

2024 Annual Groundwater Monitoring and Corrective Action Report

Lon D. Wright Power Plant

Fossil Fuel Combustion Ash (FFCA) Monofill

City of Fremont Department of Utilities
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SCS ENGINEERS

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1.0 INTRODUCTION

This 2024 Annual Groundwater Monitoring and Corrective Action Report was prepared to support compliance with the groundwater monitoring requirements of the “Coal Combustion Residuals (CCR) Final Rule” published by the United States Environmental Protection Agency (USEPA) in the *Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule*, dated April 17, 2015 (USEPA, 2015), and subsequent revisions. Specifically, this report was prepared to fulfill the requirements of 40 CFR 257.90(e) and the Assessment Monitoring Program described in 40 CFR 257.95. The applicable sections of the Rule are provided below in *italics*, followed by applicable information relative to the 2024 Annual Groundwater Monitoring and Corrective Action Report for the 11.36-acre CCR monofill at the Lon D. Wright Power Plant, which is owned by the City of Fremont Department of Utilities (FDU).

This report covers the period of groundwater monitoring from January 1, 2024 through December 31, 2024.

1.1 §257.90(E)(6) SUMMARY

A section at the beginning of the annual report that provides an overview of the current status of groundwater monitoring and corrective action programs for the CCR unit. At a minimum, the summary must specify all of the following:

1.1.1 §257.90(e)(6)(i) Initial Monitoring Program

At the start of the current annual reporting period, whether the CCR unit was operating under the detection monitoring program in §257.94 or the assessment monitoring program in §257.95;

At the start of the current annual reporting period, (January 1, 2024), the CCR Landfill was operating under an assessment monitoring program in compliance with §257.95.

1.1.2 §257.90(e)(6)(ii) Final Monitoring Program

At the end of the current annual reporting period, whether the CCR unit was operating under the detection monitoring program in §257.94 or the assessment monitoring program in §257.95;

At the end of the current annual reporting period, (December 31, 2024), the CCR Landfill was operating under an assessment monitoring program in compliance with §257.95.

1.1.3 §257.90(e)(6)(iii) Statistically Significant Increases

If it was determined that there was a statistically significant increase (SSI) over background for one or more constituents listed in Appendix III to this part pursuant to §257.94(e):

- (A) *Identify those constituents listed in Appendix III to this part and the names of the monitoring wells associated with such an increase; and,*

Constituent	Monitoring Well with SSI	
	First Quarter (February) Event	Third Quarter (August) Event
Arsenic	MW-1, MW-6, MW-4R	MW-1, MW-3, MW-4R, MW-6
Boron	MW-7	MW-7
Barium	N/A	MW-5
Calcium	MW-1, MW-3, MW-5	MW-1, MW-5,
Chloride	MW-1, MW-3, MW-4R, MW-5, MW-7, MW-8	MW-1, MW-2, MW-3, MW-4R, MW-5, MW-7, MW-8
Fluoride	MW-2	MW-2
Lead	N/A	MW-4R
Lithium	MW-1, MW-2	MW-1
Molybdenum	MW-2, MW-5, MW-7, MW-8	MW-2, MW-5, MW-7, MW-8
Selenium	MW-2, MW-6, MW-8	MW-1, MW-5, MW-7, MW-8
Total Dissolved Solids (TDS)	N/A	MW-5

(B) Provide the date when the assessment monitoring program was initiated for the CCR unit.

Eight background groundwater monitoring events were completed from October 2016 through September 2017 under the detection monitoring program. Statistical analysis of the analytical results from the eight background groundwater monitoring events resulted in all seven downgradient wells having statistically significant increases (SSIs) in concentration above the background concentration data at MW-4R. The SSI determinations completed in 2017 resulted in the transition from the detection monitoring program into the assessment monitoring program in February 2018.

1.1.4 §257.90(e)(6)(iv) Statistically Significant Levels

If it was determined that there was a statistically significant level above the groundwater protection standard for one or more constituents listed in Appendix IV to this part pursuant to §257.95(g) include all of the following:

(A) Identify those constituents listed in Appendix IV to this part and the names of the monitoring wells associated with such an increase;

No Appendix IV detects statistically exceeded the groundwater protection standard.

(B) Provide the date when the assessment of corrective measures was initiated for the CCR unit;

Not applicable as corrective measures are not required.

(C) Provide the date when the public meeting was held for the assessment of corrective measures for the CCR unit; and

Not applicable as corrective measures are not required.

(D) *Provide the date when the assessment of corrective measures was completed for the CCR unit.*

Not applicable as corrective measures are not required.

1.1.5 §257.90(e)(6)(v) Selection of Remedy

Whether a remedy was selected pursuant to §257.97 during the current annual reporting period, and if so, the date of remedy selection; and

Not applicable as corrective measures are not required.

1.1.6 §257.90(e)(6)(vi) Remedial Activities

Whether remedial activities were initiated or are ongoing pursuant to § 257.98 during the current annual reporting period.

Not applicable as corrective measures are not required.

2.0 §257.90(E) ANNUAL REPORT REQUIREMENTS

Annual groundwater monitoring and corrective action report. For existing CCR landfills and existing CCR surface impoundments, no later than January 31, 2018, and annually thereafter, the owner or operator must prepare an annual groundwater monitoring and corrective action report. For new CCR landfills, new CCR surface impoundments, and all lateral expansions of CCR units, the owner or operator must prepare the initial annual groundwater monitoring and corrective action report no later than January 31 of the year following the calendar year a groundwater monitoring system has been established for such CCR unit as required by this subpart, and annually thereafter. For the preceding calendar year, the annual report must document the status of the groundwater monitoring and corrective action program for the CCR unit, summarize key actions completed, describe any problems encountered, discuss actions to resolve the problems, and project key activities for the upcoming year. For purposes of this section, the owner or operator has prepared the annual report when the report is placed in the facility's operating record as required by § 257.105(h)(1). At a minimum, the annual groundwater monitoring and corrective action report must contain the following information, to the extent available:

2.1 §257.90(E)(1) SITE MAP

A map, aerial image, or diagram showing the CCR unit and all background (or upgradient) and downgradient monitoring wells, to include the well identification numbers, that are part of the groundwater monitoring program for the CCR unit;

A site vicinity map with an aerial image showing the property boundary of the Lon D. Wright Power Plant is provided as **Figure 1**. This figure includes the CCR monofill and background (or upgradient) and downgradient monitoring wells with identification numbers for the groundwater monitoring program.

2.2 §257.90(E)(2) MONITORING SYSTEM CHANGES

Identification of any monitoring wells that were installed or decommissioned during the preceding year, along with a narrative description of why those actions were taken;

No new monitoring wells were installed and no wells were decommissioned as part of the groundwater monitoring program for the FFCA monofill in 2024. The groundwater monitoring system currently consists of eight monitoring wells (1 upgradient and 7 downgradient). Monitoring wells MW-1 through MW-5 were installed in 1996 to intercept the shallow groundwater table beneath the FFCA monofill. Monitoring wells MW-6 through MW-8 were installed in 2016 to increase the interception potential of predominant down- and cross-gradient flow migration pathways and to demonstrate compliance with 40 CFR 257.91. Background monitoring well MW-4 was replaced with MW-4R in 2016 due to the poor integrity of the monitoring well.

2.3 §257.90(E)(3) SUMMARY OF SAMPLING EVENTS

In addition to all the monitoring data obtained under §§ 257.90 through 257.98, a summary including the number of groundwater samples that were collected for analysis for each background and downgradient well, the dates the samples were collected, and whether the sample was required by the detection monitoring or assessment monitoring programs;

Two groundwater samples were collected from each CCR monitoring well for the semi-annual assessment monitoring events. Samples from the first sampling event on February 6, 2024 and the second sampling event on August 8, 2024 were analyzed for both Appendix III and Appendix IV constituents. A summary including the number of groundwater samples that were collected for analysis for each background and downgradient well, the dates the samples were collected, and whether the sample was required by the detection monitoring or assessment monitoring programs is included in **Table 1**. The Groundwater Monitoring Program Reports for the first and second sampling events were submitted to the Nebraska Department of Environment and Energy (NDEE). These include the analytical reports, groundwater contour maps, field data sheets and statistical summaries, and are provided in **Appendices A1** and **A2**.

2.4 §257.90(E)(4) MONITORING TRANSITION NARRATIVE

A narrative discussion of any transition between monitoring programs (e.g., the date and circumstances for transitioning from detection monitoring to assessment monitoring in addition to identifying the constituent(s) detected at a statistically significant increase over background levels);

As required by 40 CFR 257.90(b), eight background groundwater monitoring events were completed from October 2016 through September 2017 under the detection monitoring program. Statistical analysis of the analytical results from the eight background groundwater monitoring events resulted in all seven downgradient wells having statistically significant increases (SSIs) in concentration above the background concentration data at MW-4R. The SSI determinations completed in 2017 resulted in the transition from the detection monitoring program into the assessment monitoring program in February 2018. The site remained in the assessment monitoring program throughout 2024.

2.5 §257.90(E)(5) OTHER REQUIREMENTS

Other information required to be included in the annual report as specified in §§ 257.90 through 257.98.

Additional potentially applicable requirements for the annual report, and the location of the requirement within the Rule, are provided in the following sections.

2.5.1 §257.90(e) General Requirements

For the preceding calendar year, the annual report must document the status of the groundwater monitoring and corrective action program for the CCR unit, summarize key actions completed, describe any problems encountered, discuss actions to resolve the problems, and project key activities for the upcoming year.

Status of Groundwater Monitoring and Corrective Action Program. The groundwater monitoring and corrective action program is currently in assessment monitoring.

Summary of Key Actions Completed. The facility conducted groundwater monitoring in accordance with assessment monitoring protocols and established groundwater protection standards.

Description of Any Problems Encountered. No problems were encountered involving the two groundwater monitoring events.

Discussion of Actions to Resolve the Problems. No problems were encountered involving the two groundwater monitoring events.

Projection of Key Activities for the Upcoming Year (2025):

Perform two semiannual assessment monitoring events in the first and third quarters of 2025.

Perform statistical evaluation and determination of any statistically significant increases for both semiannual assessment monitoring events.

2.5.2 §257.94(d) Alternative Detection Monitoring Frequency

The owner or operator must include the demonstration providing the basis for the alternative monitoring frequency and the certification by a qualified professional engineer in the annual groundwater monitoring and corrective action report required by § 257.90(e).

Not applicable. No alternative detection monitoring frequency has been proposed. The facility is currently in assessment monitoring.

2.5.3 §257.94(e)(2) Alternative Source Demonstration for Detection Monitoring

The owner or operator must also include the demonstration in the annual groundwater monitoring and corrective action report required by § 257.90(e), in addition to the certification by a qualified professional engineer.

Not applicable. No alternative source demonstration for detection monitoring was completed in 2024.

2.5.4 §257.95(c) Alternative Assessment Monitoring Frequency

The owner or operator must include the demonstration providing the basis for the alternative monitoring frequency and the certification by a qualified professional engineer in the annual groundwater monitoring and corrective action report required by § 257.90(e).

Not applicable. No alternative assessment monitoring frequency has been proposed.

2.5.5 §257.95(d)(3) Assessment Monitoring Results and Standards

Include the recorded concentrations required by paragraph (d)(1) of this section, identify the background concentrations established under § 257.94(b), and identify the groundwater protection standards established under paragraph (d)(2) of this section in the annual groundwater monitoring and corrective action report required by § 257.90(e).

Assessment Monitoring Results and Standards for the two assessment monitoring events can be found in the attached Groundwater Monitoring Program Reports submitted to the NDEE. These reports, which include the analytical reports, groundwater contour maps, field data sheets and statistical summaries, are provided in **Appendices A1** and **A2**.

2.5.6 §257.95(g)(3)(ii) Alternative Source Demonstration for Assessment Monitoring

The owner or operator must also include the demonstration in the annual groundwater monitoring and corrective action report required by § 257.90(e), in addition to the certification by a qualified professional engineer.

Not applicable. No alternative source demonstration for assessment monitoring was completed in 2024.

2.5.7 §257.96(a) Extension of Time for Corrective Measures Assessment

The assessment of corrective measures must be completed within 90 days, unless the owner or operator demonstrates the need for additional time to complete the assessment of corrective measure due to site-specific conditions or circumstances. The owner or operator must obtain a certification from a qualified professional engineer attesting that the demonstration is accurate. The 90-day deadline to complete the assessment of corrective measures may be extended for longer than 60 days. The owner or operator must also include the demonstration in the annual groundwater monitoring and corrective action report required by § 257.90(e), in addition to the certification by a qualified professional engineer.

Not applicable. A corrective measures assessment has not been initiated.

TABLE 1
CCR Rule Groundwater Samples Summary

Table 1
CCR Rule Groundwater Samples Summary
Lon D. Wright Power Plant FFCA Monofill
1st Quarter & 3rd Quarter - 2024

Well ID	Designation	Number of Samples Collected	Sampling Dates
MW-1	Downgradient	2 (1 each event)	2/6/2024
			8/8/2024
MW-2	Downgradient	2 (1 each event)	2/6/2024
			8/8/2024
MW-3	Downgradient	2 (1 each event)	2/6/2024
			8/8/2024
MW-4R	Upgradient	2 (1 each event)	2/6/2024
			8/8/2024
MW-5	Downgradient	2 (1 each event)	2/6/2024
			8/8/2024
MW-6	Downgradient	2 (1 each event)	2/6/2024
			8/8/2024
MW-7	Downgradient	2 (1 each event)	2/6/2024
			8/8/2024
MW-8	Downgradient	2 (1 each event)	2/6/2024
			8/8/2024

Note - All monitoring wells are currently in the assessment monitoring program

FIGURE 1
Site Map with Monitoring Wells

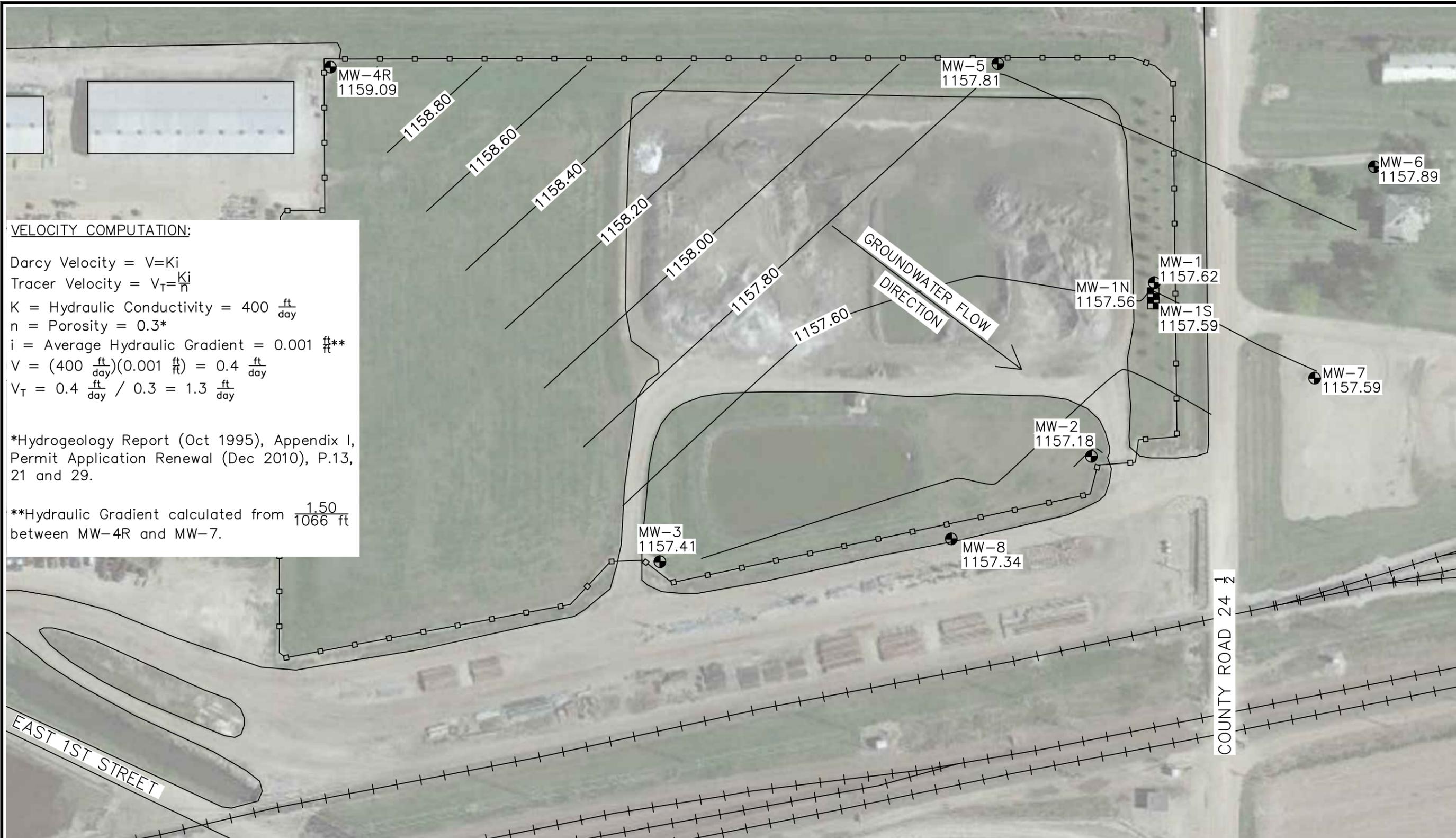
T:\27224080.00\AUTOCAD\EX-01 SITE VICINITY MAP.DWG



SCS ENGINEERS 14755 Grover Street Omaha, NE 68144 PH. (402) 884-6202 FAX. (413) 881-0012 PROJ. NO. 27224080.00 DWG. BY: MBS CHK. BY: ZEM DATE: 01/10/2024	CLIENT FREMONT DEPARTMENT OF UTILITIES LON D. WRIGHT POWER PLANT FREMONT, NEBRASKA	SHEET TITLE SITE VICINITY MAP	REV. DATE 1 1/10/2024 2 1/10/2024 3 1/10/2024 4 1/10/2024 5 1/10/2024	CK BY MBS ZEM MBS ZEM MBS ZEM
	CADD FILE: 2722 SITE VICINITY MAP.DWG	DRAWING NO. F-01	PROJECT TITLE ANNUAL GROUNDWATER MONITORING CORRECTIVE ACTION REPORT	

FIGURE 2
Potentiometric Contour Map

T:\27224080.00\AutoCAD\EX-02 Potentiometric Contour Map.dwg Jan 07, 2025 - 3:20pm Layout Name: 11x17 By: 5287bsg



VELOCITY COMPUTATION:

Darcy Velocity = $V=Ki$
 Tracer Velocity = $V_T = \frac{Ki}{n}$

$K = \text{Hydraulic Conductivity} = 400 \frac{\text{ft}}{\text{day}}$
 $n = \text{Porosity} = 0.3^*$
 $i = \text{Average Hydraulic Gradient} = 0.001 \frac{\text{ft}}{\text{ft}}^{**}$

$V = (400 \frac{\text{ft}}{\text{day}})(0.001 \frac{\text{ft}}{\text{ft}}) = 0.4 \frac{\text{ft}}{\text{day}}$
 $V_T = 0.4 \frac{\text{ft}}{\text{day}} / 0.3 = 1.3 \frac{\text{ft}}{\text{day}}$

*Hydrogeology Report (Oct 1995), Appendix I, Permit Application Renewal (Dec 2010), P.13, 21 and 29.

**Hydraulic Gradient calculated from $\frac{1.50}{1066 \text{ ft}}$ between MW-4R and MW-7.

- LEGEND**
- ++++ RAILROAD TRACKS
 - — ESTIMATED POTENTIOMETRIC CONTOUR
 - — □ FENCE
 - — POTENTIOMETRIC CONTOUR
 - ⊕ MONITORING WELL 1162.50 FEET ABOVE MEAN SEA LEVEL
 - ⊞ PIEZOMETER

NOTES:
 1. DEPTHS TO GROUNDWATER MEASURED 08/08/2024.



CK BY		REV		DATE	
		Δ	Δ	Δ	Δ
SHEET TITLE		POTENTIOMETRIC CONTOUR MAP			
PROJECT TITLE		ANNUAL GROUNDWATER MONITORING CORRECTIVE ACTION REPORT			
CLIENT					
FREMONT DEPARTMENT OF UTILITIES LON D. WRIGHT POWER PLANT FREMONT, NEBRASKA					
SCS ENGINEERS					
14755 GROVER STREET OMAHA, NEBRASKA 68144 PH: (402) 884-6202 FAX: (402) 884-6203					
PROJ. NO. 27224080.00		DWN. BY: BSG		PROJ. MGR: MJM	
DSC. BY: MBS		CHK. BY: MBS			
CADD FILE: EX-02 POTENTIOMETRIC CONTOUR MAP.DWG					
DATE: 01/07/2025					
DRAWING NO. F-02					



APPENDIX A
Groundwater Monitoring Program Reports

A1 1st Quarter Groundwater Monitoring Program Report

Lon D. Wright Power Plant Statistical Summary of February 2024 Data

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401 E Military Road
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27224080.00 | June 27, 2024

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Attachments

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A.2	Intrawell Prediction Limits
A.3	Interwell Prediction Limits
A.4	Sen’s Slope/Mann-Kendall Analysis
A.5	Confidence Interval Analysis
B	Figures
B.1	Groundwater Contours Map
C	Supporting information
C.1	Field Data Sheets
C.2	Chain of Custody
C.3	Testing Results

1 EVALUATION OF ANALYTICAL RESULTS

1.1 SITE-SPECIFIC STATISTICAL PROGRAM

Statistical analysis consisted of methods outlined in the Groundwater Monitoring Plan (GMP) (revised April 2021), 40 CFR Part 257, Subpart D (CCR rule) and EPA's Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities – Unified Guidance (Unified Guidance) dated March 2009 using Sanitas™ Statistical Software version 9.6.37. An intrawell statistical approach is the primary statistical method and interwell comparisons are supplementary statistical analyses used to give context to intrawell statistical results. If no intrawell statistical exceedance is noted, the additional statistical analysis is not used to make assessment monitoring determinations. Constituent/well pairs exceeding inter-and intrawell prediction limits but not displaying significant increasing trends are not entered into the assessment monitoring program. Additionally, in an assessment monitoring program, if one or more constituent/well pair statistically exceeds the intrawell prediction limit but does not exceed the Confidence Interval (ie GWPS) then assessment monitoring procedures for the site will continue and no changes to the sampling schedule are implemented. Based on current understanding of the Federal CCR rule, when assessment monitoring is required at one well then all wells must be in assessment monitoring. This understanding does not conflict with GMP requirements.

Because the site remains in assessment monitoring, each well at the site was sampled and analyzed following assessment monitoring procedures. During the February 2024 sampling event, samples from each well were analyzed for Appendix III and IV constituents. Detected Appendix III and Appendix IV constituent results were analyzed using time series plots, intrawell prediction limit analysis, interwell prediction limit analysis, Sen's slope trend analyses, and confidence interval analysis. The statistical results have been summarized in **Table 2** at the end of this Section.

Statistical output charts and tables are included in **Attachment A**.

1.2 COMPLIANCE STATISTICAL ANALYSIS

Compliance statistical analysis was performed on data collected from the February 2024 sampling event. Pertinent statistical results are summarized in **Table 2** at the end of this Section.

1.2.1 Time Series Plots

Time series plots were prepared for Appendix III and Appendix IV constituents to show the concentration variations over time. Time series graphs are included in **Attachment A.1**.

1.2.2 Intrawell Prediction Limits

An intrawell prediction limit analysis compares the historical data of a well to its own compliance data. The historical data is used to calculate the prediction limit that is compared to the compliance data point. If a compliance data point exceeds the calculated prediction limit, then an initial exceedance is noted; however, this may not indicate a statistical significant increase (SSI). The distribution of the data was calculated by applying the Shapiro-Wilk test for normality or the Ladder of Powers (Helsel & Hirsh, 1992) for transformed data. A parametric prediction limit was constructed for data determined to have a normal or transformed normal distribution. A non-parametric prediction limit was calculated for data not transformed normal or containing 51 percent to 90 percent non-detect results.

Intrawell prediction limits were used to statistically evaluate the detected constituents in each monitoring well using an established background dataset from October 2016 through June 2018 except for Boron where the background dataset is from October 2016 to February 2018. Outliers, if any, are removed from the background dataset.

Intrawell prediction limit analysis results are included in **Attachment A.2** and summarized in **Table 2**.

1.2.3 Interwell Prediction Limits

An interwell prediction limit analysis compares data collected from compliance (downgradient) monitoring wells with data collected from the background (upgradient) monitoring wells. Available upgradient monitoring well data (MW-4R) was used to calculate the interwell prediction limit and was used to determine if a single data point is statistically representative of a group of data points. The distribution of the data was calculated by applying the Shapiro-Wilk test for normality, or the Ladder of Powers (Helsel & Hirsh, 1992) for transformed data. A parametric prediction limit was constructed for data determined to have a normal or transformed normal distribution. A non-parametric prediction limit was calculated for data not transformed normal or containing 51 percent to 90 percent of observations less than the laboratory reporting limit (non-detects) results. A Poisson based prediction limit was calculated for data with greater than 90 percent non-detect results.

Interwell prediction limits were used as a supplementary statistical analysis to provide additional context and evaluation to the statistical evaluation of the detected constituents from the February 2024 sampling event data. Interwell prediction limits analysis results are included in **Attachment A.3** and summarized in **Table 2**.

1.2.4 Sen's Slope/Mann-Kendall Trend Analysis

A Sen's Slope/Mann-Kendall statistical analysis was performed on the detected constituent/well pairs using the background dataset and the February 2024 sampling event to determine trends in the concentration of these constituents. A trend is the general increase or decrease in observed values over time. A trend analysis can be used to determine the significance of an apparent trend and to estimate the magnitude of that trend. The Mann-Kendall test is nonparametric, meaning that it does not depend on an assumption of a particular underlying distribution. The test uses only the relative magnitude of data rather than actual values. Therefore, missing values are allowed, and values that are recorded as non-detects by the laboratory can still be used in the statistical analysis by assigning values equal to half their reporting limits. Sen's Slope is a simple nonparametric procedure developed to estimate the true slope. The advantage of this method over linear regression is that it is not greatly affected by gross data errors or outliers, and can be computed when data is missing or non-detect. Significant trends should be identified as either increasing or decreasing and whether these trends are occurring in more than one well. Trends can result from naturally occurring changes to the groundwater, seasonal fluctuations, and disturbances from new well installations or facility activities. Sen's Slope/Mann-Kendall analysis results are included in **Attachment A.4** and summarized in **Table 3**.

1.2.5 Confidence Interval Analysis

Confidence Interval analysis was performed on the detected constituent/well pairs from the February 2024 sampling event. Confidence interval analysis is an intrawell test used to compare the compliance data to a fixed numerical limit (compliance limit). Since the wells are in assessment monitoring, the compliance limit is represented by the groundwater protection standard (GWPS). Based on the Unified Guidance, the confidence interval is bound by an upper and lower limit which defines the most probable range where either the average or median concentration is expected. A

potential statistical exceedance is indicated by confidence interval analysis when the lower limit of the confidence interval is above the compliance limit.

The GWPS for lithium and molybdenum were identified in the July 17, 2018 *Hazardous and Solid Waste Management System: Disposal of Coal Combustion Residuals from Electric Utilities; Amendments to the National Minimum Criteria (Phase One, Part One); Final Rule* (July 2018 EPA CCR Amendment) and were utilized as the compliance limits. The average upgradient concentrations, derived from MW-4R, were used as the compliance limit for boron, calcium, and Total Radium because no GWPS exists for these constituents. MW-4R is sampled in the first and third quarters of each year. The average upgradient concentrations are reviewed and calculated after each sampling event to ensure consistent data. The confidence interval analysis results are included in **Attachment A.5** and summarized in **Table 2**.

1.2.6 Statistical Summary

The following table lists a summary of constituents having exceedances for the previous monitoring period, July 2023, and the current monitoring period, February 2024.

Table 1. Previously Identified and Currently Identified Exceedances

Well	Previously identified exceedances Jul-23		Currently identified exceedances Feb-24	
	Intrawell	Interwell	Intrawell	Interwell
MW-1	Chloride Fluoride Sulfate	Chloride Fluoride Sulfate	Boron Chloride Sulfate	Sulfate Sulfate Total Radium
MW-2	Chloride Fluoride Sulfate	Sulfate	Boron Chloride Fluoride	Fluoride
MW-3	Chloride		Arsenic Chloride	Barium Sulfate
MW-4R (upgradient)	Arsenic Chloride		Arsenic Chloride	
MW-5	Chloride Sulfate	Sulfate	Chloride Sulfate	Sulfate
MW-6		Chloride Sulfate	Arsenic	Sulfate
MW-7	Chloride	Chloride Sulfate	Chloride Sulfate	Chloride Sulfate
MW-8	Chloride		Chloride	

Notes: Changes to July 2023 Exceedances.

Interwell PL MW-1 Fluoride ADDED was not previously performed for July 2023 Stats.

Interwell PL MW-2 Fluoride ADDED was not previously performed for July 2023 stats.

Intrawell PL MW-3 Arsenic REMOVED was based on Aug 2022 data and not performed on July 2023 data.

Intrawell PL MW-7 Sulfate REMOVED - Actual wells is 7 - raised the Parametric PL from 65.39 to 66.3 for July 2023 Stats.

Intrawell exceedances were noted for arsenic (MW-3, MW-4R, and MW-6), chloride (MW-1, MW-2, MW-3, MW-4R, MW-5, and MW-8), and boron (MW-1 and MW-2) without corresponding interwell exceedances. Intrawell exceedances with corresponding interwell exceedances were noted for chloride (MW-7), fluoride (MW-2), and sulfate (MW-1, MW-5, and MW-7). No constituent/well pairs statistically exceeded the GWPS. Chloride and Arsenic at upgradient well MW-4R was identified as an intrawell exceedance and may indicate a natural change in the groundwater quality. This change in the groundwater quality may be the reason for similar exceedances identified in the downgradient wells.

Statistical exceedances above background are still present at some wells; however no Appendix IV detects statistically exceeded the GWPS. Based on the current understanding of the Federal CCR rule, when assessment monitoring is required at one well then all wells must be in assessment monitoring. Therefore, the site will remain in assessment monitoring during the next scheduled sampling event. The statistical analysis results from the February 2024 sampling event are summarized in **Table 2** below.

Table 2. Summary of Statistical Analysis

Well	Detected Constituents	Analytical Result	Intrawell Exceedance?	Interwell Exceedance?	Significant Increasing Trend?	Confidence Interval Exceedance?	GWPS MCL or Background Average
MW-1	Arsenic (ug/L)	4.02	No	No	Yes	No	<10
	Boron (ug/L)	221	Yes	No	No	No	158.1 ³
	Calcium (mg/L)	89.8	No	No	No	Yes	87 ³
	Chloride (mg/L)	33.5	Yes	No	Yes	No	<250
	Sulfate (mg/L)	82.7	Yes	Yes	No	No	<250
	Total Radium (pCi/L)	3.56	No	Yes	No	No	5 ³
MW-2	Boron (ug/L)	152	Yes	No	No	No	158.1 ³
	Calcium (mg/L)	95.6	No	No	No	Yes	87 ³
	Chloride (mg/L)	43.8	Yes	No	No	No	<250
	Fluoride (mg/L)	1.41	Yes	Yes	Yes	No	<4
	Lithium (ug/L)	29.1	No	No	Yes	No	40 ³
MW-3	Arsenic (ug/L)	3.97	Yes	No	No	No	<10
	Barium (ug/L)	165	No	Yes	No	No	<2000
	Calcium (mg/L)	111	No	No	Yes	Yes	87 ³
	Chloride (mg/L)	58.5	Yes	No	Yes	No	<250
	Sulfate (mg/L)	55.4	No	Yes	No	No	<250
MW-4R	Arsenic (ug/L)	6.11	Yes	See Note 2	Yes	No	<10
	Chloride (mg/L)	44.1	Yes		Yes	No	<250
MW-5	Calcium (mg/L)	88.3	No	No	No	Yes	87 ³
	Chloride (mg/L)	43.7	Yes	No	Yes	No	<250
	Sulfate (mg/L)	54.9	Yes	Yes	No	No	<250
MW-6	Arsenic (ug/L)	4.83	Yes	No	Yes	No	<10
	Sulfate (mg/L)	73.4	No	Yes	No	No	<250
MW-7	Calcium (mg/L)	73.4	No	No	No	Yes	87 ³
	Chloride (mg/L)	62.6	Yes	Yes	Yes	No	<250
	Sulfate (mg/L)	73.1	Yes	Yes	No	No	<250

MW-8	Calcium (mg/L)	86.5	No	No	No	Yes	87 ³
	Chloride (mg/L)	38.8	Yes	No	Yes	No	<250(mg/L)

¹ - GWPS were established by the NDEE Title 118 Groundwater Quality Standards or the July 2018 EPA CCR Amendment.

² - No interwell statistical comparison was performed on the upgradient well MW-4R.

³ - No GWPS has been established. MCL shown is based on the average background level established by upstream monitoring.

2 GENERAL COMMENTS

The sampling event was conducted under the supervision of Charles Joyce who holds a Nebraska Drilling and pump installation contractor's license (WD-PIC #39502) SCS Engineers does not warrant the work of third parties supplying information used in the assimilation of this document. This document has been prepared using the level of care and skill ordinarily exercised, under similar circumstances, by environmental professionals currently practicing in this locality. No other representation, express or implied, and no warranty or guarantee is included or intended.

3 REFERENCES

HDR, Appendix D Groundwater Monitoring Plan for Fremont Department of Utilities Fossil Fuel Combustion Ash Disposal Site, March 2016; Revised December 2018.

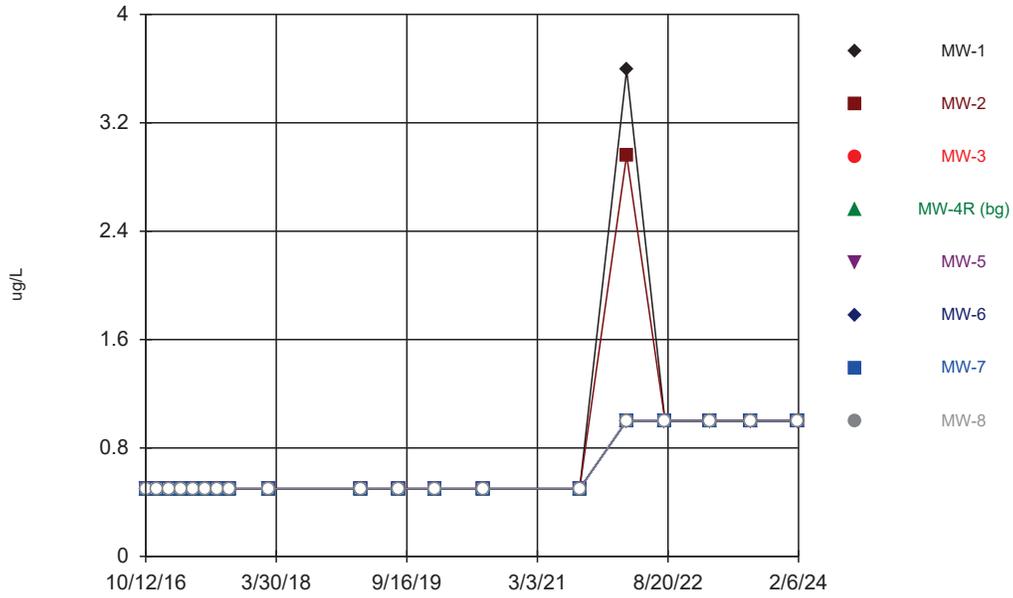
Layne GeoSciences, Inc. 1995. Hydrogeology of Proposed Fossil Fuel Combustion Ash Disposal Site. Prepared for Fremont Department of Utilities and HDR Engineering, Inc.

Sanitas Technologies, Sanitas Statistical Software v 9.6.37 and User Guide

Attachment A. Compliance Statistical Analysis

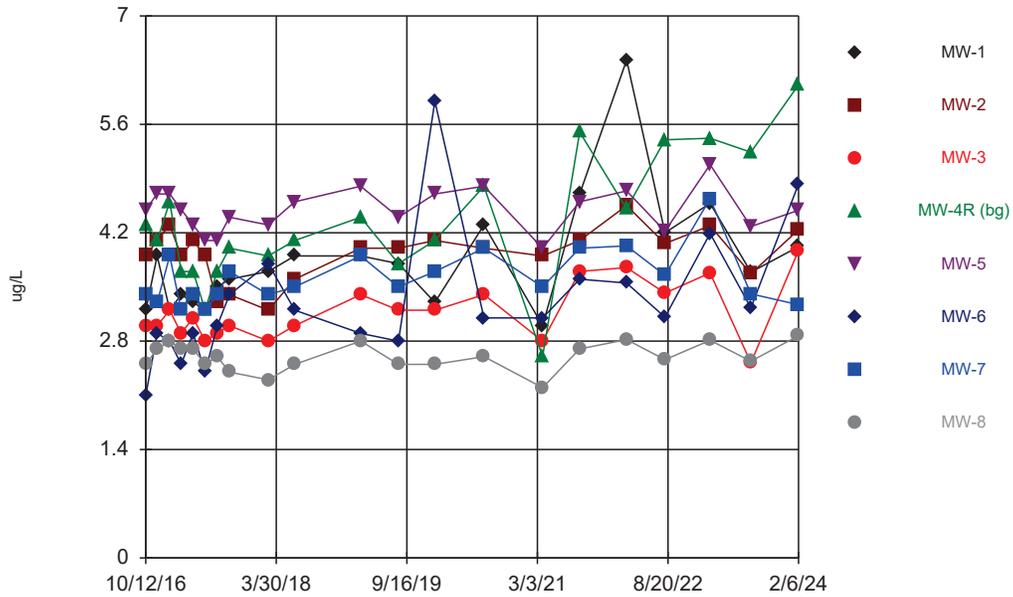
A.1 Time Series Plots

Time Series



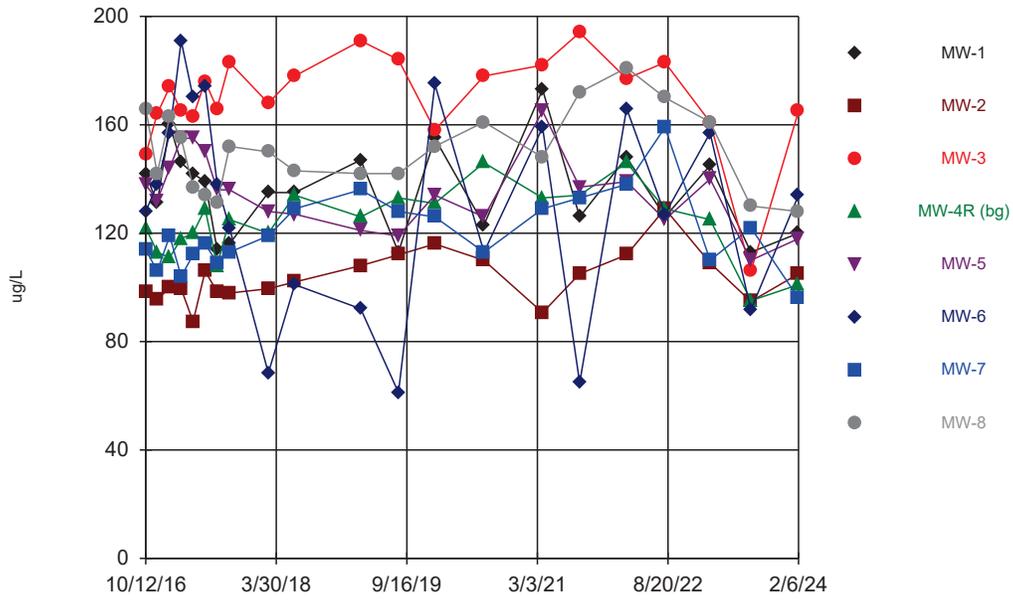
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Time Series



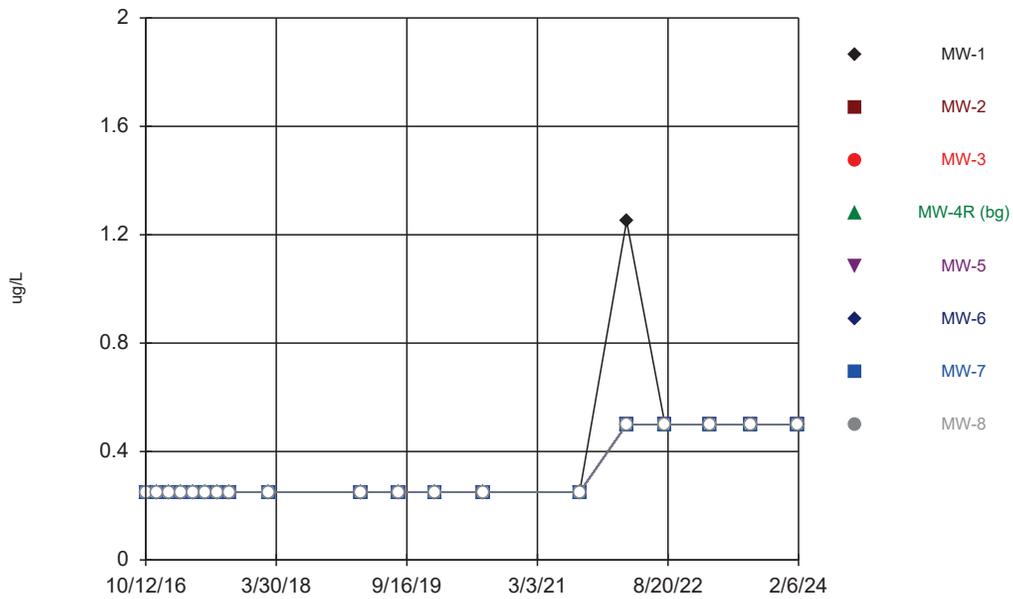
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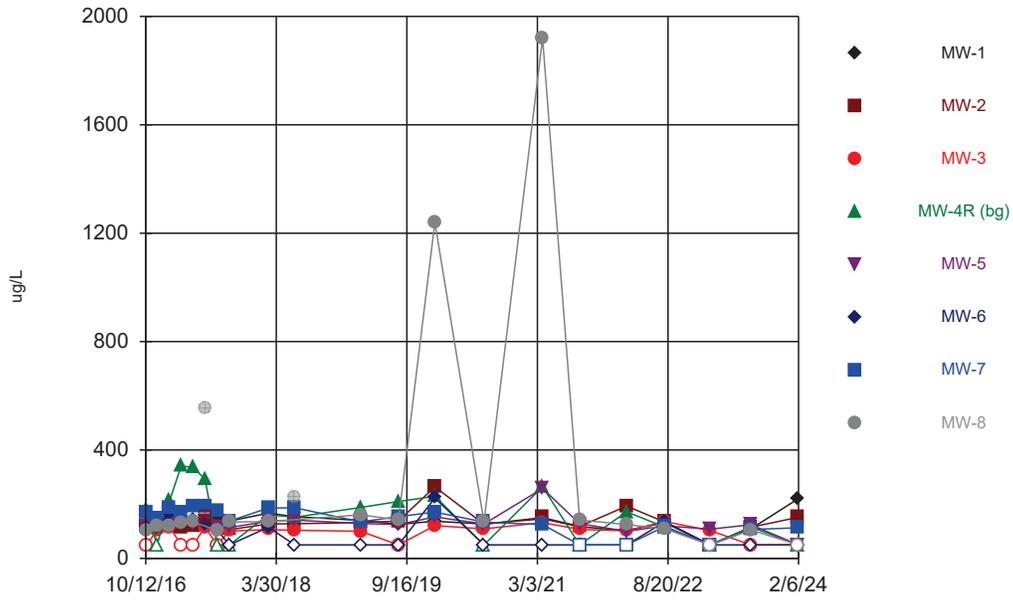
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Time Series



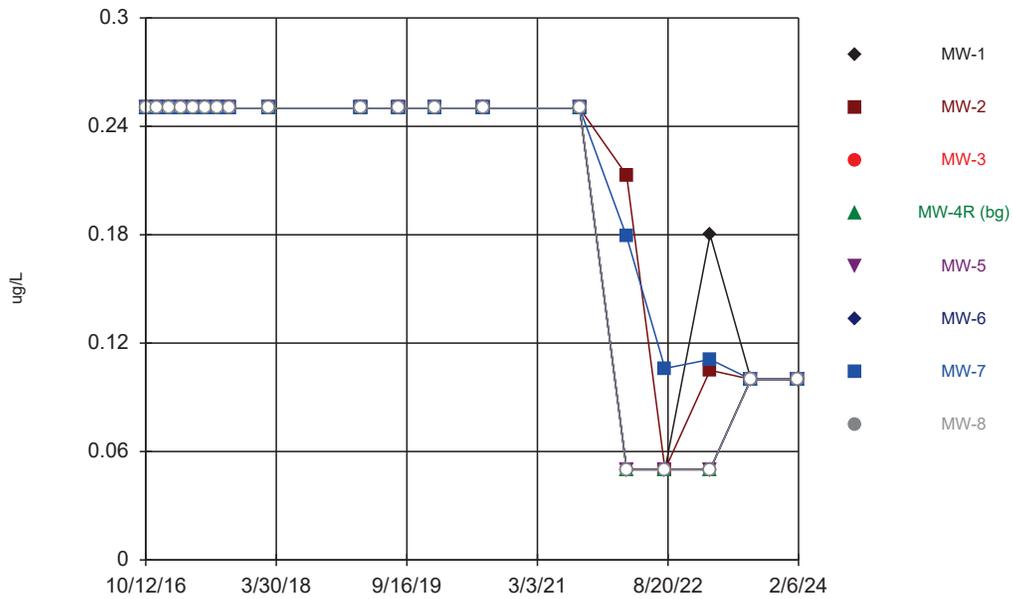
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Time Series



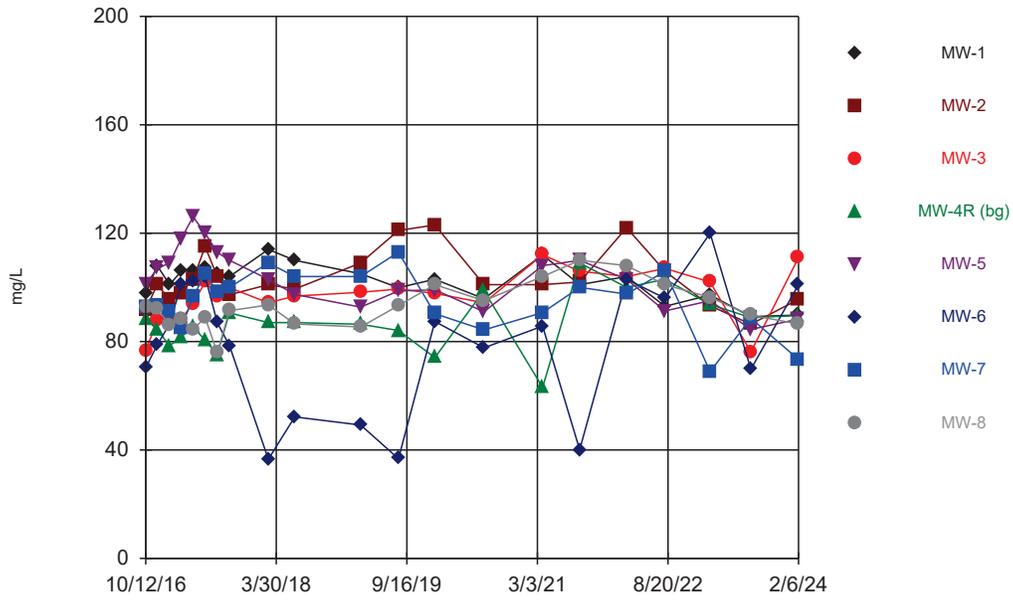
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Time Series



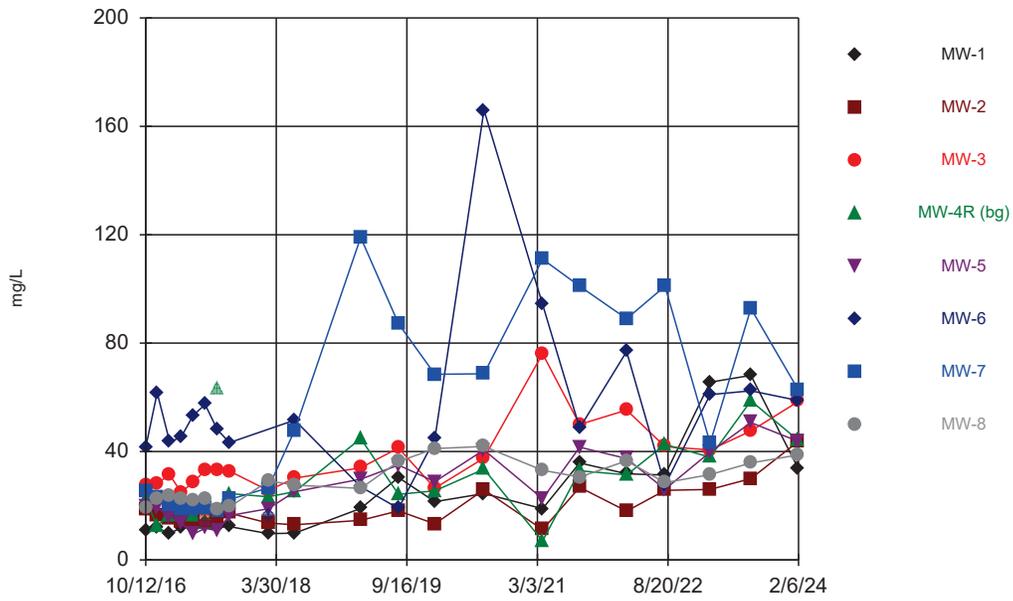
Constituent: Cadmium Analysis Run 4/3/2024 12:54 PM View: 2024Q1 Time Series
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Time Series



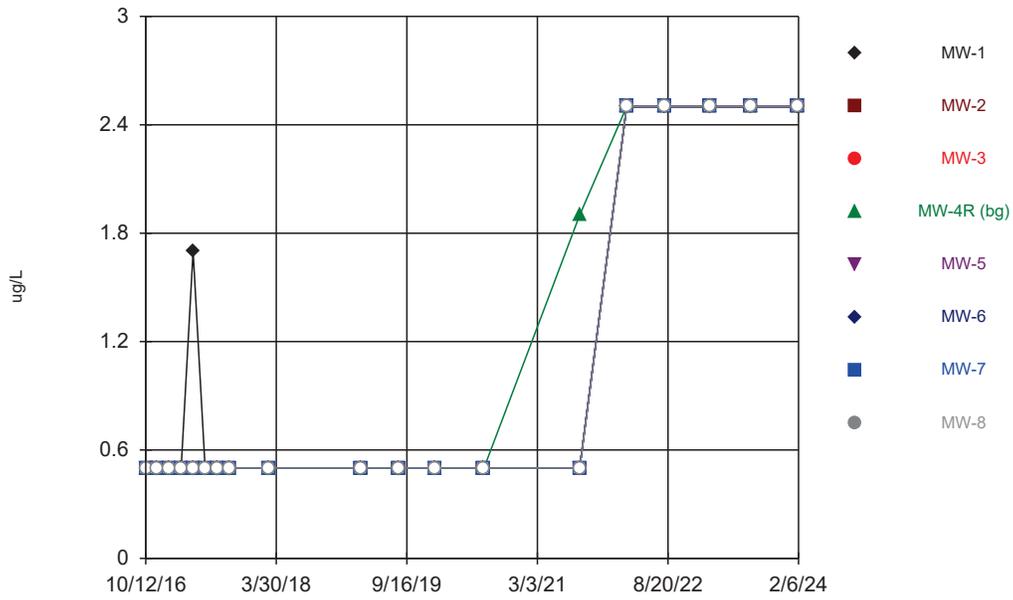
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Time Series



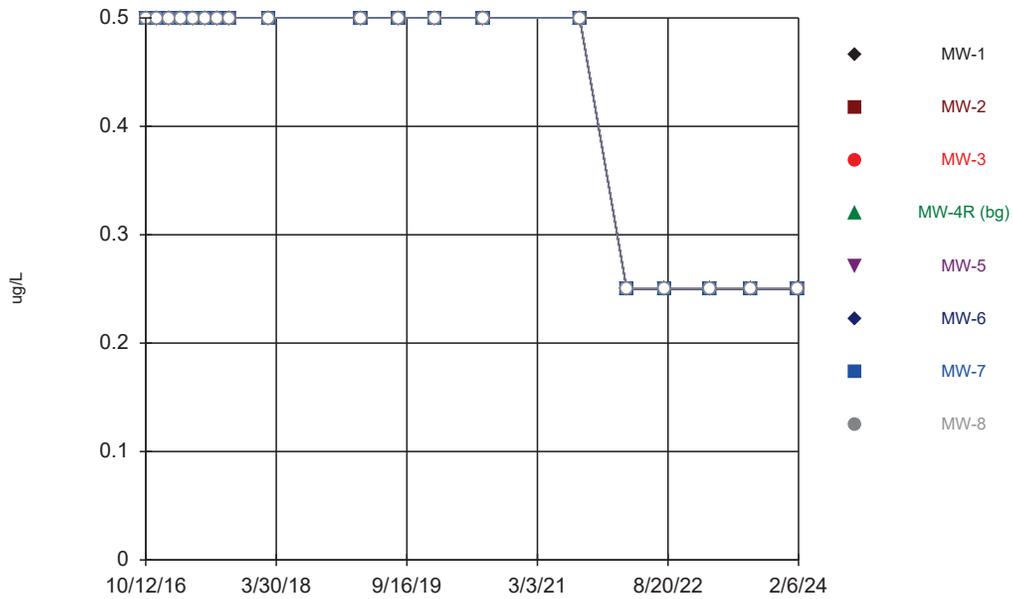
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Time Series



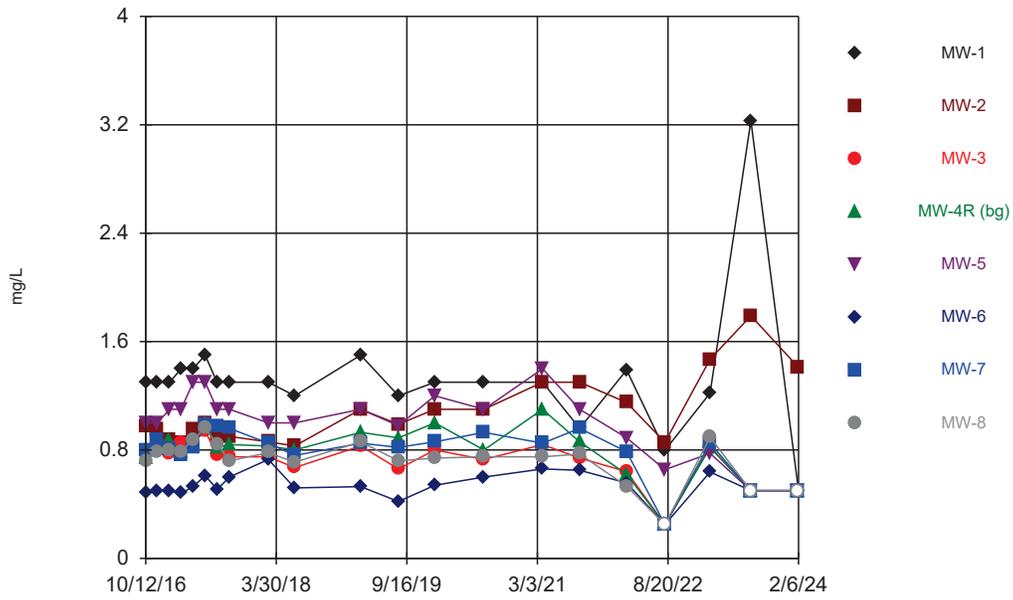
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Time Series



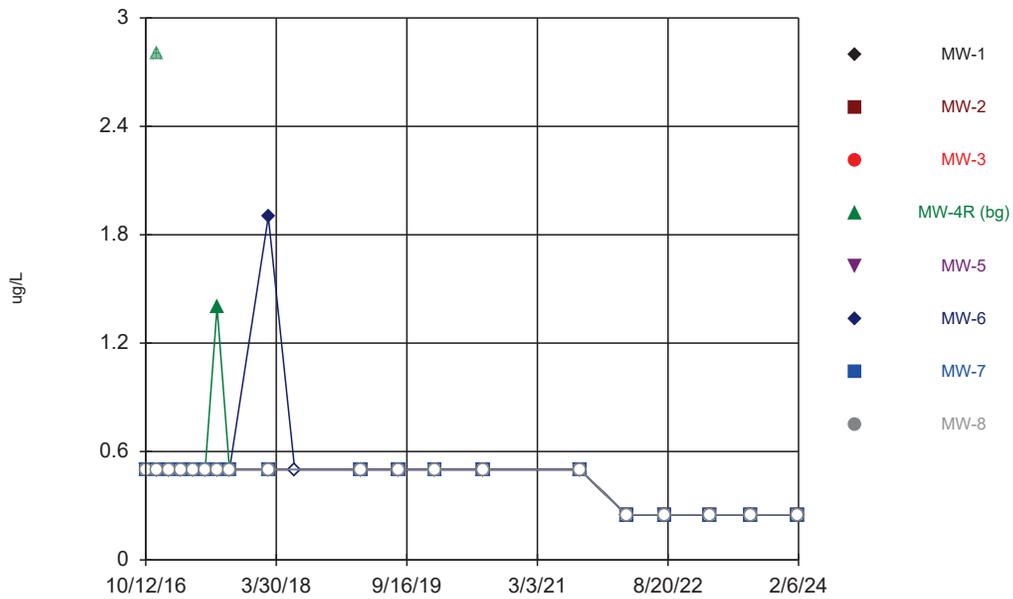
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Time Series



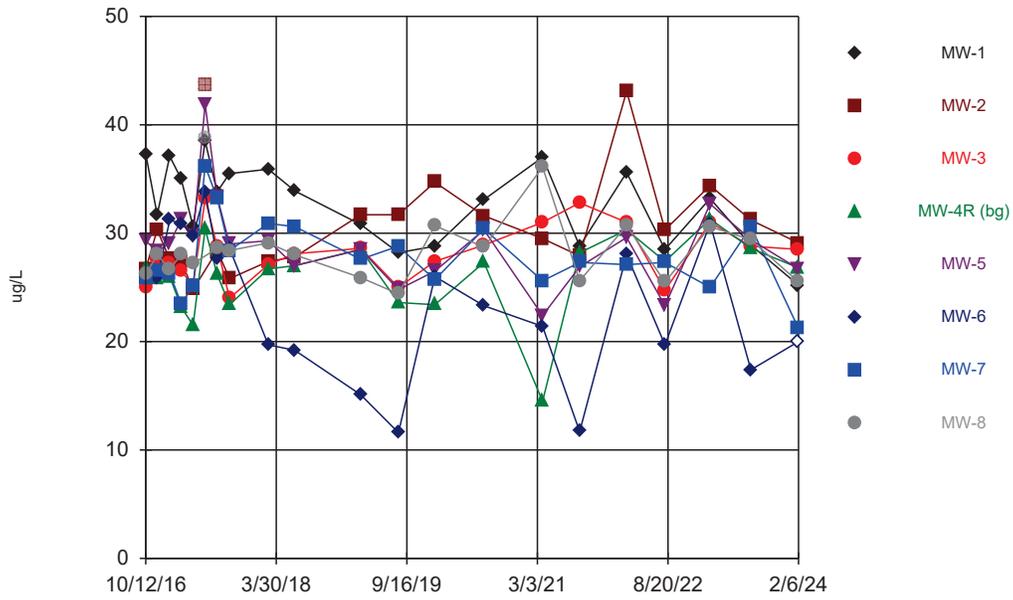
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Time Series



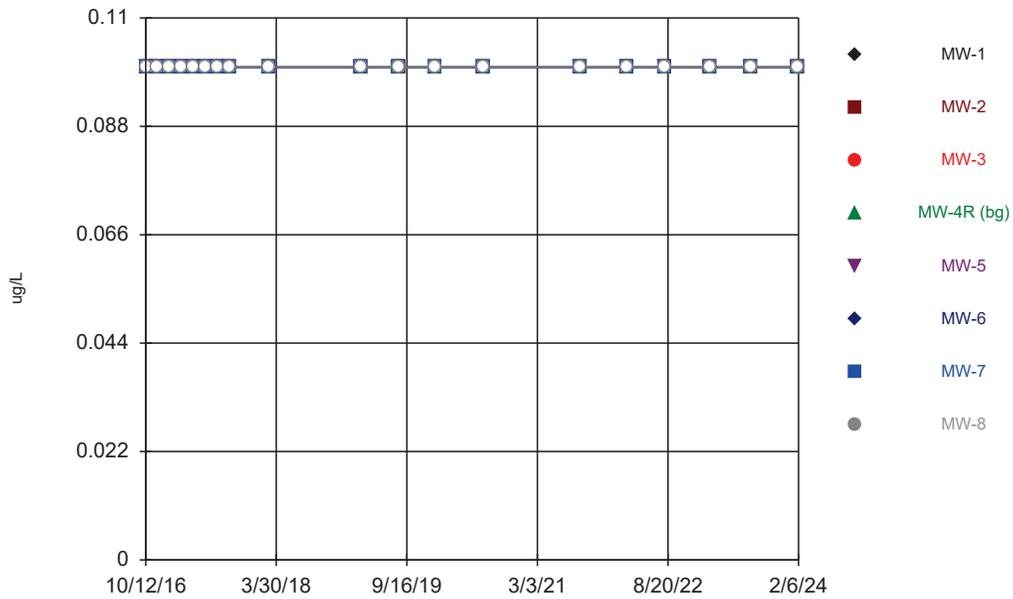
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Time Series



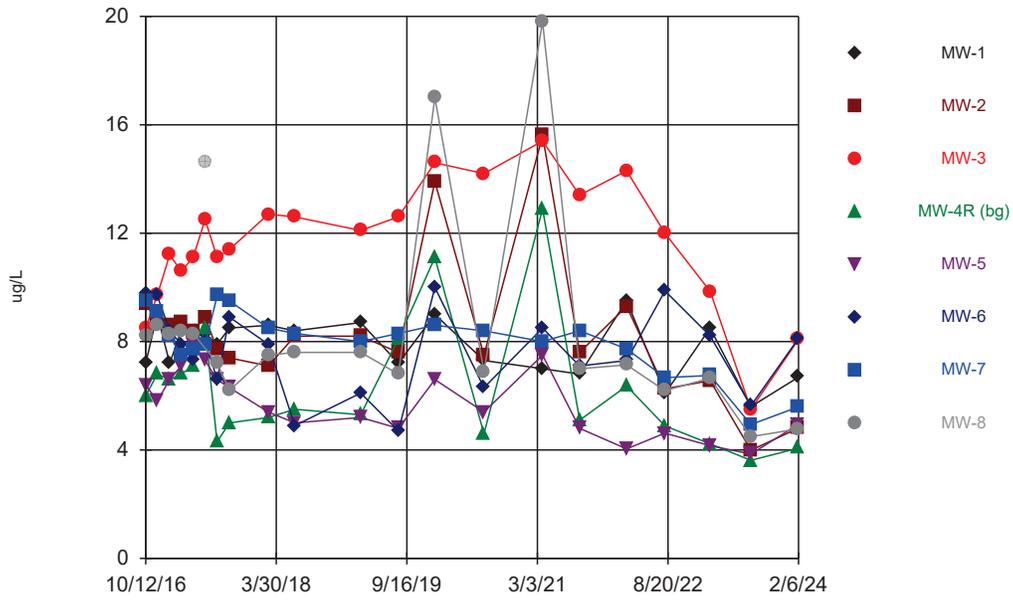
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Time Series



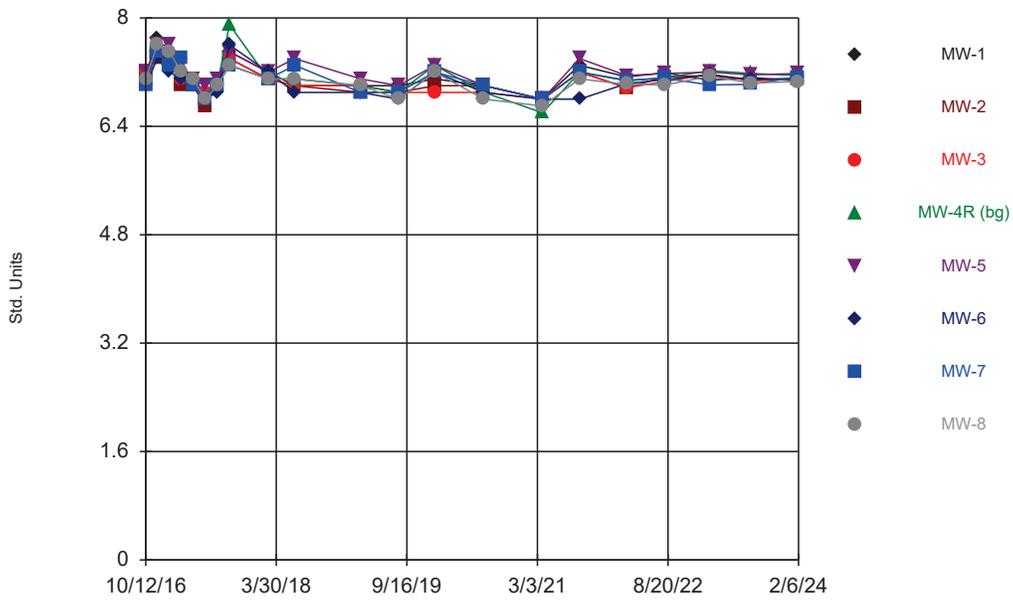
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Time Series



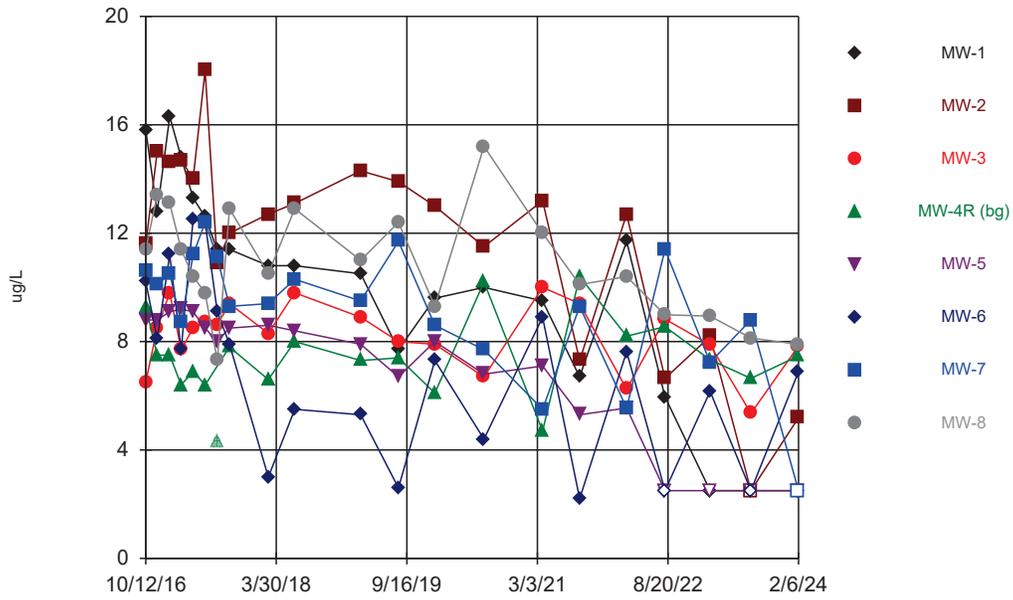
Constituent: Molybdenum Analysis Run 4/3/2024 12:54 PM View: 2024Q1 Time Series
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Time Series



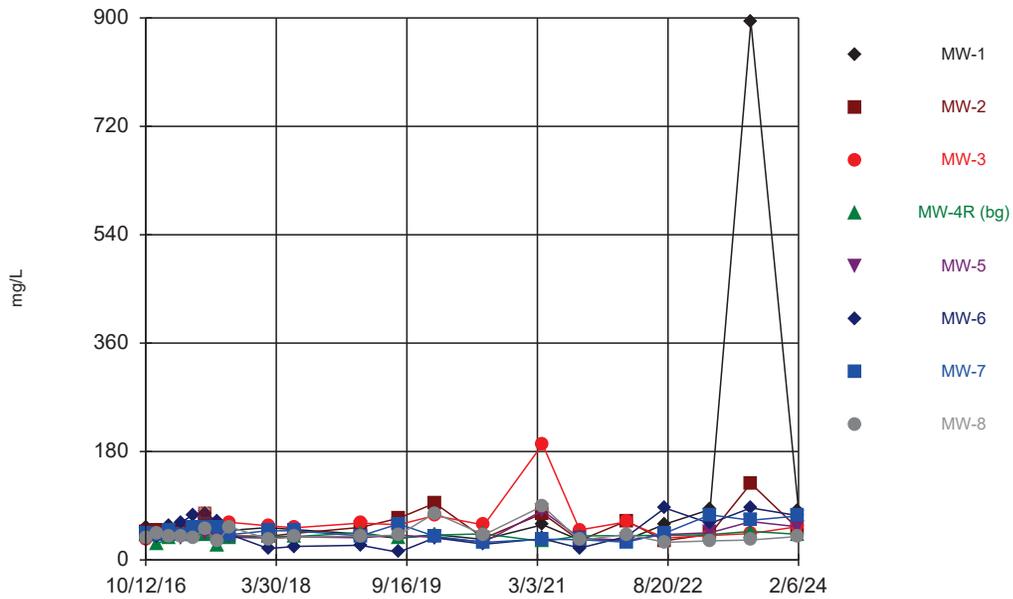
Constituent: pH Analysis Run 4/3/2024 12:54 PM View: 2024Q1 Time Series
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Time Series



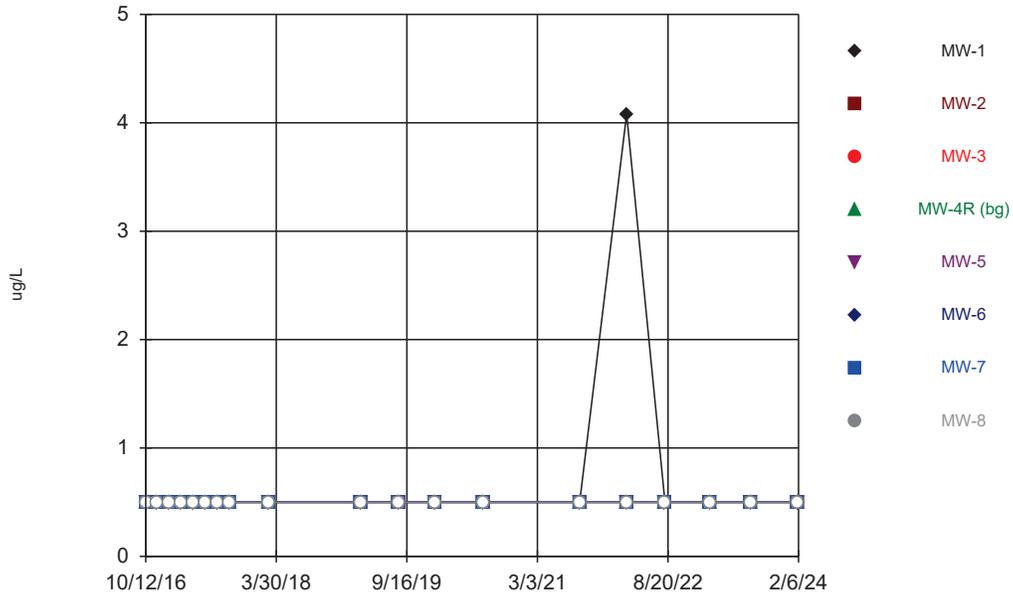
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Time Series



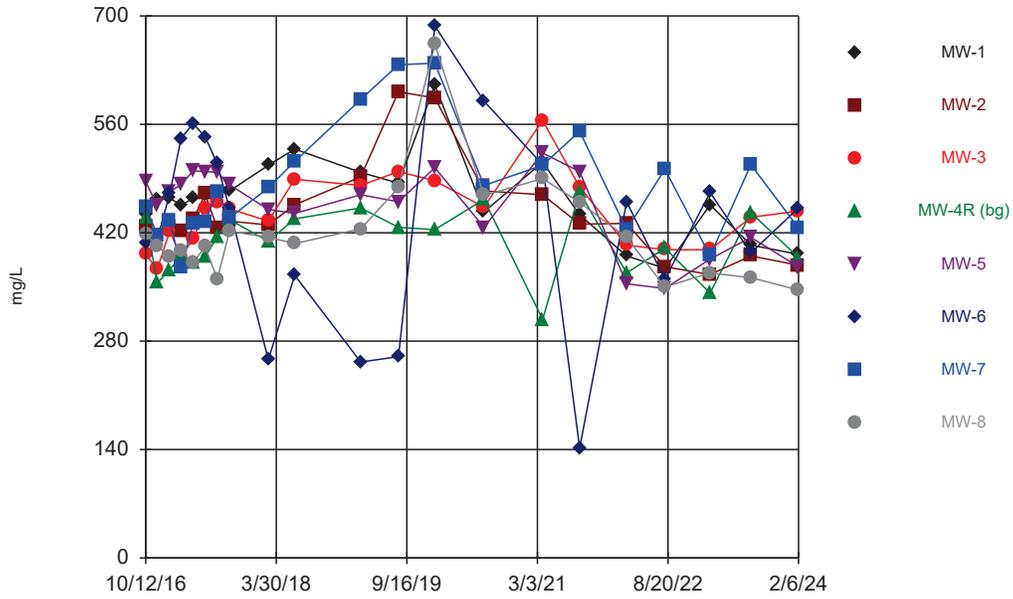
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Time Series



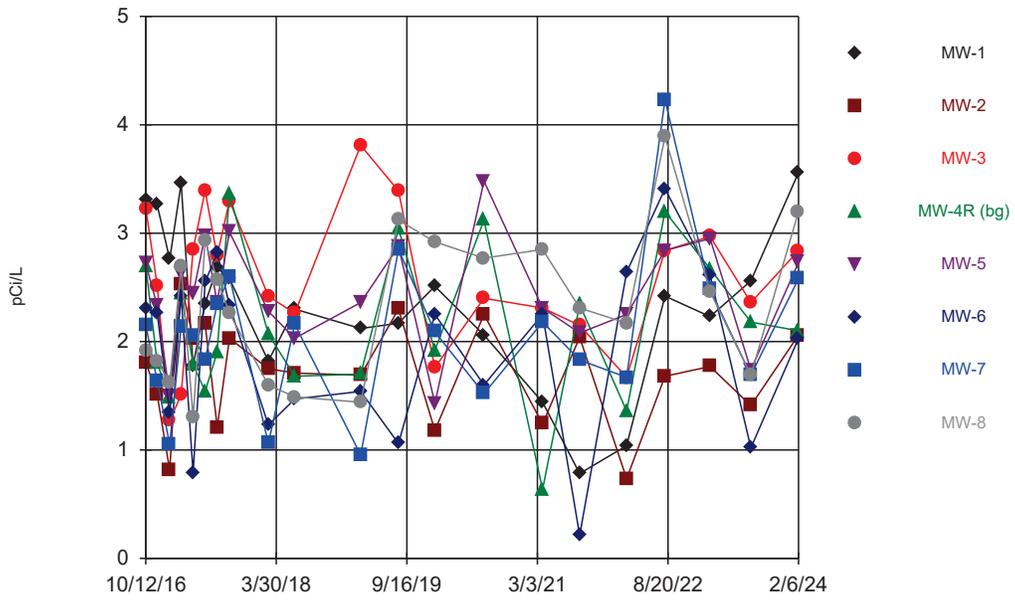
Constituent: Thallium Analysis Run 4/3/2024 12:54 PM View: 2024Q1 Time Series
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Time Series



Constituent: Total Dissolved Solids Analysis Run 4/3/2024 12:54 PM View: 2024Q1 Time Series
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Time Series



Constituent: Total Radium Analysis Run 4/3/2024 12:55 PM View: 2024Q1 Time Series
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

A.2 Intrawell Prediction Limits

Intrawell Prediction Limit

Fremont Dept. of Utilities

Client: SCS Engineers

Data: Fremont Department of Utilities Groundwater

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Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Wells	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Arsenic (ug/L)	MW-1	4.369	n/a	2/6/2024	4.02	No	10	n/a	3.49	0.2767	0	None	No	0.0003583	Param Intra 1 of 2
Arsenic (ug/L)	MW-2	4.96	n/a	2/6/2024	4.24	No	10	n/a	3.77	0.3743	0	None	No	0.0003583	Param Intra 1 of 2
Arsenic (ug/L)	MW-3	3.368	n/a	2/6/2024	3.97	Yes	10	n/a	2.97	0.1252	0	None	No	0.0003583	Param Intra 1 of 2
Arsenic (ug/L)	MW-4R	5.157	n/a	2/6/2024	6.11	Yes	10	n/a	3.93	0.386	0	None	No	0.0003583	Param Intra 1 of 2
Arsenic (ug/L)	MW-5	5.119	n/a	2/6/2024	4.49	No	10	n/a	4.42	0.2201	0	None	No	0.0003583	Param Intra 1 of 2
Arsenic (ug/L)	MW-6	4.478	n/a	2/6/2024	4.83	Yes	10	n/a	2.9	0.4967	0	None	No	0.0003583	Param Intra 1 of 2
Arsenic (ug/L)	MW-7	4.13	n/a	2/6/2024	3.27	No	10	n/a	3.44	0.2171	0	None	No	0.0003583	Param Intra 1 of 2
Arsenic (ug/L)	MW-8	3.068	n/a	2/6/2024	2.87	No	10	n/a	2.57	0.1567	0	None	No	0.0003583	Param Intra 1 of 2
Barium (ug/L)	MW-1	174.9	n/a	2/6/2024	111.2	No	10	n/a	136.2	12.18	0	None	No	0.0003583	Param Intra 1 of 2 Deseas
Barium (ug/L)	MW-2	113.7	n/a	2/6/2024	105	No	10	n/a	98.45	4.784	0	None	No	0.0003583	Param Intra 1 of 2
Barium (ug/L)	MW-3	199.2	n/a	2/6/2024	165	No	10	n/a	168.6	9.64	0	None	No	0.0003583	Param Intra 1 of 2
Barium (ug/L)	MW-4R	145.6	n/a	2/6/2024	101	No	10	n/a	120	8.055	0	None	No	0.0003583	Param Intra 1 of 2
Barium (ug/L)	MW-5	173.2	n/a	2/6/2024	118	No	10	n/a	140.1	10.43	0	None	No	0.0003583	Param Intra 1 of 2
Barium (ug/L)	MW-6	255	n/a	2/6/2024	134	No	10	n/a	138.7	36.6	0	None	No	0.0003583	Param Intra 1 of 2
Barium (ug/L)	MW-7	137.1	n/a	2/6/2024	96	No	10	n/a	114.1	7.249	0	None	No	0.0003583	Param Intra 1 of 2
Barium (ug/L)	MW-8	185.2	n/a	2/6/2024	128	No	10	n/a	147.3	11.93	0	None	No	0.0003583	Param Intra 1 of 2
Boron (ug/L)	MW-1	179.5	n/a	2/6/2024	221	Yes	10	n/a	143.9	11.21	0	None	No	0.0003583	Param Intra 1 of 2
Boron (ug/L)	MW-2	141.7	n/a	2/6/2024	152	Yes	9	n/a	118.6	6.803	0	None	No	0.0003583	Param Intra 1 of 2
Boron (ug/L)	MW-7	232.9	n/a	2/6/2024	113	No	10	n/a	175.1	18.19	0	None	No	0.0003583	Param Intra 1 of 2
Calcium (mg/L)	MW-1	120.2	n/a	2/6/2024	89.8	No	10	n/a	105.9	4.518	0	None	No	0.0003583	Param Intra 1 of 2
Calcium (mg/L)	MW-2	120.3	n/a	2/6/2024	95.6	No	10	n/a	100.6	6.214	0	None	No	0.0003583	Param Intra 1 of 2
Calcium (mg/L)	MW-3	116	n/a	2/6/2024	111	No	10	n/a	92.59	7.372	0	None	No	0.0003583	Param Intra 1 of 2
Calcium (mg/L)	MW-4R	99.14	n/a	2/6/2024	89.6	No	10	n/a	83.88	4.802	0	None	No	0.0003583	Param Intra 1 of 2
Calcium (mg/L)	MW-5	139	n/a	2/6/2024	88.3	No	10	n/a	110.4	8.98	0	None	No	0.0003583	Param Intra 1 of 2
Calcium (mg/L)	MW-6	149.5	n/a	2/6/2024	101	No	10	n/a	79.7	21.97	0	None	No	0.0003583	Param Intra 1 of 2
Calcium (mg/L)	MW-7	120.7	n/a	2/6/2024	73.4	No	10	n/a	97.44	7.317	0	None	No	0.0003583	Param Intra 1 of 2
Calcium (mg/L)	MW-8	104.6	n/a	2/6/2024	86.5	No	10	n/a	87.99	5.239	0	None	No	0.0003583	Param Intra 1 of 2
Chloride (mg/L)	MW-1	15.29	n/a	2/6/2024	33.5	Yes	10	n/a	11.38	1.23	0	None	No	0.0003583	Param Intra 1 of 2
Chloride (mg/L)	MW-2	22.01	n/a	2/6/2024	43.8	Yes	9	n/a	15.49	1.918	0	None	No	0.0003583	Param Intra 1 of 2
Chloride (mg/L)	MW-3	39	n/a	2/6/2024	58.5	Yes	10	n/a	29.52	2.984	0	None	No	0.0003583	Param Intra 1 of 2
Chloride (mg/L)	MW-4R	35.49	n/a	2/6/2024	44.1	Yes	9	n/a	19.34	4.746	0	None	No	0.0003583	Param Intra 1 of 2
Chloride (mg/L)	MW-5	31.51	n/a	2/6/2024	43.7	Yes	10	n/a	16.13	4.84	0	None	No	0.0003583	Param Intra 1 of 2
Chloride (mg/L)	MW-6	104.3	n/a	2/6/2024	55.89	No	9	n/a	50.4	15.85	0	None	No	0.0003583	Param Intra 1 of 2 Deseas
Chloride (mg/L)	MW-7	47.9	n/a	2/6/2024	62.6	Yes	10	n/a	n/a	n/a	0	n/a	n/a	0.01476	NP Intra (normality) 1 of 2
Chloride (mg/L)	MW-8	33.65	n/a	2/6/2024	38.8	Yes	10	n/a	22.73	3.435	0	None	No	0.0003583	Param Intra 1 of 2
Fluoride (mg/L)	MW-2	1.089	n/a	2/6/2024	1.41	Yes	10	n/a	0.91	0.05617	0	None	No	0.0003583	Param Intra 1 of 2
Lithium (ug/L)	MW-1	42.85	n/a	2/6/2024	25.2	No	10	n/a	34.93	2.491	0	None	No	0.0003583	Param Intra 1 of 2
Lithium (ug/L)	MW-2	32.65	n/a	2/6/2024	29.1	No	9	n/a	27.36	1.557	0	None	No	0.0003583	Param Intra 1 of 2
Lithium (ug/L)	MW-3	35.41	n/a	2/6/2024	28.5	No	10	n/a	27.27	2.562	0	None	No	0.0003583	Param Intra 1 of 2
Lithium (ug/L)	MW-4R	33.59	n/a	2/6/2024	26.8	No	10	n/a	25.7	2.484	0	None	No	0.0003583	Param Intra 1 of 2
Lithium (ug/L)	MW-5	41.9	n/a	2/6/2024	26.7	No	10	n/a	n/a	n/a	0	n/a	n/a	0.01476	NP Intra (normality) 1 of 2
Lithium (ug/L)	MW-7	37.72	n/a	2/6/2024	23.23	No	10	n/a	28.55	2.888	0	None	No	0.0003583	Param Intra 1 of 2 Deseas
Lithium (ug/L)	MW-8	30.97	n/a	2/6/2024	25.5	No	9	n/a	27.8	0.9314	0	None	No	0.0003583	Param Intra 1 of 2
Molybdenum (ug/L)	MW-1	10.04	n/a	2/6/2024	6.69	No	10	n/a	8.18	0.5846	0	None	No	0.0003583	Param Intra 1 of 2
Molybdenum (ug/L)	MW-2	10.58	n/a	2/6/2024	4.81	No	10	n/a	8.31	0.7156	0	None	No	0.0003583	Param Intra 1 of 2
Molybdenum (ug/L)	MW-3	15.35	n/a	2/6/2024	8.08	No	10	n/a	11.14	1.326	0	None	No	0.0003583	Param Intra 1 of 2
Molybdenum (ug/L)	MW-4R	10.08	n/a	2/6/2024	4.07	No	10	n/a	6.18	1.227	0	None	No	0.0003583	Param Intra 1 of 2
Molybdenum (ug/L)	MW-5	9.231	n/a	2/6/2024	4.95	No	10	n/a	6.44	0.8784	0	None	No	0.0003583	Param Intra 1 of 2
Molybdenum (ug/L)	MW-6	12.57	n/a	2/6/2024	8.12	No	10	n/a	7.94	1.458	0	None	No	0.0003583	Param Intra 1 of 2
Molybdenum (ug/L)	MW-7	11.15	n/a	2/6/2024	5.59	No	10	n/a	8.59	0.8062	0	None	No	0.0003583	Param Intra 1 of 2

