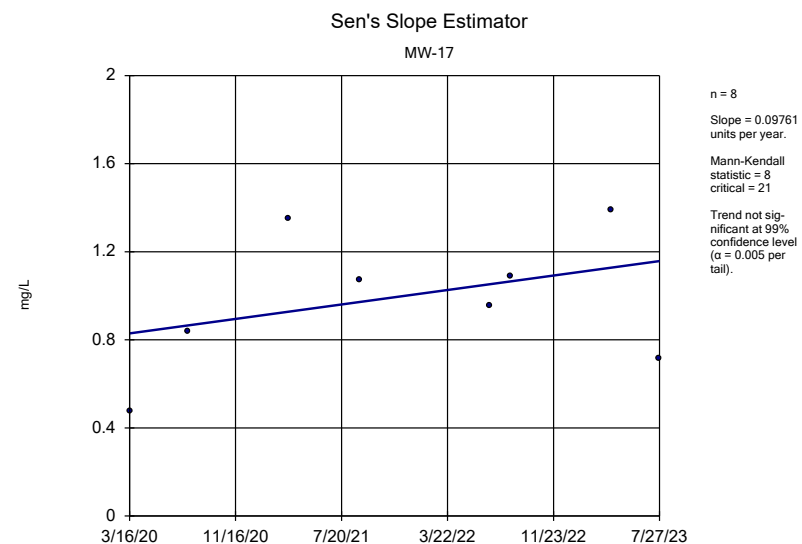
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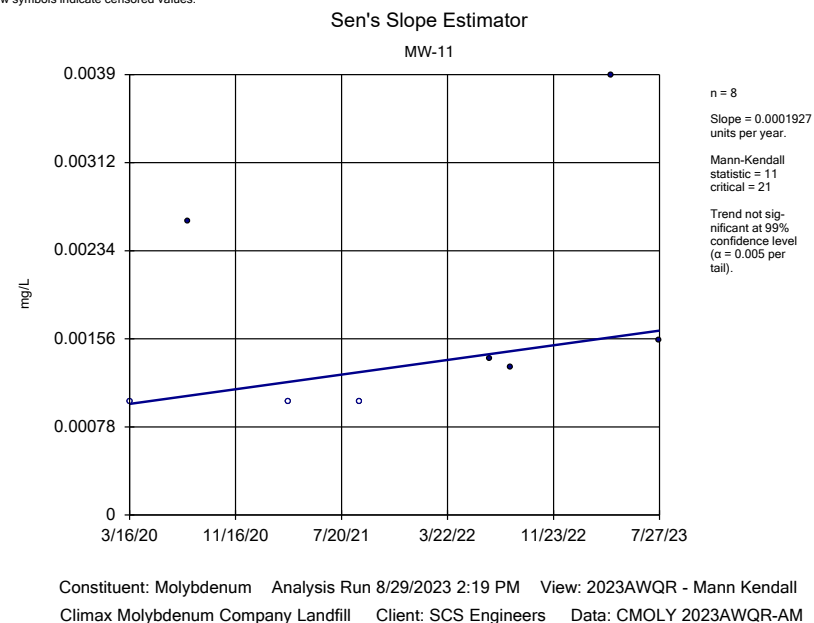
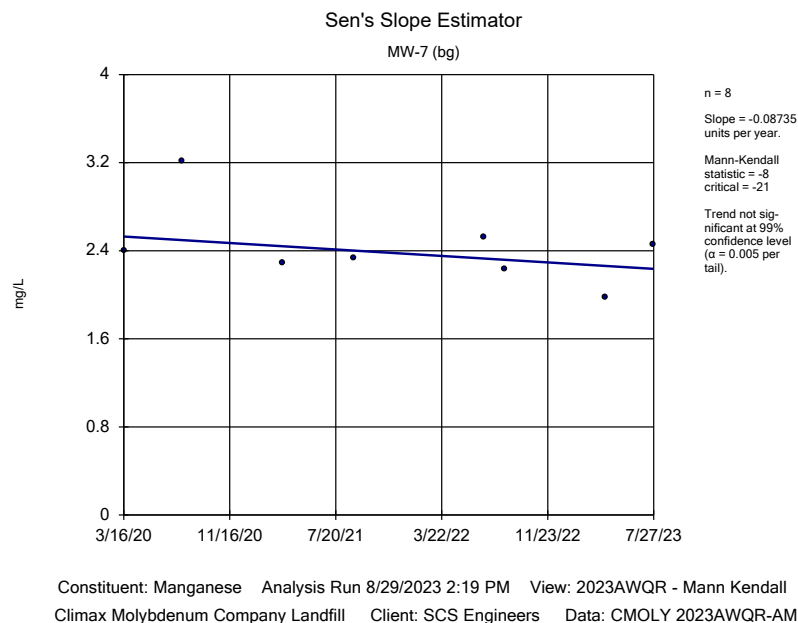
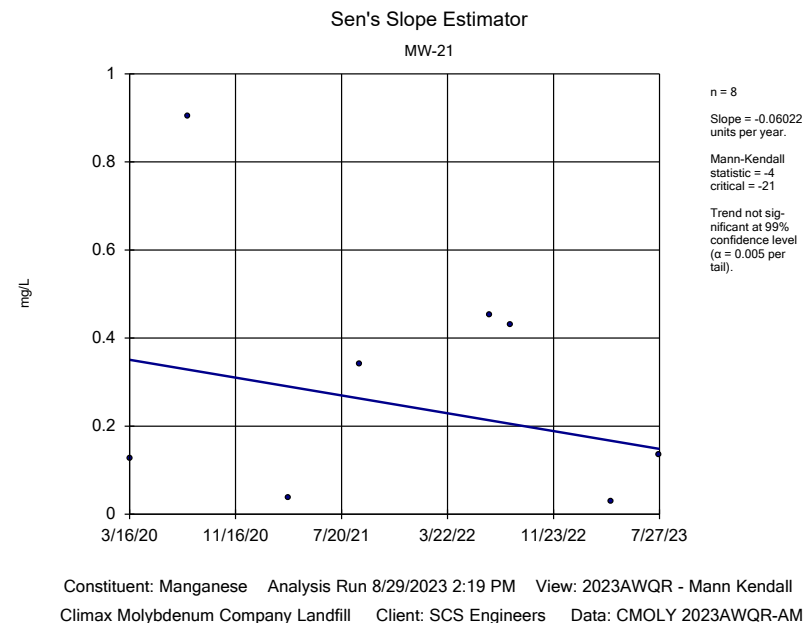
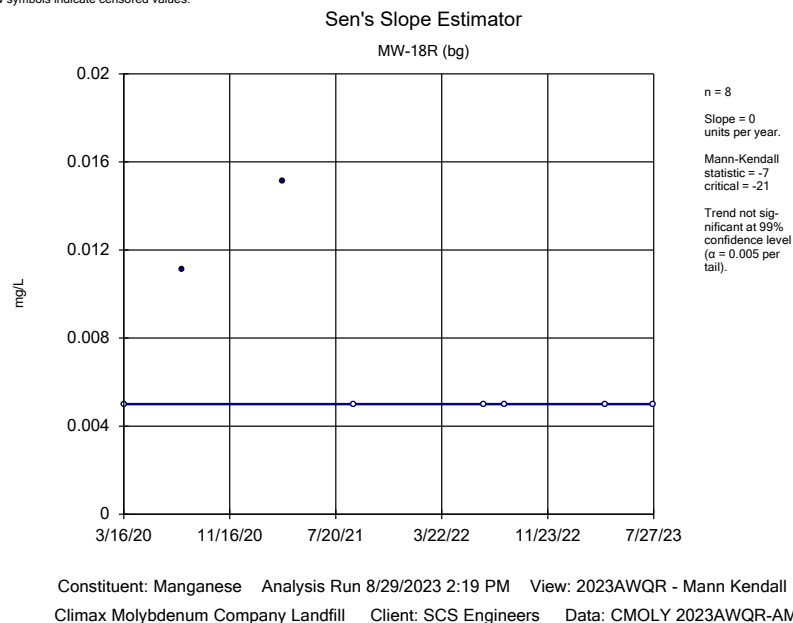
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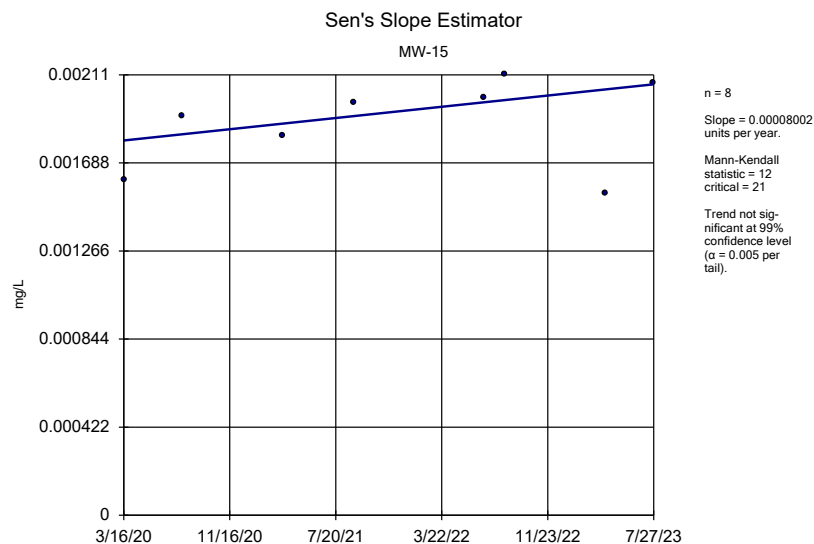


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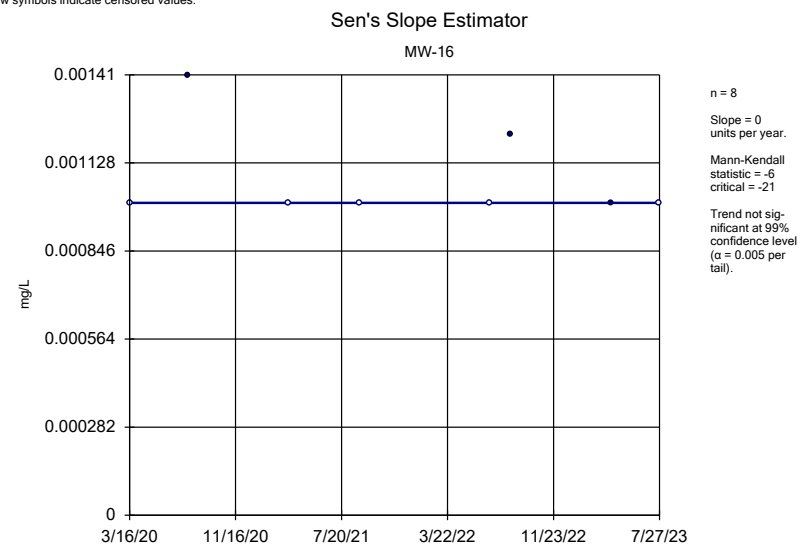


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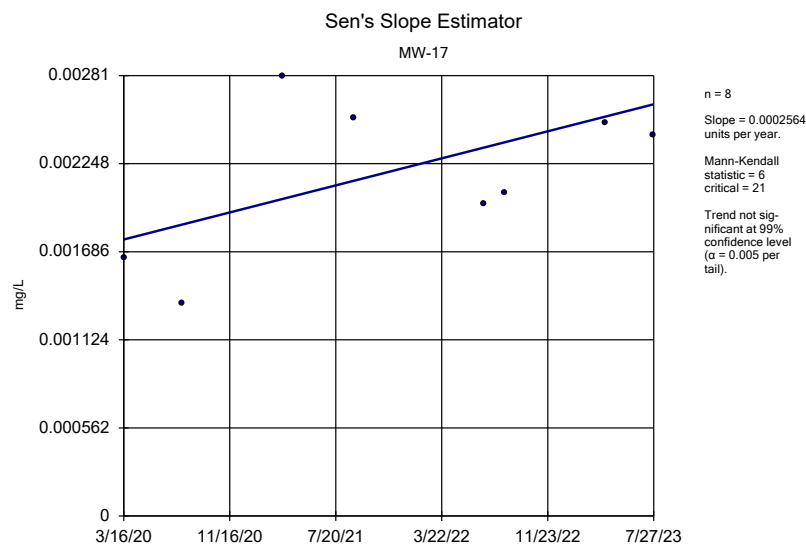




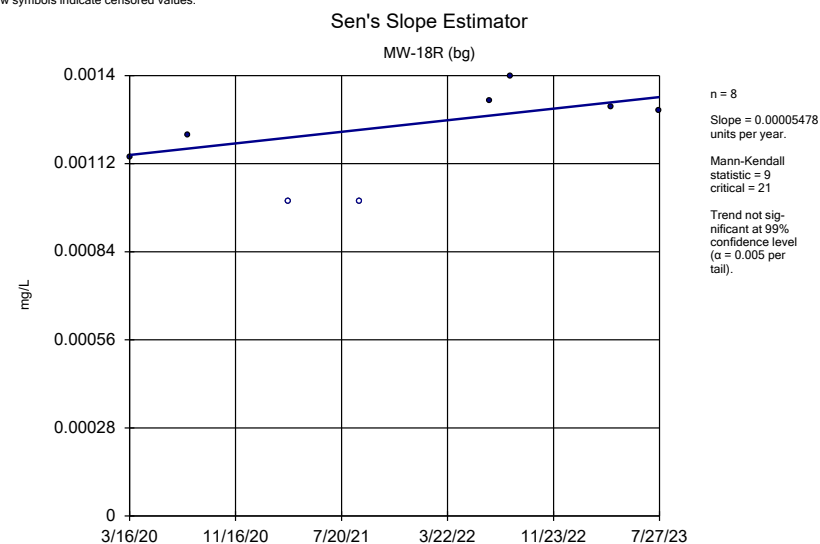
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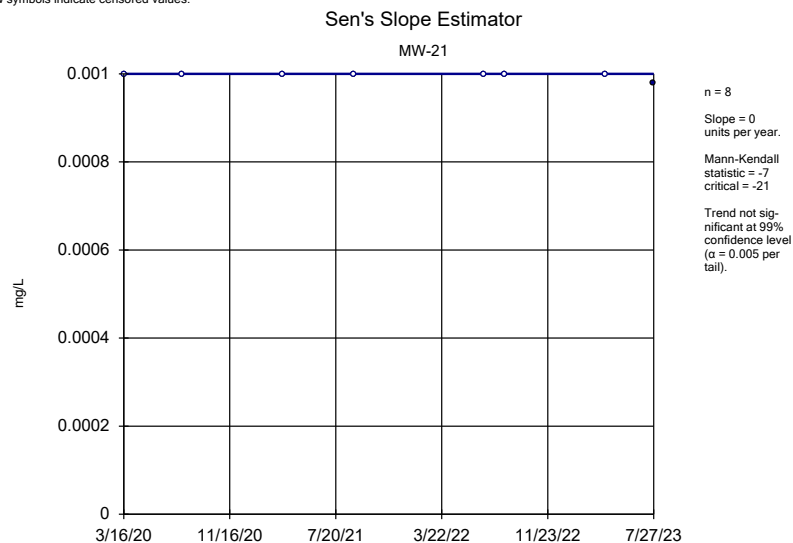
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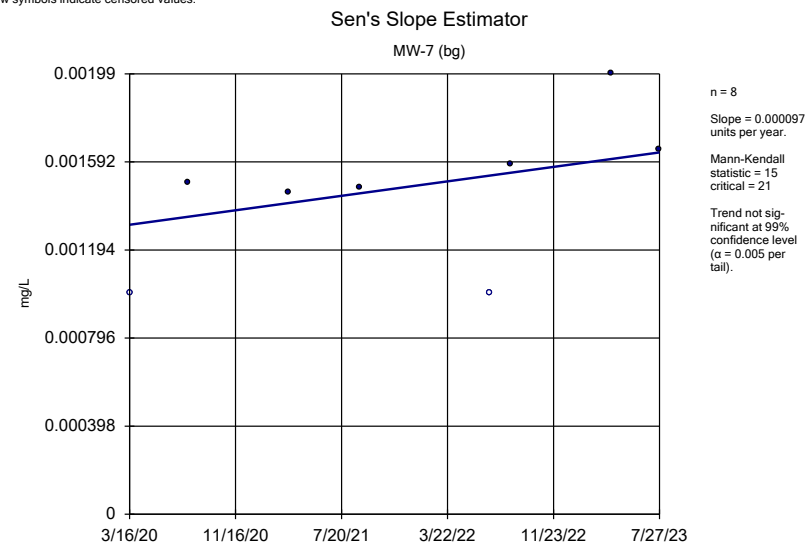
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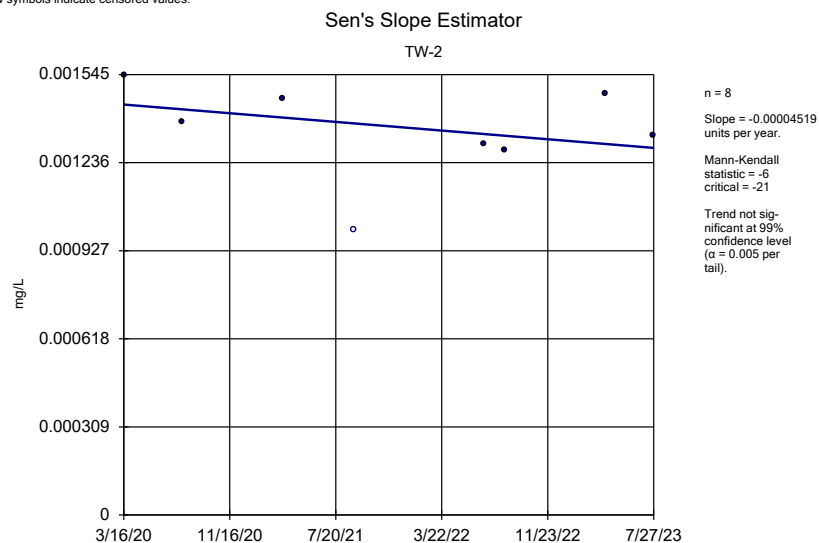
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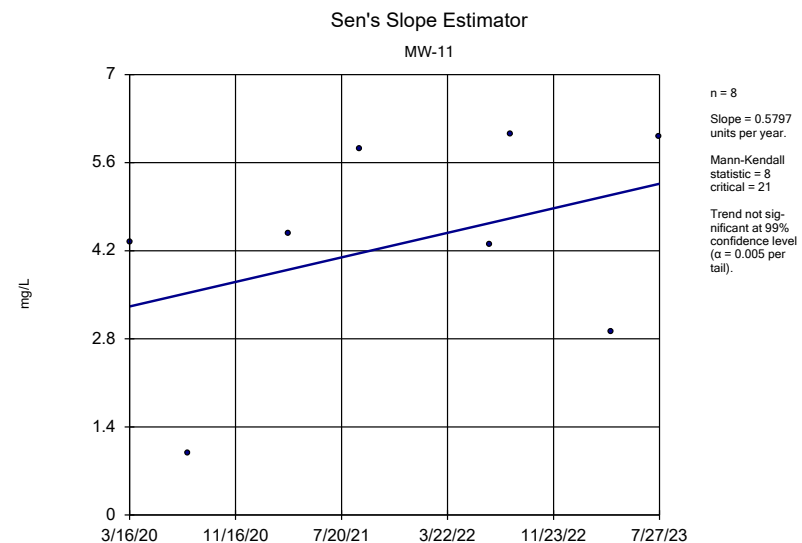
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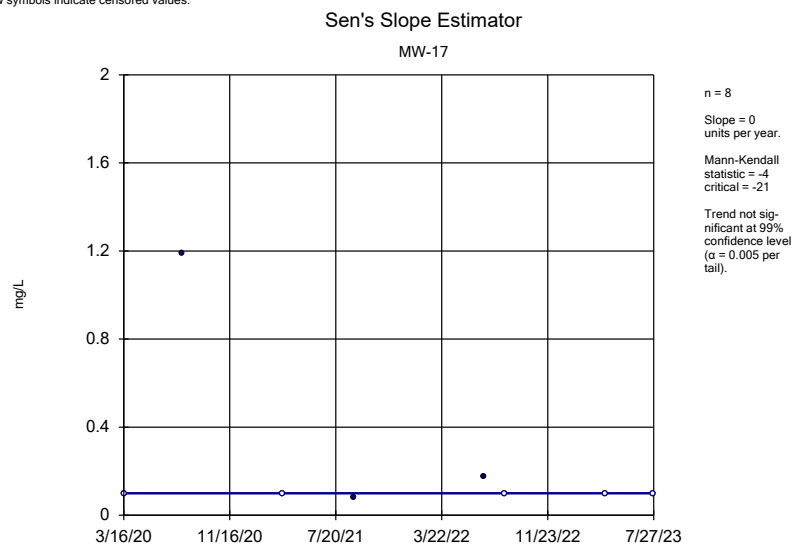
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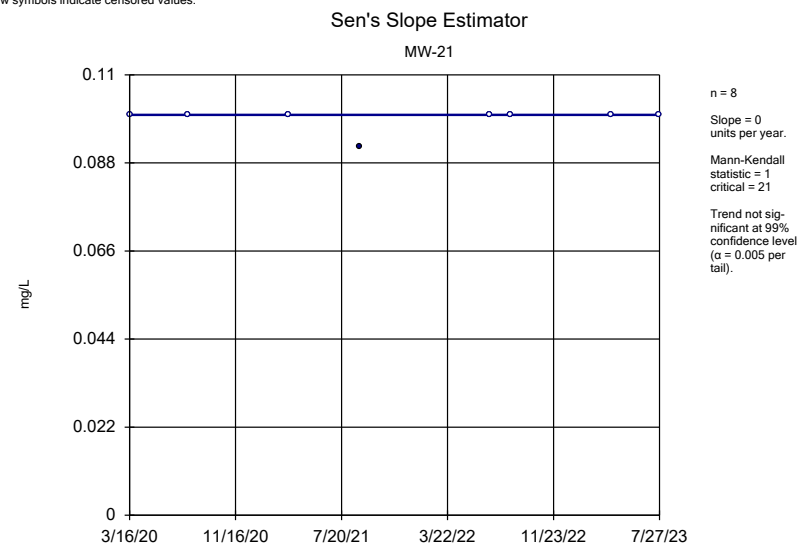
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Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY 2023AWQR-AM



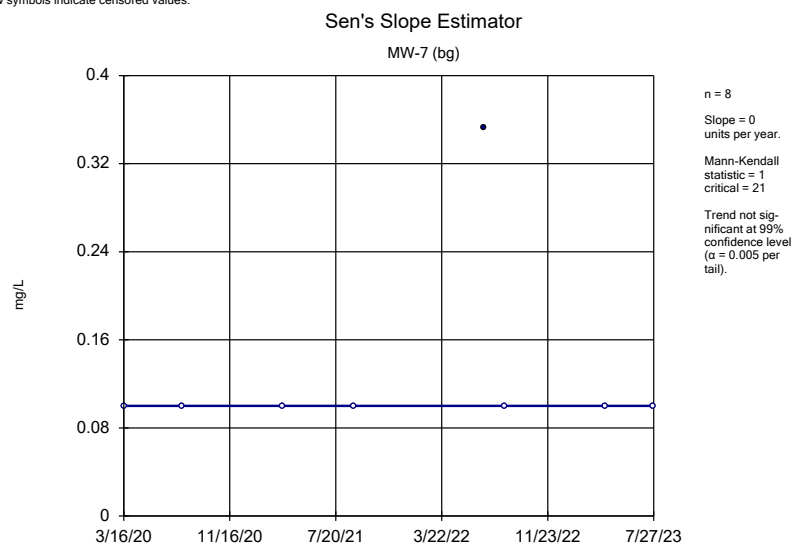
Constituent: Nitrogen, Ammonia Analysis Run 8/29/2023 2:19 PM View: 2023AWQR - Mann Kendall
Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY 2023AWQR-AM



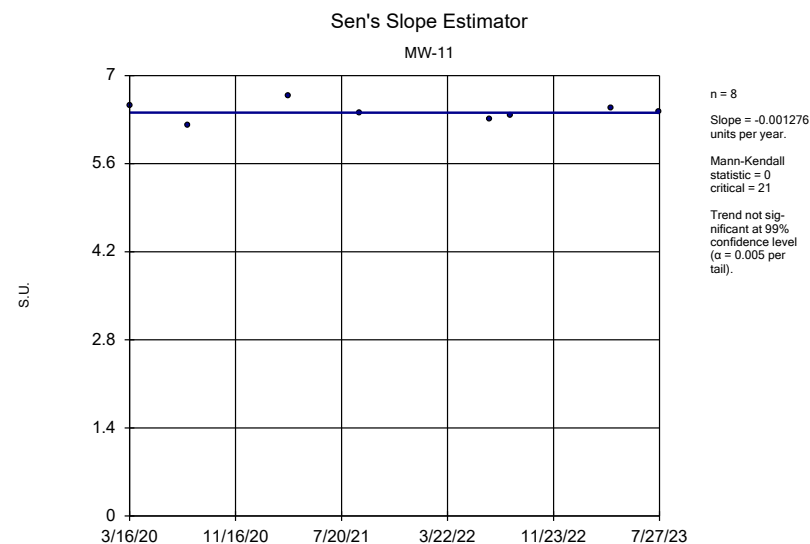
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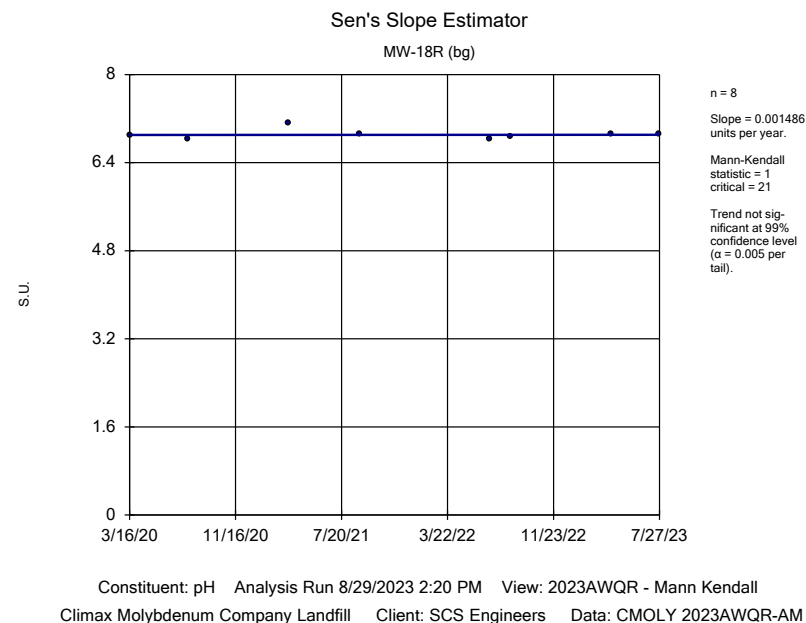
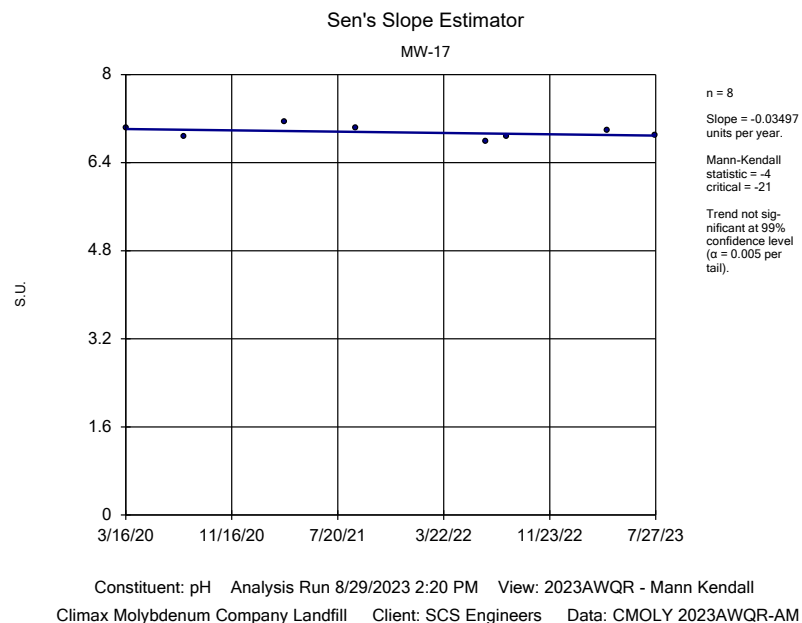
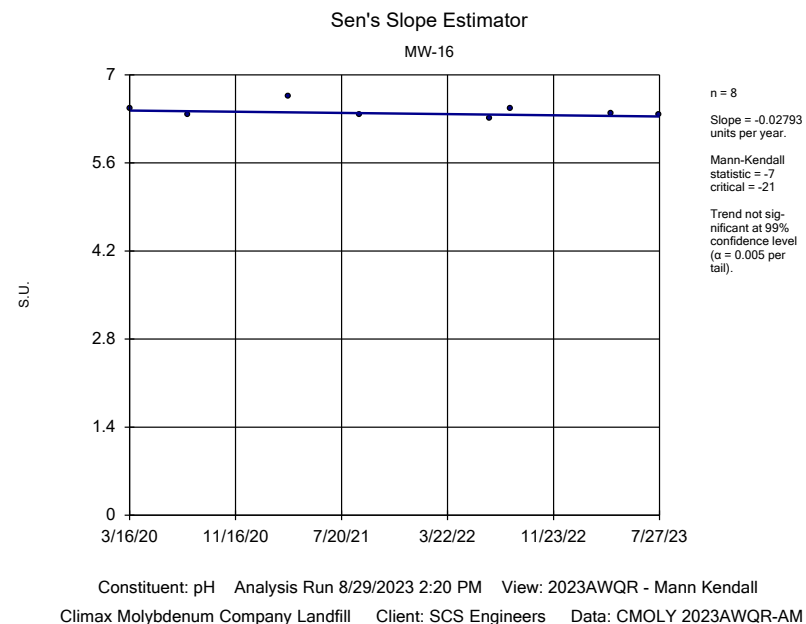
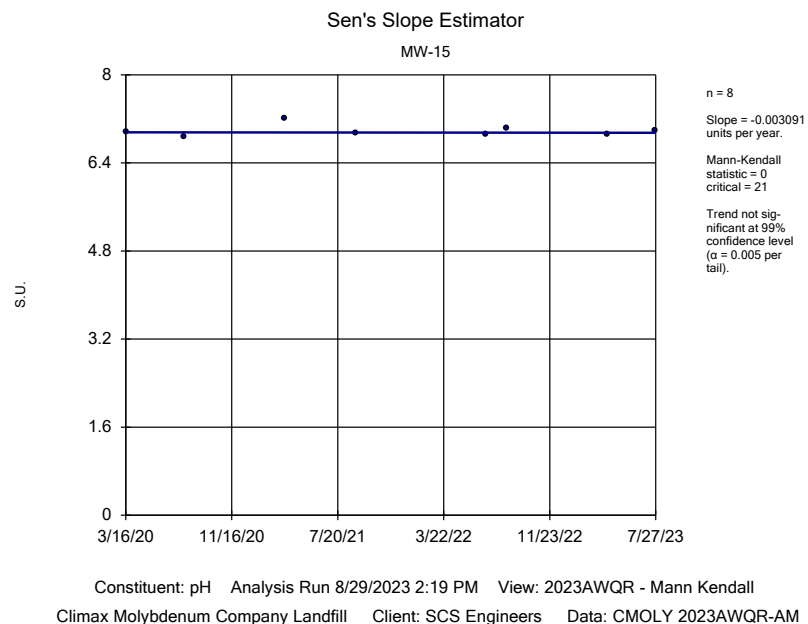
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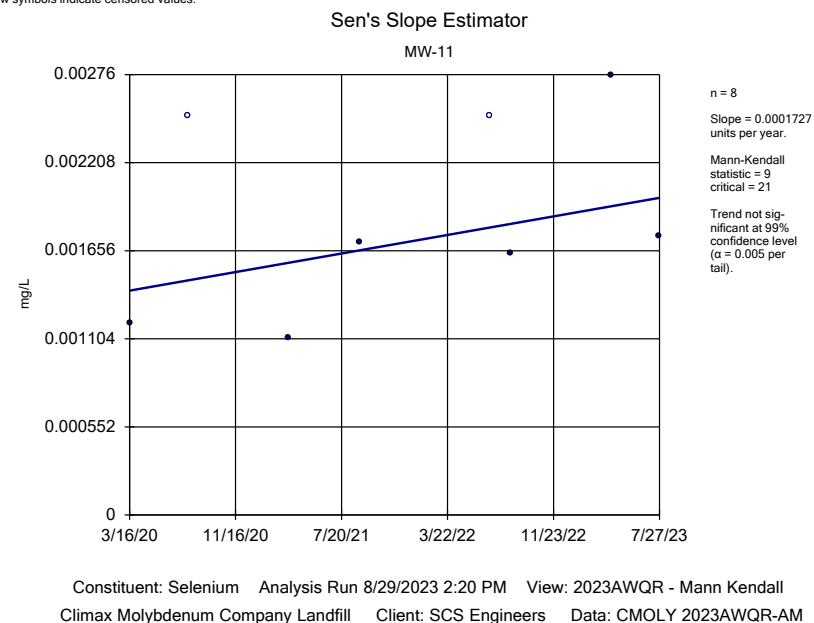
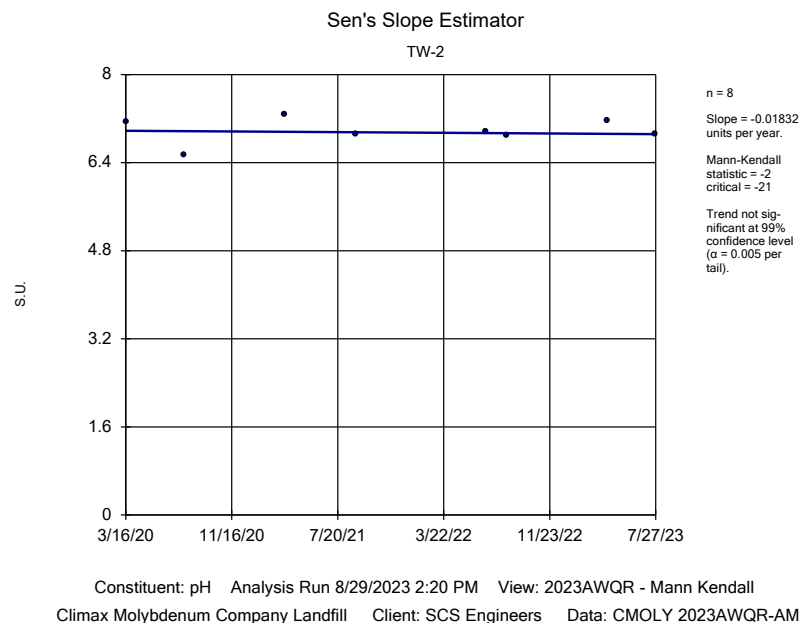
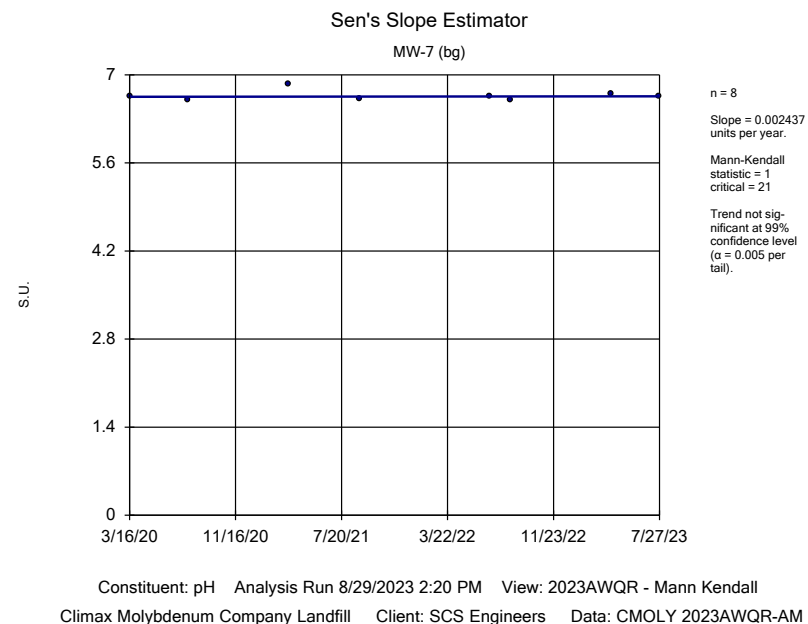
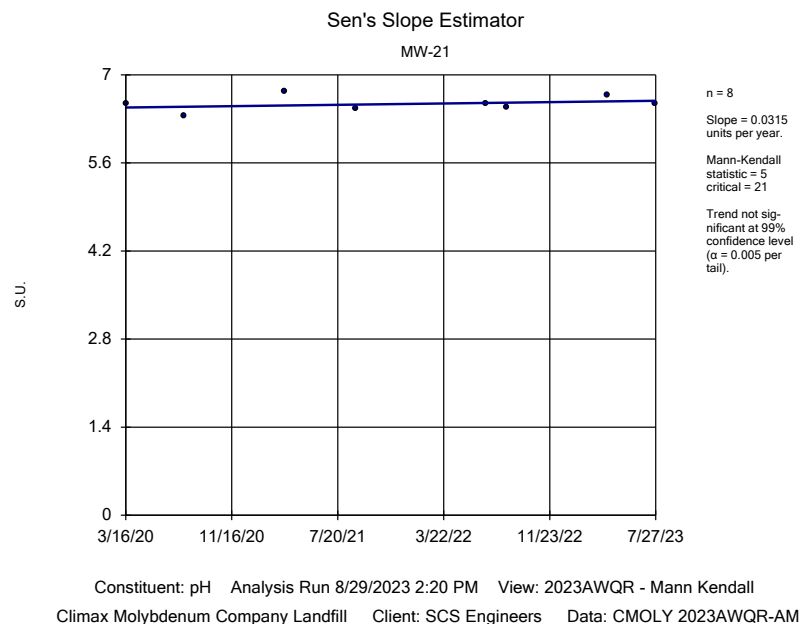


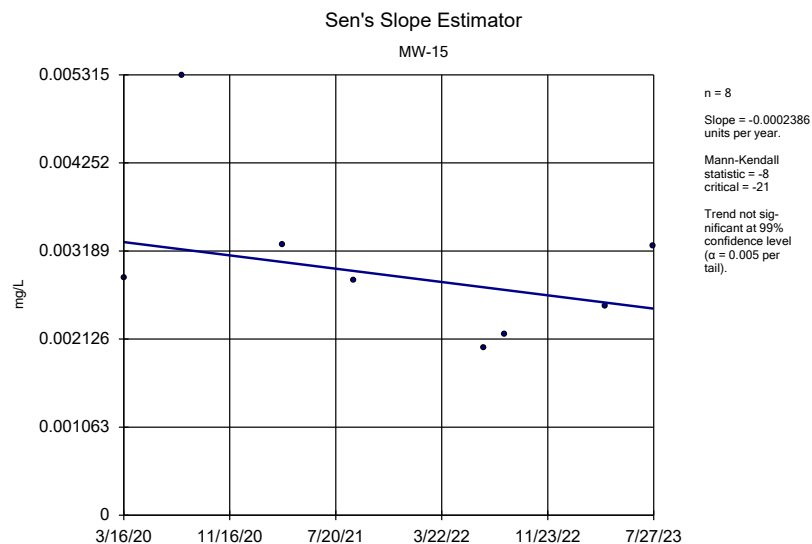
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Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY 2023AWQR-AM



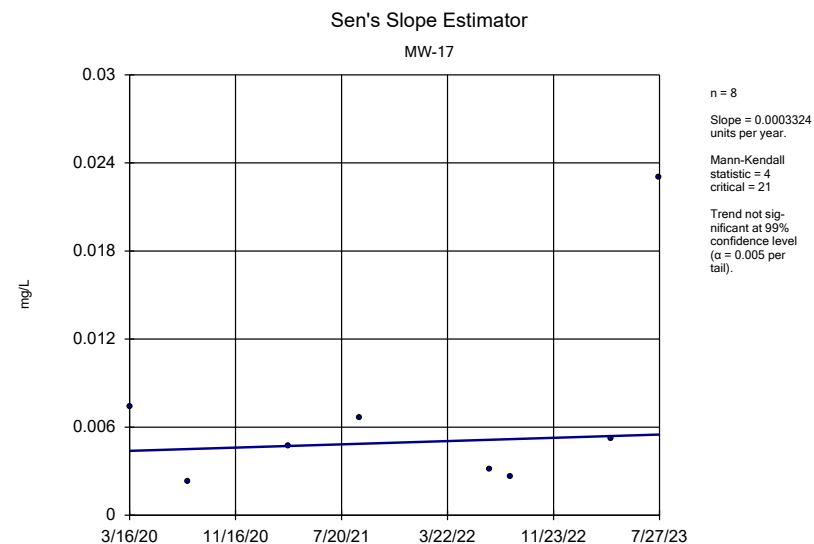
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Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY 2023AWQR-AM



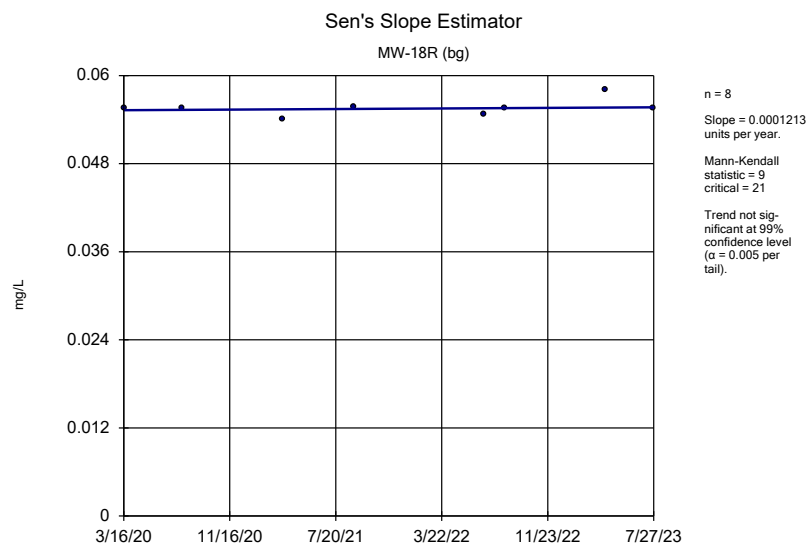




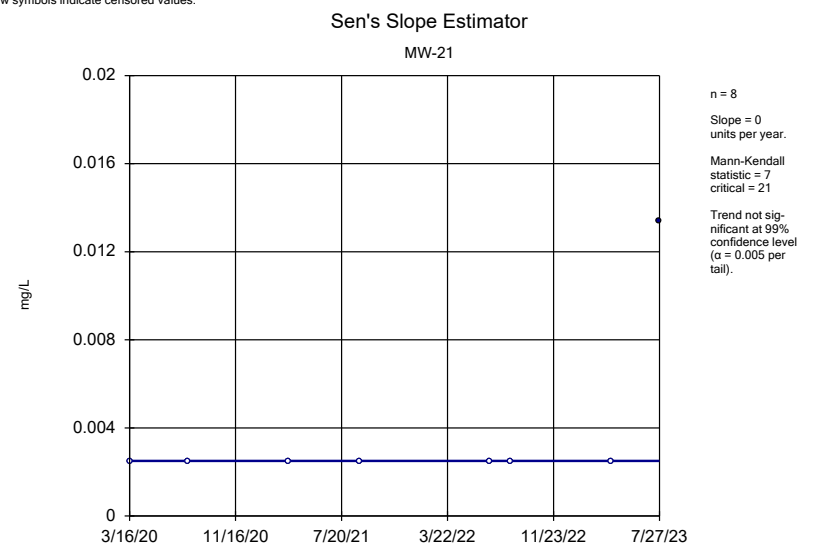
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Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY 2023AWQR-AM



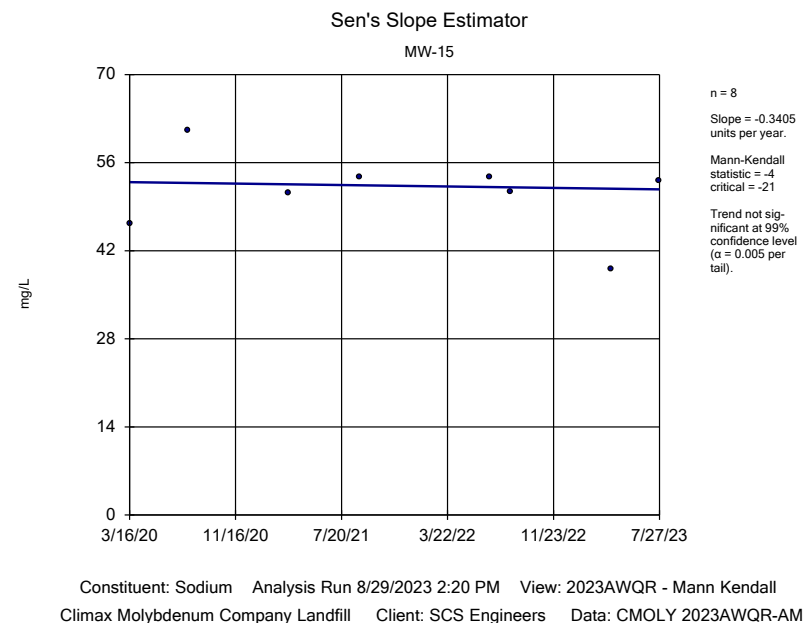
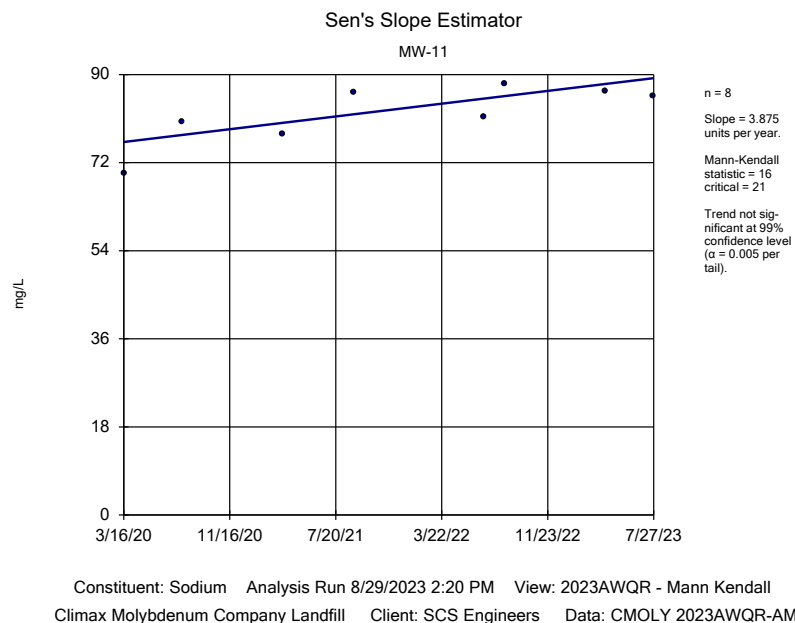
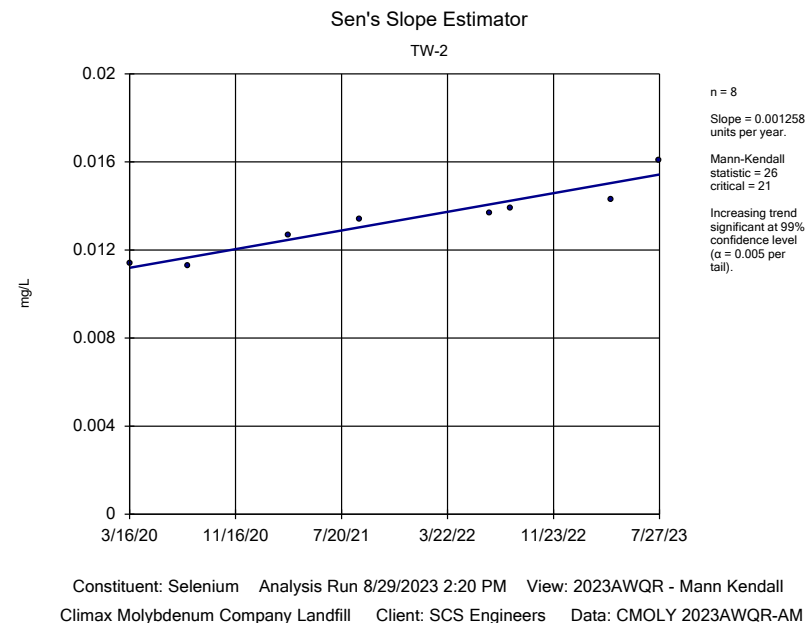
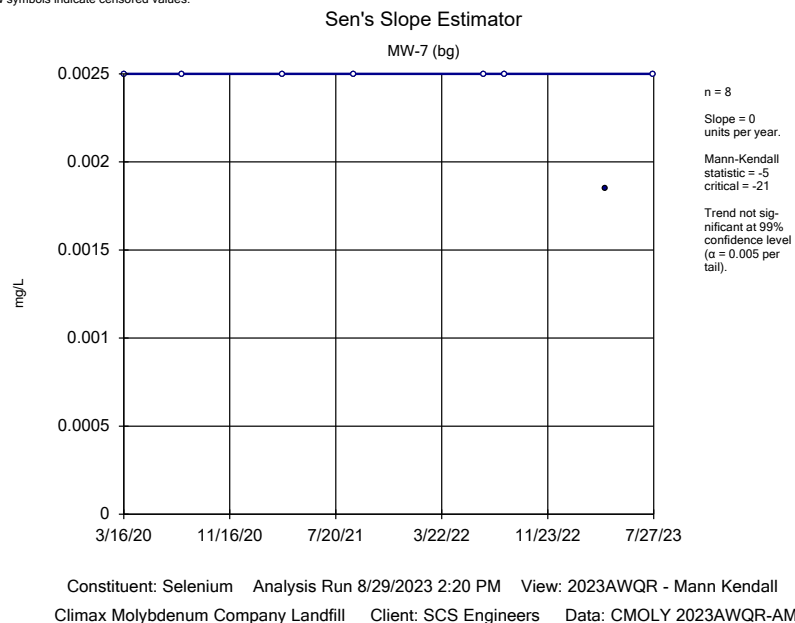
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Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY 2023AWQR-AM

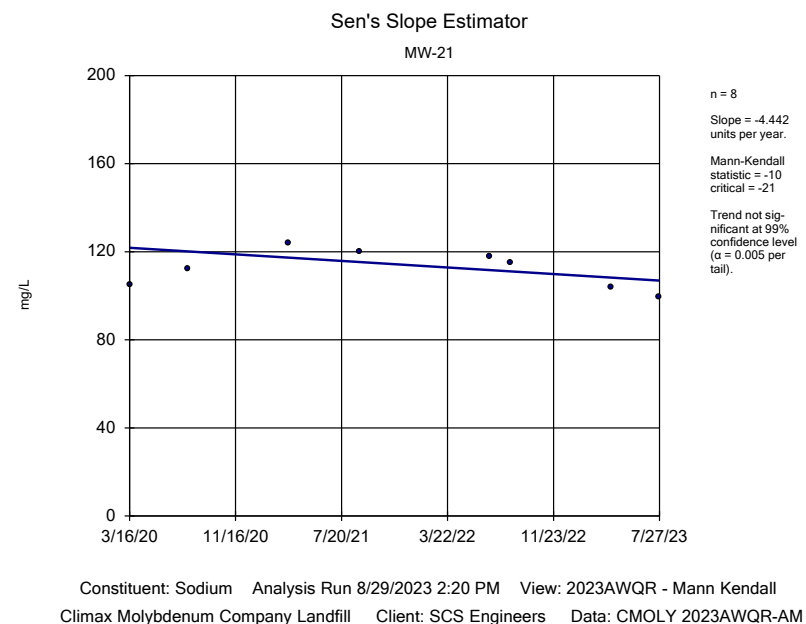
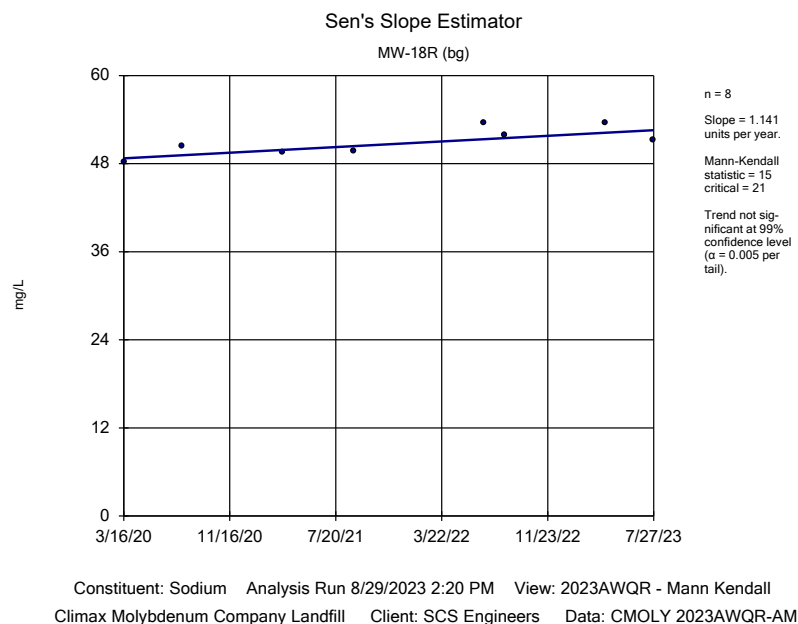
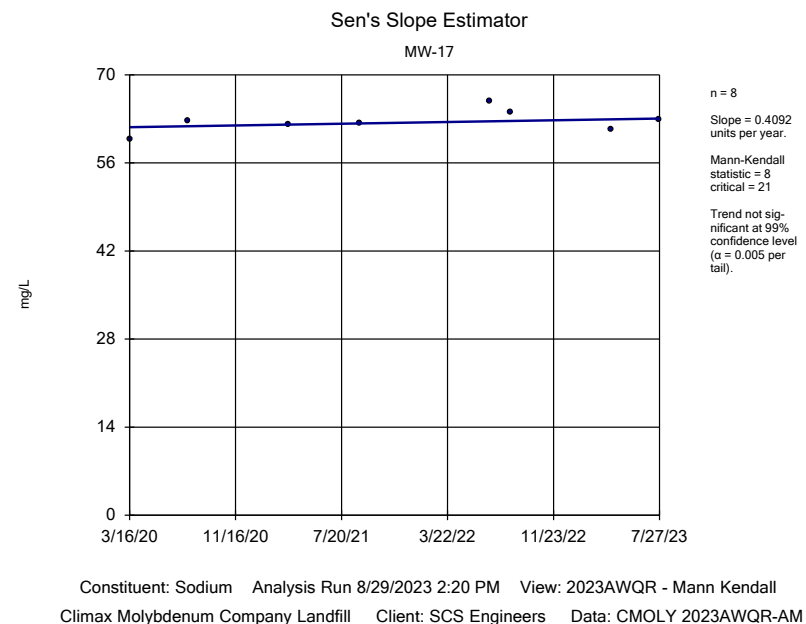
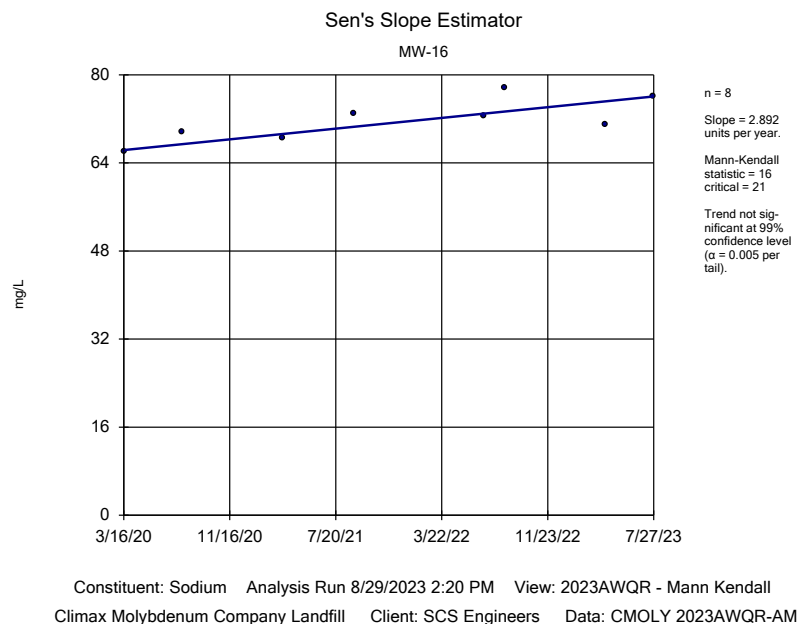


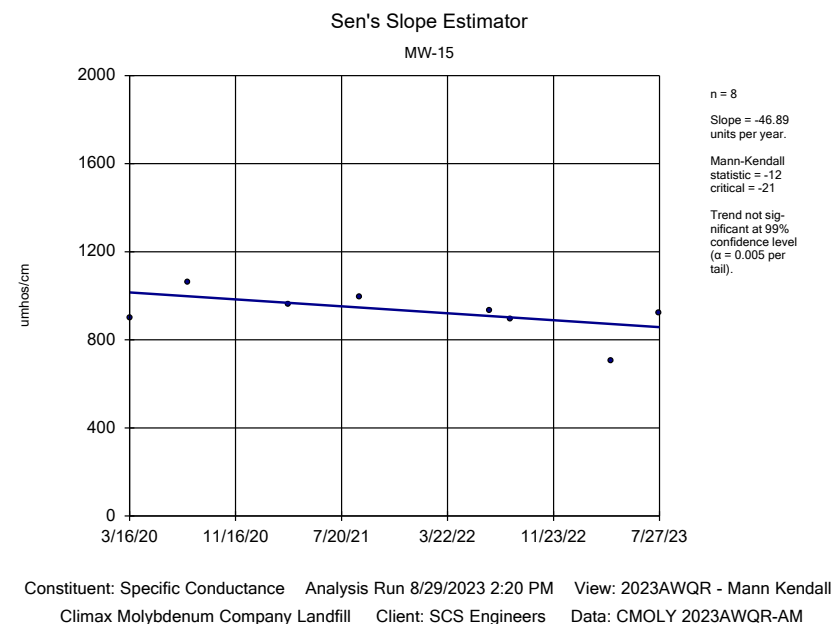
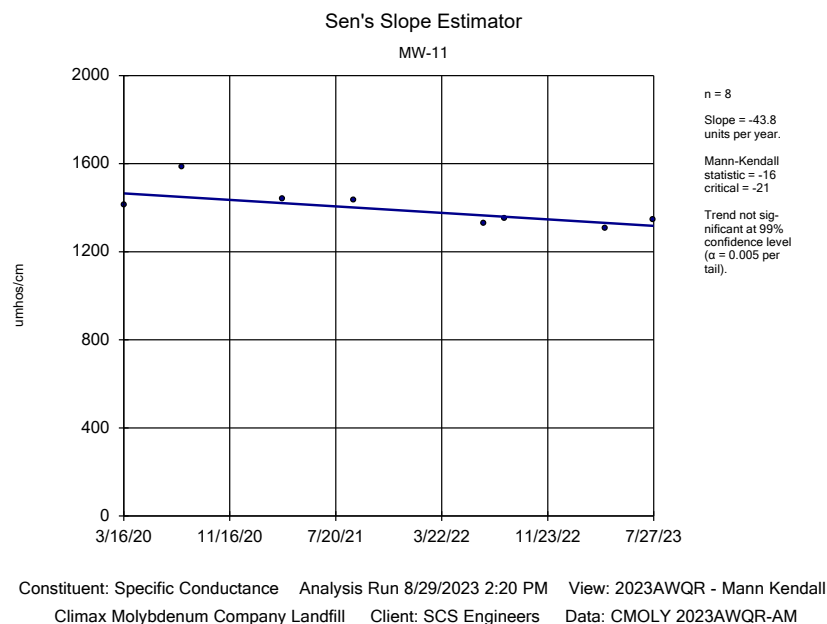
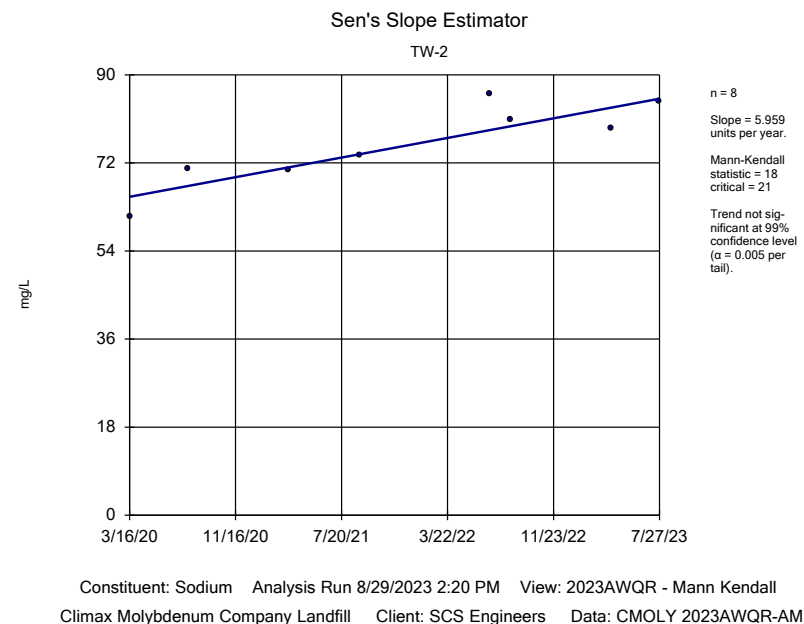
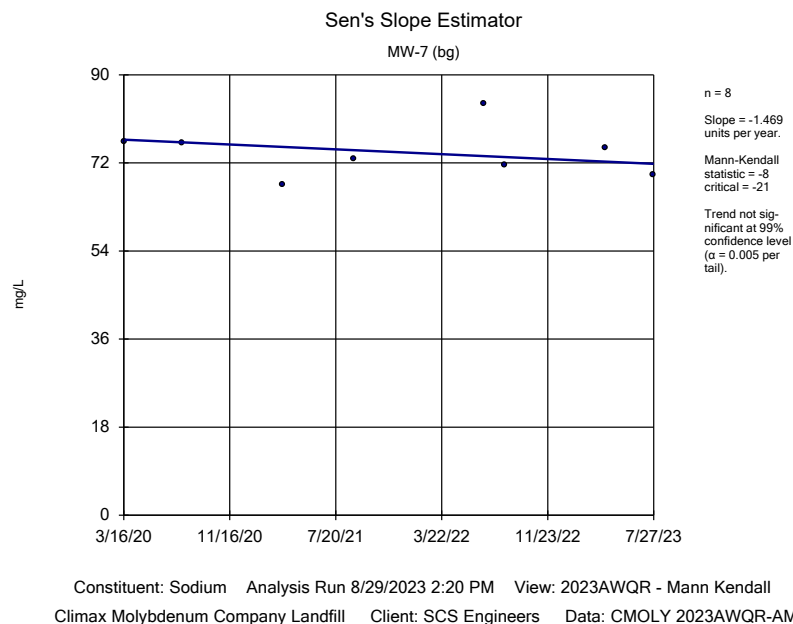
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Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY 2023AWQR-AM