Intrawell Prediction Limit

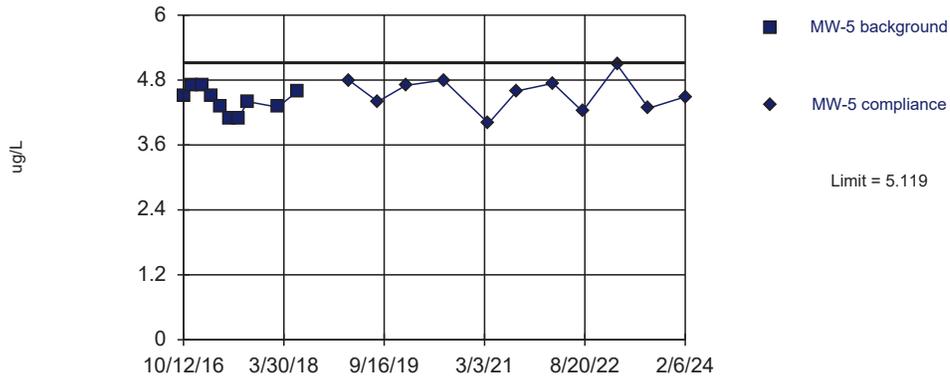
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater Printed 4/3/2024, 1:39 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Wells	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Molybdenum (ug/L)	MW-8	10.42	n/a	2/6/2024	4.78	No	9	n/a	7.811	0.7672	0	None	No	0.0003583	Param Intra 1 of 2
pH (Std. Units)	MW-1	8.025	6.335	2/6/2024	7.07	No	10	n/a	7.18	0.2658	0	None	No	0.0001792	Param Intra 1 of 2
pH (Std. Units)	MW-2	7.851	6.389	2/6/2024	7.09	No	10	n/a	7.12	0.23	0	None	No	0.0001792	Param Intra 1 of 2
pH (Std. Units)	MW-3	7.863	6.497	2/6/2024	7.11	No	10	n/a	7.18	0.215	0	None	No	0.0001792	Param Intra 1 of 2
pH (Std. Units)	MW-4R	7.933	6.505	2/6/2024	7.248	No	10	n/a	7.219	0.2247	0	None	No	0.0001792	Param Intra 1 of 2 Deseas
pH (Std. Units)	MW-5	7.986	6.614	2/6/2024	7.18	No	10	n/a	7.3	0.216	0	None	No	0.0001792	Param Intra 1 of 2
pH (Std. Units)	MW-6	7.895	6.325	2/6/2024	7.11	No	10	n/a	7.11	0.247	0	None	No	0.0001792	Param Intra 1 of 2
pH (Std. Units)	MW-7	7.873	6.467	2/6/2024	7.13	No	10	n/a	7.17	0.2214	0	None	No	0.0001792	Param Intra 1 of 2
pH (Std. Units)	MW-8	7.926	6.434	2/6/2024	7.06	No	10	n/a	7.18	0.2348	0	None	No	0.0001792	Param Intra 1 of 2
Selenium (ug/L)	MW-2	20.24	n/a	2/6/2024	5.19	No	10	n/a	13.66	2.07	0	None	No	0.0003583	Param Intra 1 of 2
Selenium (ug/L)	MW-3	11.73	n/a	2/6/2024	7.84	No	10	n/a	8.58	0.992	0	None	No	0.0003583	Param Intra 1 of 2
Selenium (ug/L)	MW-4R	10.57	n/a	2/6/2024	7.47	No	9	n/a	7.378	0.9378	0	None	No	0.0003583	Param Intra 1 of 2
Selenium (ug/L)	MW-6	18.32	n/a	2/6/2024	6.89	No	10	n/a	8.76	3.009	0	None	No	0.0003583	Param Intra 1 of 2
Selenium (ug/L)	MW-8	17.35	n/a	2/6/2024	7.9	No	10	n/a	11.31	1.9	0	None	No	0.0003583	Param Intra 1 of 2
Sulfate (mg/L)	MW-1	61.16	n/a	2/6/2024	82.7	Yes	10	n/a	51.63	2.999	0	None	No	0.0003583	Param Intra 1 of 2
Sulfate (mg/L)	MW-2	59.03	n/a	2/6/2024	51.1	No	9	n/a	45.01	4.122	0	None	No	0.0003583	Param Intra 1 of 2
Sulfate (mg/L)	MW-3	85.79	n/a	2/6/2024	55.4	No	10	n/a	51.88	10.67	0	None	No	0.0003583	Param Intra 1 of 2
Sulfate (mg/L)	MW-4R	59.48	n/a	2/6/2024	42.6	No	10	n/a	37.53	6.906	0	None	No	0.0003583	Param Intra 1 of 2
Sulfate (mg/L)	MW-5	48.2	n/a	2/6/2024	54.9	Yes	10	n/a	39.12	2.859	0	None	No	0.0003583	Param Intra 1 of 2
Sulfate (mg/L)	MW-6	114.6	n/a	2/6/2024	73.4	No	10	n/a	48.84	20.69	0	None	No	0.0003583	Param Intra 1 of 2
Sulfate (mg/L)	MW-7	66.3	n/a	2/6/2024	73.1	Yes	10	n/a	48.14	5.715	0	None	No	0.0003583	Param Intra 1 of 2
Sulfate (mg/L)	MW-8	64.43	n/a	2/6/2024	39	No	10	n/a	40.48	7.538	0	None	No	0.0003583	Param Intra 1 of 2
Total Dissolved Solids (mg/L)	MW-1	553.1	n/a	2/6/2024	392	No	10	n/a	474	24.9	0	None	No	0.0003583	Param Intra 1 of 2
Total Dissolved Solids (mg/L)	MW-2	486.6	n/a	2/6/2024	378	No	10	n/a	434.9	16.26	0	None	No	0.0003583	Param Intra 1 of 2
Total Dissolved Solids (mg/L)	MW-3	543.4	n/a	2/6/2024	448	No	10	n/a	427.4	36.49	0	None	No	0.0003583	Param Intra 1 of 2
Total Dissolved Solids (mg/L)	MW-4R	466.6	n/a	2/6/2024	413.6	No	10	n/a	401.4	20.51	0	None	No	0.0003583	Param Intra 1 of 2 Deseas
Total Dissolved Solids (mg/L)	MW-5	542.6	n/a	2/6/2024	376	No	10	n/a	477	20.65	0	None	No	0.0003583	Param Intra 1 of 2
Total Dissolved Solids (mg/L)	MW-6	754.3	n/a	2/6/2024	452	No	10	n/a	451.7	95.24	0	None	No	0.0003583	Param Intra 1 of 2
Total Dissolved Solids (mg/L)	MW-7	563	n/a	2/6/2024	426	No	10	n/a	445	37.14	0	None	No	0.0003583	Param Intra 1 of 2
Total Dissolved Solids (mg/L)	MW-8	458.5	n/a	2/6/2024	346	No	10	n/a	399.1	18.69	0	None	No	0.0003583	Param Intra 1 of 2
Total Radium (pCi/L)	MW-1	4.506	n/a	2/6/2024	3.56	No	10	n/a	2.63	0.5903	0	None	No	0.0003583	Param Intra 1 of 2
Total Radium (pCi/L)	MW-2	3.313	n/a	2/6/2024	2.06	No	10	n/a	1.755	0.4903	0	None	No	0.0003583	Param Intra 1 of 2
Total Radium (pCi/L)	MW-3	4.85	n/a	2/6/2024	2.84	No	10	n/a	2.554	0.7226	0	None	No	0.0003583	Param Intra 1 of 2
Total Radium (pCi/L)	MW-4R	3.266	n/a	2/6/2024	2.398	No	10	n/a	2.109	0.3643	0	None	No	0.0003583	Param Intra 1 of 2 Deseas
Total Radium (pCi/L)	MW-5	3.859	n/a	2/6/2024	2.73	No	10	n/a	2.428	0.4504	0	None	No	0.0003583	Param Intra 1 of 2
Total Radium (pCi/L)	MW-6	4.117	n/a	2/6/2024	2.03	No	10	n/a	1.952	0.6812	0	None	No	0.0003583	Param Intra 1 of 2
Total Radium (pCi/L)	MW-7	3.547	n/a	2/6/2024	2.58	No	10	n/a	1.904	0.5171	0	None	No	0.0003583	Param Intra 1 of 2
Total Radium (pCi/L)	MW-8	3.799	n/a	2/6/2024	3.2	No	10	n/a	2.019	0.5602	0	None	No	0.0003583	Param Intra 1 of 2

Within Limit

Prediction Limit

Intrawell Parametric



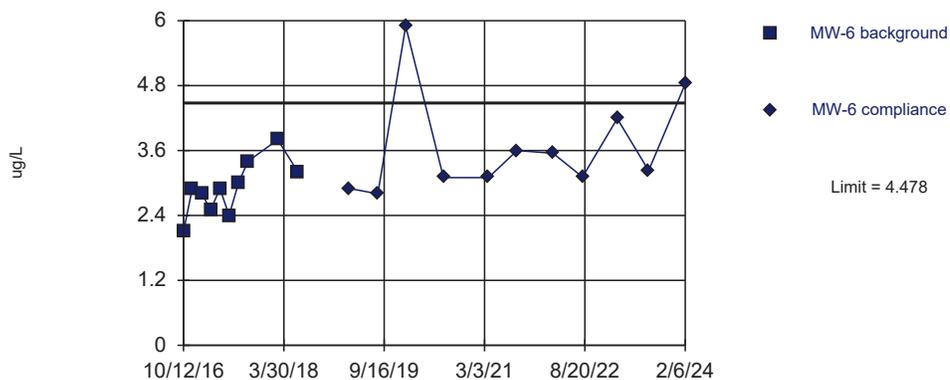
Background Data Summary: Mean=4.42, Std. Dev.=0.2201, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9234, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Arsenic Analysis Run 4/3/2024 1:36 PM View: 2024Q1 Intrawell PL
 Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Exceeds Limit

Prediction Limit

Intrawell Parametric

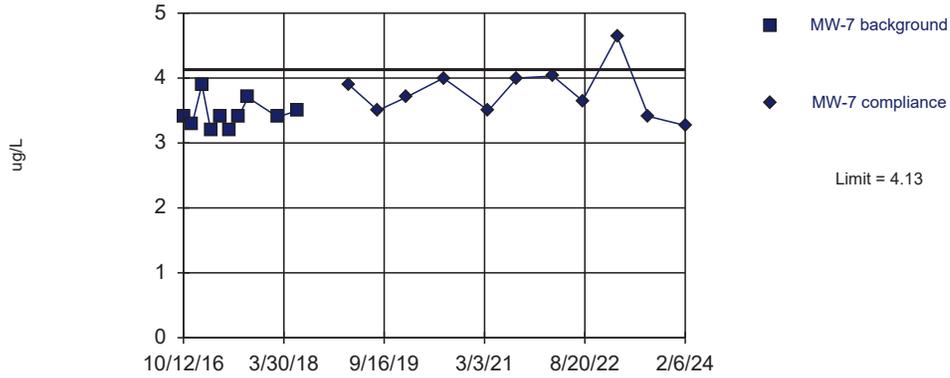


Background Data Summary: Mean=2.9, Std. Dev.=0.4967, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9854, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Arsenic Analysis Run 4/3/2024 1:36 PM View: 2024Q1 Intrawell PL
 Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit
Intrawell Parametric

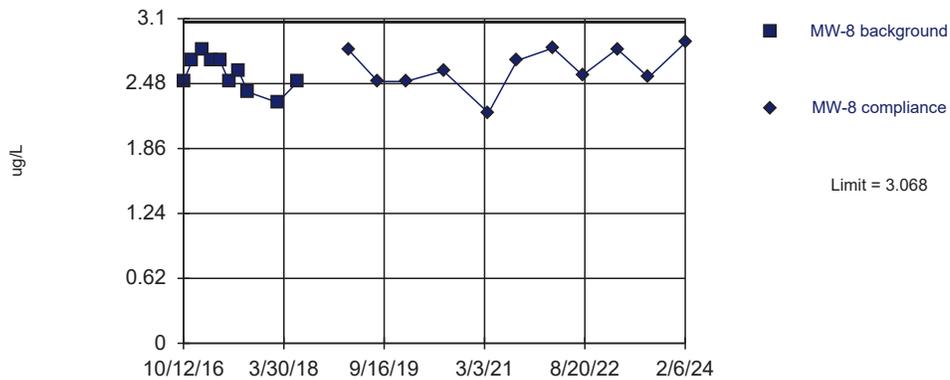


Background Data Summary: Mean=3.44, Std. Dev.=0.2171, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.875, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Arsenic Analysis Run 4/3/2024 1:36 PM View: 2024Q1 Intrawell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit
Intrawell Parametric



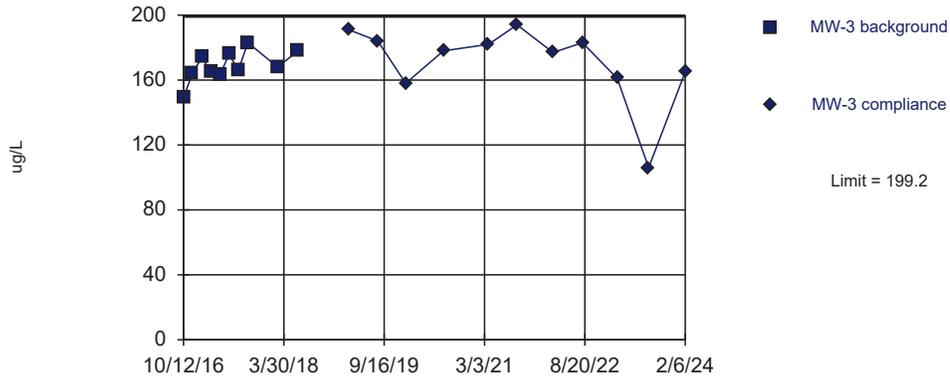
Background Data Summary: Mean=2.57, Std. Dev.=0.1567, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9449, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Arsenic Analysis Run 4/3/2024 1:36 PM View: 2024Q1 Intrawell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit

Intrawell Parametric



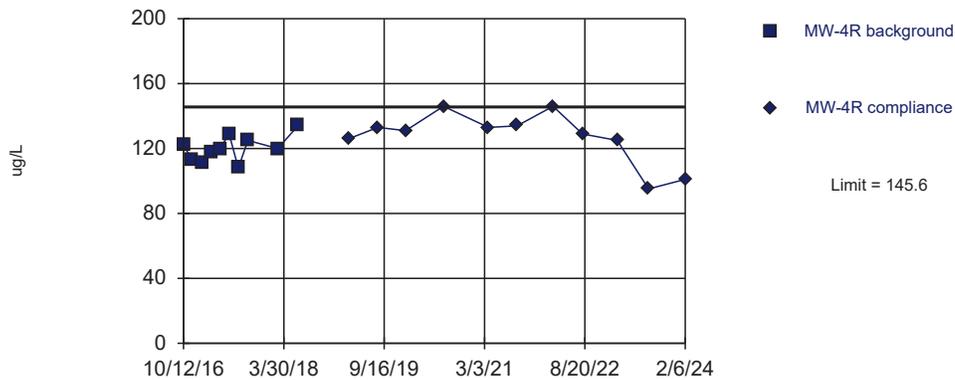
Background Data Summary: Mean=168.6, Std. Dev.=9.64, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9508, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Barium Analysis Run 4/3/2024 1:36 PM View: 2024Q1 Intrawell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit

Intrawell Parametric



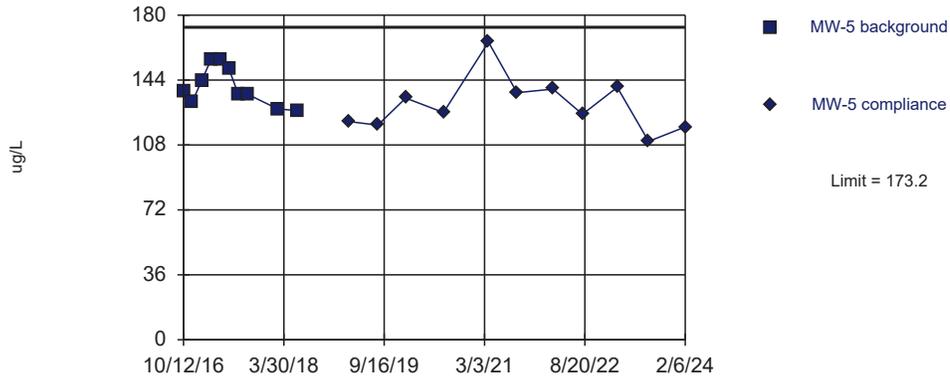
Background Data Summary: Mean=120, Std. Dev.=8.055, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9784, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Barium Analysis Run 4/3/2024 1:36 PM View: 2024Q1 Intrawell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit

Intrawell Parametric



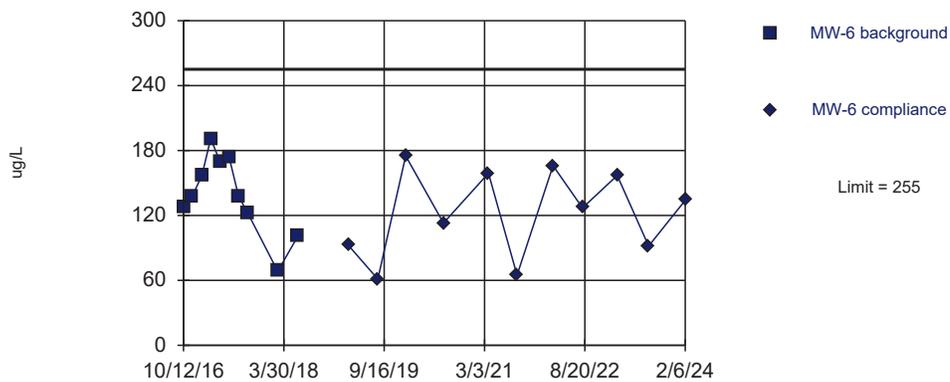
Background Data Summary: Mean=140.1, Std. Dev.=10.43, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9113, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Barium Analysis Run 4/3/2024 1:36 PM View: 2024Q1 Intrawell PL
 Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=138.7, Std. Dev.=36.6, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9715, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Barium Analysis Run 4/3/2024 1:36 PM View: 2024Q1 Intrawell PL
 Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit

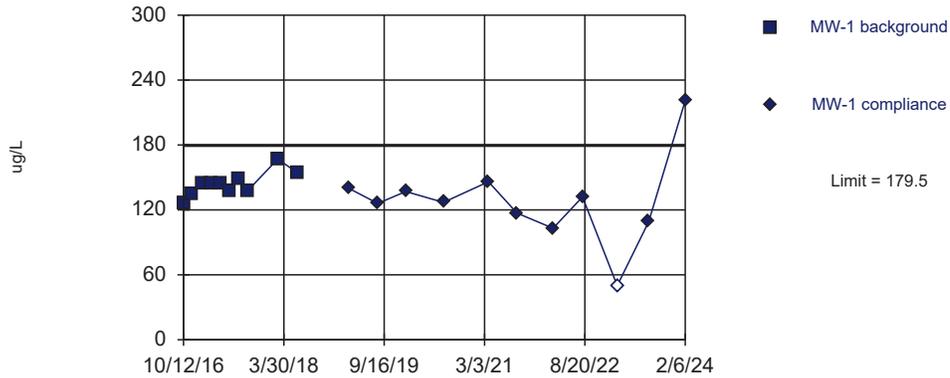
Intrawell Parametric



Exceeds Limit

Prediction Limit

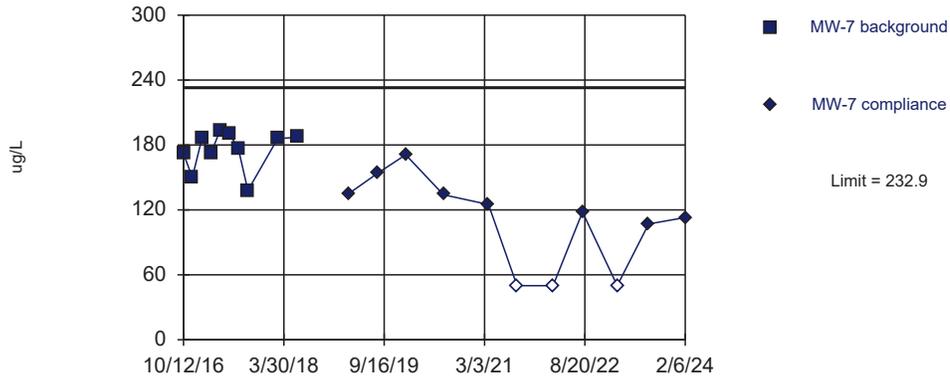
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Within Limit

Prediction Limit

Intrawell Parametric



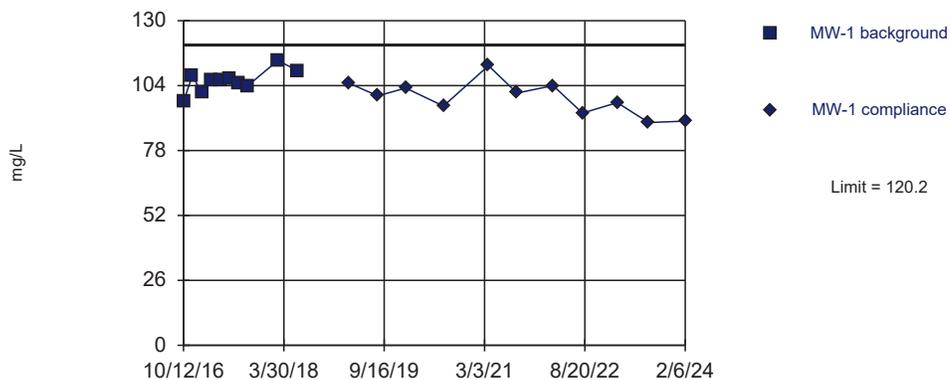
Background Data Summary: Mean=175.1, Std. Dev.=18.19, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8521, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Boron Analysis Run 4/3/2024 1:36 PM View: 2024Q1 Intrawell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

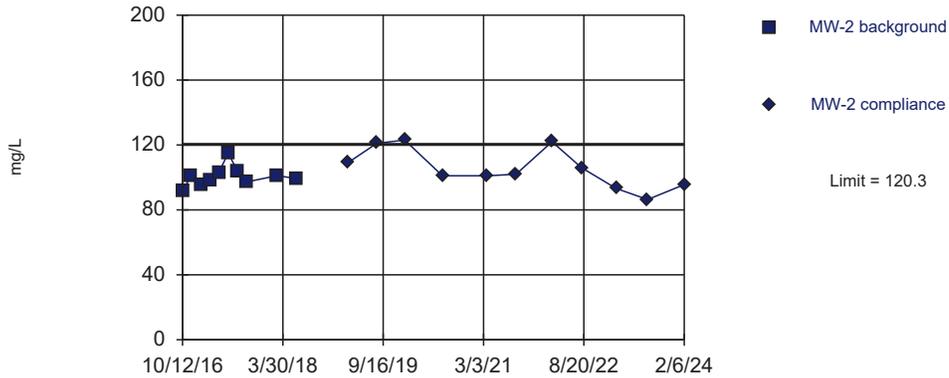
Prediction Limit

Intrawell Parametric



Within Limit

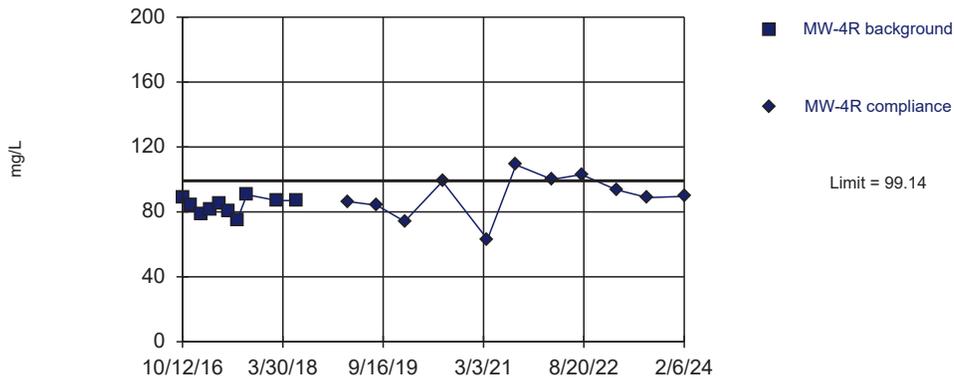
Prediction Limit Intrawell Parametric



Within Limit

Prediction Limit

Intrawell Parametric



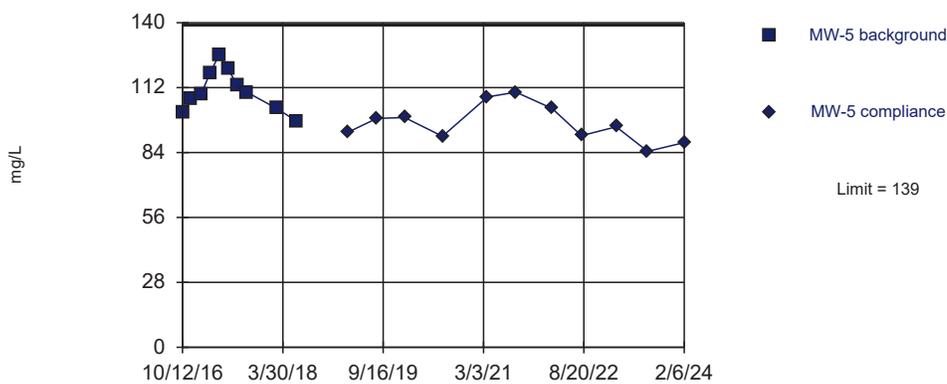
Background Data Summary: Mean=83.88, Std. Dev.=4.802, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9683, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Calcium Analysis Run 4/3/2024 1:36 PM View: 2024Q1 Intrawell PL
 Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit

Intrawell Parametric

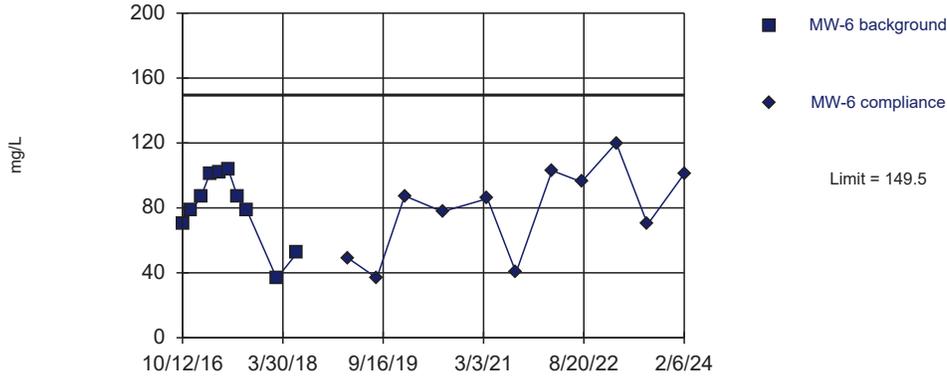


Background Data Summary: Mean=110.4, Std. Dev.=8.98, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9787, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Calcium Analysis Run 4/3/2024 1:36 PM View: 2024Q1 Intrawell PL
 Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

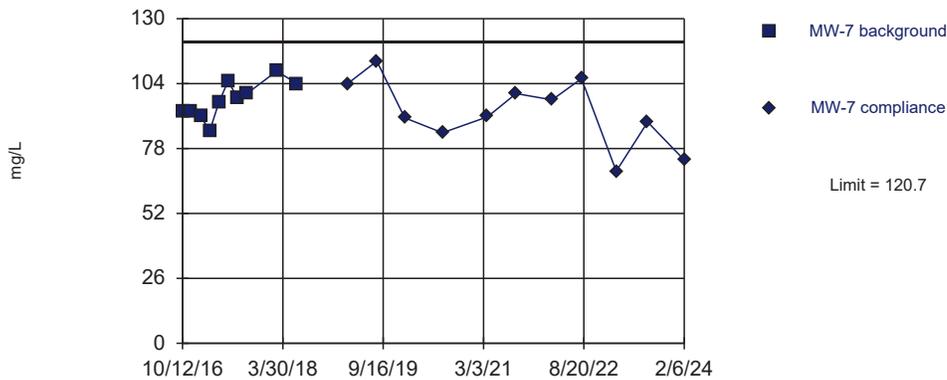


Background Data Summary: Mean=79.7, Std. Dev.=21.97, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9128, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Calcium Analysis Run 4/3/2024 1:36 PM View: 2024Q1 Intrawell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

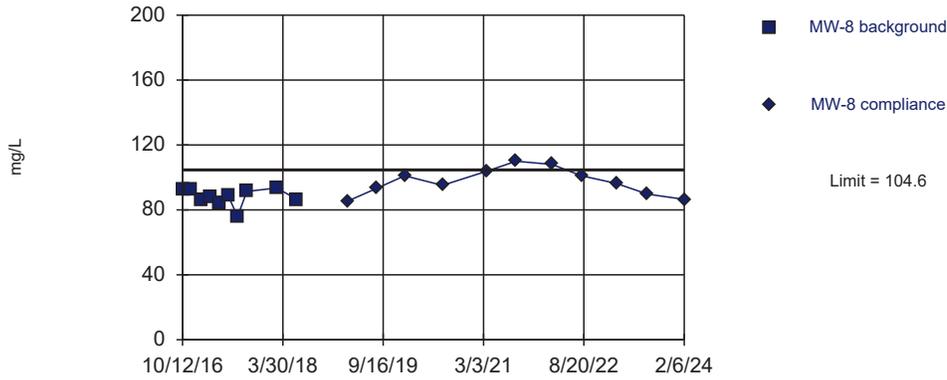


Background Data Summary: Mean=97.44, Std. Dev.=7.317, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9838, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Calcium Analysis Run 4/3/2024 1:36 PM View: 2024Q1 Intrawell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

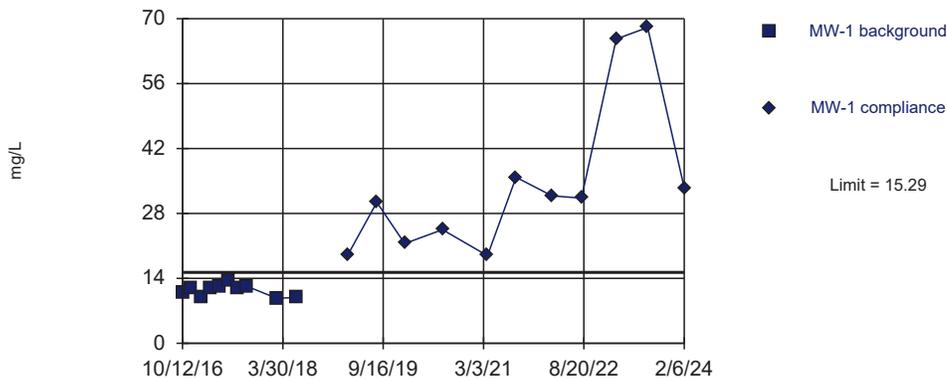


Background Data Summary: Mean=87.99, Std. Dev.=5.239, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8801, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Calcium Analysis Run 4/3/2024 1:36 PM View: 2024Q1 Intrawell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Exceeds Limit

Prediction Limit Intrawell Parametric



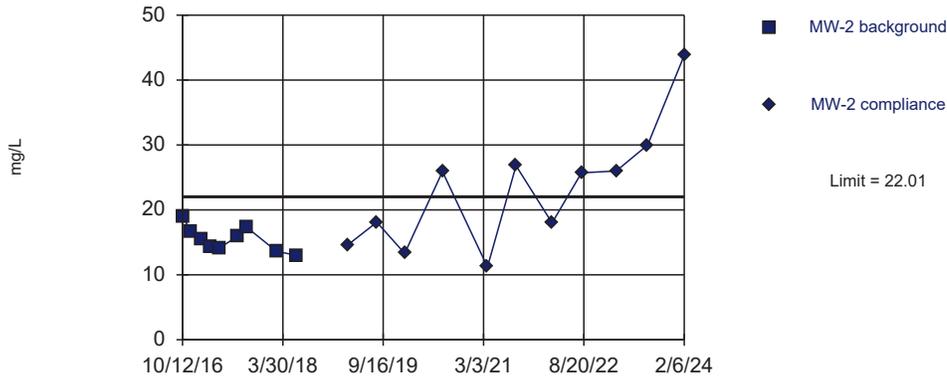
Background Data Summary: Mean=11.38, Std. Dev.=1.23, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9094, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Chloride Analysis Run 4/3/2024 1:36 PM View: 2024Q1 Intrawell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Exceeds Limit

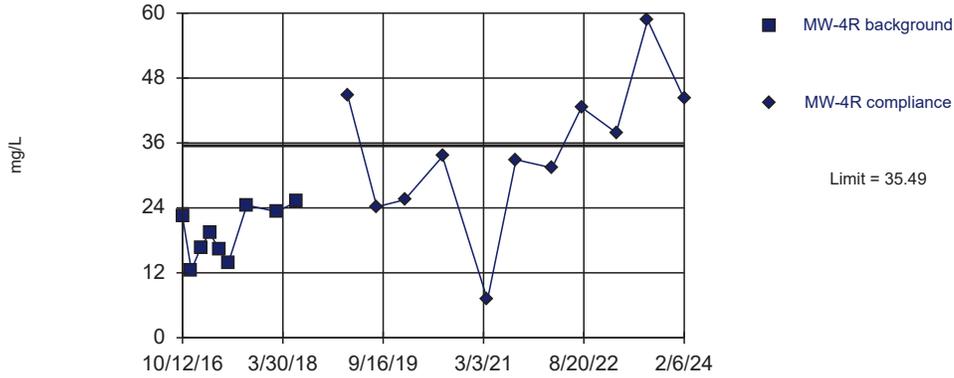
Prediction Limit

Intrawell Parametric



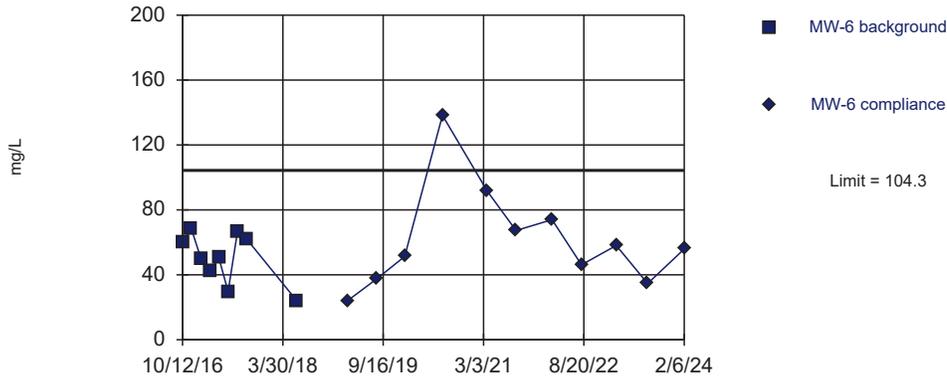
Exceeds Limit

Prediction Limit Intrawell Parametric



Within Limit

Prediction Limit
Intrawell Parametric

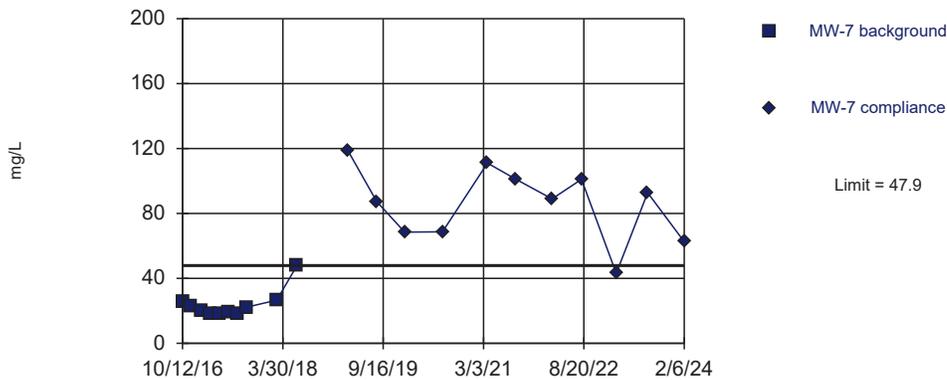


Background Data Summary: Mean=50.4, Std. Dev.=15.85, n=9. Seasonality was detected with 95% confidence and data were deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9186, critical = 0.764. Kappa = 3.401 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Chloride Analysis Run 4/3/2024 1:36 PM View: 2024Q1 Intrawell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Exceeds Limit

Prediction Limit
Intrawell Non-parametric

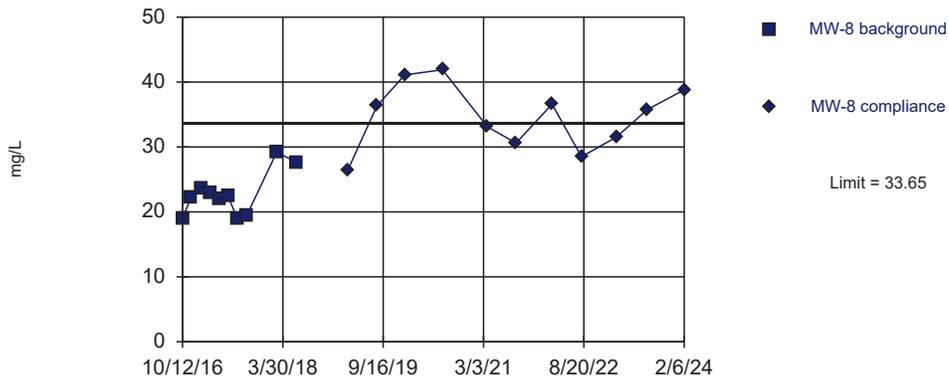


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 10 background values. Well-constituent pair annual alpha = 0.0293. Individual comparison alpha = 0.01476 (1 of 2). Seasonality was not detected with 95% confidence.

Constituent: Chloride Analysis Run 4/3/2024 1:36 PM View: 2024Q1 Intrawell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Exceeds Limit

Prediction Limit Intrawell Parametric

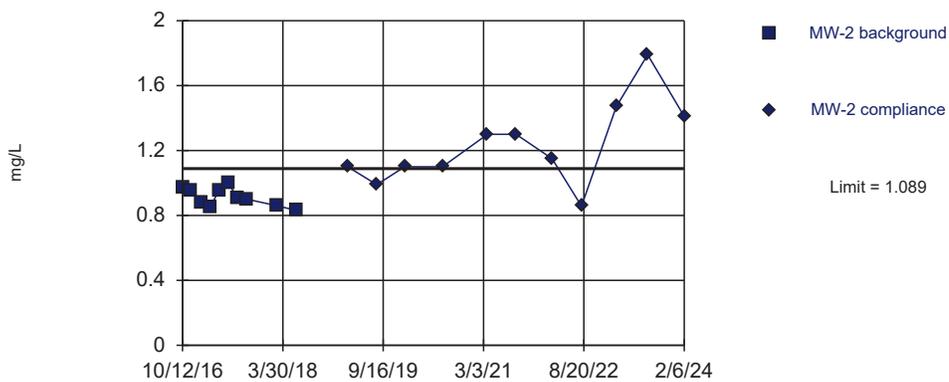


Background Data Summary: Mean=22.73, Std. Dev.=3.435, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.89, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Chloride Analysis Run 4/3/2024 1:36 PM View: 2024Q1 Intrawell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Exceeds Limit

Prediction Limit Intrawell Parametric



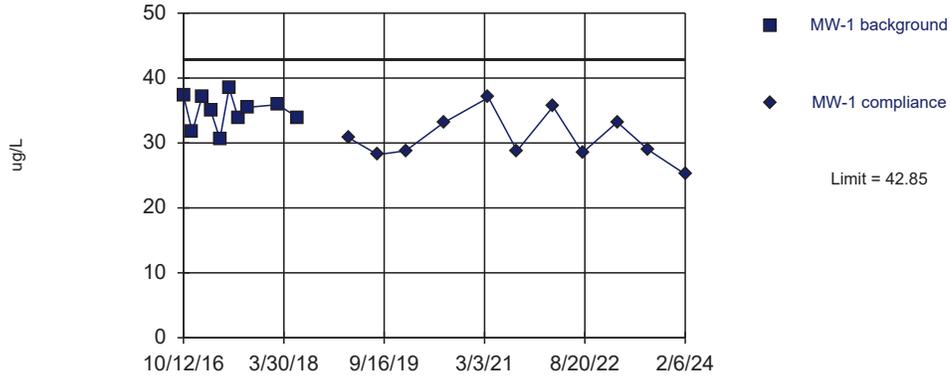
Background Data Summary: Mean=0.91, Std. Dev.=0.05617, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.962, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Fluoride Analysis Run 4/3/2024 1:36 PM View: 2024Q1 Intrawell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit

Intrawell Parametric



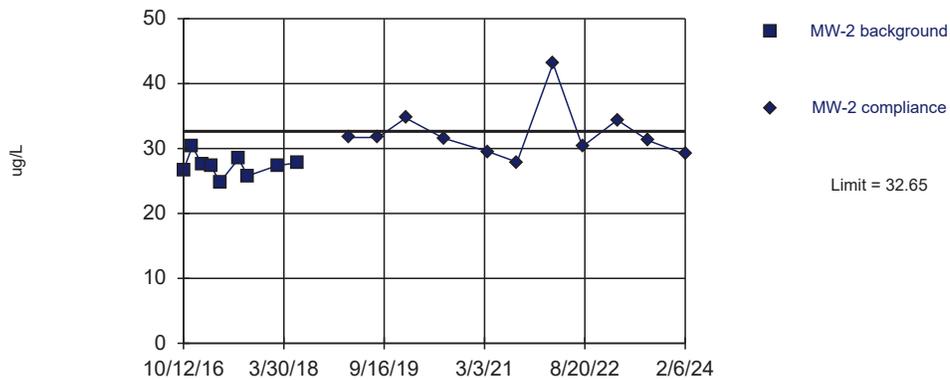
Background Data Summary: Mean=34.93, Std. Dev.=2.491, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9666, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Lithium Analysis Run 4/3/2024 1:36 PM View: 2024Q1 Intrawell PL
 Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit

Intrawell Parametric



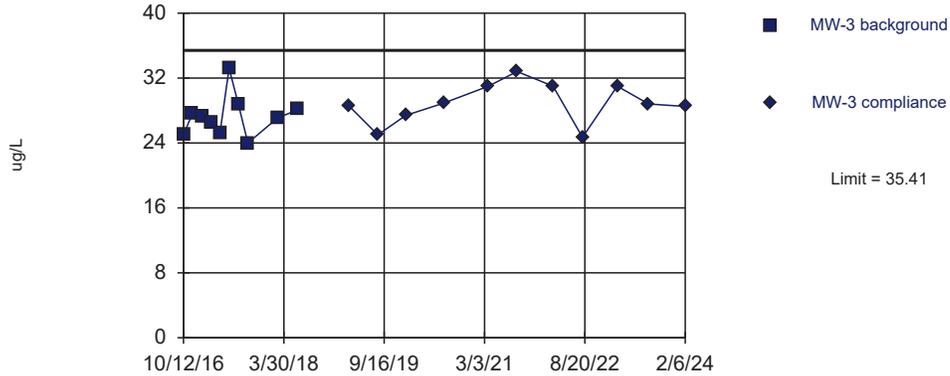
Background Data Summary: Mean=27.36, Std. Dev.=1.557, n=9. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.961, critical = 0.764. Kappa = 3.401 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Lithium Analysis Run 4/3/2024 1:36 PM View: 2024Q1 Intrawell PL
 Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit

Intrawell Parametric



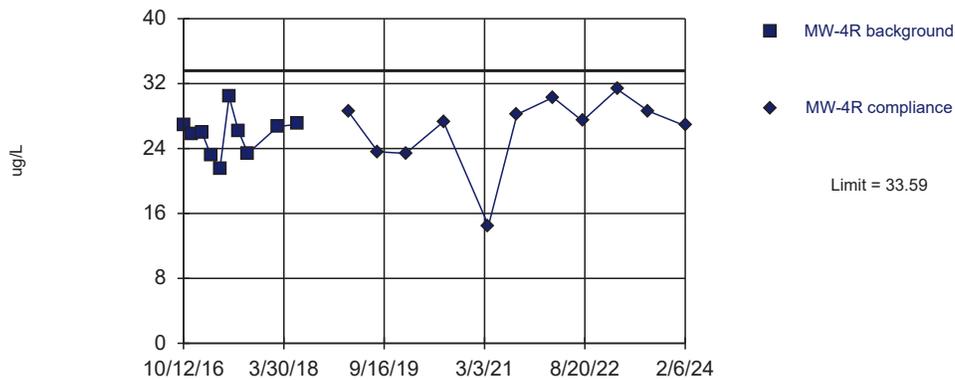
Background Data Summary: Mean=27.27, Std. Dev.=2.562, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8998, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Lithium Analysis Run 4/3/2024 1:36 PM View: 2024Q1 Intrawell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit

Intrawell Parametric

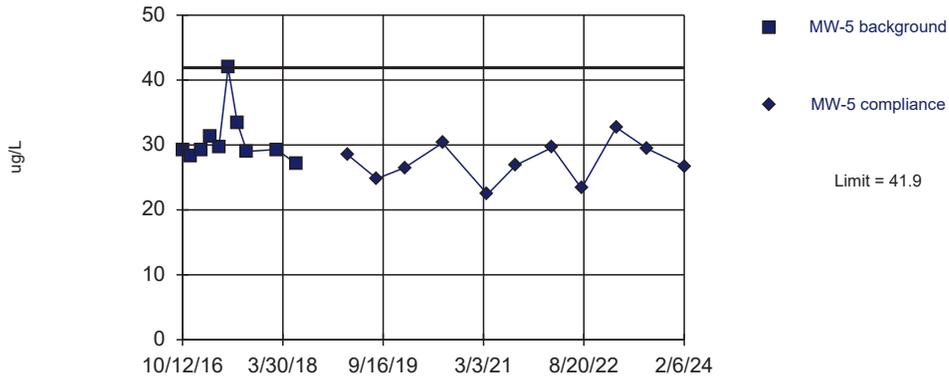


Background Data Summary: Mean=25.7, Std. Dev.=2.484, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9349, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Lithium Analysis Run 4/3/2024 1:36 PM View: 2024Q1 Intrawell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Non-parametric

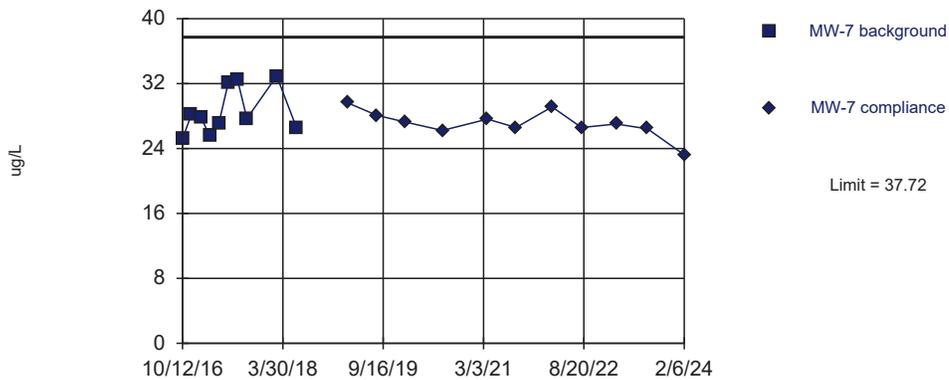


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 10 background values. Well-constituent pair annual alpha = 0.0293. Individual comparison alpha = 0.01476 (1 of 2). Seasonality was not detected with 95% confidence.

Constituent: Lithium Analysis Run 4/3/2024 1:36 PM View: 2024Q1 Intrawell PL
 Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

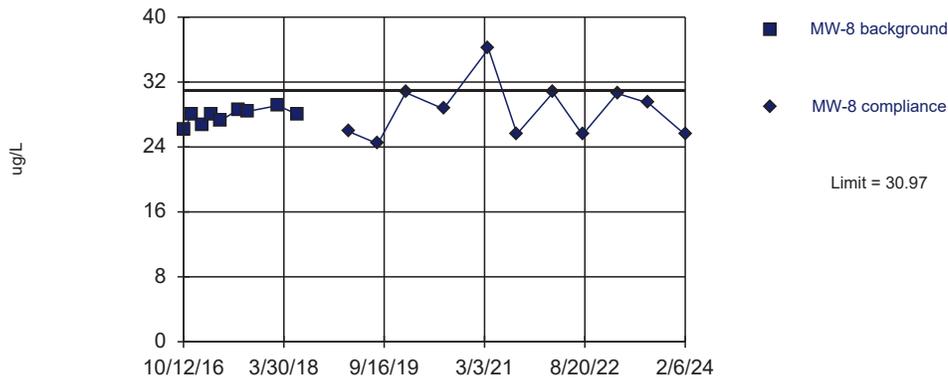


Background Data Summary: Mean=28.55, Std. Dev.=2.888, n=10. Seasonality was detected with 95% confidence and data were deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8667, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.00

Within Limit

Prediction Limit

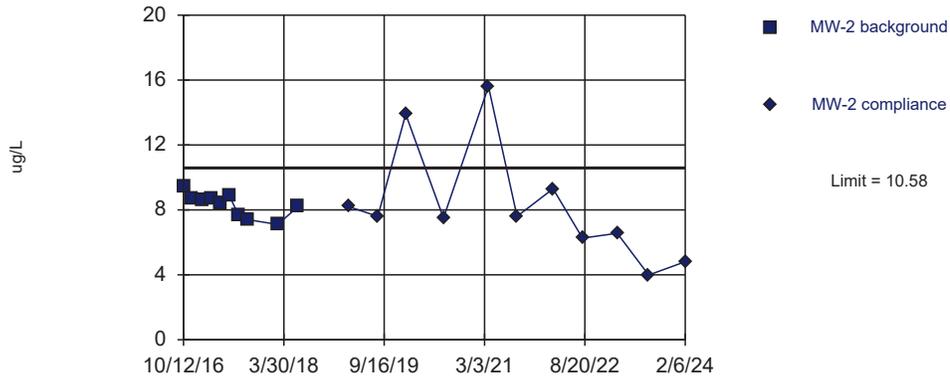
Intrawell Parametric



Within Limit

Prediction Limit

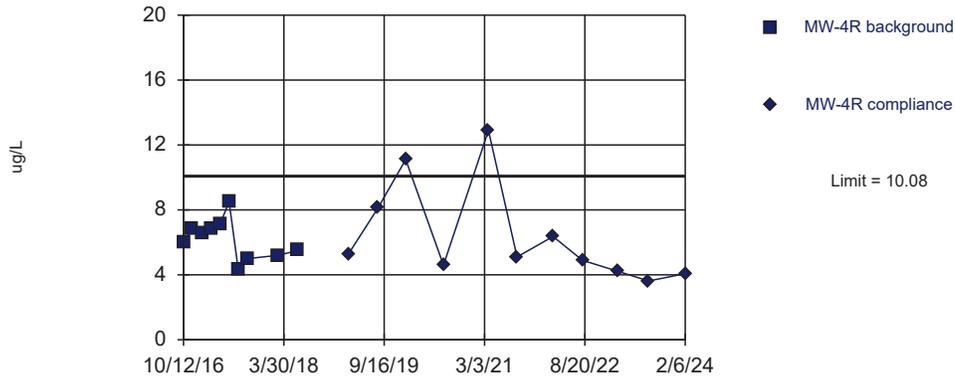
Intrawell Parametric



Within Limit

Prediction Limit

Intrawell Parametric



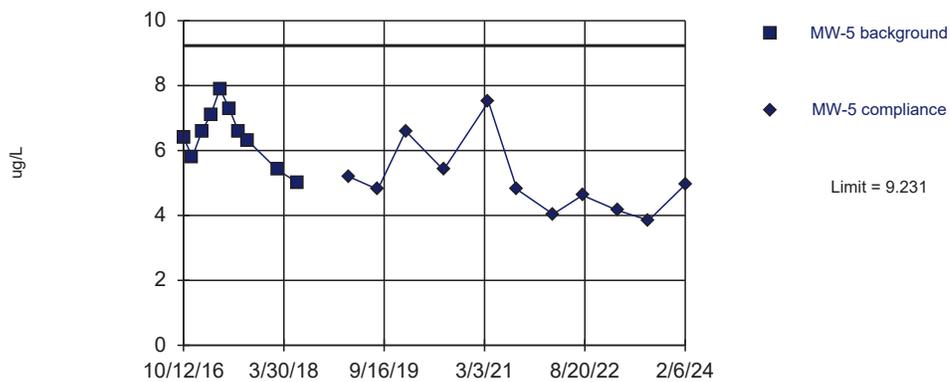
Background Data Summary: Mean=6.18, Std. Dev.=1.227, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9705, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Molybdenum Analysis Run 4/3/2024 1:36 PM View: 2024Q1 Intrawell PL
 Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit

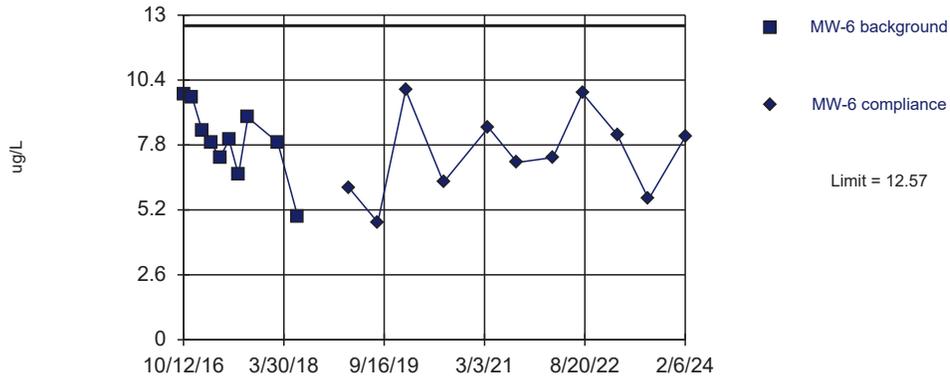
Intrawell Parametric



Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.94, Std. Dev.=1.458, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9391, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

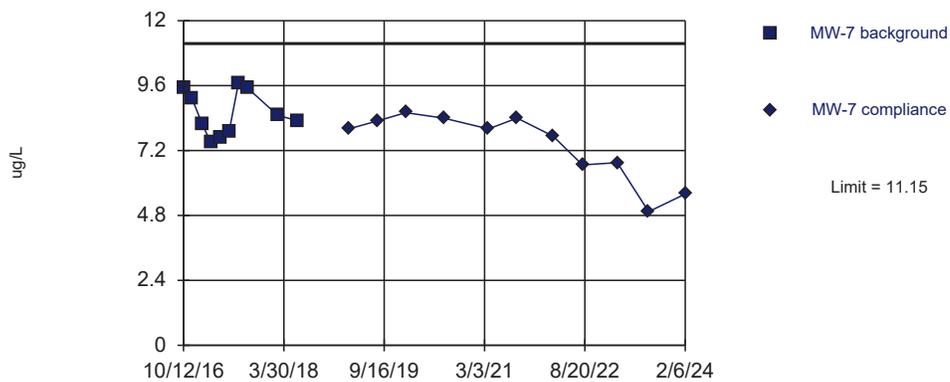
Constituent: Molybdenum Analysis Run 4/3/2024 1:37 PM View: 2024Q1 Intrawell PL

Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=8.59, Std. Dev.=0.8062, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9168, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

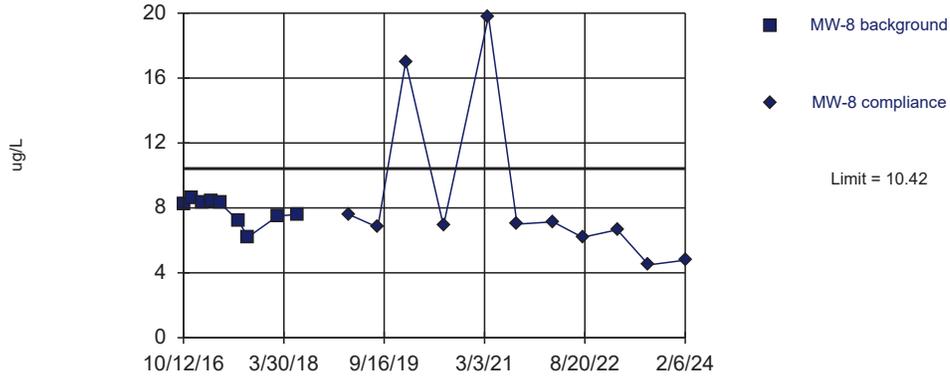
Constituent: Molybdenum Analysis Run 4/3/2024 1:37 PM View: 2024Q1 Intrawell PL

Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit

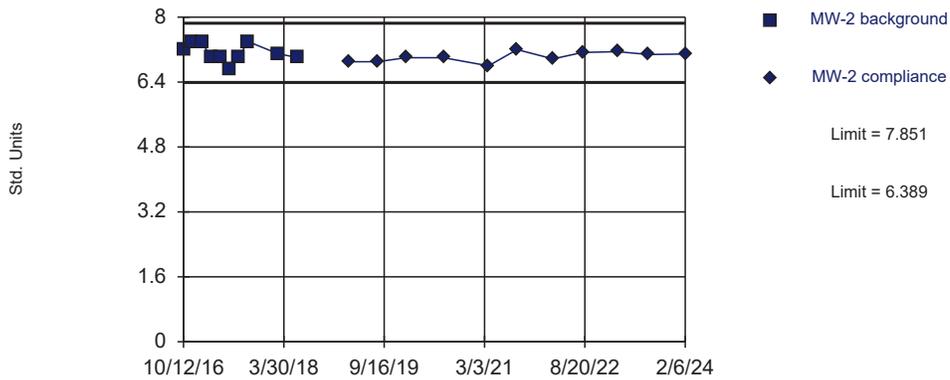
Intrawell Parametric



Within Limits

Prediction Limit

Intrawell Parametric



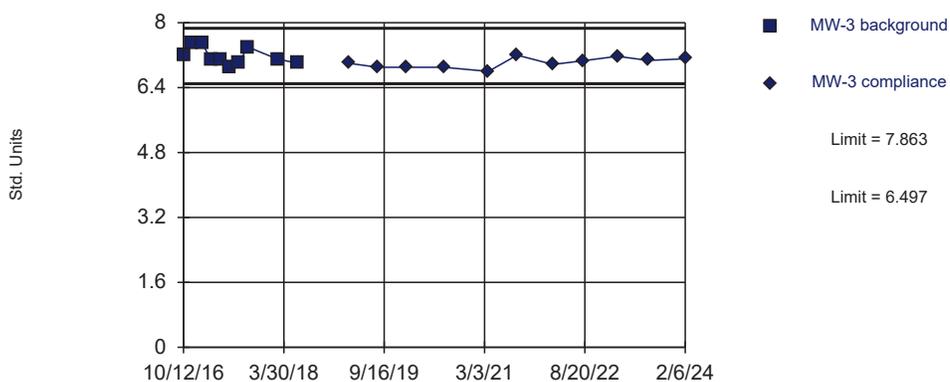
Background Data Summary: Mean=7.12, Std. Dev.=0.23, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8807, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: pH Analysis Run 4/3/2024 1:37 PM View: 2024Q1 Intrawell PL
 Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limits

Prediction Limit

Intrawell Parametric



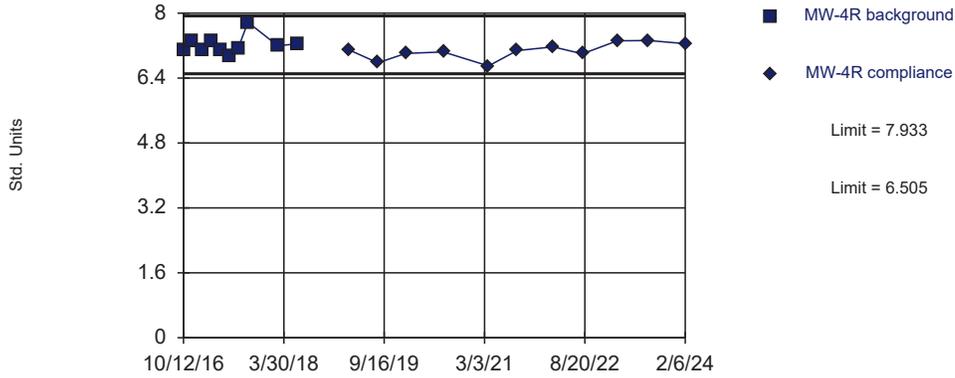
Background Data Summary: Mean=7.18, Std. Dev.=0.215, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.885, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: pH Analysis Run 4/3/2024 1:37 PM View: 2024Q1 Intrawell PL
 Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limits

Prediction Limit

Intrawell Parametric



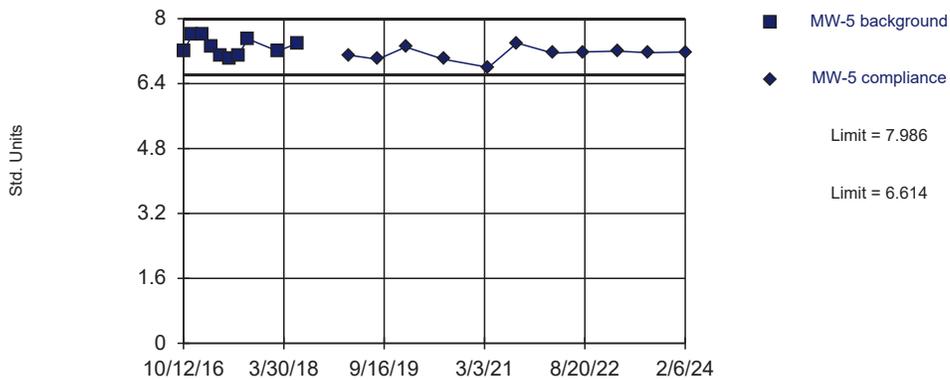
Background Data Summary: Mean=7.219, Std. Dev.=0.2247, n=10. Seasonality was detected with 95% confidence and data were deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.833, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: pH Analysis Run 4/3/2024 1:37 PM View: 2024Q1 Intrawell PL
 Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limits

Prediction Limit

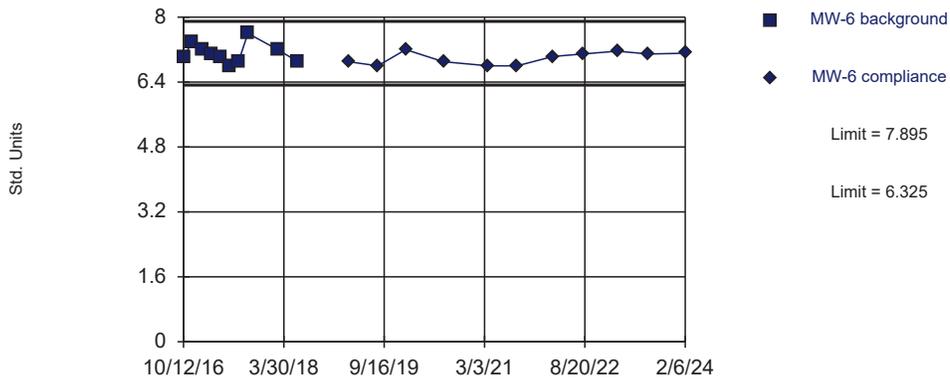
Intrawell Parametric



Within Limits

Prediction Limit

Intrawell Parametric



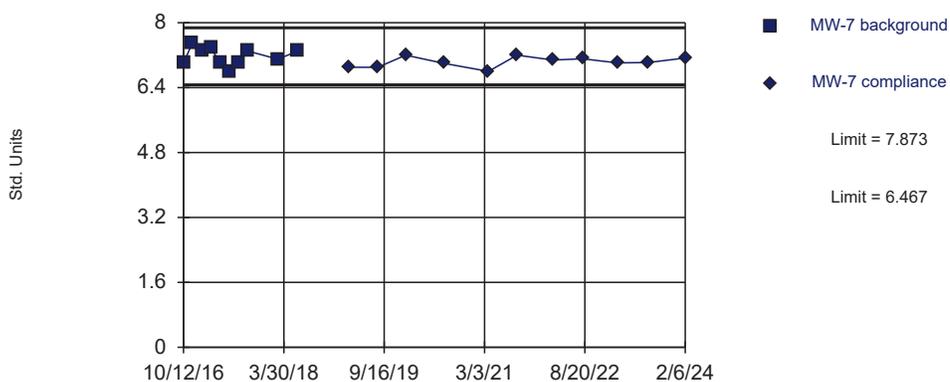
Background Data Summary: Mean=7.11, Std. Dev.=0.247, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9348, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: pH Analysis Run 4/3/2024 1:37 PM View: 2024Q1 Intrawell PL
 Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limits

Prediction Limit

Intrawell Parametric



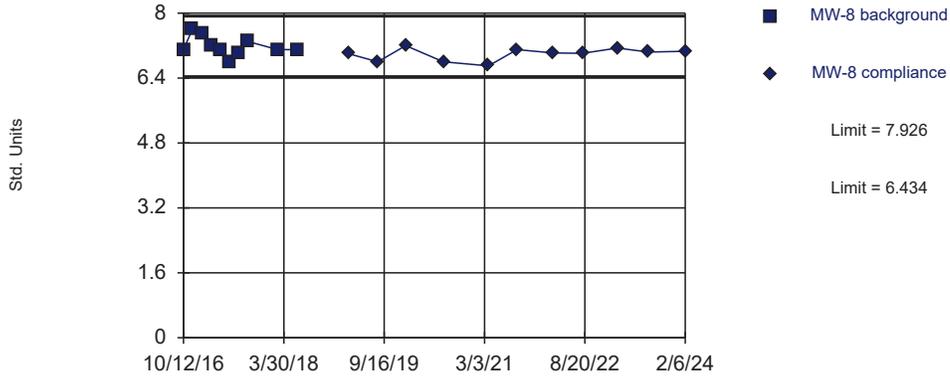
Background Data Summary: Mean=7.17, Std. Dev.=0.2214, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9355, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: pH Analysis Run 4/3/2024 1:37 PM View: 2024Q1 Intrawell PL
 Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limits

Prediction Limit

Intrawell Parametric



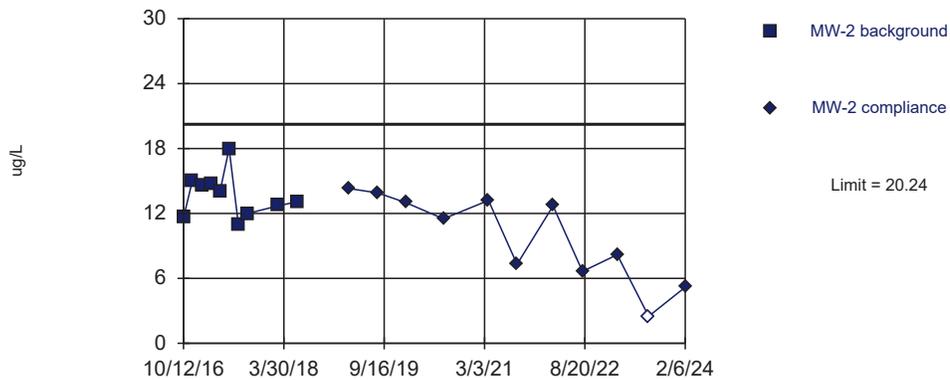
Background Data Summary: Mean=7.18, Std. Dev.=0.2348, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9288, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: pH Analysis Run 4/3/2024 1:37 PM View: 2024Q1 Intrawell PL
 Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

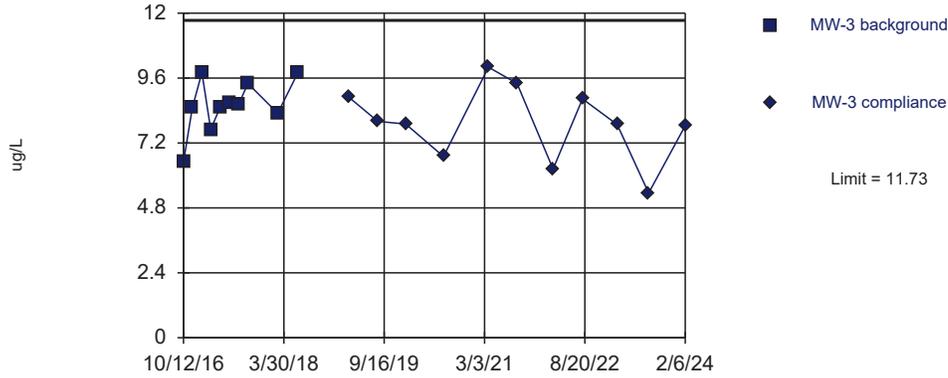
Prediction Limit

Intrawell Parametric



Within Limit

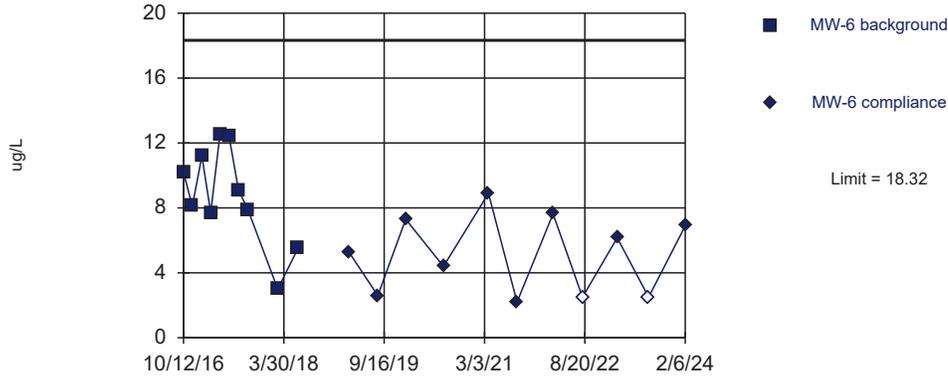
Prediction Limit Intrawell Parametric



Within Limit

Prediction Limit

Intrawell Parametric



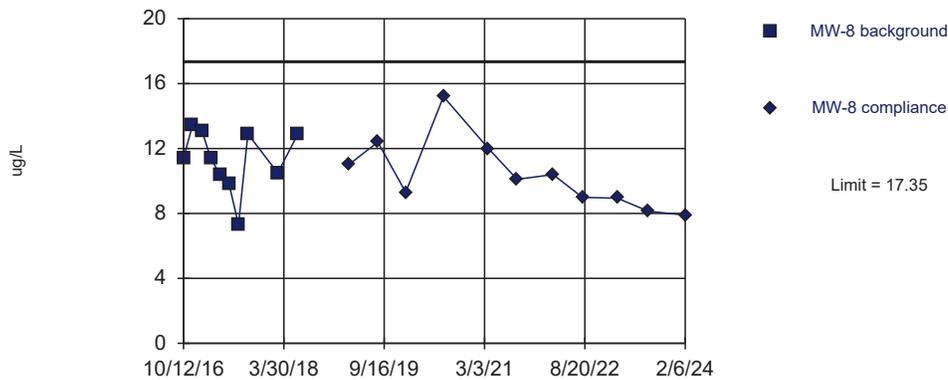
Background Data Summary: Mean=8.76, Std. Dev.=3.009, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.949, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Selenium Analysis Run 4/3/2024 1:37 PM View: 2024Q1 Intrawell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit

Intrawell Parametric



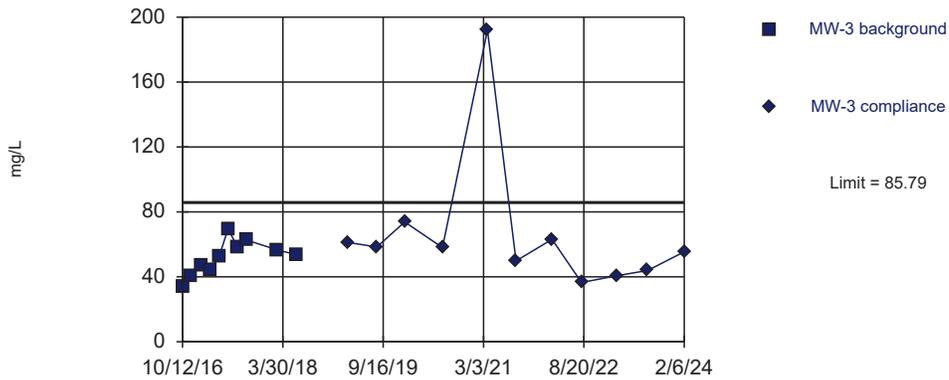
Background Data Summary: Mean=11.31, Std. Dev.=1.9, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9028, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Selenium Analysis Run 4/3/2024 1:37 PM View: 2024Q1 Intrawell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit

Intrawell Parametric



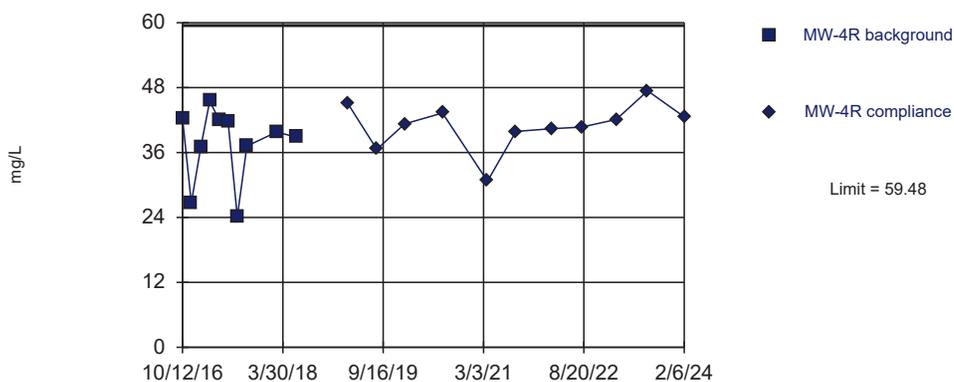
Background Data Summary: Mean=51.88, Std. Dev.=10.67, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9935, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Sulfate Analysis Run 4/3/2024 1:37 PM View: 2024Q1 Intrawell PL
 Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit

Intrawell Parametric

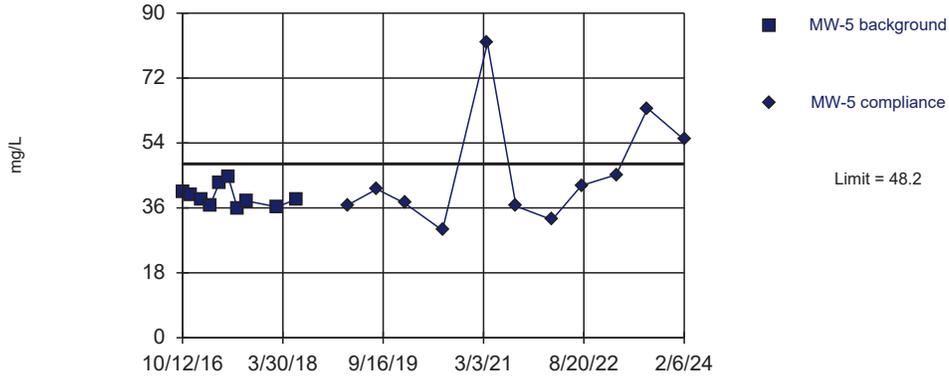


Background Data Summary: Mean=37.53, Std. Dev.=6.906, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8478, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Sulfate Analysis Run 4/3/2024 1:37 PM View: 2024Q1 Intrawell PL
 Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Exceeds Limit

Prediction Limit
Intrawell Parametric

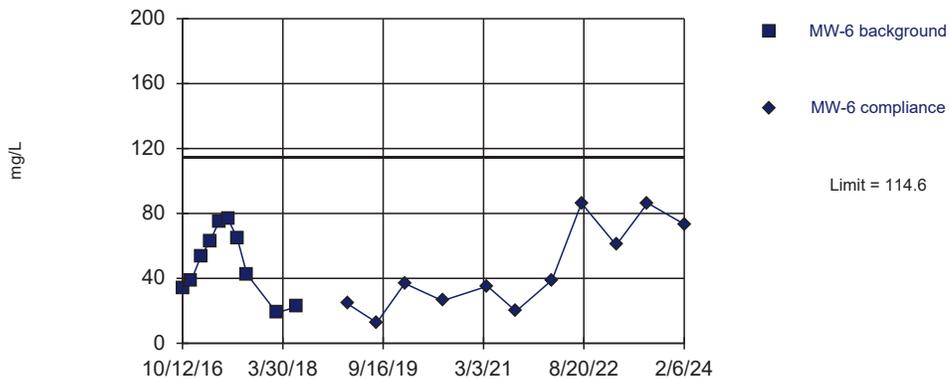


Background Data Summary: Mean=39.12, Std. Dev.=2.859, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9135, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Sulfate Analysis Run 4/3/2024 1:37 PM View: 2024Q1 Intrawell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit
Intrawell Parametric

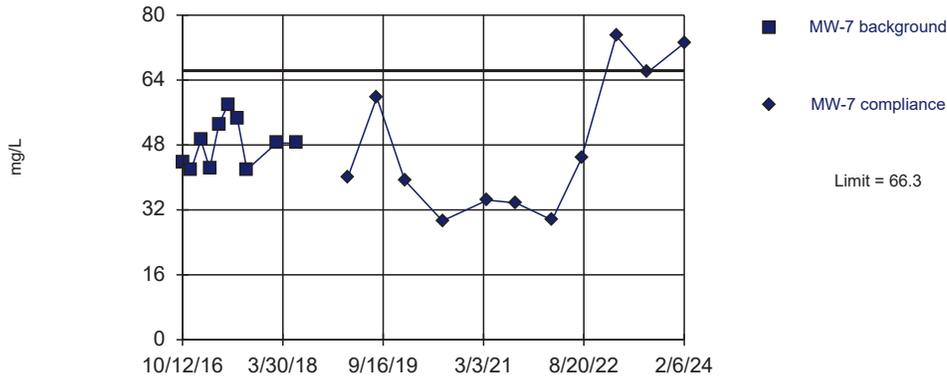


Background Data Summary: Mean=48.84, Std. Dev.=20.69, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9417, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Sulfate Analysis Run 4/3/2024 1:37 PM View: 2024Q1 Intrawell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Exceeds Limit

Prediction Limit
Intrawell Parametric

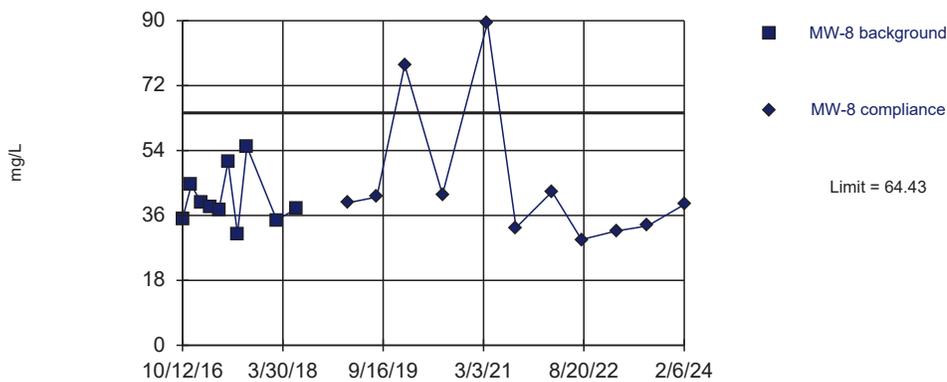


Background Data Summary: Mean=48.14, Std. Dev.=5.715, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9073, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Sulfate Analysis Run 4/3/2024 1:37 PM View: 2024Q1 Intrawell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit
Intrawell Parametric

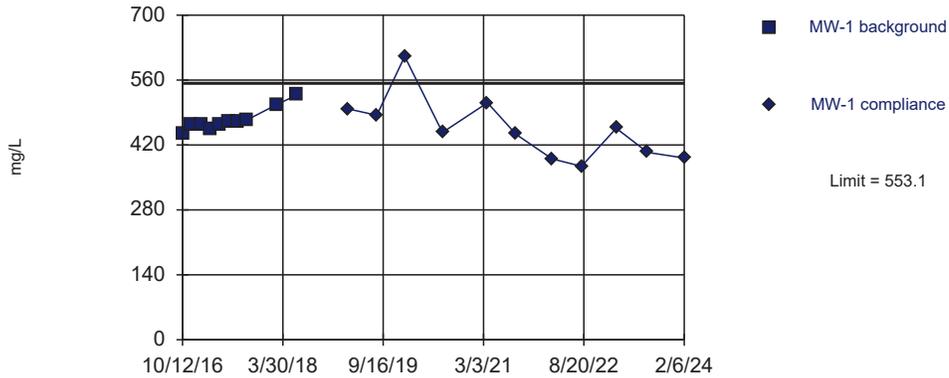


Background Data Summary: Mean=40.48, Std. Dev.=7.538, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9039, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Sulfate Analysis Run 4/3/2024 1:37 PM View: 2024Q1 Intrawell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

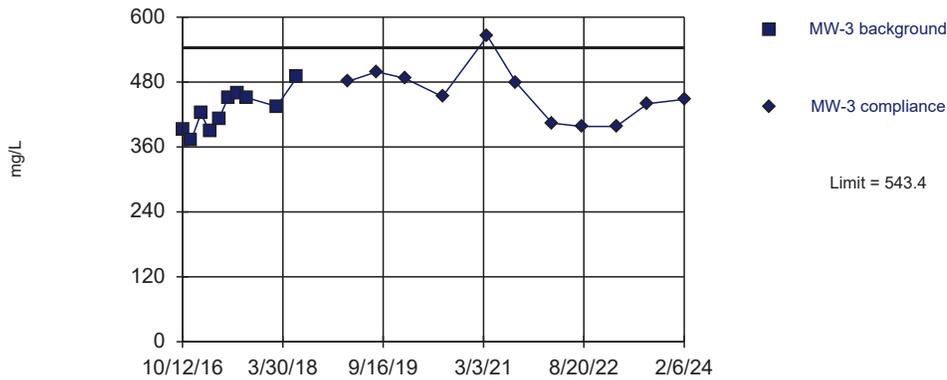
Prediction Limit Intrawell Parametric



Within Limit

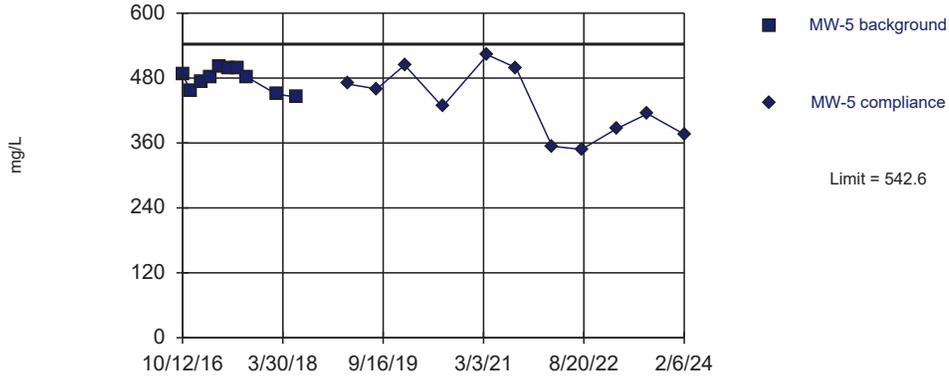
Prediction Limit

Intrawell Parametric



Within Limit

Prediction Limit
Intrawell Parametric

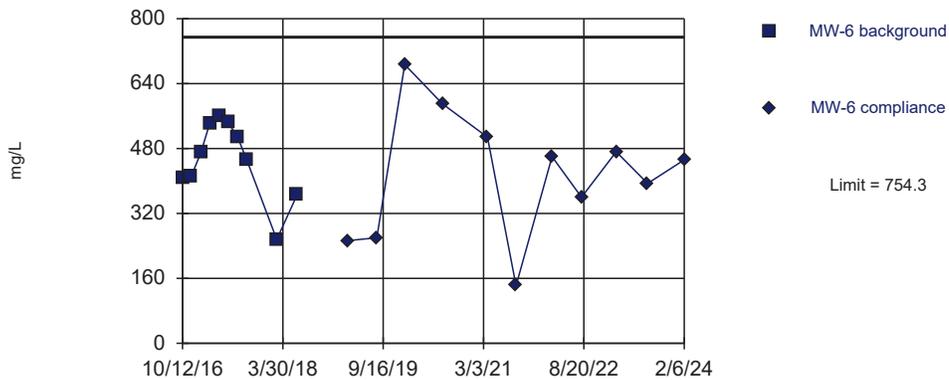


Background Data Summary: Mean=477, Std. Dev.=20.65, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8913, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Total Dissolved Solids Analysis Run 4/3/2024 1:37 PM View: 2024Q1 Intrawell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

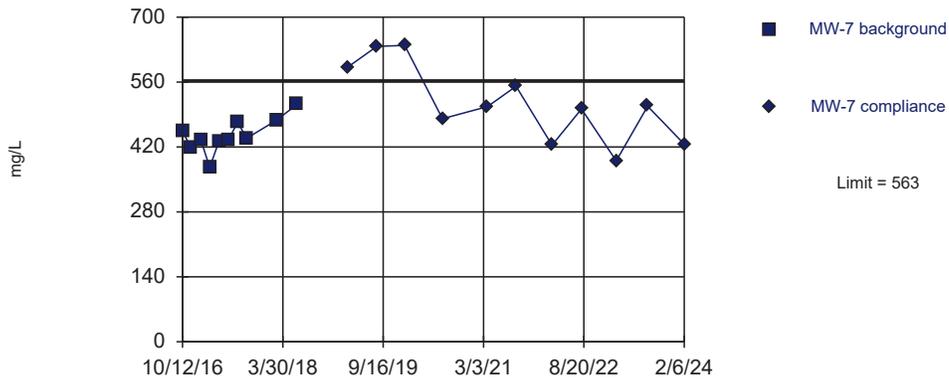
Prediction Limit
Intrawell Parametric



Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=445, Std. Dev.=37.14, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9661, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

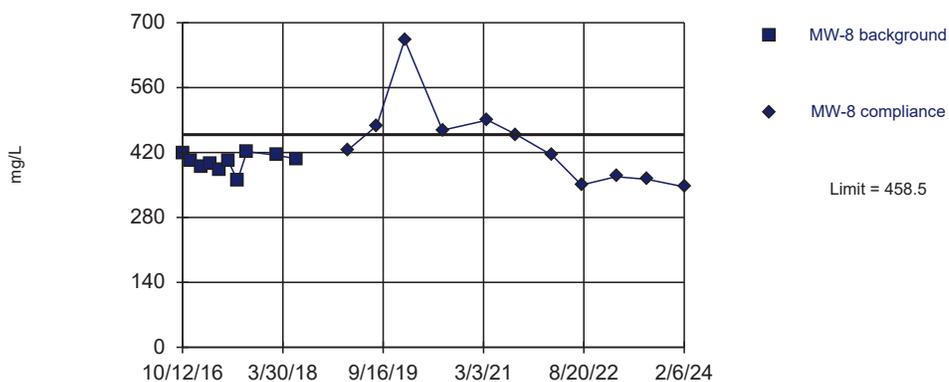
Constituent: Total Dissolved Solids Analysis Run 4/3/2024 1:37 PM View: 2024Q1 Intrawell PL

Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=399.1, Std. Dev.=18.69, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9407, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

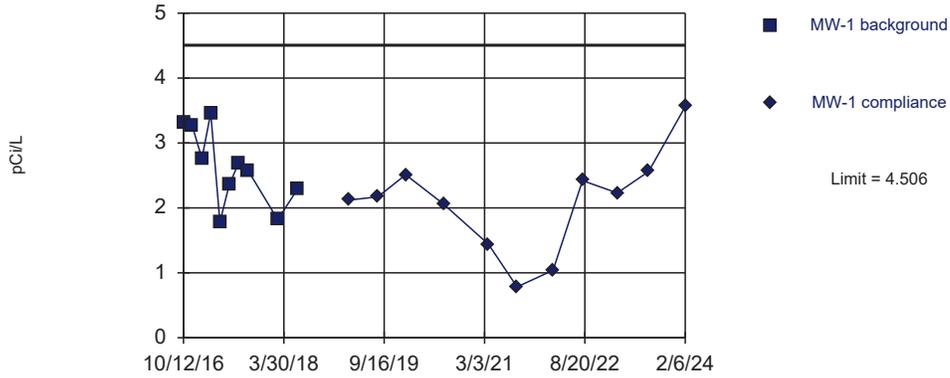
Constituent: Total Dissolved Solids Analysis Run 4/3/2024 1:37 PM View: 2024Q1 Intrawell PL

Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=2.63, Std. Dev.=0.5903, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.937, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