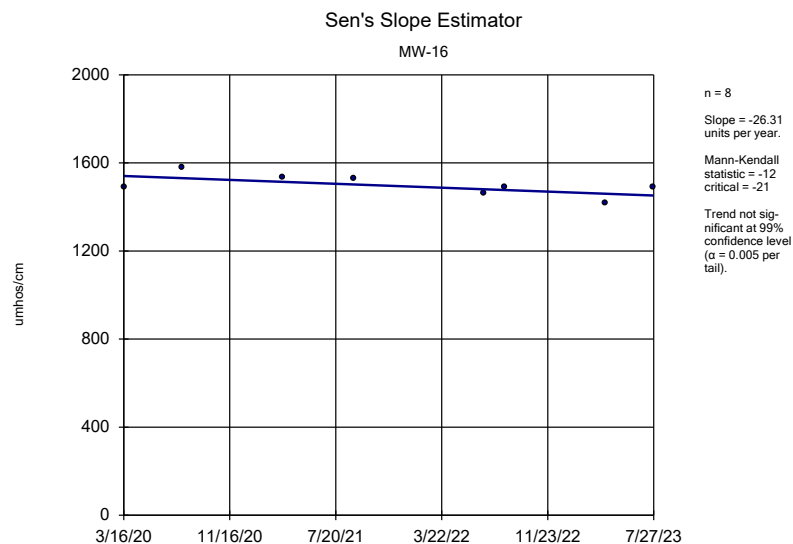


Constituent: Selenium Analysis Run 8/29/2023 2:20 PM View: 2023AWQR - Mann Kendall
Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY 2023AWQR-AM

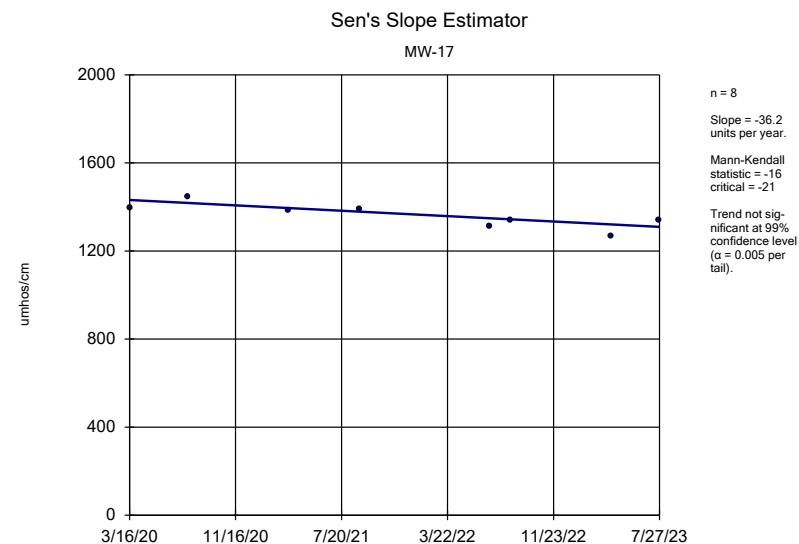




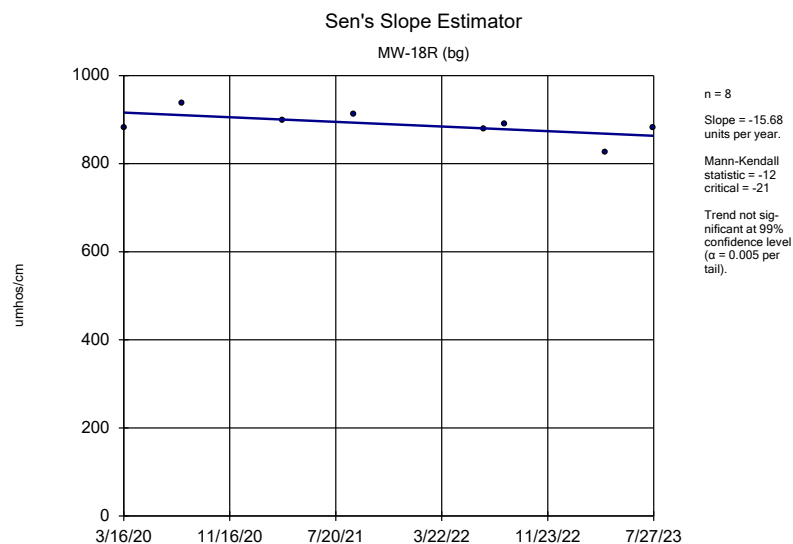




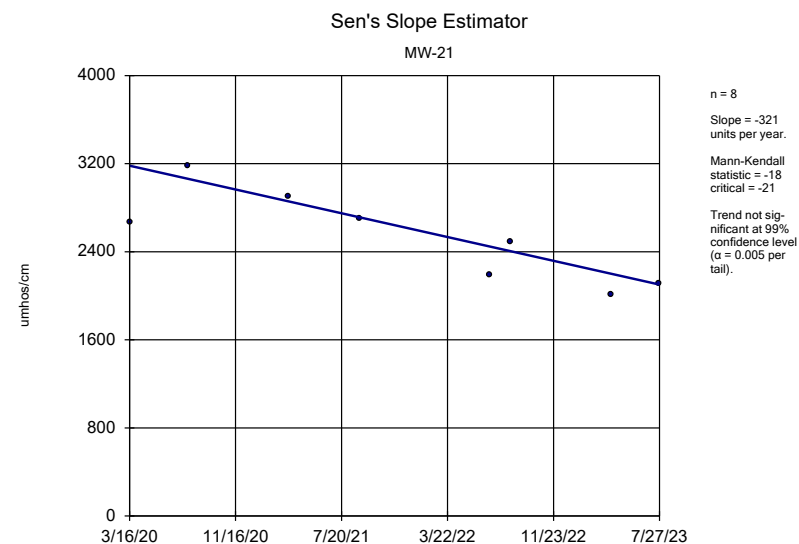
Constituent: Specific Conductance Analysis Run 8/29/2023 2:20 PM View: 2023AWQR - Mann Kendall
Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY 2023AWQR-AM



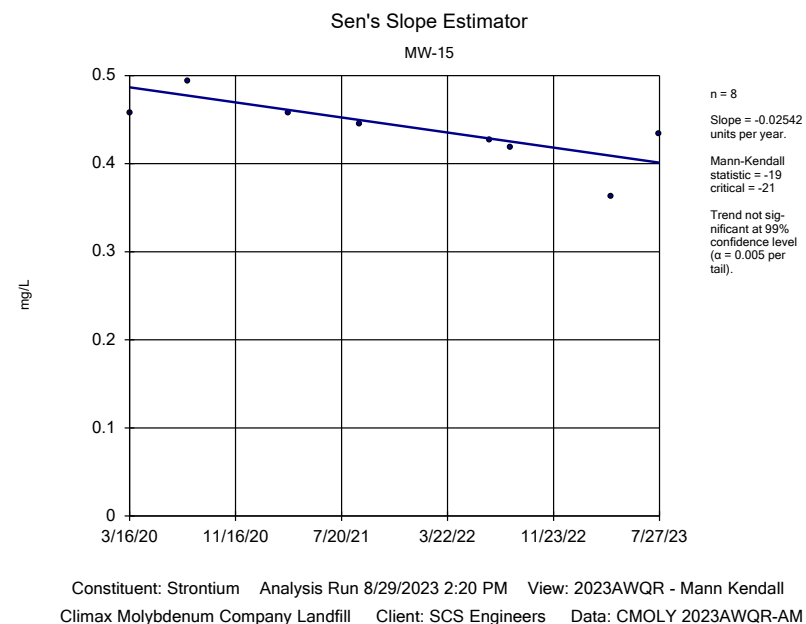
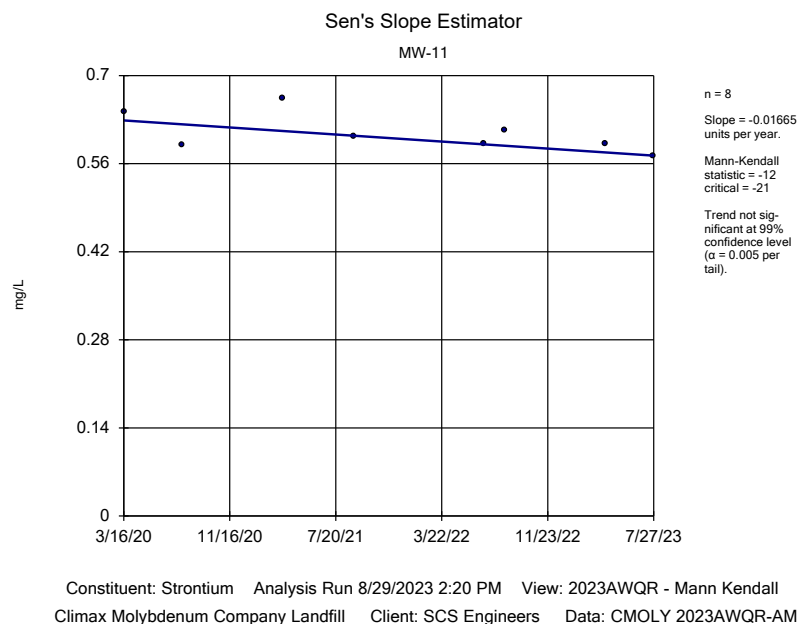
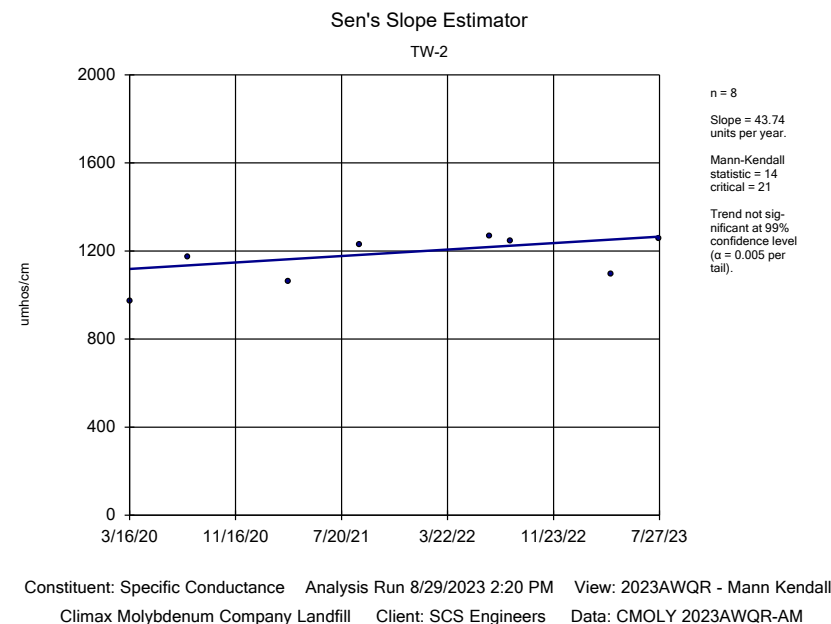
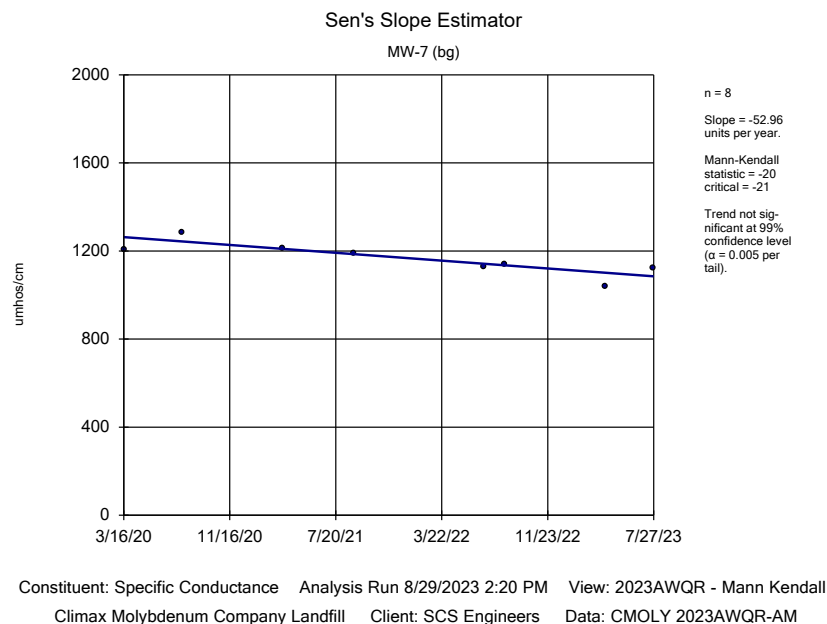
Constituent: Specific Conductance Analysis Run 8/29/2023 2:20 PM View: 2023AWQR - Mann Kendall
Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY 2023AWQR-AM

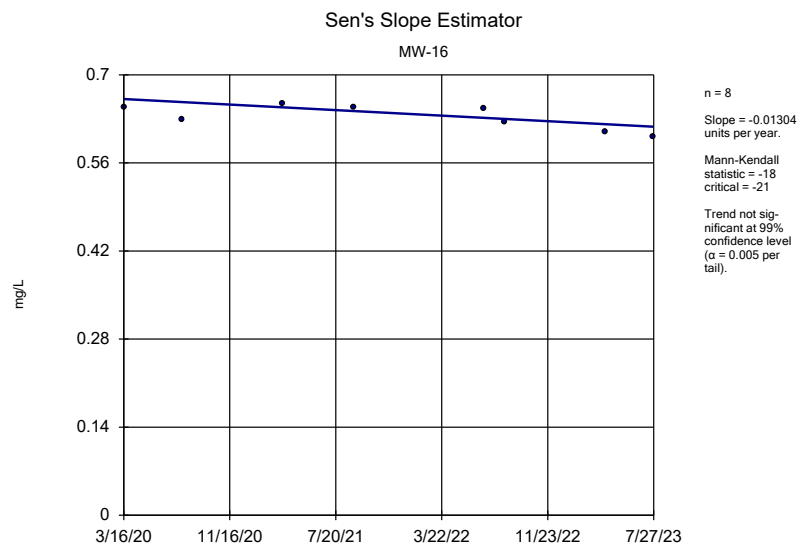


Constituent: Specific Conductance Analysis Run 8/29/2023 2:20 PM View: 2023AWQR - Mann Kendall
Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY 2023AWQR-AM

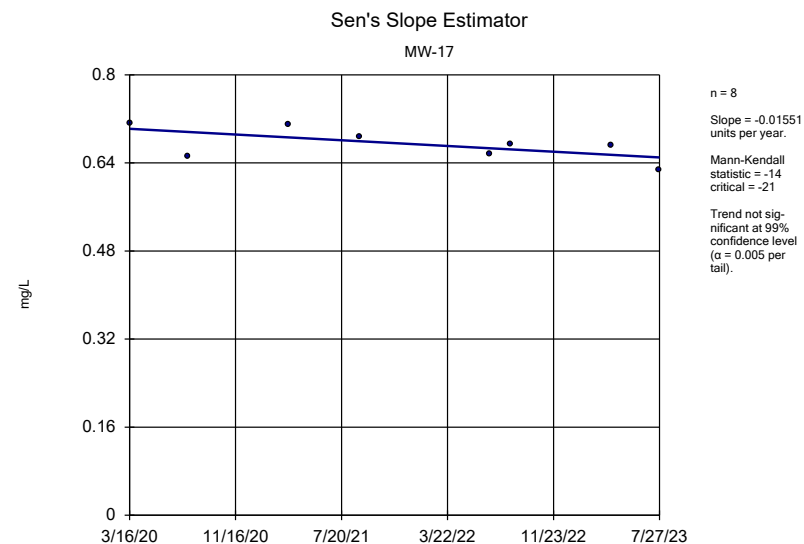


Constituent: Specific Conductance Analysis Run 8/29/2023 2:20 PM View: 2023AWQR - Mann Kendall
Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY 2023AWQR-AM

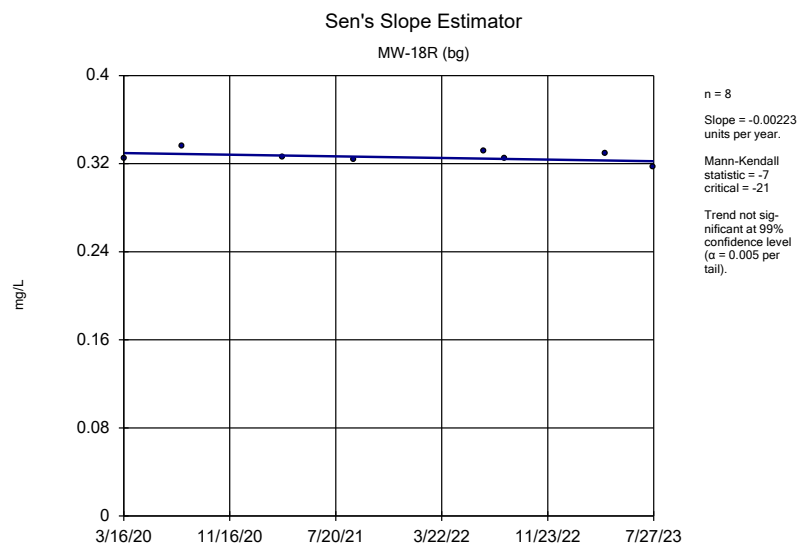




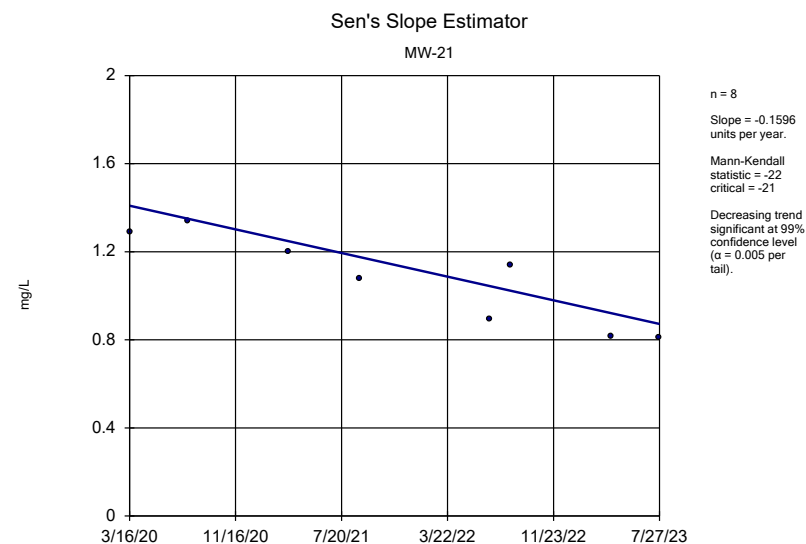
Constituent: Strontium Analysis Run 8/29/2023 2:20 PM View: 2023AWQR - Mann Kendall
Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY 2023AWQR-AM



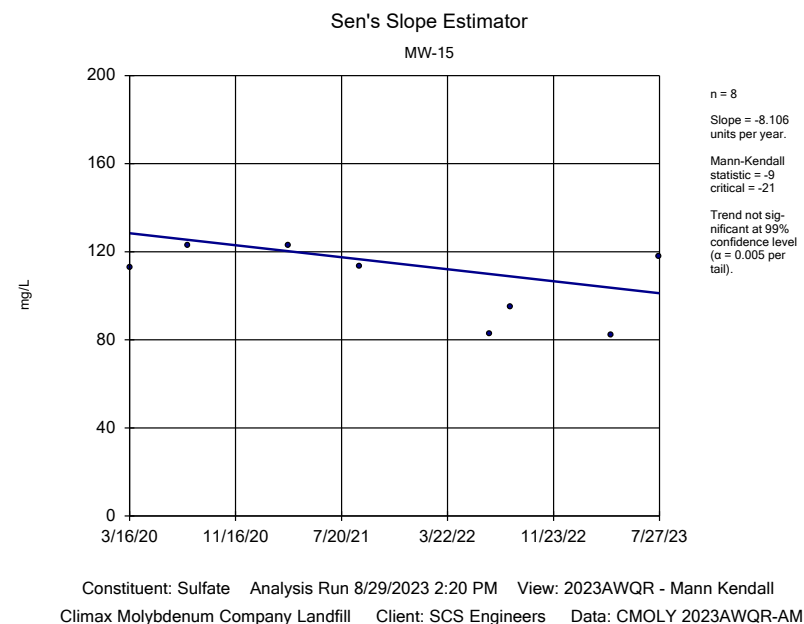
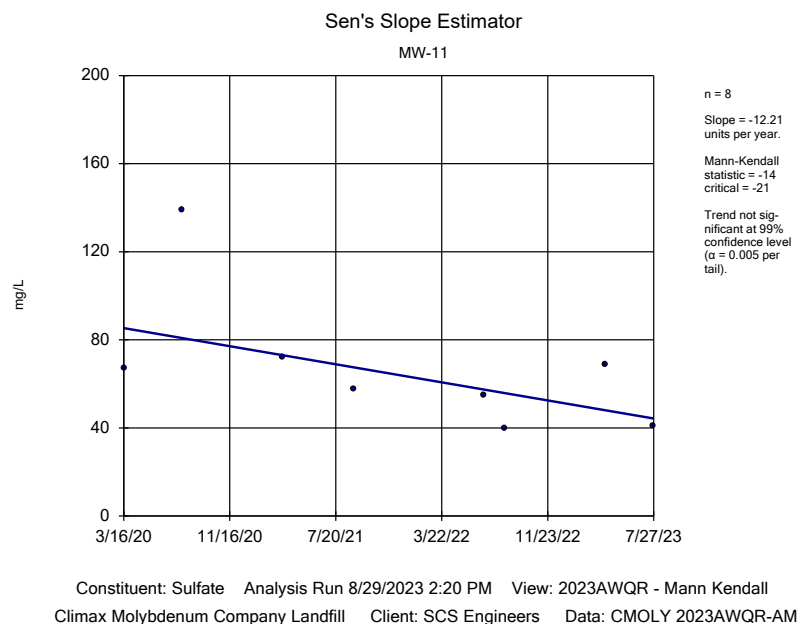
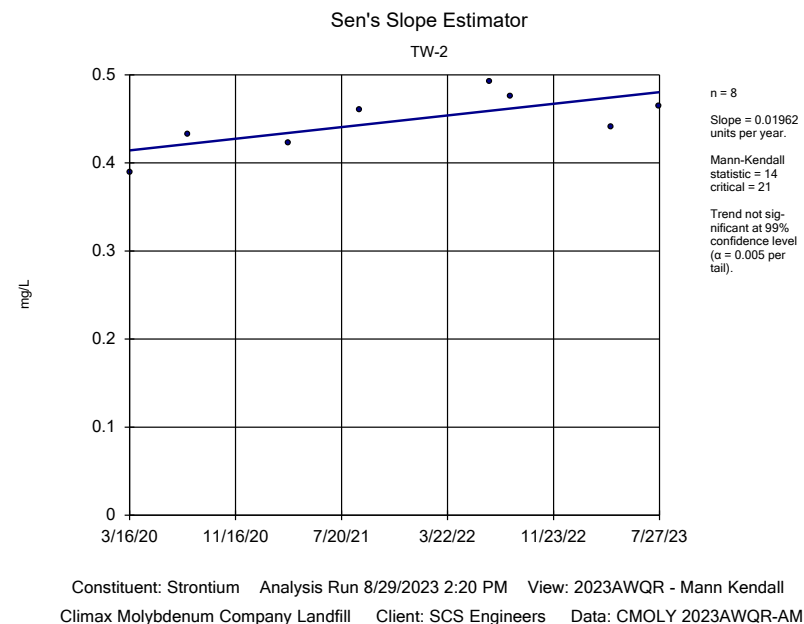
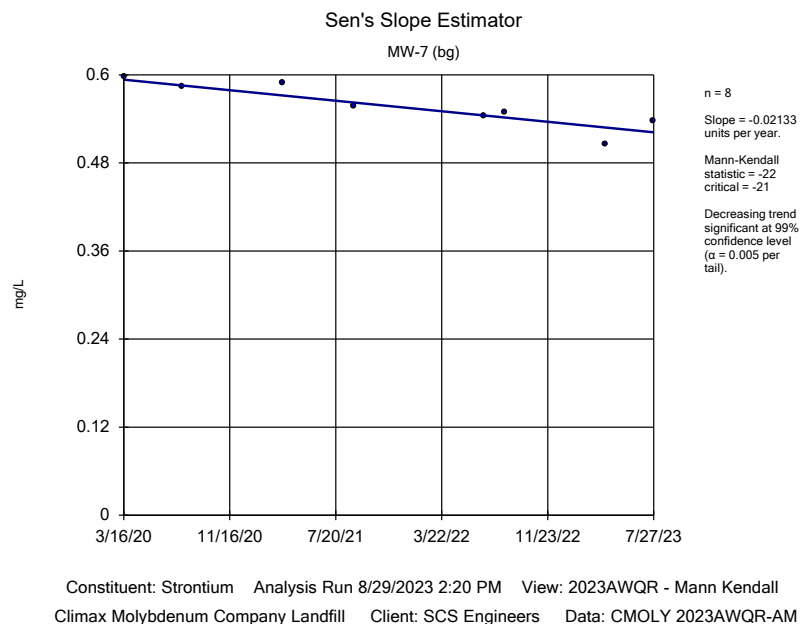
Constituent: Strontium Analysis Run 8/29/2023 2:20 PM View: 2023AWQR - Mann Kendall
Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY 2023AWQR-AM



Constituent: Strontium Analysis Run 8/29/2023 2:20 PM View: 2023AWQR - Mann Kendall
Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY 2023AWQR-AM

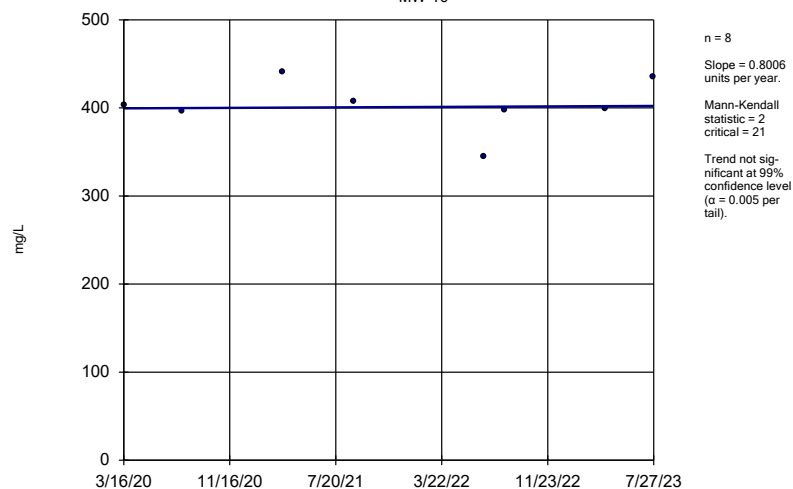


Constituent: Strontium Analysis Run 8/29/2023 2:20 PM View: 2023AWQR - Mann Kendall
Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY 2023AWQR-AM



Sen's Slope Estimator

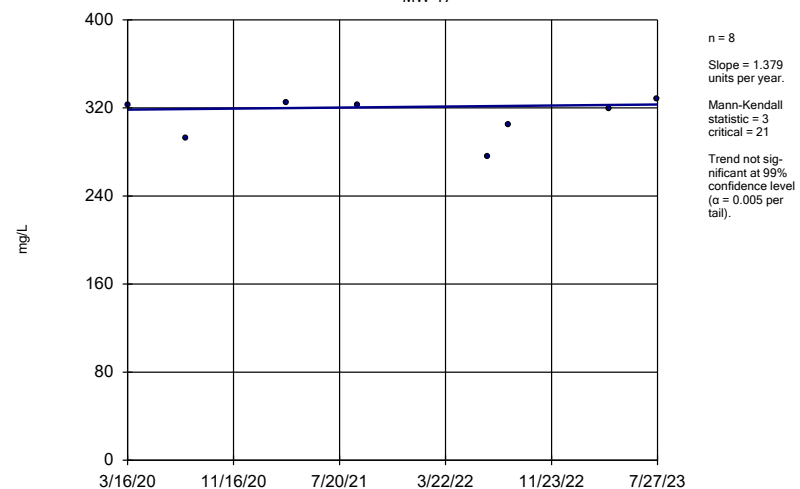
MW-16



Constituent: Sulfate Analysis Run 8/29/2023 2:20 PM View: 2023AWQR - Mann Kendall
Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY 2023AWQR-AM

Sen's Slope Estimator

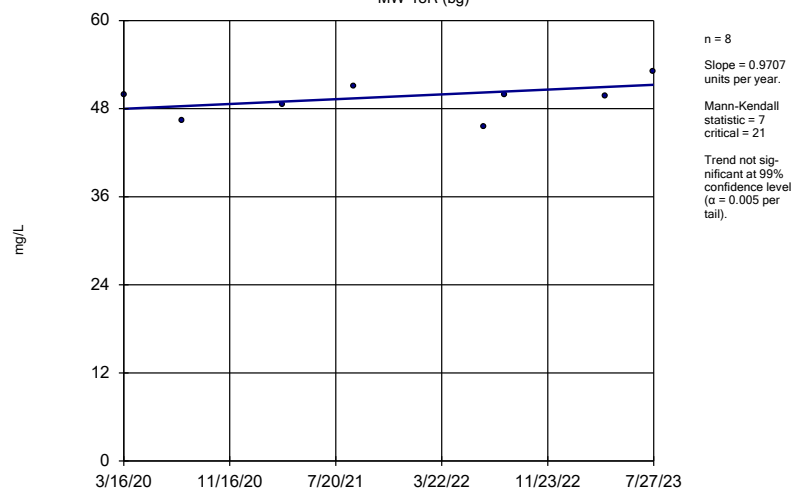
MW-17



Constituent: Sulfate Analysis Run 8/29/2023 2:20 PM View: 2023AWQR - Mann Kendall
Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY 2023AWQR-AM

Sen's Slope Estimator

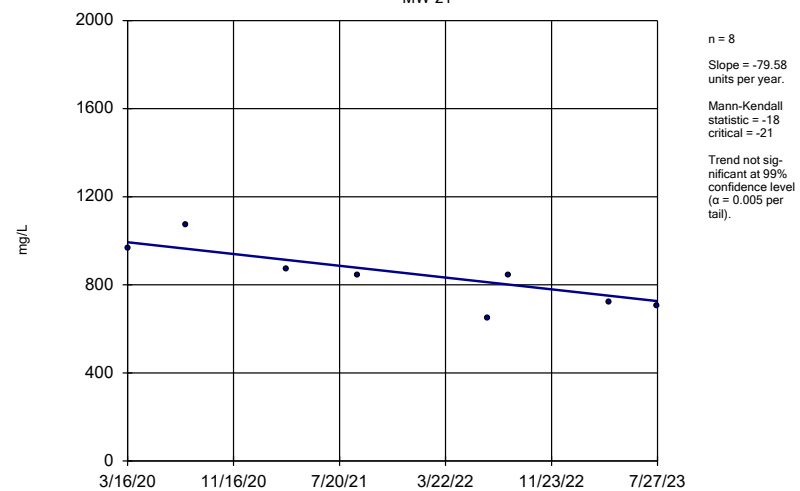
MW-18R (bg)



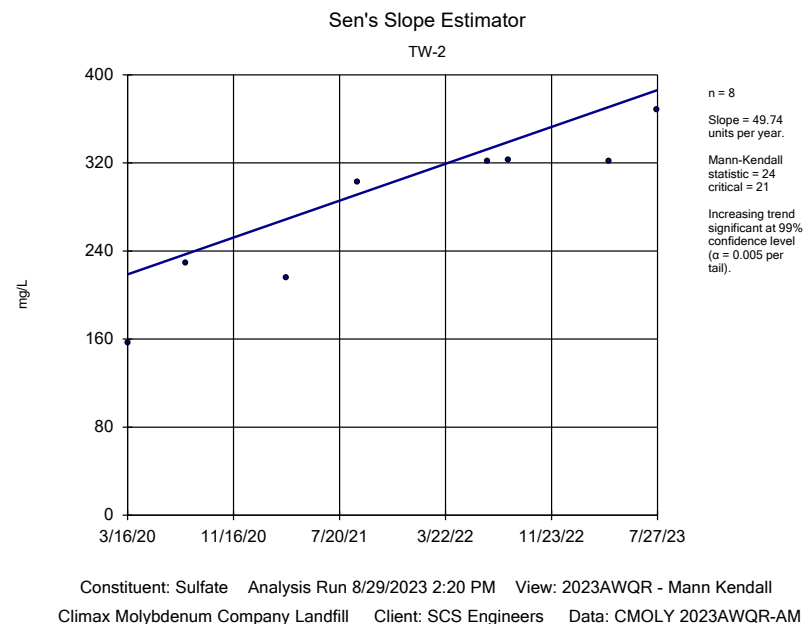
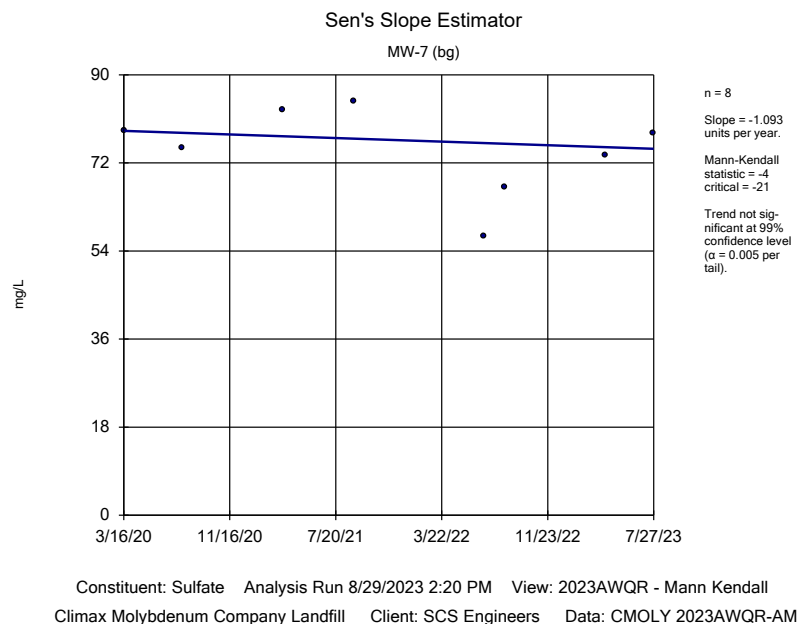
Constituent: Sulfate Analysis Run 8/29/2023 2:20 PM View: 2023AWQR - Mann Kendall
Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY 2023AWQR-AM

Sen's Slope Estimator

MW-21



Constituent: Sulfate Analysis Run 8/29/2023 2:20 PM View: 2023AWQR - Mann Kendall
Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY 2023AWQR-AM



Attachment B

Control Limits

Control Limit

Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY Sanitas HMSP Printed 8/29/2023, 2:09 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Date</u>	<u>Observ.</u>	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>
Arsenic (mg/L)	MW-11	0.006289	n/a	4/7/2023	0.00636	Yes	35	68.57
Chemical Oxygen Demand (mg/L)	MW-11	20.65	n/a	4/7/2023	59.5	Yes	120	28.33
Chemical Oxygen Demand (mg/L)	MW-15	20.65	n/a	4/7/2023	11.01	No	120	28.33
Chemical Oxygen Demand (mg/L)	MW-16	20.65	n/a	4/7/2023	9.13	No	120	28.33
Chemical Oxygen Demand (mg/L)	MW-17	20.65	n/a	4/7/2023	5.46	No	120	28.33
Chemical Oxygen Demand (mg/L)	MW-21	20.65	n/a	4/7/2023	13.2	No	120	28.33
Chloride (mg/L)	MW-11	43.83	n/a	4/7/2023	18.8	No	126	0.7937
Chloride (mg/L)	MW-15	43.83	n/a	4/7/2023	8.16	No	126	0.7937
Chloride (mg/L)	MW-16	43.83	n/a	4/7/2023	5.83	No	126	0.7937
Chloride (mg/L)	MW-17	43.83	n/a	4/7/2023	7.78	No	126	0.7937
Chloride (mg/L)	TW-2	43.83	n/a	4/7/2023	11.3	No	126	0.7937
Chloride (mg/L)	MW-21	43.83	n/a	4/7/2023	127	Yes	126	0.7937
Iron (mg/L)	MW-11	6.811	n/a	4/7/2023	22.9	Yes	36	27.78
Lithium (mg/L)	MW-15	0.0378	n/a	4/7/2023	0.0219	No	35	0
Lithium (mg/L)	MW-16	0.0378	n/a	4/7/2023	0.0263	No	35	0
Lithium (mg/L)	MW-17	0.0378	n/a	4/7/2023	0.0718	Yes	35	0
Lithium (mg/L)	TW-2	0.0378	n/a	4/7/2023	0.0411	Yes	35	0
Lithium (mg/L)	MW-21	0.0378	n/a	4/7/2023	0.0245	No	35	0
Manganese (mg/L)	MW-11	3.25	n/a	4/7/2023	6.06	Yes	35	37.14
Manganese (mg/L)	MW-16	3.25	n/a	4/7/2023	0.0805	No	35	37.14
Manganese (mg/L)	MW-17	3.25	n/a	4/7/2023	1.39	No	35	37.14
Manganese (mg/L)	MW-21	3.25	n/a	4/7/2023	0.0306	No	35	37.14
Molybdenum (mg/L)	MW-11	0.03148	n/a	4/7/2023	0.0039	No	36	47.22
Molybdenum (mg/L)	MW-17	0.03148	n/a	4/7/2023	0.00251	No	36	47.22
Nitrogen, Ammonia (mg/L)	MW-11	0.2856	n/a	4/7/2023	2.92	Yes	126	61.11
pH (S.U.)	MW-11	7.47	6.439	4/7/2023	6.48	No	125	0
pH (S.U.)	MW-15	7.47	6.439	4/7/2023	6.92	No	125	0
pH (S.U.)	MW-16	7.47	6.439	4/7/2023	6.39	Yes	125	0
pH (S.U.)	MW-17	7.47	6.439	4/7/2023	6.99	No	125	0
pH (S.U.)	TW-2	7.47	6.439	4/7/2023	7.17	No	125	0
pH (S.U.)	MW-21	7.47	6.439	4/7/2023	6.67	No	125	0
Selenium (mg/L)	MW-17	0.1048	n/a	4/7/2023	0.00526	No	36	38.89
Selenium (mg/L)	TW-2	0.1048	n/a	4/7/2023	0.0143	No	36	38.89
Sodium (mg/L)	MW-11	77.57	n/a	4/7/2023	86.6	Yes	36	0
Sodium (mg/L)	MW-15	77.57	n/a	4/7/2023	39	No	36	0
Sodium (mg/L)	MW-16	77.57	n/a	4/7/2023	70.9	No	36	0
Sodium (mg/L)	MW-17	77.57	n/a	4/7/2023	61.4	No	36	0
Sodium (mg/L)	TW-2	77.57	n/a	4/7/2023	79	Yes	36	0
Sodium (mg/L)	MW-21	77.57	n/a	4/7/2023	104	Yes	36	0
Specific Conductance (umhos/cm)	MW-11	1428	n/a	4/7/2023	1305	No	125	0
Specific Conductance (umhos/cm)	MW-15	1428	n/a	4/7/2023	706.6	No	125	0
Specific Conductance (umhos/cm)	MW-16	1428	n/a	4/7/2023	1418	No	125	0
Specific Conductance (umhos/cm)	MW-17	1428	n/a	4/7/2023	1266	No	125	0
Specific Conductance (umhos/cm)	TW-2	1428	n/a	4/7/2023	1097	No	125	0
Specific Conductance (umhos/cm)	MW-21	1428	n/a	4/7/2023	2007	Yes	125	0
Strontium (mg/L)	MW-11	0.7991	n/a	4/7/2023	0.591	No	35	0
Strontium (mg/L)	MW-15	0.7991	n/a	4/7/2023	0.363	No	35	0
Strontium (mg/L)	MW-16	0.7991	n/a	4/7/2023	0.61	No	35	0
Strontium (mg/L)	MW-17	0.7991	n/a	4/7/2023	0.672	No	35	0
Strontium (mg/L)	TW-2	0.7991	n/a	4/7/2023	0.441	No	35	0

Control Limit

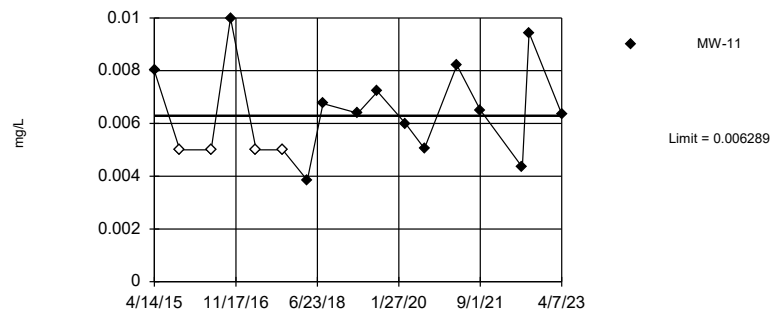
Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY Sanitas HMSP Printed 8/29/2023, 2:09 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Date</u>	<u>Observ.</u>	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>
Strontium (mg/L)	MW-21	0.7991	n/a	4/7/2023	0.817	Yes	35	0
Sulfate (mg/L)	MW-11	228.7	n/a	4/7/2023	68.8	No	120	0
Sulfate (mg/L)	MW-15	228.7	n/a	4/7/2023	81.9	No	120	0
Sulfate (mg/L)	MW-16	228.7	n/a	4/7/2023	399	Yes	120	0
Sulfate (mg/L)	MW-17	228.7	n/a	4/7/2023	319	Yes	120	0
Sulfate (mg/L)	TW-2	228.7	n/a	4/7/2023	322	Yes	120	0
Sulfate (mg/L)	MW-21	228.7	n/a	4/7/2023	723	Yes	120	0

Exceeds Limit: MW-11

Prediction Limit

Interwell Parametric



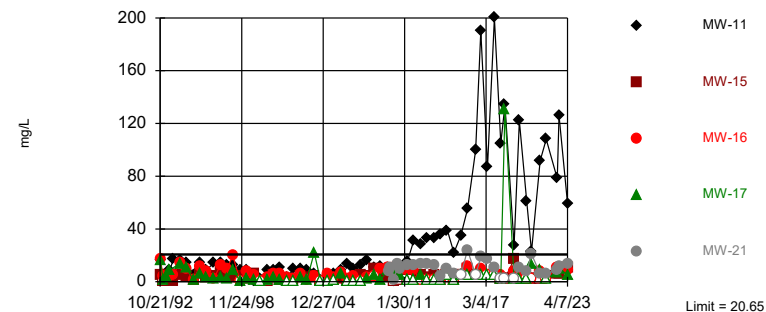
Background Data Summary: Mean=0.00241, Std. Dev.=0.00194, n=35, 68.57% NDs (user selected parametric test despite non-detects). Normality test was disabled. Assumes 4 future values. Kappa overridden to 2.

Constituent: Arsenic Analysis Run 8/29/2023 2:08 PM View: 2023AWQR - Control Limit - Spring
Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY Sanitas HMSP

Exceeds Limit: MW-11

Prediction Limit

Interwell Parametric



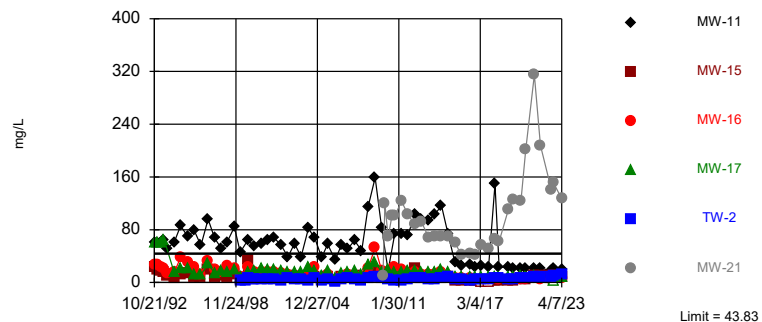
Background Data Summary: Mean=7.487, Std. Dev.=6.582, n=120, 28.33% NDs. Normality test was disabled. Comparing 5 points to limit. Kappa overridden to 2.

Constituent: Chemical Oxygen Demand Analysis Run 8/29/2023 2:08 PM View: 2023AWQR - Control Limit
Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY Sanitas HMSP

Exceeds Limit: MW-21

Prediction Limit

Interwell Parametric



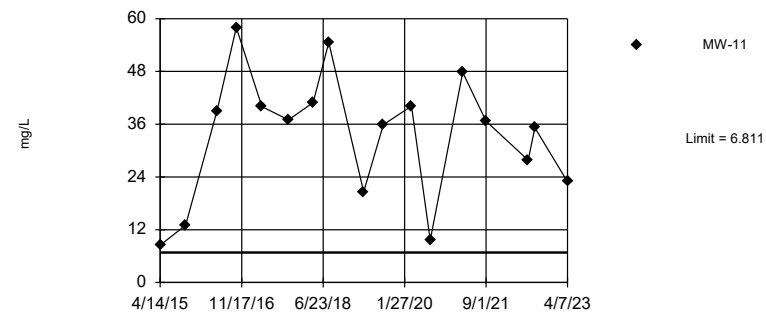
Background Data Summary: Mean=18.3, Std. Dev.=12.76, n=126, 0.7937% NDs. Normality test was disabled. Comparing 6 points to limit. Kappa overridden to 2.

Constituent: Chloride Analysis Run 8/29/2023 2:08 PM View: 2023AWQR - Control Limit - Spring
Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY Sanitas HMSP

Exceeds Limit: MW-11

Prediction Limit

Interwell Parametric



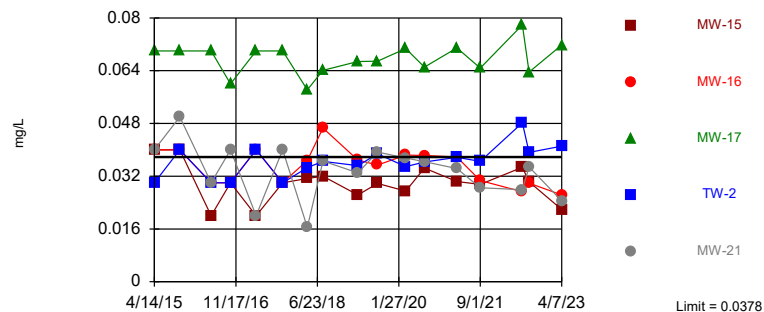
Background Data Summary: Mean=1.127, Std. Dev.=2.842, n=36, 27.78% NDs. Normality test was disabled. Assumes 4 future values. Kappa overridden to 2.

Constituent: Iron Analysis Run 8/29/2023 2:08 PM View: 2023AWQR - Control Limit - Spring
Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY Sanitas HMSP

Exceeds Limit: MW-17, TW-2

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=0.02916, Std. Dev.=0.004318, n=35. Normality test was disabled. Comparing 5 points to limit. Kappa overridden to 2.

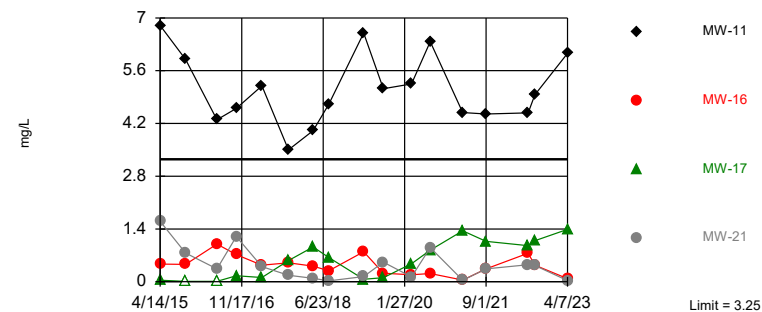
Constituent: Lithium Analysis Run 8/29/2023 2:09 PM View: 2023AWQR - Control Limit - Spring
Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY Sanitas HMSP

Hollow symbols indicate censored values.

Exceeds Limit: MW-11

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=0.9414, Std. Dev.=1.154, n=35, 37.14% NDs. Normality test was disabled. Comparing 4 points to limit. Assumes 1 future value. Kappa overridden to 2.

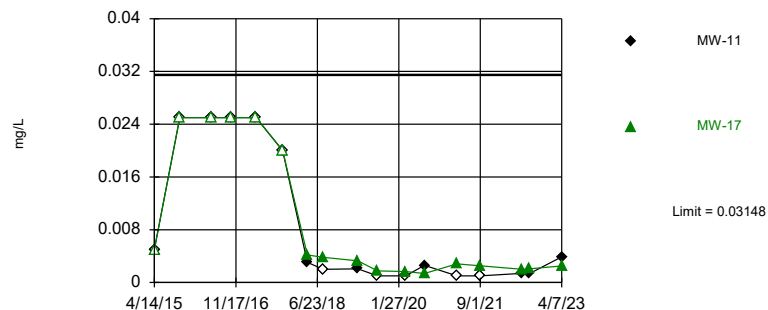
Constituent: Manganese Analysis Run 8/29/2023 2:09 PM View: 2023AWQR - Control Limit - Spring
Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY Sanitas HMSP

Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=0.009717, Std. Dev.=0.01088, n=36, 47.22% NDs. Normality test was disabled. Comparing 2 points to limit. Assumes 3 future values. Kappa overridden to 2.

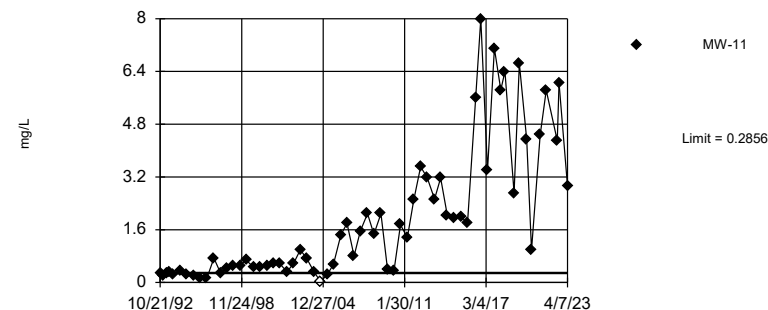
Constituent: Molybdenum Analysis Run 8/29/2023 2:09 PM View: 2023AWQR - Control Limit - Spring
Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY Sanitas HMSP

Hollow symbols indicate censored values.

Exceeds Limit: MW-11

Prediction Limit

Interwell Parametric



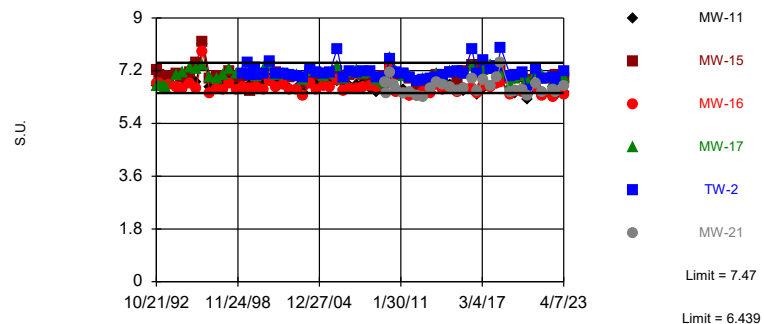
Background Data Summary: Mean=0.08629, Std. Dev.=0.09967, n=126, 61.11% NDs (user selected parametric test despite non-detects). Normality test was disabled. Assumes 4 future values. Kappa overridden to 2.

Constituent: Nitrogen, Ammonia Analysis Run 8/29/2023 2:09 PM View: 2023AWQR - Control Limit - Spring
Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY Sanitas HMSP

Exceeds Limits: MW-16

Prediction Limit

Interwell Parametric



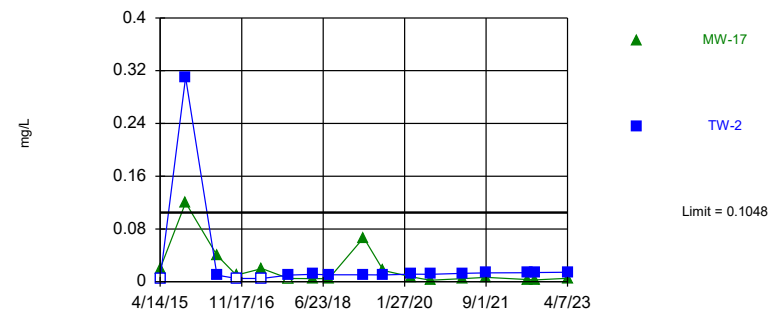
Background Data Summary: Mean=6.954, Std. Dev.=0.2578, n=125. Normality test was disabled. Comparing 6 points to limit. Kappa overridden to 2.

Constituent: pH Analysis Run 8/29/2023 2:09 PM View: 2023AWQR - Control Limit - Spring
Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY Sanitas HMSP

Within Limit

Prediction Limit

Interwell Parametric



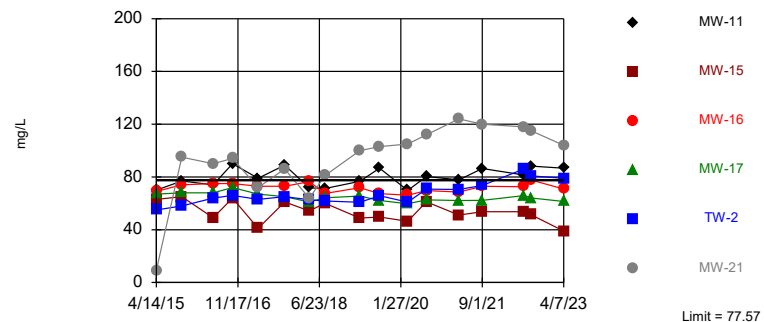
Background Data Summary: Mean=0.03428, Std. Dev.=0.03526, n=36, 38.89% NDs. Normality test was disabled. Comparing 2 points to limit. Assumes 3 future values. Kappa overridden to 2.

Constituent: Selenium Analysis Run 8/29/2023 2:09 PM View: 2023AWQR - Control Limit - Spring
Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY Sanitas HMSP

Exceeds Limit: MW-11, TW-2, MW-21

Prediction Limit

Interwell Parametric



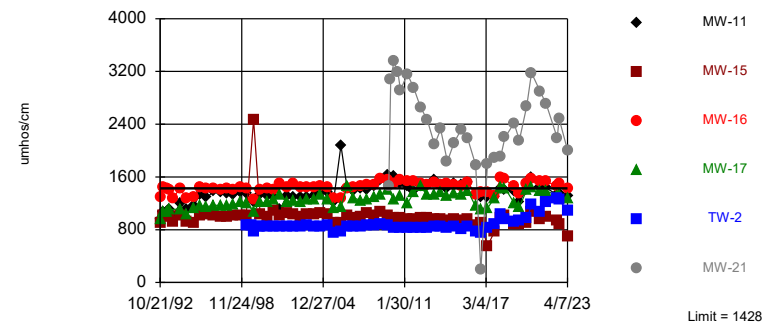
Background Data Summary: Mean=57.39, Std. Dev.=10.09, n=36. Normality test was disabled. Comparing 6 points to limit. Kappa overridden to 2.

Constituent: Sodium Analysis Run 8/29/2023 2:09 PM View: 2023AWQR - Control Limit - Spring
Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY Sanitas HMSP

Exceeds Limit: MW-21

Prediction Limit

Interwell Parametric

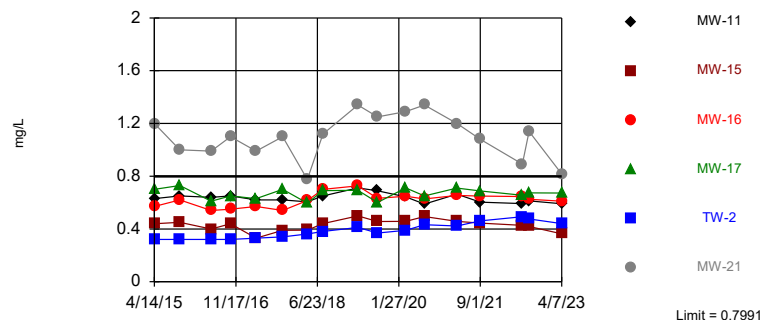


Background Data Summary: Mean=1022, Std. Dev.=202.6, n=125. Normality test was disabled. Comparing 6 points to limit. Kappa overridden to 2.

Constituent: Specific Conductance Analysis Run 8/29/2023 2:09 PM View: 2023AWQR - Control Limit - S
Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY Sanitas HMSP

Exceeds Limit: MW-21

Prediction Limit Interwell Parametric

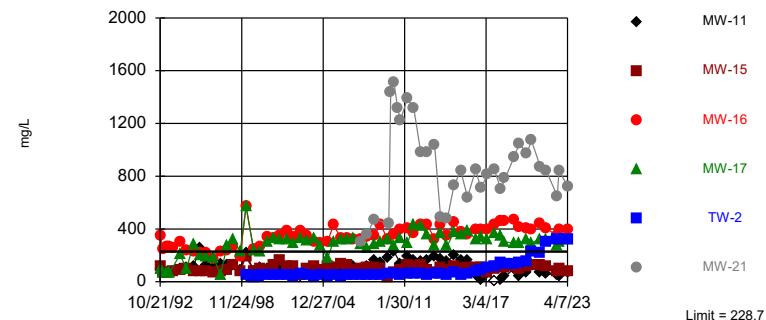


Background Data Summary: Mean=0.4705, Std. Dev.=0.1643, n=35. Normality test was disabled. Comparing 6 points to limit. Kappa overridden to 2.

Constituent: Strontium Analysis Run 8/29/2023 2:09 PM View: 2023AWQR - Control Limit - Spring
Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY Sanitas HMSP

Exceeds Limit: MW-16, MW-17, TW-2, MW-21

Prediction Limit Interwell Parametric



Background Data Summary: Mean=66.1, Std. Dev.=81.28, n=120. Normality test was disabled. Comparing 6 points to limit. Kappa overridden to 2.