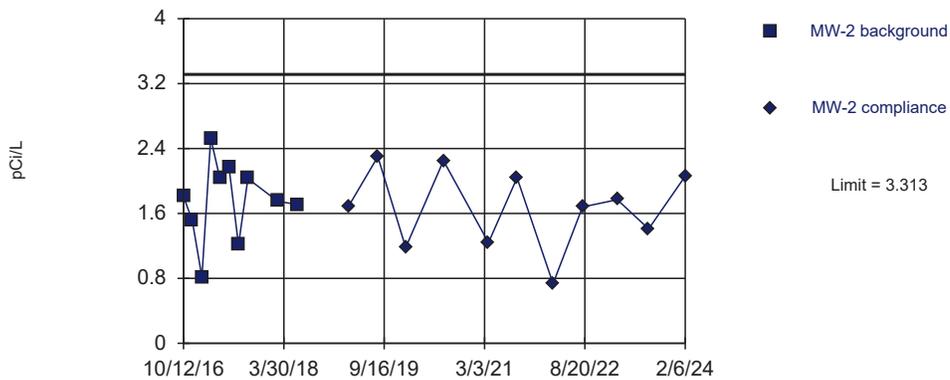
Constituent: Total Radium Analysis Run 4/3/2024 1:37 PM View: 2024Q1 Intrawell PL

Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit

Intrawell Parametric



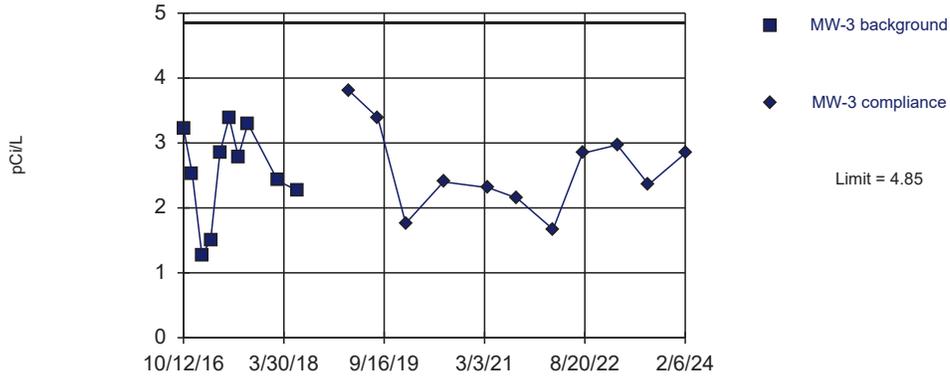
Background Data Summary: Mean=1.755, Std. Dev.=0.4903, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9723, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Total Radium Analysis Run 4/3/2024 1:37 PM View: 2024Q1 Intrawell PL

Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit
Intrawell Parametric

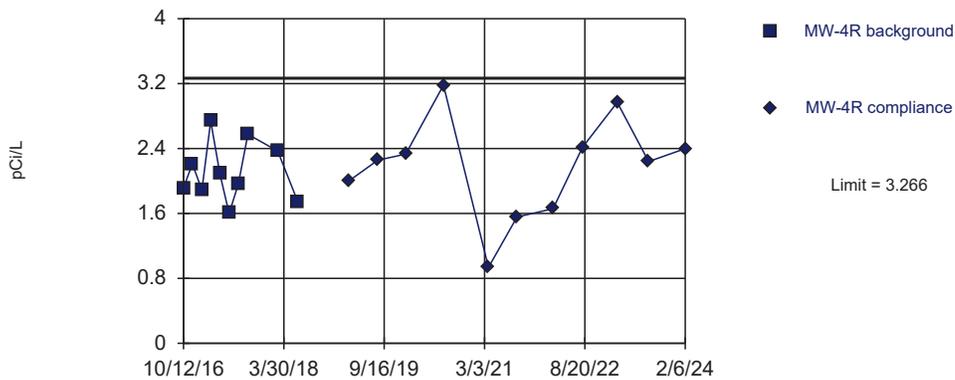


Background Data Summary: Mean=2.554, Std. Dev.=0.7226, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9177, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Total Radium Analysis Run 4/3/2024 1:37 PM View: 2024Q1 Intrawell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit
Intrawell Parametric



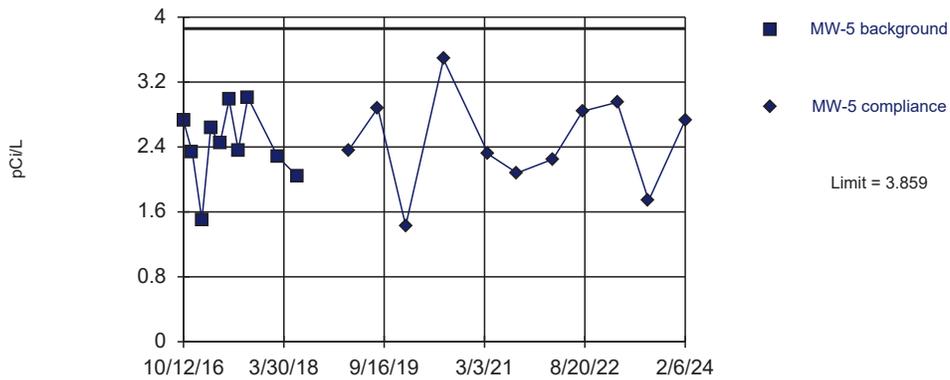
Background Data Summary: Mean=2.109, Std. Dev.=0.3643, n=10. Seasonality was detected with 95% confidence and data were deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9618, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Total Radium Analysis Run 4/3/2024 1:37 PM View: 2024Q1 Intrawell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=2.428, Std. Dev.=0.4504, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.945, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

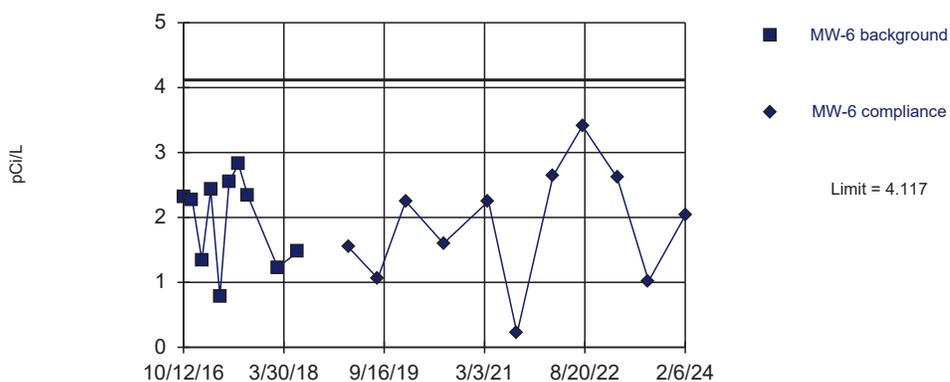
Constituent: Total Radium Analysis Run 4/3/2024 1:37 PM View: 2024Q1 Intrawell PL

Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit

Intrawell Parametric



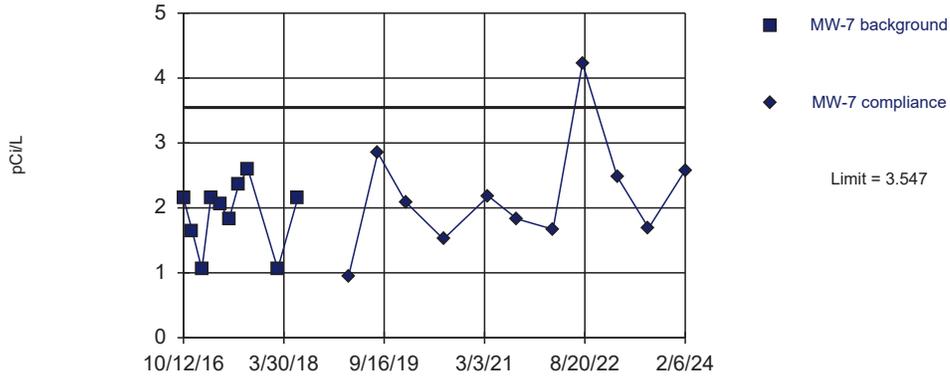
Background Data Summary: Mean=1.952, Std. Dev.=0.6812, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8997, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Total Radium Analysis Run 4/3/2024 1:37 PM View: 2024Q1 Intrawell PL

Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit
Intrawell Parametric

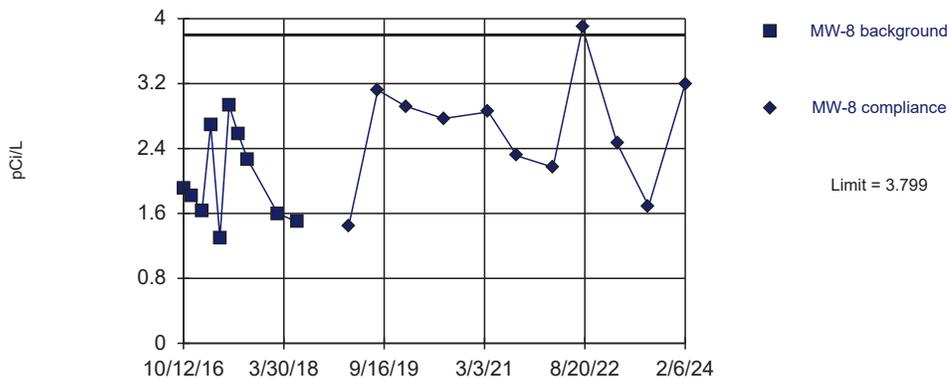


Background Data Summary: Mean=1.904, Std. Dev.=0.5171, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8953, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Total Radium Analysis Run 4/3/2024 1:37 PM View: 2024Q1 Intrawell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit
Intrawell Parametric



Background Data Summary: Mean=2.019, Std. Dev.=0.5602, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.929, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Total Radium Analysis Run 4/3/2024 1:37 PM View: 2024Q1 Intrawell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

A.3 Interwell Prediction Limits

Interwell Prediction Limit

Fremont Dept. of Utilities

Client: SCS Engineers

Data: Fremont Department of Utilities Groundwater

Printed 4/3/2024, 1:43 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Wells	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Arsenic (ug/L)	MW-1	6.443	n/a	2/6/2024	4.02	No	21	MW-4R	4.342	0.8432	0	None	No	0.0003583	Param Inter 1 of 2
Arsenic (ug/L)	MW-2	6.443	n/a	2/6/2024	4.24	No	21	MW-4R	4.342	0.8432	0	None	No	0.0003583	Param Inter 1 of 2
Arsenic (ug/L)	MW-3	6.443	n/a	2/6/2024	3.97	No	21	MW-4R	4.342	0.8432	0	None	No	0.0003583	Param Inter 1 of 2
Arsenic (ug/L)	MW-5	6.443	n/a	2/6/2024	4.49	No	21	MW-4R	4.342	0.8432	0	None	No	0.0003583	Param Inter 1 of 2
Arsenic (ug/L)	MW-6	6.443	n/a	2/6/2024	4.83	No	21	MW-4R	4.342	0.8432	0	None	No	0.0003583	Param Inter 1 of 2
Arsenic (ug/L)	MW-7	6.443	n/a	2/6/2024	3.27	No	21	MW-4R	4.342	0.8432	0	None	No	0.0003583	Param Inter 1 of 2
Arsenic (ug/L)	MW-8	6.443	n/a	2/6/2024	2.87	No	21	MW-4R	4.342	0.8432	0	None	No	0.0003583	Param Inter 1 of 2
Barium (ug/L)	MW-1	156.3	n/a	2/6/2024	120	No	21	MW-4R	123.8	13.07	0	None	No	0.0003583	Param Inter 1 of 2
Barium (ug/L)	MW-2	156.3	n/a	2/6/2024	105	No	21	MW-4R	123.8	13.07	0	None	No	0.0003583	Param Inter 1 of 2
Barium (ug/L)	MW-3	156.3	n/a	2/6/2024	165	Yes	21	MW-4R	123.8	13.07	0	None	No	0.0003583	Param Inter 1 of 2
Barium (ug/L)	MW-5	156.3	n/a	2/6/2024	118	No	21	MW-4R	123.8	13.07	0	None	No	0.0003583	Param Inter 1 of 2
Barium (ug/L)	MW-6	156.3	n/a	2/6/2024	134	No	21	MW-4R	123.8	13.07	0	None	No	0.0003583	Param Inter 1 of 2
Barium (ug/L)	MW-7	156.3	n/a	2/6/2024	96	No	21	MW-4R	123.8	13.07	0	None	No	0.0003583	Param Inter 1 of 2
Barium (ug/L)	MW-8	156.3	n/a	2/6/2024	128	No	21	MW-4R	123.8	13.07	0	None	No	0.0003583	Param Inter 1 of 2
Boron (ug/L)	MW-1	436.1	n/a	2/6/2024	221	No	21	MW-4R	141.5	118.3	33.33	Aitchison`s	No	0.0003583	Param Inter 1 of 2
Boron (ug/L)	MW-2	436.1	n/a	2/6/2024	152	No	21	MW-4R	141.5	118.3	33.33	Aitchison`s	No	0.0003583	Param Inter 1 of 2
Boron (ug/L)	MW-7	436.1	n/a	2/6/2024	113	No	21	MW-4R	141.5	118.3	33.33	Aitchison`s	No	0.0003583	Param Inter 1 of 2
Calcium (mg/L)	MW-1	113	n/a	2/6/2024	89.8	No	21	MW-4R	87.11	10.38	0	None	No	0.0003583	Param Inter 1 of 2
Calcium (mg/L)	MW-2	113	n/a	2/6/2024	95.6	No	21	MW-4R	87.11	10.38	0	None	No	0.0003583	Param Inter 1 of 2
Calcium (mg/L)	MW-3	113	n/a	2/6/2024	111	No	21	MW-4R	87.11	10.38	0	None	No	0.0003583	Param Inter 1 of 2
Calcium (mg/L)	MW-5	113	n/a	2/6/2024	88.3	No	21	MW-4R	87.11	10.38	0	None	No	0.0003583	Param Inter 1 of 2
Calcium (mg/L)	MW-6	113	n/a	2/6/2024	101	No	21	MW-4R	87.11	10.38	0	None	No	0.0003583	Param Inter 1 of 2
Calcium (mg/L)	MW-7	113	n/a	2/6/2024	73.4	No	21	MW-4R	87.11	10.38	0	None	No	0.0003583	Param Inter 1 of 2
Calcium (mg/L)	MW-8	113	n/a	2/6/2024	86.5	No	21	MW-4R	87.11	10.38	0	None	No	0.0003583	Param Inter 1 of 2
Chloride (mg/L)	MW-1	60.3	n/a	2/6/2024	33.5	No	20	MW-4R	27.84	12.93	0	None	No	0.0003583	Param Inter 1 of 2
Chloride (mg/L)	MW-2	60.3	n/a	2/6/2024	43.8	No	20	MW-4R	27.84	12.93	0	None	No	0.0003583	Param Inter 1 of 2
Chloride (mg/L)	MW-3	60.3	n/a	2/6/2024	58.5	No	20	MW-4R	27.84	12.93	0	None	No	0.0003583	Param Inter 1 of 2
Chloride (mg/L)	MW-5	60.3	n/a	2/6/2024	43.7	No	20	MW-4R	27.84	12.93	0	None	No	0.0003583	Param Inter 1 of 2
Chloride (mg/L)	MW-6	60.3	n/a	2/6/2024	58.8	No	20	MW-4R	27.84	12.93	0	None	No	0.0003583	Param Inter 1 of 2
Chloride (mg/L)	MW-7	60.3	n/a	2/6/2024	62.6	Yes	20	MW-4R	27.84	12.93	0	None	No	0.0003583	Param Inter 1 of 2
Chloride (mg/L)	MW-8	60.3	n/a	2/6/2024	38.8	No	20	MW-4R	27.84	12.93	0	None	No	0.0003583	Param Inter 1 of 2
Fluoride (mg/L)	MW-2	1.269	n/a	2/6/2024	1.41	Yes	21	MW-4R	0.7933	0.1909	14.29	None	No	0.0003583	Param Inter 1 of 2
Lithium (ug/L)	MW-1	35.19	n/a	2/6/2024	25.2	No	21	MW-4R	26.04	3.673	0	None	No	0.0003583	Param Inter 1 of 2
Lithium (ug/L)	MW-2	35.19	n/a	2/6/2024	29.1	No	21	MW-4R	26.04	3.673	0	None	No	0.0003583	Param Inter 1 of 2
Lithium (ug/L)	MW-3	35.19	n/a	2/6/2024	28.5	No	21	MW-4R	26.04	3.673	0	None	No	0.0003583	Param Inter 1 of 2
Lithium (ug/L)	MW-5	35.19	n/a	2/6/2024	26.7	No	21	MW-4R	26.04	3.673	0	None	No	0.0003583	Param Inter 1 of 2
Lithium (ug/L)	MW-7	35.19	n/a	2/6/2024	21.2	No	21	MW-4R	26.04	3.673	0	None	No	0.0003583	Param Inter 1 of 2
Lithium (ug/L)	MW-8	35.19	n/a	2/6/2024	25.5	No	21	MW-4R	26.04	3.673	0	None	No	0.0003583	Param Inter 1 of 2
Molybdenum (ug/L)	MW-1	12.5	n/a	2/6/2024	6.69	No	21	MW-4R	2.473	0.4264	0	None	sqrt(x)	0.0003583	Param Inter 1 of 2
Molybdenum (ug/L)	MW-2	12.5	n/a	2/6/2024	4.81	No	21	MW-4R	2.473	0.4264	0	None	sqrt(x)	0.0003583	Param Inter 1 of 2
Molybdenum (ug/L)	MW-3	12.5	n/a	2/6/2024	8.08	No	21	MW-4R	2.473	0.4264	0	None	sqrt(x)	0.0003583	Param Inter 1 of 2
Molybdenum (ug/L)	MW-5	12.5	n/a	2/6/2024	4.95	No	21	MW-4R	2.473	0.4264	0	None	sqrt(x)	0.0003583	Param Inter 1 of 2
Molybdenum (ug/L)	MW-6	12.5	n/a	2/6/2024	8.12	No	21	MW-4R	2.473	0.4264	0	None	sqrt(x)	0.0003583	Param Inter 1 of 2
Molybdenum (ug/L)	MW-7	12.5	n/a	2/6/2024	5.59	No	21	MW-4R	2.473	0.4264	0	None	sqrt(x)	0.0003583	Param Inter 1 of 2
Molybdenum (ug/L)	MW-8	12.5	n/a	2/6/2024	4.78	No	21	MW-4R	2.473	0.4264	0	None	sqrt(x)	0.0003583	Param Inter 1 of 2
pH (Std. Units)	MW-1	7.712	6.575	2/6/2024	7.125	No	21	MW-4R	7.144	0.2281	0	None	No	0.0001792	Param Inter 1 of 2 Deseas
pH (Std. Units)	MW-2	7.712	6.575	2/6/2024	7.145	No	21	MW-4R	7.144	0.2281	0	None	No	0.0001792	Param Inter 1 of 2 Deseas
pH (Std. Units)	MW-3	7.712	6.575	2/6/2024	7.165	No	21	MW-4R	7.144	0.2281	0	None	No	0.0001792	Param Inter 1 of 2 Deseas
pH (Std. Units)	MW-5	7.712	6.575	2/6/2024	7.235	No	21	MW-4R	7.144	0.2281	0	None	No	0.0001792	Param Inter 1 of 2 Deseas
pH (Std. Units)	MW-6	7.712	6.575	2/6/2024	7.165	No	21	MW-4R	7.144	0.2281	0	None	No	0.0001792	Param Inter 1 of 2 Deseas

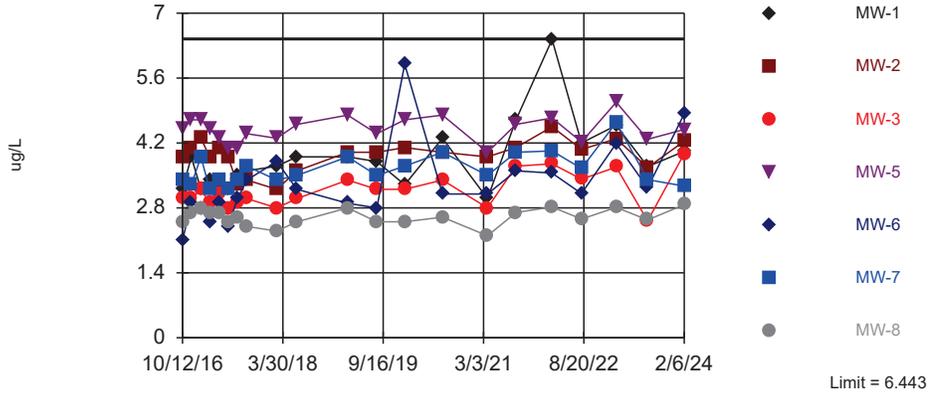
Interwell Prediction Limit

Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater Printed 4/3/2024, 1:43 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Wells	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
pH (Std. Units)	MW-7	7.712	6.575	2/6/2024	7.185	No	21	MW-4R	7.144	0.2281	0	None	No	0.0001792	Param Inter 1 of 2 Deseas
pH (Std. Units)	MW-8	7.712	6.575	2/6/2024	7.115	No	21	MW-4R	7.144	0.2281	0	None	No	0.0001792	Param Inter 1 of 2 Deseas
Selenium (ug/L)	MW-2	10.94	n/a	2/6/2024	5.19	No	20	MW-4R	7.535	1.358	0	None	No	0.0003583	Param Inter 1 of 2
Selenium (ug/L)	MW-3	10.94	n/a	2/6/2024	7.84	No	20	MW-4R	7.535	1.358	0	None	No	0.0003583	Param Inter 1 of 2
Selenium (ug/L)	MW-6	10.94	n/a	2/6/2024	6.89	No	20	MW-4R	7.535	1.358	0	None	No	0.0003583	Param Inter 1 of 2
Selenium (ug/L)	MW-8	10.94	n/a	2/6/2024	7.9	No	20	MW-4R	7.535	1.358	0	None	No	0.0003583	Param Inter 1 of 2
Sulfate (mg/L)	MW-1	51.18	n/a	2/6/2024	82.7	Yes	21	MW-4R	1577	418.4	0	None	x^2	0.0003583	Param Inter 1 of 2
Sulfate (mg/L)	MW-2	51.18	n/a	2/6/2024	51.1	No	21	MW-4R	1577	418.4	0	None	x^2	0.0003583	Param Inter 1 of 2
Sulfate (mg/L)	MW-3	51.18	n/a	2/6/2024	55.4	Yes	21	MW-4R	1577	418.4	0	None	x^2	0.0003583	Param Inter 1 of 2
Sulfate (mg/L)	MW-5	51.18	n/a	2/6/2024	54.9	Yes	21	MW-4R	1577	418.4	0	None	x^2	0.0003583	Param Inter 1 of 2
Sulfate (mg/L)	MW-6	51.18	n/a	2/6/2024	73.4	Yes	21	MW-4R	1577	418.4	0	None	x^2	0.0003583	Param Inter 1 of 2
Sulfate (mg/L)	MW-7	51.18	n/a	2/6/2024	73.1	Yes	21	MW-4R	1577	418.4	0	None	x^2	0.0003583	Param Inter 1 of 2
Sulfate (mg/L)	MW-8	51.18	n/a	2/6/2024	39	No	21	MW-4R	1577	418.4	0	None	x^2	0.0003583	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	MW-1	510.8	n/a	2/6/2024	392	No	21	MW-4R	405.5	42.25	0	None	No	0.0003583	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	MW-2	510.8	n/a	2/6/2024	378	No	21	MW-4R	405.5	42.25	0	None	No	0.0003583	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	MW-3	510.8	n/a	2/6/2024	448	No	21	MW-4R	405.5	42.25	0	None	No	0.0003583	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	MW-5	510.8	n/a	2/6/2024	376	No	21	MW-4R	405.5	42.25	0	None	No	0.0003583	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	MW-6	510.8	n/a	2/6/2024	452	No	21	MW-4R	405.5	42.25	0	None	No	0.0003583	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	MW-7	510.8	n/a	2/6/2024	426	No	21	MW-4R	405.5	42.25	0	None	No	0.0003583	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	MW-8	510.8	n/a	2/6/2024	346	No	21	MW-4R	405.5	42.25	0	None	No	0.0003583	Param Inter 1 of 2
Total Radium (pCi/L)	MW-1	3.702	n/a	2/6/2024	3.744	Yes	21	MW-4R	2.251	0.5824	0	None	No	0.0003583	Param Inter 1 of 2 Deseas
Total Radium (pCi/L)	MW-2	3.702	n/a	2/6/2024	2.244	No	21	MW-4R	2.251	0.5824	0	None	No	0.0003583	Param Inter 1 of 2 Deseas
Total Radium (pCi/L)	MW-3	3.702	n/a	2/6/2024	3.024	No	21	MW-4R	2.251	0.5824	0	None	No	0.0003583	Param Inter 1 of 2 Deseas
Total Radium (pCi/L)	MW-5	3.702	n/a	2/6/2024	2.914	No	21	MW-4R	2.251	0.5824	0	None	No	0.0003583	Param Inter 1 of 2 Deseas
Total Radium (pCi/L)	MW-6	3.702	n/a	2/6/2024	2.214	No	21	MW-4R	2.251	0.5824	0	None	No	0.0003583	Param Inter 1 of 2 Deseas
Total Radium (pCi/L)	MW-7	3.702	n/a	2/6/2024	2.764	No	21	MW-4R	2.251	0.5824	0	None	No	0.0003583	Param Inter 1 of 2 Deseas
Total Radium (pCi/L)	MW-8	3.702	n/a	2/6/2024	3.384	No	21	MW-4R	2.251	0.5824	0	None	No	0.0003583	Param Inter 1 of 2 Deseas

Within Limit

Prediction Limit
Interwell Parametric

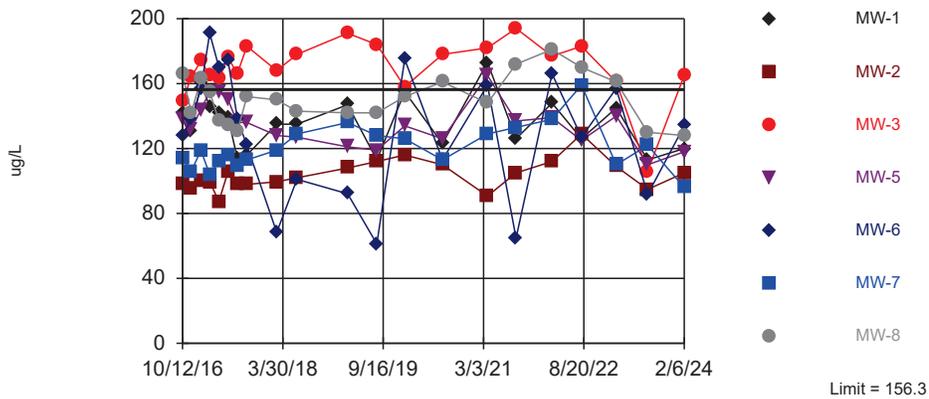


Background Data Summary: Mean=4.342, Std. Dev.=0.8432, n=21. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9688, critical = 0.873. Kappa = 2.491 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Individual comparison alpha = 0.0003583. Comparing 7 points to limit.

Constituent: Arsenic Analysis Run 4/3/2024 1:42 PM View: 2024Q1 Interwell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Exceeds Limit: MW-3

Prediction Limit
Interwell Parametric

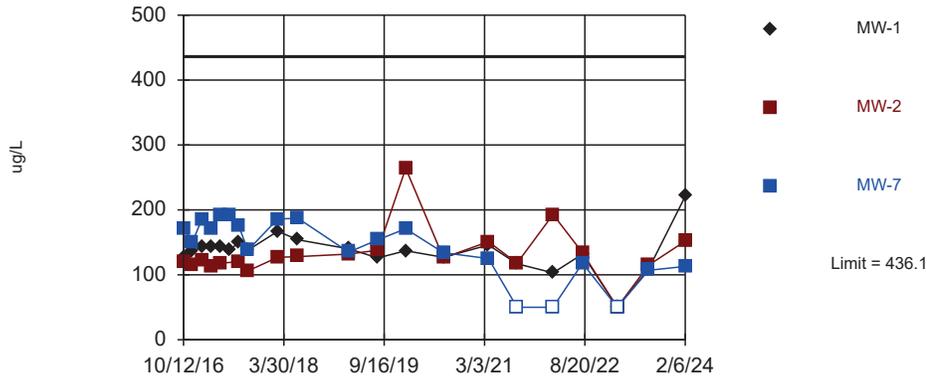


Background Data Summary: Mean=123.8, Std. Dev.=13.07, n=21. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9656, critical = 0.873. Kappa = 2.491 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Individual comparison alpha = 0.0003583. Comparing 7 points to limit.

Constituent: Barium Analysis Run 4/3/2024 1:42 PM View: 2024Q1 Interwell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit
Interwell Parametric

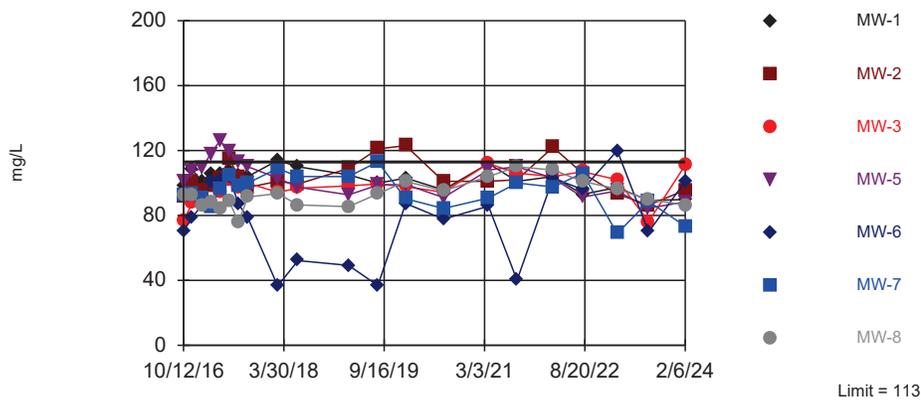


Background Data Summary (after Aitchison's Adjustment): Mean=141.5, Std. Dev.=118.3, n=21, 33.33% NDs. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8972, critical = 0.873. Kappa = 2.491 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Individual comparison alpha = 0.0003583. Comparing 3 points to limit. Assumes 4 future values.

Constituent: Boron Analysis Run 4/3/2024 1:42 PM View: 2024Q1 Interwell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit
Interwell Parametric

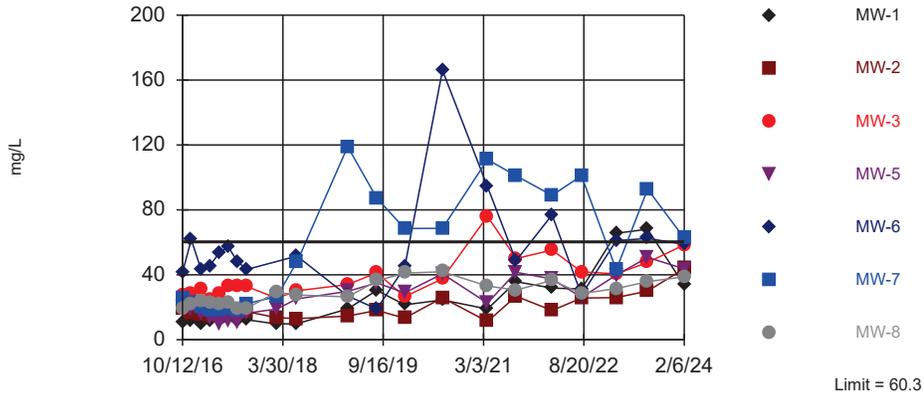


Background Data Summary: Mean=87.11, Std. Dev.=10.38, n=21. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9765, critical = 0.873. Kappa = 2.491 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Individual comparison alpha = 0.0003583. Comparing 7 points to limit.

Constituent: Calcium Analysis Run 4/3/2024 1:42 PM View: 2024Q1 Interwell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Exceeds Limit: MW-7

Prediction Limit Interwell Parametric

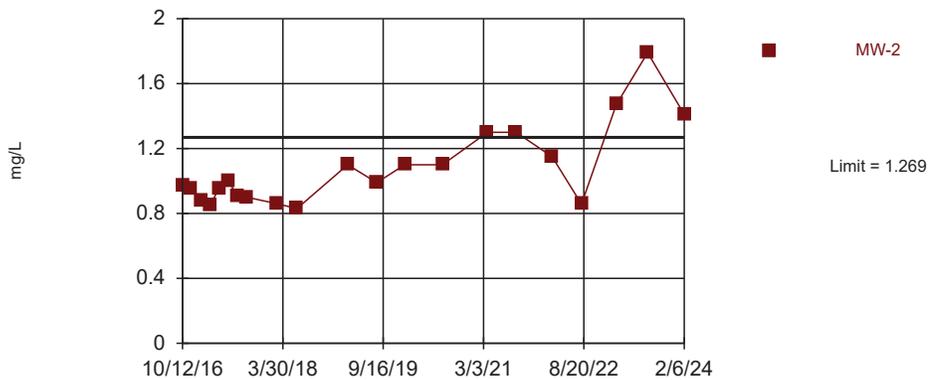


Background Data Summary: Mean=27.84, Std. Dev.=12.93, n=20. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9615, critical = 0.868. Kappa = 2.511 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Individual comparison alpha = 0.0003583. Comparing 7 points to limit.

Constituent: Chloride Analysis Run 4/3/2024 1:42 PM View: 2024Q1 Interwell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Exceeds Limit: MW-2

Prediction Limit Interwell Parametric

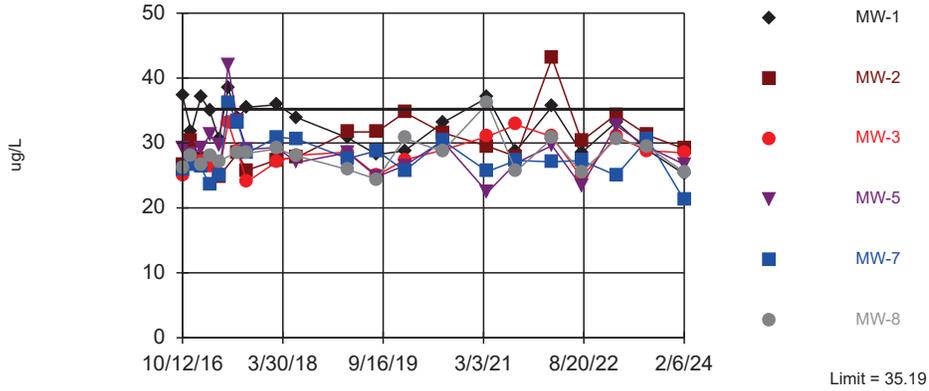


Background Data Summary: Mean=0.7933, Std. Dev.=0.1909, n=21, 14.29% NDs. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8742, critical = 0.873. Kappa = 2.491 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Individual comparison alpha = 0.0003583. Assumes 6 future values.

Constituent: Fluoride Analysis Run 4/3/2024 1:42 PM View: 2024Q1 Interwell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit
Interwell Parametric

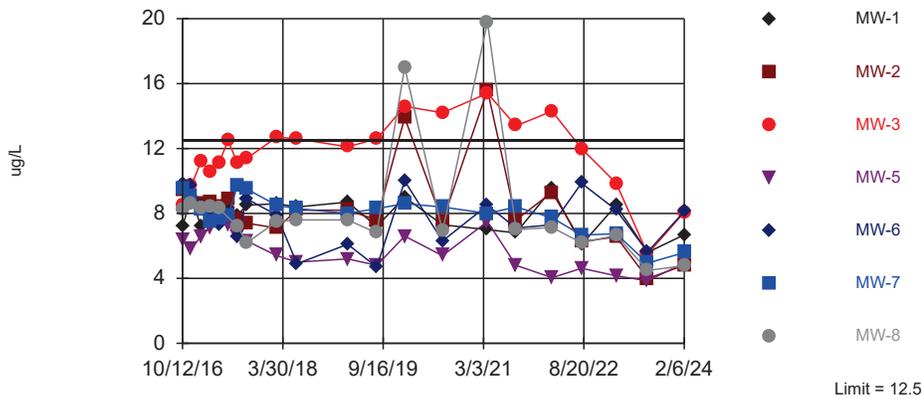


Background Data Summary: Mean=26.04, Std. Dev.=3.673, n=21. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8811, critical = 0.873. Kappa = 2.491 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Individual comparison alpha = 0.0003583. Comparing 6 points to limit. Assumes 1 future value.

Constituent: Lithium Analysis Run 4/3/2024 1:42 PM View: 2024Q1 Interwell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit
Interwell Parametric

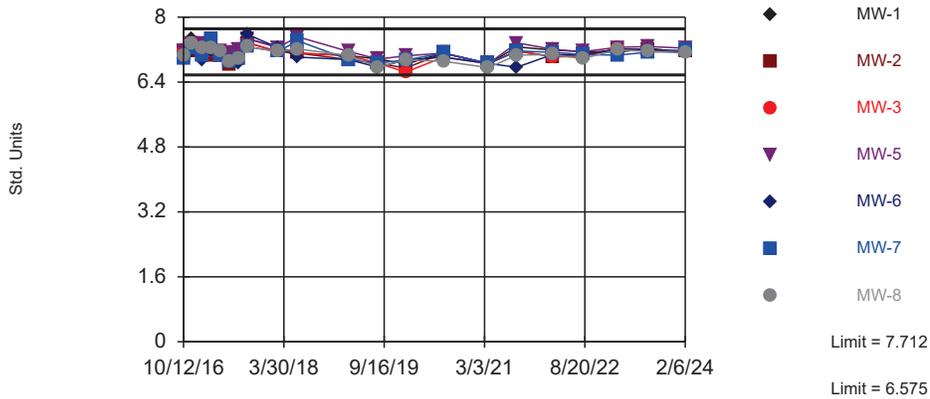


Background Data Summary (based on square root transformation): Mean=2.473, Std. Dev.=0.4264, n=21. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9069, critical = 0.873. Kappa = 2.491 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Individual comparison alpha = 0.0003583. Comparing 7 points to limit.

Constituent: Molybdenum Analysis Run 4/3/2024 1:42 PM View: 2024Q1 Interwell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limits

Prediction Limit
Interwell Parametric

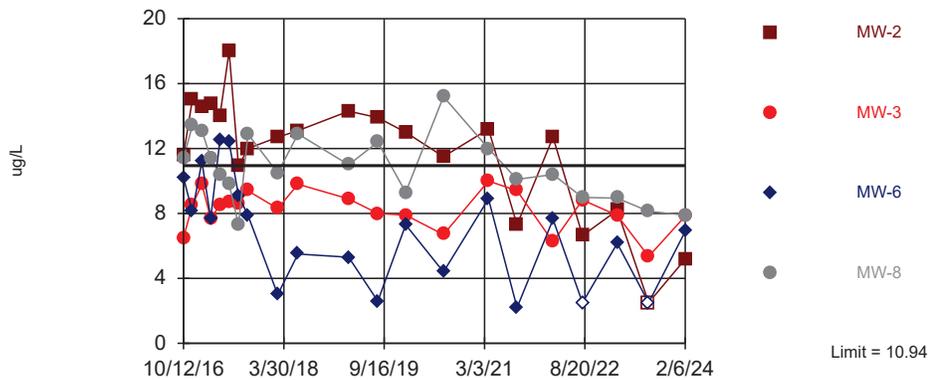


Background Data Summary: Mean=7.144, Std. Dev.=0.2281, n=21. Seasonality was detected with 95% confidence and data were deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8734, critical = 0.873. Kappa = 2.491 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Individual comparison alpha = 0.0001792. Comparing 7 points to limit.

Constituent: pH Analysis Run 4/3/2024 1:42 PM View: 2024Q1 Interwell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit
Interwell Parametric

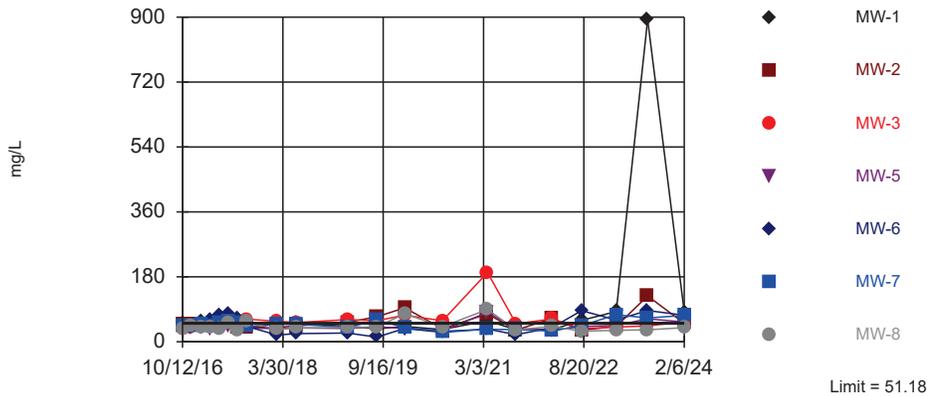


Background Data Summary: Mean=7.535, Std. Dev.=1.358, n=20. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9502, critical = 0.868. Kappa = 2.511 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Individual comparison alpha = 0.0003583. Comparing 4 points to limit. Assumes 3 future values.

Constituent: Selenium Analysis Run 4/3/2024 1:42 PM View: 2024Q1 Interwell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Exceeds Limit: MW-1, MW-3, MW-5, MW-6, MW-7

Prediction Limit
Interwell Parametric

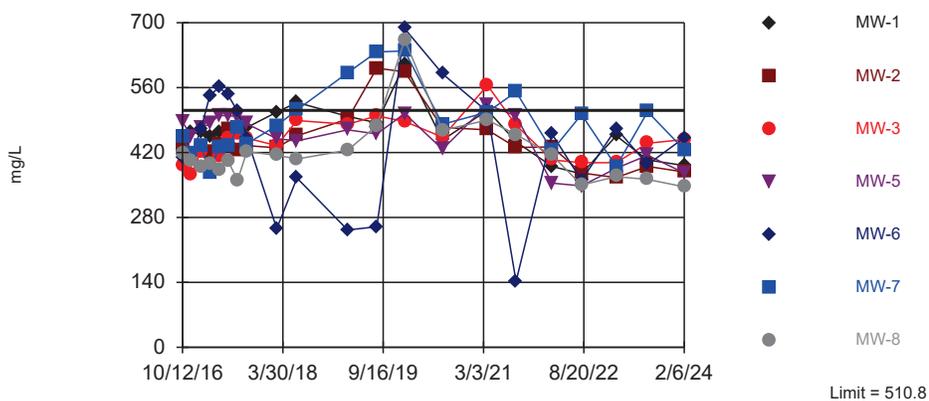


Background Data Summary (based on square transformation): Mean=1577, Std. Dev.=418.4, n=21. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9127, critical = 0.873. Kappa = 2.491 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Individual comparison alpha = 0.0003583. Comparing 7 points to limit.

Constituent: Sulfate Analysis Run 4/3/2024 1:42 PM View: 2024Q1 Interwell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit
Interwell Parametric

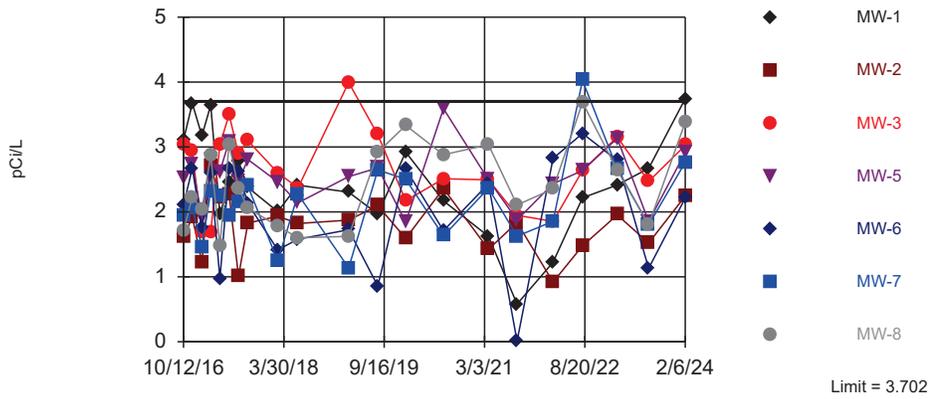


Background Data Summary: Mean=405.5, Std. Dev.=42.25, n=21. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9746, critical = 0.873. Kappa = 2.491 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Individual comparison alpha = 0.0003583. Comparing 7 points to limit.

Constituent: Total Dissolved Solids Analysis Run 4/3/2024 1:42 PM View: 2024Q1 Interwell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Exceeds Limit: MW-1

Prediction Limit Interwell Parametric



Background Data Summary: Mean=2.251, Std. Dev.=0.5824, n=21. Seasonality was detected with 95% confidence and data were deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9706, critical = 0.873. Kappa = 2.491 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Individual comparison alpha = 0.0003583. Comparing 7 points to limit.

Constituent: Total Radium Analysis Run 4/3/2024 1:42 PM View: 2024Q1 Interwell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

A.4 Sen's Slope/Mann-Kendall Analysis

Trend Test

Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater Printed 4/3/2024, 1:50 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 (ug/L)	MW-1	0.175	93	78	Yes	21	0	0.02	NP
Arsenic (ug/L)	MW-2	0.03236	41	78	No	21	0	0.02	NP
Arsenic (ug/L)	MW-3	0.1064	74	78	No	21	0	0.02	NP
Arsenic (ug/L)	MW-4R (bg)	0.239	90	78	Yes	21	0	0.02	NP
Arsenic (ug/L)	MW-5	0.0077	11	78	No	21	0	0.02	NP
Arsenic (ug/L)	MW-6	0.1753	111	78	Yes	21	0	0.02	NP
Arsenic (ug/L)	MW-7	0.05843	73	78	No	21	0	0.02	NP
Arsenic (ug/L)	MW-8	0.004897	24	78	No	21	0	0.02	NP
Barium (ug/L)	MW-1	-2.262	-32	-78	No	21	0	0.02	NP
Barium (ug/L)	MW-2	1.926	69	78	No	21	0	0.02	NP
Barium (ug/L)	MW-3	1.806	35	78	No	21	0	0.02	NP
Barium (ug/L)	MW-4R (bg)	2.161	48	78	No	21	0	0.02	NP
Barium (ug/L)	MW-5	-2.79	-68	-78	No	21	0	0.02	NP
Barium (ug/L)	MW-6	-4.073	-38	-78	No	21	0	0.02	NP
Barium (ug/L)	MW-7	3.401	63	78	No	21	0	0.02	NP
Barium (ug/L)	MW-8	0	3	78	No	21	0	0.02	NP
Boron (ug/L)	MW-1	-2.729	-45	-78	No	21	4.762	0.02	NP
Boron (ug/L)	MW-2	4.137	54	73	No	20	5	0.02	NP
Boron (ug/L)	MW-7	-11.97	-121	-78	Yes	21	14.29	0.02	NP
Calcium (mg/L)	MW-1	-1.596	-82	-78	Yes	21	0	0.02	NP
Calcium (mg/L)	MW-2	0.4586	18	78	No	21	0	0.02	NP
Calcium (mg/L)	MW-3	2.56	104	78	Yes	21	0	0.02	NP
Calcium (mg/L)	MW-4R (bg)	1.506	59	78	No	21	0	0.02	NP
Calcium (mg/L)	MW-5	-3.008	-98	-78	Yes	21	0	0.02	NP
Calcium (mg/L)	MW-6	1.311	15	78	No	21	0	0.02	NP
Calcium (mg/L)	MW-7	-0.5671	-20	-78	No	21	0	0.02	NP
Calcium (mg/L)	MW-8	1.684	66	78	No	21	0	0.02	NP
Chloride (mg/L)	MW-1	3.881	144	78	Yes	21	0	0.02	NP
Chloride (mg/L)	MW-2	1.651	62	73	No	20	0	0.02	NP
Chloride (mg/L)	MW-3	3.474	124	78	Yes	21	0	0.02	NP
Chloride (mg/L)	MW-4R (bg)	3.774	112	73	Yes	20	0	0.02	NP
Chloride (mg/L)	MW-5	4.369	128	78	Yes	21	0	0.02	NP
Chloride (mg/L)	MW-6	1.725	36	73	No	20	0	0.02	NP
Chloride (mg/L)	MW-7	11.65	97	78	Yes	21	0	0.02	NP
Chloride (mg/L)	MW-8	2.293	116	78	Yes	21	0	0.02	NP
Fluoride (mg/L)	MW-2	0.07072	99	78	Yes	21	0	0.02	NP
Lithium (ug/L)	MW-1	-0.9449	-81	-78	Yes	21	0	0.02	NP
Lithium (ug/L)	MW-2	0.6425	75	73	Yes	20	0	0.02	NP
Lithium (ug/L)	MW-3	0.4784	57	78	No	21	0	0.02	NP
Lithium (ug/L)	MW-4R (bg)	0.3997	64	78	No	21	0	0.02	NP
Lithium (ug/L)	MW-5	-0.4018	-47	-78	No	21	0	0.02	NP
Lithium (ug/L)	MW-7	-0.1675	-22	-78	No	21	0	0.02	NP
Lithium (ug/L)	MW-8	0.2264	23	73	No	20	0	0.02	NP
Molybdenum (ug/L)	MW-1	-0.1889	-43	-78	No	21	0	0.02	NP
Molybdenum (ug/L)	MW-2	-0.4027	-89	-78	Yes	21	0	0.02	NP
Molybdenum (ug/L)	MW-3	0.4937	48	78	No	21	0	0.02	NP
Molybdenum (ug/L)	MW-4R (bg)	-0.267	-63	-78	No	21	0	0.02	NP
Molybdenum (ug/L)	MW-5	-0.3551	-109	-78	Yes	21	0	0.02	NP
Molybdenum (ug/L)	MW-6	-0.1582	-34	-78	No	21	0	0.02	NP
Molybdenum (ug/L)	MW-7	-0.3419	-86	-78	Yes	21	0	0.02	NP

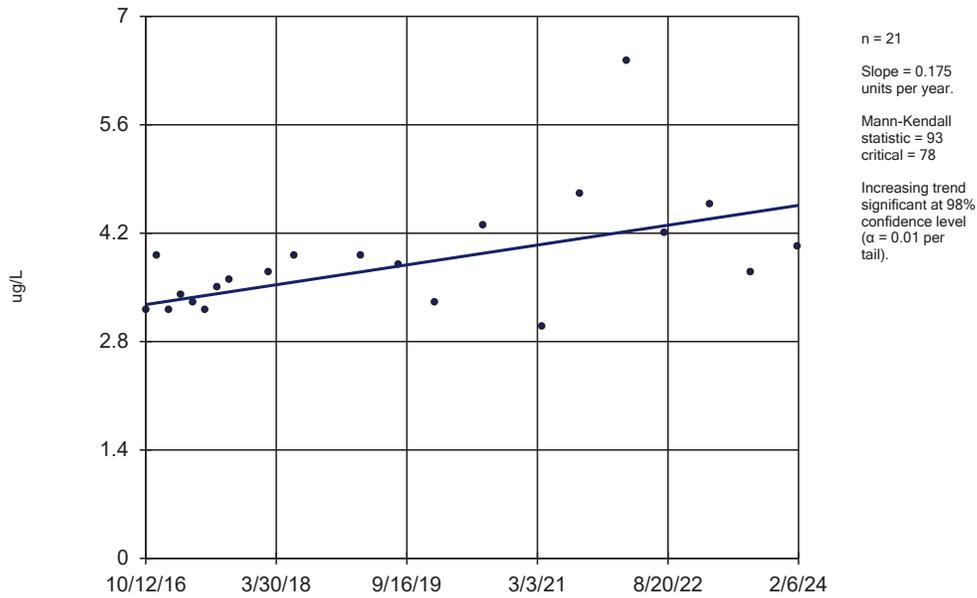
Trend Test

Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater Printed 4/3/2024, 1:50 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 (ug/L)	MW-8	-0.341	-88	-73	Yes	20	0	0.02	NP
pH (Std. Units)	MW-1	-0.002045	-21	-78	No	21	0	0.02	NP
pH (Std. Units)	MW-2	-0.0008406	-20	-78	No	21	0	0.02	NP
pH (Std. Units)	MW-3	-0.02954	-48	-78	No	21	0	0.02	NP
pH (Std. Units)	MW-4R (bg)	-0.01207	-22	-78	No	21	0	0.02	NP
pH (Std. Units)	MW-5	-0.02378	-41	-78	No	21	0	0.02	NP
pH (Std. Units)	MW-6	-0.001704	-19	-78	No	21	0	0.02	NP
pH (Std. Units)	MW-7	-0.02478	-24	-78	No	21	0	0.02	NP
pH (Std. Units)	MW-8	-0.02202	-55	-78	No	21	0	0.02	NP
Selenium (ug/L)	MW-2	-1.062	-109	-78	Yes	21	4.762	0.02	NP
Selenium (ug/L)	MW-3	-0.1166	-33	-78	No	21	0	0.02	NP
Selenium (ug/L)	MW-4R (bg)	0.01163	6	73	No	20	0	0.02	NP
Selenium (ug/L)	MW-6	-0.836	-99	-78	Yes	21	9.524	0.02	NP
Selenium (ug/L)	MW-8	-0.422	-87	-78	Yes	21	0	0.02	NP
Sulfate (mg/L)	MW-1	0.4671	6	78	No	21	0	0.02	NP
Sulfate (mg/L)	MW-2	0.4491	8	73	No	20	0	0.02	NP
Sulfate (mg/L)	MW-3	1.217	26	78	No	21	0	0.02	NP
Sulfate (mg/L)	MW-4R (bg)	0.5184	41	78	No	21	0	0.02	NP
Sulfate (mg/L)	MW-5	0.509	26	78	No	21	0	0.02	NP
Sulfate (mg/L)	MW-6	1.587	22	78	No	21	0	0.02	NP
Sulfate (mg/L)	MW-7	-0.2306	-2	-78	No	21	0	0.02	NP
Sulfate (mg/L)	MW-8	-0.3302	-14	-78	No	21	0	0.02	NP
Total Dissolved Solids (mg/L)	MW-1	-4.534	-24	-78	No	21	0	0.02	NP
Total Dissolved Solids (mg/L)	MW-2	-1.937	-11	-78	No	21	0	0.02	NP
Total Dissolved Solids (mg/L)	MW-3	7.165	44	78	No	21	0	0.02	NP
Total Dissolved Solids (mg/L)	MW-4R (bg)	4.339	22	78	No	21	0	0.02	NP
Total Dissolved Solids (mg/L)	MW-5	-12.79	-74	-78	No	21	0	0.02	NP
Total Dissolved Solids (mg/L)	MW-6	-8.935	-24	-78	No	21	0	0.02	NP
Total Dissolved Solids (mg/L)	MW-7	11.5	50	78	No	21	0	0.02	NP
Total Dissolved Solids (mg/L)	MW-8	-1.829	-5	-78	No	21	0	0.02	NP
Total Radium (pCi/L)	MW-1	-0.1441	-58	-78	No	21	0	0.02	NP
Total Radium (pCi/L)	MW-2	-0.01557	-15	-78	No	21	0	0.02	NP
Total Radium (pCi/L)	MW-3	-0.01222	-10	-78	No	21	0	0.02	NP
Total Radium (pCi/L)	MW-4R (bg)	0.0462	22	78	No	21	0	0.02	NP
Total Radium (pCi/L)	MW-5	-0.009296	-7	-78	No	21	0	0.02	NP
Total Radium (pCi/L)	MW-6	-0.001157	-1	-78	No	21	0	0.02	NP
Total Radium (pCi/L)	MW-7	0.06112	37	78	No	21	0	0.02	NP
Total Radium (pCi/L)	MW-8	0.09209	44	78	No	21	0	0.02	NP

Sen's Slope Estimator

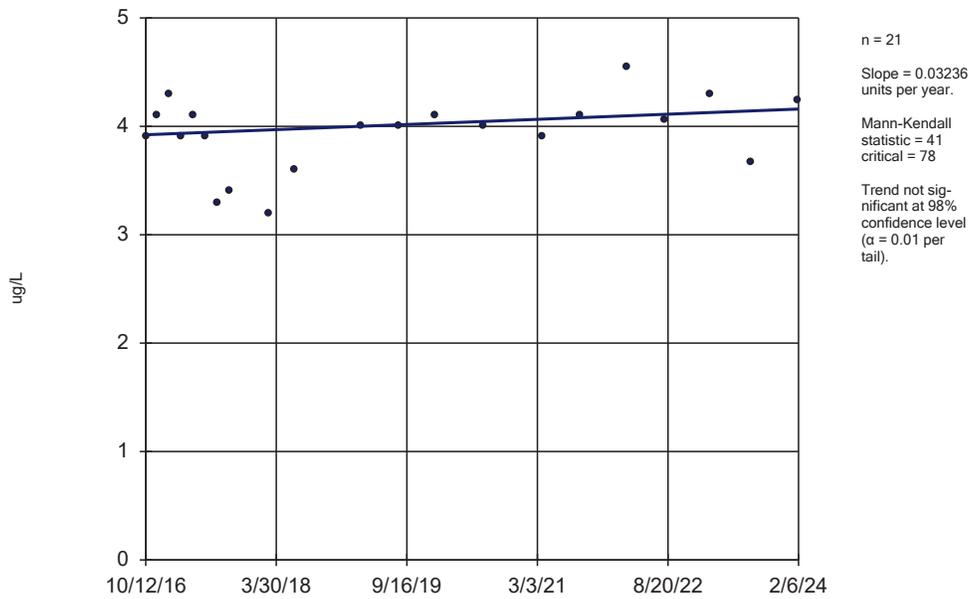
MW-1



Constituent: Arsenic Analysis Run 4/3/2024 1:46 PM View: 2024Q1 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

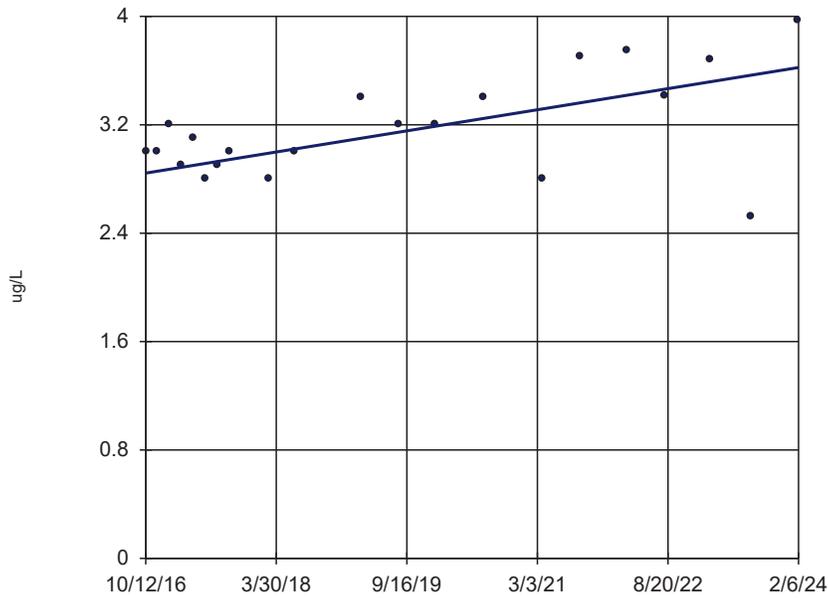
MW-2



Constituent: Arsenic Analysis Run 4/3/2024 1:46 PM View: 2024Q1 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

MW-3

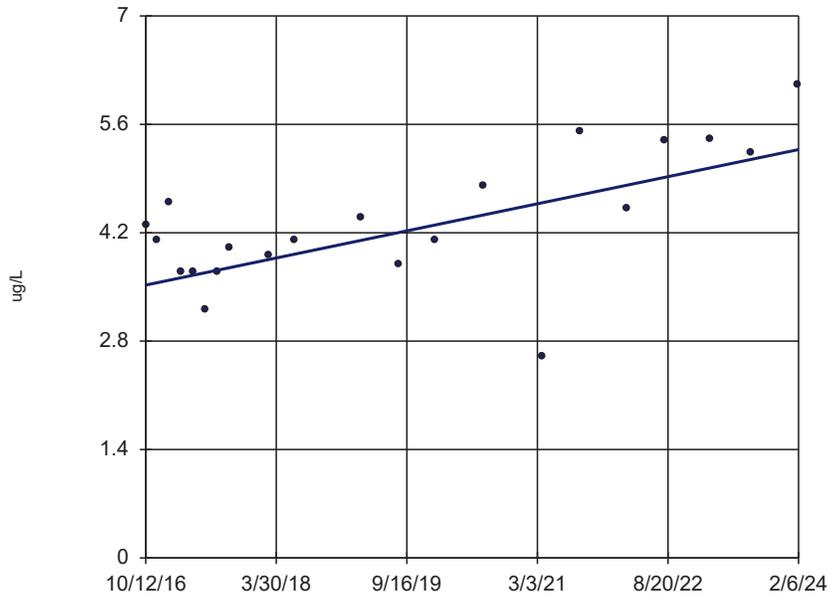


n = 21
Slope = 0.1064
units per year.
Mann-Kendall
statistic = 74
critical = 78
Trend not sig-
nificant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Constituent: Arsenic Analysis Run 4/3/2024 1:46 PM View: 2024Q1 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

MW-4R (bg)

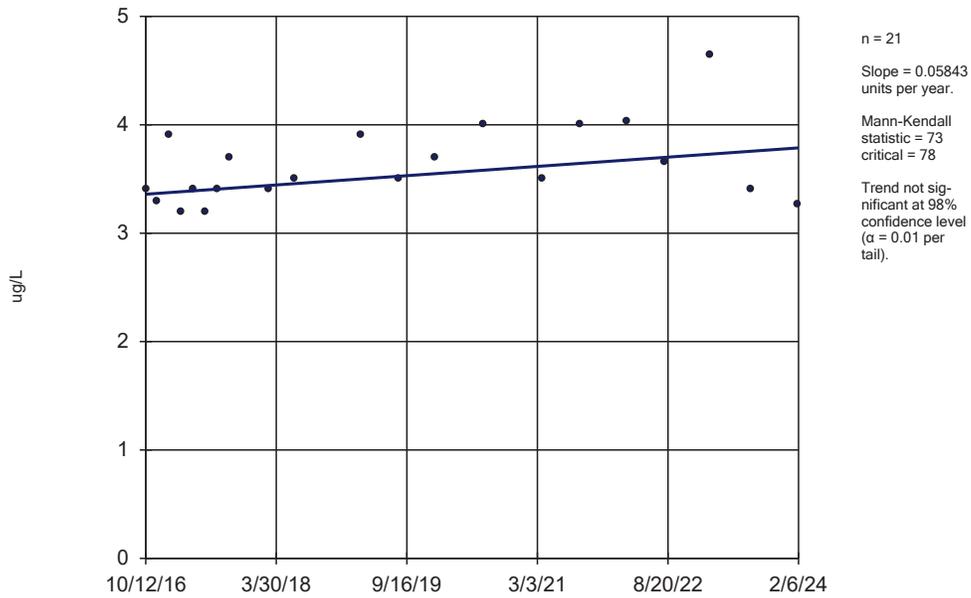


n = 21
Slope = 0.239
units per year.
Mann-Kendall
statistic = 90
critical = 78
Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Constituent: Arsenic Analysis Run 4/3/2024 1:46 PM View: 2024Q1 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

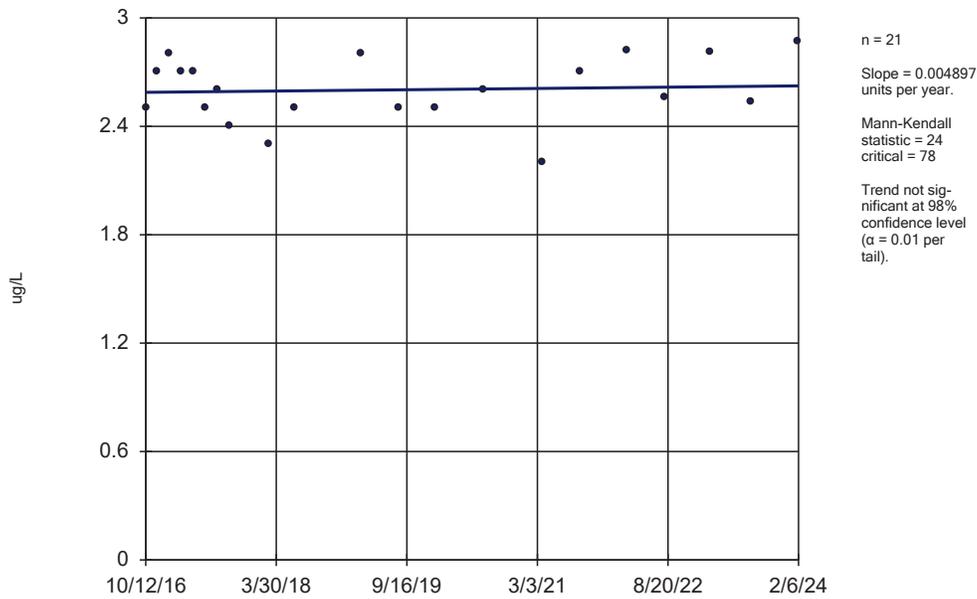
MW-7



Constituent: Arsenic Analysis Run 4/3/2024 1:46 PM View: 2024Q1 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

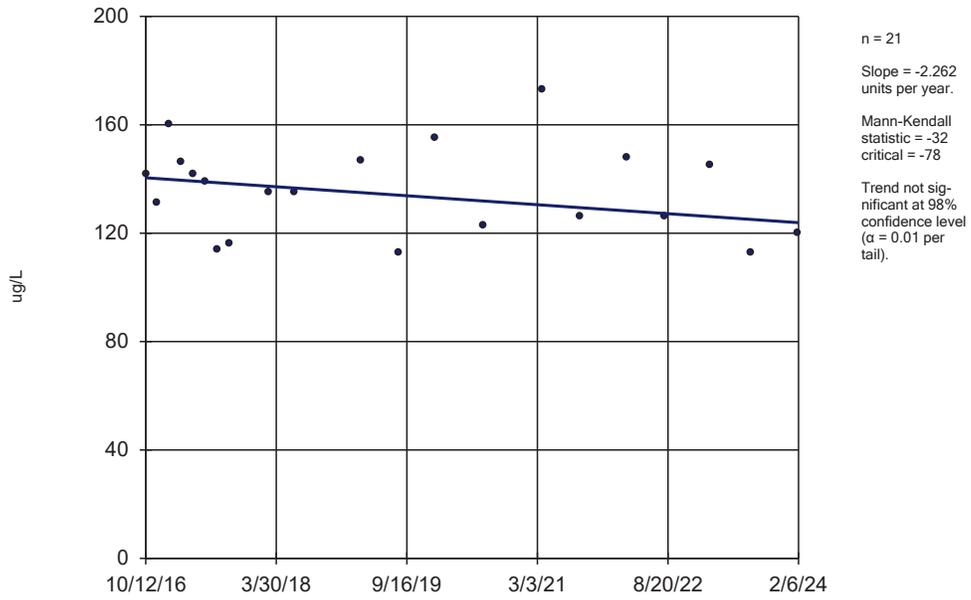
MW-8



Constituent: Arsenic Analysis Run 4/3/2024 1:46 PM View: 2024Q1 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

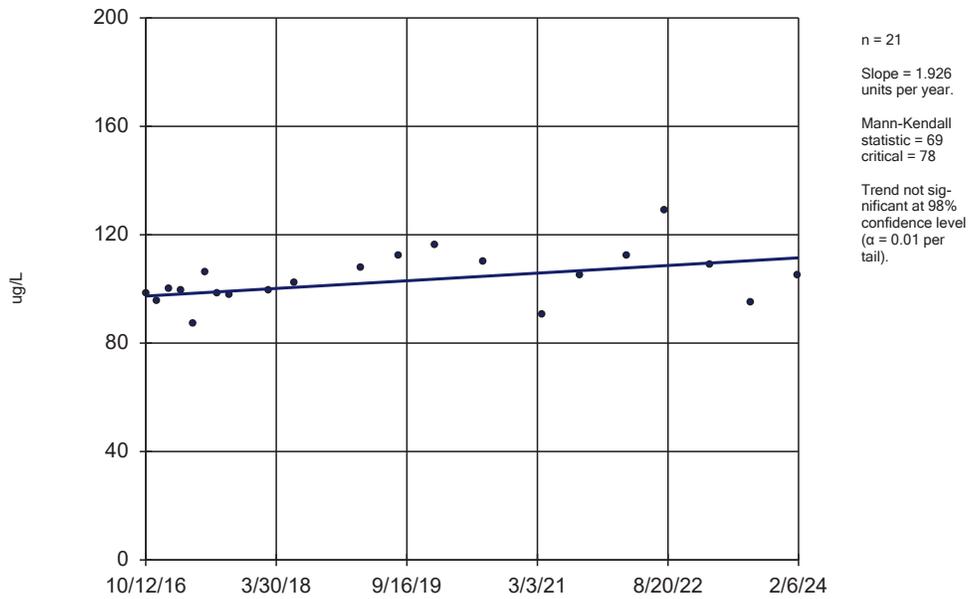
MW-1



Constituent: Barium Analysis Run 4/3/2024 1:46 PM View: 2024Q1 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

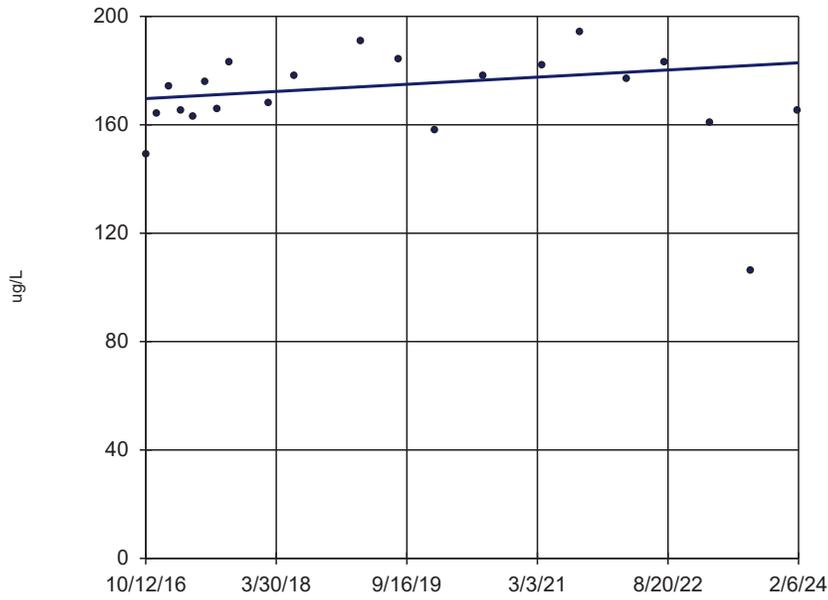
MW-2



Constituent: Barium Analysis Run 4/3/2024 1:46 PM View: 2024Q1 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

MW-3



n = 21

Slope = 1.806
units per year.

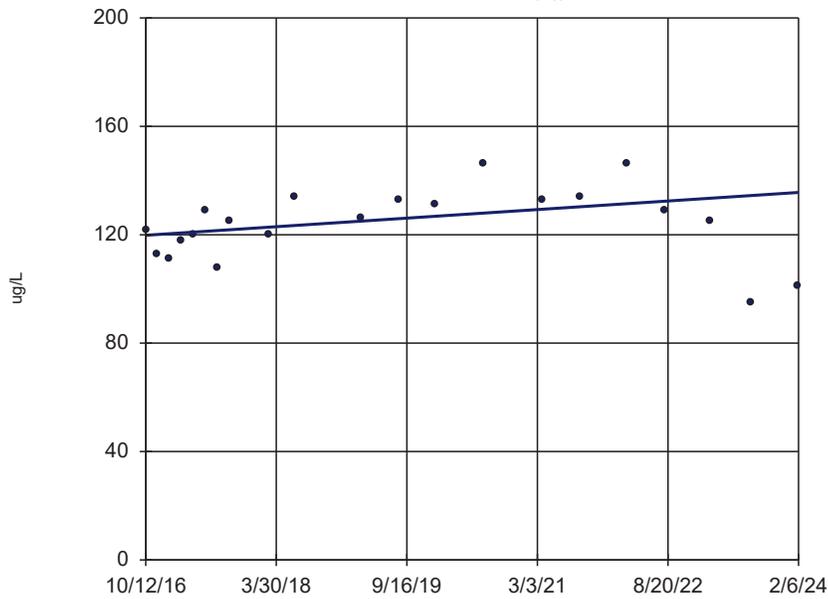
Mann-Kendall
statistic = 35
critical = 78

Trend not sig-
nificant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Constituent: Barium Analysis Run 4/3/2024 1:46 PM View: 2024Q1 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

MW-4R (bg)



n = 21

Slope = 2.161
units per year.

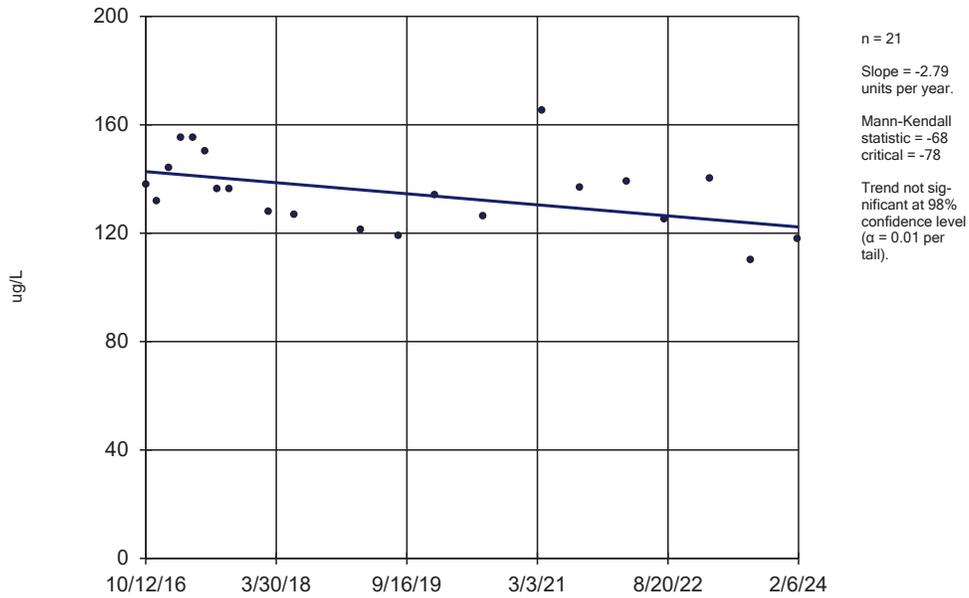
Mann-Kendall
statistic = 48
critical = 78

Trend not sig-
nificant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Constituent: Barium Analysis Run 4/3/2024 1:46 PM View: 2024Q1 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

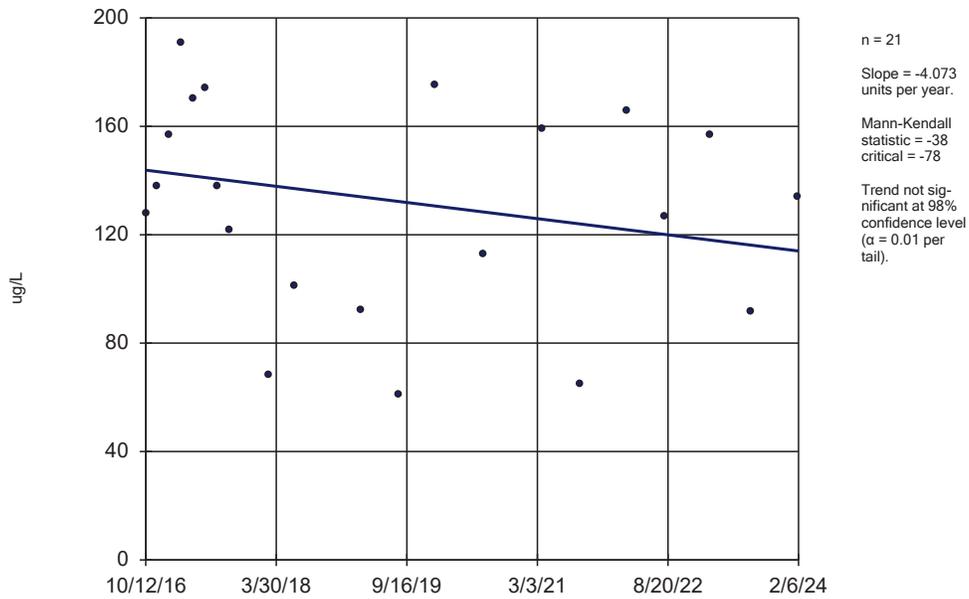
MW-5



Constituent: Barium Analysis Run 4/3/2024 1:46 PM View: 2024Q1 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

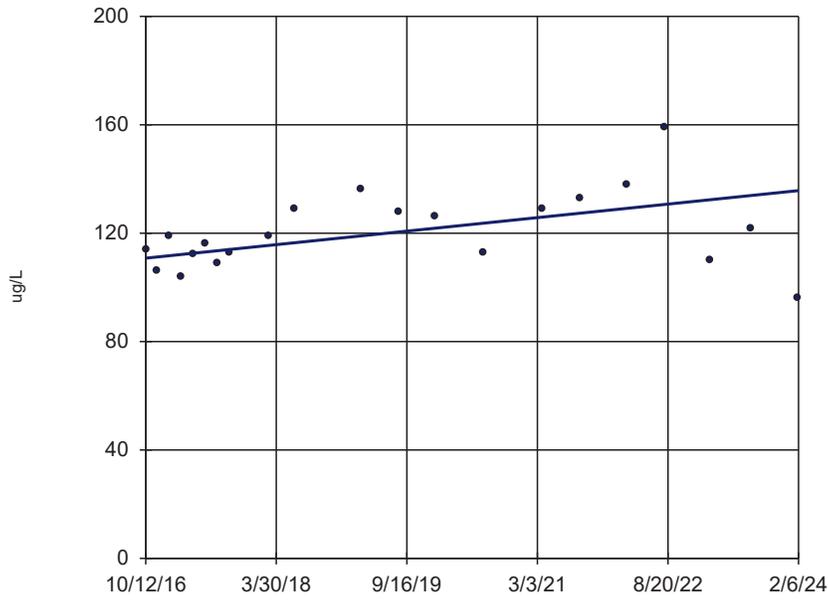
MW-6



Constituent: Barium Analysis Run 4/3/2024 1:46 PM View: 2024Q1 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

MW-7

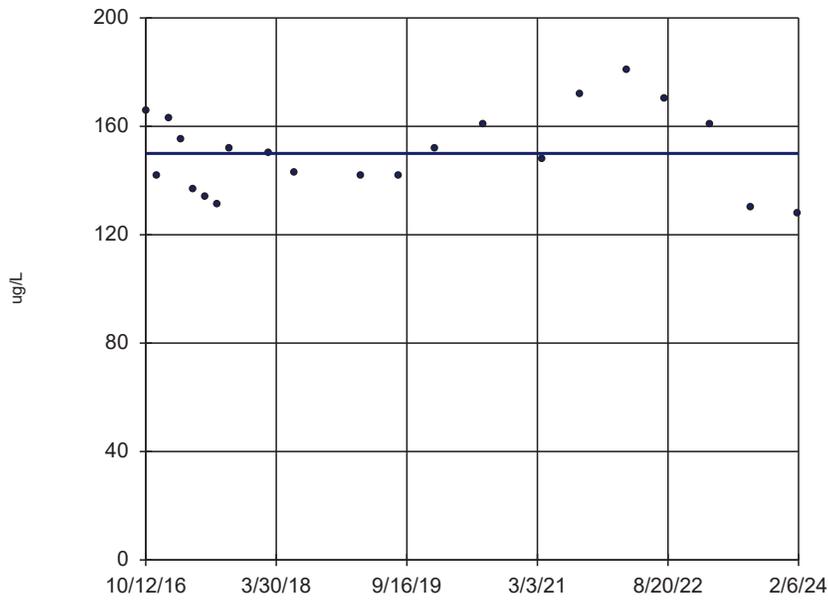


n = 21
Slope = 3.401
units per year.
Mann-Kendall
statistic = 63
critical = 78
Trend not sig-
nificant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Constituent: Barium Analysis Run 4/3/2024 1:46 PM View: 2024Q1 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

MW-8

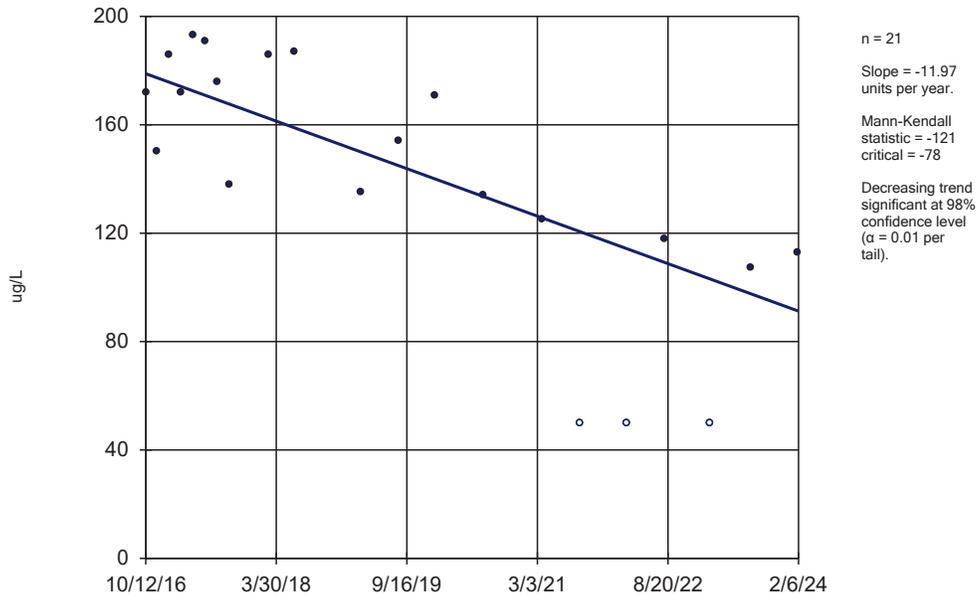


n = 21
Slope = 0
units per year.
Mann-Kendall
statistic = 3
critical = 78
Trend not sig-
nificant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Constituent: Barium Analysis Run 4/3/2024 1:46 PM View: 2024Q1 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

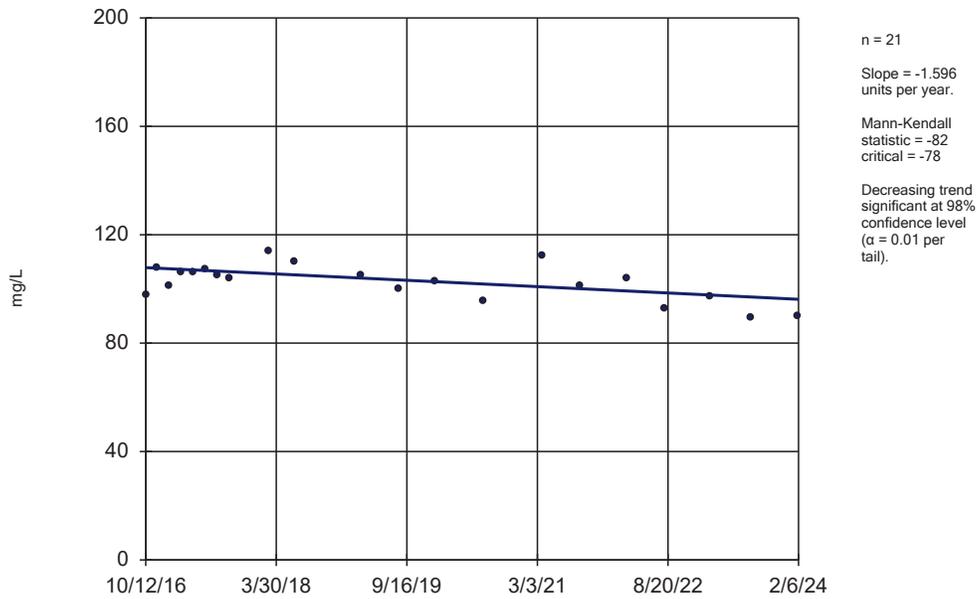
MW-7



Constituent: Boron Analysis Run 4/3/2024 1:46 PM View: 2024Q1 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

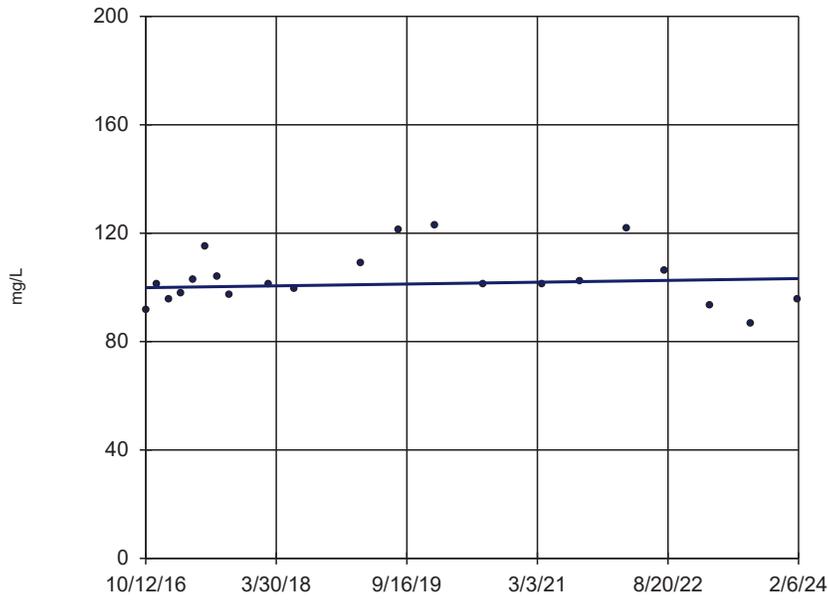
MW-1



Constituent: Calcium Analysis Run 4/3/2024 1:46 PM View: 2024Q1 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