Constituent: Sulfate Analysis Run 8/29/2023 2:09 PM View: 2023AWQR - Control Limit - Spring
Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY Sanitas HMSP

Control Limit

Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY Sanitas HMSP Printed 8/29/2023, 2:11 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Date</u>	<u>Observ.</u>	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>
Arsenic (mg/L)	MW-11	0.006166	n/a	7/27/2023	0.00767	Yes	37	67.57
Chemical Oxygen Demand (mg/L)	MW-11	20.84	n/a	7/27/2023	118	Yes	122	27.87
Chemical Oxygen Demand (mg/L)	MW-15	20.84	n/a	7/27/2023	6.11	No	122	27.87
Chemical Oxygen Demand (mg/L)	MW-16	20.84	n/a	7/27/2023	8.36	No	122	27.87
Chemical Oxygen Demand (mg/L)	MW-17	20.84	n/a	7/27/2023	6.31	No	122	27.87
Chemical Oxygen Demand (mg/L)	TW-2	20.84	n/a	7/27/2023	8.02	No	122	27.87
Chemical Oxygen Demand (mg/L)	MW-21	20.84	n/a	7/27/2023	9.38	No	122	27.87
Chloride (mg/L)	MW-11	43.64	n/a	7/27/2023	22.7	No	128	0.7813
Chloride (mg/L)	MW-15	43.64	n/a	7/27/2023	11.15	No	128	0.7813
Chloride (mg/L)	MW-16	43.64	n/a	7/27/2023	5.5	No	128	0.7813
Chloride (mg/L)	MW-17	43.64	n/a	7/27/2023	8.74	No	128	0.7813
Chloride (mg/L)	TW-2	43.64	n/a	7/27/2023	13.3	No	128	0.7813
Chloride (mg/L)	MW-21	43.64	n/a	7/27/2023	109	Yes	128	0.7813
Iron (mg/L)	MW-11	6.638	n/a	7/27/2023	31.4	Yes	38	28.95
Lithium (mg/L)	MW-15	0.03774	n/a	7/27/2023	0.0285	No	37	0
Lithium (mg/L)	MW-16	0.03774	n/a	7/27/2023	0.0256	No	37	0
Lithium (mg/L)	MW-17	0.03774	n/a	7/27/2023	0.0668	Yes	37	0
Lithium (mg/L)	TW-2	0.03774	n/a	7/27/2023	0.0413	Yes	37	0
Lithium (mg/L)	MW-21	0.03774	n/a	7/27/2023	0.0257	No	37	0
Manganese (mg/L)	MW-11	3.278	n/a	7/27/2023	5	Yes	37	37.84
Manganese (mg/L)	MW-16	3.278	n/a	7/27/2023	0.106	No	37	37.84
Manganese (mg/L)	MW-17	3.278	n/a	7/27/2023	0.717	No	37	37.84
Manganese (mg/L)	MW-21	3.278	n/a	7/27/2023	0.136	No	37	37.84
Molybdenum (mg/L)	MW-15	0.03078	n/a	7/27/2023	0.00207	No	38	44.74
Molybdenum (mg/L)	MW-17	0.03078	n/a	7/27/2023	0.00243	No	38	44.74
Nitrogen, Ammonia (mg/L)	MW-11	0.2843	n/a	7/27/2023	6.02	Yes	128	61.72
pH (S.U.)	MW-11	7.466	6.437	7/27/2023	6.42	Yes	127	0
pH (S.U.)	MW-15	7.466	6.437	7/27/2023	6.98	No	127	0
pH (S.U.)	MW-16	7.466	6.437	7/27/2023	6.37	Yes	127	0
pH (S.U.)	MW-17	7.466	6.437	7/27/2023	6.9	No	127	0
pH (S.U.)	TW-2	7.466	6.437	7/27/2023	6.92	No	127	0
pH (S.U.)	MW-21	7.466	6.437	7/27/2023	6.54	No	127	0
Selenium (mg/L)	MW-17	0.1037	n/a	7/27/2023	0.023	No	38	39.47
Selenium (mg/L)	TW-2	0.1037	n/a	7/27/2023	0.0161	No	38	39.47
Selenium (mg/L)	MW-21	0.1037	n/a	7/27/2023	0.0134	No	38	39.47
Sodium (mg/L)	MW-11	77.68	n/a	7/27/2023	85.6	Yes	38	0
Sodium (mg/L)	MW-15	77.68	n/a	7/27/2023	53.2	No	38	0
Sodium (mg/L)	MW-16	77.68	n/a	7/27/2023	76	No	38	0
Sodium (mg/L)	MW-17	77.68	n/a	7/27/2023	62.8	No	38	0
Sodium (mg/L)	TW-2	77.68	n/a	7/27/2023	84.7	Yes	38	0
Sodium (mg/L)	MW-21	77.68	n/a	7/27/2023	99.4	Yes	38	0
Specific Conductance (umhos/cm)	MW-11	1425	n/a	7/27/2023	1346	No	127	0
Specific Conductance (umhos/cm)	MW-15	1425	n/a	7/27/2023	923.9	No	127	0
Specific Conductance (umhos/cm)	MW-16	1425	n/a	7/27/2023	1490	Yes	127	0
Specific Conductance (umhos/cm)	MW-17	1425	n/a	7/27/2023	1341	No	127	0
Specific Conductance (umhos/cm)	TW-2	1425	n/a	7/27/2023	1256	No	127	0
Specific Conductance (umhos/cm)	MW-21	1425	n/a	7/27/2023	2116	Yes	127	0
Strontium (mg/L)	MW-11	0.7924	n/a	7/27/2023	0.572	No	37	0
Strontium (mg/L)	MW-15	0.7924	n/a	7/27/2023	0.4335	No	37	0
Strontium (mg/L)	MW-16	0.7924	n/a	7/27/2023	0.602	No	37	0

Control Limit

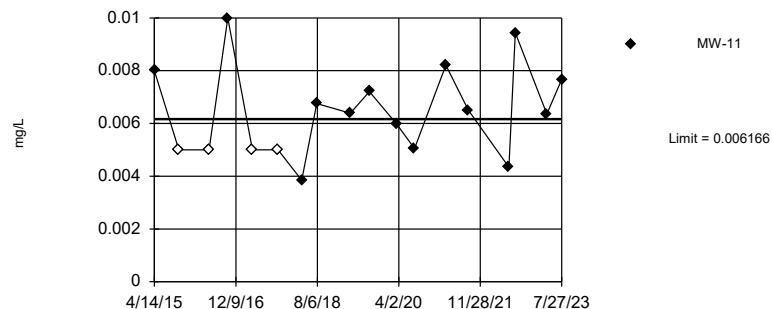
Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY Sanitas HMSP Printed 8/29/2023, 2:11 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Date</u>	<u>Observ.</u>	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>
Strontium (mg/L)	MW-17	0.7924	n/a	7/27/2023	0.627	No	37	0
Strontium (mg/L)	TW-2	0.7924	n/a	7/27/2023	0.465	No	37	0
Strontium (mg/L)	MW-21	0.7924	n/a	7/27/2023	0.809	Yes	37	0
Sulfate (mg/L)	MW-11	227.3	n/a	7/27/2023	41	No	122	0
Sulfate (mg/L)	MW-15	227.3	n/a	7/27/2023	118	No	122	0
Sulfate (mg/L)	MW-16	227.3	n/a	7/27/2023	435	Yes	122	0
Sulfate (mg/L)	MW-17	227.3	n/a	7/27/2023	328	Yes	122	0
Sulfate (mg/L)	TW-2	227.3	n/a	7/27/2023	368	Yes	122	0
Sulfate (mg/L)	MW-21	227.3	n/a	7/27/2023	704	Yes	122	0

Exceeds Limit: MW-11

Prediction Limit

Interwell Parametric



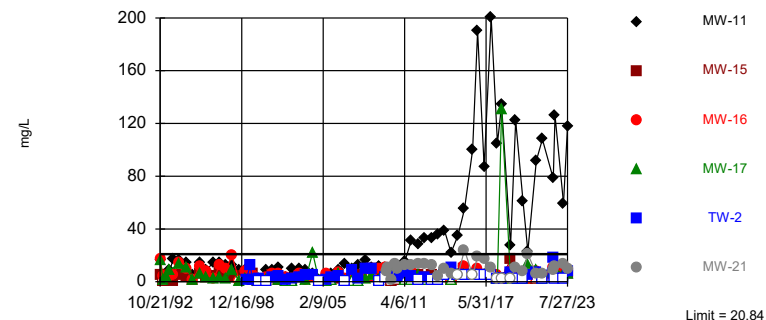
Background Data Summary: Mean=0.002323, Std. Dev.=0.001922, n=37, 67.57% NDs (user selected parametric test despite non-detects). Normality test was disabled. Assumes 4 future values. Kappa overridden to 2.

Constituent: Arsenic Analysis Run 8/29/2023 2:10 PM View: 2023AWQR - Control Limit - Fall
Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY Sanitas HMSP

Exceeds Limit: MW-11

Prediction Limit

Interwell Parametric



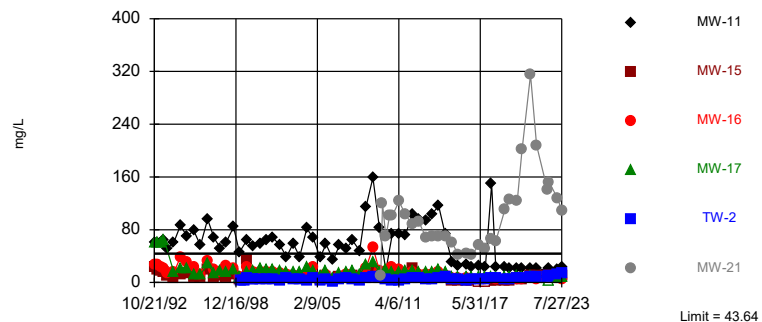
Background Data Summary: Mean=7.582, Std. Dev.=6.631, n=122, 27.87% NDs. Normality test was disabled. Comparing 6 points to limit. Kappa overridden to 2.

Constituent: Chemical Oxygen Demand Analysis Run 8/29/2023 2:10 PM View: 2023AWQR - Control Limit - Fall
Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY Sanitas HMSP

Exceeds Limit: MW-21

Prediction Limit

Interwell Parametric



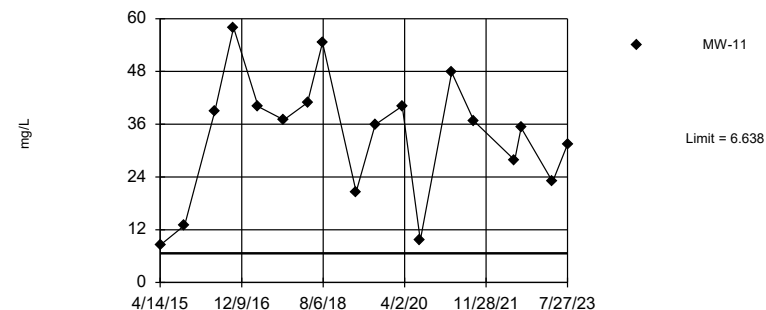
Background Data Summary: Mean=18.11, Std. Dev.=12.76, n=128, 0.7813% NDs. Normality test was disabled. Comparing 6 points to limit. Kappa overridden to 2.

Constituent: Chloride Analysis Run 8/29/2023 2:10 PM View: 2023AWQR - Control Limit - Fall
Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY Sanitas HMSP

Exceeds Limit: MW-11

Prediction Limit

Interwell Parametric



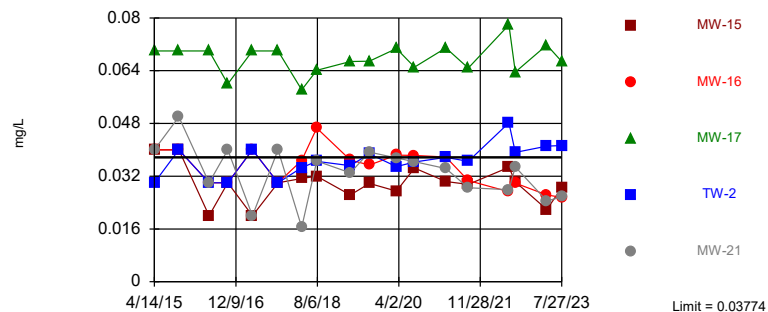
Background Data Summary: Mean=1.099, Std. Dev.=2.769, n=38, 28.95% NDs. Normality test was disabled. Assumes 4 future values. Kappa overridden to 2.

Constituent: Iron Analysis Run 8/29/2023 2:10 PM View: 2023AWQR - Control Limit - Fall
Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY Sanitas HMSP

Exceeds Limit: MW-17, TW-2

Prediction Limit

Interwell Parametric



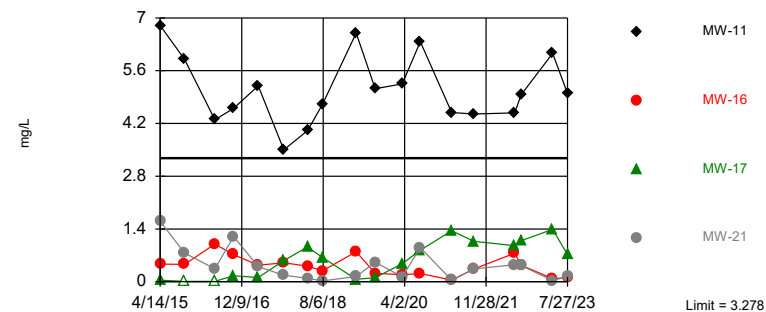
Background Data Summary: Mean=0.029, Std. Dev.=0.004369, n=37. Normality test was disabled. Comparing 5 points to limit. Kappa overridden to 2.

Constituent: Lithium Analysis Run 8/29/2023 2:10 PM View: 2023AWQR - Control Limit - Fall
Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY Sanitas HMSP

Exceeds Limit: MW-11

Prediction Limit

Interwell Parametric



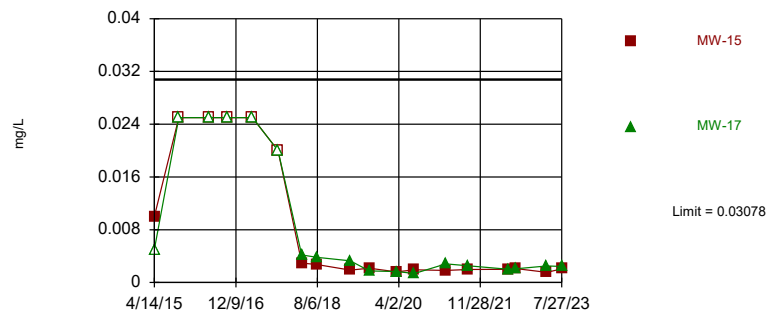
Background Data Summary: Mean=0.9572, Std. Dev.=1.16, n=37, 37.84% NDs. Normality test was disabled. Comparing 4 points to limit. Assumes 1 future value. Kappa overridden to 2.

Constituent: Manganese Analysis Run 8/29/2023 2:10 PM View: 2023AWQR - Control Limit - Fall
Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY Sanitas HMSP

Within Limit

Prediction Limit

Interwell Parametric



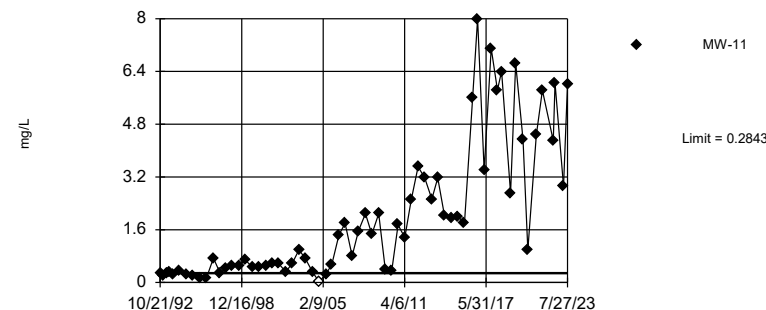
Background Data Summary: Mean=0.009283, Std. Dev.=0.01075, n=38, 44.74% NDs. Normality test was disabled. Comparing 2 points to limit. Assumes 3 future values. Kappa overridden to 2.

Constituent: Molybdenum Analysis Run 8/29/2023 2:10 PM View: 2023AWQR - Control Limit - Fall
Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY Sanitas HMSP

Exceeds Limit: MW-11

Prediction Limit

Interwell Parametric



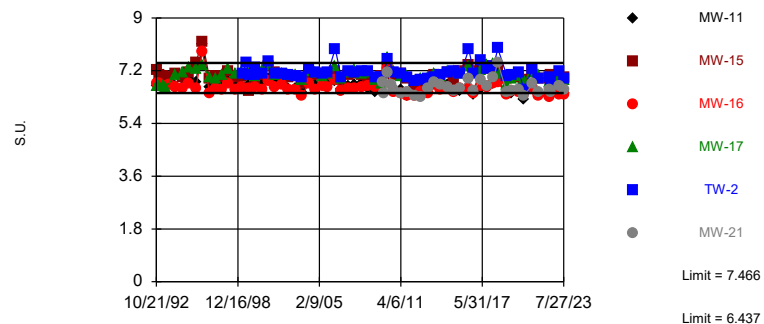
Background Data Summary: Mean=0.08651, Std. Dev.=0.0989, n=128, 61.72% NDs (user selected parametric test despite non-detects). Normality test was disabled. Assumes 4 future values. Kappa overridden to 2.

Constituent: Nitrogen, Ammonia Analysis Run 8/29/2023 2:10 PM View: 2023AWQR - Control Limit - Fall
Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY Sanitas HMSP

Exceeds Limits: MW-11, MW-16

Prediction Limit

Interwell Parametric



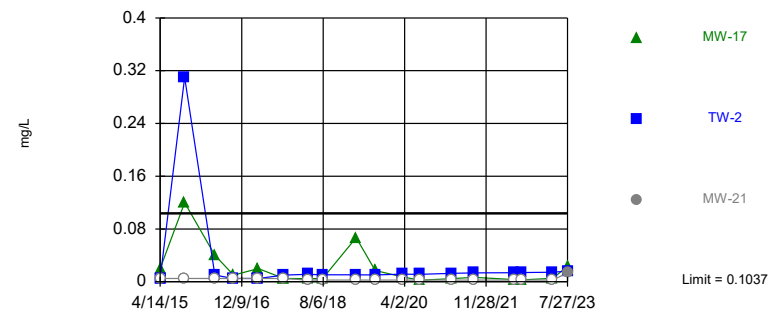
Background Data Summary: Mean=6.951, Std. Dev.=0.2572, n=127. Normality test was disabled. Comparing 6 points to limit. Kappa overridden to 2.

Constituent: pH Analysis Run 8/29/2023 2:10 PM View: 2023AWQR - Control Limit - Fall
Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY Sanitas HMSP

Within Limit

Prediction Limit

Interwell Parametric



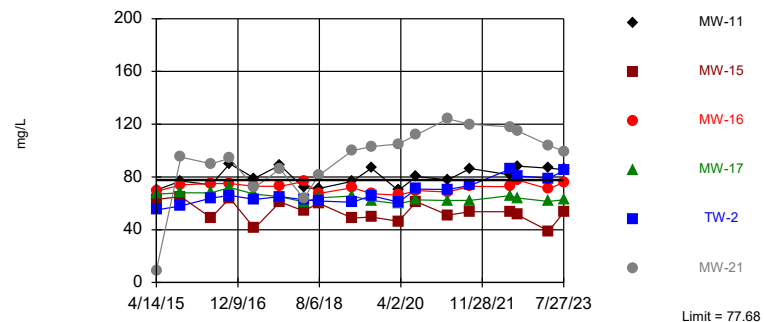
Background Data Summary: Mean=0.034, Std. Dev.=0.03487, n=38, 39.47% NDs. Normality test was disabled. Comparing 3 points to limit. Assumes 2 future values. Kappa overridden to 2.

Constituent: Selenium Analysis Run 8/29/2023 2:10 PM View: 2023AWQR - Control Limit - Fall
Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY Sanitas HMSP

Exceeds Limit: MW-11, TW-2, MW-21

Prediction Limit

Interwell Parametric



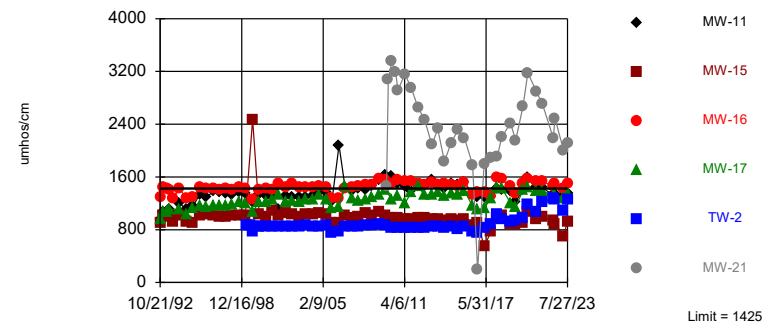
Background Data Summary: Mean=57.55, Std. Dev.=10.07, n=38. Normality test was disabled. Comparing 6 points to limit. Kappa overridden to 2.

Constituent: Sodium Analysis Run 8/29/2023 2:10 PM View: 2023AWQR - Control Limit - Fall
Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY Sanitas HMSP

Exceeds Limit: MW-16, MW-21

Prediction Limit

Interwell Parametric

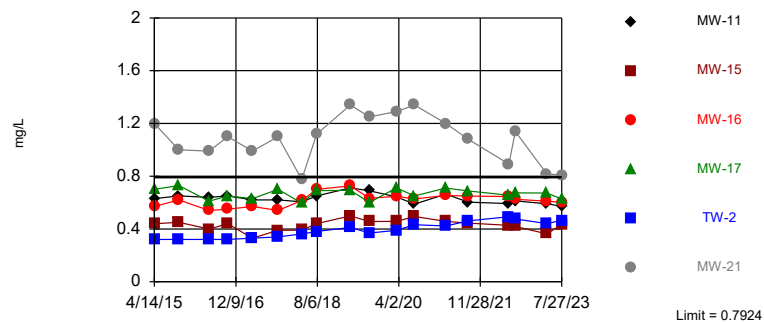


Background Data Summary: Mean=1022, Std. Dev.=201.5, n=127. Normality test was disabled. Comparing 6 points to limit. Kappa overridden to 2.

Constituent: Specific Conductance Analysis Run 8/29/2023 2:10 PM View: 2023AWQR - Control Limit - Fa
Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY Sanitas HMSP

Exceeds Limit: MW-21

Prediction Limit Interwell Parametric

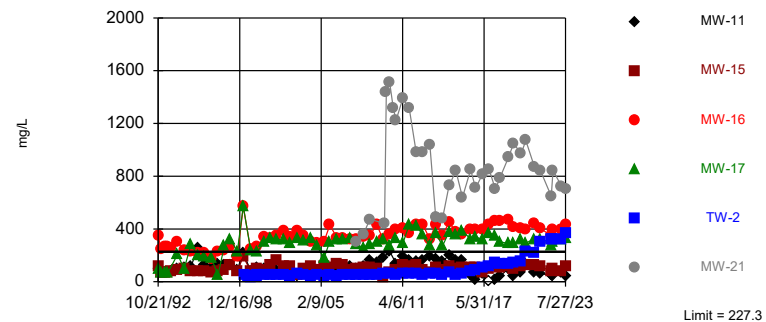


Background Data Summary: Mean=0.4682, Std. Dev.=0.1621, n=37. Normality test was disabled. Comparing 6 points to limit. Kappa overridden to 2.

Constituent: Strontium Analysis Run 8/29/2023 2:10 PM View: 2023AWQR - Control Limit - Fall
Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY Sanitas HMSP

Exceeds Limit: MW-16, MW-17, TW-2, MW-21

Prediction Limit Interwell Parametric



Background Data Summary: Mean=66.09, Std. Dev.=80.63, n=122. Normality test was disabled. Comparing 6 points to limit. Kappa overridden to 2.

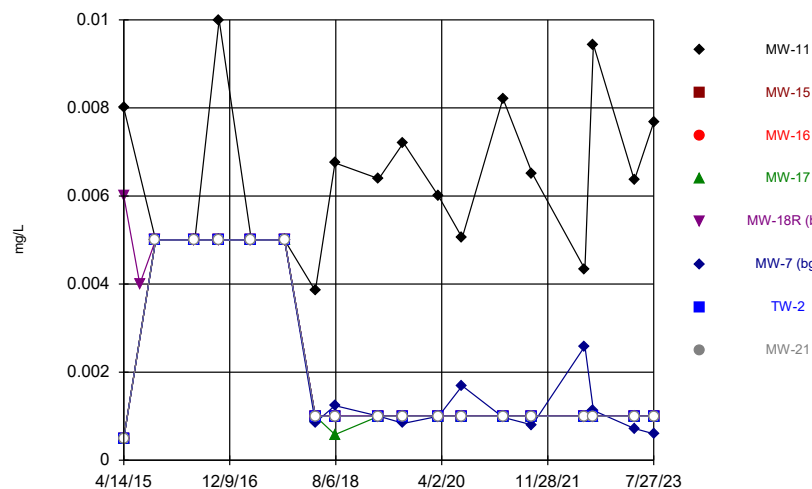
Constituent: Sulfate Analysis Run 8/29/2023 2:10 PM View: 2023AWQR - Control Limit - Fall
Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY Sanitas HMSP



Attachment C

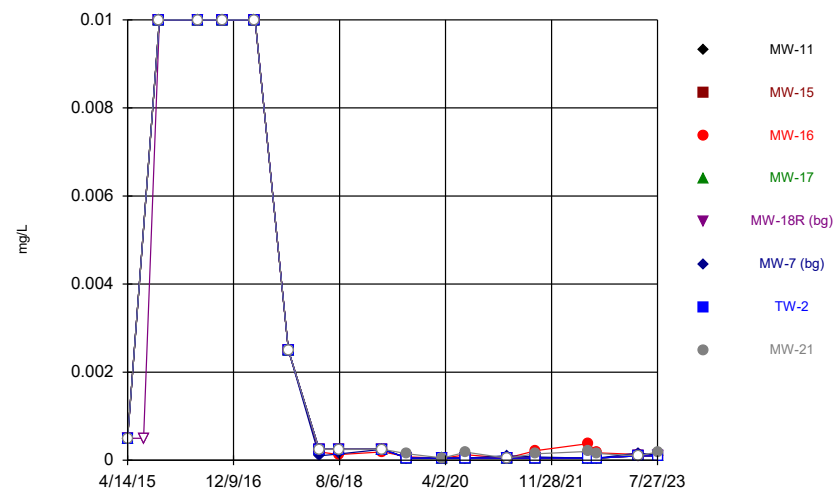
Time Series Graphs

Time Series



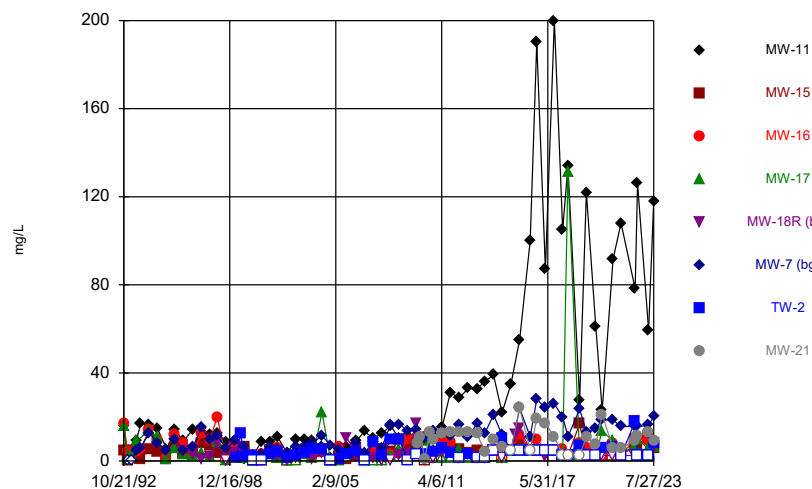
Constituent: Arsenic Analysis Run 8/28/2023 5:04 PM View: 2023AWQR - Time Series
Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY Sanitas HMSP

Time Series



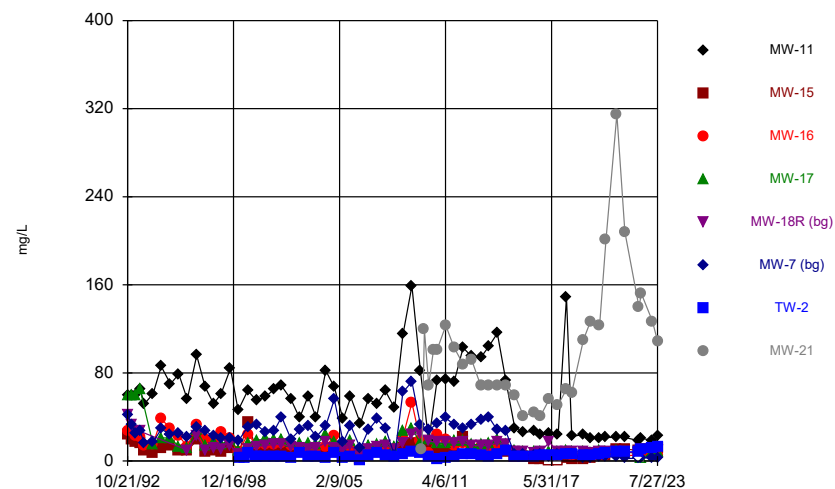
Constituent: Cadmium Analysis Run 8/28/2023 5:04 PM View: 2023AWQR - Time Series
Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY Sanitas HMSP

Time Series



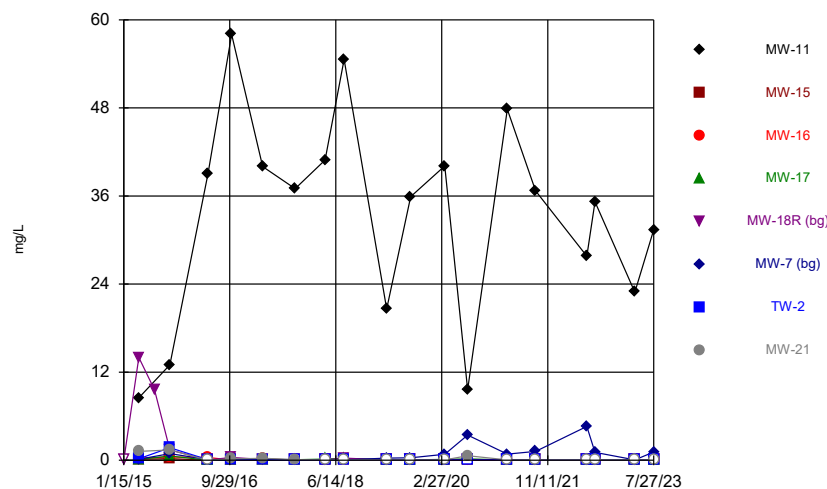
Constituent: Chemical Oxygen Demand Analysis Run 8/28/2023 5:04 PM View: 2023AWQR - Time Series
Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY Sanitas HMSP

Time Series

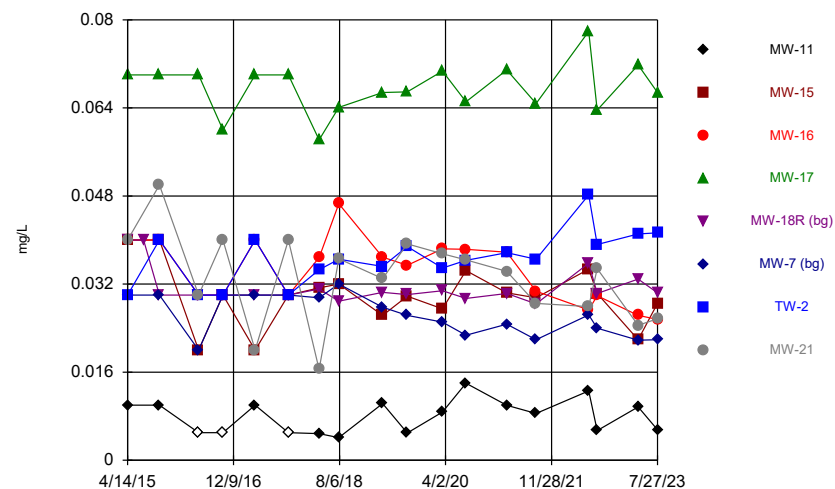


Constituent: Chloride Analysis Run 8/28/2023 5:04 PM View: 2023AWQR - Time Series
Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY Sanitas HMSP

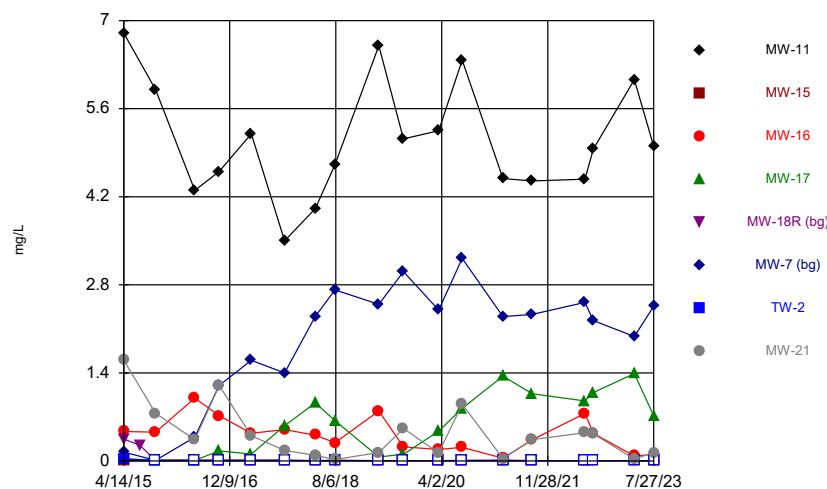
Time Series



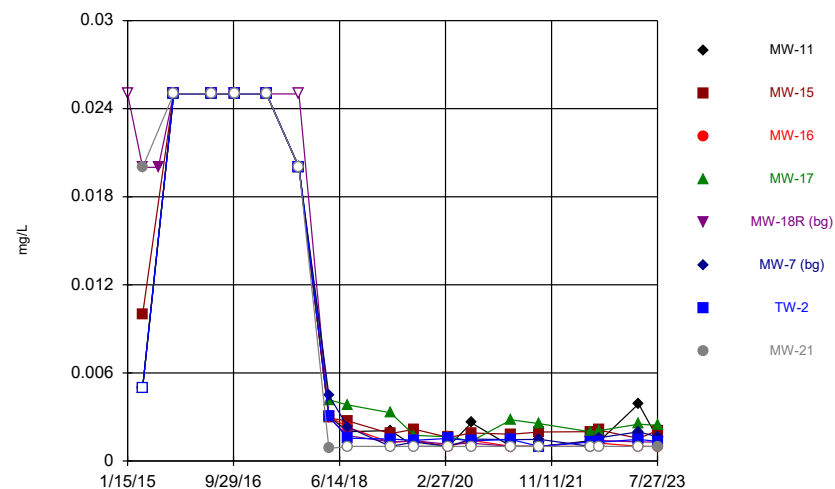
Time Series



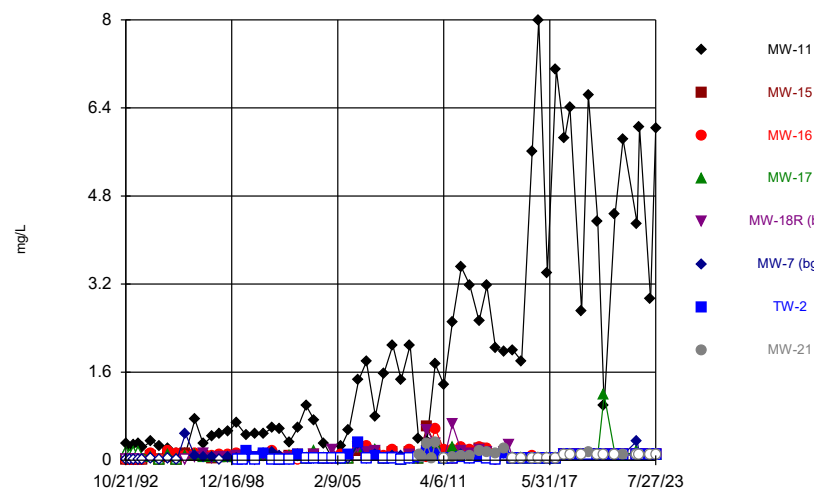
Time Series



Time Series

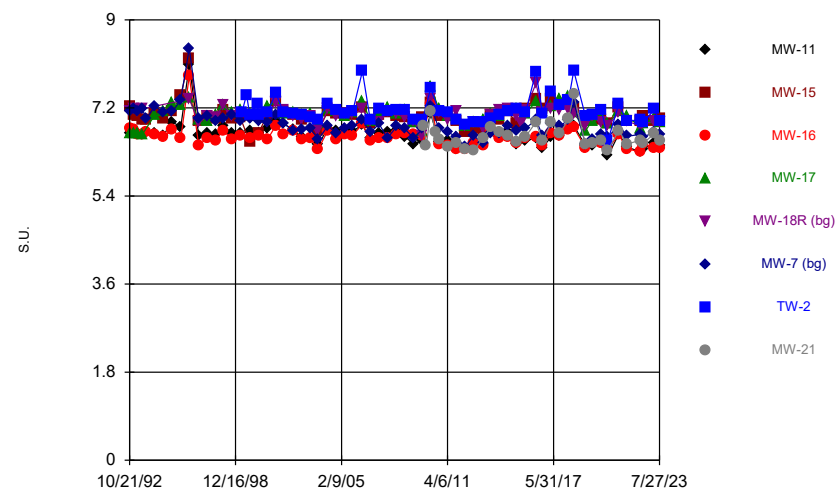


Time Series



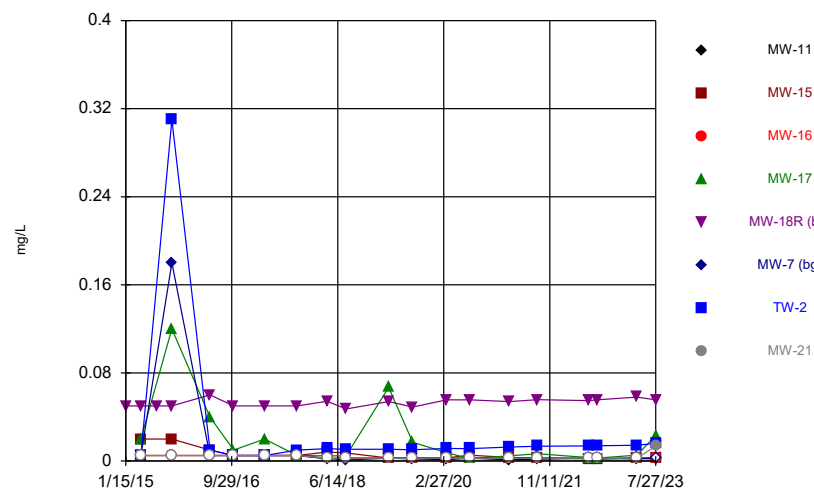
Constituent: Nitrogen, Ammonia Analysis Run 8/28/2023 5:04 PM View: 2023AWQR - Time Series
Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY Sanitas HMSP

Time Series



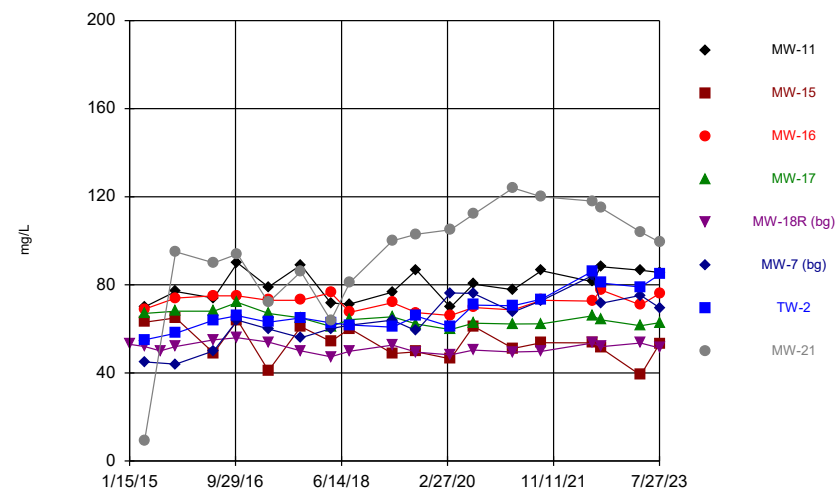
Constituent: pH Analysis Run 8/28/2023 5:04 PM View: 2023AWQR - Time Series
Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY Sanitas HMSP

Time Series



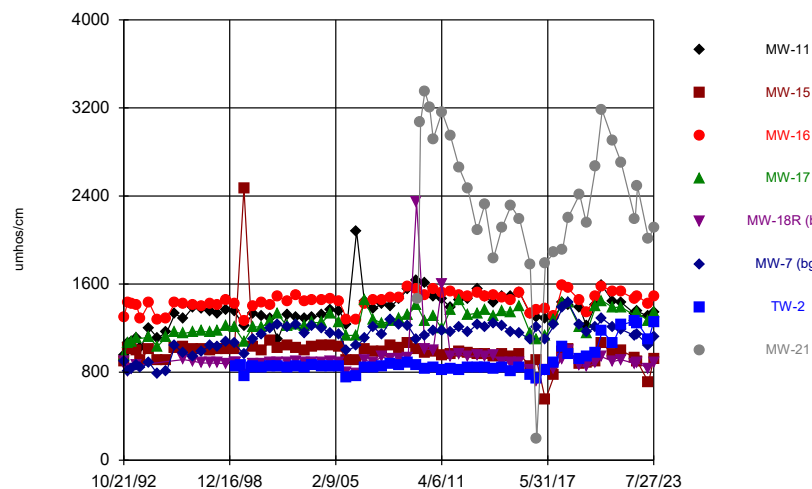
Constituent: Selenium Analysis Run 8/28/2023 5:04 PM View: 2023AWQR - Time Series
Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY Sanitas HMSP

Time Series

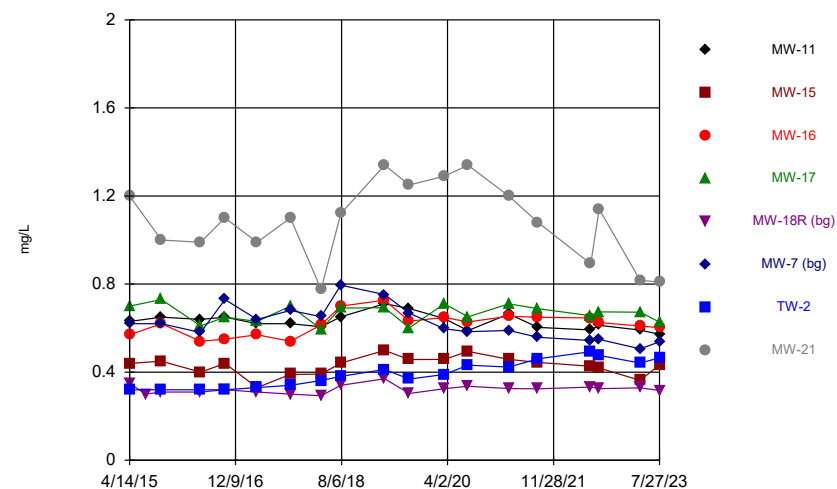


Constituent: Sodium Analysis Run 8/28/2023 5:04 PM View: 2023AWQR - Time Series
Climax Molybdenum Company Landfill Client: SCS Engineers Data: CMOLY Sanitas HMSP

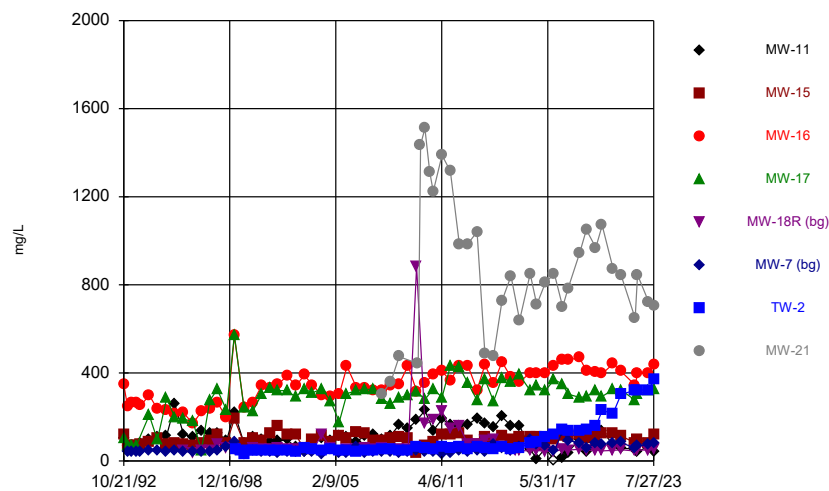
Time Series



Time Series



Time Series





Appendix E

Mann-Kendall Trend Table

Monitoring Well	Constituent Name	Calculated Statistic		
		Decreasing Trend	Stable Trend	Increasing Trend
MW-7	Arsenic		-12	
	Cadmium		7	
	Chemical Oxygen Demand		9	
	Chloride		-8	
	Iron		0	
	Lithium		-11	
	Manganese		-8	
	Molybdenum			15
	Nitrogen, Ammonia		1	
	pH		1	
	Selenium		-5	
	Sodium		-8	
	Specific Conductance	-20		
	Strontium	-22		
	Sulfate		-4	
MW-11	Arsenic		6	
	Cadmium		11	
	Chemical Oxygen Demand		10	
	Chloride		0	
	Iron		-8	
	Lithium		-10	
	Manganese		0	
	Molybdenum		11	
	Nitrogen, Ammonia		8	
	pH		0	
	Selenium		9	
	Sodium			16
	Specific Conductance	-16		
	Strontium		-12	
	Sulfate	-14		
MW-15	Chemical Oxygen Demand			19
	Chloride			14
	Lithium		-6	
	Manganese		-1	
	Molybdenum		12	
	pH		0	
	Selenium		-8	
	Sodium		-4	
	Specific Conductance		-12	
	Strontium	-19		
	Sulfate		-9	
MW-16	Cadmium		6	
	Chemical Oxygen Demand		11	
	Chloride		2	
	Iron		1	
	Lithium	-26		
	Manganese		2	
	Molybdenum		-6	
	pH		-7	
	Sodium			16
	Specific Conductance		-12	
	Strontium	-18		
	Sulfate		2	

Monitoring Well	Constituent Name	Calculated Statistic		
		Decreasing Trend	Stable Trend	Increasing Trend
MW-17	Chemical Oxygen Demand		-1	
	Chloride		-10	
	Iron		-12	
	Lithium		0	
	Manganese		8	
	Molybdenum		6	
	Nitrogen, Ammonia		-4	
	pH		-4	
	Selenium		4	
	Sodium		8	
	Specific Conductance	-16		
	Strontium	-14		
	Sulfate		3	
MW-18R	Chemical Oxygen Demand		7	
	Chloride		8	
	Iron		-7	
	Lithium		5	
	Manganese		-7	
	Molybdenum		9	
	pH		1	
	Selenium		9	
	Sodium			15
	Specific Conductance		-12	
	Strontium		-7	
	Sulfate		7	
MW-21	Cadmium		8	
	Chemical Oxygen Demand		8	
	Chloride		-10	
	Iron		-5	
	Lithium	-20		
	Manganese		-4	
	Molybdenum		-7	
	Nitrogen, Ammonia		1	
	pH		5	
	Selenium		7	
	Sodium		-10	
	Specific Conductance	-18		
	Strontium	-22		
	Sulfate	-18		
TW-2	Chemical Oxygen Demand		4	
	Chloride			24
	Lithium			20
	Molybdenum		-6	
	pH		-2	
	Selenium			26
	Sodium			18
	Specific Conductance			14
	Strontium			14
	Sulfate			24



Appendix F

Leachate Control System Performance Evaluation Report

Table F1
Leachate Management Summary
2023 Leachate Control System Performance Evaluation Report
Climax Molybdenum Company Industrial Landfill
Permit No.56-SDP-06-80P

Date of Measurement	Column in Piezometer (ft)					Discharge to Treatment Ponds (gal)	Precipitation (in)
	LPZ-1	LPZ-2	LPZ-3	LPZ-4	LPZ-5		
10/1/2022	-	-	-	-	NM	36,264	1.94
11/1/2022	-	-	-	-	0.60	-	1.98
12/1/2022	-	-	-	-	0.55	25,739	1.29
1/1/2023	-	-	-	-	0.51	28,283	1.89
2/1/2023	-	-	-	-	0.77	125,710	3.00
3/1/2023	-	-	-	-	1.62	121,743	4.01
4/6/2023	6.91	14.14	10.31	14.40	1.98	62,313	1.41
5/1/2023	-	-	-	-	1.63	23,408	2.84
6/1/2023	-	-	-	-	0.96	-	1.61
7/27/2023	4.62	11.43	8.68	12.04	0.78	85,564	3.27
8/1/2023	-	-	-	-	0.19	77,917	5.44
9/1/2023	-	-	-	-	0.61	-	1.37
Reporting Period Total						586,941	30.05

Notes:

- 1) Leachate column thicknesses for the reporting period generally remained consistent with historical measurements. However, new maximum leachate column thicknesses were measured in LPZ-2 and LPZ-4 on 4/6/2023.
- 2) Historical leachate levels and graphs are provided in Attachment A.
- 3) Precipitation data for October 2022 - September 2023 obtained from [ncdc.noaa.gov](https://www.ncdc.noaa.gov).
- 4) NM - Not Measured

Comments:

Reporting Period: October 2022 - September 2023.

Approved Changes to Leachate Collection System: None.

Proposed Changes to Leachate Collection System: None.

Maintenance Performed on Leachate Collection System: Leachate lines were jetted in January and September 2023.

Last Date of Cleaning and Inspection: September 2023.

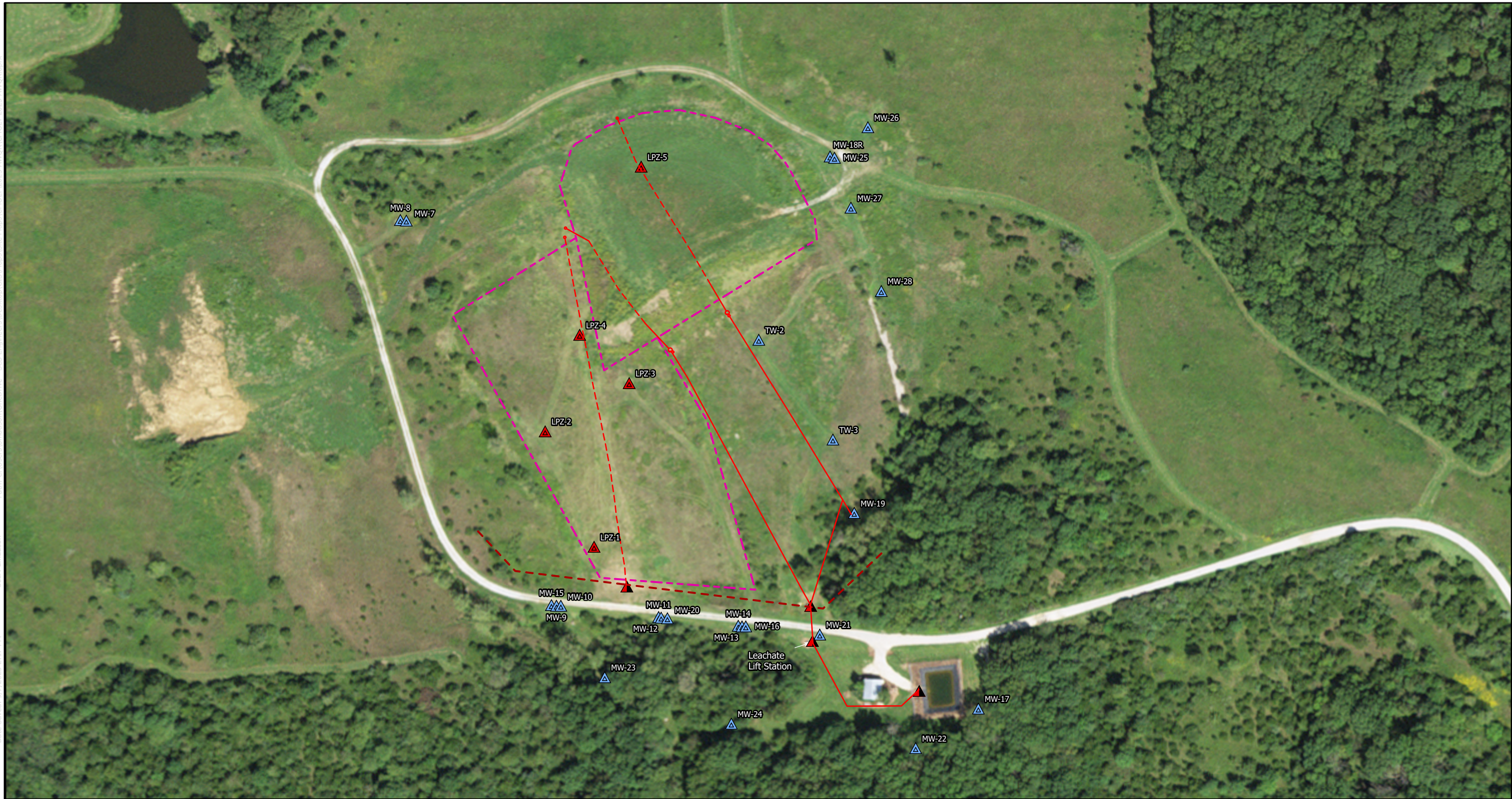
Date of Next Cleaning and Inspection: Anticipated quarterly to semiannually in 2024.

Volume of Leachate Recirculated: Not Applicable.

Volume of Leachate Treated Off-Site: 586,941 gallons were transported to the Climax Molybdenum Co. treatment ponds.

Leachate Quality Testing Results: Leachate quality testing results for the reporting period are provided in Attachment B.

Path: C:\Users\hmadison\OneDrive - SCS Engineers\Desktop\GIS\Mapa\Site Mapa\CMOLV\2023\AMOR\CMOLV_2023_AMOR.aprx
User: hmadison
Date Saved: 9/7/2023 2:17 PM

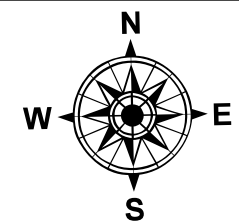


Leachate Control System

Legend

- | | |
|--|--------------------------------|
| Approximate Monitoring Well Location | Perforated Leachate Pipe |
| Approximate Leachate Monitoring Location | Approximate Toe Drain Location |
| Approximate Manhole Location | Approximate Waste Boundary |
| Solid Leachate Pipe | Approximate Property Boundary |

Climax Molybdenum
Industrial Landfill
Argyle, Iowa
Project No: 27223194.00
Drawing Date: November
2023



0 80 160 320 480
Feet

Figure 1

Attachment A

Historical Leachate Level Graphs

**Historical Leachate Level Measurements
Climax Molybdenum Company Industrial Landfill**

Well #	LPZ-1		LPZ-2		LPZ-3		LPZ-4	
Drilled Well Depth (ft) ³	15.35		17.85		15.35		17.80	
Bottom of Well (ft ASL) ³	641.42		642.79		644.68		644.75	
	Thickness (ft) ¹	Elevation (ft) ²	Thickness (ft) ¹	Elevation (ft) ²	Thickness (ft) ¹	Elevation (ft) ²	Thickness (ft) ¹	Elevation (ft) ²
5/15/1991	4.80	646.22	7.75	650.54	4.05	648.73	7.40	652.15
5/28/1991	5.20	646.62	9.05	651.84	4.85	649.53	7.65	652.40
6/13/1991	5.50	646.92	9.90	652.69	4.90	649.58	7.70	652.45
6/26/1991	5.55	646.97	10.55	653.34	4.90	649.58	7.20	651.95
7/15/1991	5.25	646.67	10.45	653.24	4.30	648.98	6.75	651.50
7/29/1991	5.20	646.62	10.40	653.19	4.10	648.78	6.70	651.45
8/7/1991	6.00	647.42	10.20	652.99	4.15	648.83	6.65	651.40
8/14/1991	6.15	647.57	9.90	652.69	4.05	648.73	6.65	651.40
8/15/1991	6.15	647.57	9.85	652.64	4.10	648.78	6.60	651.35
8/28/1991	5.85	647.27	9.05	651.84	3.60	648.28	6.10	650.85
9/16/1991	5.60	647.02	8.45	651.24	3.35	648.03	5.60	650.35
10/2/1991	5.45	646.87	7.05	649.84	3.15	647.83	5.63	650.38
10/16/1991	5.10	646.52	6.50	649.29	3.05	647.73	5.52	650.27
10/31/1991	4.82	646.24	5.88	648.67	2.67	647.35	5.38	650.13
11/15/1991	4.65	646.07	5.34	648.13	2.90	647.58	10.07	654.82
12/6/1991	4.35	645.77	5.38	648.17	3.08	647.76	10.87	655.62
12/19/1991	4.07	645.49	5.39	648.18	3.00	647.68	9.97	654.72
1/7/1992	4.21	645.63	6.43	649.22	3.65	648.33	10.07	654.82
2/18/1992	4.03	645.45	6.77	649.56	3.88	648.56	9.63	654.38
3/19/1992	3.91	645.33	7.92	650.71	4.33	649.01	9.76	654.51
4/15/1992	3.95	645.37	8.42	651.21	4.73	649.41	9.51	654.26
5/19/1992	4.15	645.57	9.81	652.60	4.75	649.43	9.20	653.95
6/16/1992	4.44	645.86	10.46	653.25	4.76	649.44	8.85	653.60
7/28/1992	4.22	645.64	9.79	652.58	4.57	649.25	8.76	653.51
8/19/1992	3.97	645.39	8.88	651.67	4.29	648.97	7.68	652.43
9/9/1992	3.80	645.22	9.53	652.32	4.21	648.89	10.46	655.21
9/23/1992	2.87	644.29	7.93	650.72	4.29	648.97	7.46	652.21
10/30/1992	2.15	643.57	5.54	648.33	2.63	647.31	5.23	649.98
11/20/1992	2.92	644.34	6.79	649.58	3.99	648.67	10.30	655.05
12/16/1992	3.09	644.51	6.91	649.70	4.59	649.27	12.00	656.75
1/19/1993	1.97	643.39	5.29	648.08	4.12	648.80	8.30	653.05
2/23/1993	2.98	644.40	7.03	649.82	4.59	649.27	10.31	655.06
3/16/1993	3.50	644.92	7.87	650.66	5.06	649.74	12.48	657.23
4/13/1993	4.39	645.81	9.12	651.91	5.64	650.32	10.98	655.73
5/11/1993	3.85	645.27	8.57	651.36	5.44	650.12	10.32	655.07
6/8/1993	4.95	646.37	11.53	654.32	6.66	651.34	12.28	657.03
7/13/1993	5.01	646.43	11.99	654.78	7.09	651.77	11.85	656.60
8/11/1993	5.39	646.81	11.99	654.78	7.30	651.98	11.60	656.35
9/28/1993	5.52	646.94	10.85	653.64	7.36	652.04	11.62	656.37
10/13/1993	5.51	646.93	10.18	652.97	6.89	651.57	10.23	654.98
11/3/1993	5.37	646.79	9.50	652.29	6.74	651.42	9.99	654.74
12/15/1993	4.87	646.29	8.35	651.14	6.44	651.12	10.86	655.61
1/13/1994	4.65	646.07	8.02	650.81	5.95	650.63	9.24	653.99
2/16/1994	4.13	645.55	7.32	650.11	5.27	649.95	8.50	653.25
3/10/1994	4.54	645.96	7.84	650.63	6.16	650.84	9.76	654.51
4/12/1994	5.83	647.25	9.77	652.56	6.77	651.45	10.73	655.48
5/13/1994	5.10	646.52	10.81	653.60	6.87	651.55	10.88	655.63
6/6/1994	7.07	648.49	11.96	654.75	7.24	651.92	11.32	656.07
7/20/1995	5.81	647.23	12.20	654.99	6.15	650.83	9.99	654.74
8/31/1995	5.40	646.82	12.41	655.20	6.32	651.00	8.51	653.26
10/10/1995	4.68	646.10	13.06	655.85	7.03	651.71	9.01	653.76

**Historical Leachate Level Measurements
Climax Molybdenum Company Industrial Landfill**

Well #	LPZ-1		LPZ-2		LPZ-3		LPZ-4	
Drilled Well Depth (ft) ³	15.35		17.85		15.35		17.80	
Bottom of Well (ft ASL) ³	641.42		642.79		644.68		644.75	
	Thickness (ft) ¹	Elevation (ft) ²	Thickness (ft) ¹	Elevation (ft) ²	Thickness (ft) ¹	Elevation (ft) ²	Thickness (ft) ¹	Elevation (ft) ²
11/15/1995	4.16	645.58	12.41	655.20	6.84	651.52	8.47	653.22
12/12/1995	3.90	645.32	11.71	654.50	6.25	650.93	7.94	652.69
1/3/1996	4.29	645.71	11.58	654.37	6.25	650.93	7.95	652.70
2/23/1996	3.87	645.29	11.17	653.96	6.60	651.28	7.74	652.49
3/14/1996	4.86	646.28	10.71	653.50	6.79	651.47	7.64	652.39
4/2/1996	4.40	645.82	10.77	653.56	6.90	651.58	7.67	652.42
5/14/1996	5.26	646.68	10.85	653.64	7.33	652.01	8.02	652.77
6/13/1996	5.79	647.21	11.51	654.30	7.89	652.57	8.69	653.44
7/11/1996	6.11	647.53	11.71	654.50	6.88	651.56	8.14	652.89
8/15/1996	6.18	647.60	12.13	654.92	6.84	651.52	8.13	652.88
9/6/1996	6.09	647.51	12.25	655.04	6.75	651.43	8.08	652.83
10/27/1996	6.84	648.26	11.46	654.25	6.97	651.65	7.75	652.50
11/21/1996	6.64	648.06	11.13	653.92	5.75	650.43	7.50	652.25
12/17/1996	6.34	647.76	10.70	653.49	5.52	650.20	7.34	652.09
1/27/1997	5.81	647.23	10.20	652.99	5.20	649.88	6.81	651.56
2/20/1997	5.59	647.01	9.67	652.46	4.68	649.36	6.44	651.19
3/12/1997	6.16	647.58	9.60	652.39	4.82	649.50	6.82	651.57
4/24/1997	6.26	647.68	10.31	653.10	5.22	649.90	7.17	651.92
5/23/1997	6.78	648.20	10.47	653.26	5.30	649.98	6.86	651.61
6/24/1997	7.24	648.66	11.05	653.84	5.72	650.40	7.31	652.06
7/9/1997	7.26	648.68	11.13	653.92	5.82	650.50	7.27	652.02
8/20/1997	7.68	649.10	11.76	654.55	6.27	650.95	7.69	652.44
9/24/1997	7.31	648.73	11.63	654.42	6.00	650.68	7.50	652.25
10/19/1997	6.98	648.40	11.36	654.15	5.77	650.45	7.34	652.09
11/13/1997	6.81	648.23	11.09	653.88	5.66	650.34	7.39	652.14
12/2/1997	6.36	647.78	10.47	653.26	4.82	649.50	7.19	651.94
1/2/1998	6.50	647.92	10.37	653.16	5.64	650.32	7.57	652.32
2/4/1998	6.20	647.62	10.10	652.89	5.49	650.17	7.33	652.08
3/25/1998	6.86	648.28	10.61	653.40	6.30	650.98	8.15	652.90
4/17/1998	6.65	648.07	10.84	653.63	6.73	651.41	8.54	653.29
5/29/1998	6.97	648.39	11.54	654.33	7.17	651.85	8.57	653.32
6/9/1998	7.11	648.53	11.79	654.58	7.17	651.85	8.47	653.22
7/15/1998	7.25	648.67	12.21	655.00	7.45	652.13	8.85	653.60
8/12/1998	6.66	648.08	12.20	654.99	7.00	651.68	8.32	653.07
9/25/1998	6.46	647.88	12.08	654.87	6.60	651.28	8.19	652.94
10/13/1998	6.37	647.79	11.68	654.47	6.53	651.21	8.38	653.13
11/11/1998	6.32	647.74	11.45	654.24	6.84	651.52	8.62	653.37
12/21/1998	6.27	647.69	11.60	654.39	6.40	651.08	8.24	652.99
1/27/1999	6.16	647.58	10.59	653.38	6.12	650.80	8.17	652.92
2/9/1999	6.17	647.59	10.39	653.18	6.27	650.95	8.54	653.29
3/24/1999	6.56	647.98	10.81	653.60	6.72	651.40	8.52	653.27
4/22/1999	6.84	648.26	11.51	654.30	7.20	651.88	8.99	653.74
5/10/1999	6.88	648.30	11.51	654.30	7.24	651.92	8.95	653.70
6/10/1999	6.37	647.79	11.69	654.48	6.76	651.44	7.85	652.60
7/21/1999	5.51	646.93	11.63	654.42	6.24	650.92	7.29	652.04
8/5/1999	5.31	646.73	11.53	654.32	6.02	650.70	7.20	651.95
9/9/1999	4.88	646.30	11.05	653.84	5.46	650.14	6.87	651.62
10/13/1999	4.50	645.92	10.36	653.15	5.42	650.10	6.71	651.46
11/2/1999	4.46	645.88	10.05	652.84	5.10	649.78	6.67	651.42
12/2/1999	4.01	645.43	9.63	652.42	4.74	649.42	6.07	650.82
1/3/2000	3.93	645.35	9.51	652.30	4.67	649.35	5.48	650.23
2/9/2000	3.62	645.04	8.81	651.60	4.34	649.02	5.59	650.34
3/7/2000	4.14	645.56	8.63	651.42	4.72	649.40	9.89	654.64
4/12/2000	4.86	646.28	8.81	651.60	4.37	649.05	5.67	650.42
5/5/2000	3.79	645.21	9.35	652.14	4.54	649.22	5.71	650.46
6/9/2000	4.56	645.98	9.49	652.28	4.40	649.08	5.52	650.27
7/28/2000	3.76	645.18	10.11	652.90	4.88	649.56	6.03	650.78
8/9/2000	3.71	645.13	10.17	652.96	4.78	649.46	6.03	650.78
9/29/2000	3.26	644.68	9.69	652.48	5.18	649.86	5.55	650.30
10/18/2000	3.10	644.52	9.39	652.18	4.02	648.70	5.51	650.26