MW-2

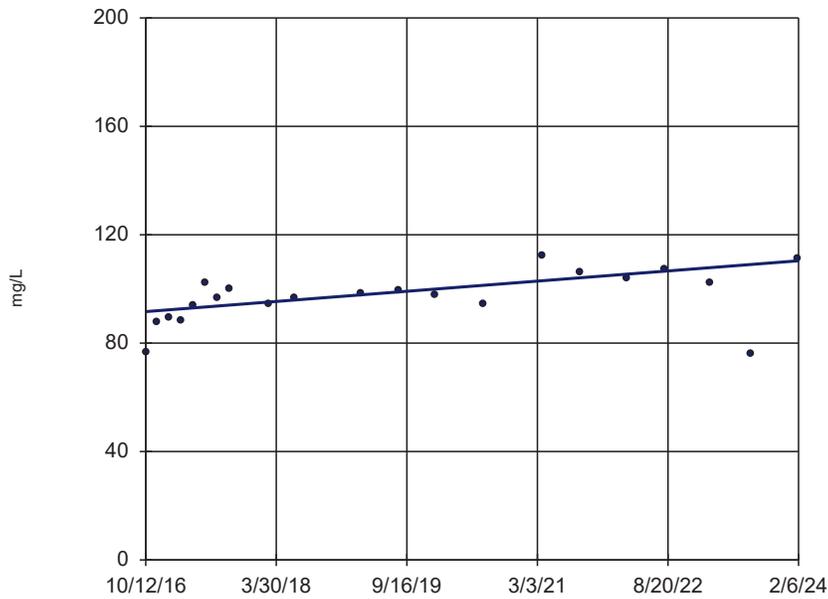


n = 21
Slope = 0.4586
units per year.
Mann-Kendall
statistic = 18
critical = 78
Trend not sig-
nificant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Constituent: Calcium Analysis Run 4/3/2024 1:46 PM View: 2024Q1 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

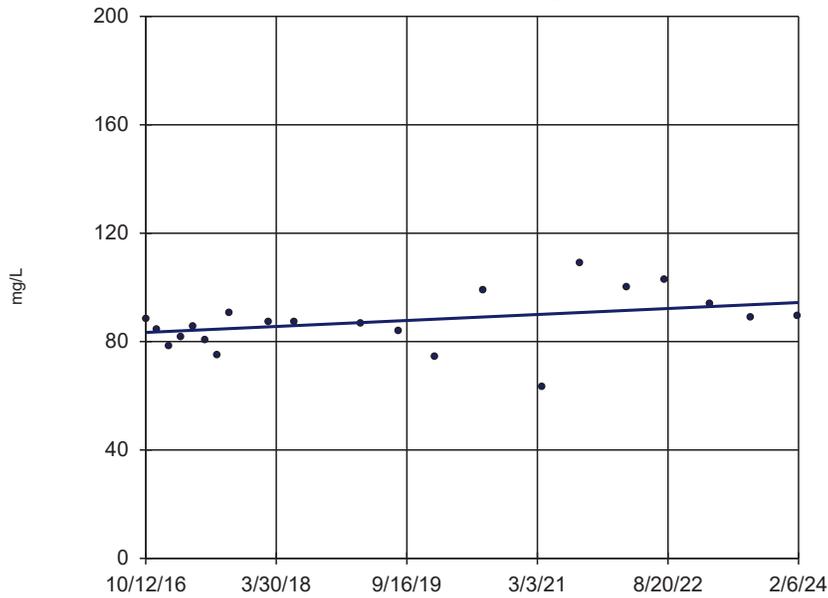
Sen's Slope Estimator

MW-3



Sen's Slope Estimator

MW-4R (bg)

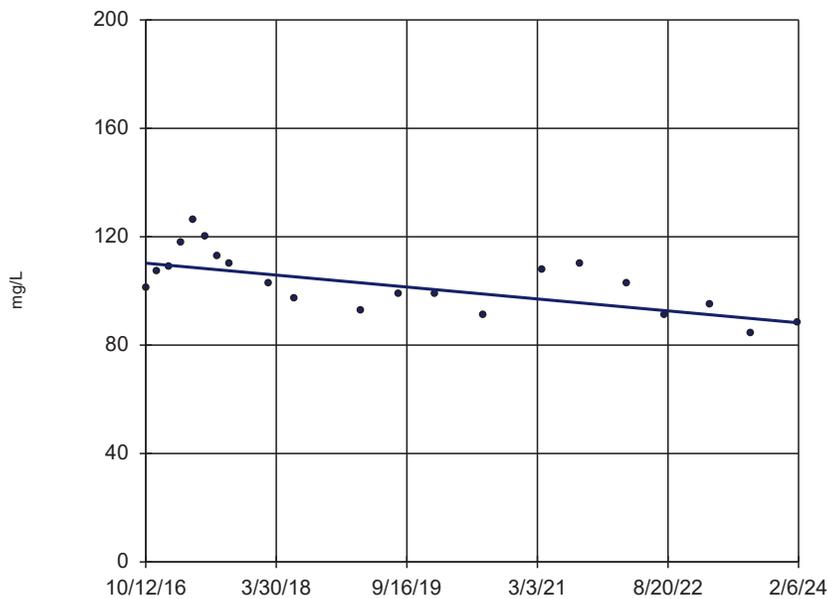


n = 21
Slope = 1.506
units per year.
Mann-Kendall
statistic = 59
critical = 78
Trend not sig-
nificant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Constituent: Calcium Analysis Run 4/3/2024 1:46 PM View: 2024Q1 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

MW-5

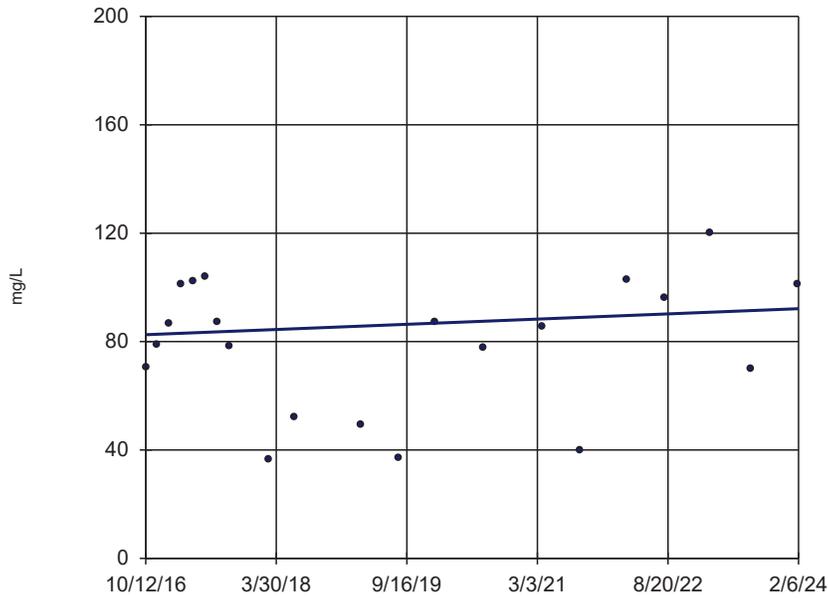


n = 21
Slope = -3.008
units per year.
Mann-Kendall
statistic = -98
critical = -78
Decreasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Constituent: Calcium Analysis Run 4/3/2024 1:46 PM View: 2024Q1 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

MW-6

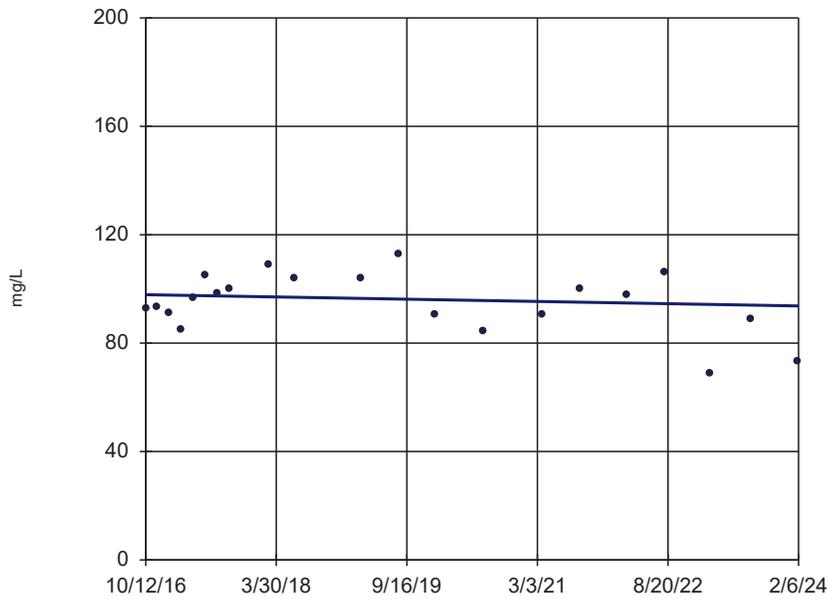


n = 21
Slope = 1.311
units per year.
Mann-Kendall
statistic = 15
critical = 78
Trend not sig-
nificant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Constituent: Calcium Analysis Run 4/3/2024 1:46 PM View: 2024Q1 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

MW-7

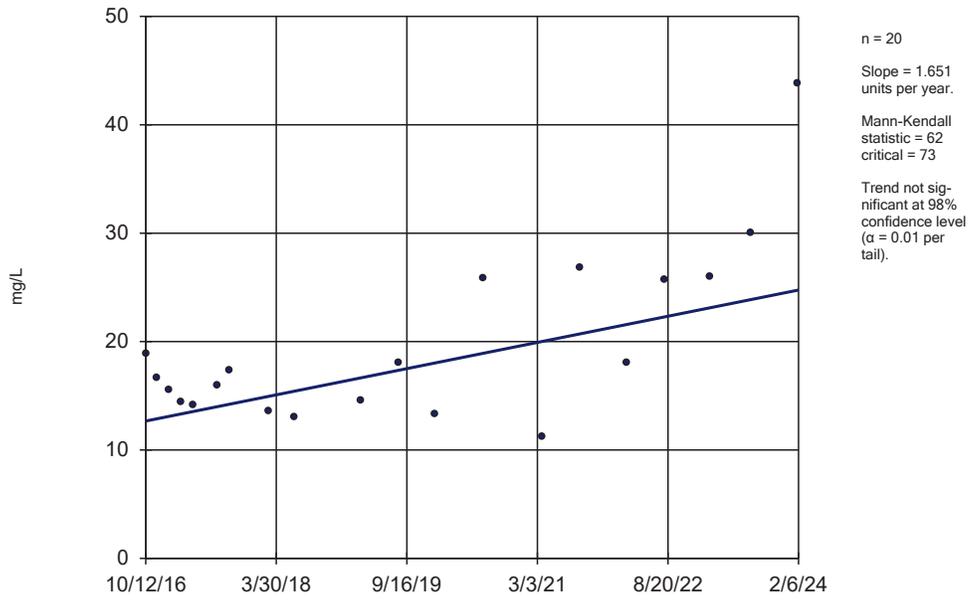


n = 21
Slope = -0.5671
units per year.
Mann-Kendall
statistic = -20
critical = -78
Trend not sig-
nificant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Constituent: Calcium Analysis Run 4/3/2024 1:46 PM View: 2024Q1 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

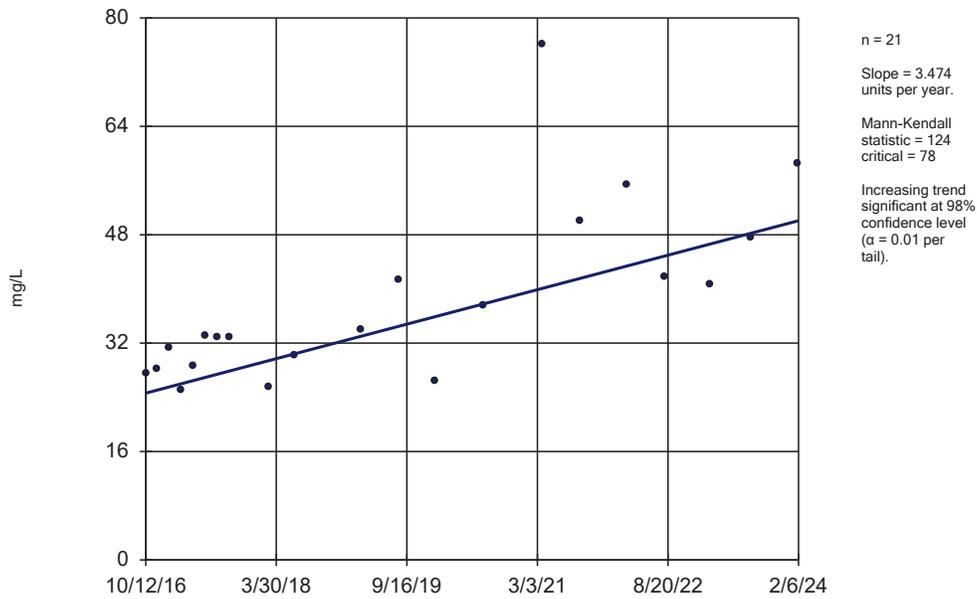
MW-2



Constituent: Chloride Analysis Run 4/3/2024 1:46 PM View: 2024Q1 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

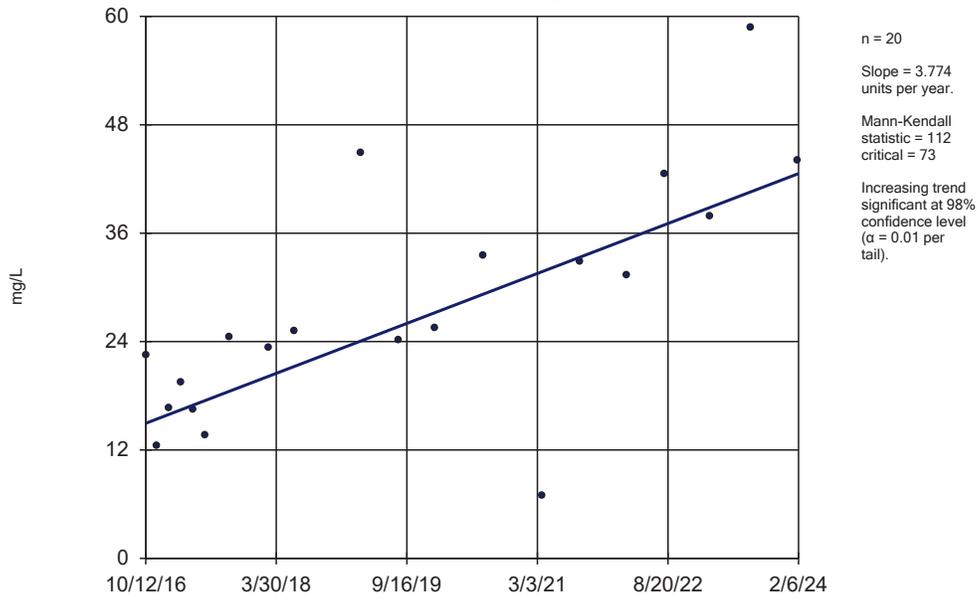
MW-3



Constituent: Chloride Analysis Run 4/3/2024 1:46 PM View: 2024Q1 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

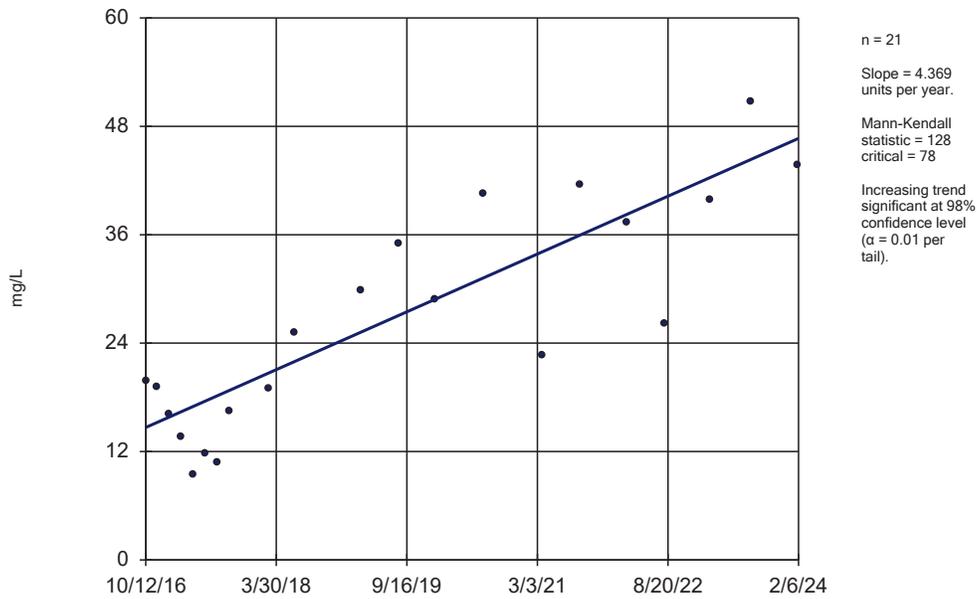
MW-4R (bg)



Constituent: Chloride Analysis Run 4/3/2024 1:46 PM View: 2024Q1 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

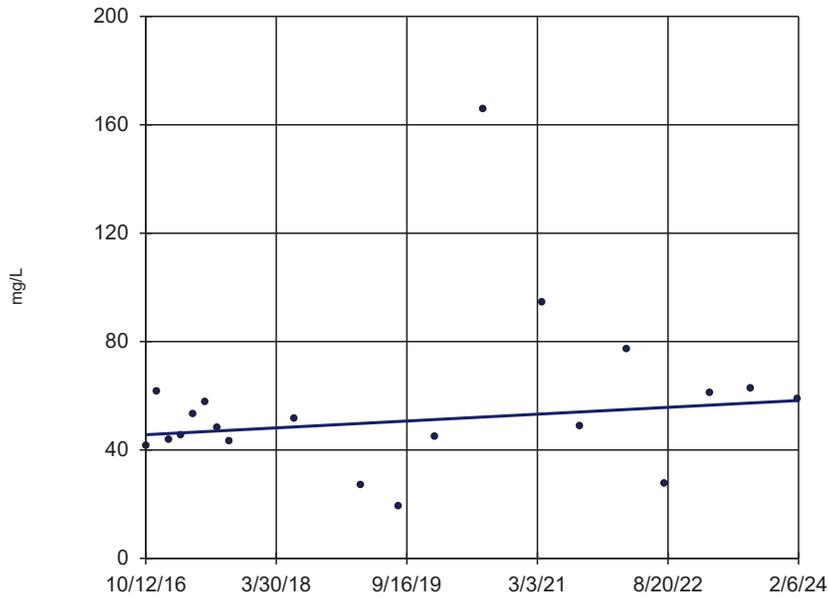
MW-5



Constituent: Chloride Analysis Run 4/3/2024 1:46 PM View: 2024Q1 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

MW-6

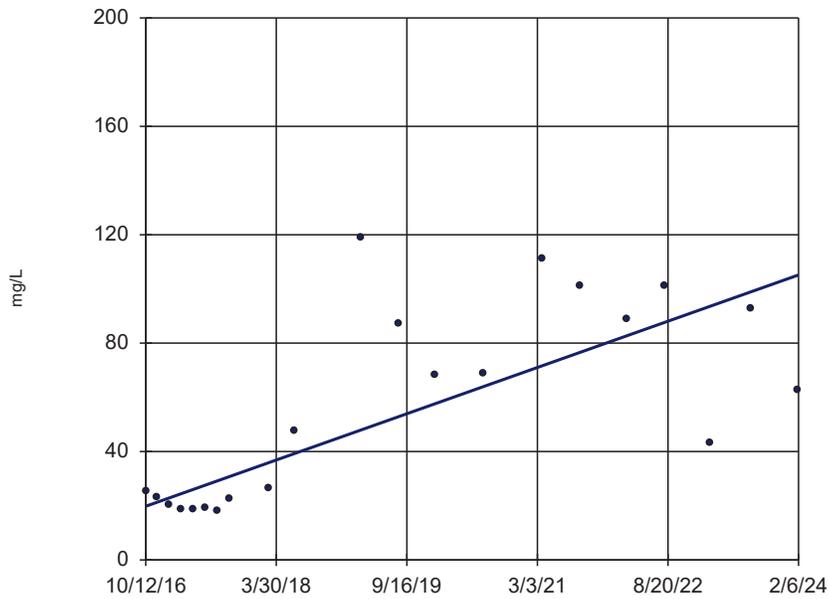


n = 20
Slope = 1.725
units per year.
Mann-Kendall
statistic = 36
critical = 73
Trend not sig-
nificant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Constituent: Chloride Analysis Run 4/3/2024 1:46 PM View: 2024Q1 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

MW-7

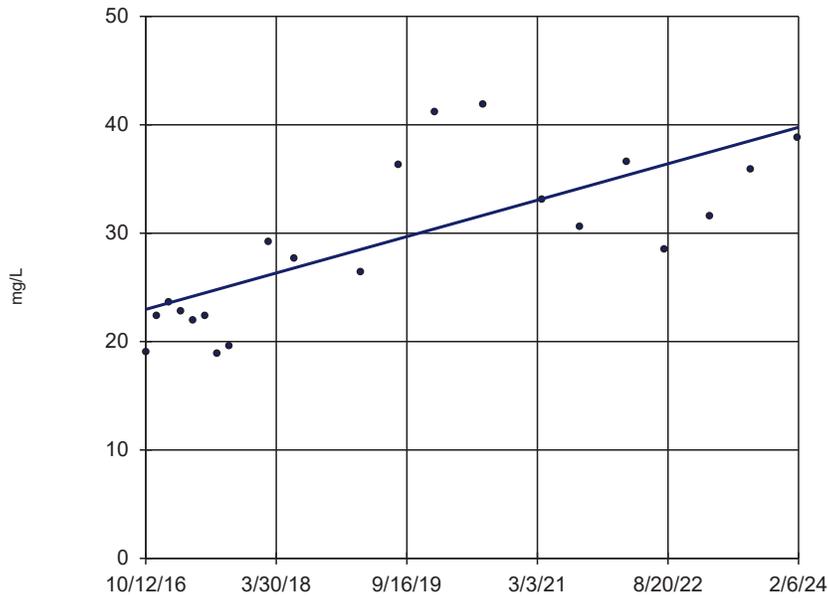


n = 21
Slope = 11.65
units per year.
Mann-Kendall
statistic = 97
critical = 78
Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Constituent: Chloride Analysis Run 4/3/2024 1:46 PM View: 2024Q1 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

MW-8

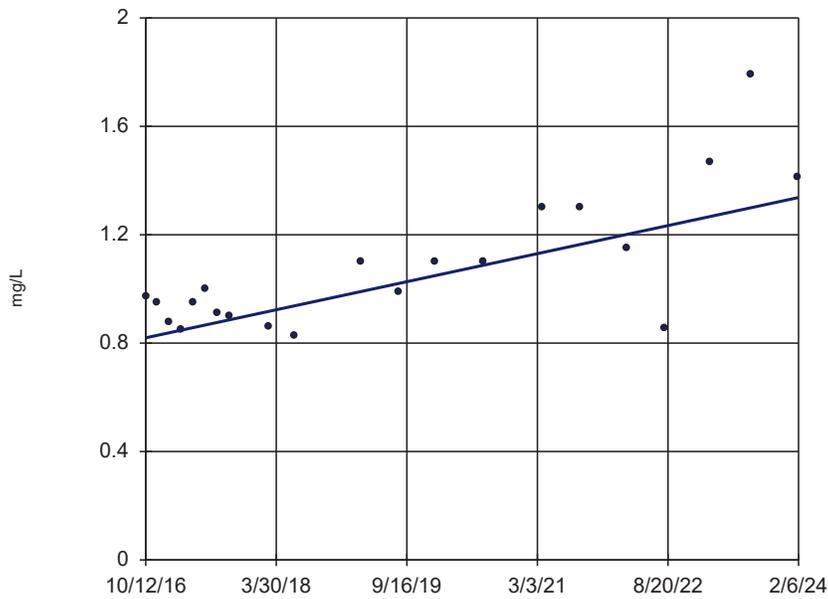


n = 21
Slope = 2.293
units per year.
Mann-Kendall
statistic = 116
critical = 78
Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Constituent: Chloride Analysis Run 4/3/2024 1:46 PM View: 2024Q1 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

MW-2

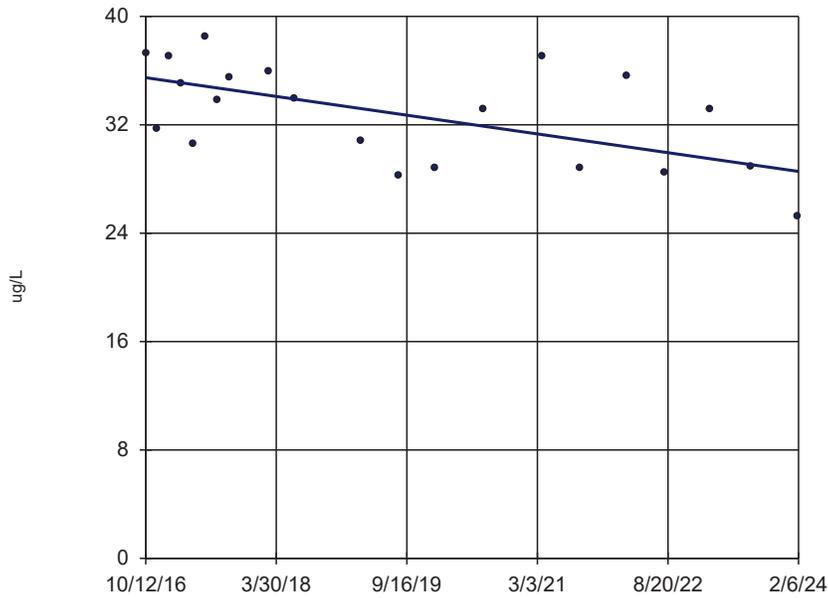


n = 21
Slope = 0.07072
units per year.
Mann-Kendall
statistic = 99
critical = 78
Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Constituent: Fluoride Analysis Run 4/3/2024 1:46 PM View: 2024Q1 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

MW-1

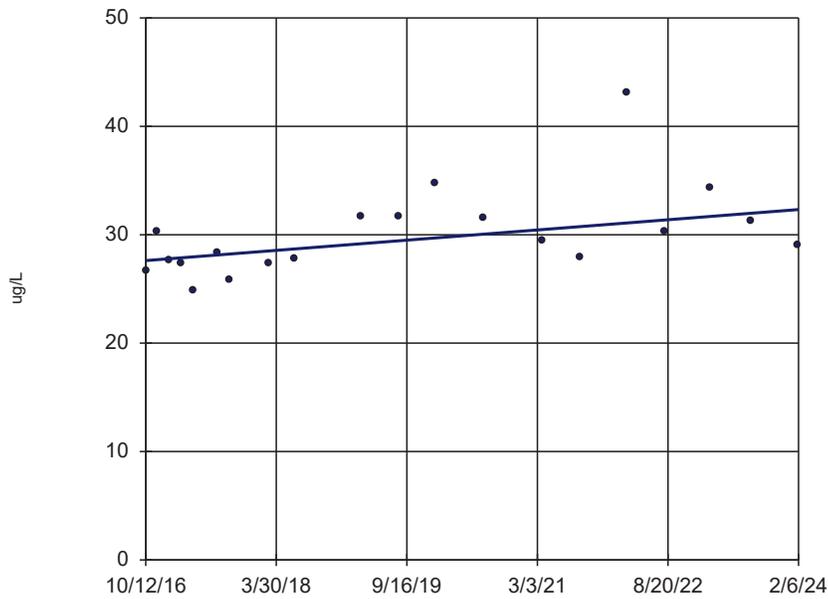


n = 21
Slope = -0.9449 units per year.
Mann-Kendall statistic = -81
critical = -78
Decreasing trend significant at 98% confidence level ($\alpha = 0.01$ per tail).

Constituent: Lithium Analysis Run 4/3/2024 1:46 PM View: 2024Q1 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

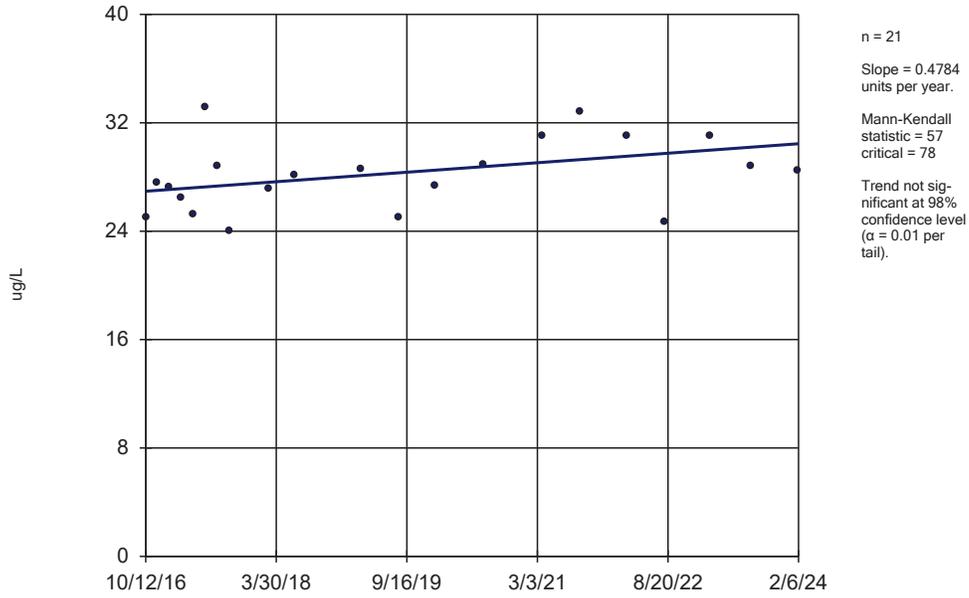
Sen's Slope Estimator

MW-2



Sen's Slope Estimator

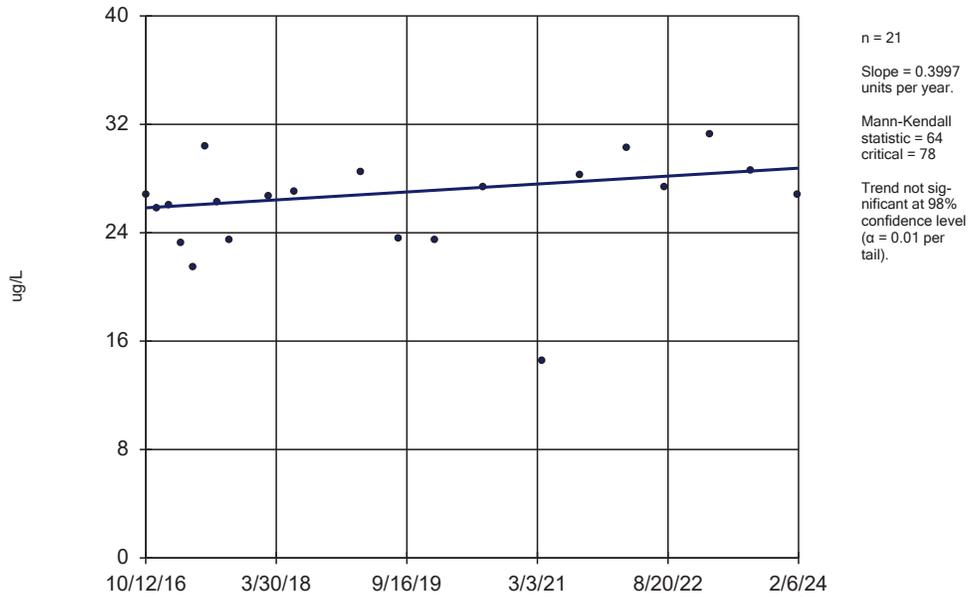
MW-3



Constituent: Lithium Analysis Run 4/3/2024 1:47 PM View: 2024Q1 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

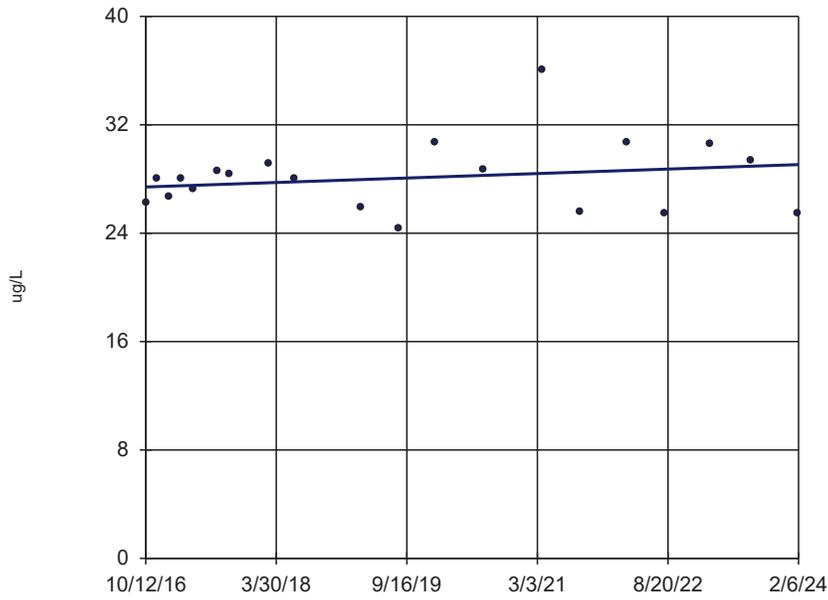
MW-4R (bg)



Constituent: Lithium Analysis Run 4/3/2024 1:47 PM View: 2024Q1 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

MW-8

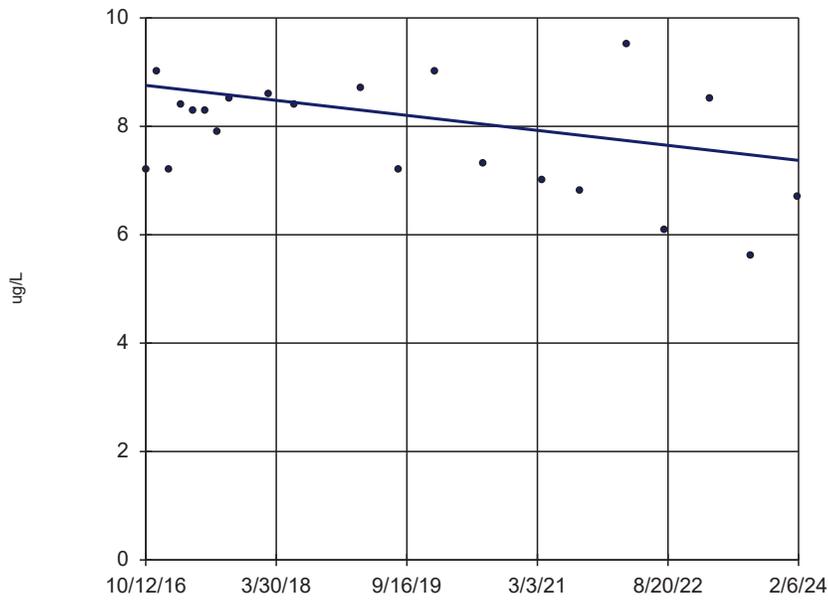


n = 20
Slope = 0.2264
units per year.
Mann-Kendall
statistic = 23
critical = 73
Trend not sig-
nificant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Constituent: Lithium Analysis Run 4/3/2024 1:47 PM View: 2024Q1 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

MW-1

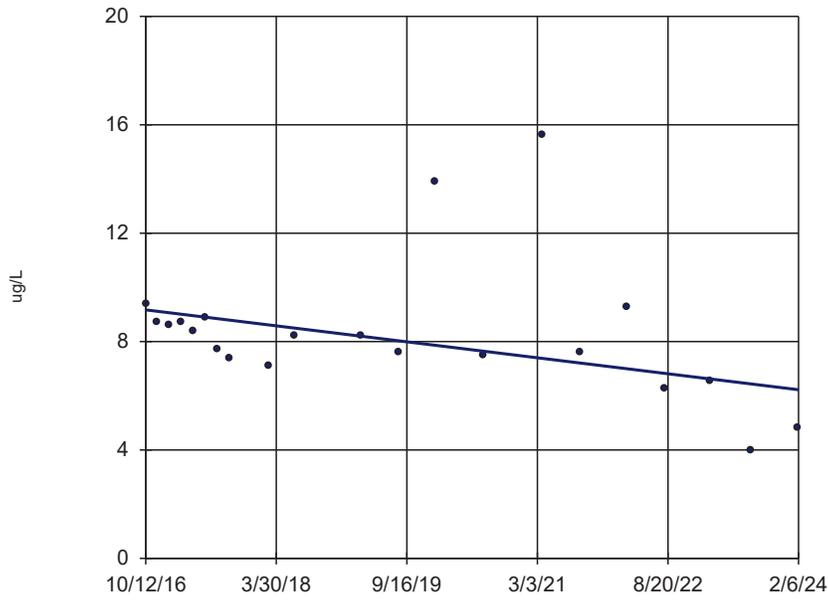


n = 21
Slope = -0.1889
units per year.
Mann-Kendall
statistic = -43
critical = -78
Trend not sig-
nificant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Constituent: Molybdenum Analysis Run 4/3/2024 1:47 PM View: 2024Q1 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

MW-2

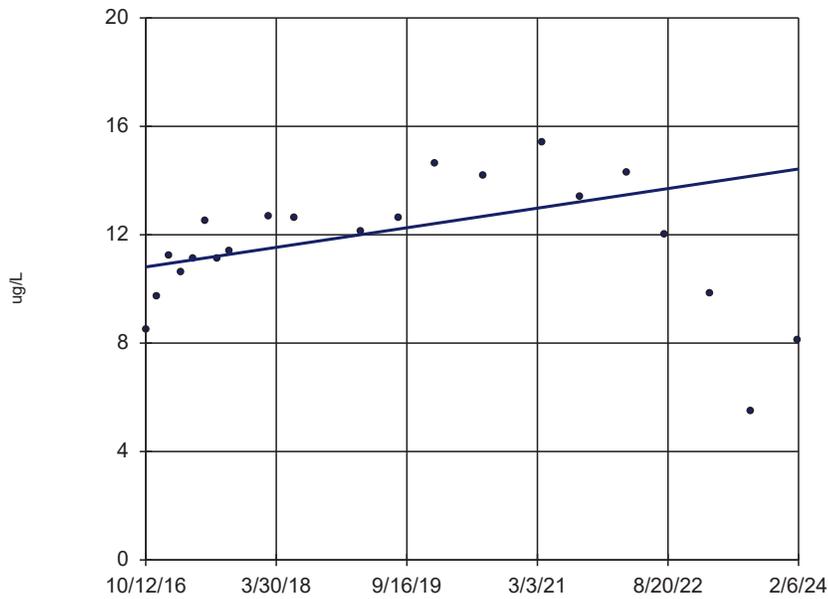


n = 21
Slope = -0.4027
units per year.
Mann-Kendall
statistic = -89
critical = -78
Decreasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Constituent: Molybdenum Analysis Run 4/3/2024 1:47 PM View: 2024Q1 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

MW-3

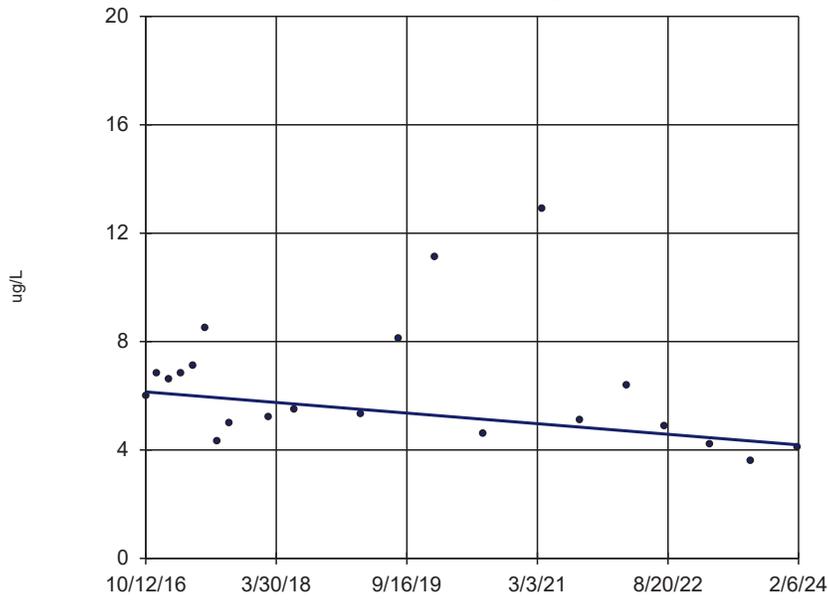


n = 21
Slope = 0.4937
units per year.
Mann-Kendall
statistic = 48
critical = 78
Trend not sig-
nificant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Constituent: Molybdenum Analysis Run 4/3/2024 1:47 PM View: 2024Q1 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

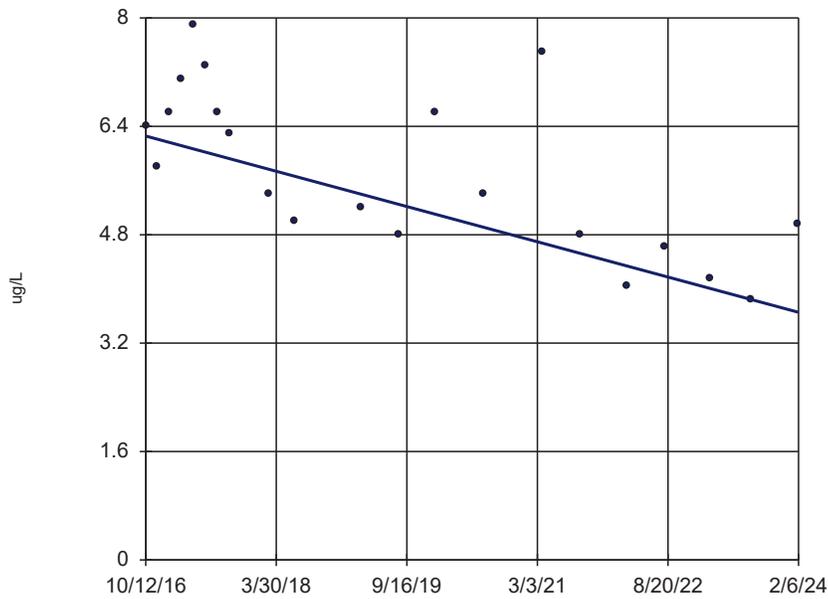
MW-4R (bg)



Constituent: Molybdenum Analysis Run 4/3/2024 1:47 PM View: 2024Q1 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

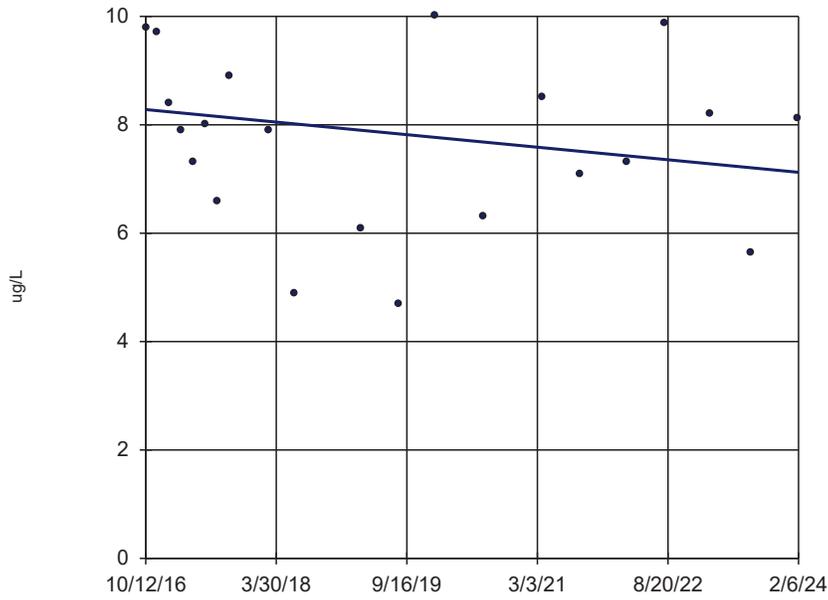
MW-5



Constituent: Molybdenum Analysis Run 4/3/2024 1:47 PM View: 2024Q1 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

MW-6

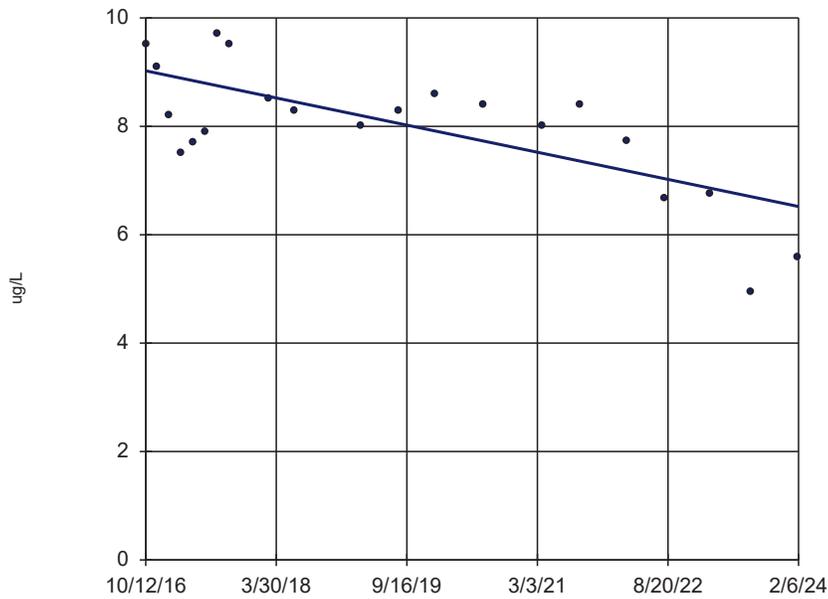


n = 21
Slope = -0.1582
units per year.
Mann-Kendall
statistic = -34
critical = -78
Trend not sig-
nificant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Constituent: Molybdenum Analysis Run 4/3/2024 1:47 PM View: 2024Q1 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

MW-7

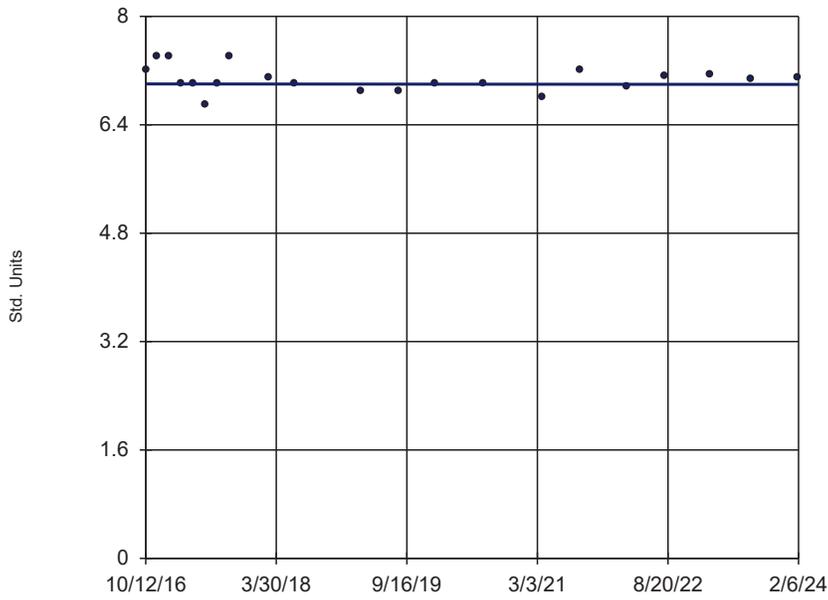


n = 21
Slope = -0.3419
units per year.
Mann-Kendall
statistic = -86
critical = -78
Decreasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Constituent: Molybdenum Analysis Run 4/3/2024 1:47 PM View: 2024Q1 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

MW-2

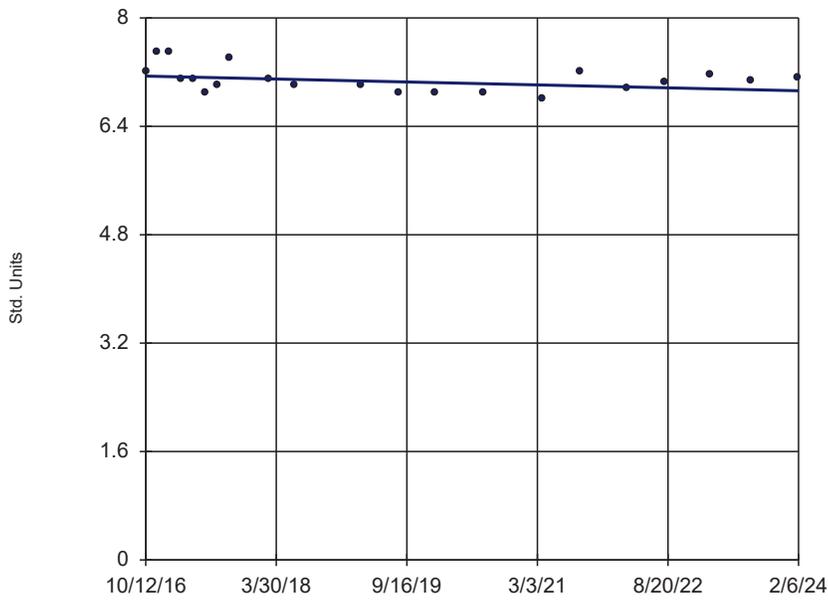


n = 21
Slope = -0.0008406 units per year.
Mann-Kendall statistic = -20
critical = -78
Trend not significant at 98% confidence level ($\alpha = 0.01$ per tail).

Constituent: pH Analysis Run 4/3/2024 1:47 PM View: 2024Q1 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

MW-3

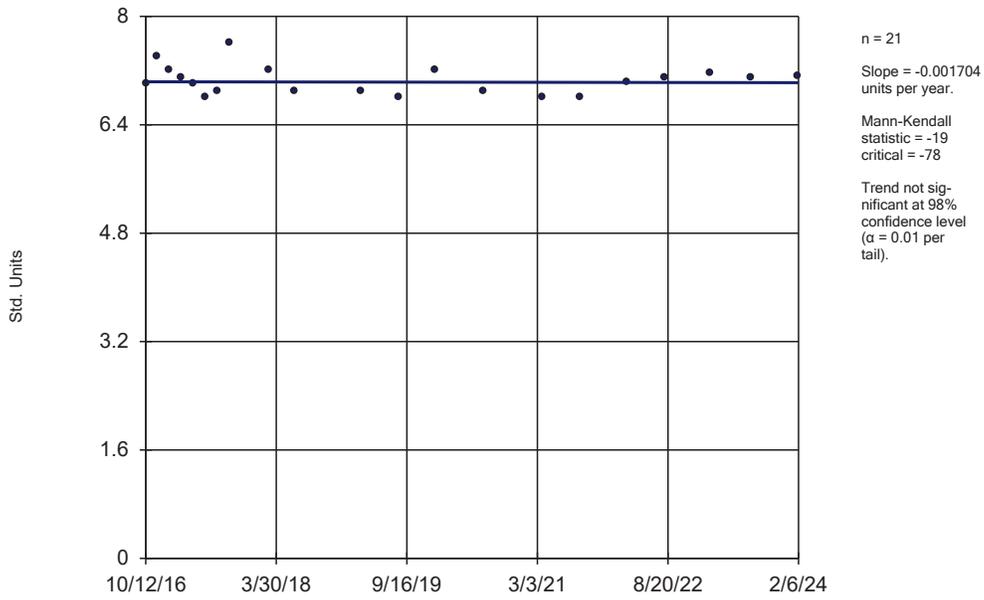


n = 21
Slope = -0.02954 units per year.
Mann-Kendall statistic = -48
critical = -78
Trend not significant at 98% confidence level ($\alpha = 0.01$ per tail).

Constituent: pH Analysis Run 4/3/2024 1:47 PM View: 2024Q1 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

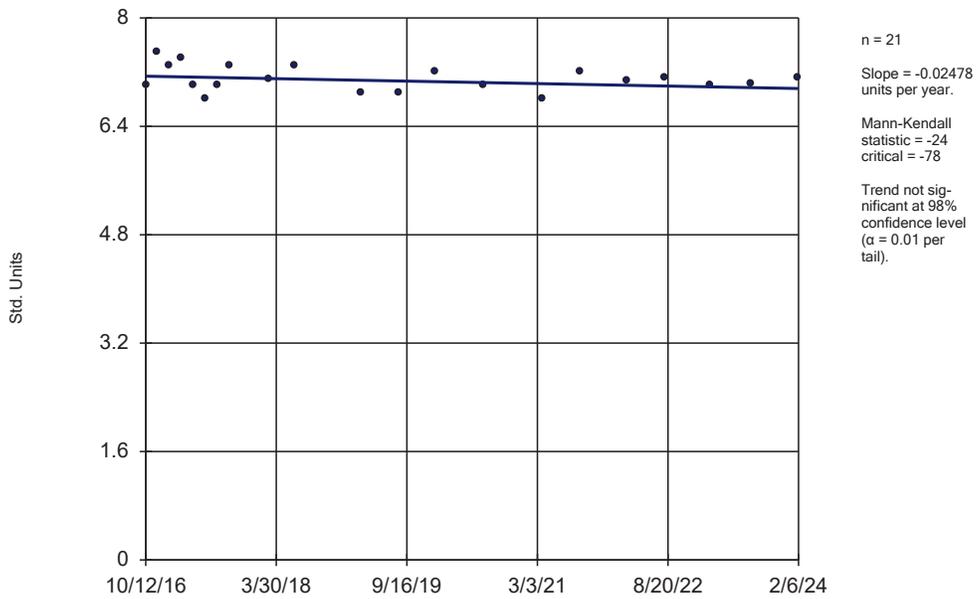
MW-6



Constituent: pH Analysis Run 4/3/2024 1:47 PM View: 2024Q1 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

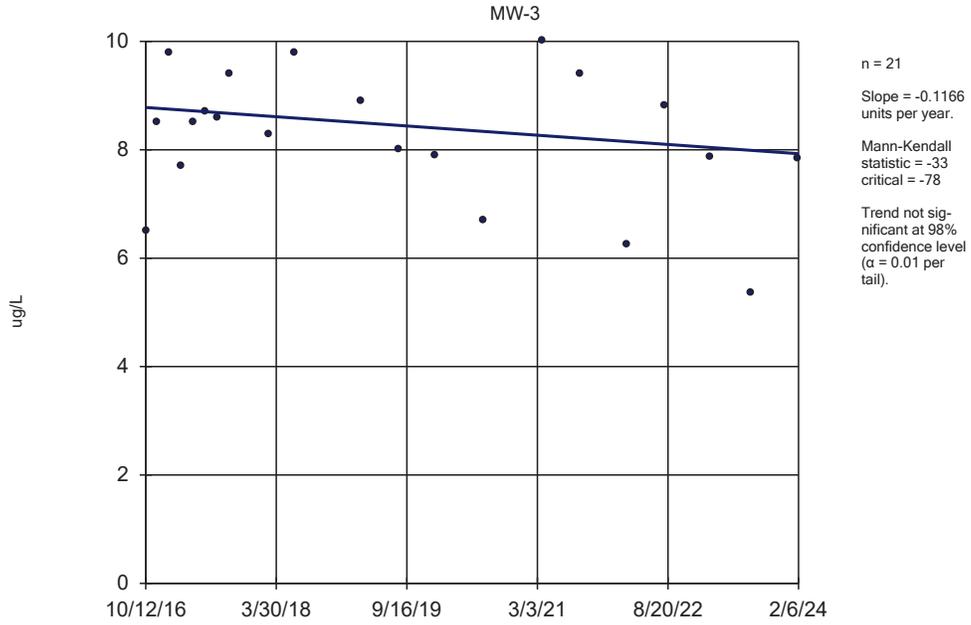
Sen's Slope Estimator

MW-7



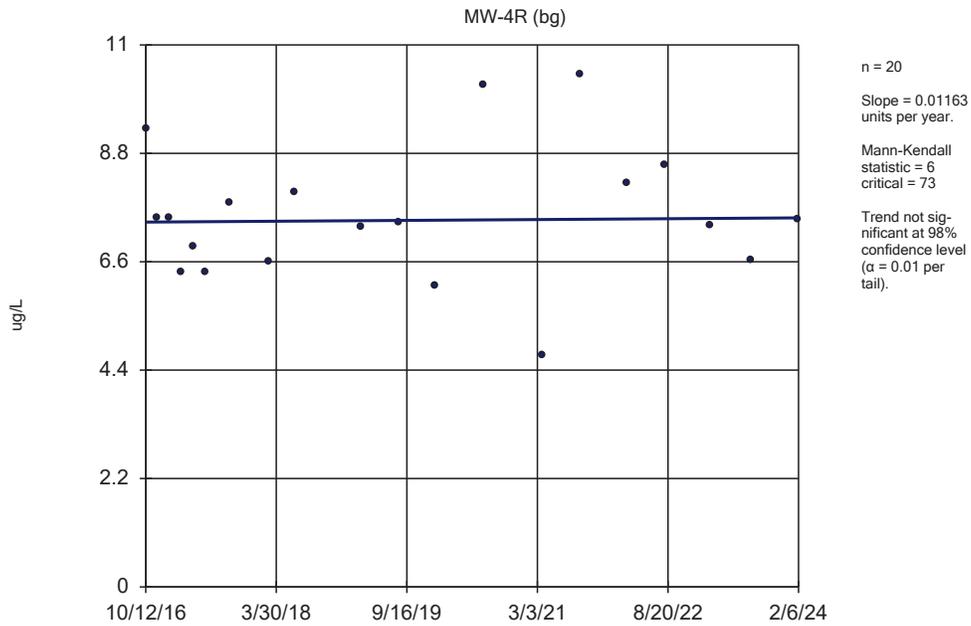
Constituent: pH Analysis Run 4/3/2024 1:47 PM View: 2024Q1 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator



Constituent: Selenium Analysis Run 4/3/2024 1:47 PM View: 2024Q1 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

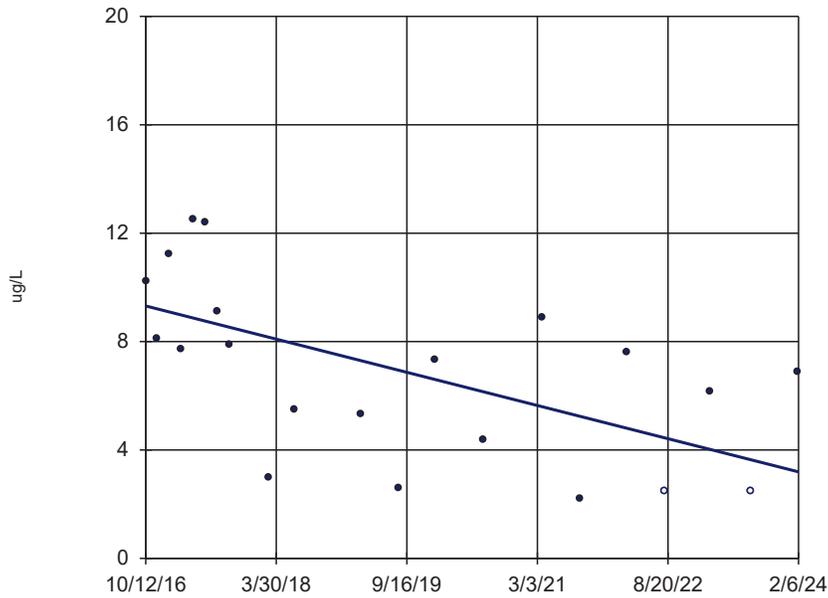
Sen's Slope Estimator



Constituent: Selenium Analysis Run 4/3/2024 1:47 PM View: 2024Q1 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

MW-6

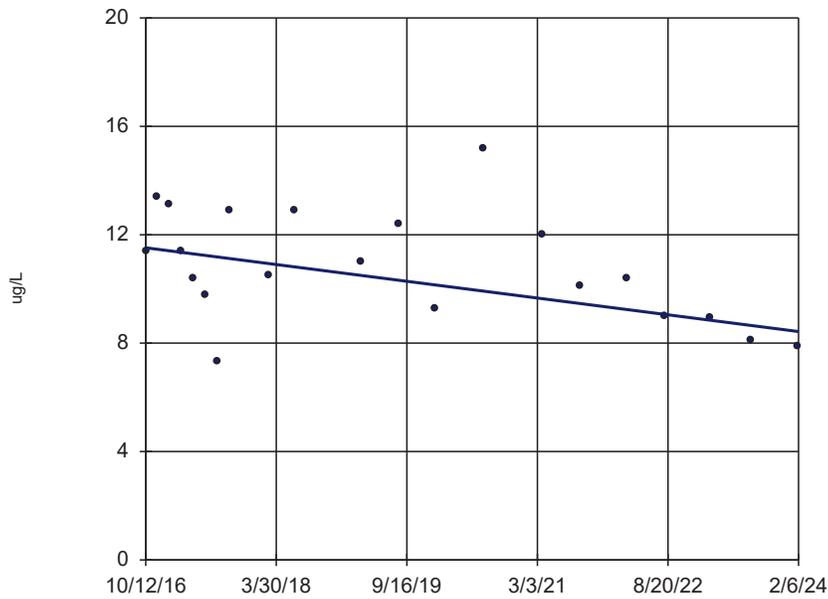


n = 21
Slope = -0.836
units per year.
Mann-Kendall
statistic = -99
critical = -78
Decreasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Constituent: Selenium Analysis Run 4/3/2024 1:47 PM View: 2024Q1 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

MW-8

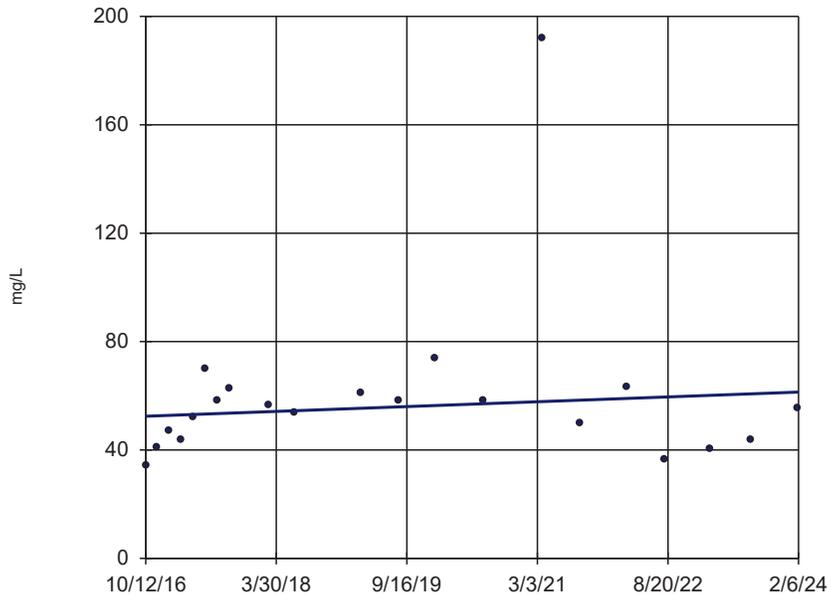


n = 21
Slope = -0.422
units per year.
Mann-Kendall
statistic = -87
critical = -78
Decreasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Constituent: Selenium Analysis Run 4/3/2024 1:47 PM View: 2024Q1 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

MW-3

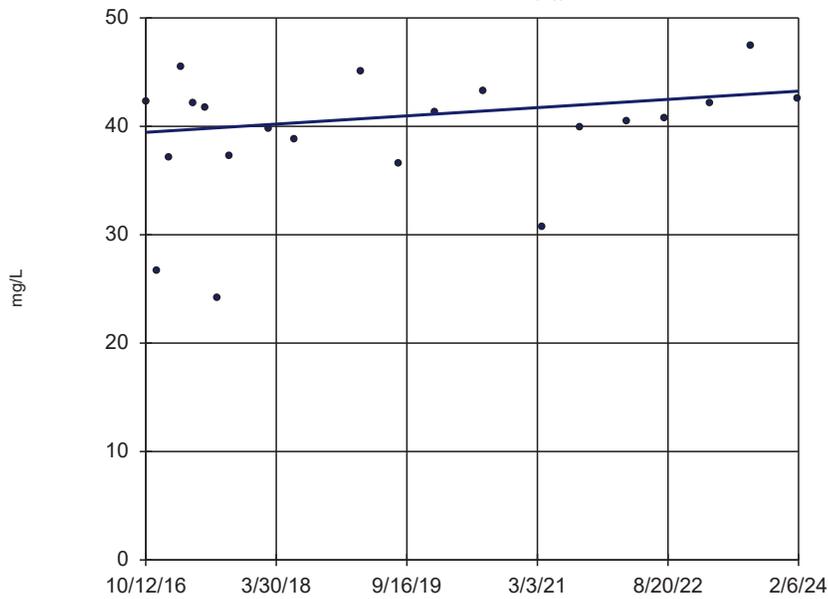


n = 21
Slope = 1.217
units per year.
Mann-Kendall
statistic = 26
critical = 78
Trend not sig-
nificant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Constituent: Sulfate Analysis Run 4/3/2024 1:47 PM View: 2024Q1 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

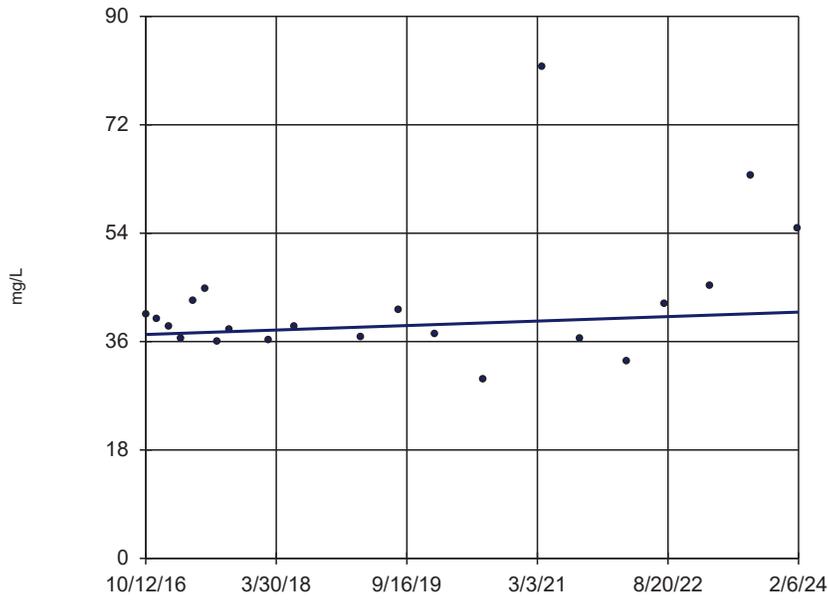
Sen's Slope Estimator

MW-4R (bg)



Sen's Slope Estimator

MW-5

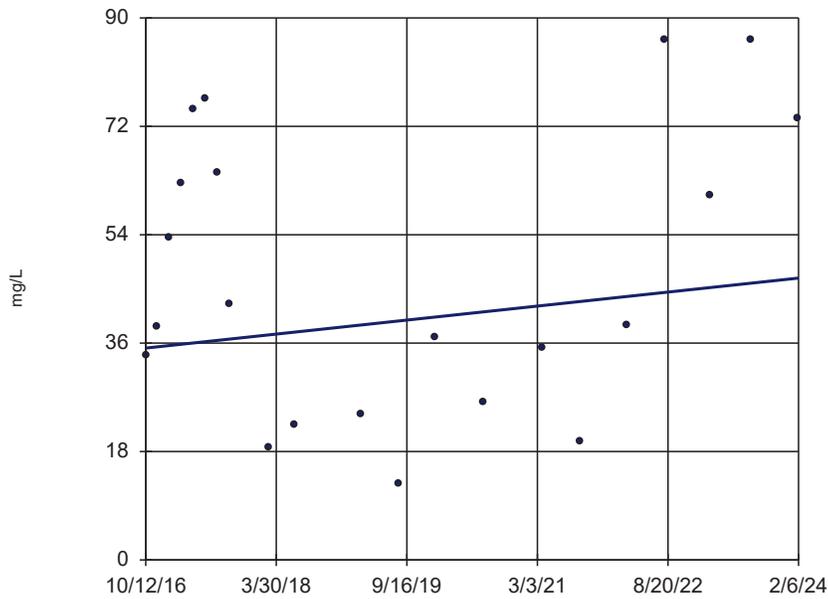


n = 21
Slope = 0.509
units per year.
Mann-Kendall
statistic = 26
critical = 78
Trend not sig-
nificant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Constituent: Sulfate Analysis Run 4/3/2024 1:47 PM View: 2024Q1 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

MW-6

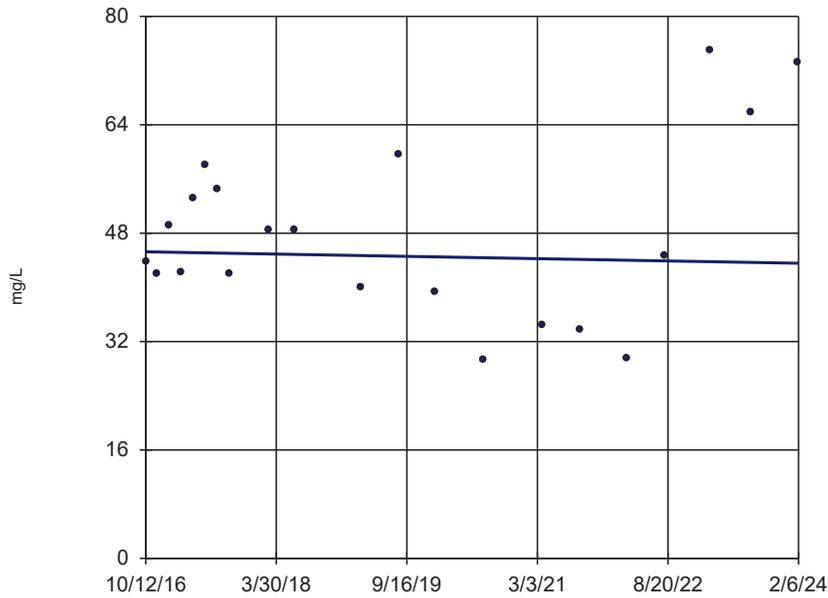


n = 21
Slope = 1.587
units per year.
Mann-Kendall
statistic = 22
critical = 78
Trend not sig-
nificant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Constituent: Sulfate Analysis Run 4/3/2024 1:47 PM View: 2024Q1 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

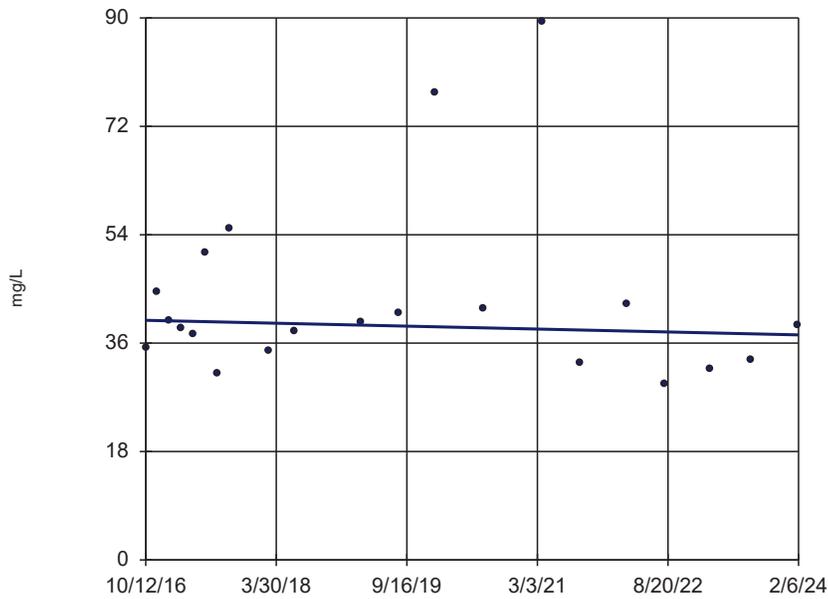
MW-7



Constituent: Sulfate Analysis Run 4/3/2024 1:47 PM View: 2024Q1 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

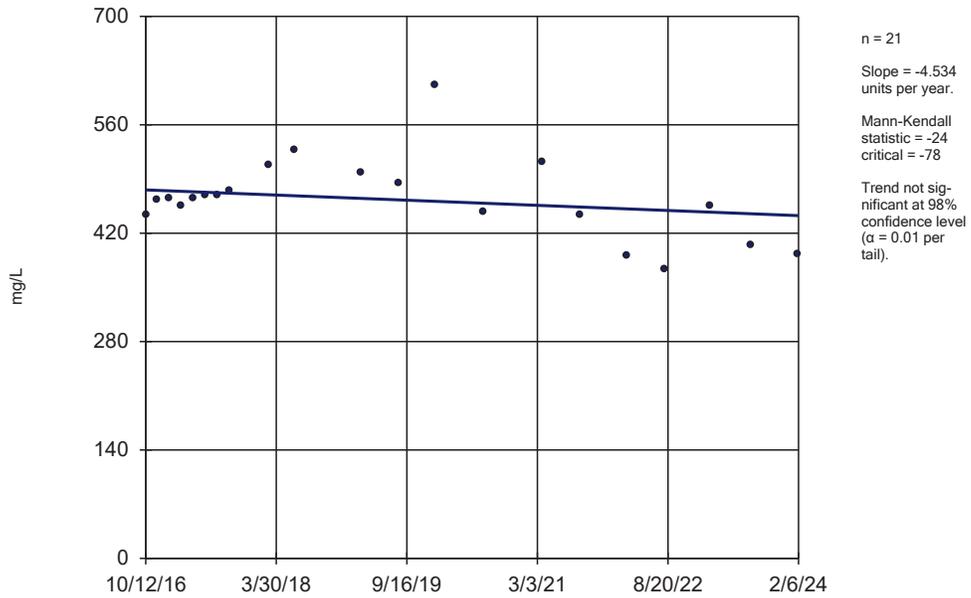
MW-8



Constituent: Sulfate Analysis Run 4/3/2024 1:47 PM View: 2024Q1 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

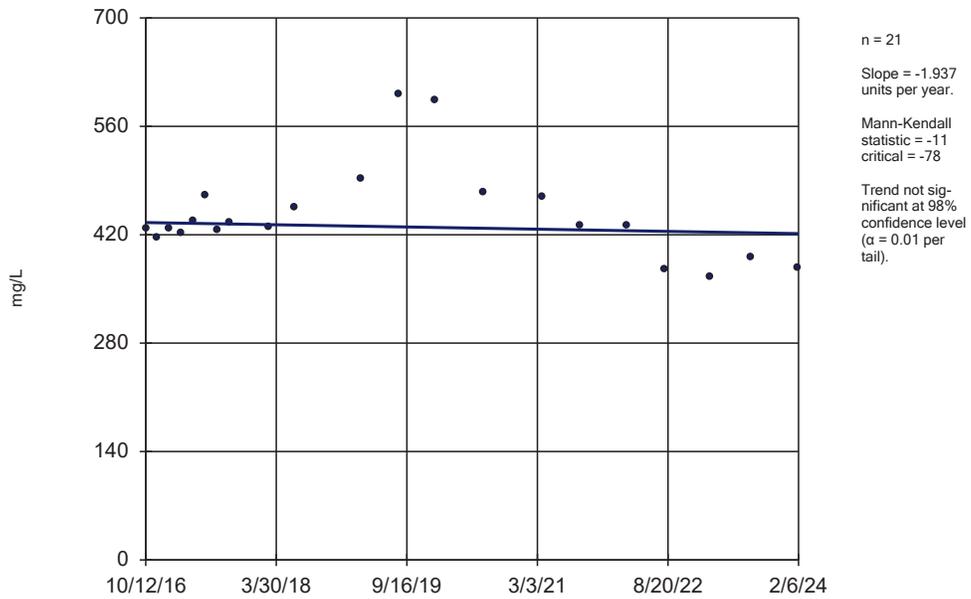
MW-1



Constituent: Total Dissolved Solids Analysis Run 4/3/2024 1:47 PM View: 2024Q1 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

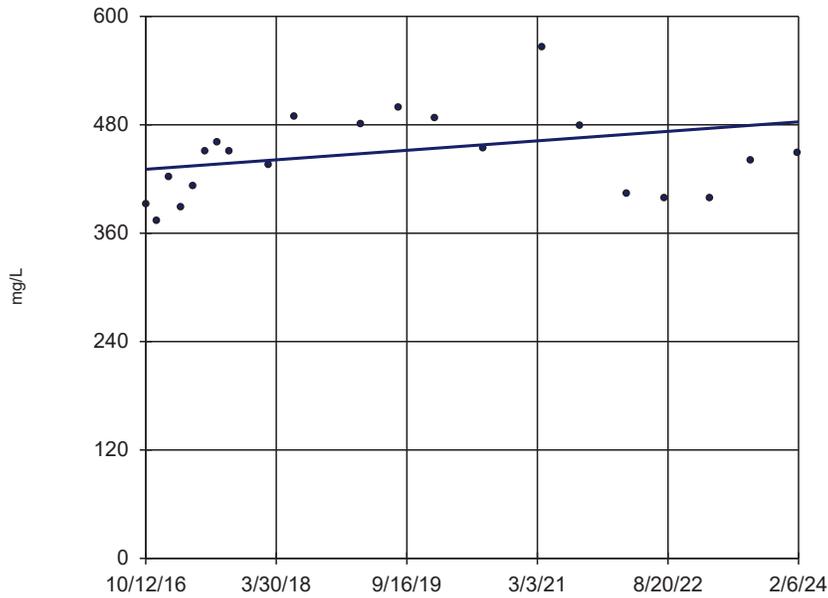
MW-2



Constituent: Total Dissolved Solids Analysis Run 4/3/2024 1:47 PM View: 2024Q1 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

MW-3

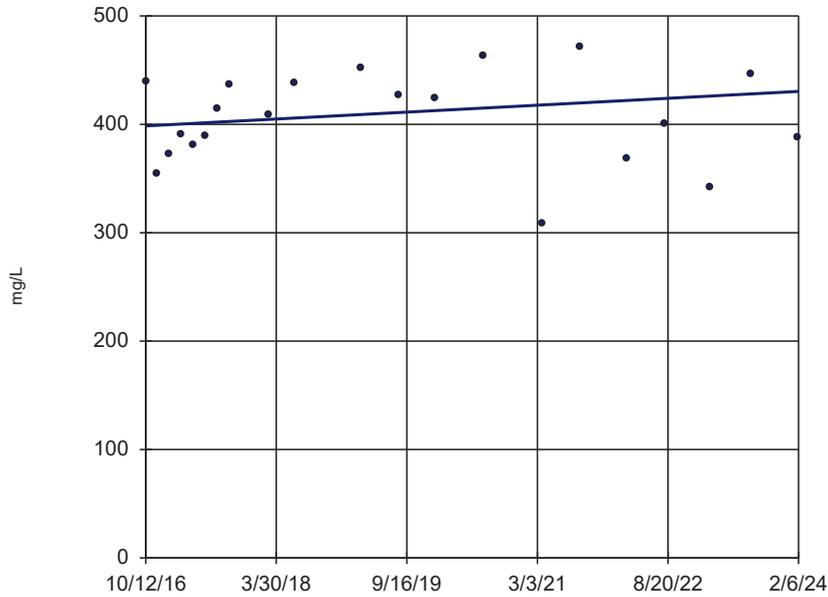


n = 21
Slope = 7.165
units per year.
Mann-Kendall
statistic = 44
critical = 78
Trend not sig-
nificant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Constituent: Total Dissolved Solids Analysis Run 4/3/2024 1:47 PM View: 2024Q1 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

MW-4R (bg)

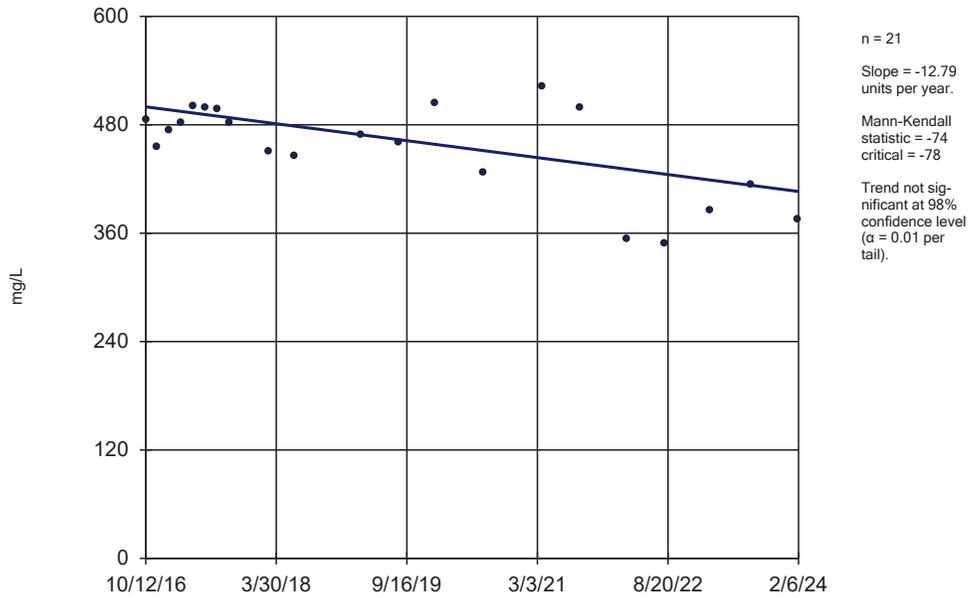


n = 21
Slope = 4.339
units per year.
Mann-Kendall
statistic = 22
critical = 78
Trend not sig-
nificant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Constituent: Total Dissolved Solids Analysis Run 4/3/2024 1:47 PM View: 2024Q1 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

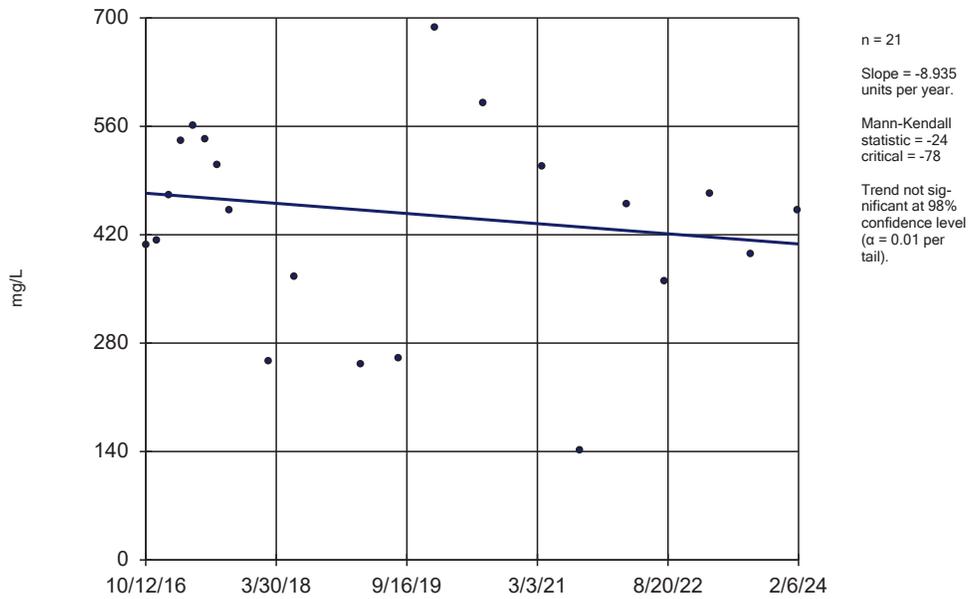
MW-5



Constituent: Total Dissolved Solids Analysis Run 4/3/2024 1:47 PM View: 2024Q1 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

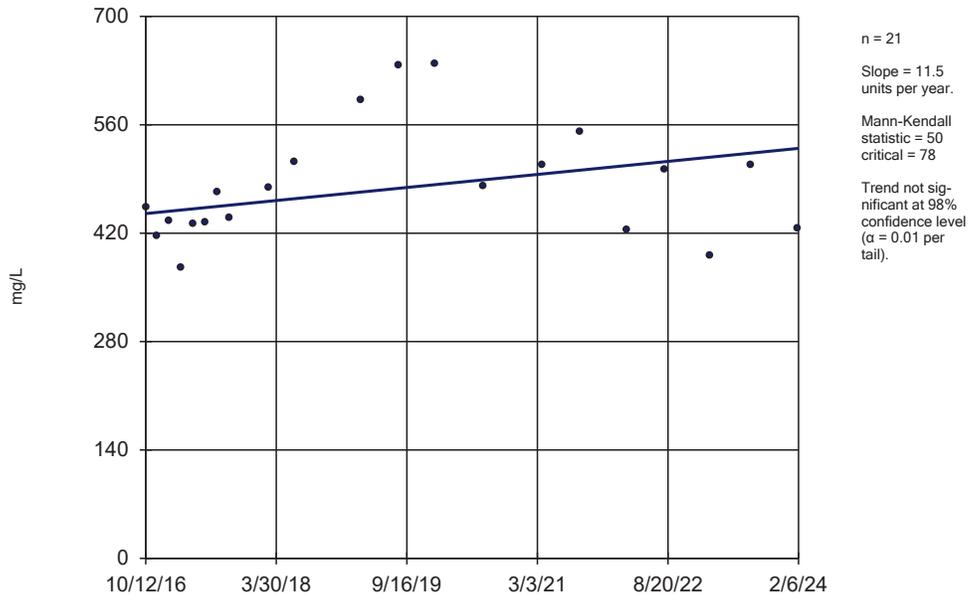
MW-6



Constituent: Total Dissolved Solids Analysis Run 4/3/2024 1:47 PM View: 2024Q1 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

MW-7

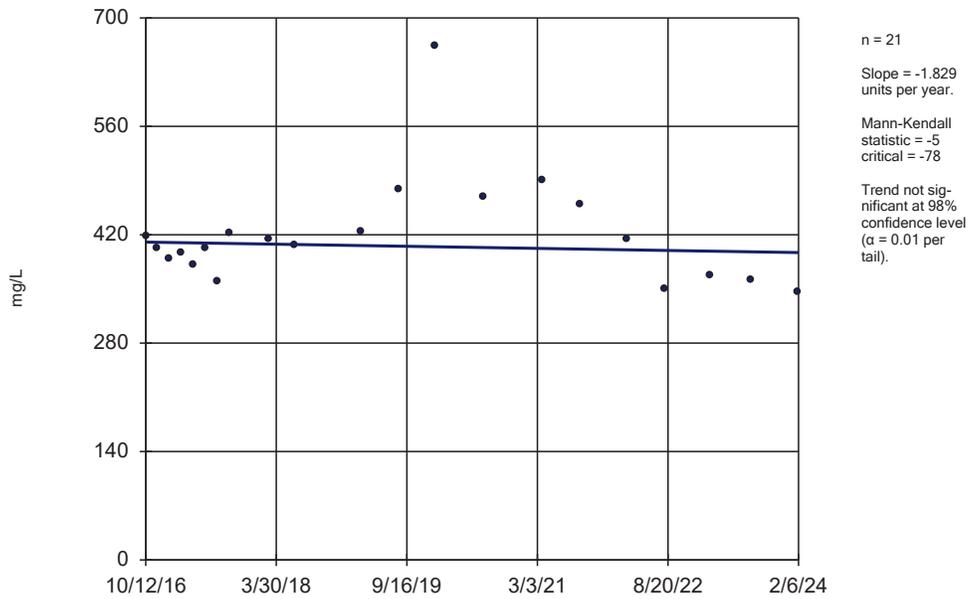


Constituent: Total Dissolved Solids Analysis Run 4/3/2024 1:47 PM View: 2024Q1 Trend Analysis

Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

MW-8

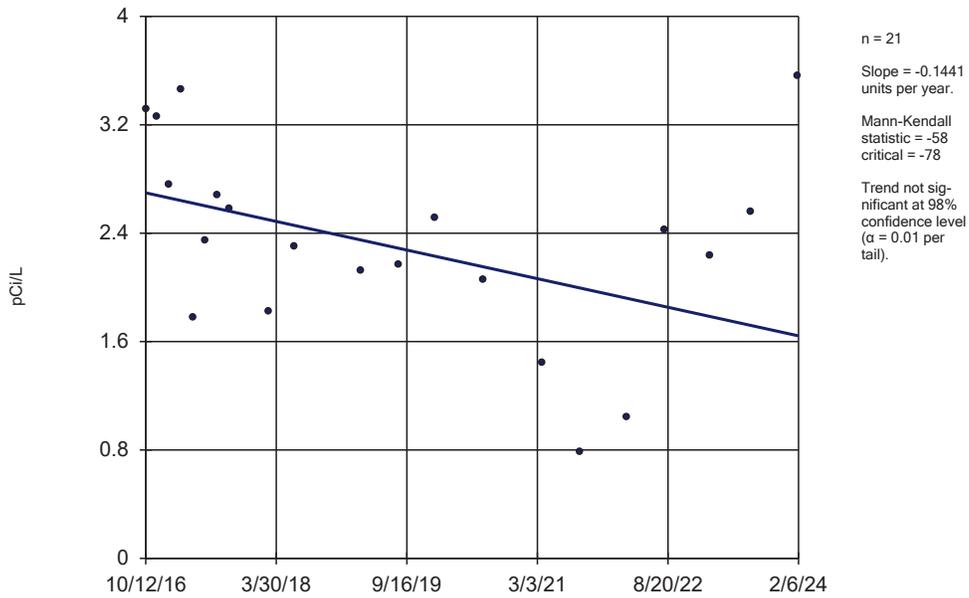


Constituent: Total Dissolved Solids Analysis Run 4/3/2024 1:47 PM View: 2024Q1 Trend Analysis

Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

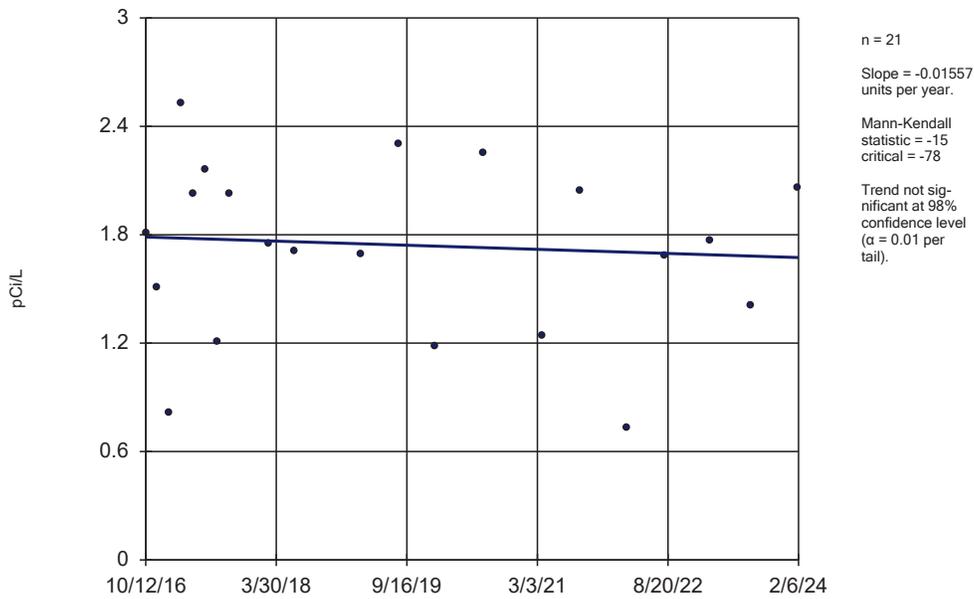
MW-1



Constituent: Total Radium Analysis Run 4/3/2024 1:48 PM View: 2024Q1 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

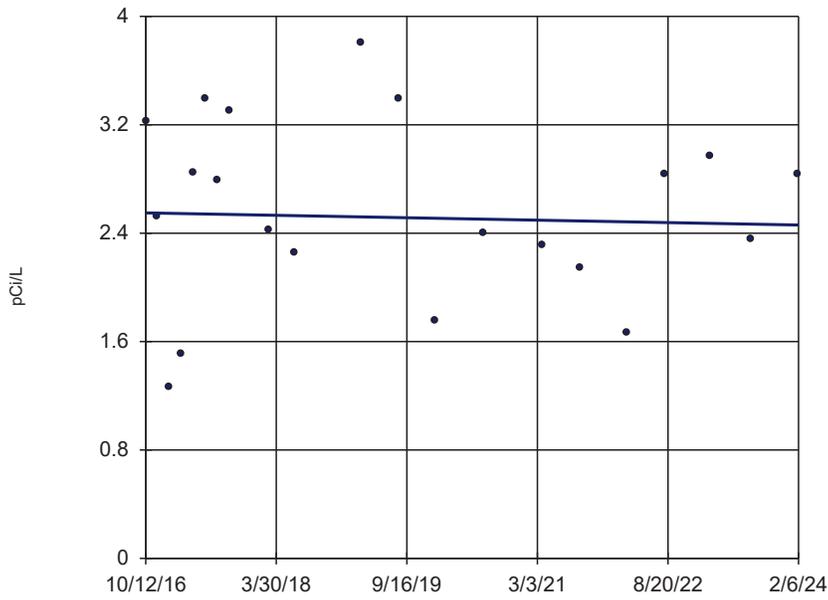
MW-2



Constituent: Total Radium Analysis Run 4/3/2024 1:48 PM View: 2024Q1 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

MW-3

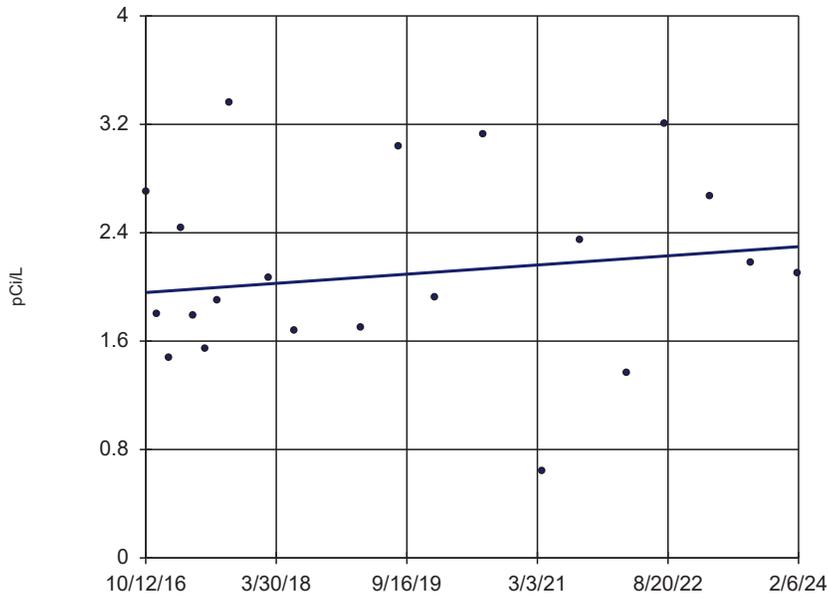


n = 21
Slope = -0.01222
units per year.
Mann-Kendall
statistic = -10
critical = -78
Trend not sig-
nificant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Constituent: Total Radium Analysis Run 4/3/2024 1:48 PM View: 2024Q1 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

MW-4R (bg)

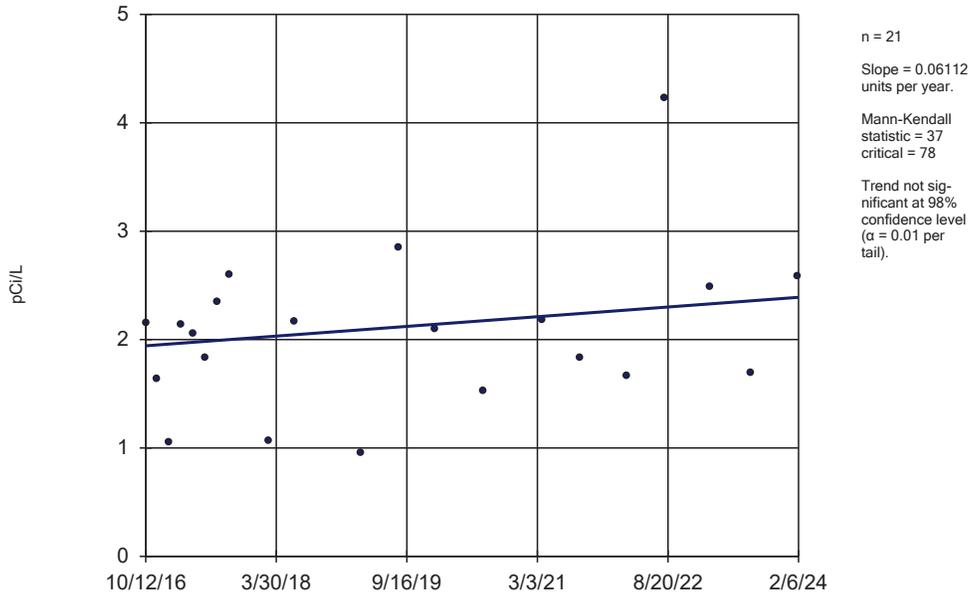


n = 21
Slope = 0.0462
units per year.
Mann-Kendall
statistic = 22
critical = 78
Trend not sig-
nificant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Constituent: Total Radium Analysis Run 4/3/2024 1:48 PM View: 2024Q1 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

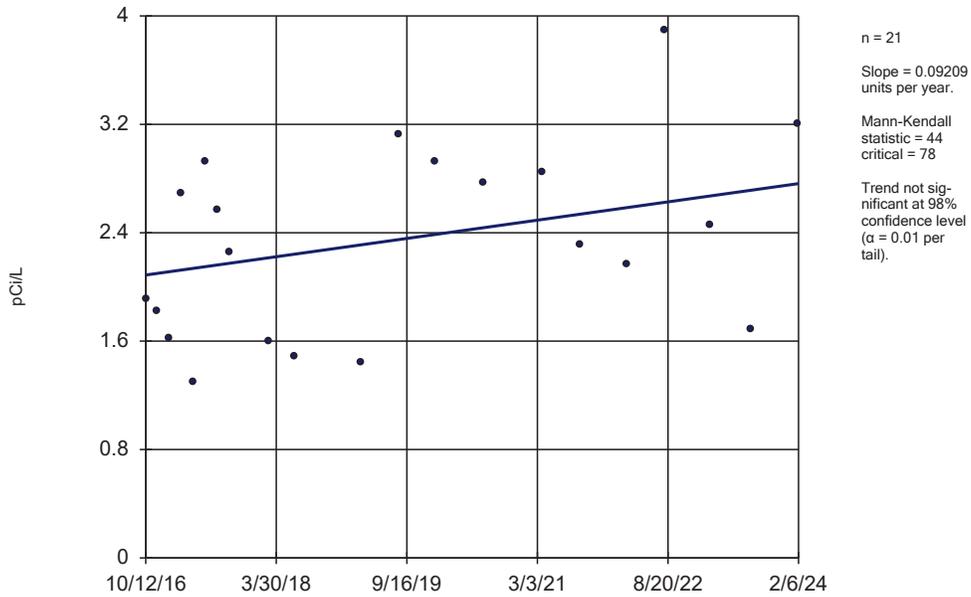
MW-7



Constituent: Total Radium Analysis Run 4/3/2024 1:48 PM View: 2024Q1 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

MW-8



Constituent: Total Radium Analysis Run 4/3/2024 1:48 PM View: 2024Q1 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

A.5 Confidence Interval Analysis

Confidence Interval

Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater Printed 4/3/2024, 1:58 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Arsenic (ug/L)	MW-1	4.168	3.446	10	No	21	0	ln(x)	0.01	Param.
Arsenic (ug/L)	MW-2	4.12	3.747	10	No	21	0	No	0.01	Param.
Arsenic (ug/L)	MW-3	3.384	2.972	10	No	21	0	No	0.01	Param.
Arsenic (ug/L)	MW-4R (bg)	4.807	3.877	10	No	21	0	No	0.01	Param.
Arsenic (ug/L)	MW-5	4.642	4.339	10	No	21	0	No	0.01	Param.
Arsenic (ug/L)	MW-6	3.705	2.834	10	No	21	0	sqrt(x)	0.01	Param.
Arsenic (ug/L)	MW-7	3.815	3.423	10	No	21	0	No	0.01	Param.
Arsenic (ug/L)	MW-8	2.698	2.502	10	No	21	0	No	0.01	Param.
Barium (ug/L)	MW-1	144.8	126.6	2000	No	21	0	No	0.01	Param.
Barium (ug/L)	MW-2	108.8	98.46	2000	No	21	0	No	0.01	Param.
Barium (ug/L)	MW-3	179.6	161.3	2000	No	21	0	x^2	0.01	Param.
Barium (ug/L)	MW-4R (bg)	131	116.6	2000	No	21	0	No	0.01	Param.
Barium (ug/L)	MW-5	142.5	127.5	2000	No	21	0	No	0.01	Param.
Barium (ug/L)	MW-6	151.2	108.6	2000	No	21	0	No	0.01	Param.
Barium (ug/L)	MW-7	128.3	112.7	2000	No	21	0	No	0.01	Param.
Barium (ug/L)	MW-8	158.7	142.2	2000	No	21	0	No	0.01	Param.
Boron (ug/L)	MW-1	146	126	158.1	No	21	4.762	No	0.01	NP (normality)
Boron (ug/L)	MW-2	138	115	158.1	No	20	5	No	0.01	NP (normality)
Boron (ug/L)	MW-7	166.5	115.2	158.1	No	21	14.29	No	0.01	Param.
Calcium (mg/L)	MW-1	106	98.6	87.11	Yes	21	0	No	0.01	Param.
Calcium (mg/L)	MW-2	108.6	97.68	87.11	Yes	21	0	No	0.01	Param.
Calcium (mg/L)	MW-3	102.1	91.6	87.11	Yes	21	0	No	0.01	Param.
Calcium (mg/L)	MW-4R (bg)	92.84	81.39	87.11	No	21	0	No	0.01	Param.
Calcium (mg/L)	MW-5	109.2	97.11	87.11	Yes	21	0	No	0.01	Param.
Calcium (mg/L)	MW-6	92.6	65.85	87.11	No	21	0	No	0.01	Param.
Calcium (mg/L)	MW-7	100.9	88.72	87.11	Yes	21	0	No	0.01	Param.
Calcium (mg/L)	MW-8	97.46	88.27	87.11	Yes	21	0	No	0.01	Param.
Chloride (mg/L)	MW-1	27.13	13.81	250	No	21	0	ln(x)	0.01	Param.
Chloride (mg/L)	MW-2	23.25	15.19	250	No	20	0	sqrt(x)	0.01	Param.
Chloride (mg/L)	MW-3	44.29	31.09	250	No	21	0	sqrt(x)	0.01	Param.
Chloride (mg/L)	MW-4R (bg)	35.18	20.49	250	No	20	0	No	0.01	Param.
Chloride (mg/L)	MW-5	33.3	19.8	250	No	21	0	No	0.01	Param.
Chloride (mg/L)	MW-6	69.43	39.82	250	No	20	0	sqrt(x)	0.01	Param.
Chloride (mg/L)	MW-7	92.8	20.3	250	No	21	0	No	0.01	NP (normality)
Chloride (mg/L)	MW-8	33.04	24.86	250	No	21	0	No	0.01	Param.
Fluoride (mg/L)	MW-2	1.201	0.9415	4	No	21	0	sqrt(x)	0.01	Param.
Lithium (ug/L)	MW-1	34.78	30.69	40	No	21	0	No	0.01	Param.
Lithium (ug/L)	MW-2	32.19	27.8	40	No	20	0	sqrt(x)	0.01	Param.
Lithium (ug/L)	MW-3	29.56	26.67	40	No	21	0	No	0.01	Param.
Lithium (ug/L)	MW-4R (bg)	28.07	24.02	40	No	21	0	No	0.01	Param.
Lithium (ug/L)	MW-5	31.07	26.79	40	No	21	0	sqrt(x)	0.01	Param.
Lithium (ug/L)	MW-7	29.64	25.91	40	No	21	0	No	0.01	Param.
Lithium (ug/L)	MW-8	29.66	26.67	40	No	20	0	No	0.01	Param.
Molybdenum (ug/L)	MW-1	8.389	7.247	100	No	21	0	No	0.01	Param.
Molybdenum (ug/L)	MW-2	9.519	6.862	100	No	21	0	sqrt(x)	0.01	Param.
Molybdenum (ug/L)	MW-3	12.9	10.28	100	No	21	0	No	0.01	Param.
Molybdenum (ug/L)	MW-4R (bg)	7.335	5.008	100	No	21	0	sqrt(x)	0.01	Param.
Molybdenum (ug/L)	MW-5	6.39	5.069	100	No	21	0	No	0.01	Param.
Molybdenum (ug/L)	MW-6	8.542	6.813	100	No	21	0	No	0.01	Param.
Molybdenum (ug/L)	MW-7	8.626	7.305	100	No	21	0	No	0.01	Param.

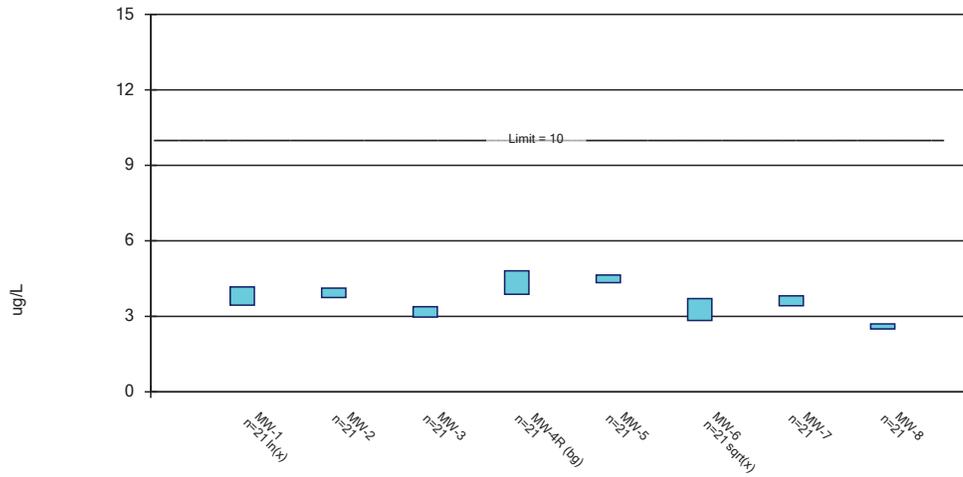
Confidence Interval

Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater Printed 4/3/2024, 1:58 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Molybdenum (ug/L)	MW-8	8.3	6.65	100	No	20	0	No	0.01	NP (normality)
pH (Std. Units)	MW-1	7.252	6.995	8.5	No	21	0	No	0.005	Param.
pH (Std. Units)	MW-2	7.182	6.953	8.5	No	21	0	No	0.005	Param.
pH (Std. Units)	MW-3	7.208	6.971	8.5	No	21	0	No	0.005	Param.
pH (Std. Units)	MW-4R (bg)	7.31	6.97	8.5	No	21	0	No	0.005	Param.
pH (Std. Units)	MW-5	7.339	7.087	8.5	No	21	0	No	0.005	Param.
pH (Std. Units)	MW-6	7.175	6.918	8.5	No	21	0	No	0.005	Param.
pH (Std. Units)	MW-7	7.214	6.981	8.5	No	21	0	No	0.005	Param.
pH (Std. Units)	MW-8	7.214	6.945	8.5	No	21	0	No	0.005	Param.
Selenium (ug/L)	MW-2	13.72	9.612	50	No	21	4.762	No	0.01	Param.
Selenium (ug/L)	MW-3	8.911	7.55	50	No	21	0	No	0.01	Param.
Selenium (ug/L)	MW-4R (bg)	8.306	6.763	50	No	20	0	No	0.01	Param.
Selenium (ug/L)	MW-6	8.641	5.071	50	No	21	9.524	No	0.01	Param.
Selenium (ug/L)	MW-8	11.96	9.703	50	No	21	0	No	0.01	Param.
Sulfate (mg/L)	MW-1	58.5	42.3	250	No	21	0	No	0.01	NP (normality)
Sulfate (mg/L)	MW-2	63.63	41.66	250	No	20	0	x^(1/3)	0.01	Param.
Sulfate (mg/L)	MW-3	62.6	43.9	250	No	21	0	No	0.01	NP (normality)
Sulfate (mg/L)	MW-4R (bg)	42.52	36.7	250	No	21	0	x^2	0.01	Param.
Sulfate (mg/L)	MW-5	44.7	36.5	250	No	21	0	No	0.01	NP (normality)
Sulfate (mg/L)	MW-6	60.06	34.14	250	No	21	0	No	0.01	Param.
Sulfate (mg/L)	MW-7	55.02	40.77	250	No	21	0	No	0.01	Param.
Sulfate (mg/L)	MW-8	44.4	33.1	250	No	21	0	No	0.01	NP (normality)
Total Dissolved Solids (mg/L)	MW-1	493.2	435.3	500	No	21	0	No	0.01	Param.
Total Dissolved Solids (mg/L)	MW-2	473.8	412	500	No	21	0	ln(x)	0.01	Param.
Total Dissolved Solids (mg/L)	MW-3	469.6	418.6	500	No	21	0	No	0.01	Param.
Total Dissolved Solids (mg/L)	MW-4R (bg)	428.8	382.2	500	No	21	0	No	0.01	Param.
Total Dissolved Solids (mg/L)	MW-5	482.2	425.4	500	No	21	0	No	0.01	Param.
Total Dissolved Solids (mg/L)	MW-6	504.6	361.6	500	No	21	0	No	0.01	Param.
Total Dissolved Solids (mg/L)	MW-7	521.9	440.7	500	No	21	0	No	0.01	Param.
Total Dissolved Solids (mg/L)	MW-8	459	368	500	No	21	0	No	0.01	NP (normality)
Total Radium (pCi/L)	MW-1	2.745	1.94	5	No	21	0	No	0.01	Param.
Total Radium (pCi/L)	MW-2	1.975	1.445	5	No	21	0	No	0.01	Param.
Total Radium (pCi/L)	MW-3	2.943	2.203	5	No	21	0	No	0.01	Param.
Total Radium (pCi/L)	MW-4R (bg)	2.525	1.763	5	No	21	0	No	0.01	Param.
Total Radium (pCi/L)	MW-5	2.728	2.16	5	No	21	0	No	0.01	Param.
Total Radium (pCi/L)	MW-6	2.345	1.478	5	No	21	0	No	0.01	Param.
Total Radium (pCi/L)	MW-7	2.449	1.657	5	No	21	0	No	0.01	Param.
Total Radium (pCi/L)	MW-8	2.717	1.95	5	No	21	0	No	0.01	Param.

Parametric Confidence Interval

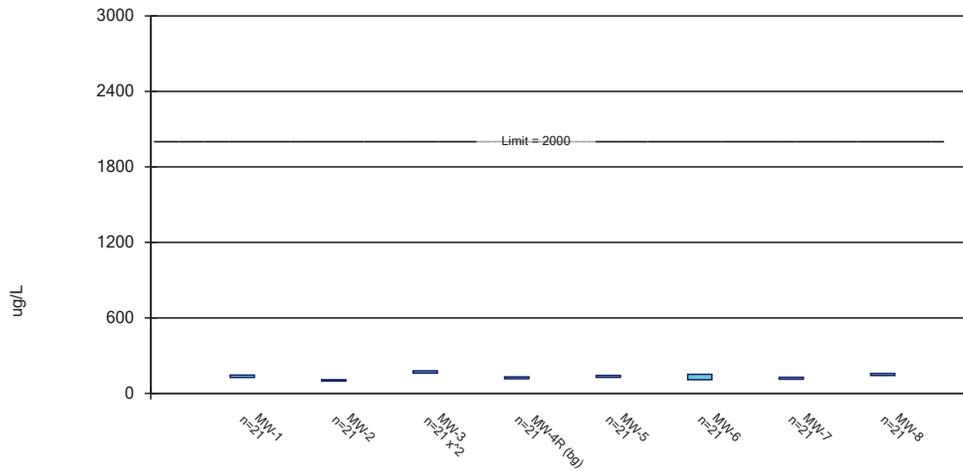
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Arsenic Analysis Run 4/3/2024 1:56 PM View: 2024Q1 Confidence Interval
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Parametric Confidence Interval

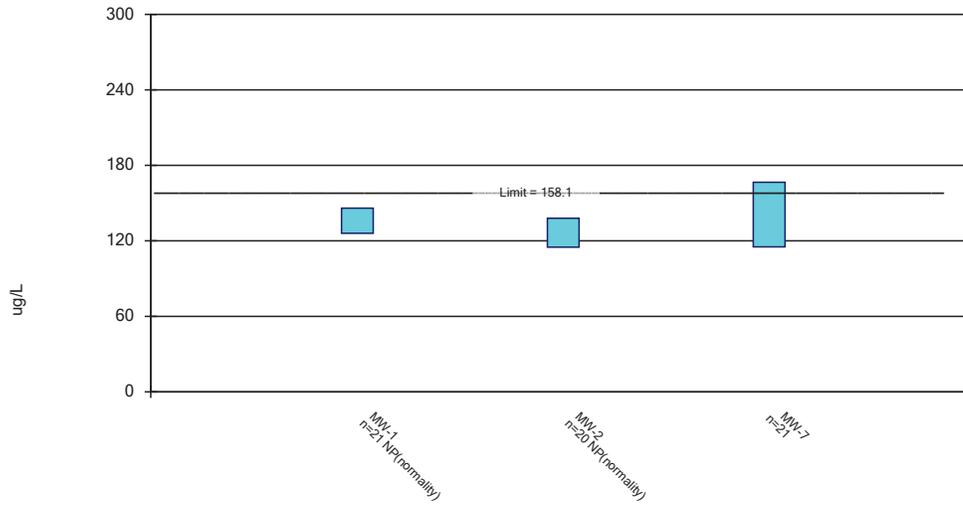
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Barium Analysis Run 4/3/2024 1:56 PM View: 2024Q1 Confidence Interval
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

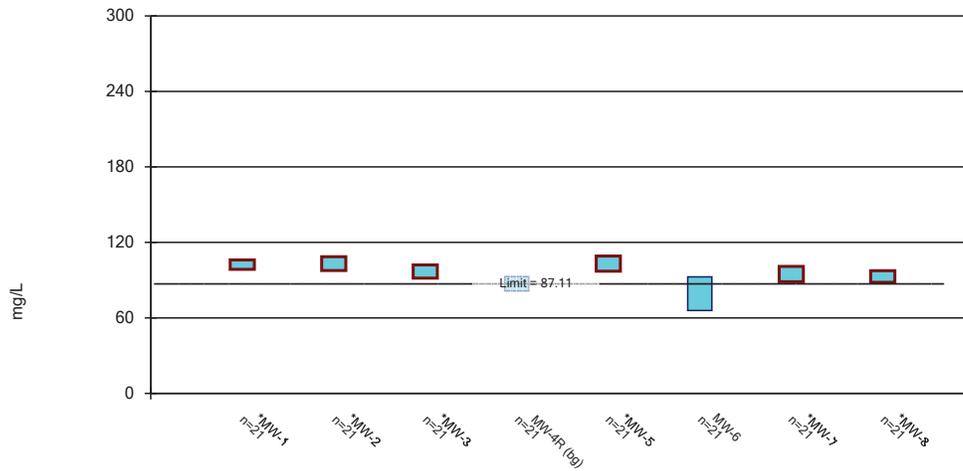


Constituent: Boron Analysis Run 4/3/2024 1:56 PM View: 2024Q1 Confidence Interval

Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Parametric Confidence Interval

Compliance limit is exceeded.* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

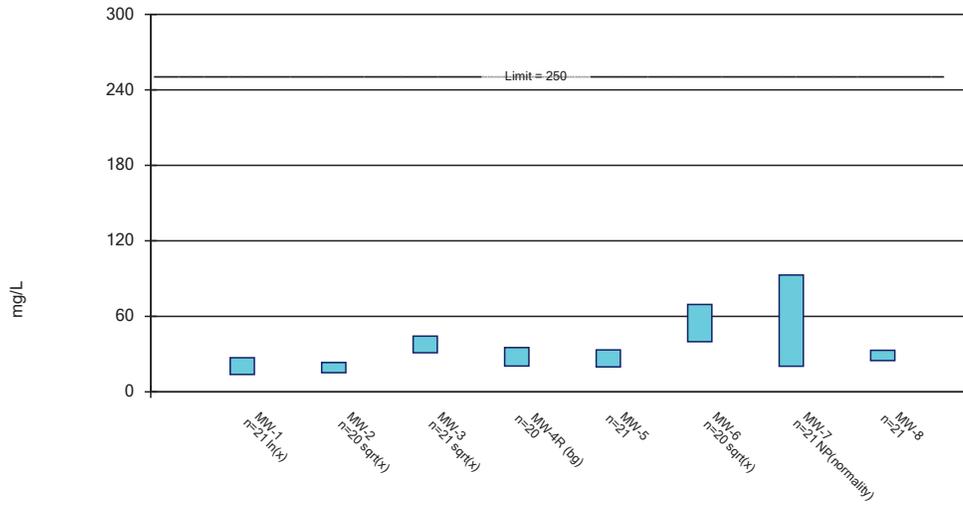


Constituent: Calcium Analysis Run 4/3/2024 1:56 PM View: 2024Q1 Confidence Interval

Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Parametric and Non-Parametric (NP) Confidence Interval

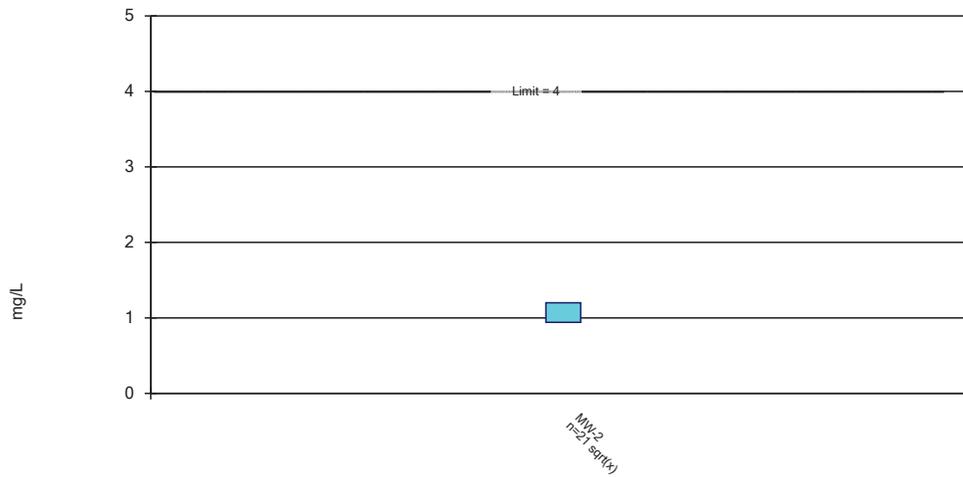
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Chloride Analysis Run 4/3/2024 1:56 PM View: 2024Q1 Confidence Interval
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Parametric Confidence Interval

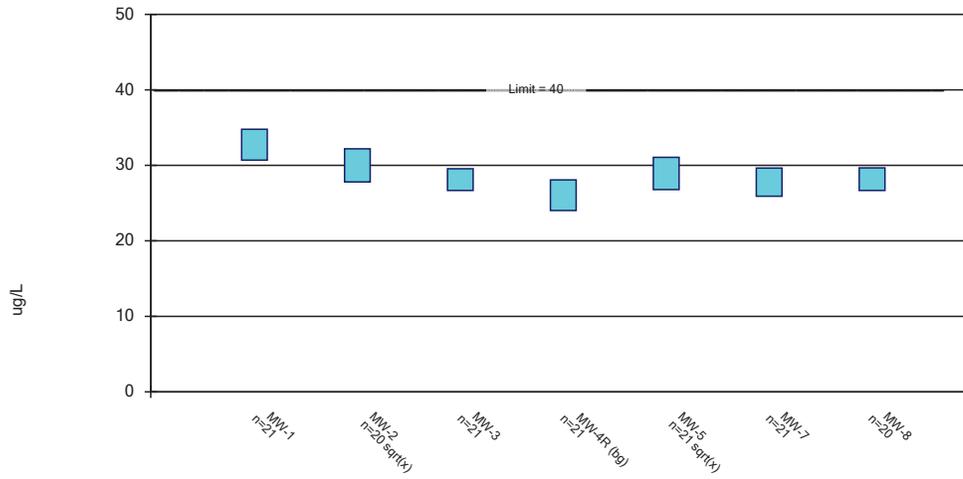
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Fluoride Analysis Run 4/3/2024 1:56 PM View: 2024Q1 Confidence Interval
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Parametric Confidence Interval

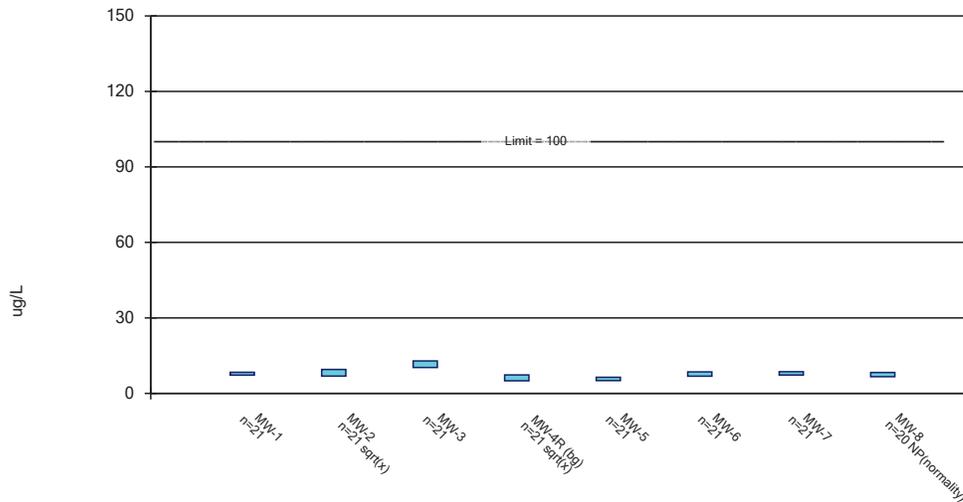
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Lithium Analysis Run 4/3/2024 1:57 PM View: 2024Q1 Confidence Interval
 Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Parametric and Non-Parametric (NP) Confidence Interval

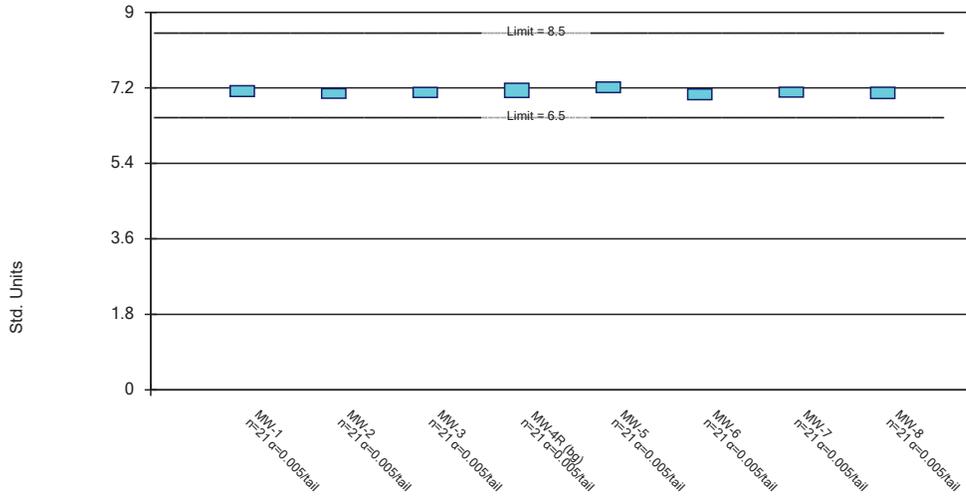
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Molybdenum Analysis Run 4/3/2024 1:57 PM View: 2024Q1 Confidence Interval
 Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Parametric Confidence Interval

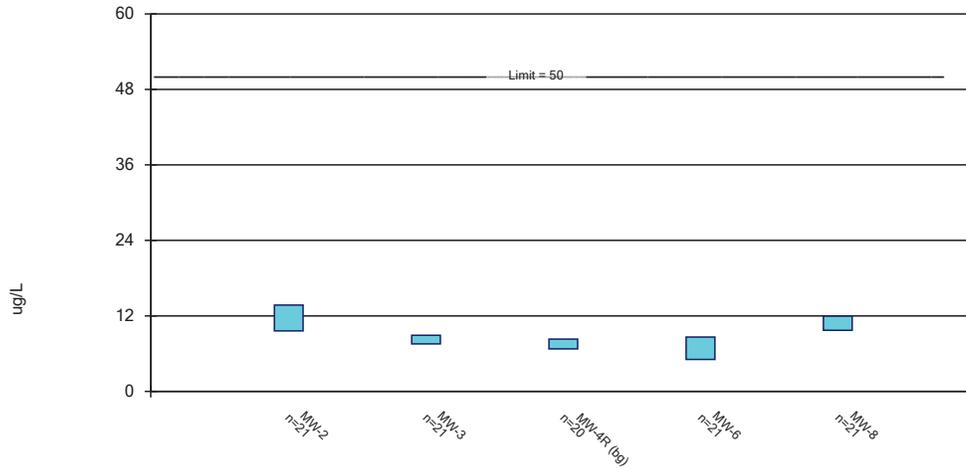
Compliance Limit is not exceeded. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: pH Analysis Run 4/3/2024 1:57 PM View: 2024Q1 Confidence Interval
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Parametric Confidence Interval

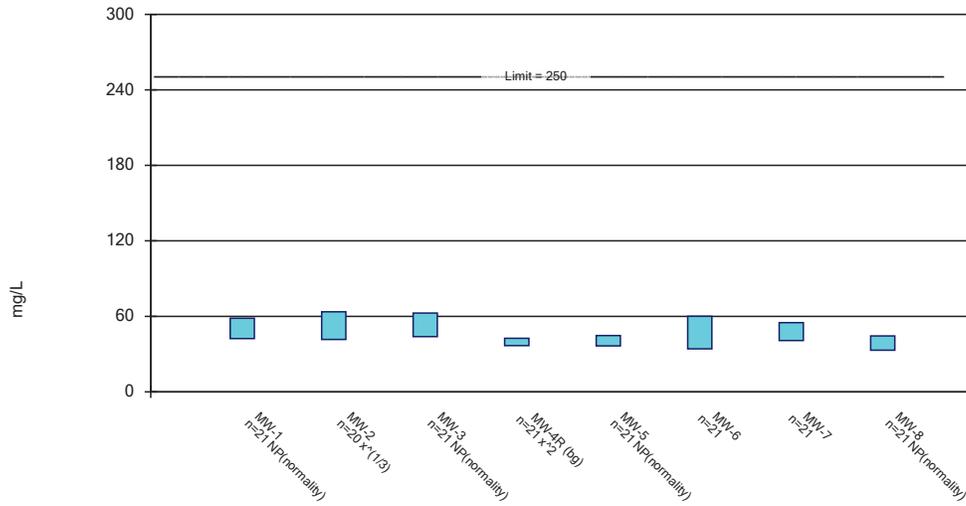
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Selenium Analysis Run 4/3/2024 1:57 PM View: 2024Q1 Confidence Interval
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Parametric and Non-Parametric (NP) Confidence Interval

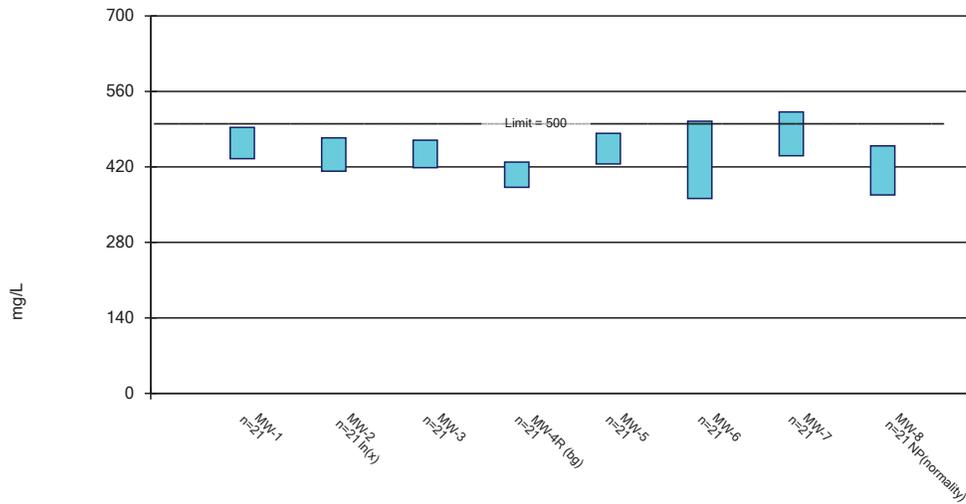
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Sulfate Analysis Run 4/3/2024 1:57 PM View: 2024Q1 Confidence Interval
 Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Parametric and Non-Parametric (NP) Confidence Interval

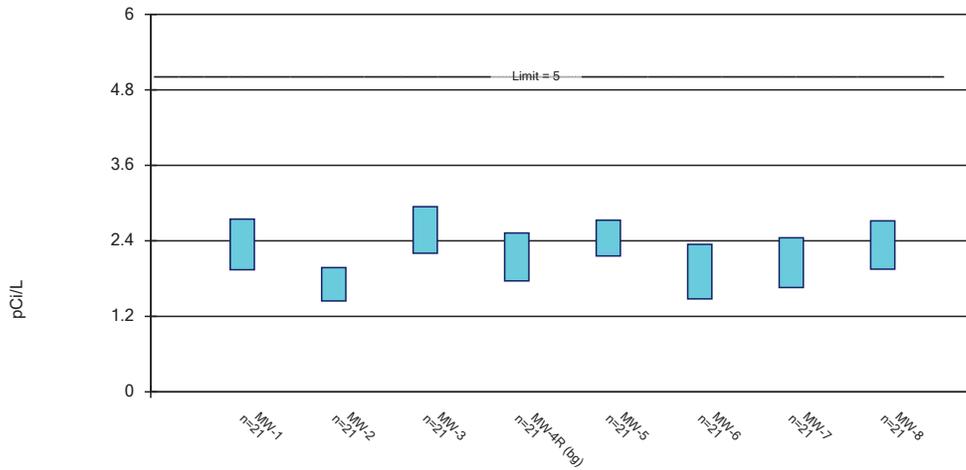
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Total Dissolved Solids Analysis Run 4/3/2024 1:57 PM View: 2024Q1 Confidence Interval
 Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Parametric Confidence Interval

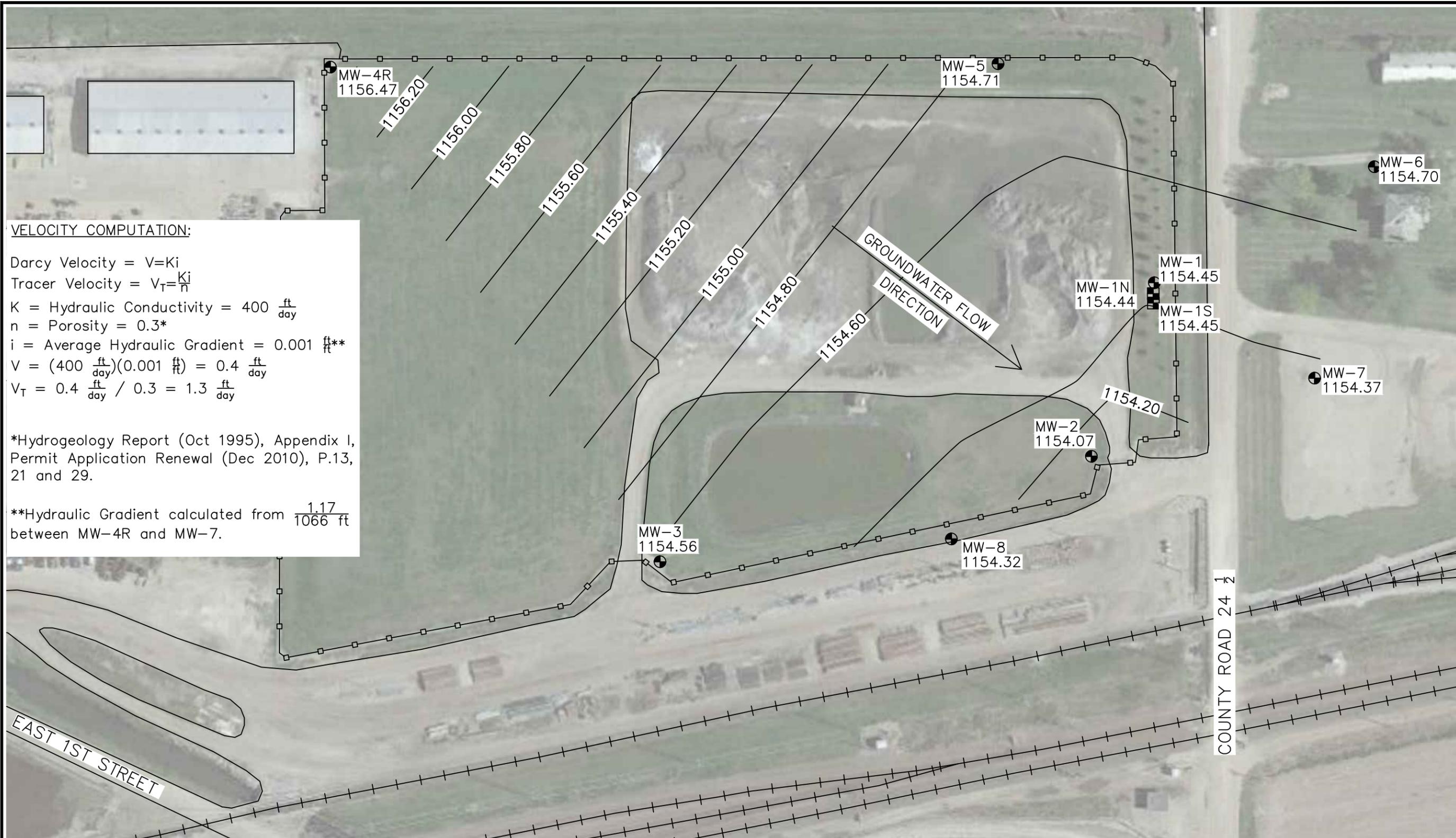
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Total Radium Analysis Run 4/3/2024 1:57 PM View: 2024Q1 Confidence Interval
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

B Figures

T:\27224080.00\Data and Calculations\1Q 2024\DWG\2024 Q1 Groundwater Contours.dwg Mar 29, 2024 - 4:20pm Layout Name: 11x17 By: 5192mbs



VELOCITY COMPUTATION:

Darcy Velocity = $V=Ki$
 Tracer Velocity = $V_T = \frac{Ki}{n}$

$K = \text{Hydraulic Conductivity} = 400 \frac{\text{ft}}{\text{day}}$
 $n = \text{Porosity} = 0.3^*$
 $i = \text{Average Hydraulic Gradient} = 0.001 \frac{\text{ft}}{\text{ft}}^{**}$

$V = (400 \frac{\text{ft}}{\text{day}})(0.001 \frac{\text{ft}}{\text{ft}}) = 0.4 \frac{\text{ft}}{\text{day}}$
 $V_T = 0.4 \frac{\text{ft}}{\text{day}} / 0.3 = 1.3 \frac{\text{ft}}{\text{day}}$

*Hydrogeology Report (Oct 1995), Appendix I, Permit Application Renewal (Dec 2010), P.13, 21 and 29.
 **Hydraulic Gradient calculated from $\frac{1.17}{1066 \text{ ft}}$ between MW-4R and MW-7.

- LEGEND**
- ++++ RAILROAD TRACKS
 - — ESTIMATED POTENTIOMETRIC CONTOUR
 - — FENCE
 - POTENTIOMETRIC CONTOUR
 - ⊕ MONITORING WELL 1162.50 FEET ABOVE MEAN SEA LEVEL
 - ⊞ PIEZOMETER

NOTES:
 1. DEPTHS TO GROUNDWATER MEASURED 02/06/2024.



CK BY	-	-	-	-	-
REV	△	△	△	△	△
DATE	-	-	-	-	-
SHEET TITLE	POTENTIOMETRIC CONTOUR MAP				
PROJECT TITLE	SEMIANNUAL GROUNDWATER SAMPLING				
CLIENT	FREMONT DEPARTMENT OF UTILITIES LON D. WRIGHT POWER PLANT FREMONT, NEBRASKA				
SCS ENGINEERS	14755 GARDNER STREET OVERLAND PARK, KS 66204 PH: (913) 884-6202 FAX: (913) 884-6203 PROJ. NO. 27224080.00 DSK. BY: MBS DWN. BY: MBS CHK. BY: EWW Q/A RW BY: EWW PROJ. MGR. MJM				
CADD FILE:	2024 Q1 GROUNDWATER CONTOURS.DWG				
DATE:	03/29/24				
FIGURE NO.	1				

C Supporting information

C.1 Field Data Sheets

Field Data Sheet

Project Name: FDU GW Sampling
 Project Location: Fremont, NE
 Project Number: 27224080.00

Monitoring Point: MW-1
 Date(s): 2/6/2024

Field Team Members

Name: Alex Smith Affiliation: SCS Engineers
 Name: Dylan Wagner Affiliation: SCS Engineers

Weather Conditions

Mean Temp: 45 °F (Mean) Wind Direction: N S E W (circle two if needed)
 Precipitation: None Light Heavy Sky: Cloudy Sunny Partly

Well Observations

Well Pad	<u>OK</u>		Locks	<u>Yes</u>	<u>No</u>
Casing	<u>OK</u>		Protective Casing	<u>x</u>	
Protective Casing	<u>OK</u>		Well	<u>x</u>	
Reference Mark/Identification	<u>OK</u>				

Groundwater Level Measurements

Date/Time Measured: 2/6/2024 11:23
 Total Depth: 29.00 feet below TOC
 Static Water Level: 26.25 feet below TOC
 TD - SWL: 2.75 water column (ft.)

Purging Activities

Purged By: DW Purge Date: 02/06/24
 Purge Method: Bailer **Dedicated Pump** Non-Dedicated Pump Peristaltic Pump (circle one)
 Well Diameter: 1-inch 2-inch 3-inch **4-inch** Other _____ (circle one)
 Purge Volume Calculation: 10 mL/ft * 2.75 ft = 27.50 mL Min Purge Volume: 100 mL
 Initial Parameter Readings: Temp (°C) 11.67 pH 7.3 ORP 163.00
 Sp. Cond. 0.767 Turbidity 0 DO 7.89
 Physical appearance of purge water: Clear
 10% 0.2 SU 10%

Purge Time	Cumulative Purge Vol. (mL)	Purge Rate (ml/m)	Temp (°C)	pH	ORP (mV)	Specific Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Water Level (ft below TOC)
11:30	500	150	12.01	7.21	166.00	0.77	0.00	6.98	26.3
11:33	950	150	12.41	7.11	170.00	0.78	0.00	5.71	26.2
11:36	1400	150	12.76	7.02	175.00	0.77	0.00	5.09	26.2

Sampling Activities

Sampled By: DW Sample Date/Time: 2/6/2024 11:40
 Sample Method: Bailer **Dedicated Pump** Non-Dedicated Pump Peristaltic Pump (circle one)
 Sample Parameters: Temp (°C) 12.76 pH 7.02 ORP 175.00
 Sp. Cond. 0.765 Turbidity 0 DO 5.09
 Water Level 26.24 (feet below TOC)

Observations/Comments: (i.e., equipment malfunctions, contamination sources, sampling difficulties; duplicate sample)

Electronic Form Completed By: AS Date: 2/7/2024

Field Data Sheet

Project Name: FDU GW Sampling
Project Location: Fremont, NE
Project Number: 27224080.00

Monitoring Point: MW-1N
Date(s): 2/6/2024

Field Team Members

Name: Alex Smith Affiliation: SCS Engineers
 Name: Dylan Wagner Affiliation: SCS Engineers

Weather Conditions

Mean Temp: 45 °F (Mean) Wind Direction: N S E W (circle two if needed)
 Precipitation: None Light Heavy Sky: Cloudy Sunny Partly

Well Observations

Well Pad	<u>OK</u>	Locks	<u>Yes</u>	<u>No</u>	
Casing	<u>OK</u>		Protective Casing	<u>x</u>	
Protective Casing	<u>OK</u>		Well	<u>x</u>	
Reference Mark/Identification	<u>OK</u>				

Groundwater Level Measurements

Date/Time Measured: 2/6/2024 11:19
 Total Depth: 62.24 feet below TOC
 Static Water Level: 27.03 feet below TOC
 TD - SWL: 35.21 water column (ft.)

Purging Activities

Purged By: - Purge Date: -
 Purge Method: Bailer Dedicated Pump Non-Dedicated Pump Peristaltic Pump (circle one)
 Well Diameter: 1-inch 2-inch 3-inch 4-inch Other _____ (circle one)
 Purge Volume Calculation: - Min Purge Volume: - mL
 Initial Parameter Readings: Temp (°C) - pH - ORP -
 Sp. Cond. - Turbidity - DO -
 Physical appearance of purge water: -
 10% 0.2 SU 10%

Purge Time	Cumulative Purge Vol. (mL)	Purge Rate (ml/m)	Temp (°C)	pH	ORP (mV)	Specific Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Water Level (ft below TOC)
-	-	-	-	-	-	-	-	-	-

Sampling Activities

Sampled By: - Sample Date/Time: -
 Sample Method: Bailer Dedicated Pump Non-Dedicated Pump Peristaltic Pump (circle one)
 Sample Parameters: Temp (°C) - pH - ORP -
 Sp. Cond. - Turbidity - DO -
 Water Level - (feet below TOC)

Observations/Comments: (i.e., equipment malfunctions, contamination sources, sampling difficulties; duplicate sample)
Only total depth and SWL measured. No purging or sampling took place.

Electronic Form Completed By: AS Date: 2/7/2024

Field Data Sheet

Project Name: FDU GW Sampling
Project Location: Fremont, NE
Project Number: 27224080.00

Monitoring Point: MW-1S
Date(s): 2/6/2024

Field Team Members

Name: Alex Smith Affiliation: SCS Engineers
 Name: Dylan Wagner Affiliation: SCS Engineers

Weather Conditions

Mean Temp: 45 °F (Mean) Wind Direction: N S E W (circle two if needed)
 Precipitation: None Light Heavy Sky: Cloudy Sunny Partly

Well Observations

Well Pad	<u>OK</u>	Locks	<u>Yes</u>	<u>No</u>	
Casing	<u>OK</u>		Protective Casing	<u>x</u>	
Protective Casing	<u>OK</u>		Well	<u>x</u>	
Reference Mark/Identification	<u>OK</u>				

Groundwater Level Measurements

Date/Time Measured: 2/6/2024 11:21
 Total Depth: 92.19 feet below TOC
 Static Water Level: 27.02 feet below TOC
 TD - SWL: 65.17 water column (ft.)

Purging Activities

Purged By: - Purge Date: -
 Purge Method: Bailer Dedicated Pump Non-Dedicated Pump Peristaltic Pump (circle one)
 Well Diameter: 1-inch 2-inch 3-inch 4-inch Other _____ (circle one)
 Purge Volume Calculation: - Min Purge Volume: - mL
 Initial Parameter Readings: Temp (°C) - pH - ORP -
 Sp. Cond. - Turbidity - DO -
 Physical appearance of purge water: -
 10% 0.2 SU 10%

Purge Time	Cumulative Purge Vol. (mL)	Purge Rate (ml/m)	Temp (°C)	pH	ORP (mV)	Specific Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Water Level (ft below TOC)
-	-	-	-	-	-	-	-	-	-

Sampling Activities

Sampled By: - Sample Date/Time: -
 Sample Method: Bailer Dedicated Pump Non-Dedicated Pump Peristaltic Pump (circle one)
 Sample Parameters: Temp (°C) - pH - ORP -
 Sp. Cond. - Turbidity - DO -
 Water Level - (feet below TOC)

Observations/Comments: (i.e., equipment malfunctions, contamination sources, sampling difficulties; duplicate sample)
Only total depth and SWL measured. No purging or sampling took place.

Electronic Form Completed By: AS Date: 2/7/2024

Field Data Sheet

Project Name: FDU GW Sampling
Project Location: Fremont, NE
Project Number: 27224080.00

Monitoring Point: MW-2
Date(s): 2/6/2024

Field Team Members

Name: Alex Smith Affiliation: SCS Engineers
 Name: Dylan Wagner Affiliation: SCS Engineers

Weather Conditions

Mean Temp: 46 °F (Mean) Wind Direction: N S E W (circle two if needed)
 Precipitation: None Light Heavy Sky: Cloudy Sunny Partly

Well Observations

Well Pad	<u>OK</u>	Locks	<u>Yes</u>	<u>No</u>
Casing	<u>OK</u>	Protective Casing	<u>x</u>	
Protective Casing	<u>OK</u>	Well	<u>x</u>	
Reference Mark/Identification	<u>OK</u>			

Groundwater Level Measurements

Date/Time Measured: 2/6/2024 12:15
 Total Depth: 28.00 feet below TOC
 Static Water Level: 22.89 feet below TOC
 TD - SWL: 5.11 water column (ft.)

Purging Activities

Purged By: DW Purge Date: 02/06/24
 Purge Method: Bailer **Dedicated Pump** Non-Dedicated Pump Peristaltic Pump (circle one)
 Well Diameter: 1-inch 2-inch 3-inch **4-inch** Other _____ (circle one)
 Purge Volume Calculation: $10 \text{ mL/ft} \times 5.11 \text{ ft} = 51.1 \text{ mL}$ Min Purge Volume: 100 mL
 Initial Parameter Readings: Temp (°C) 11.78 pH 7.3 ORP 149.00
 Sp. Cond. 0.732 Turbidity 0 DO 10.12
 Physical appearance of purge water: Clear
 10% 0.2 SU 10%

Purge Time	Cumulative Purge Vol. (mL)	Purge Rate (ml/m)	Temp (°C)	pH	ORP (mV)	Specific Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Water Level (ft below TOC)
12:21	500	200	12.01	7.01	162.00	0.77	0.00	5.40	22.9
12:24	1100	200	12.06	7.07	165.00	0.77	0.00	4.90	22.9
12:27	1700	200	12.15	7.00	168.00	0.77	0.00	4.03	22.9

Sampling Activities

Sampled By: DW Sample Date/Time: 2/6/2024 12:30
 Sample Method: Bailer **Dedicated Pump** Non-Dedicated Pump Peristaltic Pump (circle one)
 Sample Parameters: Temp (°C) 12.15 pH 7 ORP 168.00
 Sp. Cond. 0.772 Turbidity 0 DO 4.03
 Water Level 22.89 (feet below TOC)

Observations/Comments: (i.e., equipment malfunctions, contamination sources, sampling difficulties; duplicate sample)

Electronic Form Completed By: AS Date: 2/7/2024

Field Data Sheet

Project Name: FDU GW Sampling
Project Location: Fremont, NE
Project Number: 27224080.00

Monitoring Point: MW-3
Date(s): 2/6/2024

Field Team Members

Name: Alex Smith Affiliation: SCS Engineers
 Name: Dylan Wagner Affiliation: SCS Engineers

Weather Conditions

Mean Temp: 45 °F (Mean) Wind Direction: N S E W (circle two if needed)
 Precipitation: None Light Heavy Sky: Cloudy Sunny Partly

Well Observations

Well Pad	<u>OK</u>	Locks	<u>Yes</u>	<u>No</u>	
Casing	<u>OK</u>		Protective Casing	<u>x</u>	
Protective Casing	<u>OK</u>		Well	<u>x</u>	
Reference Mark/Identification	<u>OK</u>				

Groundwater Level Measurements

Date/Time Measured: 2/6/2024 10:15

Total Depth:	<u>28.00</u>	feet below TOC
Static Water Level:	<u>23.93</u>	feet below TOC
TD - SWL:	<u>4.07</u>	water column (ft.)

Purging Activities

Purged By: DW Purge Date: 02/06/24
 Purge Method: Bailer **Dedicated Pump** Non-Dedicated Pump Peristaltic Pump (circle one)
 Well Diameter: 1-inch 2-inch 3-inch **4-inch** Other _____ (circle one)
 Purge Volume Calculation: $10 \text{ mL/ft} \times 4.07 \text{ ft} = 40.70 \text{ mL}$ Min Purge Volume: 100 mL
 Initial Parameter Readings: Temp (°C) 11.16 pH 7.41 ORP 148.00
 Sp. Cond. 0.804 Turbidity 0 DO 8.47
 Physical appearance of purge water: Clear
 10% 0.2 SU 10%

Purge Time	Cumulative Purge Vol. (mL)	Purge Rate (ml/m)	Temp (°C)	pH	ORP (mV)	Specific Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Water Level (ft below TOC)
10:20	600	200	11.33	7.33	153.00	0.84	0.00	6.00	23.9
10:23	1200	200	11.93	7.20	161.00	0.87	0.00	4.46	24.0
10:26	1800	200	12.14	7.09	168.00	0.87	0.00	4.45	24.0

Sampling Activities

Sampled By: DW Sample Date/Time: 2/6/2024 10:30
 Sample Method: Bailer **Dedicated Pump** Non-Dedicated Pump Peristaltic Pump (circle one)
 Sample Parameters: Temp (°C) 12.14 pH 7.09 ORP 168.00
 Sp. Cond. 0.867 Turbidity 0 DO 4.45
 Water Level 23.98 (feet below TOC)

Observations/Comments: (i.e., equipment malfunctions, contamination sources, sampling difficulties; duplicate sample)

Electronic Form Completed By: AS Date: 2/7/2024

Field Data Sheet

Project Name: FDU GW Sampling
Project Location: Fremont, NE
Project Number: 27224080.00

Monitoring Point: MW-4R
Date(s): 2/6/2024

Field Team Members

Name: Alex Smith Affiliation: SCS Engineers
 Name: Dylan Wagner Affiliation: SCS Engineers

Weather Conditions

Mean Temp: 36 °F (Mean) Wind Direction: N S E W (circle two if needed)
 Precipitation: None Light Heavy Sky: Cloudy Sunny Partly

Well Observations

Well Pad	<u>OK</u>	Locks	<u>Yes</u>	<u>No</u>	
Casing	<u>OK</u>		Protective Casing	<u>x</u>	
Protective Casing	<u>OK</u>		Well	<u>x</u>	
Reference Mark/Identification	<u>OK</u>				

Groundwater Level Measurements

Total Depth: 28.00 feet below TOC
 Static Water Level: 21.82 feet below TOC
 Date/Time Measured: 2/6/2024 9:39 TD - SWL: 6.18 water column (ft.)

Purging Activities

Purged By: DW Purge Date: 02/06/24
 Purge Method: Bailer **Dedicated Pump** Non-Dedicated Pump Peristaltic Pump (circle one)
 Well Diameter: 1-inch 2-inch 3-inch **4-inch** Other _____ (circle one)
 Purge Volume Calculation: $10 \text{ mL/ft} \times 6.18 \text{ ft} = 61.80 \text{ mL}$ Min Purge Volume: 100 mL
 Initial Parameter Readings: Temp (°C) 11.85 pH 8.13 ORP 112.00
 Sp. Cond. 0.784 Turbidity 0 DO 7.32
 Physical appearance of purge water: Clear
 10% 0.2 SU 10%

Purge Time	Cumulative Purge Vol. (mL)	Purge Rate (ml/m)	Temp (°C)	pH	ORP (mV)	Specific Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Water Level (ft below TOC)
9:49	700	200	11.74	7.50	143.00	0.77	0.00	4.35	21.9
9:52	1300	200	11.78	7.45	144.00	0.76	0.00	4.11	21.9
9:55	1900	200	11.80	7.38	147.00	0.75	0.00	4.03	21.8

Sampling Activities

Sampled By: DW Sample Date/Time: 2/6/2024 10:00
 Sample Method: Bailer **Dedicated Pump** Non-Dedicated Pump Peristaltic Pump (circle one)
 Sample Parameters: Temp (°C) 11.8 pH 7.38 ORP 147.00
 Sp. Cond. 0.751 Turbidity 0 DO 4.03
 Water Level 21.82 (feet below TOC)

Observations/Comments: (i.e., equipment malfunctions, contamination sources, sampling difficulties; duplicate sample)

Electronic Form Completed By: AS **Date:** 2/7/2024

Field Data Sheet

Project Name: FDU GW Sampling
Project Location: Fremont, NE
Project Number: 27224080.00

Monitoring Point: MW-5
Date(s): 2/6/2024

Field Team Members

Name: Alex Smith Affiliation: SCS Engineers
 Name: Dylan Wagner Affiliation: SCS Engineers

Weather Conditions

Mean Temp: 45 °F (Mean) Wind Direction: N S E W (circle two if needed)
 Precipitation: None Light Heavy Sky: Cloudy Sunny Partly

Well Observations

Well Pad	<u>OK</u>	Locks	<u>Yes</u>	<u>No</u>	
Casing	<u>OK</u>		Protective Casing	<u>x</u>	
Protective Casing	<u>OK</u>		Well	<u>x</u>	
Reference Mark/Identification	<u>OK</u>				

Groundwater Level Measurements

Total Depth: 28.00 feet below TOC
 Static Water Level: 22.61 feet below TOC
 Date/Time Measured: 2/6/2024 10:49 TD - SWL: 5.39 water column (ft.)

Purging Activities

Purged By: DW Purge Date: 02/06/24
 Purge Method: Bailer **Dedicated Pump** Non-Dedicated Pump Peristaltic Pump (circle one)
 Well Diameter: 1-inch 2-inch 3-inch **4-inch** Other _____ (circle one)
 Purge Volume Calculation: $10 \text{ mL/ft} \times 5.39 \text{ ft} = 53.90 \text{ mL}$ Min Purge Volume: 100 mL
 Initial Parameter Readings: Temp (°C) 11.84 pH 7.37 ORP 149.00
 Sp. Cond. 0.76 Turbidity 0 DO 7.65
 Physical appearance of purge water: Clear
 10% 0.2 SU 10%

Purge Time	Cumulative Purge Vol. (mL)	Purge Rate (ml/m)	Temp (°C)	pH	ORP (mV)	Specific Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Water Level (ft below TOC)
10:54	500	200	12.34	7.32	153.00	0.77	0.00	6.97	22.6
10:57	1100	200	13.01	7.21	163.00	0.77	0.00	6.42	22.6
11:00	1700	200	13.36	7.12	168.00	0.75	0.00	6.46	22.6

Sampling Activities

Sampled By: DW Sample Date/Time: 2/6/2024 11:05
 Sample Method: Bailer **Dedicated Pump** Non-Dedicated Pump Peristaltic Pump (circle one)
 Sample Parameters: Temp (°C) 13.36 pH 7.12 ORP 168.00
 Sp. Cond. 0.751 Turbidity 0 DO 6.46
 Water Level 22.58 (feet below TOC)

Observations/Comments: (i.e., equipment malfunctions, contamination sources, sampling difficulties; duplicate sample)

Electronic Form Completed By: AS Date: 2/7/2024

Field Data Sheet

Project Name: FDU GW Sampling
Project Location: Fremont, NE
Project Number: 27224080.00

Monitoring Point: MW-6
Date(s): 2/6/2024

Field Team Members

Name: Alex Smith Affiliation: SCS Engineers
 Name: Dylan Wagner Affiliation: SCS Engineers

Weather Conditions

Mean Temp: 45 °F (Mean) Wind Direction: N S E W (circle two if needed)
 Precipitation: None Light Heavy Sky: Cloudy Sunny Partly

Well Observations

Well Pad	<u>OK</u>	Locks	<u>Yes</u>	<u>No</u>	
Casing	<u>OK</u>		Protective Casing	<u>x</u>	
Protective Casing	<u>OK</u>		Well	<u>x</u>	
Reference Mark/Identification	<u>OK</u>				

Groundwater Level Measurements

Date/Time Measured: 2/6/2024 13:44

Total Depth:	<u>28.00</u>	feet below TOC
Static Water Level:	<u>22.84</u>	feet below TOC
TD - SWL:	<u>5.16</u>	water column (ft.)

Purging Activities

Purged By: DW Purge Date: 02/06/24
 Purge Method: Bailer **Dedicated Pump** Non-Dedicated Pump Peristaltic Pump (circle one)
 Well Diameter: 1-inch 2-inch 3-inch **4-inch** Other _____ (circle one)
 Purge Volume Calculation: $10 \text{ mL/ft} \times 5.16 \text{ ft} = 51.60 \text{ mL}$ Min Purge Volume: 100 mL
 Initial Parameter Readings: Temp (°C) 11.25 pH 7.08 ORP 167.00
 Sp. Cond. 0.764 Turbidity 0 DO 10.94
 Physical appearance of purge water: Clear
 10% 0.2 SU 10%

Purge Time	Cumulative Purge Vol. (mL)	Purge Rate (ml/m)	Temp (°C)	pH	ORP (mV)	Specific Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Water Level (ft below TOC)
13:48	500	200	12.41	7.15	167.00	0.81	0.00	8.58	22.9
13:51	1100	200	14.14	7.01	177.00	0.86	0.00	6.03	22.9
13:54	1700	200	14.82	6.98	177.00	0.87	0.00	4.93	22.9
13:57	2300	200	14.91	6.89	183.00	0.87	0.00	4.57	22.9

Sampling Activities

Sampled By: DW Sample Date/Time: 2/6/2024 14:00
 Sample Method: Bailer **Dedicated Pump** Non-Dedicated Pump Peristaltic Pump (circle one)
 Sample Parameters: Temp (°C) 14.91 pH 6.89 ORP 183.00
 Sp. Cond. 0.867 Turbidity 0 DO 4.57
 Water Level 22.85 (feet below TOC)

Observations/Comments: (i.e., equipment malfunctions, contamination sources, sampling difficulties; duplicate sample)

Duplicate taken at this well - See time 23:59

Electronic Form Completed By: AS **Date:** 2/7/2024

Field Data Sheet

Project Name: FDU GW Sampling
Project Location: Fremont, NE
Project Number: 27224080.00

Monitoring Point: MW-7
Date(s): 2/6/2024

Field Team Members

Name: Alex Smith Affiliation: SCS Engineers
 Name: Dylan Wagner Affiliation: SCS Engineers

Weather Conditions

Mean Temp: 45 °F (Mean) Wind Direction: N S E W (circle two if needed)
 Precipitation: None Light Heavy Sky: Cloudy Sunny Partly

Well Observations

Well Pad	<u>OK</u>	Locks	<u>Yes</u>	<u>No</u>
Casing	<u>OK</u>	Protective Casing	<u>x</u>	
Protective Casing	<u>OK</u>	Well	<u>x</u>	
Reference Mark/Identification	<u>OK</u>			

Groundwater Level Measurements

Total Depth: 28.00 feet below TOC
 Static Water Level: 22.75 feet below TOC
 Date/Time Measured: 2/6/2024 13:22 TD - SWL: 5.25 water column (ft.)

Purging Activities

Purged By: DW Purge Date: 02/06/24
 Purge Method: Bailer **Dedicated Pump** Non-Dedicated Pump Peristaltic Pump (circle one)
 Well Diameter: 1-inch 2-inch 3-inch **4-inch** Other _____ (circle one)
 Purge Volume Calculation: 10 mL/ft * 5.25 ft = 52.50 mL Min Purge Volume: 100 mL
 Initial Parameter Readings: Temp (°C) 10.32 pH 6.82 ORP 175.00
 Sp. Cond. 0.937 Turbidity 0 DO 10.57
 Physical appearance of purge water: Clear
 10% 0.2 SU 10%

Purge Time	Cumulative Purge Vol. (mL)	Purge Rate (ml/m)	Temp (°C)	pH	ORP (mV)	Specific Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Water Level (ft below TOC)
13:26	600	200	12.50	6.92	178.00	0.90	0.00	5.49	22.8
13:29	1200	200	12.81	7.02	173.00	0.88	0.00	4.35	22.8
13:32	1800	200	12.90	6.87	181.00	0.86	0.00	4.16	22.8

Sampling Activities

Sampled By: DW Sample Date/Time: 2/6/2024 13:35
 Sample Method: Bailer **Dedicated Pump** Non-Dedicated Pump Peristaltic Pump (circle one)
 Sample Parameters: Temp (°C) 12.9 pH 6.87 ORP 187.00
 Sp. Cond. 0.859 Turbidity 0 DO 4.16
 Water Level 22.78 (feet below TOC)

Observations/Comments: (i.e., equipment malfunctions, contamination sources, sampling difficulties; duplicate sample)

Electronic Form Completed By: AS **Date:** 2/7/2024

Field Data Sheet

Project Name: FDU GW Sampling
Project Location: Fremont, NE
Project Number: 27224080.00

Monitoring Point: MW-8
Date(s): 2/6/2024

Field Team Members

Name: Alex Smith Affiliation: SCS Engineers
 Name: Dylan Wagner Affiliation: SCS Engineers

Weather Conditions

Mean Temp: 45 °F (Mean) Wind Direction: N S E W (circle two if needed)
 Precipitation: None Light Heavy Sky: Cloudy Sunny Partly

Well Observations

Well Pad	<u>OK</u>	Locks	<u>Yes</u>	<u>No</u>	
Casing	<u>OK</u>		Protective Casing	<u>x</u>	
Protective Casing	<u>OK</u>		Well	<u>x</u>	
Reference Mark/Identification	<u>OK</u>				

Groundwater Level Measurements

Date/Time Measured: 2/6/2024 12:48
 Total Depth: 28.00 feet below TOC
 Static Water Level: 23.04 feet below TOC
 TD - SWL: 4.96 water column (ft.)

Purging Activities

Purged By: DW Purge Date: 02/06/24
 Purge Method: Bailer **Dedicated Pump** Non-Dedicated Pump Peristaltic Pump (circle one)
 Well Diameter: 1-inch 2-inch 3-inch **4-inch** Other _____ (circle one)
 Purge Volume Calculation: $10 \text{ mL/ft} \times 4.96 \text{ ft} = 49.60 \text{ mL}$ Min Purge Volume: 100 mL
 Initial Parameter Readings: Temp (°C) 10.2 pH 7.33 ORP 152.00
 Sp. Cond. 0.709 Turbidity 0 DO 11.40
 Physical appearance of purge water: Clear
 10% 0.2 SU 10%

Purge Time	Cumulative Purge Vol. (mL)	Purge Rate (ml/m)	Temp (°C)	pH	ORP (mV)	Specific Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Water Level (ft below TOC)
12:58	1000	200	12.48	6.98	176.00	0.72	0.00	11.61	23.1
13:01	1600	200	12.54	7.00	173.00	0.72	0.00	11.55	23.0
13:04	2200	200	12.62	6.93	175.00	0.72	0.00	11.16	23.1

Sampling Activities

Sampled By: DW Sample Date/Time: 2/6/2024 13:08
 Sample Method: Bailer **Dedicated Pump** Non-Dedicated Pump Peristaltic Pump (circle one)
 Sample Parameters: Temp (°C) 12.62 pH 6.93 ORP 175.00
 Sp. Cond. 0.722 Turbidity 0 DO 11.16
 Water Level 23.05 (feet below TOC)

Observations/Comments: (i.e., equipment malfunctions, contamination sources, sampling difficulties; duplicate sample)

Electronic Form Completed By: AS Date: 2/7/2024

C.2 Chain of Custody

Chain of Custody Record

Regulatory Program: DW NPDES RCRA Other

Eurofins Environment Testing America

Client Contact		Project Manager: Morgan Sykes		Site Contact: Dylan Wagner		Date: 2-6-24		COC No		
SCS Engineers		Email: msykes@scsengineers.com		Lab Contact: Mary Yang		Carrier:		TALS Project #		
14755 Grover Street		Tel/Fax: (402) 938-0323		Analysis Turnaround Time		Filtered Sample (Y/N)		Sampler: <i>Dylan Wagner</i>		
Omaha Nebraska, 68144		<input checked="" type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS		TAT if different from Below <u>10</u>		Performs MS / MSD (Y/N)		For Lab Use Only:		
(402) 884-6202 Phone		<input type="checkbox"/> 2 weeks		<input type="checkbox"/> 1 week		7470A Mercury		Walk-in Client:		
(913)681-0012 FAX		<input type="checkbox"/> 2 days		<input type="checkbox"/> 1 day		6020 Total Metals		Lab Sampling		
Project Name City of Fremont		<input type="checkbox"/> 2 weeks				9056 Chloride-Fluoride-Sulfate		Job / SDG No		
Site. FDU		<input type="checkbox"/> 1 day				2540C TDS				
P O # 27224080 00						9040 pH				
						9315 Radium-226*				
						9315 Radium-228*				
						Total Radium				
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Performs MS / MSD (Y/N)	Sample Specific Notes		
MW-1	2-6-24	11:10	G	WT	5		X	X	X	
MW-2	2-6-24	12:30	G	WT	5		X	X	X	
MW-3	2-6-24	10:00	G	WT	5		X	X	X	
MW-4R	2-6-24	10:00	G	WT	5		X	X	X	
MW-5	2-6-24	11:05	G	WT	5		X	X	X	
MW-6	2-6-24	14:00	G	WT	5		X	X	X	
MW-7	2-6-24	13:35	G	WT	5		X	X	X	
MW-8	2-6-24	13:08	G	WT	5		X	X	X	
Duplicate	2-6-24	23:59	G	WT	5		X	X	X	
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other							Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)			
Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample							<input type="checkbox"/> Return to Client <input type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for _____ Months			
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown										
Special Instructions/QC Requirements & Comments:										
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No		Cooler Temp (°C) Obs'd		Corr'd		Therm ID No		
Relinquished by: <i>Dylan Wagner</i>		Company: <i>SCS Engineers</i>		Date/Time: <i>1540 2-6-24</i>		Received by: <i>MU</i>		Company: <i>915</i>		
Relinquished by:		Company:		Date/Time:		Received by:		Company:		
Relinquished by:		Company:		Date/Time:		Received in Laboratory by:		Company:		

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3/4/2024



C.3 Testing Results



ANALYTICAL REPORT

PREPARED FOR

Attn: Morgan Sykes
SCS Engineers
14755 Grover St
Omaha, Nebraska 68144

Generated 3/4/2024 4:27:43 PM

JOB DESCRIPTION

FDU - City of Fremont

JOB NUMBER

310-274450-1

Eurofins Cedar Falls

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



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Authorized for release by
Mary Yang, Project Management Assistant I
Mary.Yang@ET.EurofinsUS.com
(319)277-2401



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Case Narrative

Client: SCS Engineers
Project: FDU - City of Fremont

Job ID: 310-274450-1

Job ID: 310-274450-1

Eurofins Cedar Falls

Job Narrative 310-274450-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The samples were received on 2/7/2024 9:15 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were -0.5°C, -0.1°C and 0.4°C.

HPLC/IC

Method 9056A_ORGFM_28D: The following samples were diluted due to the nature of the sample matrix: MW-1 (310-274450-1), MW-3 (310-274450-3), MW-4R (310-274450-4), MW-5 (310-274450-5), MW-6 (310-274450-6), MW-7 (310-274450-7), MW-8 (310-274450-8) and Duplicate (310-274450-9). 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 continuing calibration verification (CCV) associated with batch 310-413492 recovered above the upper control limit for Beryllium. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: MW-6 (310-274450-6) and Duplicate (310-274450-9).

Method 6020B: Due to sample matrix effect on the internal standard (ISTD), a dilution was required for the following samples: MW-6 (310-274450-6) and Duplicate (310-274450-9).

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.

Eurofins Cedar Falls

Case Narrative

Client: SCS Engineers
Project: FDU - City of Fremont

Job ID: 310-274450-1

Job ID: 310-274450-2

Eurofins Cedar Falls

Job Narrative 310-274450-2

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The samples were received on 2/7/2024 9:15 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were -0.5°C, -0.1°C and 0.4°C.

Gas Flow Proportional Counter

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

Rad

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

Eurofins Cedar Falls

Sample Summary

Client: SCS Engineers
Project/Site: FDU - City of Fremont

Job ID: 310-274450-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-274450-1	MW-1	Water	02/06/24 11:40	02/07/24 09:15
310-274450-2	MW-2	Water	02/06/24 12:30	02/07/24 09:15
310-274450-3	MW-3	Water	02/06/24 10:30	02/07/24 09:15
310-274450-4	MW-4R	Water	02/06/24 10:00	02/07/24 09:15
310-274450-5	MW-5	Water	02/06/24 11:05	02/07/24 09:15
310-274450-6	MW-6	Water	02/06/24 14:00	02/07/24 09:15
310-274450-7	MW-7	Water	02/06/24 13:35	02/07/24 09:15
310-274450-8	MW-8	Water	02/06/24 13:08	02/07/24 09:15
310-274450-9	Duplicate	Water	02/06/24 23:59	02/07/24 09:15

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Detection Summary

Client: SCS Engineers
Project/Site: FDU - City of Fremont

Job ID: 310-274450-1

Client Sample ID: MW-1

Lab Sample ID: 310-274450-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	33.5		5.00		mg/L	5		9056A	Total/NA
Sulfate	82.7		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.00402		0.00200		mg/L	1		6020B	Total/NA
Barium	0.120		0.00200		mg/L	1		6020B	Total/NA
Boron	0.221		0.100		mg/L	1		6020B	Total/NA
Calcium	89.8		0.500		mg/L	1		6020B	Total/NA
Lithium	0.0252		0.0100		mg/L	1		6020B	Total/NA
Molybdenum	0.00669		0.00200		mg/L	1		6020B	Total/NA
pH	7.07	HF	1.00		SU	1		9040C	Total/NA
Total Dissolved Solids	392		50.0		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-2

Lab Sample ID: 310-274450-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	43.8		5.00		mg/L	5		9056A	Total/NA
Fluoride	1.41		1.00		mg/L	5		9056A	Total/NA
Sulfate	51.1		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.00424		0.00200		mg/L	1		6020B	Total/NA
Barium	0.105		0.00200		mg/L	1		6020B	Total/NA
Boron	0.152		0.100		mg/L	1		6020B	Total/NA
Calcium	95.6		0.500		mg/L	1		6020B	Total/NA
Lithium	0.0291		0.0100		mg/L	1		6020B	Total/NA
Molybdenum	0.00481		0.00200		mg/L	1		6020B	Total/NA
Selenium	0.00519		0.00500		mg/L	1		6020B	Total/NA
pH	7.09	HF	1.00		SU	1		9040C	Total/NA
Total Dissolved Solids	378		50.0		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-3

Lab Sample ID: 310-274450-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	58.5		5.00		mg/L	5		9056A	Total/NA
Sulfate	55.4		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.00397		0.00200		mg/L	1		6020B	Total/NA
Barium	0.165		0.00200		mg/L	1		6020B	Total/NA
Calcium	111		0.500		mg/L	1		6020B	Total/NA
Lithium	0.0285		0.0100		mg/L	1		6020B	Total/NA
Molybdenum	0.00808		0.00200		mg/L	1		6020B	Total/NA
Selenium	0.00784		0.00500		mg/L	1		6020B	Total/NA
pH	7.11	HF	1.00		SU	1		9040C	Total/NA
Total Dissolved Solids	448		50.0		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-4R

Lab Sample ID: 310-274450-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	44.1		5.00		mg/L	5		9056A	Total/NA
Sulfate	42.6		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.00611		0.00200		mg/L	1		6020B	Total/NA
Barium	0.101		0.00200		mg/L	1		6020B	Total/NA
Calcium	89.6		0.500		mg/L	1		6020B	Total/NA
Lithium	0.0268		0.0100		mg/L	1		6020B	Total/NA
Molybdenum	0.00407		0.00200		mg/L	1		6020B	Total/NA
Selenium	0.00747		0.00500		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: FDU - City of Fremont

Job ID: 310-274450-1

Client Sample ID: MW-4R (Continued)

Lab Sample ID: 310-274450-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
pH	7.15	HF	1.00		SU	1		9040C	Total/NA
Total Dissolved Solids	388		50.0		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-5

Lab Sample ID: 310-274450-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	43.7		5.00		mg/L	5		9056A	Total/NA
Sulfate	54.9		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.00449		0.00200		mg/L	1		6020B	Total/NA
Barium	0.118		0.00200		mg/L	1		6020B	Total/NA
Calcium	88.3		0.500		mg/L	1		6020B	Total/NA
Lithium	0.0267		0.0100		mg/L	1		6020B	Total/NA
Molybdenum	0.00495		0.00200		mg/L	1		6020B	Total/NA
pH	7.18	HF	1.00		SU	1		9040C	Total/NA
Total Dissolved Solids	376		50.0		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-6

Lab Sample ID: 310-274450-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	58.8		5.00		mg/L	5		9056A	Total/NA
Sulfate	73.4		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.00483		0.00200		mg/L	1		6020B	Total/NA
Barium	0.134		0.00200		mg/L	1		6020B	Total/NA
Calcium	101		0.500		mg/L	1		6020B	Total/NA
Molybdenum	0.00812		0.00200		mg/L	1		6020B	Total/NA
Selenium	0.00689		0.00500		mg/L	1		6020B	Total/NA
pH	7.11	HF	1.00		SU	1		9040C	Total/NA
Total Dissolved Solids	452		50.0		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-7

Lab Sample ID: 310-274450-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	62.6		5.00		mg/L	5		9056A	Total/NA
Sulfate	73.1		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.00327		0.00200		mg/L	1		6020B	Total/NA
Barium	0.0960		0.00200		mg/L	1		6020B	Total/NA
Boron	0.113		0.100		mg/L	1		6020B	Total/NA
Calcium	73.4		0.500		mg/L	1		6020B	Total/NA
Lithium	0.0212		0.0100		mg/L	1		6020B	Total/NA
Molybdenum	0.00559		0.00200		mg/L	1		6020B	Total/NA
pH	7.13	HF	1.00		SU	1		9040C	Total/NA
Total Dissolved Solids	426		50.0		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-8

Lab Sample ID: 310-274450-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	38.8		5.00		mg/L	5		9056A	Total/NA
Sulfate	39.0		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.00287		0.00200		mg/L	1		6020B	Total/NA
Barium	0.128		0.00200		mg/L	1		6020B	Total/NA
Calcium	86.5		0.500		mg/L	1		6020B	Total/NA
Lithium	0.0255		0.0100		mg/L	1		6020B	Total/NA
Molybdenum	0.00478		0.00200		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: FDU - City of Fremont

Job ID: 310-274450-1

Client Sample ID: MW-8 (Continued)

Lab Sample ID: 310-274450-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Selenium	0.00790		0.00500		mg/L	1		6020B	Total/NA
pH	7.06	HF	1.00		SU	1		9040C	Total/NA
Total Dissolved Solids	346		50.0		mg/L	1		SM 2540C	Total/NA

Client Sample ID: Duplicate

Lab Sample ID: 310-274450-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	59.0		5.00		mg/L	5		9056A	Total/NA
Sulfate	73.6		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.00481		0.00200		mg/L	1		6020B	Total/NA
Barium	0.136		0.00200		mg/L	1		6020B	Total/NA
Calcium	101		0.500		mg/L	1		6020B	Total/NA
Molybdenum	0.00821		0.00200		mg/L	1		6020B	Total/NA
Selenium	0.00710		0.00500		mg/L	1		6020B	Total/NA
pH	7.10	HF	1.00		SU	1		9040C	Total/NA
Total Dissolved Solids	476		50.0		mg/L	1		SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

Client Sample Results

Client: SCS Engineers
Project/Site: FDU - City of Fremont

Job ID: 310-274450-1

Client Sample ID: MW-1

Lab Sample ID: 310-274450-1

Date Collected: 02/06/24 11:40

Matrix: Water

Date Received: 02/07/24 09:15

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	33.5		5.00		mg/L			02/08/24 16:35	5
Fluoride	<1.00		1.00		mg/L			02/08/24 16:35	5
Sulfate	82.7		5.00		mg/L			02/08/24 16:35	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		02/09/24 09:00	02/09/24 21:07	1
Arsenic	0.00402		0.00200		mg/L		02/09/24 09:00	02/09/24 21:07	1
Barium	0.120		0.00200		mg/L		02/09/24 09:00	02/09/24 21:07	1
Beryllium	<0.00100		0.00100		mg/L		02/09/24 09:00	02/09/24 21:07	1
Boron	0.221		0.100		mg/L		02/09/24 09:00	02/12/24 11:38	1
Cadmium	<0.000200		0.000200		mg/L		02/09/24 09:00	02/09/24 21:07	1
Calcium	89.8		0.500		mg/L		02/09/24 09:00	02/09/24 21:07	1
Chromium	<0.00500		0.00500		mg/L		02/09/24 09:00	02/09/24 21:07	1
Cobalt	<0.000500		0.000500		mg/L		02/09/24 09:00	02/09/24 21:07	1
Lead	<0.000500		0.000500		mg/L		02/09/24 09:00	02/09/24 21:07	1
Lithium	0.0252		0.0100		mg/L		02/09/24 09:00	02/09/24 21:07	1
Molybdenum	0.00669		0.00200		mg/L		02/09/24 09:00	02/09/24 21:07	1
Selenium	<0.00500		0.00500		mg/L		02/09/24 09:00	02/09/24 21:07	1
Thallium	<0.00100		0.00100		mg/L		02/09/24 09:00	02/09/24 21:07	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		02/12/24 11:34	02/13/24 10:46	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	392		50.0		mg/L			02/08/24 15:41	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 9040C)	7.07	HF	1.00		SU			02/07/24 10:38	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
			(2σ+/-)	(2σ+/-)						
Radium-226	0.425		0.116	0.123	1.00	0.0933	pCi/L	02/09/24 10:03	03/04/24 08:13	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	89.8		30 - 110					02/09/24 10:03	03/04/24 08:13	1

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
			(2σ+/-)	(2σ+/-)						
Radium-228	3.13		0.613	0.677	1.00	0.517	pCi/L	02/09/24 10:06	02/20/24 12:16	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	89.8		30 - 110					02/09/24 10:06	02/20/24 12:16	1
Y Carrier	79.6		30 - 110					02/09/24 10:06	02/20/24 12:16	1

Eurofins Cedar Falls

Client Sample Results

Client: SCS Engineers
 Project/Site: FDU - City of Fremont

Job ID: 310-274450-1

Client Sample ID: MW-1

Lab Sample ID: 310-274450-1

Date Collected: 02/06/24 11:40

Matrix: Water

Date Received: 02/07/24 09:15

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	3.56		0.624	0.688	5.00	0.517	pCi/L		03/04/24 15:29	1

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Client Sample Results

Client: SCS Engineers
Project/Site: FDU - City of Fremont

Job ID: 310-274450-1

Client Sample ID: MW-2

Lab Sample ID: 310-274450-2

Date Collected: 02/06/24 12:30

Matrix: Water

Date Received: 02/07/24 09:15

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	43.8		5.00		mg/L			02/08/24 16:49	5
Fluoride	1.41		1.00		mg/L			02/08/24 16:49	5
Sulfate	51.1		5.00		mg/L			02/08/24 16:49	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		02/09/24 09:00	02/09/24 21:10	1
Arsenic	0.00424		0.00200		mg/L		02/09/24 09:00	02/09/24 21:10	1
Barium	0.105		0.00200		mg/L		02/09/24 09:00	02/09/24 21:10	1
Beryllium	<0.00100		0.00100		mg/L		02/09/24 09:00	02/09/24 21:10	1
Boron	0.152		0.100		mg/L		02/09/24 09:00	02/12/24 11:40	1
Cadmium	<0.000200		0.000200		mg/L		02/09/24 09:00	02/09/24 21:10	1
Calcium	95.6		0.500		mg/L		02/09/24 09:00	02/09/24 21:10	1
Chromium	<0.00500		0.00500		mg/L		02/09/24 09:00	02/09/24 21:10	1
Cobalt	<0.000500		0.000500		mg/L		02/09/24 09:00	02/09/24 21:10	1
Lead	<0.000500		0.000500		mg/L		02/09/24 09:00	02/09/24 21:10	1
Lithium	0.0291		0.0100		mg/L		02/09/24 09:00	02/09/24 21:10	1
Molybdenum	0.00481		0.00200		mg/L		02/09/24 09:00	02/09/24 21:10	1
Selenium	0.00519		0.00500		mg/L		02/09/24 09:00	02/09/24 21:10	1
Thallium	<0.00100		0.00100		mg/L		02/09/24 09:00	02/09/24 21:10	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		02/12/24 11:34	02/13/24 10:49	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	378		50.0		mg/L			02/08/24 15:41	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 9040C)	7.09	HF	1.00		SU			02/07/24 10:40	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.436		0.126	0.132	1.00	0.113	pCi/L	02/09/24 10:03	03/04/24 08:13	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.5		30 - 110					02/09/24 10:03	03/04/24 08:13	1

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.63		0.513	0.535	1.00	0.591	pCi/L	02/09/24 10:06	02/20/24 12:16	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.5		30 - 110					02/09/24 10:06	02/20/24 12:16	1
Y Carrier	75.9		30 - 110					02/09/24 10:06	02/20/24 12:16	1

Eurofins Cedar Falls

Client Sample Results

Client: SCS Engineers
 Project/Site: FDU - City of Fremont

Job ID: 310-274450-1

Client Sample ID: MW-2

Lab Sample ID: 310-274450-2

Date Collected: 02/06/24 12:30

Matrix: Water

Date Received: 02/07/24 09:15

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	2.06		0.528	0.551	5.00	0.591	pCi/L		03/04/24 15:29	1

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Client Sample Results

Client: SCS Engineers
Project/Site: FDU - City of Fremont

Job ID: 310-274450-1

Client Sample ID: MW-3

Lab Sample ID: 310-274450-3

Date Collected: 02/06/24 10:30

Matrix: Water

Date Received: 02/07/24 09:15

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	58.5		5.00		mg/L			02/08/24 17:03	5
Fluoride	<1.00		1.00		mg/L			02/08/24 17:03	5
Sulfate	55.4		5.00		mg/L			02/08/24 17:03	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		02/09/24 09:00	02/09/24 21:23	1
Arsenic	0.00397		0.00200		mg/L		02/09/24 09:00	02/09/24 21:23	1
Barium	0.165		0.00200		mg/L		02/09/24 09:00	02/09/24 21:23	1
Beryllium	<0.00100		0.00100		mg/L		02/09/24 09:00	02/09/24 21:23	1
Boron	<0.100		0.100		mg/L		02/09/24 09:00	02/12/24 12:02	1
Cadmium	<0.000200		0.000200		mg/L		02/09/24 09:00	02/09/24 21:23	1
Calcium	111		0.500		mg/L		02/09/24 09:00	02/09/24 21:23	1
Chromium	<0.00500		0.00500		mg/L		02/09/24 09:00	02/09/24 21:23	1
Cobalt	<0.000500		0.000500		mg/L		02/09/24 09:00	02/09/24 21:23	1
Lead	<0.000500		0.000500		mg/L		02/09/24 09:00	02/09/24 21:23	1
Lithium	0.0285		0.0100		mg/L		02/09/24 09:00	02/09/24 21:23	1
Molybdenum	0.00808		0.00200		mg/L		02/09/24 09:00	02/09/24 21:23	1
Selenium	0.00784		0.00500		mg/L		02/09/24 09:00	02/09/24 21:23	1
Thallium	<0.00100		0.00100		mg/L		02/09/24 09:00	02/09/24 21:23	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		02/12/24 11:34	02/13/24 10:51	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	448		50.0		mg/L			02/08/24 15:41	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 9040C)	7.11	HF	1.00		SU			02/07/24 10:41	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
			(2σ+/-)	(2σ+/-)						
Radium-226	0.620		0.136	0.147	1.00	0.0848	pCi/L	02/09/24 10:03	03/04/24 08:13	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.5		30 - 110					02/09/24 10:03	03/04/24 08:13	1

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
			(2σ+/-)	(2σ+/-)						
Radium-228	2.22		0.529	0.567	1.00	0.542	pCi/L	02/09/24 10:06	02/20/24 12:16	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.5		30 - 110					02/09/24 10:06	02/20/24 12:16	1
Y Carrier	85.2		30 - 110					02/09/24 10:06	02/20/24 12:16	1

Eurofins Cedar Falls

Client Sample Results

Client: SCS Engineers
 Project/Site: FDU - City of Fremont

Job ID: 310-274450-1

Client Sample ID: MW-3

Lab Sample ID: 310-274450-3

Date Collected: 02/06/24 10:30

Matrix: Water

Date Received: 02/07/24 09:15

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	2.84		0.546	0.586	5.00	0.542	pCi/L		03/04/24 15:29	1

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Client Sample Results

Client: SCS Engineers
Project/Site: FDU - City of Fremont

Job ID: 310-274450-1

Client Sample ID: MW-4R
Date Collected: 02/06/24 10:00
Date Received: 02/07/24 09:15

Lab Sample ID: 310-274450-4
Matrix: Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	44.1		5.00		mg/L			02/08/24 17:16	5
Fluoride	<1.00		1.00		mg/L			02/08/24 17:16	5
Sulfate	42.6		5.00		mg/L			02/08/24 17:16	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		02/09/24 09:00	02/09/24 21:26	1
Arsenic	0.00611		0.00200		mg/L		02/09/24 09:00	02/09/24 21:26	1
Barium	0.101		0.00200		mg/L		02/09/24 09:00	02/09/24 21:26	1
Beryllium	<0.00100		0.00100		mg/L		02/09/24 09:00	02/09/24 21:26	1
Boron	<0.100		0.100		mg/L		02/09/24 09:00	02/12/24 12:05	1
Cadmium	<0.000200		0.000200		mg/L		02/09/24 09:00	02/09/24 21:26	1
Calcium	89.6		0.500		mg/L		02/09/24 09:00	02/09/24 21:26	1
Chromium	<0.00500		0.00500		mg/L		02/09/24 09:00	02/09/24 21:26	1
Cobalt	<0.000500		0.000500		mg/L		02/09/24 09:00	02/09/24 21:26	1
Lead	<0.000500		0.000500		mg/L		02/09/24 09:00	02/09/24 21:26	1
Lithium	0.0268		0.0100		mg/L		02/09/24 09:00	02/09/24 21:26	1
Molybdenum	0.00407		0.00200		mg/L		02/09/24 09:00	02/09/24 21:26	1
Selenium	0.00747		0.00500		mg/L		02/09/24 09:00	02/09/24 21:26	1
Thallium	<0.00100		0.00100		mg/L		02/09/24 09:00	02/09/24 21:26	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		02/12/24 11:34	02/13/24 10:53	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	388		50.0		mg/L			02/08/24 15:41	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 9040C)	7.15	HF	1.00		SU			02/07/24 10:42	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.428		0.121	0.127	1.00	0.110	pCi/L	02/09/24 10:03	03/04/24 08:13	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
<i>Ba Carrier</i>	91.8		30 - 110					02/09/24 10:03	03/04/24 08:13	1

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.67		0.477	0.501	1.00	0.528	pCi/L	02/09/24 10:06	02/20/24 12:16	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
<i>Ba Carrier</i>	91.8		30 - 110					02/09/24 10:06	02/20/24 12:16	1
<i>Y Carrier</i>	87.1		30 - 110					02/09/24 10:06	02/20/24 12:16	1

Client Sample Results

Client: SCS Engineers
 Project/Site: FDU - City of Fremont

Job ID: 310-274450-1

Client Sample ID: MW-4R
Date Collected: 02/06/24 10:00
Date Received: 02/07/24 09:15

Lab Sample ID: 310-274450-4
Matrix: Water

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	2.10		0.492	0.517	5.00	0.528	pCi/L		03/04/24 15:29	1

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Client Sample Results

Client: SCS Engineers
Project/Site: FDU - City of Fremont

Job ID: 310-274450-1

Client Sample ID: MW-5

Lab Sample ID: 310-274450-5

Date Collected: 02/06/24 11:05

Matrix: Water

Date Received: 02/07/24 09:15

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	43.7		5.00		mg/L			02/08/24 17:30	5
Fluoride	<1.00		1.00		mg/L			02/08/24 17:30	5
Sulfate	54.9		5.00		mg/L			02/08/24 17:30	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		02/09/24 09:00	02/09/24 21:28	1
Arsenic	0.00449		0.00200		mg/L		02/09/24 09:00	02/09/24 21:28	1
Barium	0.118		0.00200		mg/L		02/09/24 09:00	02/09/24 21:28	1
Beryllium	<0.00100		0.00100		mg/L		02/09/24 09:00	02/09/24 21:28	1
Boron	<0.100		0.100		mg/L		02/09/24 09:00	02/12/24 12:07	1
Cadmium	<0.000200		0.000200		mg/L		02/09/24 09:00	02/09/24 21:28	1
Calcium	88.3		0.500		mg/L		02/09/24 09:00	02/09/24 21:28	1
Chromium	<0.00500		0.00500		mg/L		02/09/24 09:00	02/09/24 21:28	1
Cobalt	<0.000500		0.000500		mg/L		02/09/24 09:00	02/09/24 21:28	1
Lead	<0.000500		0.000500		mg/L		02/09/24 09:00	02/09/24 21:28	1
Lithium	0.0267		0.0100		mg/L		02/09/24 09:00	02/09/24 21:28	1
Molybdenum	0.00495		0.00200		mg/L		02/09/24 09:00	02/09/24 21:28	1
Selenium	<0.00500		0.00500		mg/L		02/09/24 09:00	02/09/24 21:28	1
Thallium	<0.00100		0.00100		mg/L		02/09/24 09:00	02/09/24 21:28	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		02/12/24 11:34	02/13/24 10:55	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	376		50.0		mg/L			02/08/24 15:41	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 9040C)	7.18	HF	1.00		SU			02/07/24 10:43	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.626		0.146	0.156	1.00	0.131	pCi/L	02/09/24 10:03	03/04/24 08:13	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
<i>Ba Carrier</i>	97.3		30 - 110					02/09/24 10:03	03/04/24 08:13	1

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	2.10		0.568	0.600	1.00	0.644	pCi/L	02/09/24 10:06	02/20/24 12:16	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
<i>Ba Carrier</i>	97.3		30 - 110					02/09/24 10:06	02/20/24 12:16	1
<i>Y Carrier</i>	76.3		30 - 110					02/09/24 10:06	02/20/24 12:16	1

Eurofins Cedar Falls

Client Sample Results

Client: SCS Engineers
 Project/Site: FDU - City of Fremont

Job ID: 310-274450-1

Client Sample ID: MW-5

Lab Sample ID: 310-274450-5

Date Collected: 02/06/24 11:05

Matrix: Water

Date Received: 02/07/24 09:15

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	2.73		0.586	0.620	5.00	0.644	pCi/L		03/04/24 15:29	1

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Client Sample Results

Client: SCS Engineers
Project/Site: FDU - City of Fremont

Job ID: 310-274450-1

Client Sample ID: MW-6

Lab Sample ID: 310-274450-6

Date Collected: 02/06/24 14:00

Matrix: Water

Date Received: 02/07/24 09:15

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	58.8		5.00		mg/L			02/08/24 17:43	5
Fluoride	<1.00		1.00		mg/L			02/08/24 17:43	5
Sulfate	73.4		5.00		mg/L			02/08/24 17:43	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		02/09/24 09:00	02/12/24 12:09	1
Arsenic	0.00483		0.00200		mg/L		02/09/24 09:00	02/12/24 12:09	1
Barium	0.134		0.00200		mg/L		02/09/24 09:00	02/12/24 12:09	1
Beryllium	<0.00100	^+	0.00100		mg/L		02/09/24 09:00	02/12/24 12:09	1
Boron	<0.100		0.100		mg/L		02/09/24 09:00	02/12/24 12:09	1
Cadmium	<0.000200		0.000200		mg/L		02/09/24 09:00	02/12/24 12:09	1
Calcium	101		0.500		mg/L		02/09/24 09:00	02/12/24 12:09	1
Chromium	<0.00500		0.00500		mg/L		02/09/24 09:00	02/12/24 12:09	1
Cobalt	<0.000500		0.000500		mg/L		02/09/24 09:00	02/12/24 12:09	1
Lead	<0.000500		0.000500		mg/L		02/09/24 09:00	02/12/24 12:09	1
Lithium	<0.0400		0.0400		mg/L		02/09/24 09:00	02/15/24 13:38	4
Molybdenum	0.00812		0.00200		mg/L		02/09/24 09:00	02/12/24 12:09	1
Selenium	0.00689		0.00500		mg/L		02/09/24 09:00	02/12/24 12:09	1
Thallium	<0.00100		0.00100		mg/L		02/09/24 09:00	02/12/24 12:09	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		02/12/24 11:34	02/13/24 11:01	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	452		50.0		mg/L			02/08/24 15:41	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 9040C)	7.11	HF	1.00		SU			02/07/24 10:44	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.408		0.126	0.132	1.00	0.128	pCi/L	02/09/24 10:03	03/04/24 08:14	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
<i>Ba Carrier</i>	93.5		30 - 110					02/09/24 10:03	03/04/24 08:14	1

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.62		0.466	0.489	1.00	0.507	pCi/L	02/09/24 10:06	02/20/24 12:17	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
<i>Ba Carrier</i>	93.5		30 - 110					02/09/24 10:06	02/20/24 12:17	1
<i>Y Carrier</i>	82.6		30 - 110					02/09/24 10:06	02/20/24 12:17	1

Client Sample Results

Client: SCS Engineers
 Project/Site: FDU - City of Fremont

Job ID: 310-274450-1

Client Sample ID: MW-6

Lab Sample ID: 310-274450-6

Date Collected: 02/06/24 14:00

Matrix: Water

Date Received: 02/07/24 09:15

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	2.03		0.483	0.507	5.00	0.507	pCi/L		03/04/24 15:29	1

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Client Sample Results

Client: SCS Engineers
Project/Site: FDU - City of Fremont

Job ID: 310-274450-1

Client Sample ID: MW-7

Lab Sample ID: 310-274450-7

Date Collected: 02/06/24 13:35

Matrix: Water

Date Received: 02/07/24 09:15

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	62.6		5.00		mg/L			02/08/24 17:57	5
Fluoride	<1.00		1.00		mg/L			02/08/24 17:57	5
Sulfate	73.1		5.00		mg/L			02/08/24 17:57	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		02/09/24 09:00	02/09/24 21:35	1
Arsenic	0.00327		0.00200		mg/L		02/09/24 09:00	02/09/24 21:35	1
Barium	0.0960		0.00200		mg/L		02/09/24 09:00	02/09/24 21:35	1
Beryllium	<0.00100		0.00100		mg/L		02/09/24 09:00	02/09/24 21:35	1
Boron	0.113		0.100		mg/L		02/09/24 09:00	02/12/24 12:11	1
Cadmium	<0.000200		0.000200		mg/L		02/09/24 09:00	02/09/24 21:35	1
Calcium	73.4		0.500		mg/L		02/09/24 09:00	02/09/24 21:35	1
Chromium	<0.00500		0.00500		mg/L		02/09/24 09:00	02/09/24 21:35	1
Cobalt	<0.000500		0.000500		mg/L		02/09/24 09:00	02/09/24 21:35	1
Lead	<0.000500		0.000500		mg/L		02/09/24 09:00	02/09/24 21:35	1
Lithium	0.0212		0.0100		mg/L		02/09/24 09:00	02/09/24 21:35	1
Molybdenum	0.00559		0.00200		mg/L		02/09/24 09:00	02/09/24 21:35	1
Selenium	<0.00500		0.00500		mg/L		02/09/24 09:00	02/09/24 21:35	1
Thallium	<0.00100		0.00100		mg/L		02/09/24 09:00	02/09/24 21:35	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		02/12/24 11:34	02/13/24 11:04	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	426		50.0		mg/L			02/08/24 15:41	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 9040C)	7.13	HF	1.00		SU			02/07/24 10:45	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.370		0.111	0.116	1.00	0.107	pCi/L	02/09/24 10:03	03/04/24 08:04	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
<i>Ba Carrier</i>	94.3		30 - 110					02/09/24 10:03	03/04/24 08:04	1

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	2.21		0.637	0.669	1.00	0.782	pCi/L	02/09/24 10:06	02/20/24 12:17	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
<i>Ba Carrier</i>	94.3		30 - 110					02/09/24 10:06	02/20/24 12:17	1
<i>Y Carrier</i>	73.6		30 - 110					02/09/24 10:06	02/20/24 12:17	1

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Client Sample Results

Client: SCS Engineers
 Project/Site: FDU - City of Fremont

Job ID: 310-274450-1

Client Sample ID: MW-7

Lab Sample ID: 310-274450-7

Date Collected: 02/06/24 13:35

Matrix: Water

Date Received: 02/07/24 09:15

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	2.58		0.647	0.679	5.00	0.782	pCi/L		03/04/24 15:29	1

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Client Sample Results

Client: SCS Engineers
Project/Site: FDU - City of Fremont

Job ID: 310-274450-1

Client Sample ID: MW-8

Lab Sample ID: 310-274450-8

Date Collected: 02/06/24 13:08

Matrix: Water

Date Received: 02/07/24 09:15

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	38.8		5.00		mg/L			02/08/24 18:11	5
Fluoride	<1.00		1.00		mg/L			02/08/24 18:11	5
Sulfate	39.0		5.00		mg/L			02/08/24 18:11	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		02/09/24 09:00	02/09/24 21:40	1
Arsenic	0.00287		0.00200		mg/L		02/09/24 09:00	02/09/24 21:40	1
Barium	0.128		0.00200		mg/L		02/09/24 09:00	02/09/24 21:40	1
Beryllium	<0.00100		0.00100		mg/L		02/09/24 09:00	02/09/24 21:40	1
Boron	<0.100		0.100		mg/L		02/09/24 09:00	02/12/24 12:13	1
Cadmium	<0.000200		0.000200		mg/L		02/09/24 09:00	02/09/24 21:40	1
Calcium	86.5		0.500		mg/L		02/09/24 09:00	02/09/24 21:40	1
Chromium	<0.00500		0.00500		mg/L		02/09/24 09:00	02/09/24 21:40	1
Cobalt	<0.000500		0.000500		mg/L		02/09/24 09:00	02/09/24 21:40	1
Lead	<0.000500		0.000500		mg/L		02/09/24 09:00	02/09/24 21:40	1
Lithium	0.0255		0.0100		mg/L		02/09/24 09:00	02/09/24 21:40	1
Molybdenum	0.00478		0.00200		mg/L		02/09/24 09:00	02/09/24 21:40	1
Selenium	0.00790		0.00500		mg/L		02/09/24 09:00	02/09/24 21:40	1
Thallium	<0.00100		0.00100		mg/L		02/09/24 09:00	02/09/24 21:40	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		02/12/24 11:34	02/13/24 11:06	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	346		50.0		mg/L			02/08/24 15:41	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 9040C)	7.06	HF	1.00		SU			02/07/24 10:46	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
			(2σ+/-)	(2σ+/-)						
Radium-226	0.587		0.138	0.148	1.00	0.109	pCi/L	02/09/24 10:03	03/04/24 08:04	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	89.3		30 - 110					02/09/24 10:03	03/04/24 08:04	1

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
			(2σ+/-)	(2σ+/-)						
Radium-228	2.62		0.640	0.684	1.00	0.671	pCi/L	02/09/24 10:06	02/20/24 12:17	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	89.3		30 - 110					02/09/24 10:06	02/20/24 12:17	1
Y Carrier	72.1		30 - 110					02/09/24 10:06	02/20/24 12:17	1

Eurofins Cedar Falls

Client Sample Results

Client: SCS Engineers
 Project/Site: FDU - City of Fremont

Job ID: 310-274450-1

Client Sample ID: MW-8

Lab Sample ID: 310-274450-8

Date Collected: 02/06/24 13:08

Matrix: Water

Date Received: 02/07/24 09:15

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	3.20		0.655	0.700	5.00	0.671	pCi/L		03/04/24 15:29	1

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Client Sample Results

Client: SCS Engineers
Project/Site: FDU - City of Fremont

Job ID: 310-274450-1

Client Sample ID: Duplicate
Date Collected: 02/06/24 23:59
Date Received: 02/07/24 09:15

Lab Sample ID: 310-274450-9
Matrix: Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	59.0		5.00		mg/L			02/08/24 18:24	5
Fluoride	<1.00		1.00		mg/L			02/08/24 18:24	5
Sulfate	73.6		5.00		mg/L			02/08/24 18:24	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		02/09/24 09:00	02/12/24 12:16	1
Arsenic	0.00481		0.00200		mg/L		02/09/24 09:00	02/12/24 12:16	1
Barium	0.136		0.00200		mg/L		02/09/24 09:00	02/12/24 12:16	1
Beryllium	<0.00100	^+	0.00100		mg/L		02/09/24 09:00	02/12/24 12:16	1
Boron	<0.100		0.100		mg/L		02/09/24 09:00	02/12/24 12:16	1
Cadmium	<0.000200		0.000200		mg/L		02/09/24 09:00	02/12/24 12:16	1
Calcium	101		0.500		mg/L		02/09/24 09:00	02/12/24 12:16	1
Chromium	<0.00500		0.00500		mg/L		02/09/24 09:00	02/12/24 12:16	1
Cobalt	<0.000500		0.000500		mg/L		02/09/24 09:00	02/12/24 12:16	1
Lead	<0.000500		0.000500		mg/L		02/09/24 09:00	02/12/24 12:16	1
Lithium	<0.0400		0.0400		mg/L		02/09/24 09:00	02/15/24 13:40	4
Molybdenum	0.00821		0.00200		mg/L		02/09/24 09:00	02/12/24 12:16	1
Selenium	0.00710		0.00500		mg/L		02/09/24 09:00	02/12/24 12:16	1
Thallium	<0.00100		0.00100		mg/L		02/09/24 09:00	02/12/24 12:16	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		02/12/24 11:34	02/13/24 11:08	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	476		50.0		mg/L			02/08/24 15:41	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 9040C)	7.10	HF	1.00		SU			02/07/24 10:47	1

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
			(2σ+/-)	(2σ+/-)						
Radium-226	0.436		0.117	0.123	1.00	0.100	pCi/L	02/09/24 10:03	03/04/24 08:04	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.5		30 - 110					02/09/24 10:03	03/04/24 08:04	1

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
			Uncert.	Uncert.						
			(2σ+/-)	(2σ+/-)						
Radium-228	2.13		0.525	0.560	1.00	0.540	pCi/L	02/09/24 10:06	02/20/24 12:17	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.5		30 - 110					02/09/24 10:06	02/20/24 12:17	1
Y Carrier	79.3		30 - 110					02/09/24 10:06	02/20/24 12:17	1

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Client Sample Results

Client: SCS Engineers
Project/Site: FDU - City of Fremont

Job ID: 310-274450-1

Client Sample ID: Duplicate
Date Collected: 02/06/24 23:59
Date Received: 02/07/24 09:15

Lab Sample ID: 310-274450-9
Matrix: Water

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	2.57		0.538	0.573	5.00	0.540	pCi/L		03/04/24 15:29	1

- 1
- 2
- 3
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- 9
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- 12
- 13
- 14
- 15

Definitions/Glossary

Client: SCS Engineers
Project/Site: FDU - City of Fremont

Job ID: 310-274450-1

Qualifiers

Metals

Qualifier	Qualifier Description
^+	Continuing Calibration Verification (CCV) is outside acceptance limits, high biased.

General Chemistry

Qualifier	Qualifier Description
HF	Parameter with a holding time of 15 minutes. Test performed by laboratory at client's request. Sample was analyzed outside of hold time.

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

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: FDU - City of Fremont

Job ID: 310-274450-1

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 310-413259/3
Matrix: Water
Analysis Batch: 413259

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		mg/L			02/08/24 14:06	1
Fluoride	<0.200		0.200		mg/L			02/08/24 14:06	1
Sulfate	<1.00		1.00		mg/L			02/08/24 14:06	1

Lab Sample ID: LCS 310-413259/4
Matrix: Water
Analysis Batch: 413259

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	10.28		mg/L		103	90 - 110
Fluoride	2.00	2.165		mg/L		108	90 - 110
Sulfate	10.0	10.63		mg/L		106	90 - 110

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-413184/1-A
Matrix: Water
Analysis Batch: 413330

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 413184

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		02/09/24 09:00	02/09/24 20:27	1
Arsenic	<0.00200		0.00200		mg/L		02/09/24 09:00	02/09/24 20:27	1
Barium	<0.00200		0.00200		mg/L		02/09/24 09:00	02/09/24 20:27	1
Beryllium	<0.00100		0.00100		mg/L		02/09/24 09:00	02/09/24 20:27	1
Cadmium	<0.000200		0.000200		mg/L		02/09/24 09:00	02/09/24 20:27	1
Calcium	<0.500		0.500		mg/L		02/09/24 09:00	02/09/24 20:27	1
Chromium	<0.00500		0.00500		mg/L		02/09/24 09:00	02/09/24 20:27	1
Cobalt	<0.000500		0.000500		mg/L		02/09/24 09:00	02/09/24 20:27	1
Lead	<0.000500		0.000500		mg/L		02/09/24 09:00	02/09/24 20:27	1
Lithium	<0.0100		0.0100		mg/L		02/09/24 09:00	02/09/24 20:27	1
Molybdenum	<0.00200		0.00200		mg/L		02/09/24 09:00	02/09/24 20:27	1
Selenium	<0.00500		0.00500		mg/L		02/09/24 09:00	02/09/24 20:27	1
Thallium	<0.00100		0.00100		mg/L		02/09/24 09:00	02/09/24 20:27	1

Lab Sample ID: MB 310-413184/1-A
Matrix: Water
Analysis Batch: 413492

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 413184

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	<0.100		0.100		mg/L		02/09/24 09:00	02/12/24 11:27	1

Lab Sample ID: LCS 310-413184/2-A
Matrix: Water
Analysis Batch: 413330

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 413184

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	0.200	0.1976		mg/L		99	80 - 120
Arsenic	0.200	0.2035		mg/L		102	80 - 120
Barium	0.100	0.1051		mg/L		105	80 - 120
Beryllium	0.100	0.1024		mg/L		102	80 - 120

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QC Sample Results

Client: SCS Engineers
Project/Site: FDU - City of Fremont

Job ID: 310-274450-1

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

Lab Sample ID: LCS 310-413184/2-A
Matrix: Water
Analysis Batch: 413330

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 413184

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	0.100	0.09608		mg/L		96	80 - 120
Calcium	2.00	1.844		mg/L		92	80 - 120
Chromium	0.100	0.09378		mg/L		94	80 - 120
Cobalt	0.100	0.09747		mg/L		97	80 - 120
Lead	0.200	0.2109		mg/L		105	80 - 120
Lithium	0.200	0.2005		mg/L		100	80 - 120
Molybdenum	0.200	0.1887		mg/L		94	80 - 120
Selenium	0.400	0.3906		mg/L		98	80 - 120
Thallium	0.100	0.1083		mg/L		108	80 - 120

Lab Sample ID: LCS 310-413184/2-A
Matrix: Water
Analysis Batch: 413492

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 413184

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	0.200	0.1616		mg/L		81	80 - 120

Lab Sample ID: 310-274450-2 DU
Matrix: Water
Analysis Batch: 413330

Client Sample ID: MW-2
Prep Type: Total/NA
Prep Batch: 413184

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Antimony	<0.00200		<0.00200		mg/L		NC	20
Arsenic	0.00424		0.004354		mg/L		3	20
Barium	0.105		0.1079		mg/L		3	20
Beryllium	<0.00100		<0.00100		mg/L		NC	20
Cadmium	<0.000200		<0.000200		mg/L		NC	20
Calcium	95.6		96.33		mg/L		0.8	20
Chromium	<0.00500		<0.00500		mg/L		NC	20
Cobalt	<0.000500		<0.000500		mg/L		NC	20
Lead	<0.000500		<0.000500		mg/L		NC	20
Lithium	0.0291		0.02913		mg/L		0.05	20
Molybdenum	0.00481		0.004875		mg/L		1	20
Selenium	0.00519		<0.00500		mg/L		NC	20
Thallium	<0.00100		<0.00100		mg/L		NC	20

Lab Sample ID: 310-274450-2 DU
Matrix: Water
Analysis Batch: 413492

Client Sample ID: MW-2
Prep Type: Total/NA
Prep Batch: 413184

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Boron	0.152		0.1323		mg/L		14	20

QC Sample Results

Client: SCS Engineers
Project/Site: FDU - City of Fremont

Job ID: 310-274450-1

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 310-413390/1-A
Matrix: Water
Analysis Batch: 413507

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 413390

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		02/12/24 11:34	02/13/24 10:12	1

Lab Sample ID: LCS 310-413390/2-A
Matrix: Water
Analysis Batch: 413507

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 413390

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00167	0.001855		mg/L		111	80 - 120

Method: 9040C - pH

Lab Sample ID: LCS 310-412964/16
Matrix: Water
Analysis Batch: 412964

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
pH	7.00	7.050		SU		101	98 - 102

Lab Sample ID: 310-274450-1 DU
Matrix: Water
Analysis Batch: 412964

Client Sample ID: MW-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.07	HF	7.070		SU		0	20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 310-413189/1
Matrix: Water
Analysis Batch: 413189

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<50.0		50.0		mg/L			02/08/24 15:41	1

Lab Sample ID: LCS 310-413189/2
Matrix: Water
Analysis Batch: 413189

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	1000	940.0		mg/L		94	90 - 110

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-647505/1-A
Matrix: Water
Analysis Batch: 650942

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 647505

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.02550	U	0.0494	0.0494	1.00	0.0887	pCi/L	02/09/24 10:03	03/04/24 08:00	1

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QC Sample Results

Client: SCS Engineers
Project/Site: FDU - City of Fremont

Job ID: 310-274450-1

Method: 9315 - Radium-226 (GFPC) (Continued)

Lab Sample ID: MB 160-647505/1-A
Matrix: Water
Analysis Batch: 650942

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 647505

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	99.3		30 - 110	02/09/24 10:03	03/04/24 08:00	1

Lab Sample ID: LCS 160-647505/2-A
Matrix: Water
Analysis Batch: 650942

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 647505

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-226	11.3	10.18		1.06	1.00	0.124	pCi/L	90	75 - 125

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	95.0		30 - 110

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-647506/1-A
Matrix: Water
Analysis Batch: 648923

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 647506

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.2648	U	0.313	0.314	1.00	0.516	pCi/L	02/09/24 10:06	02/20/24 12:12	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	99.3		30 - 110	02/09/24 10:06	02/20/24 12:12	1
Y Carrier	83.7		30 - 110	02/09/24 10:06	02/20/24 12:12	1

Lab Sample ID: LCS 160-647506/2-A
Matrix: Water
Analysis Batch: 648923

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 647506

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-228	9.19	10.80		1.41	1.00	0.475	pCi/L	117	75 - 125

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	95.0		30 - 110
Y Carrier	83.0		30 - 110

QC Association Summary

Client: SCS Engineers
Project/Site: FDU - City of Fremont

Job ID: 310-274450-1

HPLC/IC

Analysis Batch: 413259

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-274450-1	MW-1	Total/NA	Water	9056A	
310-274450-2	MW-2	Total/NA	Water	9056A	
310-274450-3	MW-3	Total/NA	Water	9056A	
310-274450-4	MW-4R	Total/NA	Water	9056A	
310-274450-5	MW-5	Total/NA	Water	9056A	
310-274450-6	MW-6	Total/NA	Water	9056A	
310-274450-7	MW-7	Total/NA	Water	9056A	
310-274450-8	MW-8	Total/NA	Water	9056A	
310-274450-9	Duplicate	Total/NA	Water	9056A	
MB 310-413259/3	Method Blank	Total/NA	Water	9056A	
LCS 310-413259/4	Lab Control Sample	Total/NA	Water	9056A	

Metals

Prep Batch: 413184

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-274450-1	MW-1	Total/NA	Water	3005A	
310-274450-2	MW-2	Total/NA	Water	3005A	
310-274450-3	MW-3	Total/NA	Water	3005A	
310-274450-4	MW-4R	Total/NA	Water	3005A	
310-274450-5	MW-5	Total/NA	Water	3005A	
310-274450-6	MW-6	Total/NA	Water	3005A	
310-274450-7	MW-7	Total/NA	Water	3005A	
310-274450-8	MW-8	Total/NA	Water	3005A	
310-274450-9	Duplicate	Total/NA	Water	3005A	
MB 310-413184/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-413184/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-274450-2 DU	MW-2	Total/NA	Water	3005A	

Analysis Batch: 413330

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-274450-1	MW-1	Total/NA	Water	6020B	413184
310-274450-2	MW-2	Total/NA	Water	6020B	413184
310-274450-3	MW-3	Total/NA	Water	6020B	413184
310-274450-4	MW-4R	Total/NA	Water	6020B	413184
310-274450-5	MW-5	Total/NA	Water	6020B	413184
310-274450-7	MW-7	Total/NA	Water	6020B	413184
310-274450-8	MW-8	Total/NA	Water	6020B	413184
MB 310-413184/1-A	Method Blank	Total/NA	Water	6020B	413184
LCS 310-413184/2-A	Lab Control Sample	Total/NA	Water	6020B	413184
310-274450-2 DU	MW-2	Total/NA	Water	6020B	413184

Prep Batch: 413390

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-274450-1	MW-1	Total/NA	Water	7470A	
310-274450-2	MW-2	Total/NA	Water	7470A	
310-274450-3	MW-3	Total/NA	Water	7470A	
310-274450-4	MW-4R	Total/NA	Water	7470A	
310-274450-5	MW-5	Total/NA	Water	7470A	
310-274450-6	MW-6	Total/NA	Water	7470A	
310-274450-7	MW-7	Total/NA	Water	7470A	

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QC Association Summary

Client: SCS Engineers
Project/Site: FDU - City of Fremont

Job ID: 310-274450-1

Metals (Continued)

Prep Batch: 413390 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-274450-8	MW-8	Total/NA	Water	7470A	
310-274450-9	Duplicate	Total/NA	Water	7470A	
MB 310-413390/1-A	Method Blank	Total/NA	Water	7470A	
LCS 310-413390/2-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 413492

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-274450-1	MW-1	Total/NA	Water	6020B	413184
310-274450-2	MW-2	Total/NA	Water	6020B	413184
310-274450-3	MW-3	Total/NA	Water	6020B	413184
310-274450-4	MW-4R	Total/NA	Water	6020B	413184
310-274450-5	MW-5	Total/NA	Water	6020B	413184
310-274450-6	MW-6	Total/NA	Water	6020B	413184
310-274450-7	MW-7	Total/NA	Water	6020B	413184
310-274450-8	MW-8	Total/NA	Water	6020B	413184
310-274450-9	Duplicate	Total/NA	Water	6020B	413184
MB 310-413184/1-A	Method Blank	Total/NA	Water	6020B	413184
LCS 310-413184/2-A	Lab Control Sample	Total/NA	Water	6020B	413184
310-274450-2 DU	MW-2	Total/NA	Water	6020B	413184

Analysis Batch: 413507

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-274450-1	MW-1	Total/NA	Water	7470A	413390
310-274450-2	MW-2	Total/NA	Water	7470A	413390
310-274450-3	MW-3	Total/NA	Water	7470A	413390
310-274450-4	MW-4R	Total/NA	Water	7470A	413390
310-274450-5	MW-5	Total/NA	Water	7470A	413390
310-274450-6	MW-6	Total/NA	Water	7470A	413390
310-274450-7	MW-7	Total/NA	Water	7470A	413390
310-274450-8	MW-8	Total/NA	Water	7470A	413390
310-274450-9	Duplicate	Total/NA	Water	7470A	413390
MB 310-413390/1-A	Method Blank	Total/NA	Water	7470A	413390
LCS 310-413390/2-A	Lab Control Sample	Total/NA	Water	7470A	413390

Analysis Batch: 413825

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-274450-6	MW-6	Total/NA	Water	6020B	413184
310-274450-9	Duplicate	Total/NA	Water	6020B	413184

General Chemistry

Analysis Batch: 412964

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-274450-1	MW-1	Total/NA	Water	9040C	
310-274450-2	MW-2	Total/NA	Water	9040C	
310-274450-3	MW-3	Total/NA	Water	9040C	
310-274450-4	MW-4R	Total/NA	Water	9040C	
310-274450-5	MW-5	Total/NA	Water	9040C	
310-274450-6	MW-6	Total/NA	Water	9040C	
310-274450-7	MW-7	Total/NA	Water	9040C	
310-274450-8	MW-8	Total/NA	Water	9040C	

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QC Association Summary

Client: SCS Engineers
Project/Site: FDU - City of Fremont

Job ID: 310-274450-1

General Chemistry (Continued)

Analysis Batch: 412964 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-274450-9	Duplicate	Total/NA	Water	9040C	
LCS 310-412964/16	Lab Control Sample	Total/NA	Water	9040C	
310-274450-1 DU	MW-1	Total/NA	Water	9040C	

Analysis Batch: 413189

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-274450-1	MW-1	Total/NA	Water	SM 2540C	
310-274450-2	MW-2	Total/NA	Water	SM 2540C	
310-274450-3	MW-3	Total/NA	Water	SM 2540C	
310-274450-4	MW-4R	Total/NA	Water	SM 2540C	
310-274450-5	MW-5	Total/NA	Water	SM 2540C	
310-274450-6	MW-6	Total/NA	Water	SM 2540C	
310-274450-7	MW-7	Total/NA	Water	SM 2540C	
310-274450-8	MW-8	Total/NA	Water	SM 2540C	
310-274450-9	Duplicate	Total/NA	Water	SM 2540C	
MB 310-413189/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-413189/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Rad

Prep Batch: 647505

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-274450-1	MW-1	Total/NA	Water	PrecSep-21	
310-274450-2	MW-2	Total/NA	Water	PrecSep-21	
310-274450-3	MW-3	Total/NA	Water	PrecSep-21	
310-274450-4	MW-4R	Total/NA	Water	PrecSep-21	
310-274450-5	MW-5	Total/NA	Water	PrecSep-21	
310-274450-6	MW-6	Total/NA	Water	PrecSep-21	
310-274450-7	MW-7	Total/NA	Water	PrecSep-21	
310-274450-8	MW-8	Total/NA	Water	PrecSep-21	
310-274450-9	Duplicate	Total/NA	Water	PrecSep-21	
MB 160-647505/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-647505/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

Prep Batch: 647506

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-274450-1	MW-1	Total/NA	Water	PrecSep_0	
310-274450-2	MW-2	Total/NA	Water	PrecSep_0	
310-274450-3	MW-3	Total/NA	Water	PrecSep_0	
310-274450-4	MW-4R	Total/NA	Water	PrecSep_0	
310-274450-5	MW-5	Total/NA	Water	PrecSep_0	
310-274450-6	MW-6	Total/NA	Water	PrecSep_0	
310-274450-7	MW-7	Total/NA	Water	PrecSep_0	
310-274450-8	MW-8	Total/NA	Water	PrecSep_0	
310-274450-9	Duplicate	Total/NA	Water	PrecSep_0	
MB 160-647506/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-647506/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: SCS Engineers
 Project/Site: FDU - City of Fremont

Job ID: 310-274450-1

Client Sample ID: MW-1

Lab Sample ID: 310-274450-1

Date Collected: 02/06/24 11:40

Matrix: Water

Date Received: 02/07/24 09:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	413259	QTZ5	EET CF	02/08/24 16:35
Total/NA	Prep	3005A			413184	DHM5	EET CF	02/09/24 09:00
Total/NA	Analysis	6020B		1	413330	A6US	EET CF	02/09/24 21:07
Total/NA	Prep	3005A			413184	DHM5	EET CF	02/09/24 09:00
Total/NA	Analysis	6020B		1	413492	DHM5	EET CF	02/12/24 11:38
Total/NA	Prep	7470A			413390	NFT2	EET CF	02/12/24 11:34
Total/NA	Analysis	7470A		1	413507	NFT2	EET CF	02/13/24 10:46
Total/NA	Analysis	9040C		1	412964	W9YR	EET CF	02/07/24 10:38
Total/NA	Analysis	SM 2540C		1	413189	D7CP	EET CF	02/08/24 15:41
Total/NA	Prep	PrecSep-21			647505	KAC	EET SL	02/09/24 10:03
Total/NA	Analysis	9315		1	650944	SCB	EET SL	03/04/24 08:13
Total/NA	Prep	PrecSep_0			647506	KAC	EET SL	02/09/24 10:06
Total/NA	Analysis	9320		1	648923	FLC	EET SL	02/20/24 12:16
Total/NA	Analysis	Ra226_Ra228		1	650964	EMH	EET SL	03/04/24 15:29

Client Sample ID: MW-2

Lab Sample ID: 310-274450-2

Date Collected: 02/06/24 12:30

Matrix: Water

Date Received: 02/07/24 09:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	413259	QTZ5	EET CF	02/08/24 16:49
Total/NA	Prep	3005A			413184	DHM5	EET CF	02/09/24 09:00
Total/NA	Analysis	6020B		1	413330	A6US	EET CF	02/09/24 21:10
Total/NA	Prep	3005A			413184	DHM5	EET CF	02/09/24 09:00
Total/NA	Analysis	6020B		1	413492	DHM5	EET CF	02/12/24 11:40
Total/NA	Prep	7470A			413390	NFT2	EET CF	02/12/24 11:34
Total/NA	Analysis	7470A		1	413507	NFT2	EET CF	02/13/24 10:49
Total/NA	Analysis	9040C		1	412964	W9YR	EET CF	02/07/24 10:40
Total/NA	Analysis	SM 2540C		1	413189	D7CP	EET CF	02/08/24 15:41
Total/NA	Prep	PrecSep-21			647505	KAC	EET SL	02/09/24 10:03
Total/NA	Analysis	9315		1	650944	SCB	EET SL	03/04/24 08:13
Total/NA	Prep	PrecSep_0			647506	KAC	EET SL	02/09/24 10:06
Total/NA	Analysis	9320		1	648923	FLC	EET SL	02/20/24 12:16
Total/NA	Analysis	Ra226_Ra228		1	650964	EMH	EET SL	03/04/24 15:29

Client Sample ID: MW-3

Lab Sample ID: 310-274450-3

Date Collected: 02/06/24 10:30

Matrix: Water

Date Received: 02/07/24 09:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	413259	QTZ5	EET CF	02/08/24 17:03
Total/NA	Prep	3005A			413184	DHM5	EET CF	02/09/24 09:00
Total/NA	Analysis	6020B		1	413330	A6US	EET CF	02/09/24 21:23

Lab Chronicle

Client: SCS Engineers
Project/Site: FDU - City of Fremont

Job ID: 310-274450-1

Client Sample ID: MW-3

Date Collected: 02/06/24 10:30

Date Received: 02/07/24 09:15

Lab Sample ID: 310-274450-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			413184	DHM5	EET CF	02/09/24 09:00
Total/NA	Analysis	6020B		1	413492	DHM5	EET CF	02/12/24 12:02
Total/NA	Prep	7470A			413390	NFT2	EET CF	02/12/24 11:34
Total/NA	Analysis	7470A		1	413507	NFT2	EET CF	02/13/24 10:51
Total/NA	Analysis	9040C		1	412964	W9YR	EET CF	02/07/24 10:41
Total/NA	Analysis	SM 2540C		1	413189	D7CP	EET CF	02/08/24 15:41
Total/NA	Prep	PrecSep-21			647505	KAC	EET SL	02/09/24 10:03
Total/NA	Analysis	9315		1	650944	SCB	EET SL	03/04/24 08:13
Total/NA	Prep	PrecSep_0			647506	KAC	EET SL	02/09/24 10:06
Total/NA	Analysis	9320		1	648923	FLC	EET SL	02/20/24 12:16
Total/NA	Analysis	Ra226_Ra228		1	650964	EMH	EET SL	03/04/24 15:29

Client Sample ID: MW-4R

Date Collected: 02/06/24 10:00

Date Received: 02/07/24 09:15

Lab Sample ID: 310-274450-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	413259	QTZ5	EET CF	02/08/24 17:16
Total/NA	Prep	3005A			413184	DHM5	EET CF	02/09/24 09:00
Total/NA	Analysis	6020B		1	413330	A6US	EET CF	02/09/24 21:26
Total/NA	Prep	3005A			413184	DHM5	EET CF	02/09/24 09:00
Total/NA	Analysis	6020B		1	413492	DHM5	EET CF	02/12/24 12:05
Total/NA	Prep	7470A			413390	NFT2	EET CF	02/12/24 11:34
Total/NA	Analysis	7470A		1	413507	NFT2	EET CF	02/13/24 10:53
Total/NA	Analysis	9040C		1	412964	W9YR	EET CF	02/07/24 10:42
Total/NA	Analysis	SM 2540C		1	413189	D7CP	EET CF	02/08/24 15:41
Total/NA	Prep	PrecSep-21			647505	KAC	EET SL	02/09/24 10:03
Total/NA	Analysis	9315		1	650944	SCB	EET SL	03/04/24 08:13
Total/NA	Prep	PrecSep_0			647506	KAC	EET SL	02/09/24 10:06
Total/NA	Analysis	9320		1	648923	FLC	EET SL	02/20/24 12:16
Total/NA	Analysis	Ra226_Ra228		1	650964	EMH	EET SL	03/04/24 15:29

Client Sample ID: MW-5

Date Collected: 02/06/24 11:05

Date Received: 02/07/24 09:15

Lab Sample ID: 310-274450-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	413259	QTZ5	EET CF	02/08/24 17:30
Total/NA	Prep	3005A			413184	DHM5	EET CF	02/09/24 09:00
Total/NA	Analysis	6020B		1	413330	A6US	EET CF	02/09/24 21:28
Total/NA	Prep	3005A			413184	DHM5	EET CF	02/09/24 09:00
Total/NA	Analysis	6020B		1	413492	DHM5	EET CF	02/12/24 12:07
Total/NA	Prep	7470A			413390	NFT2	EET CF	02/12/24 11:34
Total/NA	Analysis	7470A		1	413507	NFT2	EET CF	02/13/24 10:55

Eurofins Cedar Falls

Lab Chronicle

Client: SCS Engineers
 Project/Site: FDU - City of Fremont

Job ID: 310-274450-1

Client Sample ID: MW-5

Date Collected: 02/06/24 11:05

Date Received: 02/07/24 09:15

Lab Sample ID: 310-274450-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9040C		1	412964	W9YR	EET CF	02/07/24 10:43
Total/NA	Analysis	SM 2540C		1	413189	D7CP	EET CF	02/08/24 15:41
Total/NA	Prep	PrecSep-21			647505	KAC	EET SL	02/09/24 10:03
Total/NA	Analysis	9315		1	650944	SCB	EET SL	03/04/24 08:13
Total/NA	Prep	PrecSep_0			647506	KAC	EET SL	02/09/24 10:06
Total/NA	Analysis	9320		1	648923	FLC	EET SL	02/20/24 12:16
Total/NA	Analysis	Ra226_Ra228		1	650964	EMH	EET SL	03/04/24 15:29

Client Sample ID: MW-6

Date Collected: 02/06/24 14:00

Date Received: 02/07/24 09:15

Lab Sample ID: 310-274450-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	413259	QTZ5	EET CF	02/08/24 17:43
Total/NA	Prep	3005A			413184	DHM5	EET CF	02/09/24 09:00
Total/NA	Analysis	6020B		1	413492	DHM5	EET CF	02/12/24 12:09
Total/NA	Prep	3005A			413184	DHM5	EET CF	02/09/24 09:00
Total/NA	Analysis	6020B		4	413825	A6US	EET CF	02/15/24 13:38
Total/NA	Prep	7470A			413390	NFT2	EET CF	02/12/24 11:34
Total/NA	Analysis	7470A		1	413507	NFT2	EET CF	02/13/24 11:01
Total/NA	Analysis	9040C		1	412964	W9YR	EET CF	02/07/24 10:44
Total/NA	Analysis	SM 2540C		1	413189	D7CP	EET CF	02/08/24 15:41
Total/NA	Prep	PrecSep-21			647505	KAC	EET SL	02/09/24 10:03
Total/NA	Analysis	9315		1	650944	SCB	EET SL	03/04/24 08:14
Total/NA	Prep	PrecSep_0			647506	KAC	EET SL	02/09/24 10:06
Total/NA	Analysis	9320		1	648923	FLC	EET SL	02/20/24 12:17
Total/NA	Analysis	Ra226_Ra228		1	650964	EMH	EET SL	03/04/24 15:29

Client Sample ID: MW-7

Date Collected: 02/06/24 13:35

Date Received: 02/07/24 09:15

Lab Sample ID: 310-274450-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	413259	QTZ5	EET CF	02/08/24 17:57
Total/NA	Prep	3005A			413184	DHM5	EET CF	02/09/24 09:00
Total/NA	Analysis	6020B		1	413330	A6US	EET CF	02/09/24 21:35
Total/NA	Prep	3005A			413184	DHM5	EET CF	02/09/24 09:00
Total/NA	Analysis	6020B		1	413492	DHM5	EET CF	02/12/24 12:11
Total/NA	Prep	7470A			413390	NFT2	EET CF	02/12/24 11:34
Total/NA	Analysis	7470A		1	413507	NFT2	EET CF	02/13/24 11:04
Total/NA	Analysis	9040C		1	412964	W9YR	EET CF	02/07/24 10:45
Total/NA	Analysis	SM 2540C		1	413189	D7CP	EET CF	02/08/24 15:41
Total/NA	Prep	PrecSep-21			647505	KAC	EET SL	02/09/24 10:03
Total/NA	Analysis	9315		1	650947	SCB	EET SL	03/04/24 08:04

Eurofins Cedar Falls

Lab Chronicle

Client: SCS Engineers
Project/Site: FDU - City of Fremont

Job ID: 310-274450-1

Client Sample ID: MW-7

Lab Sample ID: 310-274450-7

Date Collected: 02/06/24 13:35

Matrix: Water

Date Received: 02/07/24 09:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep_0			647506	KAC	EET SL	02/09/24 10:06
Total/NA	Analysis	9320		1	648923	FLC	EET SL	02/20/24 12:17
Total/NA	Analysis	Ra226_Ra228		1	650964	EMH	EET SL	03/04/24 15:29

Client Sample ID: MW-8

Lab Sample ID: 310-274450-8

Date Collected: 02/06/24 13:08

Matrix: Water

Date Received: 02/07/24 09:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	413259	QTZ5	EET CF	02/08/24 18:11
Total/NA	Prep	3005A			413184	DHM5	EET CF	02/09/24 09:00
Total/NA	Analysis	6020B		1	413330	A6US	EET CF	02/09/24 21:40
Total/NA	Prep	3005A			413184	DHM5	EET CF	02/09/24 09:00
Total/NA	Analysis	6020B		1	413492	DHM5	EET CF	02/12/24 12:13
Total/NA	Prep	7470A			413390	NFT2	EET CF	02/12/24 11:34
Total/NA	Analysis	7470A		1	413507	NFT2	EET CF	02/13/24 11:06
Total/NA	Analysis	9040C		1	412964	W9YR	EET CF	02/07/24 10:46
Total/NA	Analysis	SM 2540C		1	413189	D7CP	EET CF	02/08/24 15:41
Total/NA	Prep	PrecSep-21			647505	KAC	EET SL	02/09/24 10:03
Total/NA	Analysis	9315		1	650947	SCB	EET SL	03/04/24 08:04
Total/NA	Prep	PrecSep_0			647506	KAC	EET SL	02/09/24 10:06
Total/NA	Analysis	9320		1	648923	FLC	EET SL	02/20/24 12:17
Total/NA	Analysis	Ra226_Ra228		1	650964	EMH	EET SL	03/04/24 15:29

Client Sample ID: Duplicate

Lab Sample ID: 310-274450-9

Date Collected: 02/06/24 23:59

Matrix: Water

Date Received: 02/07/24 09:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	413259	QTZ5	EET CF	02/08/24 18:24
Total/NA	Prep	3005A			413184	DHM5	EET CF	02/09/24 09:00
Total/NA	Analysis	6020B		1	413492	DHM5	EET CF	02/12/24 12:16
Total/NA	Prep	3005A			413184	DHM5	EET CF	02/09/24 09:00
Total/NA	Analysis	6020B		4	413825	A6US	EET CF	02/15/24 13:40
Total/NA	Prep	7470A			413390	NFT2	EET CF	02/12/24 11:34
Total/NA	Analysis	7470A		1	413507	NFT2	EET CF	02/13/24 11:08
Total/NA	Analysis	9040C		1	412964	W9YR	EET CF	02/07/24 10:47
Total/NA	Analysis	SM 2540C		1	413189	D7CP	EET CF	02/08/24 15:41
Total/NA	Prep	PrecSep-21			647505	KAC	EET SL	02/09/24 10:03
Total/NA	Analysis	9315		1	650947	SCB	EET SL	03/04/24 08:04
Total/NA	Prep	PrecSep_0			647506	KAC	EET SL	02/09/24 10:06
Total/NA	Analysis	9320		1	648923	FLC	EET SL	02/20/24 12:17
Total/NA	Analysis	Ra226_Ra228		1	650964	EMH	EET SL	03/04/24 15:29

Lab Chronicle

Client: SCS Engineers
Project/Site: FDU - City of Fremont

Job ID: 310-274450-1

Laboratory References:

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

- 1
- 2
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- 15

Accreditation/Certification Summary

Client: SCS Engineers
Project/Site: FDU - City of Fremont

Job ID: 310-274450-1

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	12-01-25

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	Water	Lithium

Laboratory: Eurofins St. Louis

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

Authority	Program	Identification Number	Expiration Date
Iowa	State	373	12-01-24

- 1
- 2
- 3
- 4
- 5
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- 14
- 15

Method Summary

Client: SCS Engineers
Project/Site: FDU - City of Fremont

Job ID: 310-274450-1

Method	Method Description	Protocol	Laboratory
9056A	Anions, Ion Chromatography	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
7470A	Mercury (CVAA)	SW846	EET CF
9040C	pH	SW846	EET CF
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
7470A	Preparation, Mercury	SW846	EET CF

Protocol References:

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.

Laboratory References:

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





Environment Testing
America



310-274450 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: <u>SCS Engineers</u>			
City/State:	CITY	STATE	Project:
		<u>NC</u>	
Receipt Information			
Date/Time Received:	DATE	TIME	Received By:
	<u>2-7-24</u>	<u>9:15</u>	<u>MU</u>
Delivery Type: <input type="checkbox"/> UPS <input checked="" type="checkbox"/> D edEx <input type="checkbox"/> FedEx Ground <input type="checkbox"/> US Mail <input type="checkbox"/> Spee-Dee <input type="checkbox"/> Lab Courier <input type="checkbox"/> Lab Field Services <input type="checkbox"/> Client Drop-off <input type="checkbox"/> Other: _____			
Condition of Cooler/Containers			
Sample(s) received in Cooler?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler ID: _____	
Multiple Coolers?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler # <u>1</u> of <u>3</u>	
Cooler Custody Seals Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler custody seals intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Sample Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Sample custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Which VOA samples are in cooler? ↓	
Temperature Record			
Coolant: <input checked="" type="checkbox"/> S Wet ice <input type="checkbox"/> Blue ice <input type="checkbox"/> Dry ice <input type="checkbox"/> Other: _____ <input type="checkbox"/> NONE			
Thermometer ID: <u>X</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>0.4</u>		Corrected Temp (°C): <u>0.4</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? <input type="checkbox"/> Yes <input type="checkbox"/> No a) If yes: Is there evidence that the chilling process began? <input type="checkbox"/> Yes <input type="checkbox"/> 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?) <input type="checkbox"/> Yes <input type="checkbox"/> 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:
		<u>NC</u>	
Receipt Information			
Date/Time Received:	DATE	TIME	Received By:
	<u>2-7-24</u>	<u>9:15</u>	<u>MU</u>
Delivery Type: <input type="checkbox"/> UPS <input checked="" type="checkbox"/> FedEx <input type="checkbox"/> FedEx Ground <input type="checkbox"/> US Mail <input type="checkbox"/> Spee-Dee <input type="checkbox"/> Lab Courier <input type="checkbox"/> Lab Field Services <input type="checkbox"/> Client Drop-off <input type="checkbox"/> Other: _____			
Condition of Cooler/Containers			
Sample(s) received in Cooler?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler ID:
Multiple Coolers?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler # <u>2</u> of <u>3</u>
Cooler Custody Seals Present?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler custody seals intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Sample Custody Seals Present?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Sample custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No
Trip Blank Present?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Which VOA samples are in cooler? ↓
Temperature Record			
Coolant: <input checked="" type="checkbox"/> Wet ice <input type="checkbox"/> Blue ice <input type="checkbox"/> Dry ice <input type="checkbox"/> Other: _____ <input type="checkbox"/> NONE			
Thermometer ID:		<u>X</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? <input type="checkbox"/> Yes <input type="checkbox"/> No a) If yes: Is there evidence that the chilling process began? <input type="checkbox"/> Yes <input type="checkbox"/> 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?) <input type="checkbox"/> Yes <input type="checkbox"/> 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:
		<u>NE</u>	
Receipt Information			
Date/Time Received:	DATE	TIME	Received By:
	<u>2-7-24</u>	<u>9:15</u>	<u>MW</u>
Delivery Type: <input type="checkbox"/> UPS <input checked="" type="checkbox"/> FedEx <input type="checkbox"/> FedEx Ground <input type="checkbox"/> US Mail <input type="checkbox"/> Spee-Dee <input type="checkbox"/> Lab Courier <input type="checkbox"/> Lab Field Services <input type="checkbox"/> Client Drop-off <input type="checkbox"/> Other: _____			
Condition of Cooler/Containers			
Sample(s) received in Cooler?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler ID:	
Multiple Coolers?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler # <u>3</u> of <u>3</u>	
Cooler Custody Seals Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler custody seals intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Sample Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Sample custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Which VOA samples are in cooler? ↓	
Temperature Record			
Coolant: <input checked="" type="checkbox"/> Wet ice <input type="checkbox"/> Blue ice <input type="checkbox"/> Dry ice <input type="checkbox"/> Other: _____ <input type="checkbox"/> NONE			
Thermometer ID: <u>X</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>-0.5</u>		Corrected Temp (°C): <u>-0.5</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? <input type="checkbox"/> Yes <input type="checkbox"/> No a) If yes: Is there evidence that the chilling process began? <input type="checkbox"/> Yes <input type="checkbox"/> 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?) <input type="checkbox"/> Yes <input type="checkbox"/> No			
NOTE: If yes, contact PM before proceeding. If no, proceed with login			
Additional Comments			



Cedar Falls, IA 50613
phone 319 277 2401 fax 319 277 2425

Regulatory Program: DW NPDES RCRA Other

Eurofins Environment Testing America

Client Contact SCS Engineers 14755 Grover Street Omaha Nebraska, 68144 (402) 884-6202 Phone (913) 681-0012 FAX Project Name City of Fremont Site, FDU P O # 27224080 00		Project Manager: Morgan Sykes Email msykes@scsengineers.com Tel/Fax: (402) 938-0323 Analysis Turnaround Time <input checked="" type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS TAT if different from Below 10 <input type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day		Site Contact: Dylan Wagner Lab Contact: Mary Yang Date: 2-6-24 Carrier:		COC No 1 of 1 COCs TALS Project # Sampler Nylon Wiped For Lab Use Only: Walk-in Client: Lab Sampling Job / SDG No									
Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	7470A Mercury	9056 Chloride-Fluoride-Sulfate	2540C TDS	9040 pH	9315 Radium-226	9315 Radium-228	Total Radium	Sample Specific Notes
MW-1	2-6-24	11:10	G	WT	5	X	X	X	X	X	X	X	X	X	
MW-2	2-6-24	12:30	G	WT	5	X	X	X	X	X	X	X	X	X	
MW-3	2-6-24	10:40	G	WT	5	X	X	X	X	X	X	X	X	X	
MW-4R	2-6-24	10:00	G	WT	5	X	X	X	X	X	X	X	X	X	
MW-5	2-6-24	11:05	G	WT	5	X	X	X	X	X	X	X	X	X	
MW-6	2-6-24	14:00	G	WT	5	X	X	X	X	X	X	X	X	X	
MW-7	2-6-24	13:35	G	WT	5	X	X	X	X	X	X	X	X	X	
MW-8	2-6-24	13:08	G	WT	5	X	X	X	X	X	X	X	X	X	
Duplicate	2-6-24	23:59	G	WT	5	X	X	X	X	X	X	X	X	X	
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other Possible Hazard Identification: _____ Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Unknown <input type="checkbox"/> Poison B															
Special Instructions/QC Requirements & Comments: _____ Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return to Client <input type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for _____ Months															
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No Relinquished by <i>Dylan Wagner</i>		Custody Seal No Company SCS Engineers		Received by <i>MU</i> Company		Cooler Temp (°C) Obs'd Date/Time 2-7-24 9:15		Therm ID No Date/Time 2-7-24 9:15		Received in Laboratory by Company		Received by Company		Received in Laboratory by Company	



Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-274450-1

Login Number: 274450

List Number: 1

Creator: Costello, Mackenzie K

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 <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



Tracer/Carrier Summary

Client: SCS Engineers
 Project/Site: FDU - City of Fremont

Job ID: 310-274450-1

Method: 9315 - Radium-226 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba (30-110)	
310-274450-1	MW-1	89.8	
310-274450-2	MW-2	92.5	
310-274450-3	MW-3	92.5	
310-274450-4	MW-4R	91.8	
310-274450-5	MW-5	97.3	
310-274450-6	MW-6	93.5	
310-274450-7	MW-7	94.3	
310-274450-8	MW-8	89.3	
310-274450-9	Duplicate	96.5	
LCS 160-647505/2-A	Lab Control Sample	95.0	
MB 160-647505/1-A	Method Blank	99.3	
Tracer/Carrier Legend			
Ba = Ba Carrier			

Method: 9320 - Radium-228 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba (30-110)	Y (30-110)
310-274450-1	MW-1	89.8	79.6
310-274450-2	MW-2	92.5	75.9
310-274450-3	MW-3	92.5	85.2
310-274450-4	MW-4R	91.8	87.1
310-274450-5	MW-5	97.3	76.3
310-274450-6	MW-6	93.5	82.6
310-274450-7	MW-7	94.3	73.6
310-274450-8	MW-8	89.3	72.1
310-274450-9	Duplicate	96.5	79.3
LCS 160-647506/2-A	Lab Control Sample	95.0	83.0
MB 160-647506/1-A	Method Blank	99.3	83.7
Tracer/Carrier Legend			
Ba = Ba Carrier			
Y = Y Carrier			

A2 3rd Quarter Groundwater Monitoring Program Report

Lon D. Wright Power Plant Statistical Summary of August 2024 Data

City of Fremont Department of Utilities
401 E Military Road
Fremont, Nebraska 68025

SCS ENGINEERS

27224080.00 | October 31, 2024

SCS Engineers
14755 Grover Street
Omaha, NE 68144
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A.2	Intrawell Prediction Limits
A.3	Interwell Prediction Limits
A.4	Sen’s Slope/Mann-Kendall Analysis
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1 EVALUATION OF ANALYTICAL RESULTS

1.1 SITE-SPECIFIC STATISTICAL PROGRAM

Statistical analysis consisted of methods outlined in the Groundwater Monitoring Plan (GMP) (revised April 2021), 40 CFR Part 257, Subpart D (CCR rule) and EPA's Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities – Unified Guidance (Unified Guidance) dated March 2009 using Sanitas™ Statistical Software version 9.6.37. An intrawell statistical approach is the primary statistical method and interwell comparisons are supplementary statistical analyses used to give context to intrawell statistical results. If no intrawell statistical exceedance is noted, the additional statistical analysis is not used to make assessment monitoring determinations. Constituent/well pairs exceeding inter-and intrawell prediction limits but not displaying significant increasing trends are not entered into the assessment monitoring program. Additionally, in an assessment monitoring program, if one or more constituent/well pair statistically exceeds the intrawell prediction limit but does not exceed the Confidence Interval (ie GWPS) then assessment monitoring procedures for the site will continue and no changes to the sampling schedule are implemented. Based on current understanding of the Federal CCR rule, when assessment monitoring is required at one well then all wells must be in assessment monitoring. This understanding does not conflict with GMP requirements.

Because the site remains in assessment monitoring, each well at the site was sampled and analyzed following assessment monitoring procedures. During the August 2024 sampling event, samples from each well were analyzed for Appendix III and IV constituents. Detected Appendix III and Appendix IV constituent results were analyzed using time series plots, intrawell prediction limit analysis, interwell prediction limit analysis, Sen's slope trend analyses, and confidence interval analysis. The statistical results have been summarized in **Table 2** at the end of this Section.

Statistical output charts and tables are included in **Attachment A**.

1.2 COMPLIANCE STATISTICAL ANALYSIS

Compliance statistical analysis was performed on data collected from the August 2024 sampling event. Pertinent statistical results are summarized in **Table 2** at the end of this Section.

1.2.1 Time Series Plots

Time series plots were prepared for Appendix III and Appendix IV constituents to show the concentration variations over time. Time series graphs are included in **Attachment A.1**.

1.2.2 Intrawell Prediction Limits

An intrawell prediction limit analysis compares the historical data of a well to its own compliance data. The historical data is used to calculate the prediction limit that is compared to the compliance data point. If a compliance data point exceeds the calculated prediction limit, then an initial exceedance is noted; however, this may not indicate a statistical significant increase (SSI). The distribution of the data was calculated by applying the Shapiro-Wilk test for normality or the Ladder of Powers (Helsel & Hirsh, 1992) for transformed data. A parametric prediction limit was constructed for data determined to have a normal or transformed normal distribution. A non-parametric prediction limit was calculated for data not transformed normal or containing 51 percent to 90 percent non-detect results.

Intrawell prediction limits were used to statistically evaluate the detected constituents in each monitoring well using an established background dataset from October 2016 through June 2018 except for Boron where the background dataset is from October 2016 to February 2018. Outliers, if any, are removed from the background dataset.

Intrawell prediction limit analysis results are included in **Attachment A.2** and summarized in **Table 2**.

1.2.3 Interwell Prediction Limits

An interwell prediction limit analysis compares data collected from compliance (downgradient) monitoring wells with data collected from the background (upgradient) monitoring wells. Available upgradient monitoring well data (MW-4R) was used to calculate the interwell prediction limit and was used to determine if a single data point is statistically representative of a group of data points. The distribution of the data was calculated by applying the Shapiro-Wilk test for normality, or the Ladder of Powers (Helsel & Hirsh, 1992) for transformed data. A parametric prediction limit was constructed for data determined to have a normal or transformed normal distribution. A non-parametric prediction limit was calculated for data not transformed normal or containing 51 percent to 90 percent of observations less than the laboratory reporting limit (non-detects) results. A Poisson based prediction limit was calculated for data with greater than 90 percent non-detect results.

Interwell prediction limits were used as a supplementary statistical analysis to provide additional context and evaluation to the statistical evaluation of the detected constituents from the August 2024 sampling event data. Interwell prediction limits analysis results are included in **Attachment A.3** and summarized in **Table 2**.

1.2.4 Sen's Slope/Mann-Kendall Trend Analysis

A Sen's Slope/Mann-Kendall statistical analysis was performed on the detected constituent/well pairs using the background dataset and the August 2024 sampling event to determine trends in the concentration of these constituents. A trend is the general increase or decrease in observed values over time. A trend analysis can be used to determine the significance of an apparent trend and to estimate the magnitude of that trend. The Mann-Kendall test is nonparametric, meaning that it does not depend on an assumption of a particular underlying distribution. The test uses only the relative magnitude of data rather than actual values. Therefore, missing values are allowed, and values that are recorded as non-detects by the laboratory can still be used in the statistical analysis by assigning values equal to half their reporting limits. Sen's Slope is a simple nonparametric procedure developed to estimate the true slope. The advantage of this method over linear regression is that it is not greatly affected by gross data errors or outliers, and can be computed when data is missing or non-detect. Significant trends should be identified as either increasing or decreasing and whether these trends are occurring in more than one well. Trends can result from naturally occurring changes to the groundwater, seasonal fluctuations, and disturbances from new well installations or facility activities. Sen's Slope/Mann-Kendall analysis results are included in **Attachment A.4** and summarized in **Table 3**.

1.2.5 Confidence Interval Analysis

Confidence Interval analysis was performed on the detected constituent/well pairs from the August 2024 sampling event. Confidence interval analysis is an intrawell test used to compare the compliance data to a fixed numerical limit (compliance limit). Since the wells are in assessment monitoring, the compliance limit is represented by the groundwater protection standard (GWPS). Based on the Unified Guidance, the confidence interval is bound by an upper and lower limit which defines the most probable range where either the average or median concentration is expected. A

potential statistical exceedance is indicated by confidence interval analysis when the lower limit of the confidence interval is above the compliance limit.

The GWPS for lithium and molybdenum were identified in the July 17, 2018 *Hazardous and Solid Waste Management System: Disposal of Coal Combustion Residuals from Electric Utilities; Amendments to the National Minimum Criteria (Phase One, Part One); Final Rule* (July 2018 EPA CCR Amendment) and were utilized as the compliance limits. The average upgradient concentrations, derived from MW-4R, were used as the compliance limit for boron, calcium, and Total Radium because no GWPS exists for these constituents. MW-4R is sampled in the first and third quarters of each year. The average upgradient concentrations are reviewed and calculated after each sampling event to ensure consistent data. The confidence interval analysis results are included in **Attachment A.5** and summarized in **Table 2**.

1.2.6 Statistical Summary

The following table lists a summary of constituents having exceedances for the previous monitoring period, February 2024, and the current monitoring period, August 2024.

Table 1. Previously Identified and Currently Identified Exceedances

Well	Previously identified exceedances Feb-24		Currently identified exceedances Aug-24	
	Intrawell	Interwell	Intrawell	Interwell
MW-1	Boron Chloride Sulfate	Sulfate Total Radium	Chloride Sulfate	Sulfate
MW-2	Boron Chloride Fluoride	Fluoride	Chloride Fluoride	
MW-3	Arsenic Chloride	Barium Sulfate	Arsenic	
MW-4R (upgradient)	Arsenic Chloride		Arsenic Chloride	
MW-5	Chloride Sulfate	Sulfate	Chloride Sulfate	Sulfate
MW-6	Arsenic	Sulfate		Sulfate
MW-7	Chloride Sulfate	Chloride Sulfate	Barium Chloride Sulfate Total Dissolved Solids	Barium Calcium Chloride Sulfate Total Dissolved Solids
MW-8	Chloride		Chloride	

Intrawell exceedances were noted for arsenic (MW-3, and MW-4R), chloride (MW-1, MW-2, MW-4R, MW-5, and MW-8), and fluoride (MW-2) without corresponding interwell exceedances. Intrawell exceedances with corresponding interwell exceedances were noted for chloride (MW-7), sulfate (MW-1, MW-5, and MW-7), barium (MW-7), and total dissolved solids (MW-7). No constituent/well pairs statistically exceeded the GWPS. Chloride and Arsenic at upgradient well MW-4R was identified as an intrawell exceedance and may indicate a natural change in the groundwater quality. This change in the groundwater quality may be the reason for similar exceedances identified in the downgradient wells.

Statistical exceedances above background are still present at some wells; however no Appendix IV detects statistically exceeded the GWPS. Based on the current understanding of the Federal CCR rule, when assessment monitoring is required at one well then all wells must be in assessment monitoring. Therefore, the site will remain in assessment monitoring during the next scheduled sampling event. The statistical analysis results from the August 2024 sampling event are summarized in **Table 2** below.

Table 2. Summary of Statistical Analysis

Well	Detected Constituents	Analytical Result	Intrawell Exceedance?	Interwell Exceedance?	Significant Increasing Trend?	Confidence Interval Exceedance?	GWPS Exceedance?	GWPS MCL or Background Average
MW-1	Arsenic (ug/L)	3.7	No	No	Yes	No	No	<10
	Calcium (mg/L)	95.4	No	No	No	Yes	N/A	87 ³
	Chloride (mg/L)	57.6	Yes	No	Yes	No	No	<250
	Sulfate (mg/L)	67	Yes	Yes	No	No	No	<250
MW-2	Calcium (mg/L)	85.8	No	No	No	Yes	N/A	87 ³
	Chloride (mg/L)	44.9	Yes	No	Yes	No	No	<250
	Fluoride (mg/L)	1.23	Yes	No	Yes	No	No	<4
MW-3	Arsenic (ug/L)	3.82	Yes	No	Yes	No	No	<10
	Calcium (mg/L)	58.2	No	No	No	Yes	N/A	87 ³
	Chloride (mg/L)	20.8	No	No	Yes	No	No	<250
MW-4R	Arsenic (ug/L)	5.94	Yes	See Note 2	Yes	No	No	<10
	Chloride (mg/L)	40	Yes		Yes	No	No	<250
MW-5	Calcium (mg/L)	79.2	No	No	No	Yes	N/A	87 ³
	Chloride (mg/L)	40.2	Yes	No	Yes	No	No	<250
	Sulfate (mg/L)	53	Yes	Yes	No	No	No	<250
MW-6	Arsenic (ug/L)	3.89	No	No	Yes	No	No	<10
	Sulfate (mg/L)	81.9	No	Yes	No	No	No	<250
MW-7	Barium (ug/L)	162	Yes	Yes	No	No	No	<2000
	Calcium (mg/L)	115	No	Yes	No	Yes	N/A	87 ³
	Chloride (mg/L)	89.5	Yes	Yes	Yes	No	No	<250
	Sulfate (mg/L)	74.2	Yes	Yes	No	No	No	<250
	Total Dissolved Solids (mg/L)	568	Yes	Yes	No	No	Yes	<500
MW-8	Calcium (mg/L)	84	No	No	No	Yes	N/A	87 ³
	Chloride (mg/L)	46.4	Yes	No	Yes	No	No	<250

¹ - GWPS were established by the NDEE Title 118 Groundwater Quality Standards or the July 2018 EPA CCR Amendment.

² - No interwell statistical comparison was performed on the upgradient well MW-4R.

³ - No GWPS has been established. Maximum Contaminant Level (MCL) shown is based on the average background level established by upstream monitoring.

2 GENERAL COMMENTS

The sampling event was conducted under the supervision of Charles Joyce who holds a Nebraska Drilling and pump installation contractor's license (WD-PIC #39502) SCS Engineers does not warrant the work of third parties supplying information used in the assimilation of this document. This document has been prepared using the level of care and skill ordinarily exercised, under similar circumstances, by environmental professionals currently practicing in this locality. No other representation, express or implied, and no warranty or guarantee is included or intended.

3 REFERENCES

HDR, Appendix D Groundwater Monitoring Plan for Fremont Department of Utilities Fossil Fuel Combustion Ash Disposal Site, March 2016; Revised December 2018.

Layne GeoSciences, Inc. 1995. Hydrogeology of Proposed Fossil Fuel Combustion Ash Disposal Site. Prepared for Fremont Department of Utilities and HDR Engineering, Inc.