**Historical Leachate Level Measurements
Climax Molybdenum Company Industrial Landfill**

Well #	LPZ-1		LPZ-2		LPZ-3		LPZ-4	
Drilled Well Depth (ft) ³	15.35		17.85		15.35		17.80	
Bottom of Well (ft ASL) ³	641.42		642.79		644.68		644.75	
	Thickness (ft) ¹	Elevation (ft) ²	Thickness (ft) ¹	Elevation (ft) ²	Thickness (ft) ¹	Elevation (ft) ²	Thickness (ft) ¹	Elevation (ft) ²
11/28/2000	2.98	644.40	8.81	651.60	3.96	648.64	5.47	650.22
12/19/2000	2.78	644.20	8.31	651.10	3.54	648.22	5.27	650.02
1/10/2001	2.58	644.00	7.85	650.64	3.38	648.06	4.97	649.72
2/26/2001	4.06	645.48	8.03	650.82	4.17	648.85	5.62	650.37
3/20/2001	4.48	645.90	8.49	651.28	4.28	648.96	5.67	650.42
4/20/2001	4.62	646.04	9.27	652.06	4.80	649.48	5.87	650.62
5/25/2001	5.02	646.44	9.73	652.52	5.12	649.80	7.07	651.82
6/6/2001	5.46	646.88	10.33	653.12	5.52	650.20	8.47	653.22
7/1/2001	5.42	646.84	10.71	653.50	5.70	650.38	9.25	654.00
8/1/2001	4.66	646.08	10.83	653.62	5.52	650.20	8.81	653.56
9/4/2001	4.52	645.94	10.77	653.56	5.44	650.12	8.73	653.48
10/2/2001	4.11	645.53	10.85	653.64	5.38	650.06	6.82	651.57
11/9/2001	4.01	645.43	10.81	653.60	5.26	649.94	6.71	651.46
12/11/2001	4.18	645.60	10.93	653.72	4.97	649.65	6.85	651.60
1/11/2002	3.54	644.96	9.59	652.38	4.92	649.60	6.47	651.22
2/8/2002	2.06	643.48	9.20	651.99	4.72	649.40	5.27	650.02
3/12/2002	2.06	643.48	9.20	651.99	4.72	649.40	5.27	650.02
4/16/2002	5.36	646.78	10.25	653.04	5.92	650.60	7.17	651.92
5/10/2002	5.45	646.87	10.51	653.30	6.10	650.78	7.41	652.16
6/20/2002	6.22	647.64	11.03	653.82	6.60	651.28	11.23	655.98
7/24/2002	5.46	646.88	10.45	653.24	6.22	650.90	10.47	655.22
8/8/2002	5.06	646.48	11.29	654.08	5.88	650.56	10.11	654.86
9/12/2002	5.63	647.05	11.80	654.59	6.62	651.30	10.72	655.47
10/14/2002	5.14	646.56	11.37	654.16	5.92	650.60	10.15	654.90
11/22/2002	4.90	646.32	10.53	653.32	5.47	650.15	8.49	653.24
12/17/2002	4.66	646.08	9.69	652.48	5.02	649.70	6.87	651.62
1/8/2003	4.61	646.03	9.67	652.46	4.94	649.62	6.73	651.48
2/21/2003	2.70	644.12	8.35	651.14	4.10	648.78	5.81	650.56
3/21/2003	2.66	644.08	8.26	651.05	4.17	648.85	5.78	650.53
4/14/2003	2.54	643.96	8.18	650.97	4.22	648.90	7.57	652.32
5/29/2003	5.16	646.58	9.63	652.42	5.42	650.10	7.87	652.62
6/27/2003	4.36	645.78	8.83	651.62	4.26	648.94	7.53	652.28
7/22/2003	5.26	646.68	10.43	653.22	6.22	650.90	7.61	652.36
8/28/2003	5.14	646.56	10.81	653.60	5.42	650.10	7.43	652.18
9/4/2003	6.32	647.74	11.86	654.65	12.59	657.27	8.98	653.73
10/7/2003	5.66	647.08	10.91	653.70	5.87	650.55	7.73	652.48
11/26/2003	6.02	647.22	10.43	652.84	5.63	650.10	7.48	652.26
12/1/2003	6.00	647.20	10.41	652.82	5.63	650.10	7.48	652.26
1/19/2004	6.39	647.59	10.76	653.17	5.86	650.33	8.50	653.28
2/18/2004	6.78	647.98	11.05	653.46	6.21	650.68	9.74	654.52
3/26/2004	3.41	644.61	10.86	653.27	6.39	650.86	8.24	653.02
4/23/2004	7.23	648.43	11.13	653.54	6.63	651.10	10.04	654.82
5/28/2004	7.20	648.40	11.31	653.72	6.67	651.14	10.02	654.80
6/3/2004	7.09	648.29	11.51	653.92	6.73	651.20	9.94	654.72
7/19/2004	6.88	648.08	11.23	653.64	6.41	650.88	9.53	654.31
8/12/2004	6.56	647.76	11.13	653.54	6.17	650.64	9.38	654.16
9/17/2004	6.67	647.87	11.43	653.84	6.35	650.82	7.86	652.64
10/20/2004	6.33	647.53	11.11	653.52	5.93	650.40	7.44	652.22
11/12/2004	6.68	647.88	11.46	653.87	6.27	650.74	7.69	652.47
12/15/2004	6.73	647.93	11.51	653.92	6.35	650.82	7.75	652.53
1/25/2005	7.88	649.08	11.19	653.60	6.85	651.32	11.77	656.55
2/23/2005	7.66	648.86	11.31	653.72	6.77	651.24	11.24	656.02
3/4/2005	7.56	648.76	11.21	653.62	6.82	651.29	11.44	656.22
4/26/2005	8.08	649.28	11.83	654.24	7.21	651.68	11.49	656.27
5/25/2005	8.58	649.78	12.41	654.82	7.63	652.10	11.54	656.32
6/2/2005	6.88	648.08	12.04	654.45	7.23	651.70	10.44	655.22
7/7/2005	6.50	647.70	11.66	654.07	6.63	651.10	9.92	654.70
8/12/2005	5.38	646.58	11.29	653.70	6.01	650.48	7.40	652.18
9/7/2005	4.82	646.02	10.59	653.00	5.33	649.80	6.88	651.66
10/4/2005	4.38	645.58	10.13	652.54	5.13	649.60	6.64	651.42

**Historical Leachate Level Measurements
Climax Molybdenum Company Industrial Landfill**

Well #	LPZ-1		LPZ-2		LPZ-3		LPZ-4	
Drilled Well Depth (ft) ³	15.35		17.85		15.35		17.80	
Bottom of Well (ft ASL) ³	641.42		642.79		644.68		644.75	
	Thickness (ft) ¹	Elevation (ft) ²	Thickness (ft) ¹	Elevation (ft) ²	Thickness (ft) ¹	Elevation (ft) ²	Thickness (ft) ¹	Elevation (ft) ²
11/23/2005	4.08	645.50	9.93	652.72	5.02	649.70	6.75	651.50
12/1/2005	4.16	645.58	9.71	652.50	4.89	649.57	6.63	651.38
1/27/2006	2.91	644.33	7.93	650.72	4.82	649.50	6.97	651.72
2/14/2006	5.20	646.62	8.89	651.68	5.40	650.08	7.41	652.16
3/1/2006	5.18	646.60	8.71	651.50	5.24	649.92	7.17	651.92
4/25/2006	7.86	649.28	9.93	652.72	5.98	650.66	7.61	652.36
5/18/2006	6.47	647.89	10.15	652.94	5.97	650.65	7.61	652.36
6/2/2006	5.26	646.68	9.89	652.68	5.44	650.12	7.09	651.84
7/3/2006	4.66	646.08	9.81	652.60	5.05	649.73	6.56	651.31
8/4/2006	4.21	645.63	9.53	652.32	4.46	649.14	6.18	650.93
9/1/2006	3.80	645.22	9.06	651.85	4.05	648.73	5.75	650.50
10/9/2006	3.16	644.58	8.30	651.09	3.45	648.13	5.11	649.86
11/30/2006	2.51	643.93	7.23	650.02	3.09	647.77	4.33	649.08
12/14/2006	2.46	643.88	7.20	649.99	2.98	647.66	1.13	645.88
1/4/2007	2.39	643.81	7.07	649.86	2.97	647.65	4.10	648.85
2/28/2007	2.34	643.76	6.43	649.22	2.68	647.36	6.09	650.84
3/8/2007	2.33	643.75	6.17	648.96	2.54	647.22	3.97	648.72
4/18/2007	5.41	646.83	7.49	650.28	3.94	648.62	5.67	650.42
5/21/2007	5.66	647.08	8.53	651.32	6.72	651.40	5.99	650.74
6/7/2007	5.17	646.59	9.18	651.97	4.88	649.56	6.09	650.84
7/6/2007	4.42	645.84	8.93	651.72	4.24	648.92	5.50	650.25
8/2/2007	5.76	647.18	9.18	651.97	4.12	648.80	5.21	649.96
9/10/2007	5.29	646.71	9.81	652.60	NM	NM	NM	NM
10/8/2007	4.54	645.96	9.51	652.30	4.97	649.65	0.00	643.80
11/6/2007	1.17	642.59	4.93	647.72	1.80	646.48	2.65	647.40
12/3/2007	0.00	641.42	4.45	647.24	1.64	646.32	2.48	647.23
1/8/2008	1.25	642.67	4.44	647.23	2.01	646.69	3.01	647.76
2/14/2008	1.40	642.82	4.37	647.16	1.69	646.37	2.93	647.68
3/13/2008	1.23	642.65	4.18	646.97	1.42	646.10	2.75	647.50
4/21/2008	3.39	644.81	4.76	647.55	1.85	646.53	3.06	647.81
5/21/2008	4.72	646.14	5.62	648.41	2.64	647.32	3.37	648.12
6/2/2008	4.44	645.86	5.66	648.45	2.56	647.24	3.20	647.95
7/1/2008	6.67	648.09	6.27	649.06	2.97	647.65	3.51	648.26
8/1/2008	5.55	646.97	6.62	649.41	1.89	646.57	3.67	648.42
9/2/2008	4.07	645.49	6.82	649.61	2.99	647.67	3.53	648.28
10/13/2008	5.07	646.49	6.92	649.71	6.41	651.09	3.93	648.68
11/19/2008	5.57	646.99	7.02	649.81	3.79	648.47	6.78	651.53
12/29/2008	5.53	646.95	7.58	650.37	3.49	648.17	6.80	651.55
1/22/2009	4.67	646.09	7.32	650.11	2.99	647.67	6.61	651.36
2/6/2009	4.37	645.79	6.47	649.26	2.49	647.17	6.31	651.06
3/19/2009	5.07	646.49	6.62	649.41	2.17	646.85	6.27	651.02
4/23/2009	6.77	648.19	8.07	650.86	3.09	647.77	6.61	651.36
5/20/2009	7.17	648.59	8.02	650.81	3.31	647.99	6.59	651.34
6/9/2009	6.77	648.19	8.18	650.97	3.60	648.28	6.83	651.58
7/2/2009	6.85	648.27	9.49	652.28	3.75	648.43	7.03	651.78
8/6/2009	4.47	645.89	8.82	651.61	3.79	648.47	7.06	651.81
9/1/2009	5.56	646.98	9.60	652.39	4.16	648.84	7.16	651.91
10/19/2009	6.52	647.94	9.12	651.91	4.37	649.05	7.28	652.03
11/5/2009	7.07	648.49	9.02	651.81	4.54	649.22	6.41	651.16
12/1/2009	7.35	648.77	9.34	652.13	4.61	649.29	7.56	652.31
1/13/2010	7.24	648.66	8.47	651.26	4.89	649.57	7.38	652.13
2/4/2010	7.27	648.69	8.40	651.19	4.76	649.44	7.46	652.21
3/3/2010	6.67	648.09	7.82	650.61	4.74	649.42	7.51	652.26
4/13/2010	6.77	648.19	8.62	651.41	5.84	650.52	7.67	652.42
5/6/2010	7.15	648.57	8.94	651.73	4.73	649.41	7.97	652.72
6/25/2010	8.21	649.63	10.20	652.99	5.06	649.74	9.51	654.26
7/22/2010	7.87	649.29	10.44	653.23	5.29	649.97	9.76	654.51
8/12/2010	7.50	648.92	10.53	653.32	4.55	649.23	9.86	654.61
9/21/2010	7.65	649.07	10.32	653.11	5.89	650.57	9.79	654.54
10/6/2010	7.47	648.89	9.92	652.71	6.12	650.80	9.56	654.31

**Historical Leachate Level Measurements
Climax Molybdenum Company Industrial Landfill**

Well #	LPZ-1		LPZ-2		LPZ-3		LPZ-4	
Drilled Well Depth (ft) ³	15.35		17.85		15.35		17.80	
Bottom of Well (ft ASL) ³	641.42		642.79		644.68		644.75	
	Thickness (ft) ¹	Elevation (ft) ²	Thickness (ft) ¹	Elevation (ft) ²	Thickness (ft) ¹	Elevation (ft) ²	Thickness (ft) ¹	Elevation (ft) ²
11/2/2010	8.66	650.08	10.30	653.09	8.77	653.45	5.45	650.20
12/8/2010	8.70	650.12	9.33	652.12	6.87	651.55	5.04	649.79
1/27/2011	9.54	650.96	8.78	651.57	7.70	652.38	4.67	649.42
2/15/2011	9.79	651.21	8.71	651.50	7.45	652.13	4.18	648.93
3/17/2011	11.16	652.58	9.63	652.42	7.97	652.65	4.45	649.20
4/12/2011	10.92	652.34	9.90	652.69	8.20	652.88	4.62	649.37
5/24/2011	10.11	651.53	10.22	653.01	8.22	652.90	5.27	650.02
6/8/2011	10.90	652.32	11.00	653.79	8.51	653.19	5.60	650.35
7/5/2011	10.43	651.85	11.20	653.99	8.71	653.39	6.12	650.87
8/11/2011	7.78	649.20	10.87	653.66	8.26	652.94	6.13	650.88
9/6/2011	7.10	648.52	10.13	652.92	7.33	652.01	5.77	650.52
10/5/2011	6.66	648.08	9.30	652.09	6.72	651.40	5.35	650.10
11/2/2011	6.19	647.61	8.55	651.34	6.38	651.06	4.85	649.60
12/1/2011	6.64	648.06	9.83	652.62	6.75	651.43	9.91	654.66
1/6/2012	8.16	649.58	11.03	653.82	7.34	652.02	9.27	654.02
2/1/2012	7.76	649.18	10.48	653.27	7.01	651.69	9.00	653.75
3/19/2012	8.76	650.18	12.43	655.22	7.85	652.53	9.21	653.96
4/11/2012	7.58	649.00	11.13	653.92	7.32	652.00	9.01	653.76
5/18/2012	8.46	649.88	12.08	654.87	7.57	652.25	9.90	654.65
6/8/2012	7.12	648.54	11.73	654.52	6.82	651.50	10.01	654.76
7/13/2012	6.16	647.58	11.18	653.97	6.51	651.19	10.05	654.80
8/21/2012	6.02	647.44	10.43	653.22	5.84	650.52	8.86	653.61
9/7/2012	5.72	647.14	10.23	653.02	5.82	650.50	8.25	653.00
10/9/2012	4.91	646.33	9.27	652.06	5.21	649.89	7.56	652.31
11/2/2012	4.35	645.77	8.49	651.28	5.03	649.71	7.33	652.08
12/5/2012	3.69	645.11	7.58	650.37	4.52	649.20	6.99	651.74
1/8/2013	3.36	644.78	7.04	649.83	4.43	649.11	6.76	651.51
2/13/2013	3.36	644.78	7.04	649.83	4.43	649.11	6.76	651.51
3/26/2013	5.75	647.17	8.64	651.43	5.20	649.88	7.21	651.96
4/24/2013	8.05	649.47	11.23	654.02	5.67	650.35	7.45	652.20
5/29/2013	11.61	653.03	12.38	655.17	6.02	650.70	7.91	652.66
6/19/2013	10.24	651.66	12.47	655.26	6.29	650.97	8.06	652.81
7/25/2013	10.14	651.56	11.59	654.38	5.92	650.60	8.11	652.86
8/15/2013	9.72	651.14	10.97	653.76	5.65	650.33	8.01	652.76
9/19/2013	12.74	654.16	10.36	653.15	5.09	649.77	7.94	652.69
10/8/2013	9.22	650.64	9.87	652.66	5.15	649.83	7.99	652.74
11/26/2013	8.86	650.28	10.83	653.62	1.66	646.34	7.77	652.52
12/4/2013	8.94	650.36	10.88	653.67	4.55	649.23	8.05	652.80
1/15/2014	6.89	648.31	10.23	653.02	4.52	649.20	7.81	652.56
2/25/2014	5.55	646.97	8.75	651.54	4.14	648.82	7.11	651.86
3/10/2014	5.67	647.09	9.07	651.86	3.72	648.40	7.03	651.78
4/9/2014	6.06	647.48	10.25	653.04	4.37	649.05	7.43	652.18
5/15/2014	7.36	648.78	11.31	654.10	5.12	649.80	6.91	651.66
6/25/2014	8.20	649.62	12.43	655.22	5.59	650.27	7.85	652.60
7/9/2014	8.01	649.43	12.40	655.19	5.94	650.62	8.01	652.76
8/13/2014	8.05	649.47	12.50	655.29	6.00	650.68	7.13	651.88
9/17/2014	6.79	648.21	12.69	655.48	6.58	651.26	8.51	653.26
10/6/2014	6.81	648.23	12.73	655.52	6.84	651.52	8.83	653.58
11/21/2014	6.26	647.68	11.14	653.93	6.51	651.19	8.65	653.40
12/12/2014	5.93	647.35	10.68	653.47	6.47	651.15	8.66	653.41
1/21/2015	5.96	647.38	10.68	653.47	6.66	651.34	8.71	653.46
2/20/2015	7.29	648.71	11.37	654.16	7.17	651.85	8.72	653.47
3/12/2015	6.51	647.93	10.38	653.17	7.25	651.93	8.47	653.22
4/15/2015	6.44	647.86	10.39	653.18	6.67	651.35	8.42	653.17
5/22/2015	7.55	648.97	11.43	654.22	7.39	652.07	8.65	653.40
6/3/2015	8.45	649.87	12.10	654.89	8.25	652.93	8.84	653.59
7/10/2015	8.91	650.33	13.28	656.07	8.51	653.19	9.20	653.95
8/7/2015	8.41	649.83	13.09	655.88	8.76	653.44	9.22	653.97
9/10/2015	7.35	648.77	12.60	655.39	8.20	652.88	9.51	654.26
10/12/2015	6.68	648.10	12.05	654.84	7.70	652.38	9.78	654.53

**Historical Leachate Level Measurements
Climax Molybdenum Company Industrial Landfill**

Well #	LPZ-1		LPZ-2		LPZ-3		LPZ-4	
Drilled Well Depth (ft) ³	15.35		17.85		15.35		17.80	
Bottom of Well (ft ASL) ³	641.42		642.79		644.68		644.75	
	Thickness (ft) ¹	Elevation (ft) ²	Thickness (ft) ¹	Elevation (ft) ²	Thickness (ft) ¹	Elevation (ft) ²	Thickness (ft) ¹	Elevation (ft) ²
11/24/2015	5.97	647.39	10.53	653.32	7.24	651.92	9.99	654.74
12/4/2015	6.22	647.64	10.92	653.71	7.54	652.22	9.96	654.71
1/19/2016	7.61	649.03	11.13	653.92	8.32	653.00	10.16	654.91
2/9/2016	5.46	646.88	11.43	654.22	8.32	653.00	8.16	652.91
3/17/2016	5.76	647.18	11.33	654.12	8.77	653.45	8.31	653.06
4/28/2016	6.56	647.98	11.93	654.72	9.17	653.85	8.57	653.32
5/25/2016	5.46	646.88	11.73	654.52	9.22	653.90	8.71	653.46
6/15/2016	9.06	650.48	11.93	654.72	8.32	653.00	8.81	653.56
7/21/2016	2.96	644.38	11.03	653.82	6.92	651.60	8.91	653.66
8/22/2016	3.72	645.14	10.86	653.65	7.54	652.22	8.78	653.53
9/13/2016	3.46	644.88	10.53	653.32	7.32	652.00	8.41	653.16
10/27/2016	2.56	643.98	9.93	652.72	6.57	651.25	5.76	650.51
11/10/2016	2.62	644.04	9.49	652.28	6.42	651.10	5.51	650.26
12/8/2016	2.33	643.75	9.06	651.85	6.28	650.96	6.51	651.26
1/24/2017	2.12	643.54	7.50	650.29	6.08	650.76	6.53	651.28
2/6/2017	1.98	643.40	8.81	651.60	6.06	650.74	6.51	651.26
3/8/2017	2.02	643.44	8.54	651.33	5.92	650.60	5.17	649.92
4/11/2017	4.66	646.08	11.23	654.02	7.06	651.74	6.36	651.11
5/2/2017	4.05	645.47	12.10	654.89	6.77	651.45	6.41	651.16
6/8/2017	4.04	645.46	12.19	654.98	7.11	651.79	6.00	650.75
7/12/2017	3.36	644.78	10.93	653.72	6.47	651.15	6.05	650.80
8/18/2017	2.75	644.17	10.23	653.02	6.78	651.46	4.77	649.52
9/13/2017	2.26	643.68	9.96	652.75	5.55	650.23	5.39	650.14
10/18/2017	2.48	643.90	9.94	652.73	6.53	651.21	4.51	649.26
11/27/2017	2.14	643.56	9.46	652.25	6.15	650.83	4.08	648.83
12/19/2017	0.80	642.22	7.29	650.08	4.11	648.79	4.37	649.12
1/19/2018	0.59	642.01	6.71	649.50	3.35	648.03	3.85	648.60
2/26/2018	0.39	641.81	6.63	649.42	3.23	647.91	3.77	648.52
3/9/2018	0.35	641.77	8.39	651.18	3.53	648.21	4.23	648.98
4/12/2018	0.24	641.66	8.06	650.85	3.35	648.03	4.39	649.14
5/23/2018	4.86	646.28	9.14	651.93	5.92	650.60	4.60	649.35
6/18/2018	2.07	643.49	9.13	651.92	4.71	649.39	4.55	649.30
7/9/2018	1.39	642.81	8.74	651.53	4.01	648.69	4.00	648.75
8/2/2018	2.02	643.44	9.56	652.35	4.55	649.23	4.85	649.60
9/5/2018	2.34	643.76	9.93	652.72	4.79	649.47	5.27	650.02
10/23/2018	4.46	645.88	10.91	653.70	4.92	649.60	7.00	651.75
4/9/2019	6.86	648.28	11.53	654.32	7.92	652.60	6.11	650.86
8/28/2019	4.26	645.68	11.93	654.72	7.87	652.55	10.06	654.81
3/17/2020	8.42	649.84	12.60	655.39	9.95	654.63	11.21	655.96
7/28/2020	7.86	649.28	12.37	655.16	9.60	654.28	11.54	656.29
3/18/2021	7.61	649.03	12.41	655.20	9.59	654.27	10.36	655.11
9/1/2021	7.60	649.02	12.84	655.63	10.24	654.92	12.66	657.41
6/29/2022	7.70	649.12	12.76	655.55	10.14	654.82	13.50	658.25
8/16/2022	4.84	646.26	11.90	654.69	9.04	653.72	12.28	657.03
4/6/2023	6.91	648.33	14.14	656.93	10.31	654.99	14.40	659.15
7/27/2023	4.62	646.04	11.43	654.22	8.68	653.36	12.04	656.79

Notes:

- 1) Column A represents leachate column thickness.
- 2) Column B represents measured leachate elevation.
- 3) Drilled well depth and bottom of well elevation based on Green Environmental Services August 1991 Conceptual Leachate Control Plan Report.
- 4) NA denotes Not Available.
- 5) NM denotes Not Measured.

**Historical Leachate Level Measurements
Climax Molybdenum Company Industrial Landfill**

Well #	LPZ-5	
Drilled Well Depth (ft)³	20.13	
Bottom of Well (ft ASL)³	661.85	
	Thickness (ft)¹	Elevation (ft)²
4/25/2006	NA	DRY
5/18/2006	NA	DRY
6/2/2006	NA	DRY
7/3/2006	NA	DRY
8/4/2006	NA	DRY
9/1/2006	NA	DRY
10/9/2006	NA	DRY
11/30/2006	NA	DRY
12/14/2006	NA	DRY
1/4/2007	NA	DRY
2/28/2007	NA	DRY
3/8/2007	NA	DRY
4/18/2007	0.54	662.39
5/21/2007	0.86	662.71
6/7/2007	0.86	662.71
7/6/2007	0.85	662.70
8/2/2007	0.86	662.71
9/10/2007	0.85	662.70
10/8/2007	0.86	662.71
11/6/2007	0.86	662.71
12/3/2007	3.85	665.70
1/8/2008	0.88	662.73
2/14/2008	5.88	667.73
3/13/2008	0.88	662.73
4/21/2008	0.88	662.73
5/21/2008	0.89	662.74
6/2/2008	3.88	665.73
7/1/2008	0.93	662.78
8/1/2008	1.73	663.58
9/2/2008	0.48	662.33
10/13/2008	0.58	662.43
11/19/2008	0.55	662.40
12/29/2008	1.13	662.98
1/22/2009	0.55	662.40
2/6/2009	0.53	662.38
3/19/2009	0.81	662.66
4/23/2009	1.05	662.90
5/20/2009	1.28	663.13
6/9/2009	0.66	662.51
7/2/2009	0.87	662.72
8/6/2009	0.55	662.40
9/1/2009	1.27	663.12
10/19/2009	0.77	662.62

**Historical Leachate Level Measurements
Climax Molybdenum Company Industrial Landfill**

Well #	LPZ-5	
Drilled Well Depth (ft)³	20.13	
Bottom of Well (ft ASL)³	661.85	
	Thickness (ft)¹	Elevation (ft)²
11/5/2009	1.28	663.13
12/1/2009	1.03	662.88
1/13/2010	0.73	662.58
2/4/2010	1.08	662.93
3/3/2010	0.58	662.43
4/13/2010	0.83	662.68
5/6/2010	1.73	663.58
6/25/2010	1.83	663.68
7/22/2010	1.37	663.22
8/12/2010	0.85	662.70
9/21/2010	0.66	662.51
10/6/2010	0.88	662.73
11/2/2010	0.53	662.38
12/8/2010	0.48	662.33
1/27/2011	0.47	662.32
2/15/2011	0.43	662.28
3/17/2011	1.01	662.86
4/12/2011	0.91	662.76
5/24/2011	0.57	662.42
6/8/2011	1.45	663.30
7/5/2011	1.52	663.37
8/11/2011	0.52	662.37
9/6/2011	0.48	662.33
10/5/2011	0.50	662.35
11/2/2011	0.44	662.29
12/1/2011	0.46	662.31
1/6/2012	0.53	662.38
2/1/2012	0.45	662.30
3/19/2012	1.13	662.98
4/11/2012	0.53	662.38
5/18/2012	1.15	663.00
6/8/2012	0.53	662.38
7/13/2012	0.43	662.28
8/21/2012	0.41	662.26
9/7/2012	0.38	662.23
10/9/2012	0.38	662.23

**Historical Leachate Level Measurements
Climax Molybdenum Company Industrial Landfill**

Well #	LPZ-5	
Drilled Well Depth (ft) ³	20.13	
Bottom of Well (ft ASL) ³	661.85	
	Thickness (ft) ¹	Elevation (ft) ²
11/2/2012	0.37	662.22
12/5/2012	0.35	662.20
1/8/2013	0.35	662.20
2/13/2013	0.35	662.20
3/26/2013	0.51	662.36
4/24/2013	1.08	662.93
5/29/2013	0.93	662.78
6/19/2013	1.01	662.86
7/25/2013	0.48	662.33
8/15/2013	0.49	662.34
9/19/2013	0.49	662.34
10/8/2013	0.47	662.32
11/26/2013	0.46	662.31
12/4/2013	0.48	662.33
1/15/2014	0.48	662.33
2/25/2014	0.44	662.29
3/10/2014	0.43	662.28
4/9/2014	0.41	662.26
5/15/2014	0.45	662.30
6/25/2014	0.40	662.25
7/9/2014	0.43	662.28
8/13/2014	0.38	662.23
9/17/2014	0.70	662.55
10/6/2014	0.47	662.32
11/21/2014	0.49	662.34
12/12/2014	0.48	662.33
1/21/2015	0.50	662.35
2/20/2015	0.63	662.48
3/12/2015	0.48	662.33
4/15/2015	0.50	662.35
5/22/2015	0.80	662.65
6/3/2015	0.87	662.72
7/10/2015	1.63	663.48
8/7/2015	1.13	662.98
9/10/2015	0.53	662.38
10/12/2015	0.51	662.36

**Historical Leachate Level Measurements
Climax Molybdenum Company Industrial Landfill**

Well #	LPZ-5	
Drilled Well Depth (ft)³	20.13	
Bottom of Well (ft ASL)³	661.85	
	Thickness (ft)¹	Elevation (ft)²
11/24/2015	0.20	662.05
12/4/2015	1.02	662.87
1/19/2016	1.38	663.23
2/9/2016	1.28	663.13
3/17/2016	0.88	662.73
4/28/2016	0.93	662.78
5/25/2016	0.93	662.78
6/15/2016	0.53	662.38
7/21/2016	0.23	662.08
8/22/2016	1.47	663.32
9/13/2016	0.93	662.78
10/27/2016	0.38	662.23
11/10/2016	0.37	662.22
12/8/2016	0.45	662.30
1/24/2017	0.41	662.26
2/6/2017	0.43	662.28
3/8/2017	0.46	662.31
4/11/2017	0.41	662.26
5/2/2017		NM
6/8/2017	0.91	662.76
7/12/2017	0.44	662.29
8/18/2017	0.48	662.33
9/13/2017	0.59	662.44
10/18/2017	0.24	662.09
11/27/2017	0.06	661.91
12/19/2017	0.47	662.32
1/19/2018	0.52	662.37
2/26/2018	0.59	662.44
3/9/2018	0.85	662.70
4/12/2018	0.52	662.37
5/23/2018	5.74	667.59
6/18/2018	0.53	662.38
7/9/2018	0.65	662.50
8/2/2018	1.69	663.54
9/5/2018	2.03	663.88
10/23/2018	1.54	663.39

**Historical Leachate Level Measurements
Climax Molybdenum Company Industrial Landfill**

Well #	LPZ-5	
Drilled Well Depth (ft)³	20.13	
Bottom of Well (ft ASL)³	661.85	
	Thickness (ft)¹	Elevation (ft)²
11/12/2018	0.90	662.75
December 2018 ⁴	0.83	662.68
January 2019	1.24	663.09
February 2019	1.01	662.86
March 2019	0.61	662.46
April 2019	1.15	663.00
May 2019	2.11	663.96
June 2019	2.27	664.12
July 2019	1.71	663.56
August 2019	0.99	662.84
September 2019	0.83	662.68
October 2019	1.86	663.71
November 2019	0.91	662.76
December 2019	0.99	662.84
January 2020	1.31	663.16
February 2020	0.97	662.82
March 2020	1.26	663.11
April 2020	1.23	663.08
May 2020	1.15	663.00
June 2020		NM
July 2020	0.63	662.48
August 2020	0.56	662.41
September 2020	0.49	662.34
October 2020	0.30	662.15
November 2020	0.27	662.12
December 2020		NM
January 2021	0.28	662.13
February 2021	0.47	662.32
March 2021	0.79	662.64
April 2021	1.54	663.39
May 2021		NM
June 2021	1.26	663.11
July 2021	1.22	663.07
August 2021	1.65	663.50
September 2021	0.73	662.58

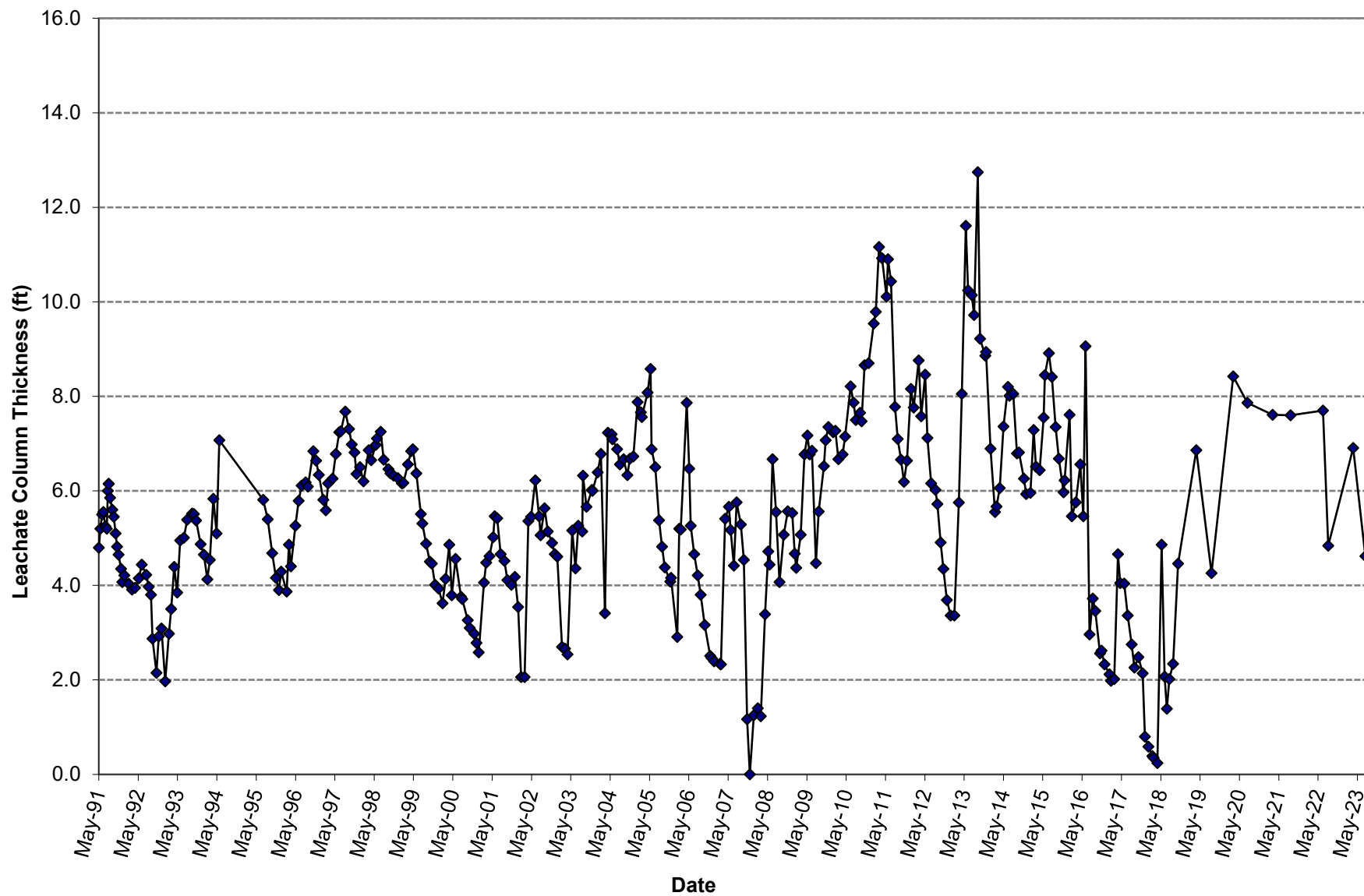
**Historical Leachate Level Measurements
Climax Molybdenum Company Industrial Landfill**

Well #	LPZ-5	
Drilled Well Depth (ft) ³	20.13	
Bottom of Well (ft ASL) ³	661.85	
	Thickness (ft) ¹	Elevation (ft) ²
October 2021	0.35	662.20
November 2021	0.67	662.52
December 2021	0.48	662.33
January 2022	0.30	662.15
February 2022	0.47	662.32
March 2022	1.31	663.16
April 2022	1.96	663.81
May 2022	2.38	664.23
June 2022	1.52	663.37
July 2022	1.06	662.91
August 2022	0.78	662.63
September 2022	0.67	662.52
October 2022		NM
November 2022	0.60	662.45
December 2022	0.55	662.40
January 2023	0.51	662.36
February 2023	0.77	662.62
March 2023	1.62	663.47
April 2023	1.98	663.83
May 2023	1.63	663.48
June 2023	0.96	662.81
July 2023	0.78	662.63
August 2023	0.19	662.04
September 2023	0.61	662.46

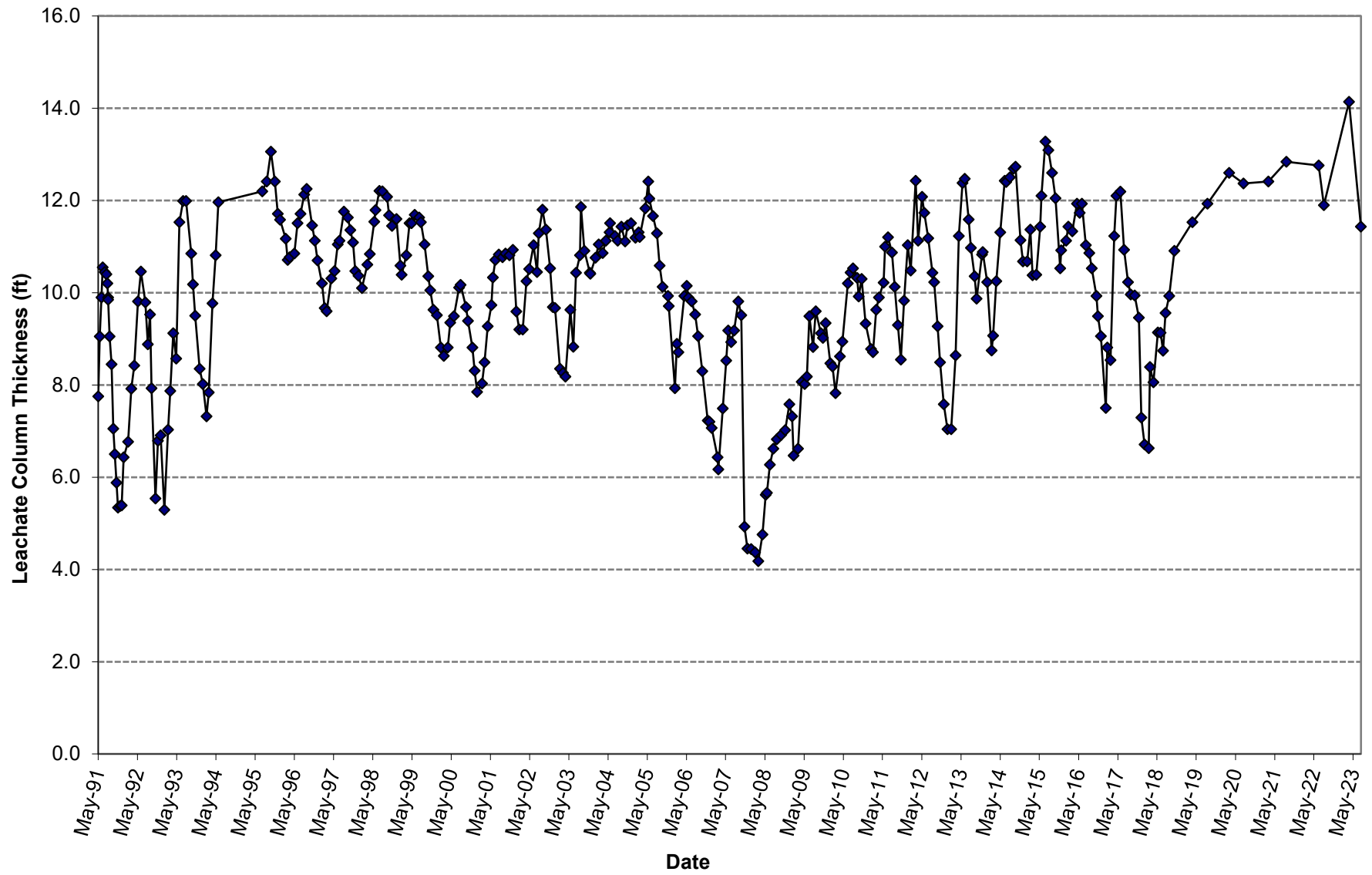
Notes:

- 1) Column A represents leachate column thickness.
- 2) Column B represents measured leachate elevation.
- 3) Drilled well depth and bottom of well elevation based on John C. Halepaska and Associates, Inc. May 17, 2006 Transmittal of Two Completed #542-1277 Forms.
- 4) Thickness measurements at LPZ-5 starting in December 2018 represent monthly average leachate thicknesses communicated by the SCADA system.
- 5) NA denotes Not Available.
- 6) NM denotes Not Measured.

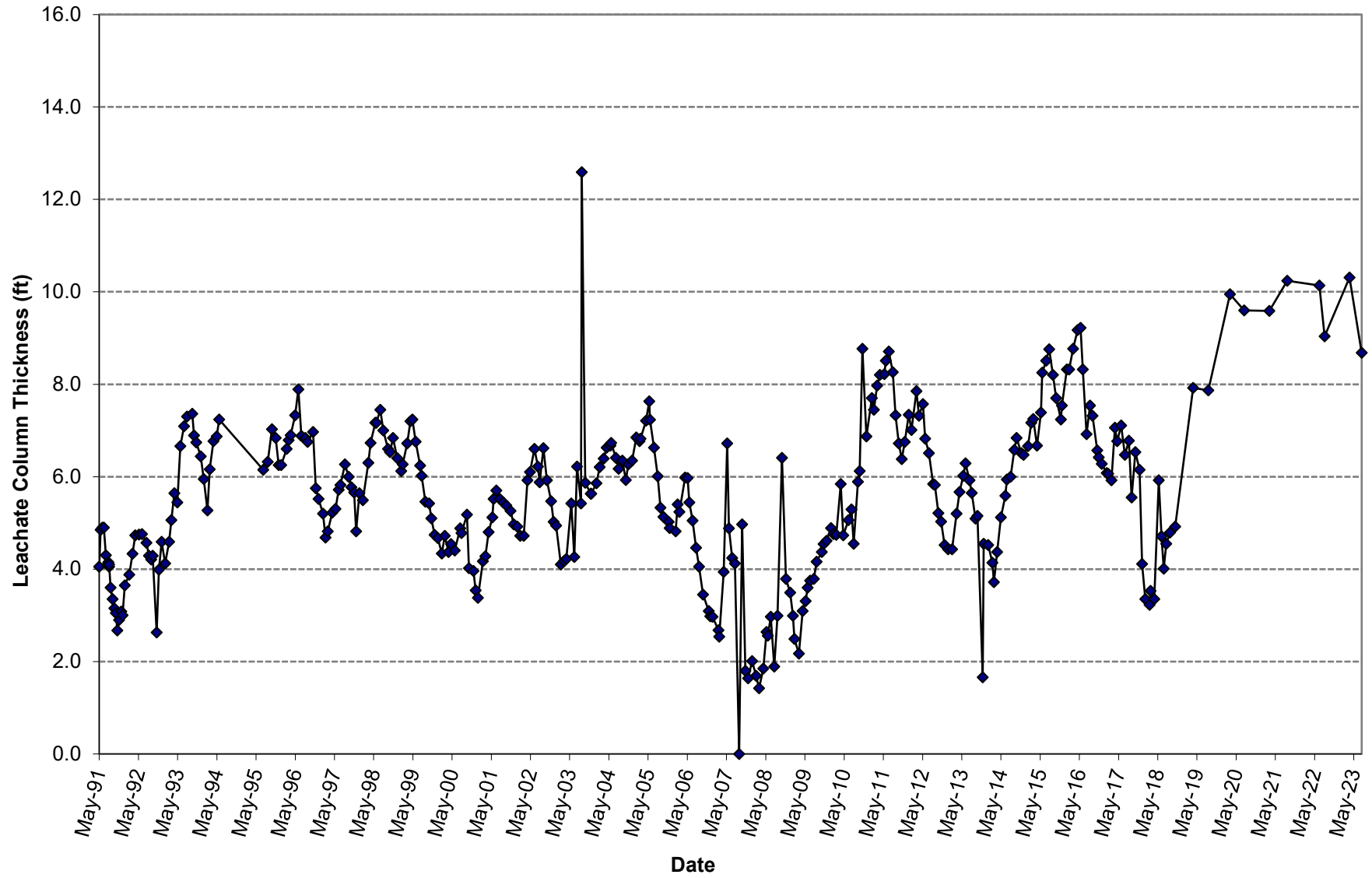
LPZ-1



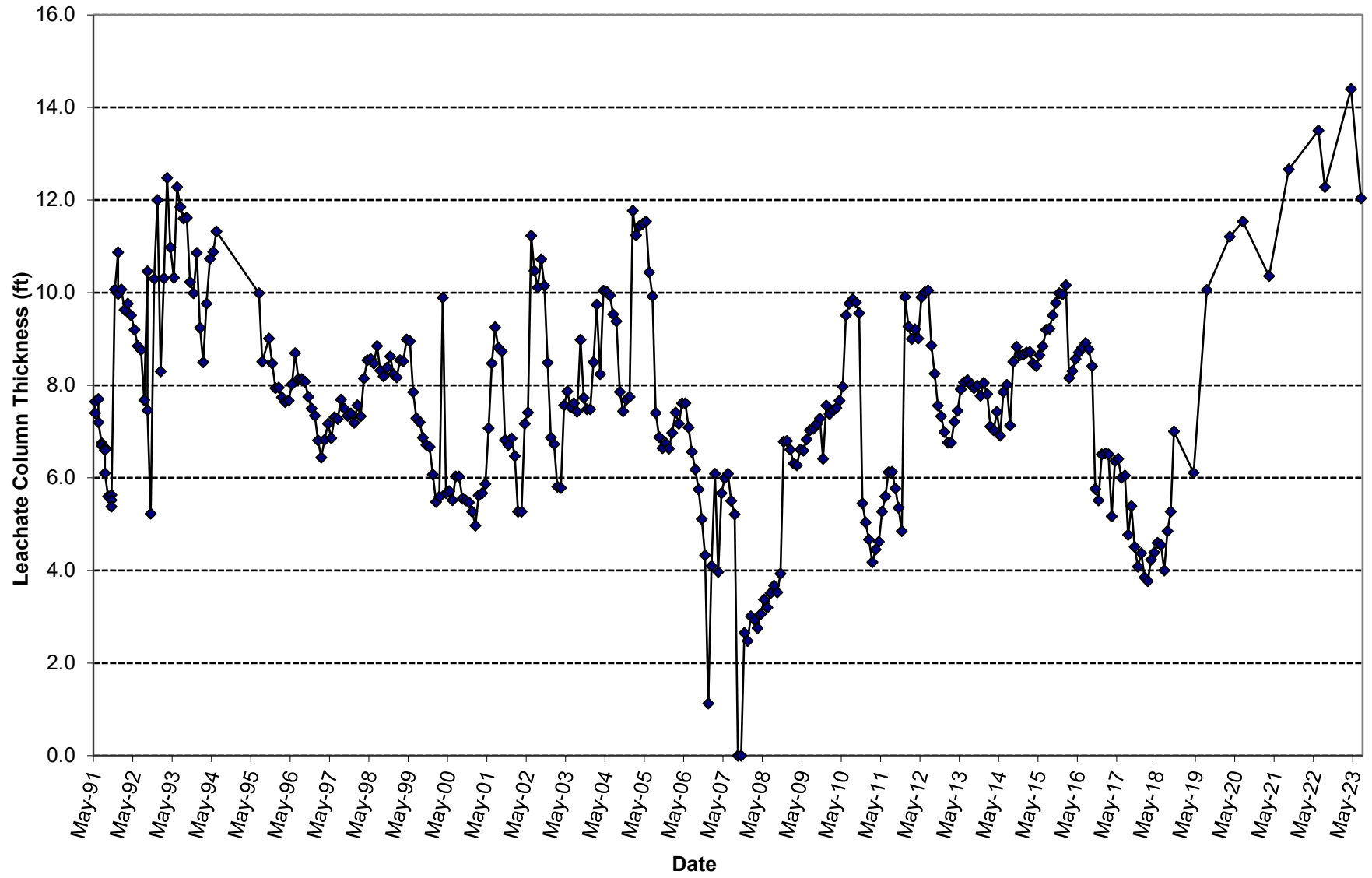
LPZ-2



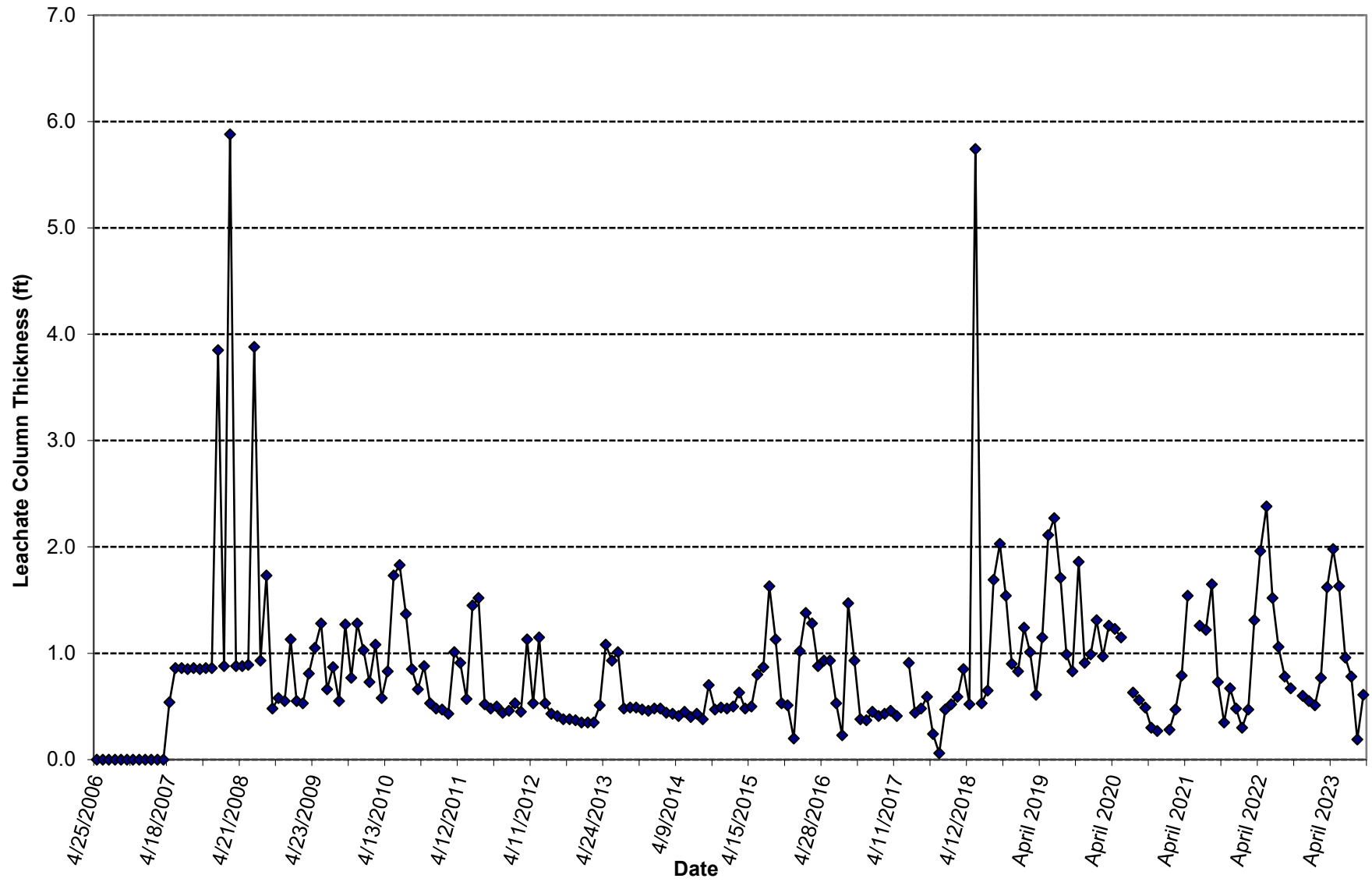
LPZ-3



LPZ-4



LPZ-5



Attachment B

Leachate Quality Testing Results

Historical Leachate Analytical Results
Climax Molybdenum Company Industrial Landfill

Date	Semiannual Parameters																											
										Dissolved Metals				Total Metals														
	pH	Sp Cd	Temp F	NH3-N	Cl	COD	F	SO4	TSS	Fe	Mo	Na	Se	Al	As	B	Cd	Fe	Li	Mn	Mo	Na	Se	Sn	Sr	W		
10/14/93	6.74	876	56	0.83	18	16.4	0.51	93	NM	0.07	0.1	59	<0.01	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM		
04/13/94	7.33	1,553	55	0.45	22	34.1	1.55	574	NM	0.08	1.0	131	<0.01	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM		
10/06/94	9.79	9,550	72	0.04	254	130.5	26	2,758	NM	0.14	3.4	2,190	0.01	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM		
04/18/95	7.77	2,250	53	1.24	48	22.5	6.45	734	NM	0.04	0.8	491	<0.01	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM		
10/11/95	7.15	4,000	61	0.70	99	40.0	4.95	1,363	NM	0.08	0.7	669	<0.01	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM		
04/11/96	7.83	1,296	56	0.98	22	25.0	0.9	226	NM	0.08	0.1	158	<0.01	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM		
10/28/96	7.04	1,783	57	0.26	64	5.5	1.7	405	NM	0.03	0.1	142	<0.01	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM		
04/25/97	7.06	1,375	59	0.08	20	17.1	1.24	300	NM	0.14	0.1	106	<0.01	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM		
10/20/97	7.37	2,010	58	0.40	52	16.0	1.89	563	NM	0.26	1.7	242	<0.01	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM		
03/26/98	7.34	1,277	55	0.22	25	20.3	0.81	347	NM	0.48	0.1	114	<0.01	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM		
10/13/98	7.07	1,383	58	0.21	208	7.4	1.06	255	NM	0.71	0.0	67	<0.01	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM		
03/25/99	7.06	1,256	52	0.21	12	18.4	0.89	449	NM	0.14	0.0	68	0.01	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM		
10/14/99	8.45	3,600	57	0.15	77	27.0	6.97	1,480	NM	0.07	9.6	710	0.03	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM		
04/13/00	8.94	3,800	55	0.65	90	30.7	10.5	1,288	NM	0.22	4.0	1,095	0.03	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM		
10/20/00	8.93	5,020	60	0.19	121	47.9	13.4	1,500	NM	0.05	1.0	1,085	0.01	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM		
04/20/01	8.35	3,300	55	0.19	73	22.4	3.96	1,260	NM	<0.03	9.2	525	0.03	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM		
10/03/01	7.98	4,060	59	0.73	122	27.9	5.66	1,735	NM	<0.03	4.5	713	<0.01	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM		
04/18/02	7.88	2,960	59	0.77	56	16.2	4.41	1,053	NM	<0.03	6.4	445	<0.02	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM		
10/15/02	7.91	3,300	59	0.57	43	29.7	4.76	1,425	NM	0.03	4.3	563	<0.01	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM		
04/15/03	7.66	2,620	52	0.31	72	20.7	3.20	902	NM	0.36	6.5	412	0.06	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM		
10/08/03	7.42	2,670	60	0.10	72	15.3	1.90	1,152	NM	1.85	16.0	196	0.02	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM		
04/26/04	7.26	484	55	0.08	90	38.3	0.50	105	NM	1.03	1.6	13	0.01	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM		
10/21/04	7.96	3,900	56	<0.05	85	22.1	5.03	1,491	NM	0.10	6.7	676	0.03	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM		
04/26/05	7.23	2,280	51	0.30	19	22.0	2.08	77	NM	0.06	12.0	197	0.08	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM		
10/05/05	7.52	428	64	0.98	11	52.8	1.88	53	NM	0.07	1.2	53	<0.01	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM		
04/26/06	8.15	2,510	51	1.52	116	22.3	2.94	1,346	NM	0.33	26.0	288	0.05	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM		
10/10/06	7.52	3,240	56	1.12	179	30.7	3.74	1,581	NM	<0.03	20.0	395	0.09	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM		
04/17/07	7.08	2,250	52	0.40	800	14.4	1.73	800	NM	0.40	0.1	172	0.01	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM		
10/10/07	7.75	6,470	59	0.13	222	31.1	6.26	3,038	NM	<0.03	38.0	1,015	0.06	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM		
04/23/08	7.55	1,856	54	0.79	48	21.9	1.03	762	NM	0.03	16	210	0.05	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM		
10/14/08	7.84	6,600	56	0.94	72	24.6	9.62	1,942	NM	<0.05	5.8	1,090	0.02	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM		
04/24/09	7.48	2,200	52	0.79	51	17.3	2.86	2,284	NM	<0.05	0.5	288	<0.01	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM		
10/20/09	7.04	2,738	60	0.51	61	17.0	2.14	1,312	NM	<0.20	11.0	262	0.04	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM		
04/14/10	7.28	2,384	55	0.60	66	16.3	2.36	804	NM	<0.05	8.4	266	<0.05	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM		
10/07/10	7.77	3,362	61	0.49	75	22.6	3.19	1,655	NM	<0.04	8.2	455	<0.06	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM		
04/13/11	6.95	2,296	53	0.62	53	19.1	1.59	1,100	NM	<0.45	6.7	264	<0.09	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM		
10/06/11	8.72	7,483	58	0.56	223	49.8	10.50	3,450	NM	<0.04	18.0	1,835	<0.06	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM		
04/12/12	8.33	4,746	51	1.50	110	37.7	6.03	2,042	NM	<0.06	12.0	945	<0.24	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM		
10/10/12	7.82	3,759	52	0.17	145	30.5	2.54	2,098	NM	<0.04	21.0	404	<0.64	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM		
04/25/13	7.45	2,629	50	0.31	37	24.5	2.83	1,066	NM	<0.03	10.0	305	<0.43	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM		
10/09/13	9.11	8,987	57	0.35	224	68.5	16.50	3,150	NM	<0.07	13.0	2,354	<0.11	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM		
4/10/2014	7.34	1,708	49	0.23	33	19.0	1.70	573	NM	<0.03	2.5	167	<0.20	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM		
10/07/14	7.46	3,433	58	0.45	62	30.0	4.46	1,397	NM	<0.05	7.4	690	<0.62	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM		
4/16/2014	8.37	3,324	51	0.32	44	26.0	4.48	1,100	NM	<0.18	NM	NM	NM	<0.1	0.02	0.05	0.001	2.8	0.01	2.2	5.9	620	0.26	<0.1	0.38	13		
10/13/2015	8.99	5,530	58	<0.05	85	94.0	7.60	2,200	NM	<0.06	NM	NM	NM	<0.1	0.02	0.13	<0.02	1.2	<0.01	0.22	15	1200	0.20	<0.1	0.36	23		
5/25/2016	NM	NM	NM	0.20	61	23.0	6.00	1,700	NM	<0.02	NM	NM	NM	<0.1	0.03	0.21	<0.02	0.8	0.01	0.7	14.0	700	1.00	<0.1	0.54	13		
10/11/2016	8.91	6,079	61	0.19	89	49.0	8.92	2,300	2.0	<0.02	NM	NM	NM	<0.1	0.05	<1.0	<0.02	0.09	<0.01	0.02	12	1500	0.87	<0.1	0.34	31		
4/11/2017	8.28	2,674	64	<0.05	29	29.0	NM	1,100	3.0	<0.02	NM	NM	NM	NM	0.04	NM	<0.02	1.3	0.01	1	6	340	0.81	NM	0.48	NM		
10/19/2017	8.17	2,531	61	<0.05	5.9	26.0	NM	46	<1	<0.03	NM	NM	NM	NM	<													