Sanitas Technologies, Sanitas Statistical Software v 9.6.37 and User Guide

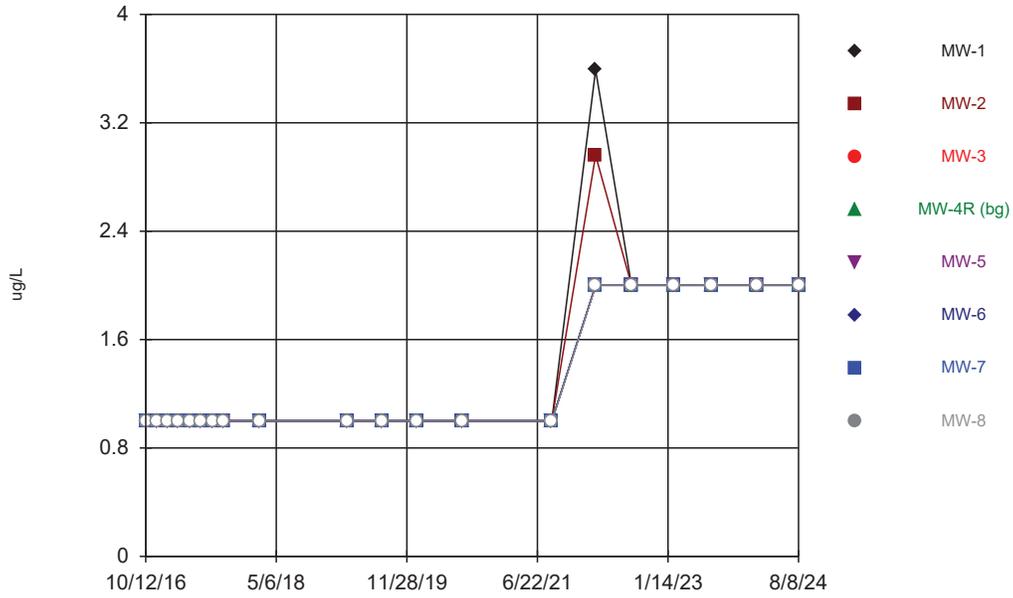
Attachment A. Compliance Statistical Analysis

<i>Well</i>	Previously identified exceedances Feb-24		Currently identified exceedances Aug-24	
	Intrawell	Interwell	Intrawell	Interwell
<i>MW-1</i>	Boron Chloride Sulfate	Sulfate Total Radium	Chloride Sulfate	Sulfate
<i>MW-2</i>	Boron Chloride Fluoride	Fluoride	Chloride Fluoride	
<i>MW-3</i>	Arsenic Chloride	Barium Sulfate	Arsenic	
<i>MW-4R</i> <i>(upgradient)</i>	Arsenic Chloride		Arsenic Chloride	
<i>MW-5</i>	Chloride Sulfate	Sulfate	Chloride Sulfate	Sulfate
<i>MW-6</i>	Arsenic	Sulfate		Sulfate
<i>MW-7</i>	Chloride Sulfate	Chloride Sulfate	Barium Chloride Sulfate Total Dissolved Solids	Barium Calcium Chloride Sulfate Total Dissolved Solids
<i>MW-8</i>	Chloride		Chloride	

Well	Detected Constituents	Analytical Result	Intrawell Exceedance?	Interwell Exceedance?	Significant Increasing Trend?	Confidence Interval Exceedance?	GWPS Exceedance?
MW-1	Arsenic (ug/L)	3.7	No	No	Yes	No	No
	Calcium (mg/L)	95.4	No	No	No	Yes	N/A
	Chloride (mg/L)	57.6	Yes	No	Yes	No	No
	Sulfate (mg/L)	67	Yes	Yes	No	No	No
MW-2	Calcium (mg/L)	85.8	No	No	No	Yes	N/A
	Chloride (mg/L)	44.9	Yes	No	Yes	No	No
	Fluoride (mg/L)	1.23	Yes	No	Yes	No	No
MW-3	Arsenic (ug/L)	3.82	Yes	No	Yes	No	No
	Calcium (mg/L)	58.2	No	No	No	Yes	N/A
	Chloride (mg/L)	20.8	No	No	Yes	No	No
MW-4R	Arsenic (ug/L)	5.94	Yes	See Note 3	Yes	No	No
	Chloride (mg/L)	40	Yes		Yes	No	No
MW-5	Calcium (mg/L)	79.2	No	No	No	Yes	N/A
	Chloride (mg/L)	40.2	Yes	No	Yes	No	No
	Sulfate (mg/L)	53	Yes	Yes	No	No	No
MW-6	Arsenic (ug/L)	3.89	No	No	Yes	No	No
	Sulfate (mg/L)	81.9	No	Yes	No	No	No
MW-7	Barium (ug/L)	162	Yes	Yes	No	No	No
	Calcium (mg/L)	115	No	Yes	No	Yes	N/A
	Chloride (mg/L)	89.5	Yes	Yes	Yes	No	No
	Sulfate (mg/L)	74.2	Yes	Yes	No	No	No
	Total Dissolved Solids (mg/L)	568	Yes	Yes	No	No	Yes
MW-8	Calcium (mg/L)	84	No	No	No	Yes	N/A
	Chloride (mg/L)	46.4	Yes	No	Yes	No	No

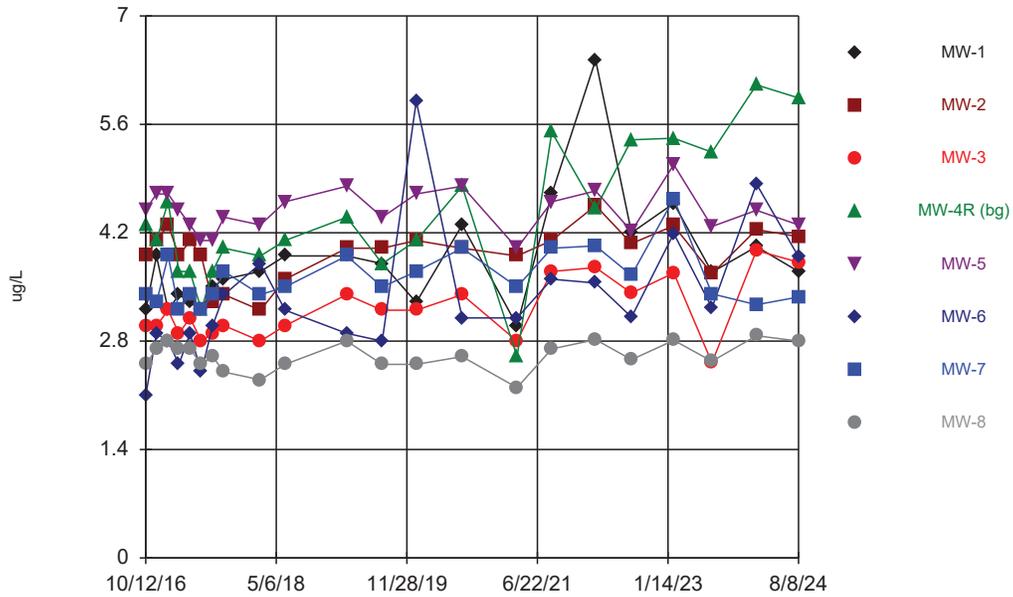
A.1 Time Series Plots

Time Series



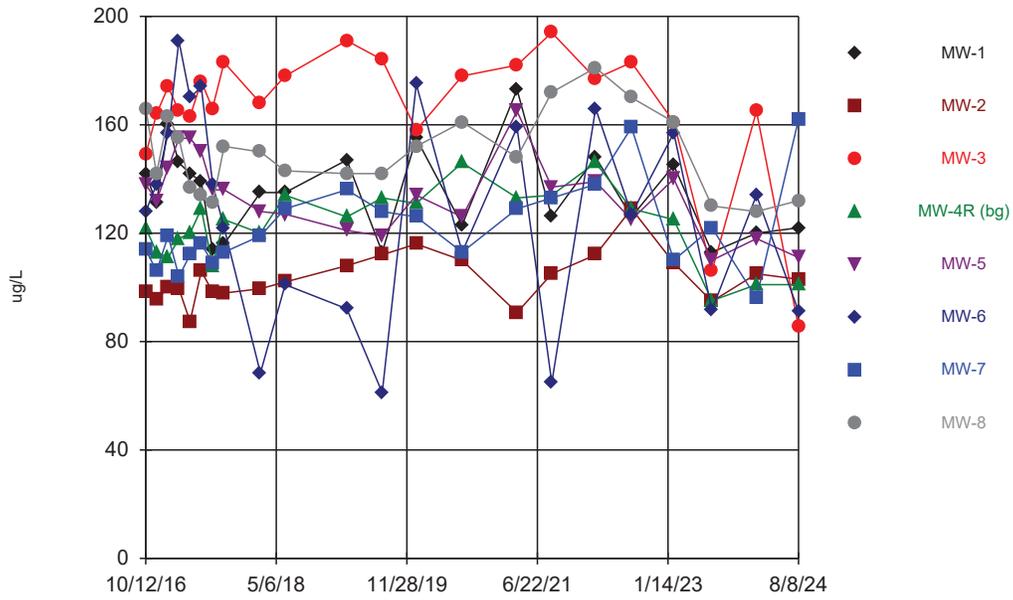
Constituent: Antimony Analysis Run 10/11/2024 10:50 AM View: 2024Q3 Time Series
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Time Series



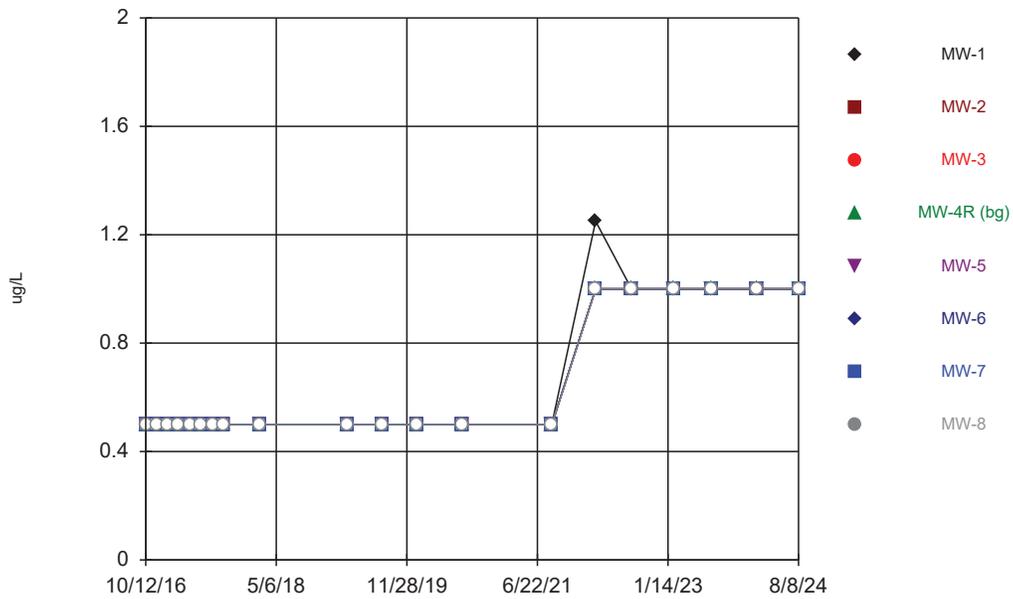
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Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Time Series



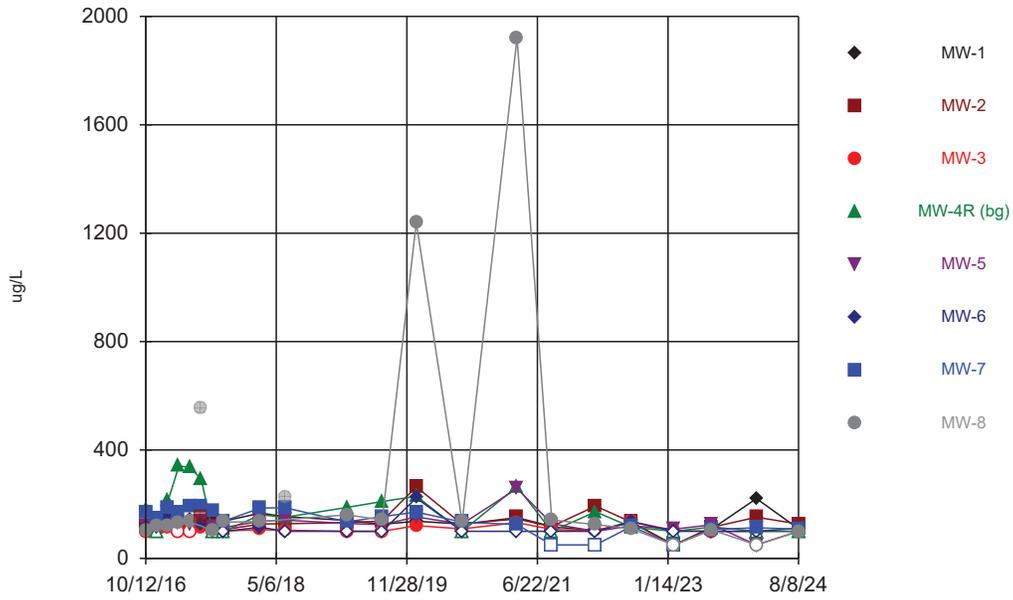
Constituent: Barium Analysis Run 10/11/2024 10:50 AM View: 2024Q3 Time Series
 Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Time Series



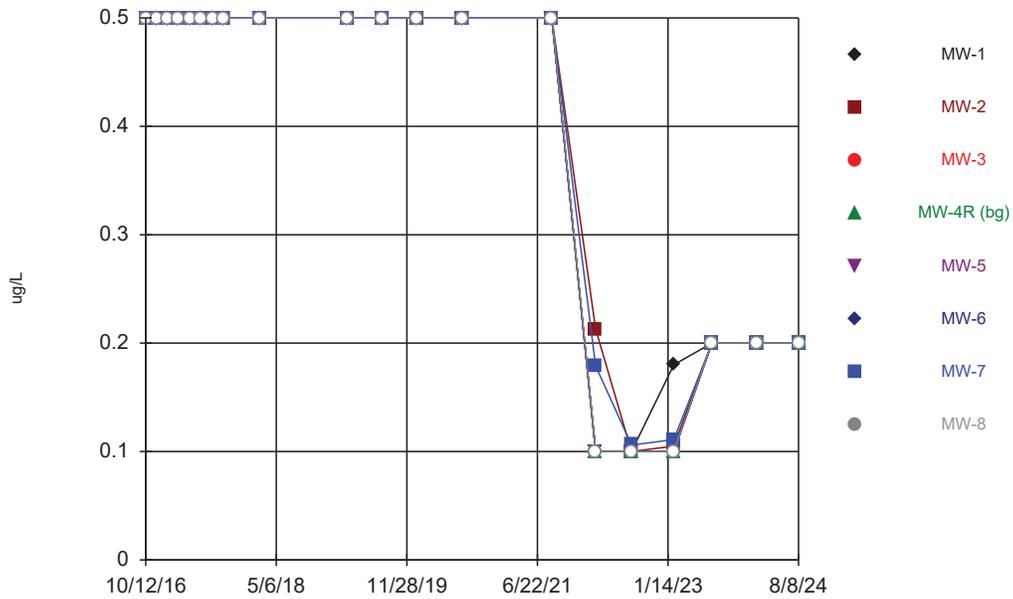
Constituent: Beryllium Analysis Run 10/11/2024 10:50 AM View: 2024Q3 Time Series
 Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Time Series



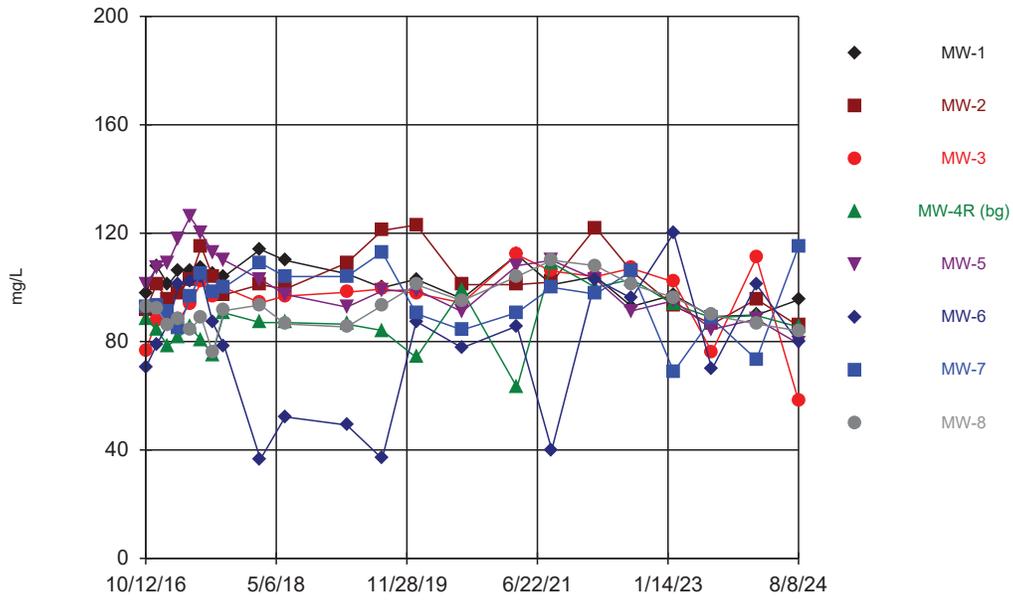
Constituent: Boron Analysis Run 10/11/2024 10:50 AM View: 2024Q3 Time Series
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Time Series



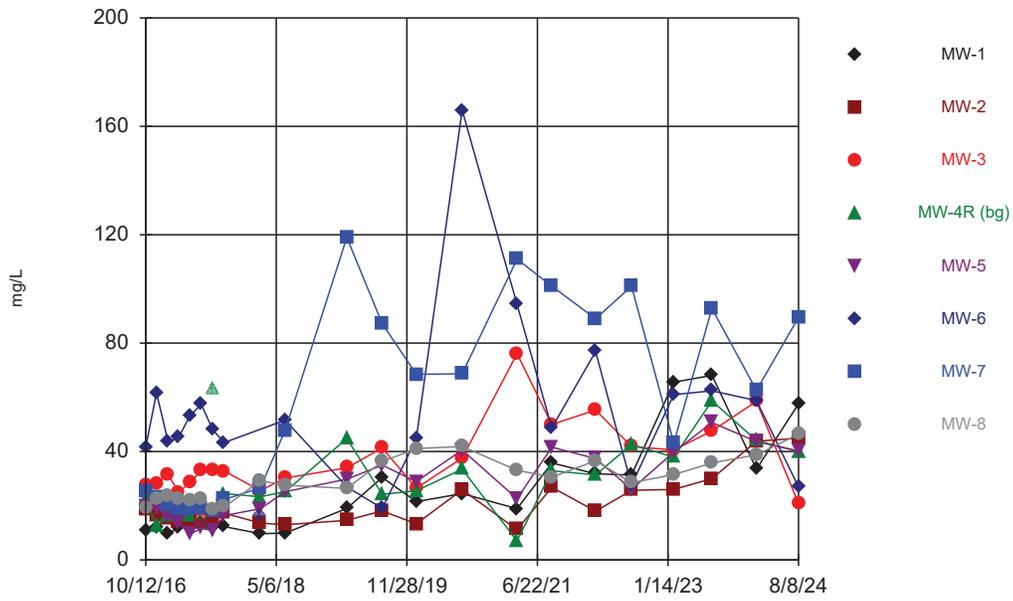
Constituent: Cadmium Analysis Run 10/11/2024 10:50 AM View: 2024Q3 Time Series
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Time Series



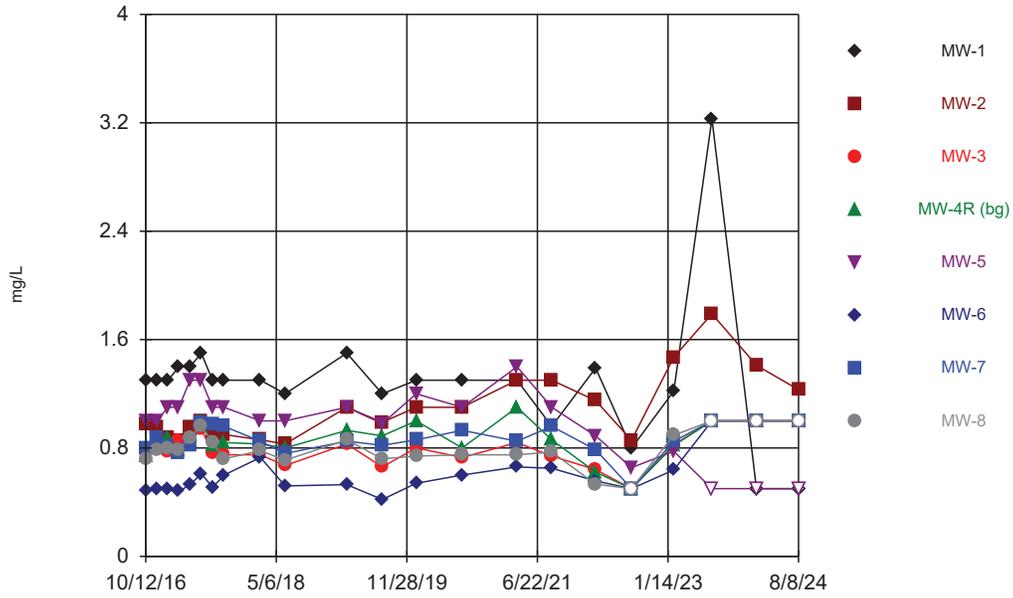
Constituent: Calcium Analysis Run 10/11/2024 10:50 AM View: 2024Q3 Time Series
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Time Series



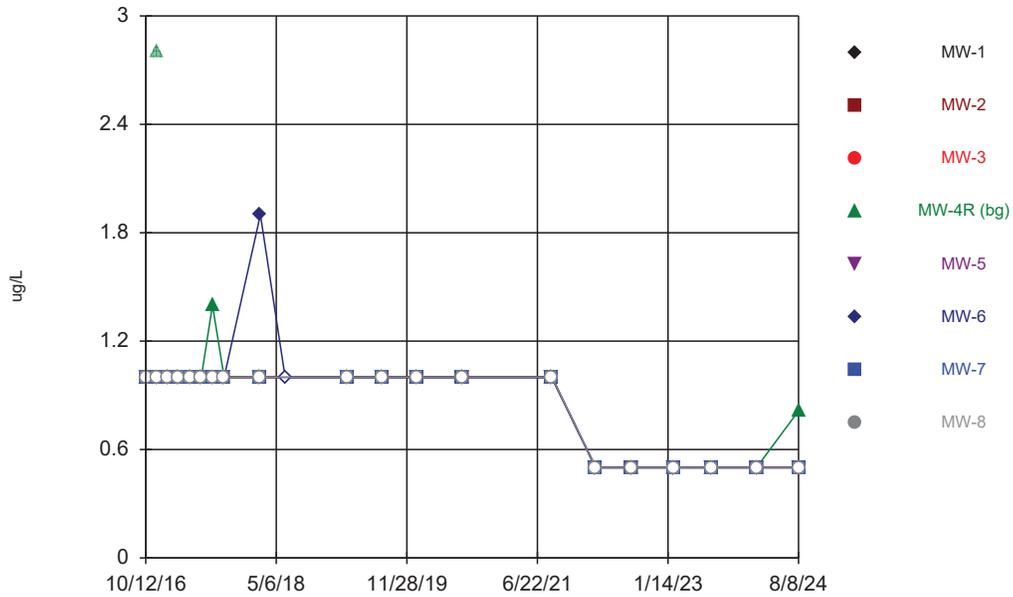
Constituent: Chloride Analysis Run 10/11/2024 10:50 AM View: 2024Q3 Time Series
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Time Series



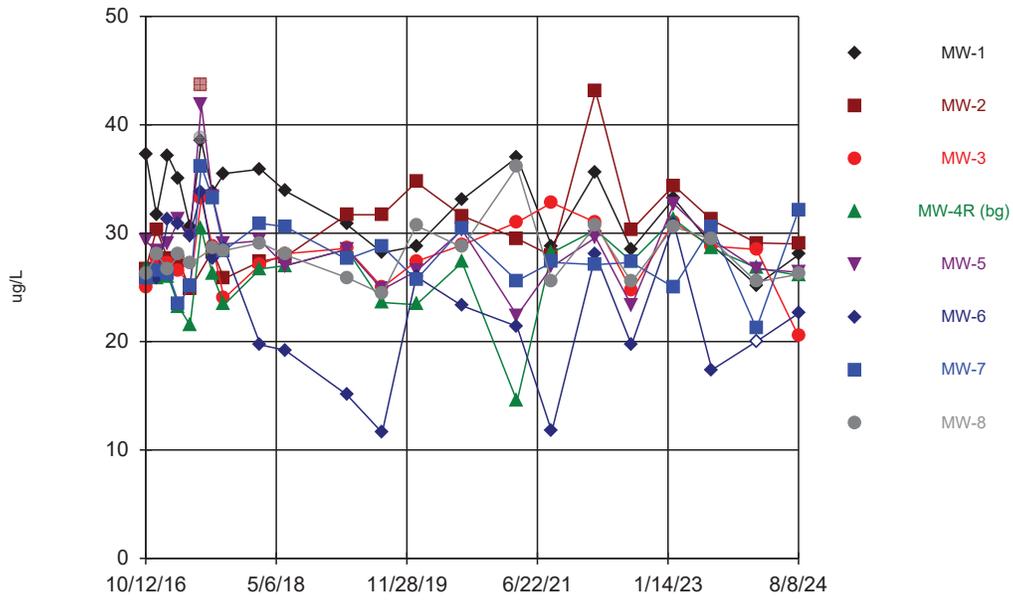
Constituent: Fluoride Analysis Run 10/11/2024 10:50 AM View: 2024Q3 Time Series
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Time Series



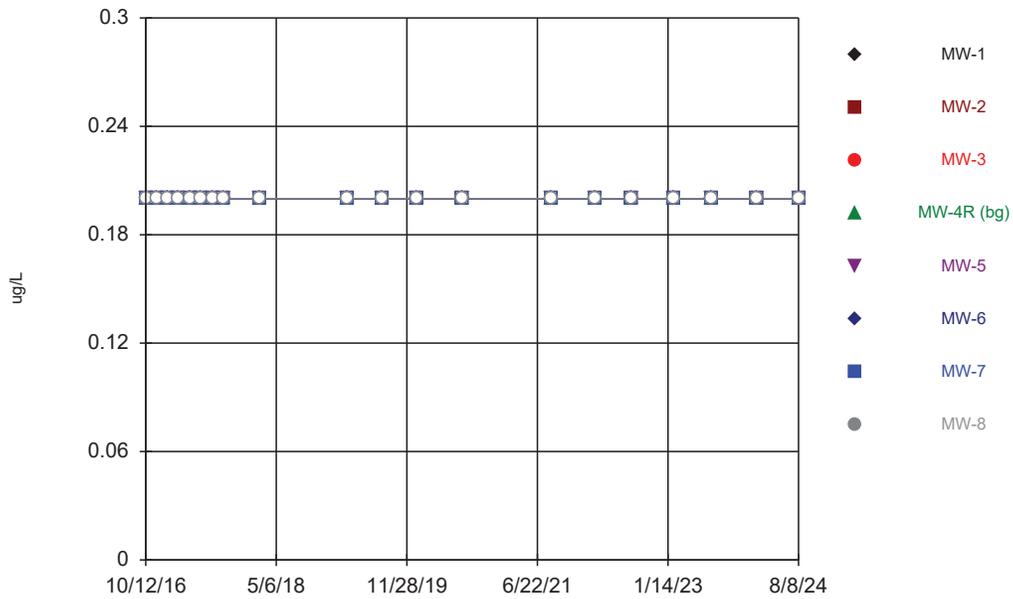
Constituent: Lead Analysis Run 10/11/2024 10:50 AM View: 2024Q3 Time Series
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Time Series



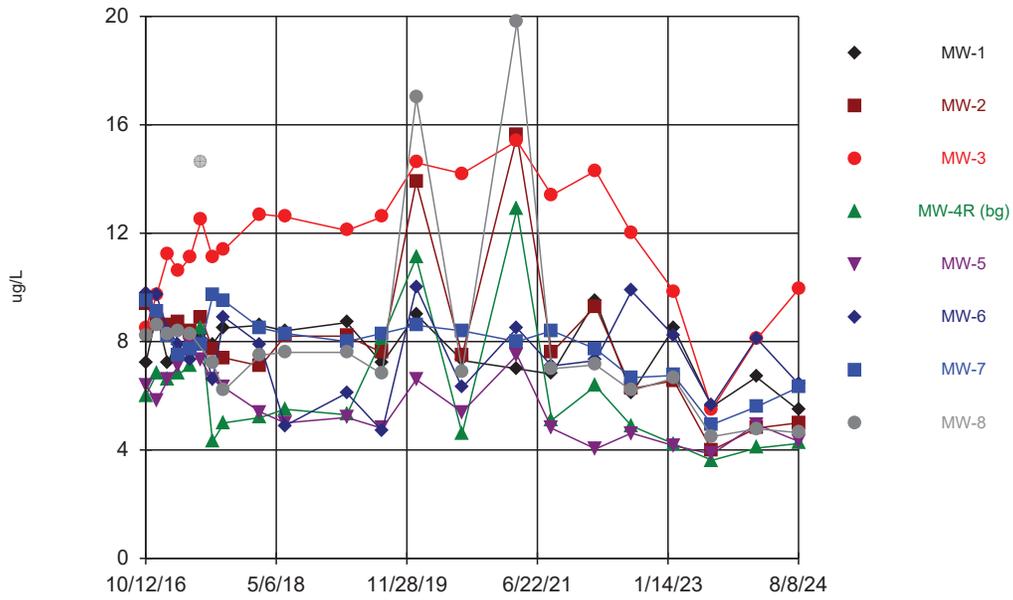
Constituent: Lithium Analysis Run 10/11/2024 10:50 AM View: 2024Q3 Time Series
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Time Series



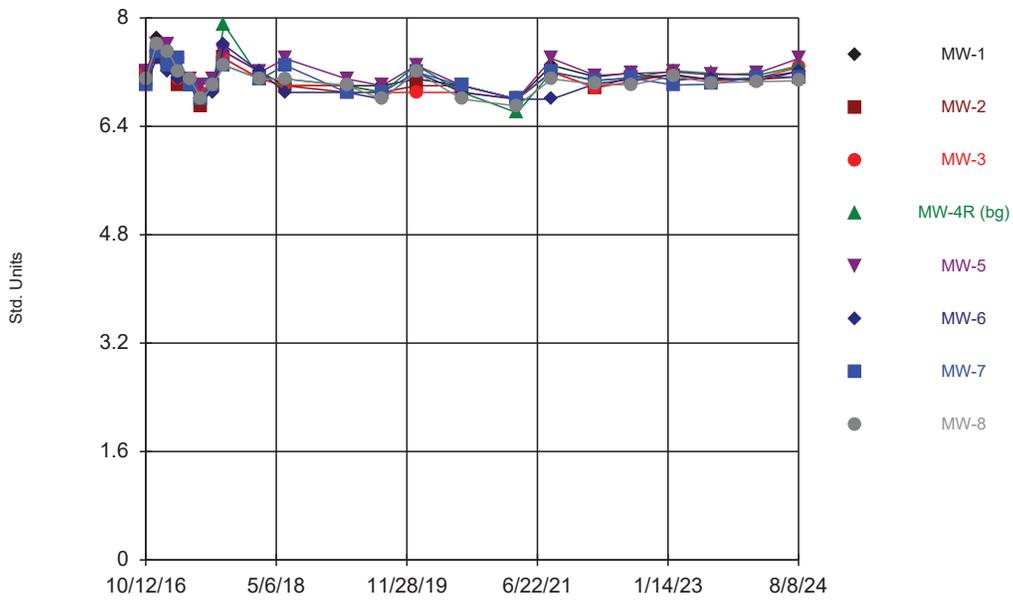
Constituent: Mercury Analysis Run 10/11/2024 10:50 AM View: 2024Q3 Time Series
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Time Series



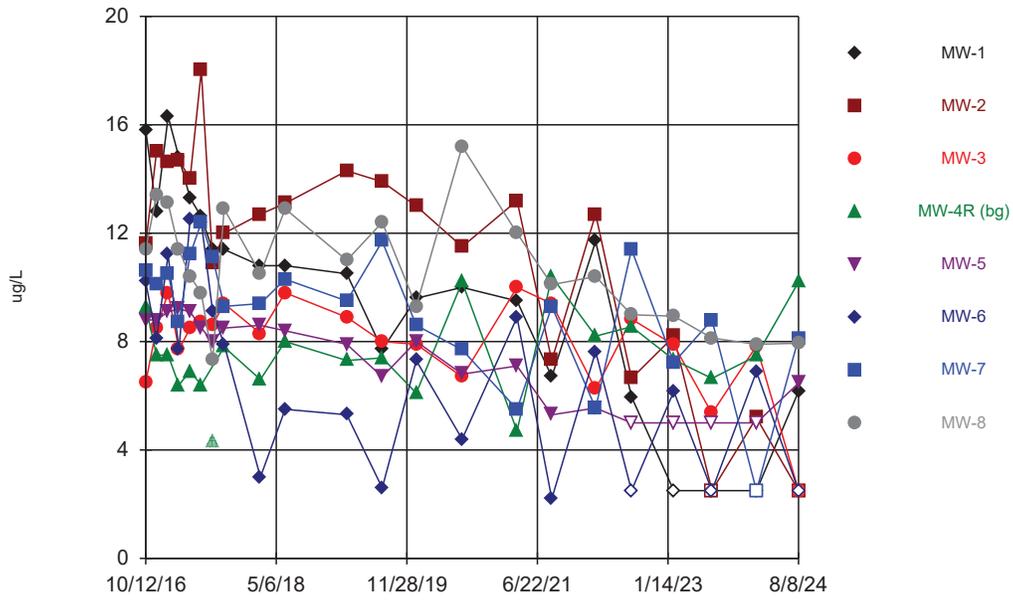
Constituent: Molybdenum Analysis Run 10/11/2024 10:50 AM View: 2024Q3 Time Series
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Time Series



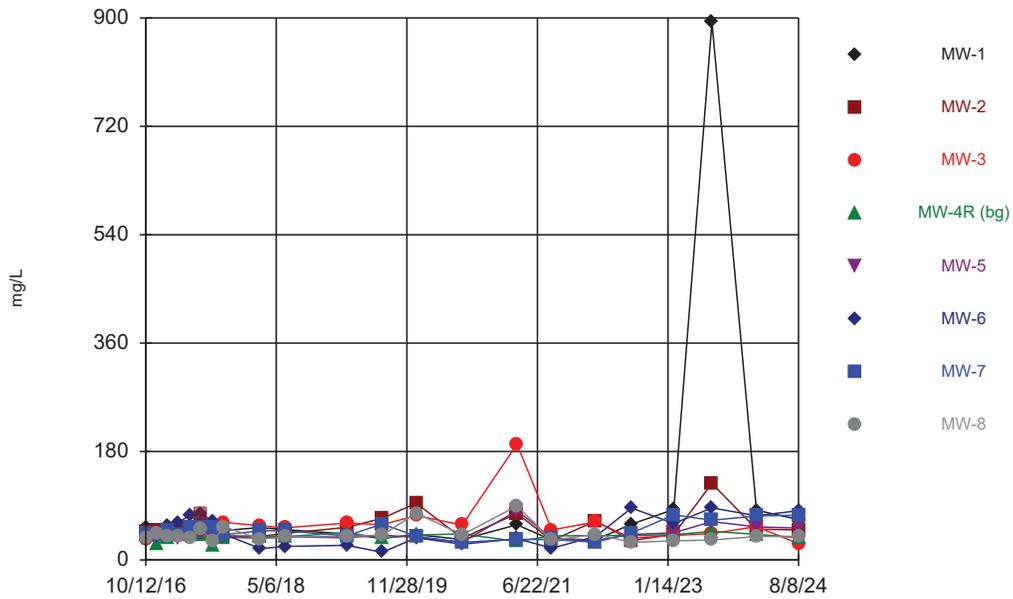
Constituent: pH Analysis Run 10/11/2024 10:50 AM View: 2024Q3 Time Series
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Time Series



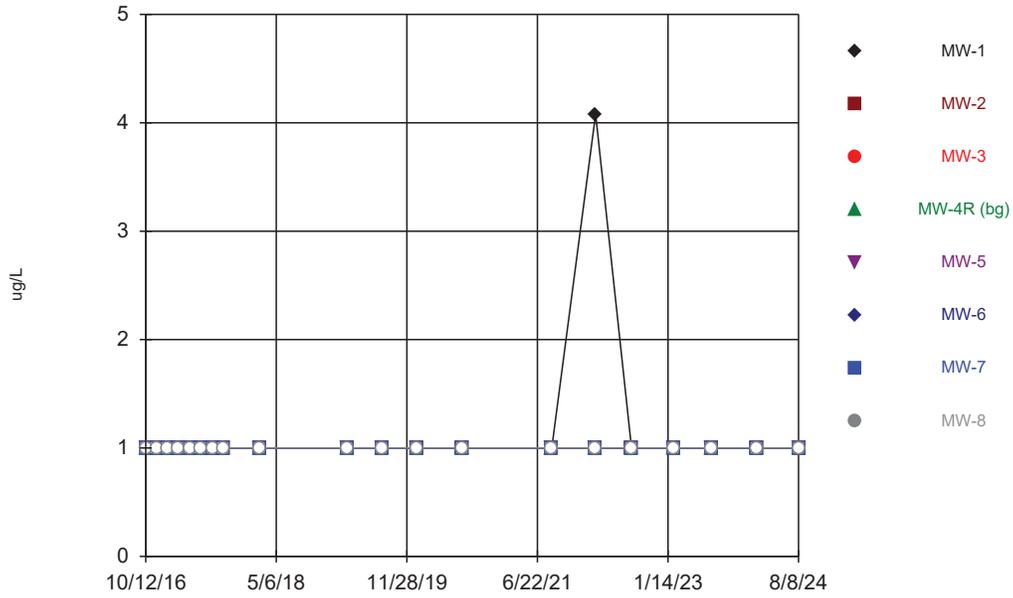
Constituent: Selenium Analysis Run 10/11/2024 10:50 AM View: 2024Q3 Time Series
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Time Series



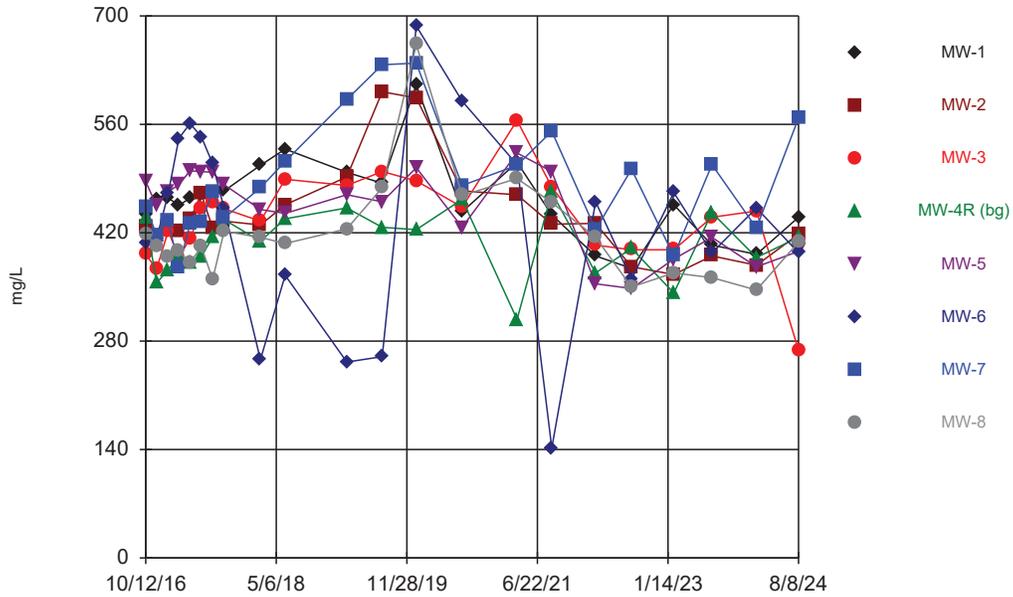
Constituent: Sulfate Analysis Run 10/11/2024 10:51 AM View: 2024Q3 Time Series
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Time Series



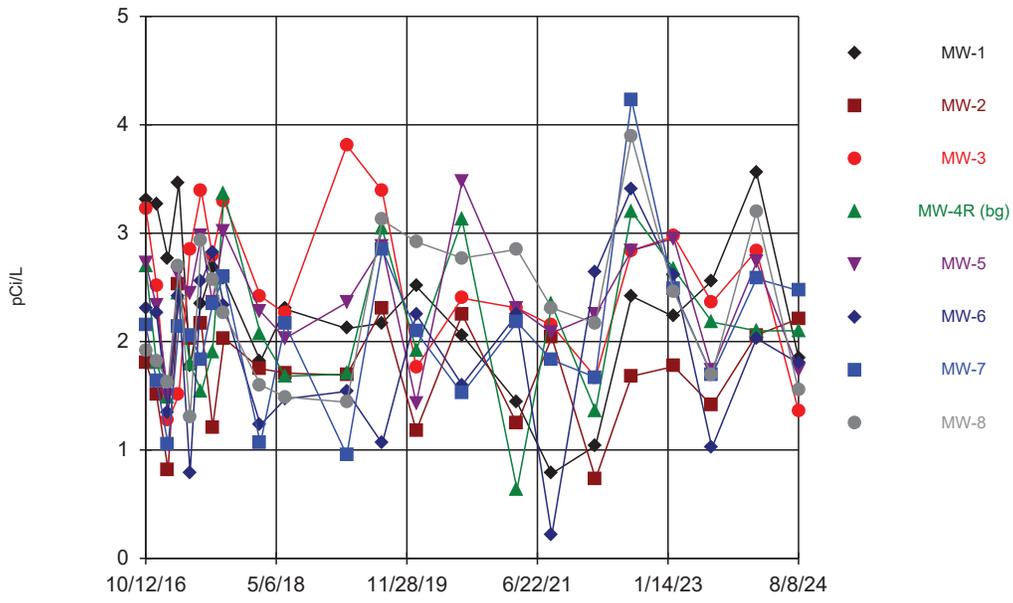
Constituent: Thallium Analysis Run 10/11/2024 10:51 AM View: 2024Q3 Time Series
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Time Series



Constituent: Total Dissolved Solids Analysis Run 10/11/2024 10:51 AM View: 2024Q3 Time Series
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Time Series



Constituent: Total Radium Analysis Run 10/11/2024 10:51 AM View: 2024Q3 Time Series
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

A.2 Intrawell Prediction Limits

Intrawell Prediction Limit

Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater Printed 10/11/2024, 11:02 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
Arsenic (ug/L)	MW-1	4.369	n/a	8/8/2024	3.7	No	10	0	No	0.0003583	Param Intra 1 of 2
Arsenic (ug/L)	MW-2	4.96	n/a	8/8/2024	4.15	No	10	0	No	0.0003583	Param Intra 1 of 2
Arsenic (ug/L)	MW-3	3.368	n/a	8/8/2024	3.82	Yes	10	0	No	0.0003583	Param Intra 1 of 2
Arsenic (ug/L)	MW-4R	5.157	n/a	8/8/2024	5.94	Yes	10	0	No	0.0003583	Param Intra 1 of 2
Arsenic (ug/L)	MW-5	5.119	n/a	8/8/2024	4.3	No	10	0	No	0.0003583	Param Intra 1 of 2
Arsenic (ug/L)	MW-6	4.478	n/a	8/8/2024	3.89	No	10	0	No	0.0003583	Param Intra 1 of 2
Arsenic (ug/L)	MW-7	4.13	n/a	8/8/2024	3.37	No	10	0	No	0.0003583	Param Intra 1 of 2
Arsenic (ug/L)	MW-8	3.068	n/a	8/8/2024	2.8	No	10	0	No	0.0003583	Param Intra 1 of 2
Barium (ug/L)	MW-1	174.5	n/a	8/8/2024	132.9	No	10	0	No	0.0003583	Param Intra 1 of 2 De...
Barium (ug/L)	MW-2	113.7	n/a	8/8/2024	103	No	10	0	No	0.0003583	Param Intra 1 of 2
Barium (ug/L)	MW-3	199.2	n/a	8/8/2024	85.3	No	10	0	No	0.0003583	Param Intra 1 of 2
Barium (ug/L)	MW-4R	145.6	n/a	8/8/2024	101	No	10	0	No	0.0003583	Param Intra 1 of 2
Barium (ug/L)	MW-5	173.2	n/a	8/8/2024	111	No	10	0	No	0.0003583	Param Intra 1 of 2
Barium (ug/L)	MW-6	255	n/a	8/8/2024	91.2	No	10	0	No	0.0003583	Param Intra 1 of 2
Barium (ug/L)	MW-7	137.1	n/a	8/8/2024	162	Yes	10	0	No	0.0003583	Param Intra 1 of 2
Barium (ug/L)	MW-8	185.2	n/a	8/8/2024	132	No	10	0	No	0.0003583	Param Intra 1 of 2
Boron (ug/L)	MW-1	179.5	n/a	8/8/2024	109	No	10	0	No	0.0003583	Param Intra 1 of 2
Boron (ug/L)	MW-2	141.7	n/a	8/8/2024	127	No	9	0	No	0.0003583	Param Intra 1 of 2
Boron (ug/L)	MW-5	158.9	n/a	8/8/2024	100	No	10	0	No	0.0003583	Param Intra 1 of 2
Boron (ug/L)	MW-6	283.4	n/a	8/8/2024	111	No	10	20	No	0.0003583	Param Intra 1 of 2
Boron (ug/L)	MW-7	232.9	n/a	8/8/2024	108	No	10	0	No	0.0003583	Param Intra 1 of 2
Boron (ug/L)	MW-8	171.5	n/a	8/8/2024	100	No	8	0	No	0.0003583	Param Intra 1 of 2
Calcium (mg/L)	MW-1	120.2	n/a	8/8/2024	95.4	No	10	0	No	0.0003583	Param Intra 1 of 2
Calcium (mg/L)	MW-2	120.3	n/a	8/8/2024	85.8	No	10	0	No	0.0003583	Param Intra 1 of 2
Calcium (mg/L)	MW-3	116	n/a	8/8/2024	58.2	No	10	0	No	0.0003583	Param Intra 1 of 2
Calcium (mg/L)	MW-4R	99.14	n/a	8/8/2024	85.4	No	10	0	No	0.0003583	Param Intra 1 of 2
Calcium (mg/L)	MW-5	139	n/a	8/8/2024	79.2	No	10	0	No	0.0003583	Param Intra 1 of 2
Calcium (mg/L)	MW-6	149.5	n/a	8/8/2024	79.7	No	10	0	No	0.0003583	Param Intra 1 of 2
Calcium (mg/L)	MW-7	120.7	n/a	8/8/2024	115	No	10	0	No	0.0003583	Param Intra 1 of 2
Calcium (mg/L)	MW-8	104.6	n/a	8/8/2024	84	No	10	0	No	0.0003583	Param Intra 1 of 2
Chloride (mg/L)	MW-1	15.29	n/a	8/8/2024	57.6	Yes	10	0	No	0.0003583	Param Intra 1 of 2
Chloride (mg/L)	MW-2	22.01	n/a	8/8/2024	44.9	Yes	9	0	No	0.0003583	Param Intra 1 of 2
Chloride (mg/L)	MW-3	39	n/a	8/8/2024	20.8	No	10	0	No	0.0003583	Param Intra 1 of 2
Chloride (mg/L)	MW-4R	35.49	n/a	8/8/2024	40	Yes	9	0	No	0.0003583	Param Intra 1 of 2
Chloride (mg/L)	MW-5	31.51	n/a	8/8/2024	40.2	Yes	10	0	No	0.0003583	Param Intra 1 of 2
Chloride (mg/L)	MW-6	105.1	n/a	8/8/2024	45.64	No	9	0	No	0.0003583	Param Intra 1 of 2 De...
Chloride (mg/L)	MW-7	47.9	n/a	8/8/2024	89.5	Yes	10	0	n/a	0.01476	NP Intra (normality) ...
Chloride (mg/L)	MW-8	33.65	n/a	8/8/2024	46.4	Yes	10	0	No	0.0003583	Param Intra 1 of 2
Fluoride (mg/L)	MW-2	1.089	n/a	8/8/2024	1.23	Yes	10	0	No	0.0003583	Param Intra 1 of 2
Lead (ug/L)	MW-4R	1.4	n/a	8/8/2024	0.814	No	8	87.5	n/a	0.02144	NP Intra (NDs) 1 of 2
Lithium (ug/L)	MW-1	42.85	n/a	8/8/2024	28	No	10	0	No	0.0003583	Param Intra 1 of 2
Lithium (ug/L)	MW-2	32.65	n/a	8/8/2024	29	No	9	0	No	0.0003583	Param Intra 1 of 2
Lithium (ug/L)	MW-3	32.94	n/a	8/8/2024	22.93	No	10	0	No	0.0003583	Param Intra 1 of 2 De...
Lithium (ug/L)	MW-4R	33.59	n/a	8/8/2024	26.1	No	10	0	No	0.0003583	Param Intra 1 of 2
Lithium (ug/L)	MW-5	41.9	n/a	8/8/2024	26.4	No	10	0	n/a	0.01476	NP Intra (normality) ...
Lithium (ug/L)	MW-6	42.47	n/a	8/8/2024	22.6	No	10	0	No	0.0003583	Param Intra 1 of 2
Lithium (ug/L)	MW-7	37.82	n/a	8/8/2024	31.07	No	10	0	No	0.0003583	Param Intra 1 of 2 De...
Lithium (ug/L)	MW-8	30.97	n/a	8/8/2024	26.2	No	9	0	No	0.0003583	Param Intra 1 of 2
Molybdenum (ug/L)	MW-1	10.04	n/a	8/8/2024	5.47	No	10	0	No	0.0003583	Param Intra 1 of 2
Molybdenum (ug/L)	MW-2	10.58	n/a	8/8/2024	5	No	10	0	No	0.0003583	Param Intra 1 of 2

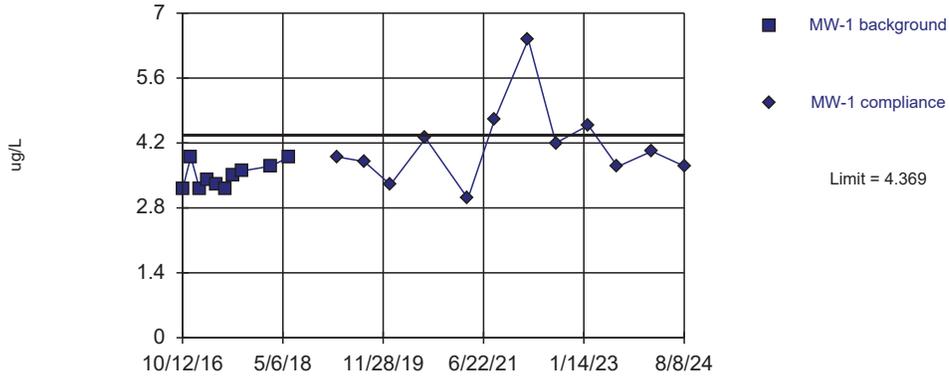
Intrawell Prediction Limit

Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater Printed 10/11/2024, 11:02 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
Molybdenum (ug/L)	MW-3	15.35	n/a	8/8/2024	9.93	No	10	0	No	0.0003583	Param Intra 1 of 2
Molybdenum (ug/L)	MW-4R	10.08	n/a	8/8/2024	4.24	No	10	0	No	0.0003583	Param Intra 1 of 2
Molybdenum (ug/L)	MW-5	9.231	n/a	8/8/2024	4.32	No	10	0	No	0.0003583	Param Intra 1 of 2
Molybdenum (ug/L)	MW-6	12.57	n/a	8/8/2024	6.44	No	10	0	No	0.0003583	Param Intra 1 of 2
Molybdenum (ug/L)	MW-7	11.15	n/a	8/8/2024	6.31	No	10	0	No	0.0003583	Param Intra 1 of 2
Molybdenum (ug/L)	MW-8	12.97	n/a	8/8/2024	6.097	No	9	0	No	0.0003583	Param Intra 1 of 2 De...
pH (Std. Units)	MW-1	8.025	6.335	8/8/2024	7.21	No	10	0	No	0.0001792	Param Intra 1 of 2
pH (Std. Units)	MW-2	7.851	6.389	8/8/2024	7.13	No	10	0	No	0.0001792	Param Intra 1 of 2
pH (Std. Units)	MW-3	7.863	6.497	8/8/2024	7.27	No	10	0	No	0.0001792	Param Intra 1 of 2
pH (Std. Units)	MW-4R	7.936	6.514	8/8/2024	7.168	No	10	0	No	0.0001792	Param Intra 1 of 2 De...
pH (Std. Units)	MW-5	7.707	6.867	8/8/2024	7.341	No	10	0	No	0.0001792	Param Intra 1 of 2 De...
pH (Std. Units)	MW-6	7.895	6.325	8/8/2024	7.21	No	10	0	No	0.0001792	Param Intra 1 of 2
pH (Std. Units)	MW-7	7.873	6.467	8/8/2024	7.13	No	10	0	No	0.0001792	Param Intra 1 of 2
pH (Std. Units)	MW-8	7.926	6.434	8/8/2024	7.07	No	10	0	No	0.0001792	Param Intra 1 of 2
Selenium (ug/L)	MW-1	19.45	n/a	8/8/2024	6.16	No	10	0	No	0.0003583	Param Intra 1 of 2
Selenium (ug/L)	MW-4R	10.57	n/a	8/8/2024	10.2	No	9	0	No	0.0003583	Param Intra 1 of 2
Selenium (ug/L)	MW-5	9.889	n/a	8/8/2024	6.47	No	10	0	No	0.0003583	Param Intra 1 of 2
Selenium (ug/L)	MW-7	13.77	n/a	8/8/2024	8.12	No	10	0	No	0.0003583	Param Intra 1 of 2
Selenium (ug/L)	MW-8	17.35	n/a	8/8/2024	7.94	No	10	0	No	0.0003583	Param Intra 1 of 2
Sulfate (mg/L)	MW-1	61.16	n/a	8/8/2024	67	Yes	10	0	No	0.0003583	Param Intra 1 of 2
Sulfate (mg/L)	MW-2	59.03	n/a	8/8/2024	49.9	No	9	0	No	0.0003583	Param Intra 1 of 2
Sulfate (mg/L)	MW-3	85.79	n/a	8/8/2024	27.2	No	10	0	No	0.0003583	Param Intra 1 of 2
Sulfate (mg/L)	MW-4R	59.48	n/a	8/8/2024	37	No	10	0	No	0.0003583	Param Intra 1 of 2
Sulfate (mg/L)	MW-5	48.2	n/a	8/8/2024	53	Yes	10	0	No	0.0003583	Param Intra 1 of 2
Sulfate (mg/L)	MW-6	114.6	n/a	8/8/2024	81.9	No	10	0	No	0.0003583	Param Intra 1 of 2
Sulfate (mg/L)	MW-7	66.3	n/a	8/8/2024	74.2	Yes	10	0	No	0.0003583	Param Intra 1 of 2
Sulfate (mg/L)	MW-8	64.43	n/a	8/8/2024	39.1	No	10	0	No	0.0003583	Param Intra 1 of 2
Total Dissolved Solids (mg/L)	MW-1	553.1	n/a	8/8/2024	440	No	10	0	No	0.0003583	Param Intra 1 of 2
Total Dissolved Solids (mg/L)	MW-2	486.6	n/a	8/8/2024	418	No	10	0	No	0.0003583	Param Intra 1 of 2
Total Dissolved Solids (mg/L)	MW-3	543.4	n/a	8/8/2024	268	No	10	0	No	0.0003583	Param Intra 1 of 2
Total Dissolved Solids (mg/L)	MW-4R	468.7	n/a	8/8/2024	388.2	No	10	0	No	0.0003583	Param Intra 1 of 2 De...
Total Dissolved Solids (mg/L)	MW-5	542.6	n/a	8/8/2024	396	No	10	0	No	0.0003583	Param Intra 1 of 2
Total Dissolved Solids (mg/L)	MW-6	754.3	n/a	8/8/2024	394	No	10	0	No	0.0003583	Param Intra 1 of 2
Total Dissolved Solids (mg/L)	MW-7	563	n/a	8/8/2024	568	Yes	10	0	No	0.0003583	Param Intra 1 of 2
Total Dissolved Solids (mg/L)	MW-8	458.5	n/a	8/8/2024	408	No	10	0	No	0.0003583	Param Intra 1 of 2
Total Radium (pCi/L)	MW-1	4.506	n/a	8/8/2024	1.85	No	10	0	No	0.0003583	Param Intra 1 of 2
Total Radium (pCi/L)	MW-2	3.313	n/a	8/8/2024	2.21	No	10	0	No	0.0003583	Param Intra 1 of 2
Total Radium (pCi/L)	MW-3	4.85	n/a	8/8/2024	1.36	No	10	0	No	0.0003583	Param Intra 1 of 2
Total Radium (pCi/L)	MW-4R	3.342	n/a	8/8/2024	1.452	No	10	0	No	0.0003583	Param Intra 1 of 2 De...
Total Radium (pCi/L)	MW-5	3.859	n/a	8/8/2024	1.74	No	10	0	No	0.0003583	Param Intra 1 of 2
Total Radium (pCi/L)	MW-6	4.117	n/a	8/8/2024	1.8	No	10	0	No	0.0003583	Param Intra 1 of 2
Total Radium (pCi/L)	MW-7	3.171	n/a	8/8/2024	1.902	No	10	0	No	0.0003583	Param Intra 1 of 2 De...
Total Radium (pCi/L)	MW-8	3.799	n/a	8/8/2024	1.55	No	10	0	No	0.0003583	Param Intra 1 of 2

Within Limit

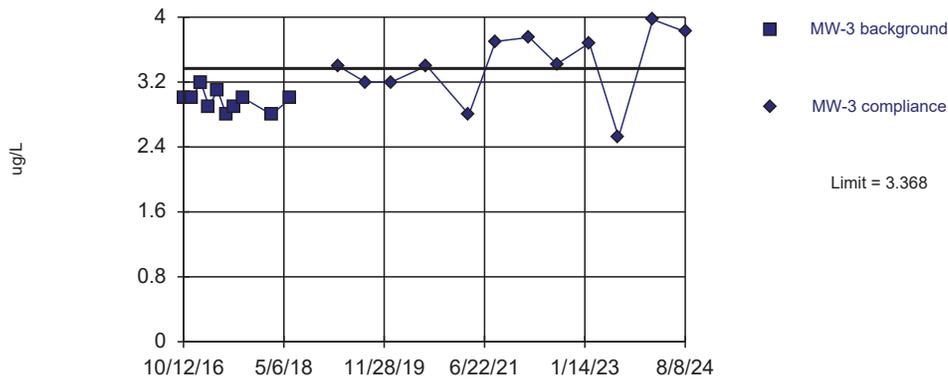
Prediction Limit
Intrawell Parametric



Exceeds Limit

Prediction Limit

Intrawell Parametric



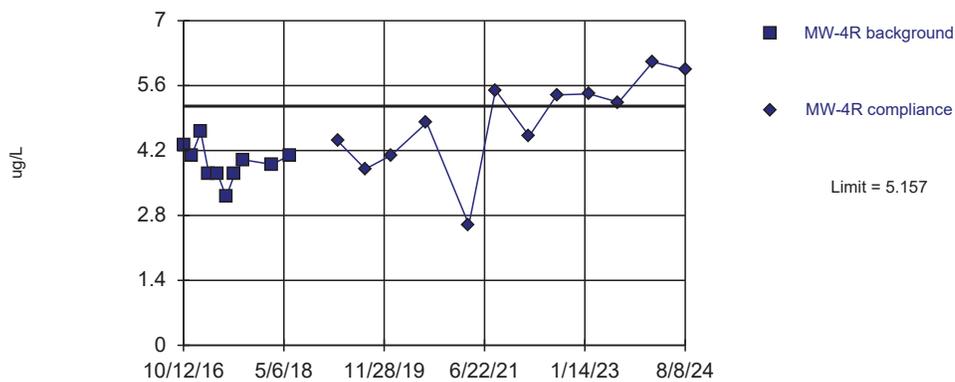
Background Data Summary: Mean=2.97, Std. Dev.=0.1252, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9291, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Arsenic Analysis Run 10/11/2024 10:58 AM View: 2024Q3 Intrawell PL
 Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Exceeds Limit

Prediction Limit

Intrawell Parametric



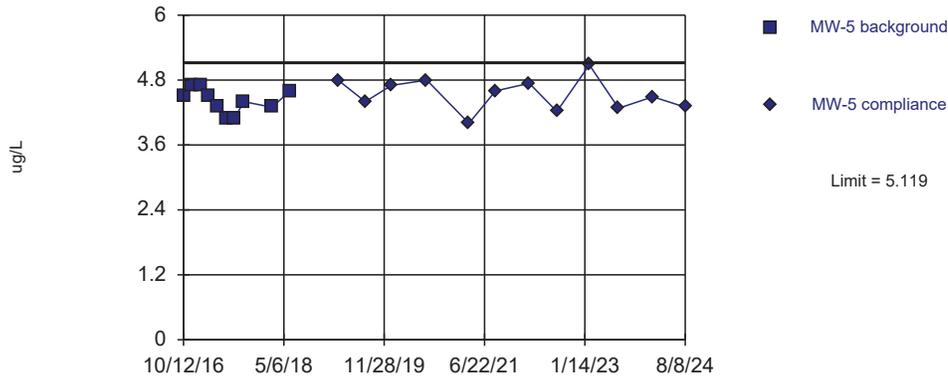
Background Data Summary: Mean=3.93, Std. Dev.=0.386, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9683, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Arsenic Analysis Run 10/11/2024 10:58 AM View: 2024Q3 Intrawell PL
 Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit

Intrawell Parametric



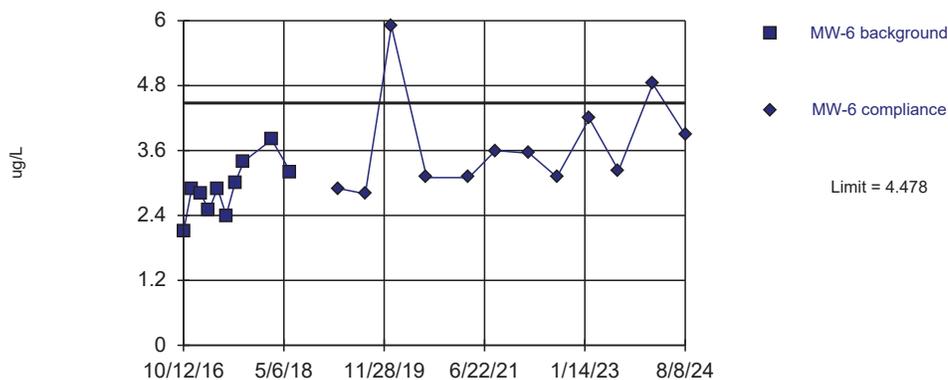
Background Data Summary: Mean=4.42, Std. Dev.=0.2201, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9234, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Arsenic Analysis Run 10/11/2024 10:58 AM View: 2024Q3 Intrawell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit

Intrawell Parametric



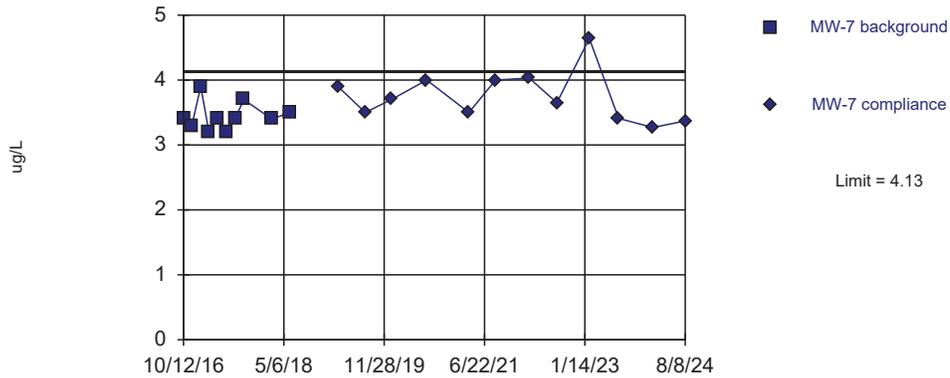
Background Data Summary: Mean=2.9, Std. Dev.=0.4967, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9854, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Arsenic Analysis Run 10/11/2024 10:58 AM View: 2024Q3 Intrawell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit

Intrawell Parametric



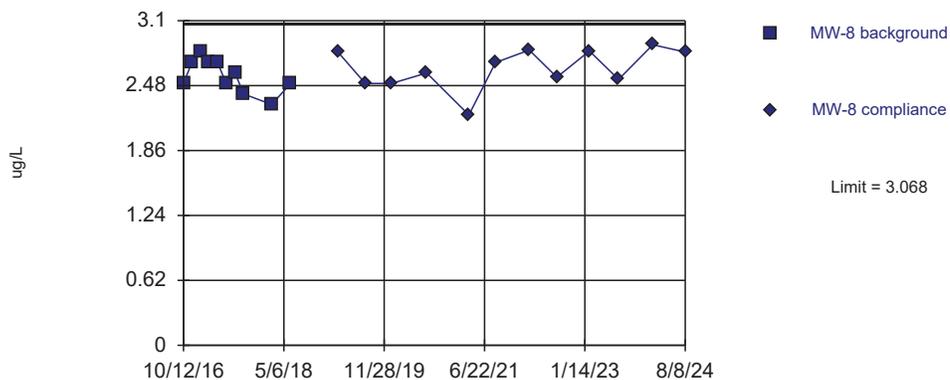
Background Data Summary: Mean=3.44, Std. Dev.=0.2171, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.875, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Arsenic Analysis Run 10/11/2024 10:58 AM View: 2024Q3 Intrawell PL
 Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit

Intrawell Parametric



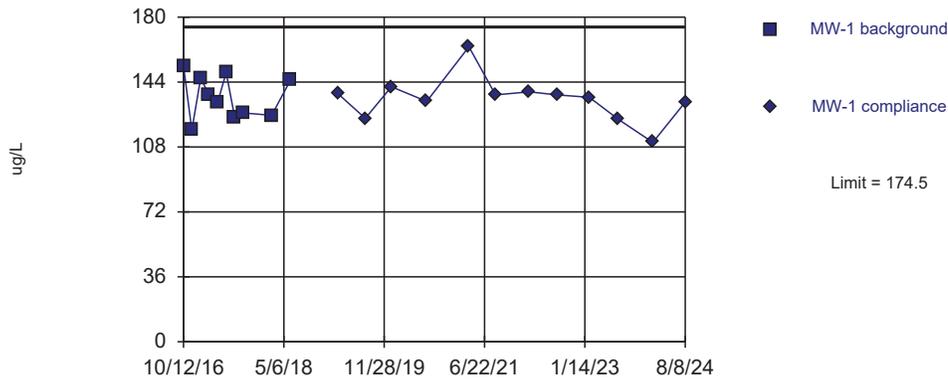
Background Data Summary: Mean=2.57, Std. Dev.=0.1567, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9449, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Arsenic Analysis Run 10/11/2024 10:58 AM View: 2024Q3 Intrawell PL
 Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit

Intrawell Parametric



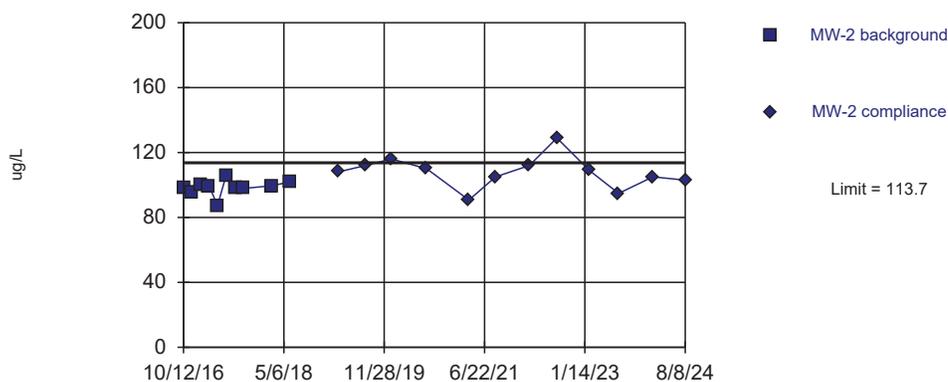
Background Data Summary: Mean=135.7, Std. Dev.=12.21, n=10. Seasonality was detected with 95% confidence and data were deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9373, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Barium Analysis Run 10/11/2024 10:58 AM View: 2024Q3 Intrawell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit

Intrawell Parametric



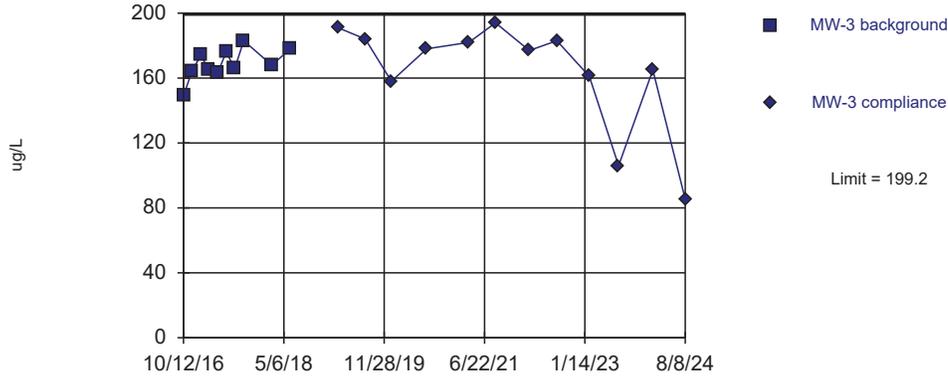
Background Data Summary: Mean=98.45, Std. Dev.=4.784, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8827, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Barium Analysis Run 10/11/2024 10:58 AM View: 2024Q3 Intrawell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit

Intrawell Parametric



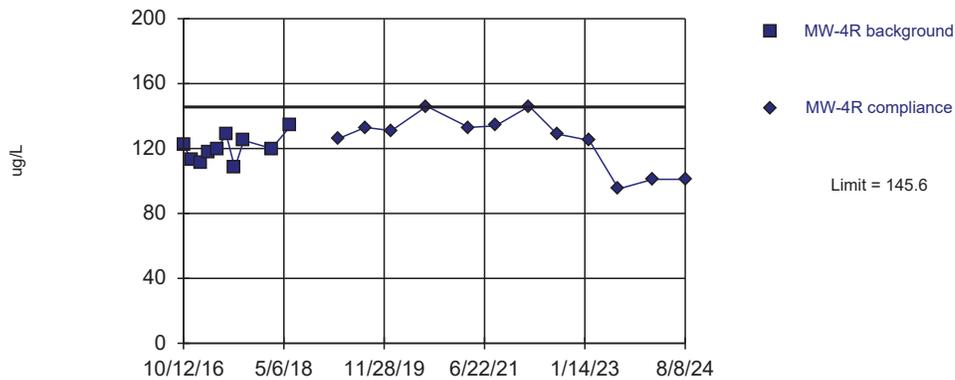
Background Data Summary: Mean=168.6, Std. Dev.=9.64, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9508, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Barium Analysis Run 10/11/2024 10:58 AM View: 2024Q3 Intrawell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit

Intrawell Parametric



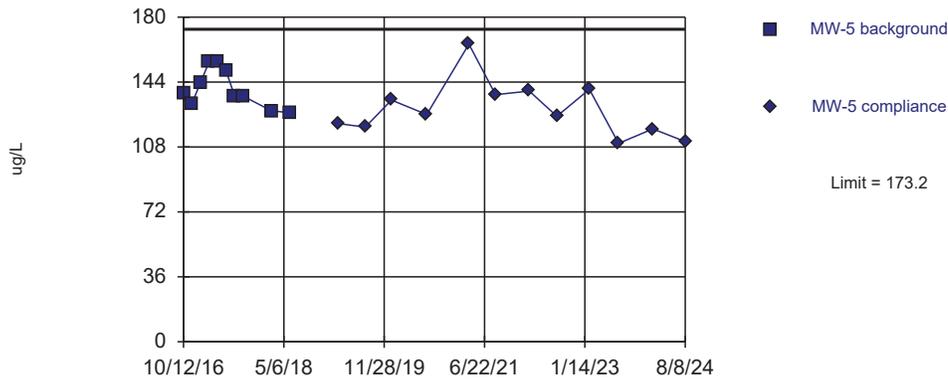
Background Data Summary: Mean=120, Std. Dev.=8.055, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9784, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Barium Analysis Run 10/11/2024 10:58 AM View: 2024Q3 Intrawell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit

Intrawell Parametric



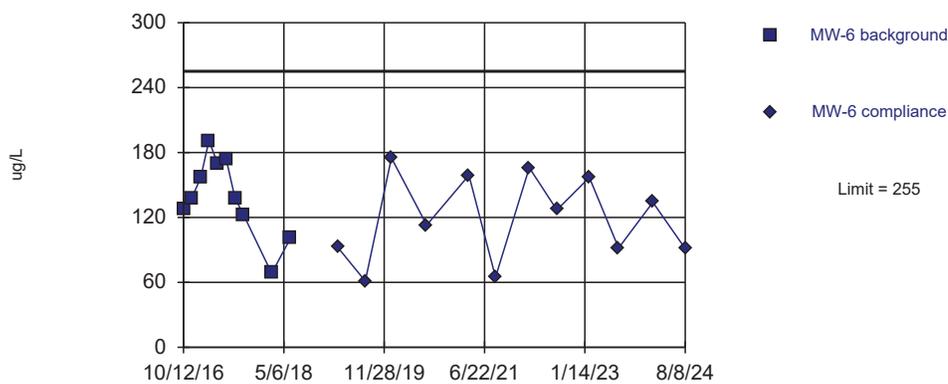
Background Data Summary: Mean=140.1, Std. Dev.=10.43, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9113, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Barium Analysis Run 10/11/2024 10:58 AM View: 2024Q3 Intrawell PL
 Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit

Intrawell Parametric

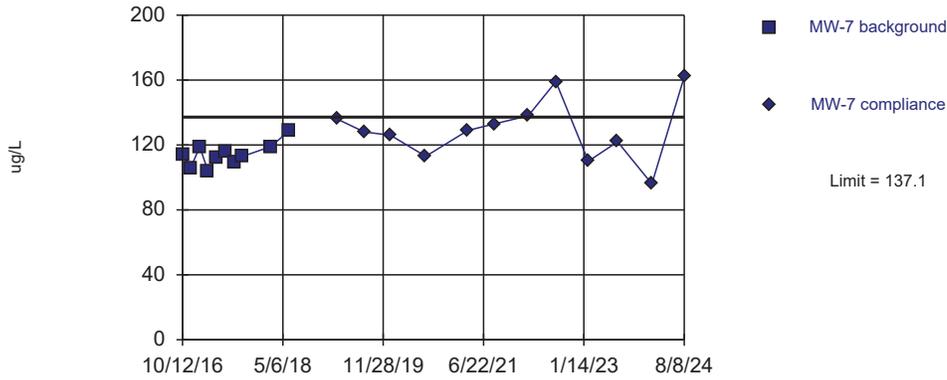


Background Data Summary: Mean=138.7, Std. Dev.=36.6, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9715, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Barium Analysis Run 10/11/2024 10:58 AM View: 2024Q3 Intrawell PL
 Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Exceeds Limit

Prediction Limit Intrawell Parametric

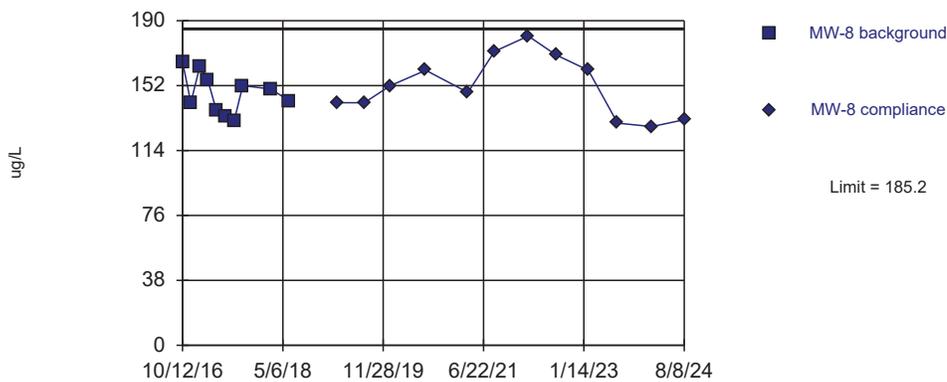


Background Data Summary: Mean=114.1, Std. Dev.=7.249, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.959, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Barium Analysis Run 10/11/2024 10:58 AM View: 2024Q3 Intrawell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric



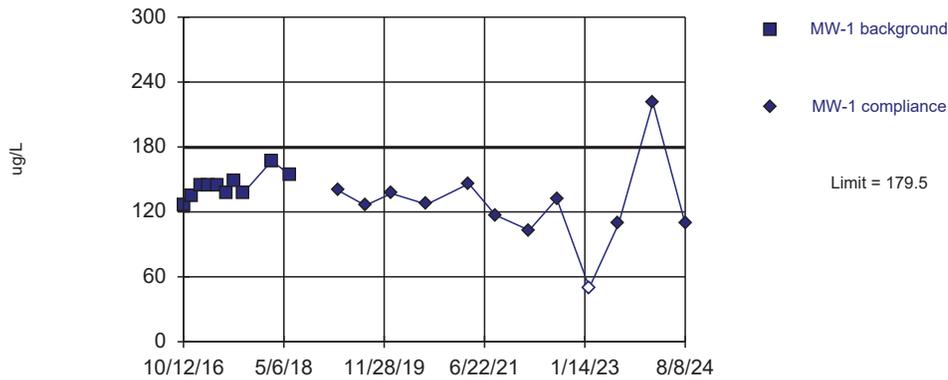
Background Data Summary: Mean=147.3, Std. Dev.=11.93, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9563, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Barium Analysis Run 10/11/2024 10:58 AM View: 2024Q3 Intrawell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit

Intrawell Parametric



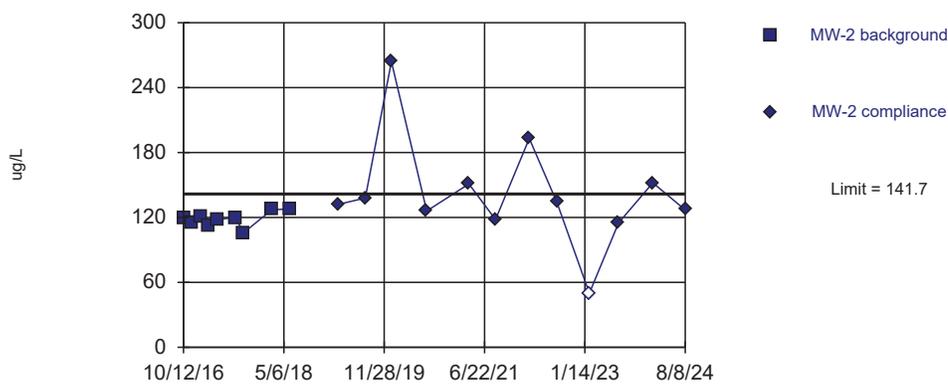
Background Data Summary: Mean=143.9, Std. Dev.=11.21, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9555, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Boron Analysis Run 10/11/2024 10:58 AM View: 2024Q3 Intrawell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit

Intrawell Parametric



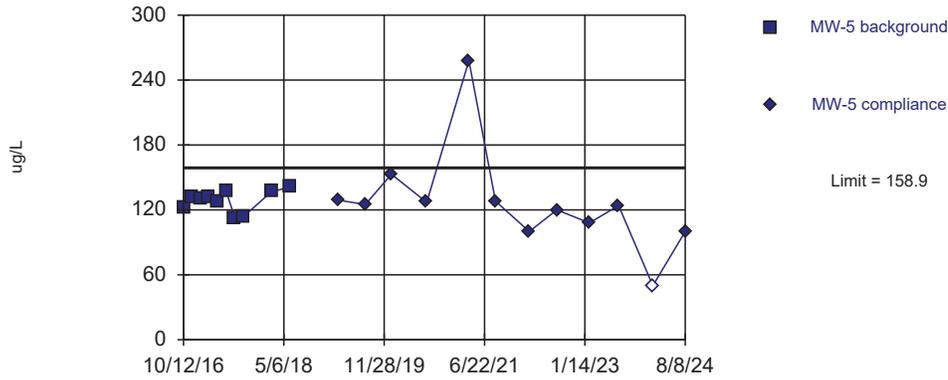
Background Data Summary: Mean=118.6, Std. Dev.=6.803, n=9. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9618, critical = 0.764. Kappa = 3.401 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Boron Analysis Run 10/11/2024 10:58 AM View: 2024Q3 Intrawell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit

Intrawell Parametric



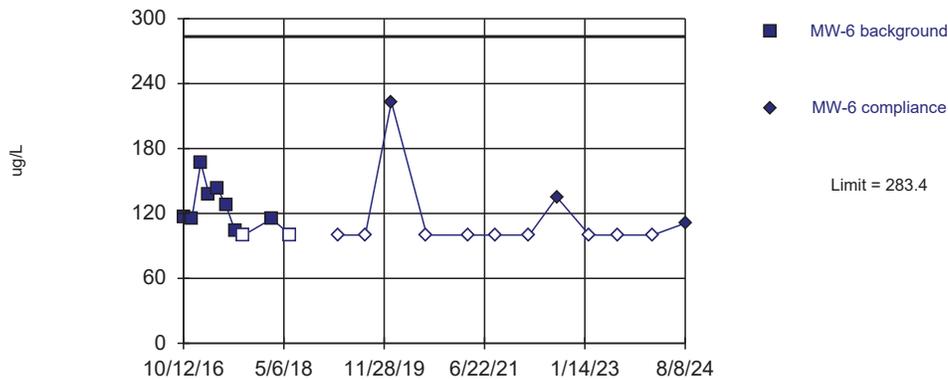
Background Data Summary: Mean=128.5, Std. Dev.=9.56, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9223, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Boron Analysis Run 10/11/2024 10:58 AM View: 2024Q3 Intrawell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit

Intrawell Parametric

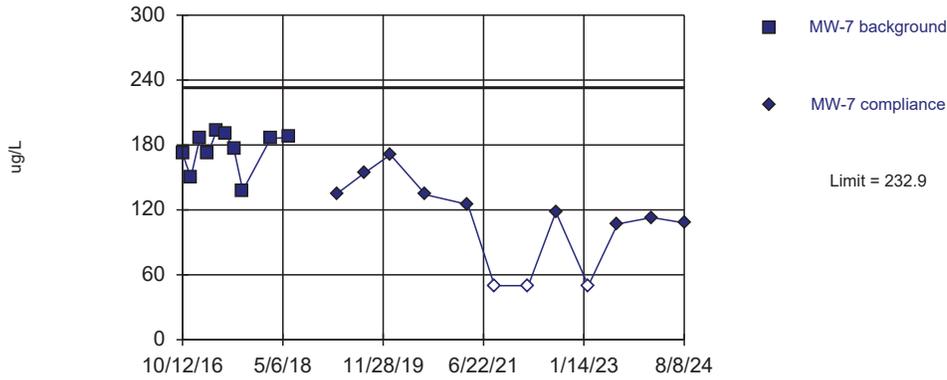


Background Data Summary (after Aitchison's Adjustment): Mean=102.5, Std. Dev.=56.93, n=10, 20% NDs. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9037, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Boron Analysis Run 10/11/2024 10:58 AM View: 2024Q3 Intrawell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit
 Intrawell Parametric

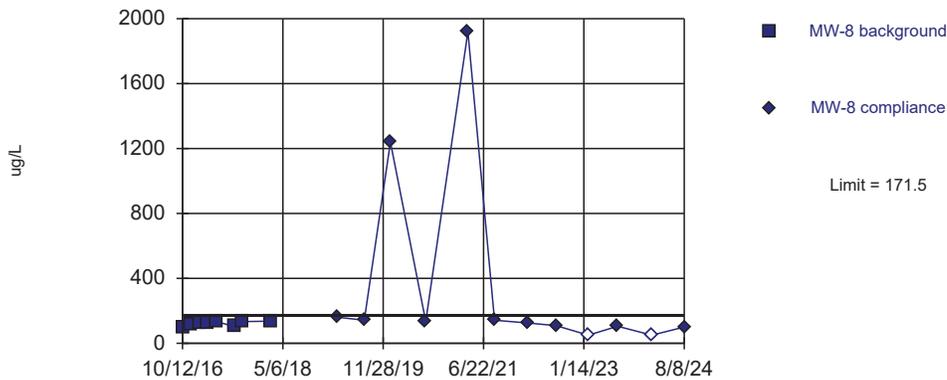


Background Data Summary: Mean=175.1, Std. Dev.=18.19, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8521, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Boron Analysis Run 10/11/2024 10:58 AM View: 2024Q3 Intrawell PL
 Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit
 Intrawell Parametric



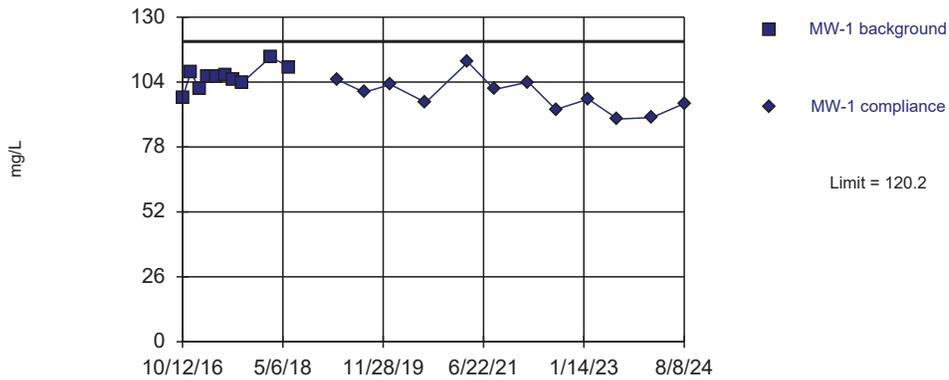
Background Data Summary: Mean=122.6, Std. Dev.=13.49, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8556, critical = 0.749. Kappa = 3.624 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Boron Analysis Run 10/11/2024 10:58 AM View: 2024Q3 Intrawell PL
 Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

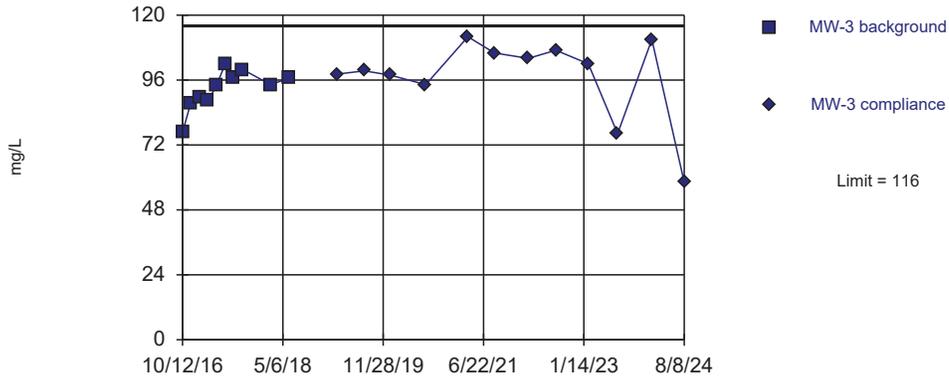
Prediction Limit

Intrawell Parametric



Within Limit

Prediction Limit Intrawell Parametric

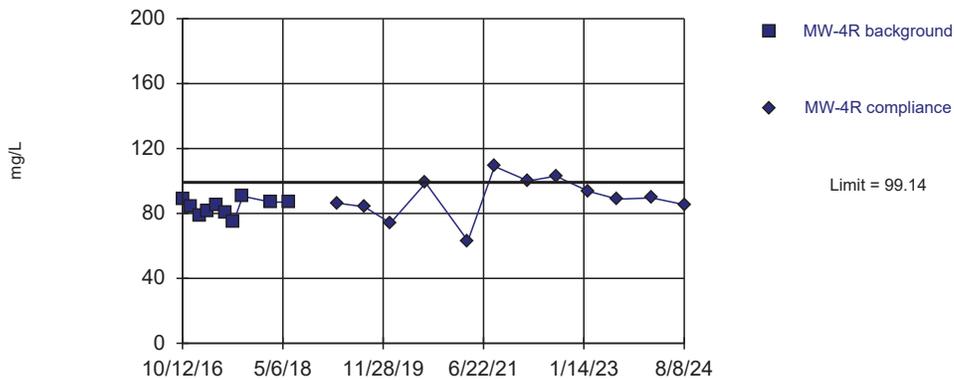


Background Data Summary: Mean=92.59, Std. Dev.=7.372, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9298, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Calcium Analysis Run 10/11/2024 10:59 AM View: 2024Q3 Intrawell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric



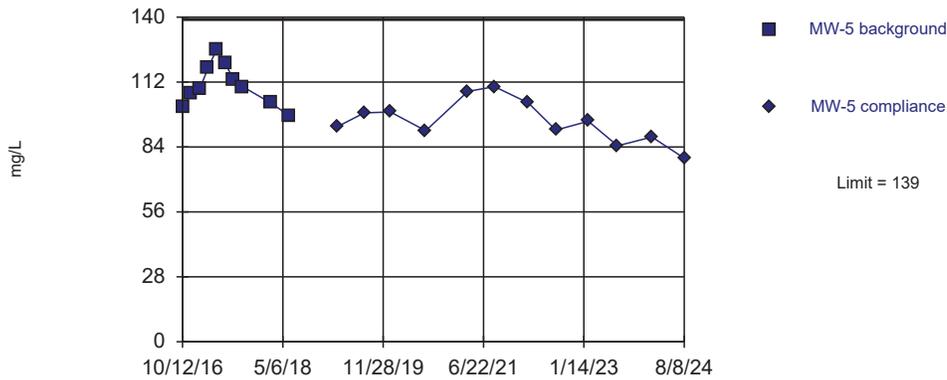
Background Data Summary: Mean=83.88, Std. Dev.=4.802, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9683, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Calcium Analysis Run 10/11/2024 10:59 AM View: 2024Q3 Intrawell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit

Intrawell Parametric



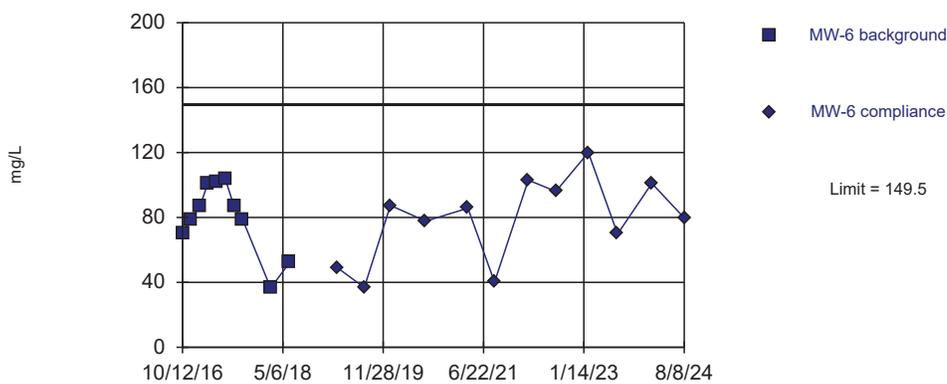
Background Data Summary: Mean=110.4, Std. Dev.=8.98, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9787, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Calcium Analysis Run 10/11/2024 10:59 AM View: 2024Q3 Intrawell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit

Intrawell Parametric

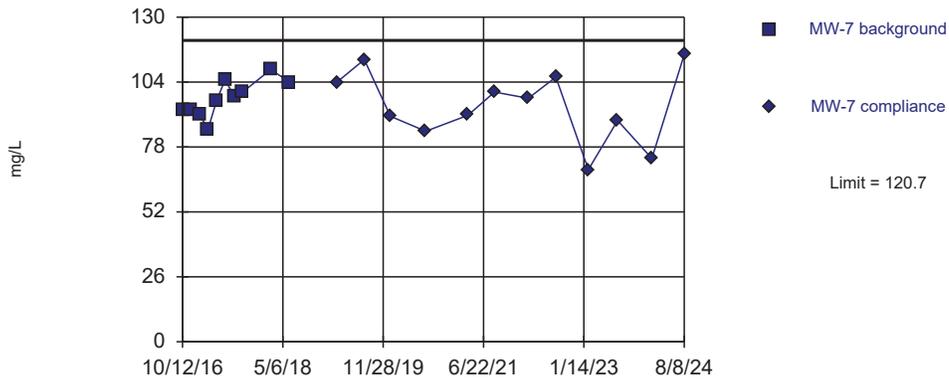


Background Data Summary: Mean=79.7, Std. Dev.=21.97, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9128, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Calcium Analysis Run 10/11/2024 10:59 AM View: 2024Q3 Intrawell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit
Intrawell Parametric

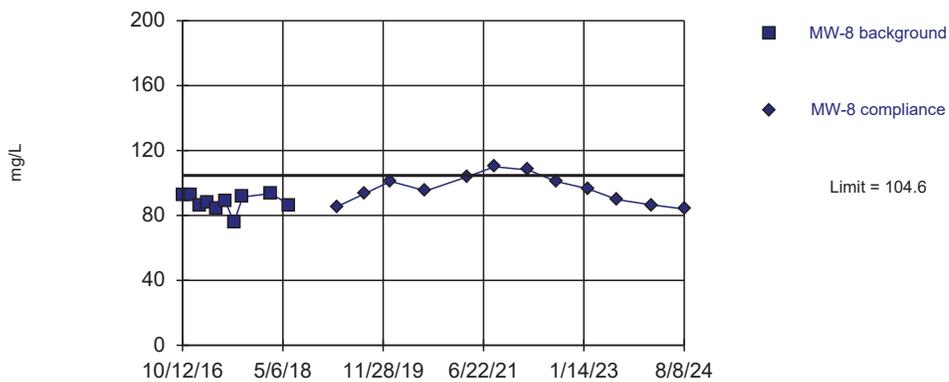


Background Data Summary: Mean=97.44, Std. Dev.=7.317, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9838, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Calcium Analysis Run 10/11/2024 10:59 AM View: 2024Q3 Intrawell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit
Intrawell Parametric



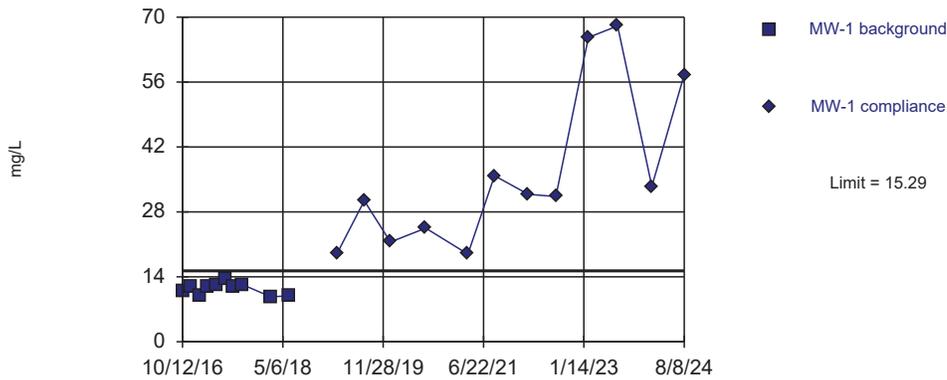
Background Data Summary: Mean=87.99, Std. Dev.=5.239, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8801, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Calcium Analysis Run 10/11/2024 10:59 AM View: 2024Q3 Intrawell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Exceeds Limit

Prediction Limit

Intrawell Parametric



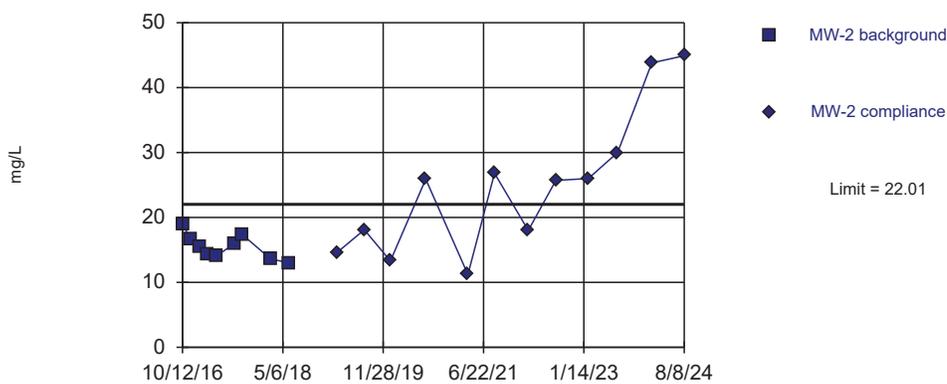
Background Data Summary: Mean=11.38, Std. Dev.=1.23, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9094, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Chloride Analysis Run 10/11/2024 10:59 AM View: 2024Q3 Intrawell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Exceeds Limit

Prediction Limit

Intrawell Parametric

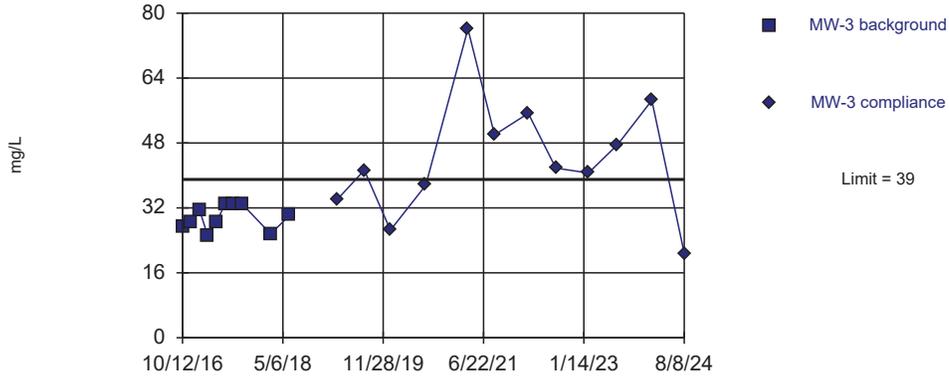


Background Data Summary: Mean=15.49, Std. Dev.=1.918, n=9. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9653, critical = 0.764. Kappa = 3.401 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Chloride Analysis Run 10/11/2024 10:59 AM View: 2024Q3 Intrawell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit
Intrawell Parametric

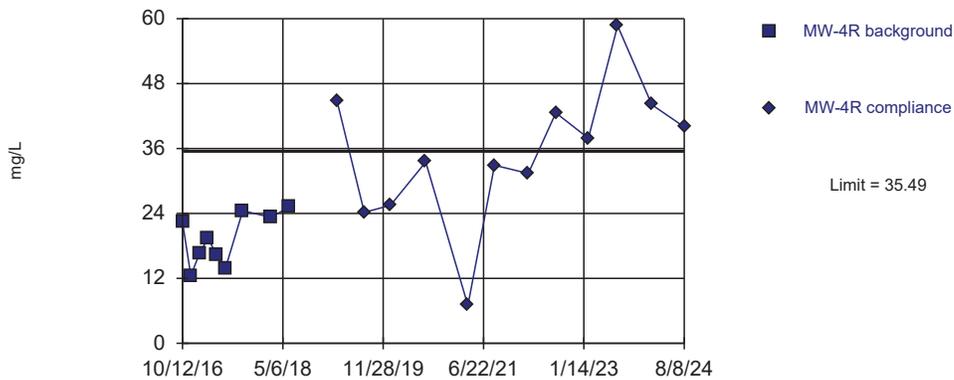


Background Data Summary: Mean=29.52, Std. Dev.=2.984, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9142, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Chloride Analysis Run 10/11/2024 10:59 AM View: 2024Q3 Intrawell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Exceeds Limit

Prediction Limit
Intrawell Parametric

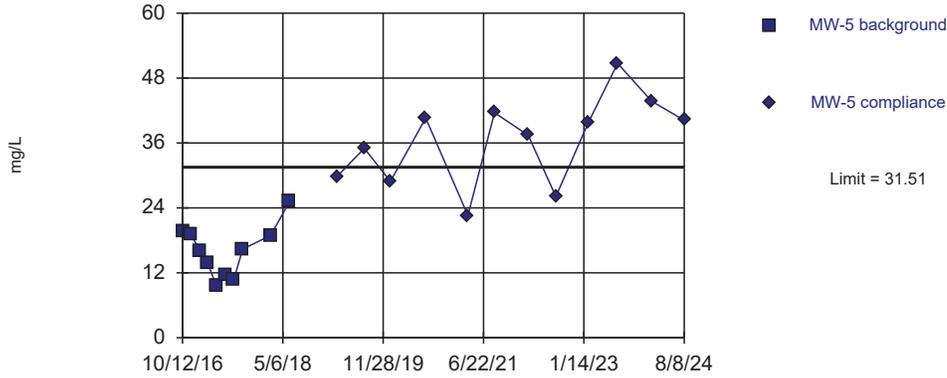


Background Data Summary: Mean=19.34, Std. Dev.=4.746, n=9. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9211, critical = 0.764. Kappa = 3.401 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Chloride Analysis Run 10/11/2024 10:59 AM View: 2024Q3 Intrawell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Exceeds Limit

Prediction Limit Intrawell Parametric

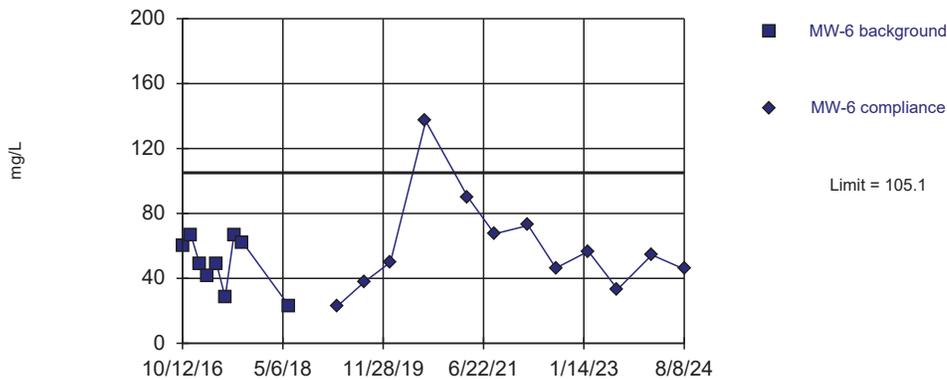


Background Data Summary: Mean=16.13, Std. Dev.=4.84, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9601, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Chloride Analysis Run 10/11/2024 10:59 AM View: 2024Q3 Intrawell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

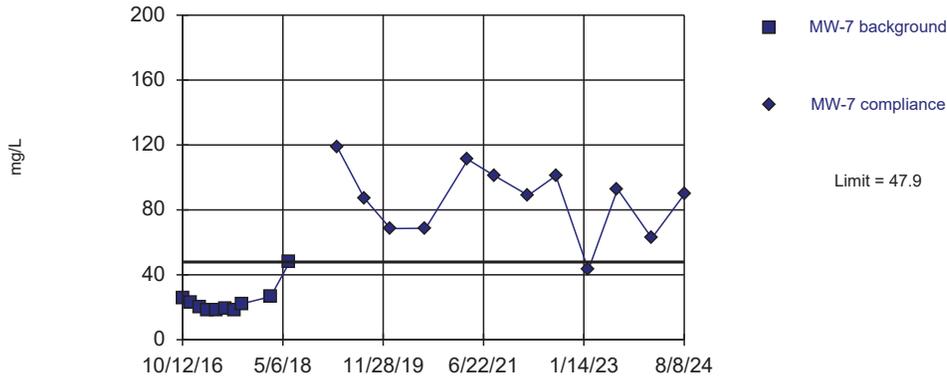


Background Data Summary: Mean=49.52, Std. Dev.=16.34, n=9. Seasonality was detected with 95% confidence and data were deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.905, critical = 0.764. Kappa = 3.401 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Chloride Analysis Run 10/11/2024 10:59 AM View: 2024Q3 Intrawell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Exceeds Limit

Prediction Limit Intrawell Non-parametric

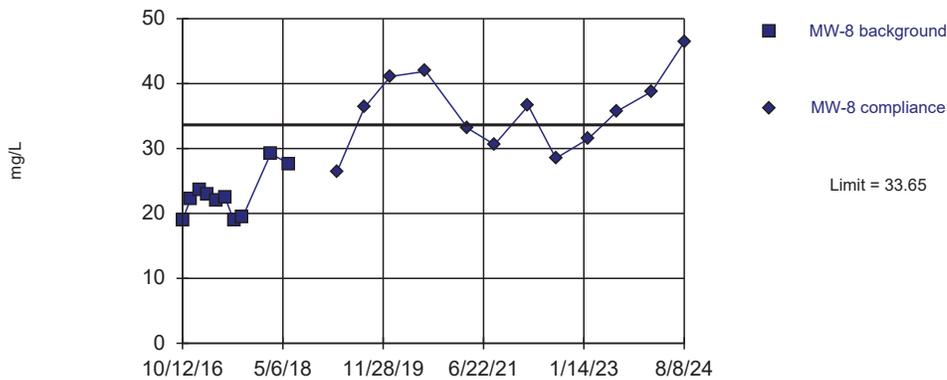


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 10 background values. Well-constituent pair annual alpha = 0.0293. Individual comparison alpha = 0.01476 (1 of 2). Seasonality was not detected with 95% confidence.

Constituent: Chloride Analysis Run 10/11/2024 10:59 AM View: 2024Q3 Intrawell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Exceeds Limit

Prediction Limit Intrawell Parametric

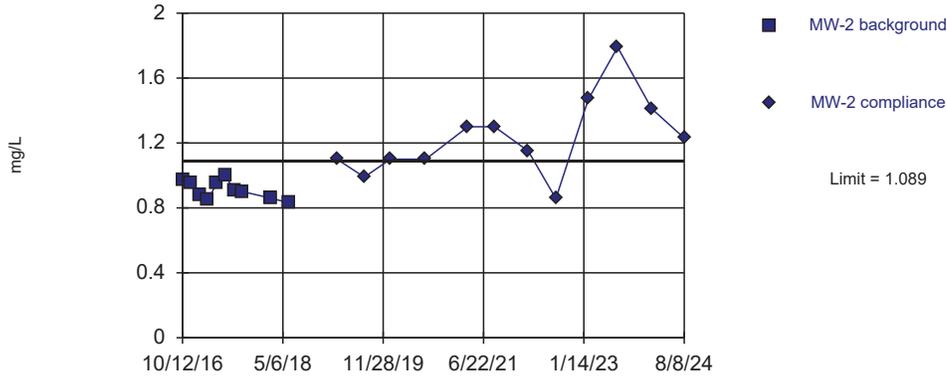


Background Data Summary: Mean=22.73, Std. Dev.=3.435, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.89, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Chloride Analysis Run 10/11/2024 10:59 AM View: 2024Q3 Intrawell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Exceeds Limit

Prediction Limit Intrawell Parametric

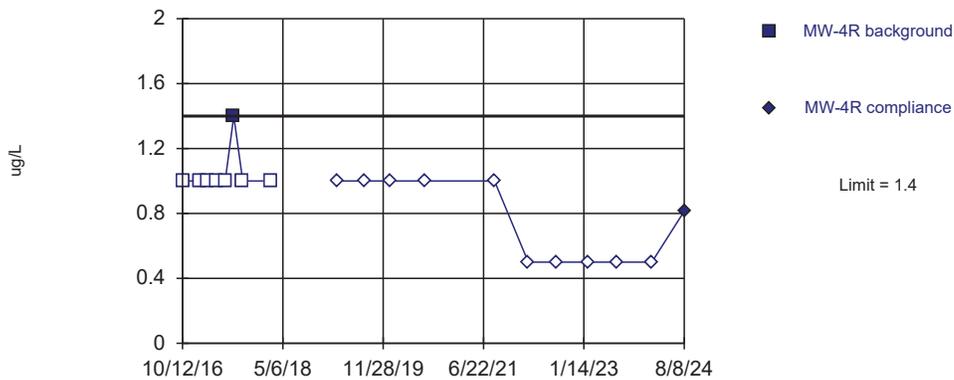


Background Data Summary: Mean=0.91, Std. Dev.=0.05617, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.962, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Fluoride Analysis Run 10/11/2024 10:59 AM View: 2024Q3 Intrawell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Non-parametric



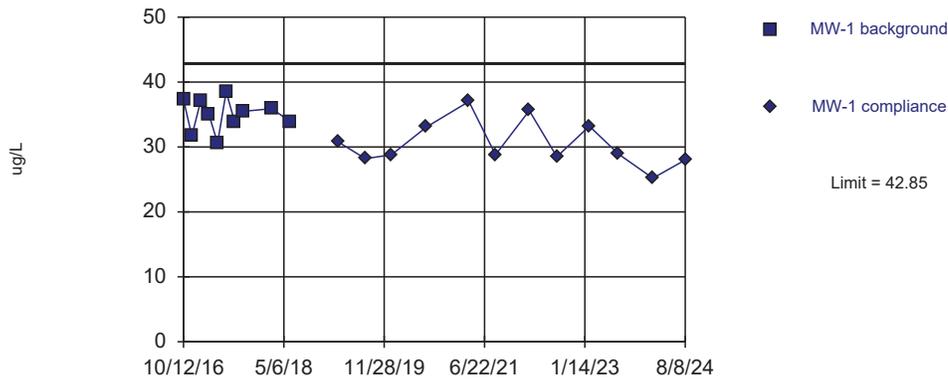
Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 8 background values. 87.5% NDs. Well-constituent pair annual alpha = 0.04242. Individual comparison alpha = 0.02144 (1 of 2). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Lead Analysis Run 10/11/2024 10:59 AM View: 2024Q3 Intrawell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit

Intrawell Parametric



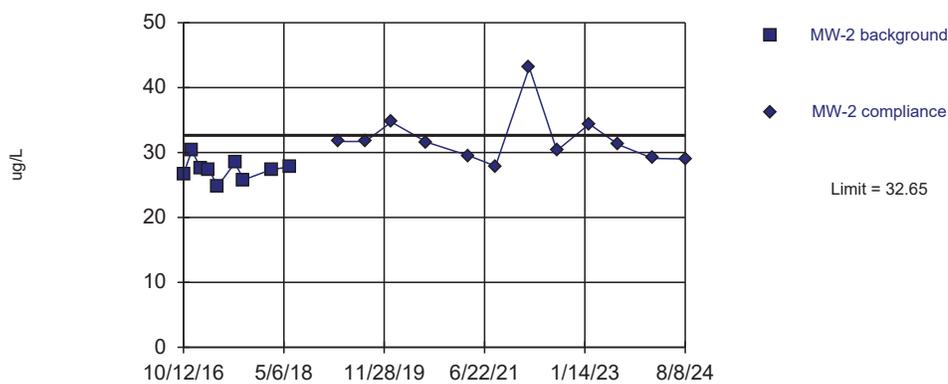
Background Data Summary: Mean=34.93, Std. Dev.=2.491, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9666, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Lithium Analysis Run 10/11/2024 10:59 AM View: 2024Q3 Intrawell PL
 Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit

Intrawell Parametric



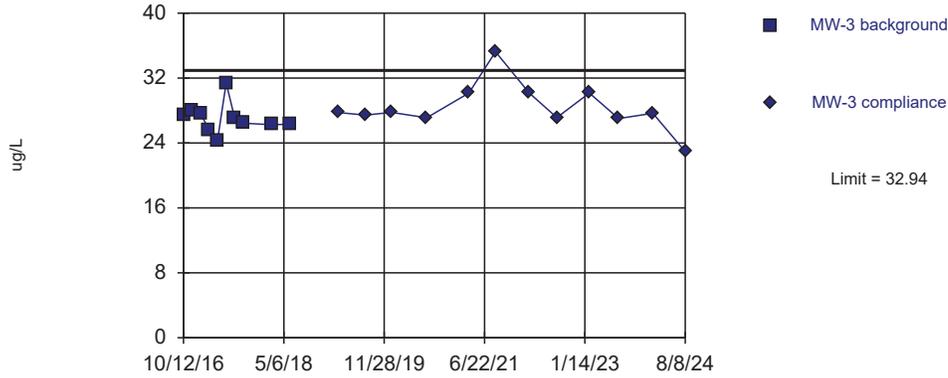
Background Data Summary: Mean=27.36, Std. Dev.=1.557, n=9. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.961, critical = 0.764. Kappa = 3.401 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Lithium Analysis Run 10/11/2024 10:59 AM View: 2024Q3 Intrawell PL
 Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

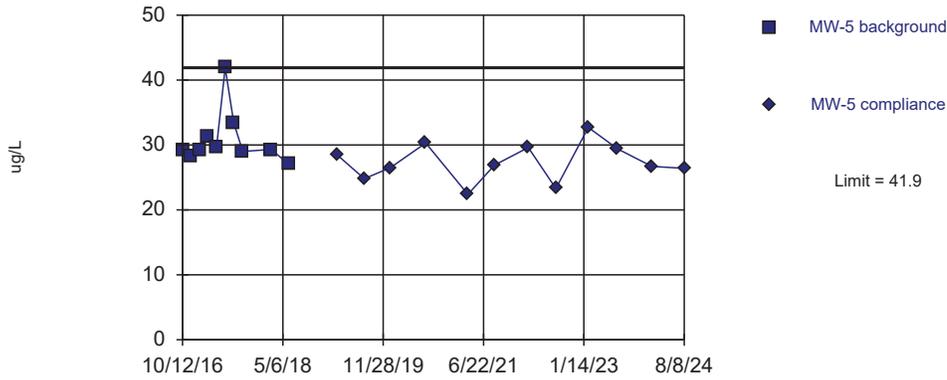
Prediction Limit

Intrawell Parametric



Within Limit

Prediction Limit
Intrawell Non-parametric

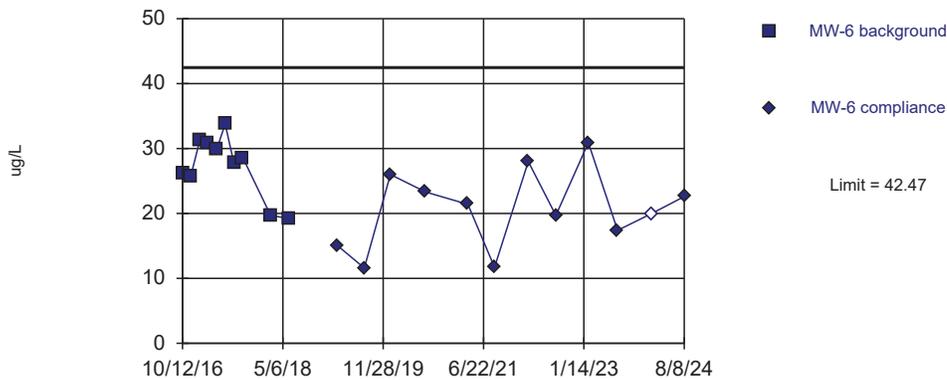


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 10 background values. Well-constituent pair annual alpha = 0.0293. Individual comparison alpha = 0.01476 (1 of 2). Seasonality was not detected with 95% confidence.

Constituent: Lithium Analysis Run 10/11/2024 10:59 AM View: 2024Q3 Intrawell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit
Intrawell Parametric



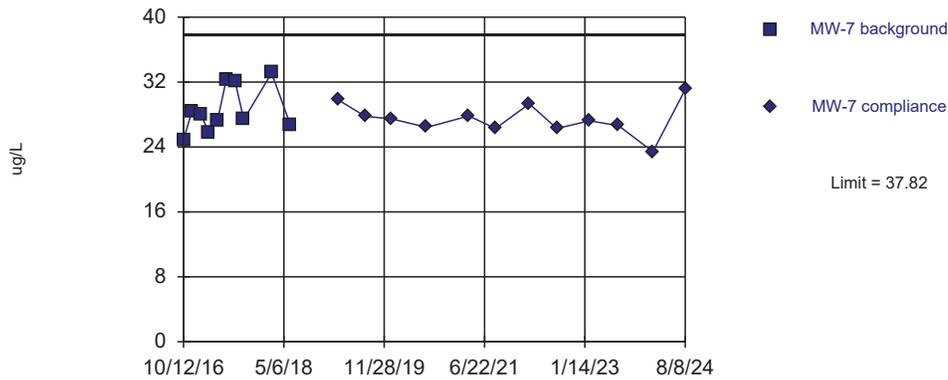
Background Data Summary: Mean=27.29, Std. Dev.=4.777, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9183, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Lithium Analysis Run 10/11/2024 10:59 AM View: 2024Q3 Intrawell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit

Intrawell Parametric



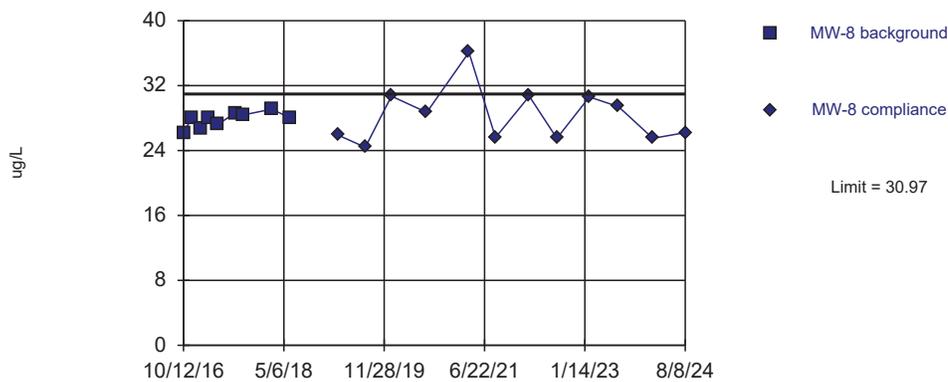
Background Data Summary: Mean=28.59, Std. Dev.=2.904, n=10. Seasonality was detected with 95% confidence and data were deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.89, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Lithium Analysis Run 10/11/2024 10:59 AM View: 2024Q3 Intrawell PL
 Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit

Intrawell Parametric



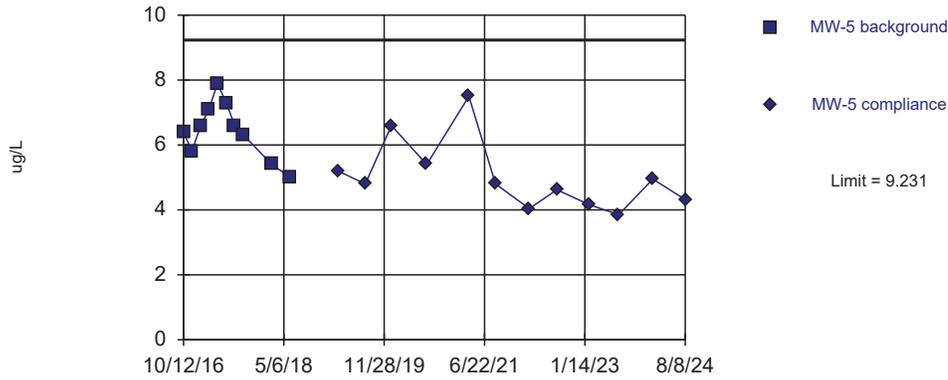
Background Data Summary: Mean=27.8, Std. Dev.=0.9314, n=9. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9451, critical = 0.764. Kappa = 3.401 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Lithium Analysis Run 10/11/2024 10:59 AM View: 2024Q3 Intrawell PL
 Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit

Intrawell Parametric



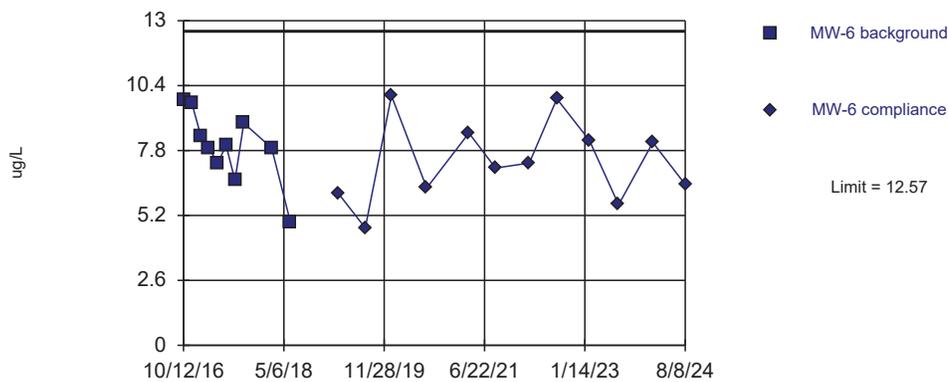
Background Data Summary: Mean=6.44, Std. Dev.=0.8784, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.983, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Molybdenum Analysis Run 10/11/2024 10:59 AM View: 2024Q3 Intrawell PL
 Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit

Intrawell Parametric



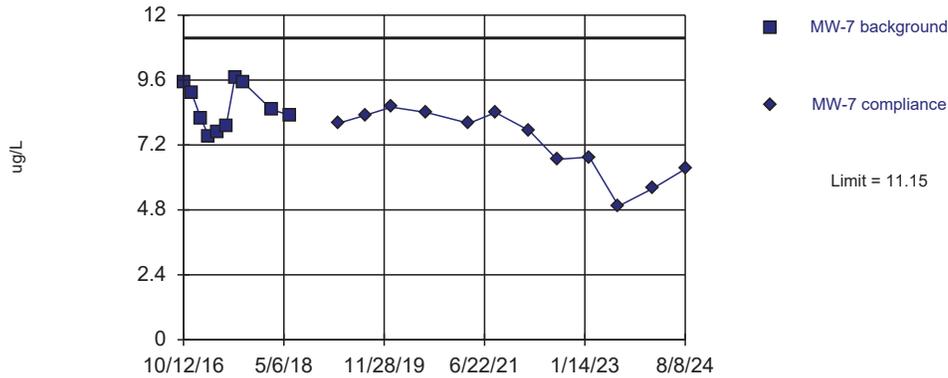
Background Data Summary: Mean=7.94, Std. Dev.=1.458, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9391, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Molybdenum Analysis Run 10/11/2024 10:59 AM View: 2024Q3 Intrawell PL
 Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit

Intrawell Parametric



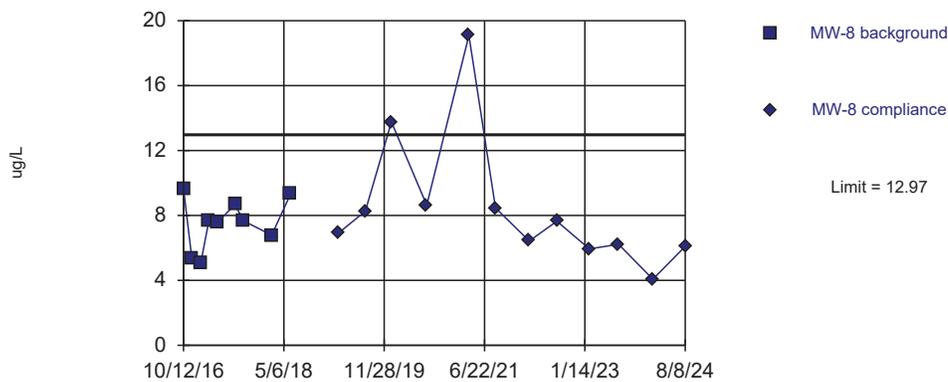
Background Data Summary: Mean=8.59, Std. Dev.=0.8062, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9168, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Molybdenum Analysis Run 10/11/2024 10:59 AM View: 2024Q3 Intrawell PL
 Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit

Intrawell Parametric



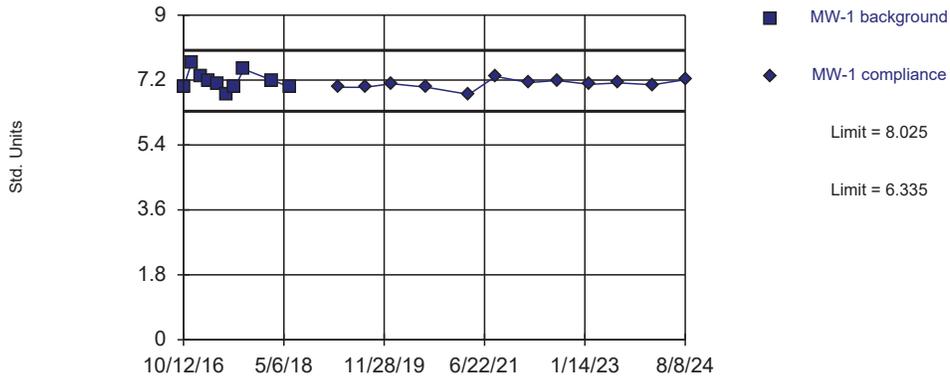
Background Data Summary: Mean=7.533, Std. Dev.=1.598, n=9. Seasonality was detected with 95% confidence and data were deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9357, critical = 0.764. Kappa = 3.401 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Molybdenum Analysis Run 10/11/2024 10:59 AM View: 2024Q3 Intrawell PL
 Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limits

Prediction Limit

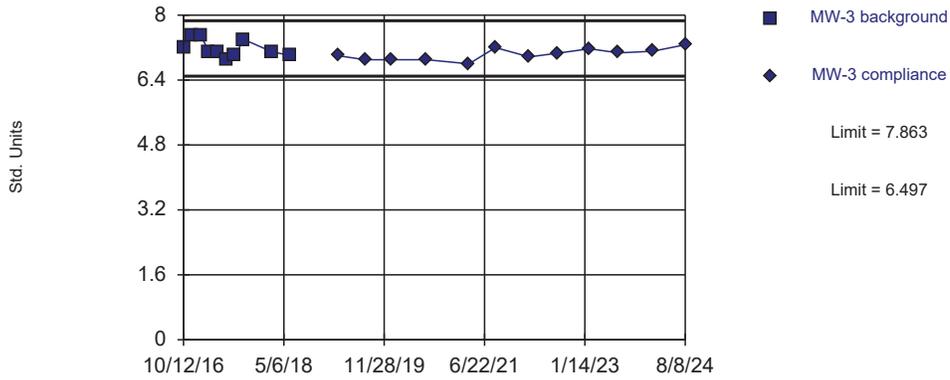
Intrawell Parametric



Within Limits

Prediction Limit

Intrawell Parametric



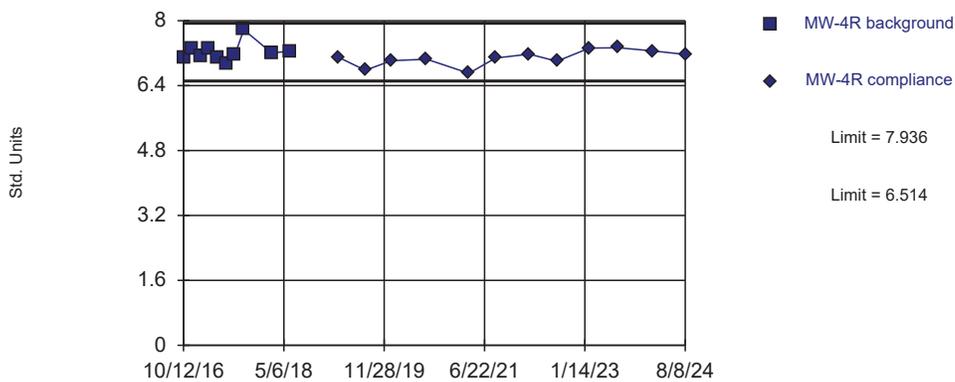
Background Data Summary: Mean=7.18, Std. Dev.=0.215, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.885, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: pH Analysis Run 10/11/2024 10:59 AM View: 2024Q3 Intrawell PL
 Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limits

Prediction Limit

Intrawell Parametric



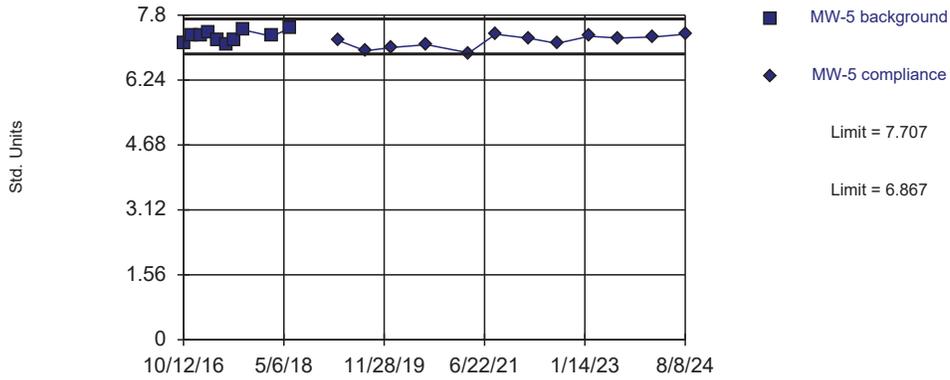
Background Data Summary: Mean=7.225, Std. Dev.=0.2238, n=10. Seasonality was detected with 95% confidence and data were deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8367, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: pH Analysis Run 10/11/2024 11:00 AM View: 2024Q3 Intrawell PL
 Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limits

Prediction Limit

Intrawell Parametric



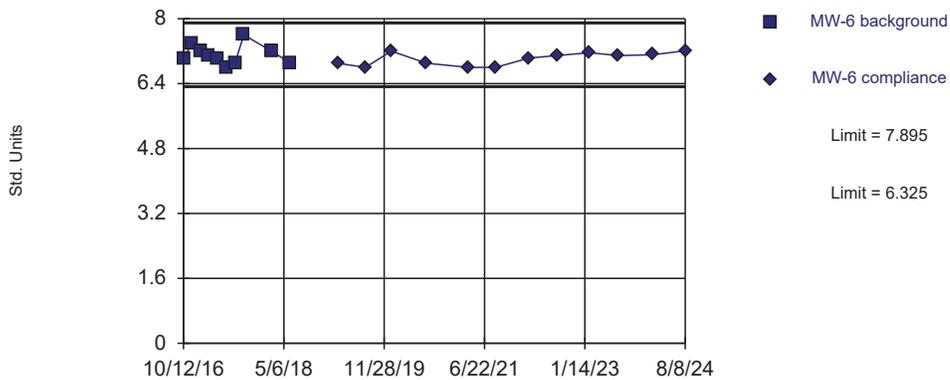
Background Data Summary: Mean=7.287, Std. Dev.=0.1321, n=10. Seasonality was detected with 95% confidence and data were deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9622, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: pH Analysis Run 10/11/2024 11:00 AM View: 2024Q3 Intrawell PL
 Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limits

Prediction Limit

Intrawell Parametric

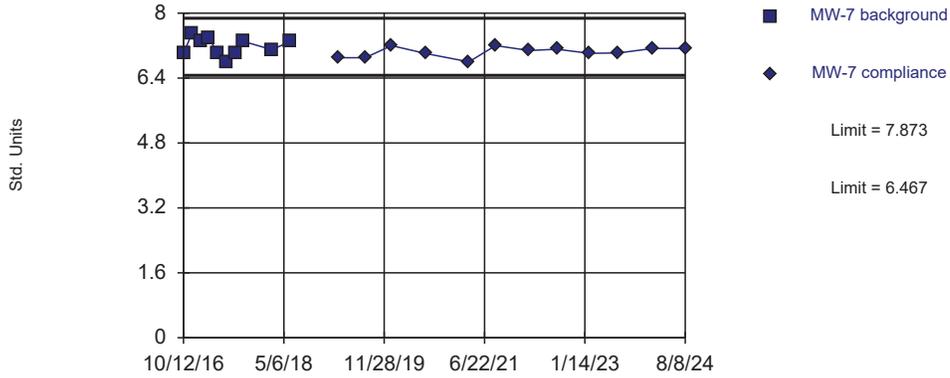


Background Data Summary: Mean=7.11, Std. Dev.=0.247, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9348, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: pH Analysis Run 10/11/2024 11:00 AM View: 2024Q3 Intrawell PL
 Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limits

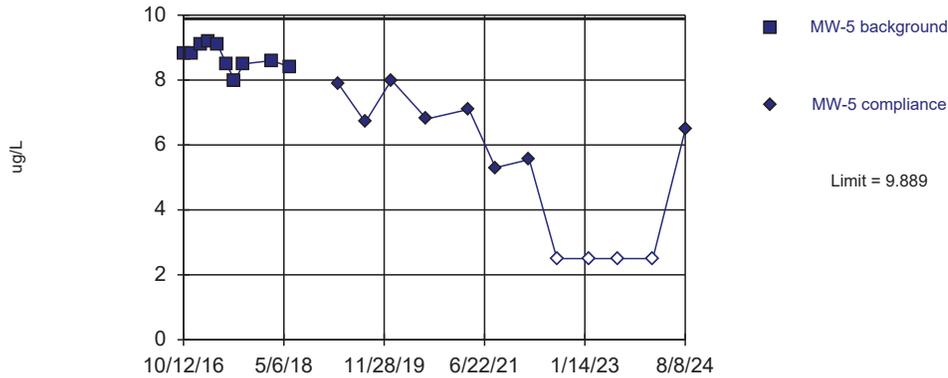
Prediction Limit
Intrawell Parametric



Within Limit

Prediction Limit

Intrawell Parametric



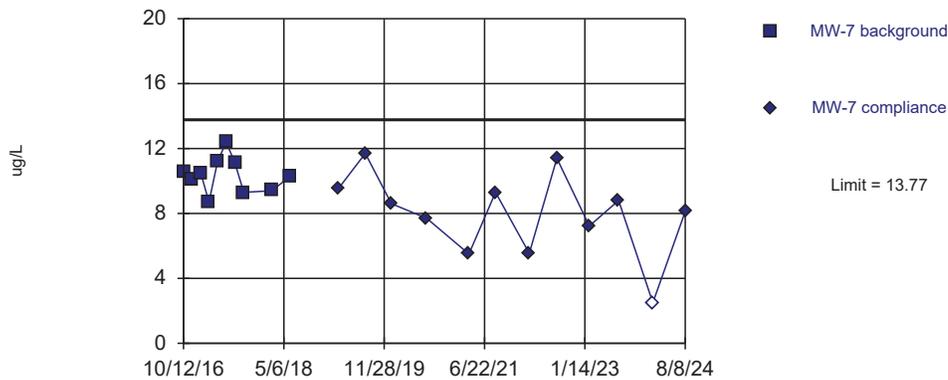
Background Data Summary: Mean=8.7, Std. Dev.=0.3742, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9468, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Selenium Analysis Run 10/11/2024 11:00 AM View: 2024Q3 Intrawell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit

Intrawell Parametric



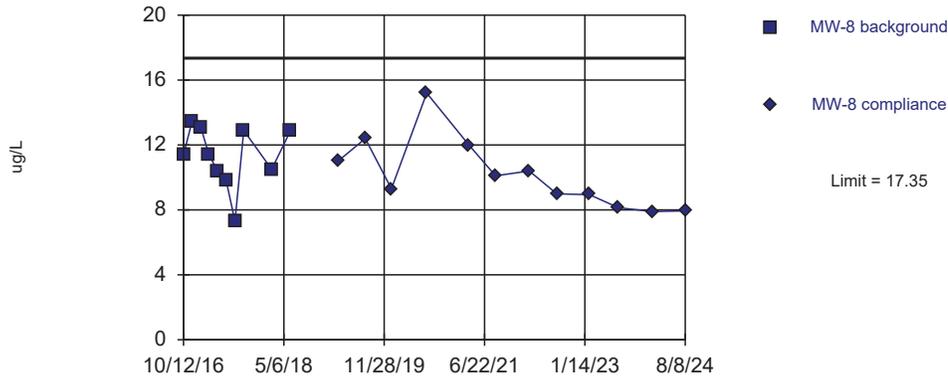
Background Data Summary: Mean=10.36, Std. Dev.=1.073, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9769, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Selenium Analysis Run 10/11/2024 11:00 AM View: 2024Q3 Intrawell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit

Intrawell Parametric



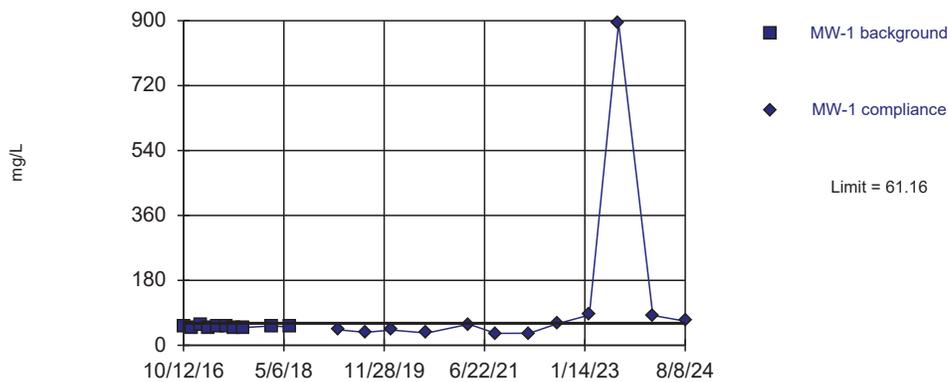
Background Data Summary: Mean=11.31, Std. Dev.=1.9, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9028, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Selenium Analysis Run 10/11/2024 11:00 AM View: 2024Q3 Intrawell PL
 Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Exceeds Limit

Prediction Limit

Intrawell Parametric



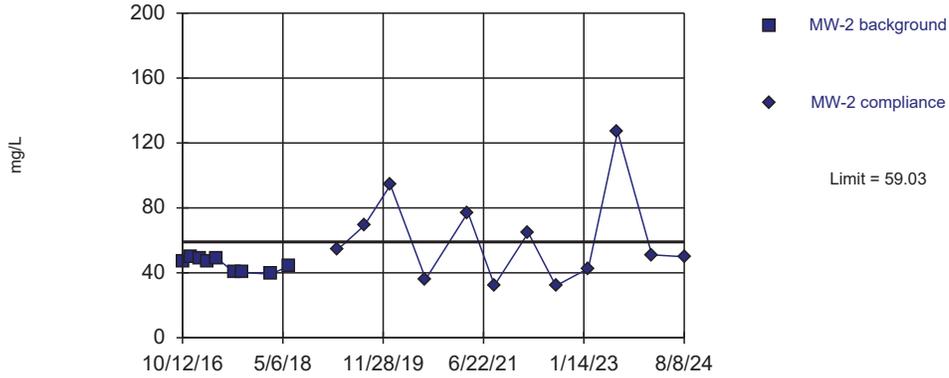
Background Data Summary: Mean=51.63, Std. Dev.=2.999, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9727, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Sulfate Analysis Run 10/11/2024 11:00 AM View: 2024Q3 Intrawell PL
 Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit

Intrawell Parametric



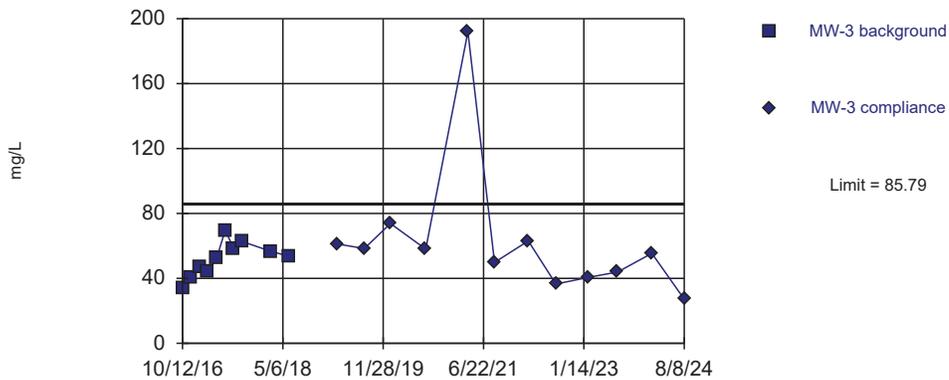
Background Data Summary: Mean=45.01, Std. Dev.=4.122, n=9. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.866, critical = 0.764. Kappa = 3.401 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Sulfate Analysis Run 10/11/2024 11:00 AM View: 2024Q3 Intrawell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit

Intrawell Parametric



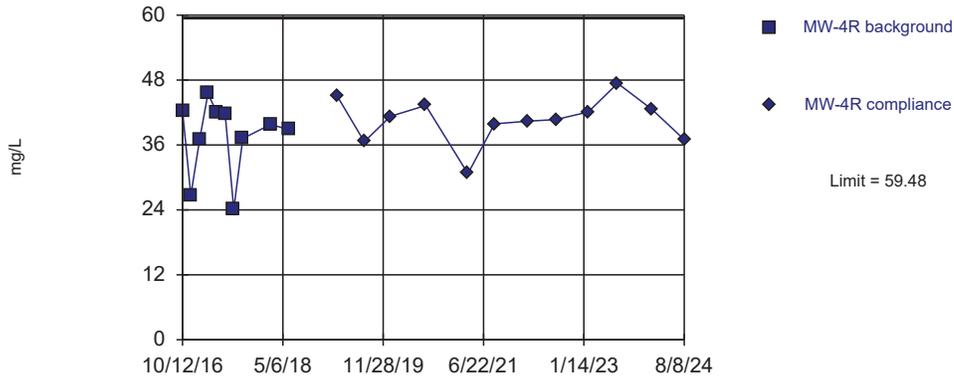
Background Data Summary: Mean=51.88, Std. Dev.=10.67, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9935, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Sulfate Analysis Run 10/11/2024 11:00 AM View: 2024Q3 Intrawell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit

Intrawell Parametric



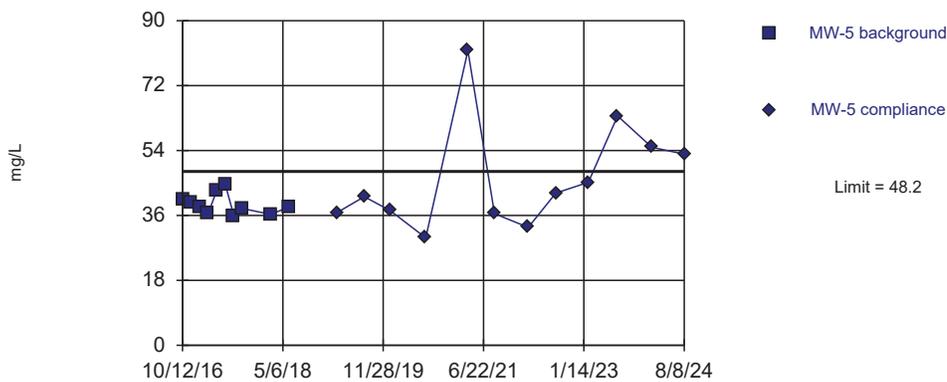
Background Data Summary: Mean=37.53, Std. Dev.=6.906, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8478, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Sulfate Analysis Run 10/11/2024 11:00 AM View: 2024Q3 Intrawell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Exceeds Limit

Prediction Limit

Intrawell Parametric

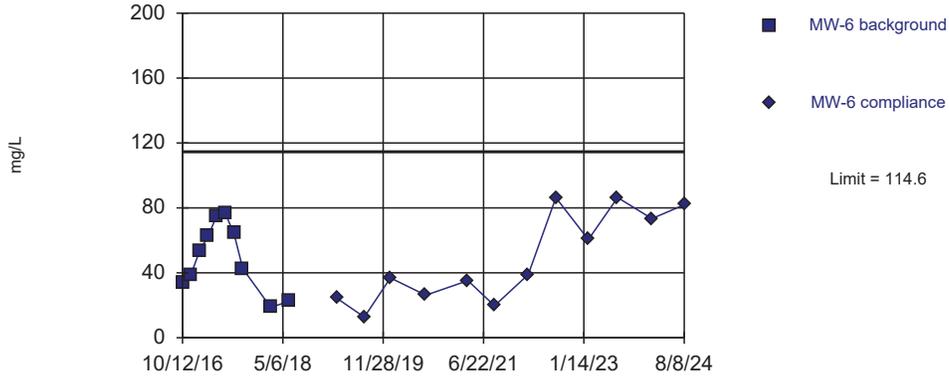


Background Data Summary: Mean=39.12, Std. Dev.=2.859, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9135, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Sulfate Analysis Run 10/11/2024 11:00 AM View: 2024Q3 Intrawell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

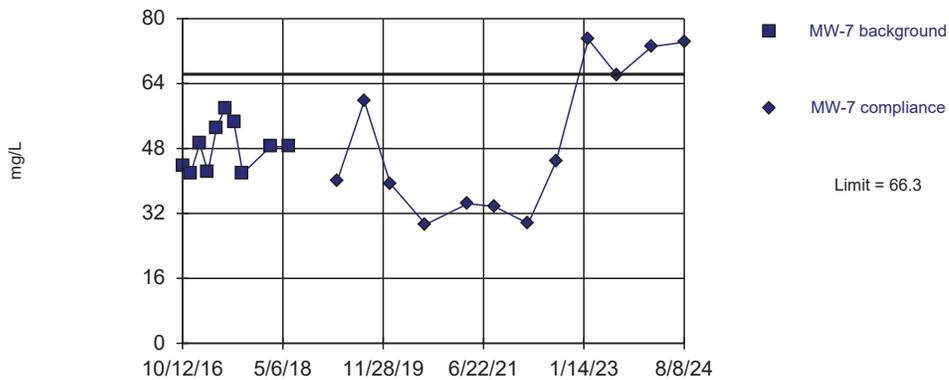


Background Data Summary: Mean=48.84, Std. Dev.=20.69, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9417, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Sulfate Analysis Run 10/11/2024 11:00 AM View: 2024Q3 Intrawell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Exceeds Limit

Prediction Limit Intrawell Parametric



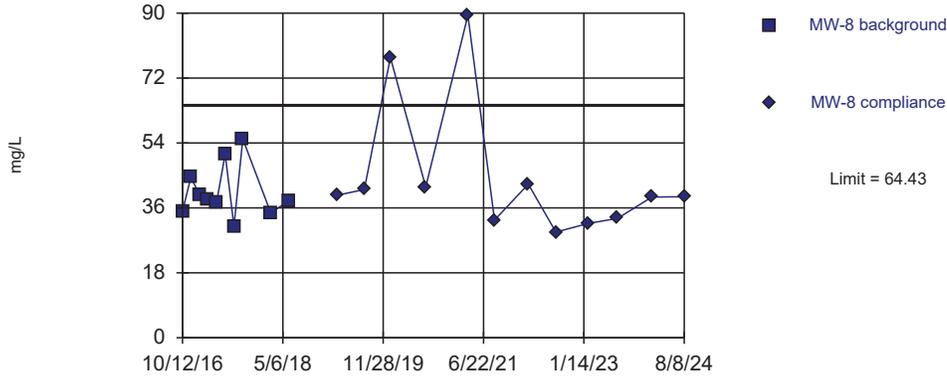
Background Data Summary: Mean=48.14, Std. Dev.=5.715, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9073, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Sulfate Analysis Run 10/11/2024 11:00 AM View: 2024Q3 Intrawell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit

Intrawell Parametric



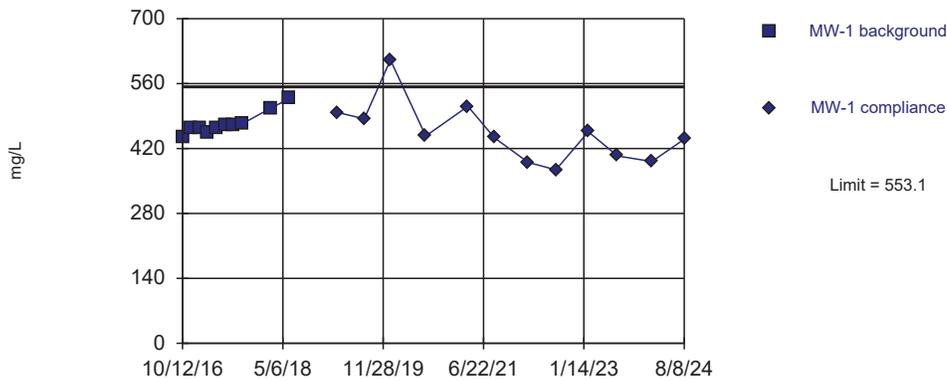
Background Data Summary: Mean=40.48, Std. Dev.=7.538, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9039, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Sulfate Analysis Run 10/11/2024 11:00 AM View: 2024Q3 Intrawell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit

Intrawell Parametric



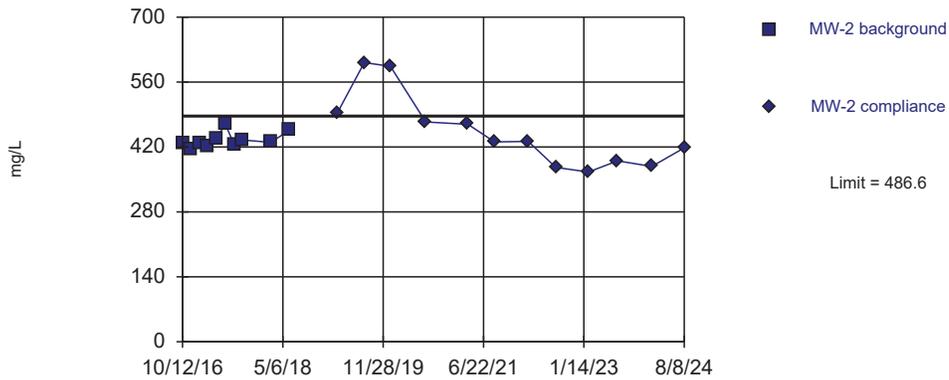
Background Data Summary: Mean=474, Std. Dev.=24.9, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8317, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Total Dissolved Solids Analysis Run 10/11/2024 11:00 AM View: 2024Q3 Intrawell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=434.9, Std. Dev.=16.26, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8566, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

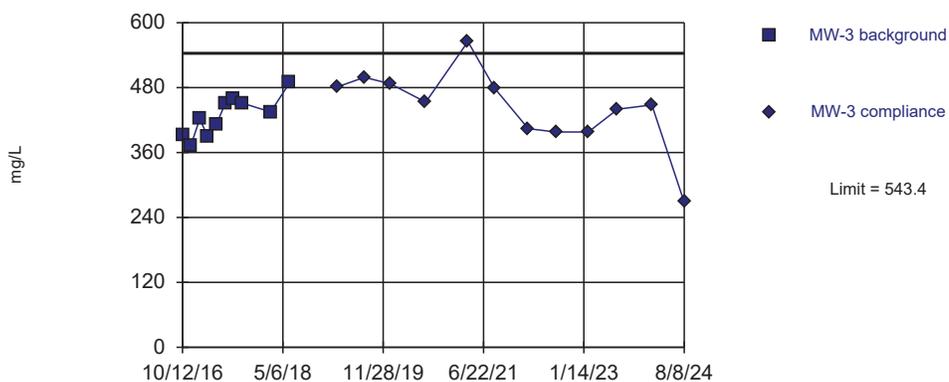
Constituent: Total Dissolved Solids Analysis Run 10/11/2024 11:00 AM View: 2024Q3 Intrawell PL

Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=427.4, Std. Dev.=36.49, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.971, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

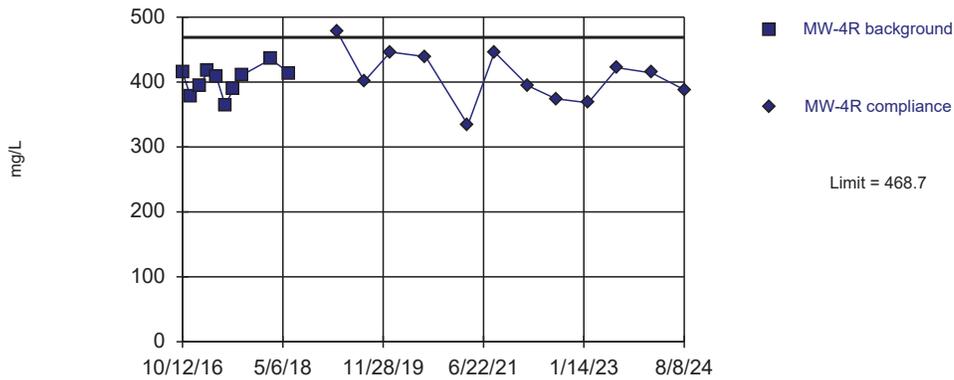
Constituent: Total Dissolved Solids Analysis Run 10/11/2024 11:00 AM View: 2024Q3 Intrawell PL

Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit

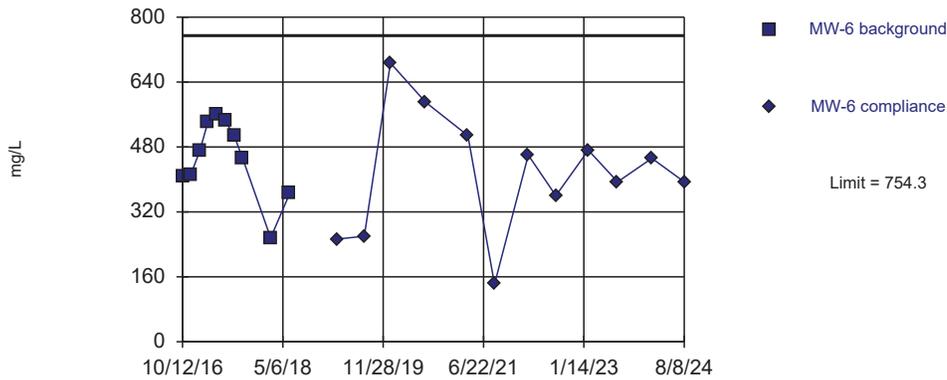
Intrawell Parametric



Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=451.7, Std. Dev.=95.24, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9297, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

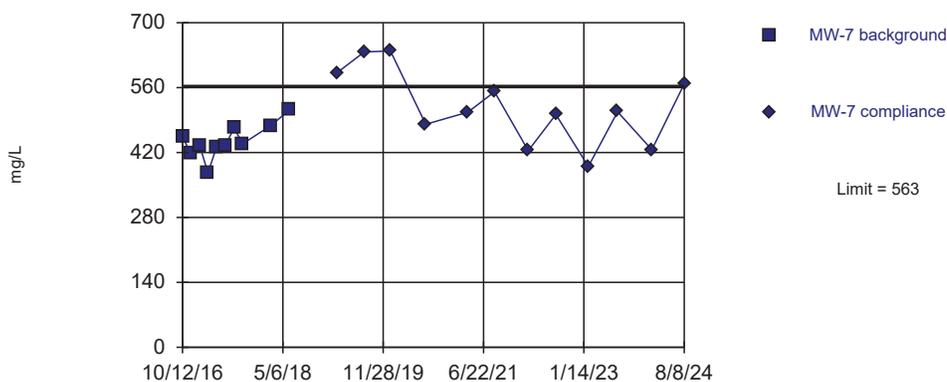
Constituent: Total Dissolved Solids Analysis Run 10/11/2024 11:00 AM View: 2024Q3 Intrawell PL

Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Exceeds Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=445, Std. Dev.=37.14, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9661, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

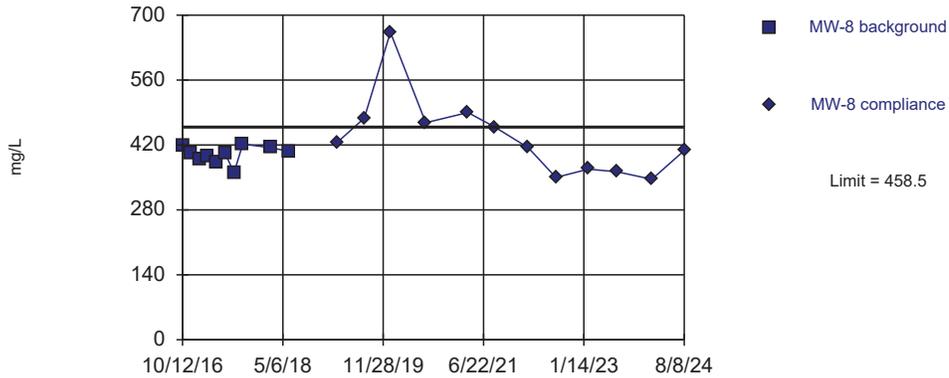
Constituent: Total Dissolved Solids Analysis Run 10/11/2024 11:00 AM View: 2024Q3 Intrawell PL

Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=399.1, Std. Dev.=18.69, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9407, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

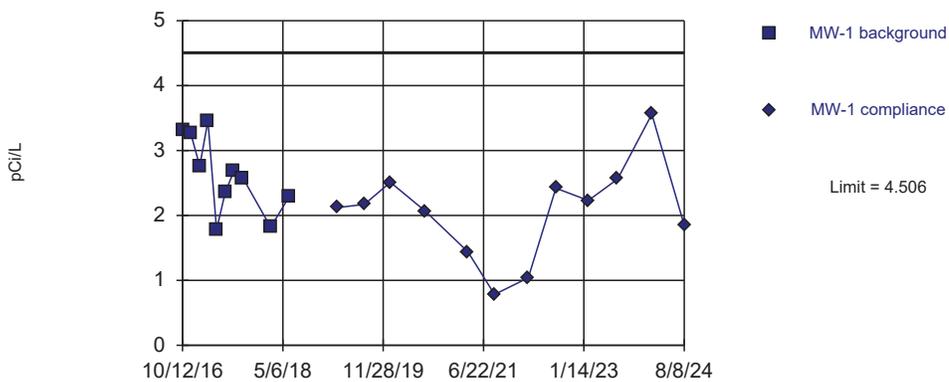
Constituent: Total Dissolved Solids Analysis Run 10/11/2024 11:00 AM View: 2024Q3 Intrawell PL

Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=2.63, Std. Dev.=0.5903, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.937, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

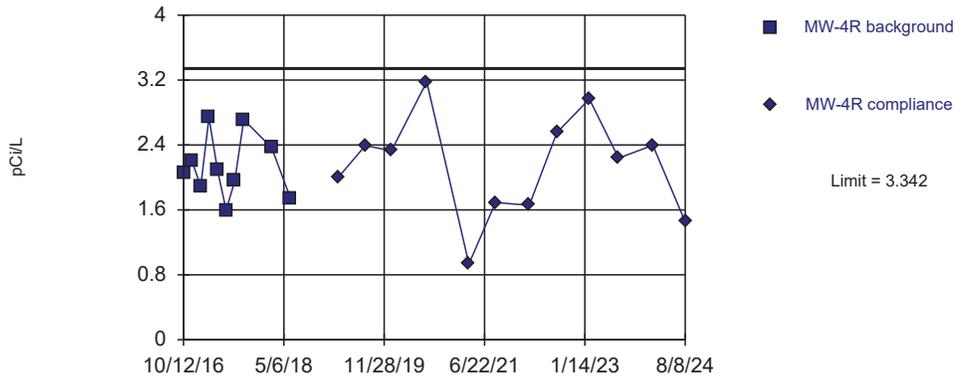
Constituent: Total Radium Analysis Run 10/11/2024 11:00 AM View: 2024Q3 Intrawell PL

Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=2.135, Std. Dev.=0.3801, n=10. Seasonality was detected with 95% confidence and data were deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.944, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

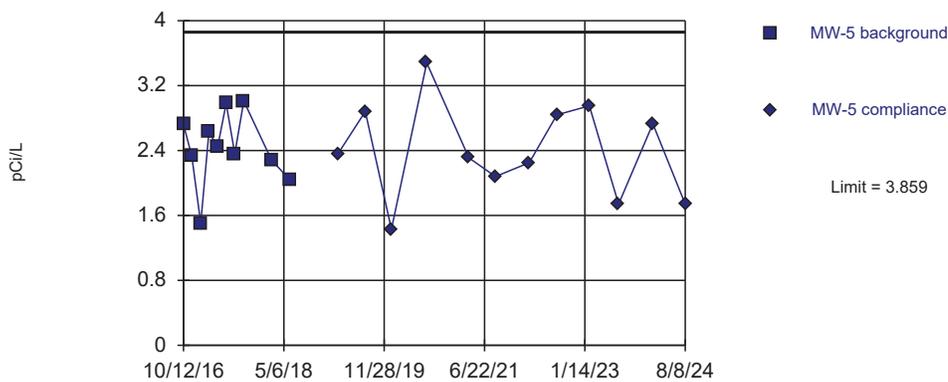
Constituent: Total Radium Analysis Run 10/11/2024 11:00 AM View: 2024Q3 Intrawell PL

Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit

Intrawell Parametric



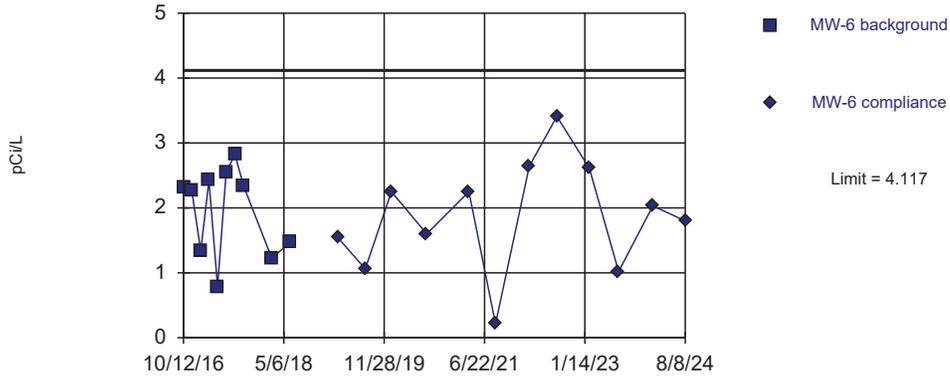
Background Data Summary: Mean=2.428, Std. Dev.=0.4504, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.945, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Total Radium Analysis Run 10/11/2024 11:00 AM View: 2024Q3 Intrawell PL

Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit
Intrawell Parametric

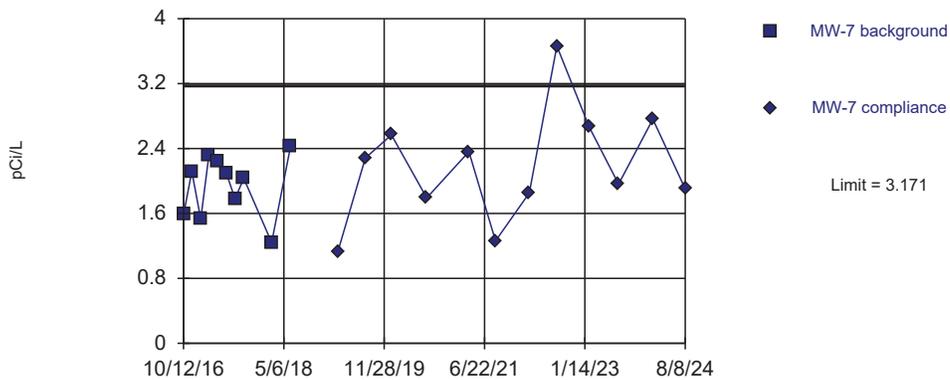


Background Data Summary: Mean=1.952, Std. Dev.=0.6812, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8997, critical = 0.781. Kappa = 3.178 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.0003583.

Constituent: Total Radium Analysis Run 10/11/2024 11:00 AM View: 2024Q3 Intrawell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

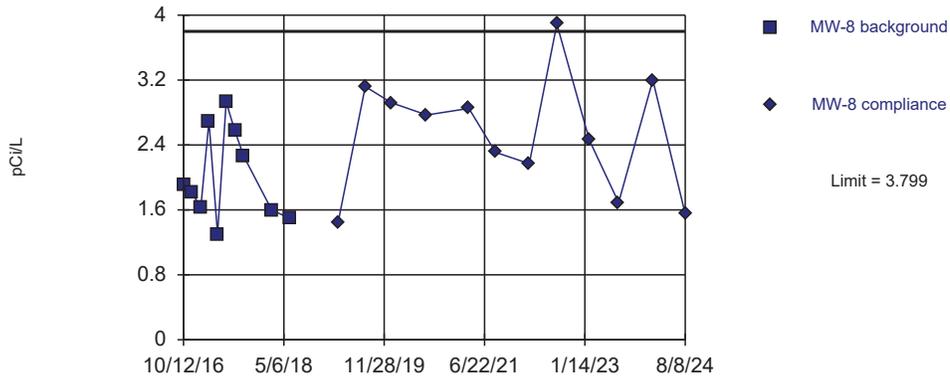
Prediction Limit
Intrawell Parametric



Within Limit

Prediction Limit

Intrawell Parametric



A.3 Interwell Prediction Limits

Interwell Prediction Limit

Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater Printed 10/11/2024, 11:22 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
Arsenic (ug/L)	MW-1	6.616	n/a	8/8/2024	3.7	No	22	0	No	0.0003583	Param Inter 1 of 2
Arsenic (ug/L)	MW-2	6.616	n/a	8/8/2024	4.15	No	22	0	No	0.0003583	Param Inter 1 of 2
Arsenic (ug/L)	MW-3	6.616	n/a	8/8/2024	3.82	No	22	0	No	0.0003583	Param Inter 1 of 2
Arsenic (ug/L)	MW-5	6.616	n/a	8/8/2024	4.3	No	22	0	No	0.0003583	Param Inter 1 of 2
Arsenic (ug/L)	MW-6	6.616	n/a	8/8/2024	3.89	No	22	0	No	0.0003583	Param Inter 1 of 2
Arsenic (ug/L)	MW-7	6.616	n/a	8/8/2024	3.37	No	22	0	No	0.0003583	Param Inter 1 of 2
Arsenic (ug/L)	MW-8	6.616	n/a	8/8/2024	2.8	No	22	0	No	0.0003583	Param Inter 1 of 2
Barium (ug/L)	MW-1	156.5	n/a	8/8/2024	122	No	22	0	No	0.0003583	Param Inter 1 of 2
Barium (ug/L)	MW-2	156.5	n/a	8/8/2024	103	No	22	0	No	0.0003583	Param Inter 1 of 2
Barium (ug/L)	MW-3	156.5	n/a	8/8/2024	85.3	No	22	0	No	0.0003583	Param Inter 1 of 2
Barium (ug/L)	MW-5	156.5	n/a	8/8/2024	111	No	22	0	No	0.0003583	Param Inter 1 of 2
Barium (ug/L)	MW-6	156.5	n/a	8/8/2024	91.2	No	22	0	No	0.0003583	Param Inter 1 of 2
Barium (ug/L)	MW-7	156.5	n/a	8/8/2024	162	Yes	22	0	No	0.0003583	Param Inter 1 of 2
Barium (ug/L)	MW-8	156.5	n/a	8/8/2024	132	No	22	0	No	0.0003583	Param Inter 1 of 2
Boron (ug/L)	MW-1	341	n/a	8/8/2024	109	No	22	36.36	n/a	0.0034	NP Inter (normality) ...
Boron (ug/L)	MW-2	341	n/a	8/8/2024	127	No	22	36.36	n/a	0.0034	NP Inter (normality) ...
Boron (ug/L)	MW-5	341	n/a	8/8/2024	100	No	22	36.36	n/a	0.0034	NP Inter (normality) ...
Boron (ug/L)	MW-6	341	n/a	8/8/2024	111	No	22	36.36	n/a	0.0034	NP Inter (normality) ...
Boron (ug/L)	MW-7	341	n/a	8/8/2024	108	No	22	36.36	n/a	0.0034	NP Inter (normality) ...
Boron (ug/L)	MW-8	341	n/a	8/8/2024	100	No	22	36.36	n/a	0.0034	NP Inter (normality) ...
Calcium (mg/L)	MW-1	112.1	n/a	8/8/2024	95.4	No	22	0	No	0.0003583	Param Inter 1 of 2
Calcium (mg/L)	MW-2	112.1	n/a	8/8/2024	85.8	No	22	0	No	0.0003583	Param Inter 1 of 2
Calcium (mg/L)	MW-3	112.1	n/a	8/8/2024	58.2	No	22	0	No	0.0003583	Param Inter 1 of 2
Calcium (mg/L)	MW-5	112.1	n/a	8/8/2024	79.2	No	22	0	No	0.0003583	Param Inter 1 of 2
Calcium (mg/L)	MW-6	112.1	n/a	8/8/2024	79.7	No	22	0	No	0.0003583	Param Inter 1 of 2
Calcium (mg/L)	MW-7	112.1	n/a	8/8/2024	115	Yes	22	0	No	0.0003583	Param Inter 1 of 2
Calcium (mg/L)	MW-8	112.1	n/a	8/8/2024	84	No	22	0	No	0.0003583	Param Inter 1 of 2
Chloride (mg/L)	MW-1	60.5	n/a	8/8/2024	57.6	No	21	0	No	0.0003583	Param Inter 1 of 2
Chloride (mg/L)	MW-2	60.5	n/a	8/8/2024	44.9	No	21	0	No	0.0003583	Param Inter 1 of 2
Chloride (mg/L)	MW-3	60.5	n/a	8/8/2024	20.8	No	21	0	No	0.0003583	Param Inter 1 of 2
Chloride (mg/L)	MW-5	60.5	n/a	8/8/2024	40.2	No	21	0	No	0.0003583	Param Inter 1 of 2
Chloride (mg/L)	MW-6	60.5	n/a	8/8/2024	26.9	No	21	0	No	0.0003583	Param Inter 1 of 2
Chloride (mg/L)	MW-7	60.5	n/a	8/8/2024	89.5	Yes	21	0	No	0.0003583	Param Inter 1 of 2
Chloride (mg/L)	MW-8	60.5	n/a	8/8/2024	46.4	No	21	0	No	0.0003583	Param Inter 1 of 2
Fluoride (mg/L)	MW-2	1.568	n/a	8/8/2024	1.23	No	22	18.18	No	0.0003583	Param Inter 1 of 2
Lithium (ug/L)	MW-1	34.91	n/a	8/8/2024	28	No	22	0	No	0.0003583	Param Inter 1 of 2
Lithium (ug/L)	MW-2	34.91	n/a	8/8/2024	29	No	22	0	No	0.0003583	Param Inter 1 of 2
Lithium (ug/L)	MW-3	34.91	n/a	8/8/2024	20.5	No	22	0	No	0.0003583	Param Inter 1 of 2
Lithium (ug/L)	MW-5	34.91	n/a	8/8/2024	26.4	No	22	0	No	0.0003583	Param Inter 1 of 2
Lithium (ug/L)	MW-6	34.91	n/a	8/8/2024	22.6	No	22	0	No	0.0003583	Param Inter 1 of 2
Lithium (ug/L)	MW-7	34.91	n/a	8/8/2024	32.1	No	22	0	No	0.0003583	Param Inter 1 of 2
Lithium (ug/L)	MW-8	34.91	n/a	8/8/2024	26.2	No	22	0	No	0.0003583	Param Inter 1 of 2
Molybdenum (ug/L)	MW-1	12.29	n/a	8/8/2024	5.47	No	22	0	sqrt(x)	0.0003583	Param Inter 1 of 2
Molybdenum (ug/L)	MW-2	12.29	n/a	8/8/2024	5	No	22	0	sqrt(x)	0.0003583	Param Inter 1 of 2
Molybdenum (ug/L)	MW-3	12.29	n/a	8/8/2024	9.93	No	22	0	sqrt(x)	0.0003583	Param Inter 1 of 2
Molybdenum (ug/L)	MW-5	12.29	n/a	8/8/2024	4.32	No	22	0	sqrt(x)	0.0003583	Param Inter 1 of 2
Molybdenum (ug/L)	MW-6	12.29	n/a	8/8/2024	6.44	No	22	0	sqrt(x)	0.0003583	Param Inter 1 of 2
Molybdenum (ug/L)	MW-7	12.29	n/a	8/8/2024	6.31	No	22	0	sqrt(x)	0.0003583	Param Inter 1 of 2
Molybdenum (ug/L)	MW-8	12.29	n/a	8/8/2024	4.64	No	22	0	sqrt(x)	0.0003583	Param Inter 1 of 2
pH (Std. Units)	MW-1	7.701	6.6	8/8/2024	7.17	No	22	0	No	0.0001792	Param Inter 1 of 2 De...

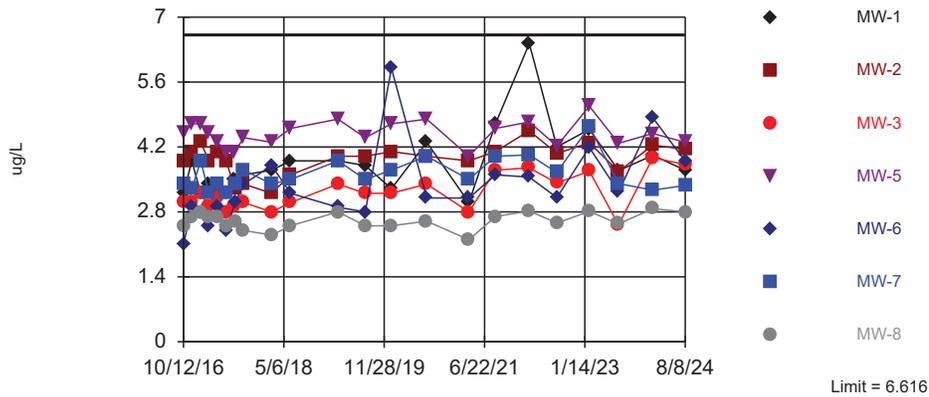
Interwell Prediction Limit

Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater Printed 10/11/2024, 11:22 AM

<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>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
pH (Std. Units)	MW-2	7.701	6.6	8/8/2024	7.09	No	22	0	No	0.0001792	Param Inter 1 of 2 De...
pH (Std. Units)	MW-3	7.701	6.6	8/8/2024	7.23	No	22	0	No	0.0001792	Param Inter 1 of 2 De...
pH (Std. Units)	MW-5	7.701	6.6	8/8/2024	7.36	No	22	0	No	0.0001792	Param Inter 1 of 2 De...
pH (Std. Units)	MW-6	7.701	6.6	8/8/2024	7.17	No	22	0	No	0.0001792	Param Inter 1 of 2 De...
pH (Std. Units)	MW-7	7.701	6.6	8/8/2024	7.09	No	22	0	No	0.0001792	Param Inter 1 of 2 De...
pH (Std. Units)	MW-8	7.701	6.6	8/8/2024	7.03	No	22	0	No	0.0001792	Param Inter 1 of 2 De...
Selenium (ug/L)	MW-1	11.26	n/a	8/8/2024	6.16	No	21	0	No	0.0003583	Param Inter 1 of 2
Selenium (ug/L)	MW-5	11.26	n/a	8/8/2024	6.47	No	21	0	No	0.0003583	Param Inter 1 of 2
Selenium (ug/L)	MW-7	11.26	n/a	8/8/2024	8.12	No	21	0	No	0.0003583	Param Inter 1 of 2
Selenium (ug/L)	MW-8	11.26	n/a	8/8/2024	7.94	No	21	0	No	0.0003583	Param Inter 1 of 2
Sulfate (mg/L)	MW-1	50.82	n/a	8/8/2024	67	Yes	22	0	x^2	0.0003583	Param Inter 1 of 2
Sulfate (mg/L)	MW-2	50.82	n/a	8/8/2024	49.9	No	22	0	x^2	0.0003583	Param Inter 1 of 2
Sulfate (mg/L)	MW-3	50.82	n/a	8/8/2024	27.2	No	22	0	x^2	0.0003583	Param Inter 1 of 2
Sulfate (mg/L)	MW-5	50.82	n/a	8/8/2024	53	Yes	22	0	x^2	0.0003583	Param Inter 1 of 2
Sulfate (mg/L)	MW-6	50.82	n/a	8/8/2024	81.9	Yes	22	0	x^2	0.0003583	Param Inter 1 of 2
Sulfate (mg/L)	MW-7	50.82	n/a	8/8/2024	74.2	Yes	22	0	x^2	0.0003583	Param Inter 1 of 2
Sulfate (mg/L)	MW-8	50.82	n/a	8/8/2024	39.1	No	22	0	x^2	0.0003583	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	MW-1	507.9	n/a	8/8/2024	440	No	22	0	No	0.0003583	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	MW-2	507.9	n/a	8/8/2024	418	No	22	0	No	0.0003583	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	MW-3	507.9	n/a	8/8/2024	268	No	22	0	No	0.0003583	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	MW-5	507.9	n/a	8/8/2024	396	No	22	0	No	0.0003583	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	MW-6	507.9	n/a	8/8/2024	394	No	22	0	No	0.0003583	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	MW-7	507.9	n/a	8/8/2024	568	Yes	22	0	No	0.0003583	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	MW-8	507.9	n/a	8/8/2024	408	No	22	0	No	0.0003583	Param Inter 1 of 2
Total Radium (pCi/L)	MW-1	3.628	n/a	8/8/2024	1.647	No	22	0	No	0.0003583	Param Inter 1 of 2 De...
Total Radium (pCi/L)	MW-2	3.628	n/a	8/8/2024	2.007	No	22	0	No	0.0003583	Param Inter 1 of 2 De...
Total Radium (pCi/L)	MW-3	3.628	n/a	8/8/2024	1.157	No	22	0	No	0.0003583	Param Inter 1 of 2 De...
Total Radium (pCi/L)	MW-5	3.628	n/a	8/8/2024	1.537	No	22	0	No	0.0003583	Param Inter 1 of 2 De...
Total Radium (pCi/L)	MW-6	3.628	n/a	8/8/2024	1.597	No	22	0	No	0.0003583	Param Inter 1 of 2 De...
Total Radium (pCi/L)	MW-7	3.628	n/a	8/8/2024	2.267	No	22	0	No	0.0003583	Param Inter 1 of 2 De...
Total Radium (pCi/L)	MW-8	3.628	n/a	8/8/2024	1.347	No	22	0	No	0.0003583	Param Inter 1 of 2 De...

Within Limit

Prediction Limit
Interwell Parametric

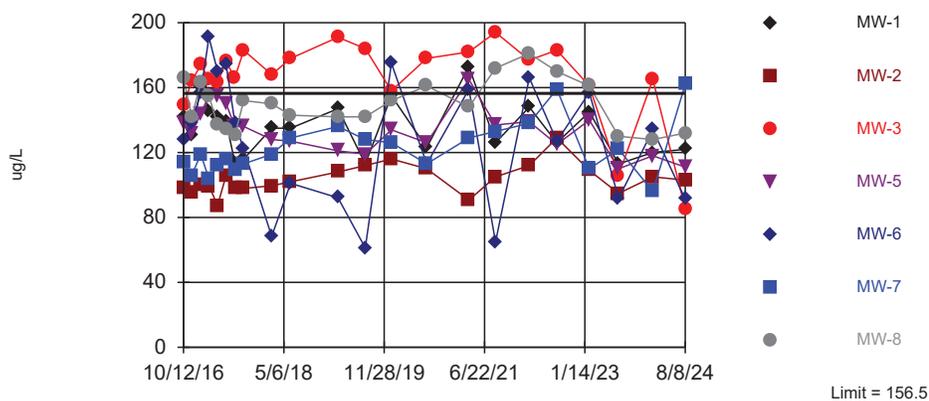


Background Data Summary: Mean=4.415, Std. Dev.=0.8907, n=22. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9642, critical = 0.878. Kappa = 2.472 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Individual comparison alpha = 0.0003583. Comparing 7 points to limit.

Constituent: Arsenic Analysis Run 10/11/2024 11:21 AM View: 2024Q3 Interwell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Exceeds Limit: MW-7

Prediction Limit
Interwell Parametric

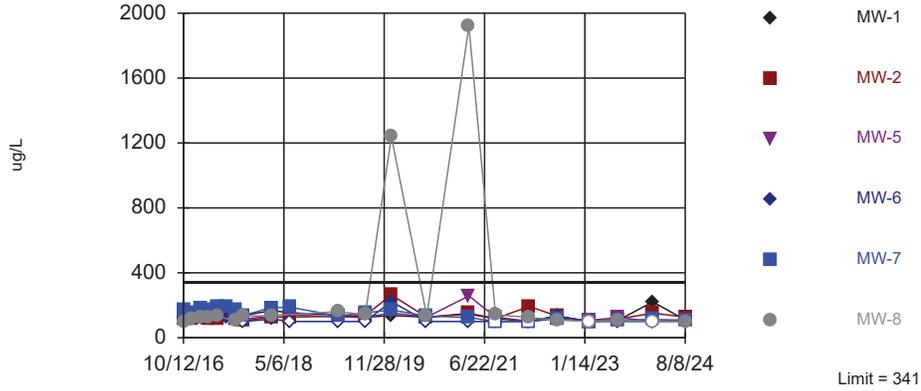


Background Data Summary: Mean=122.7, Std. Dev.=13.65, n=22. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9623, critical = 0.878. Kappa = 2.472 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Individual comparison alpha = 0.0003583. Comparing 7 points to limit.

Constituent: Barium Analysis Run 10/11/2024 11:21 AM View: 2024Q3 Interwell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Interwell Non-parametric

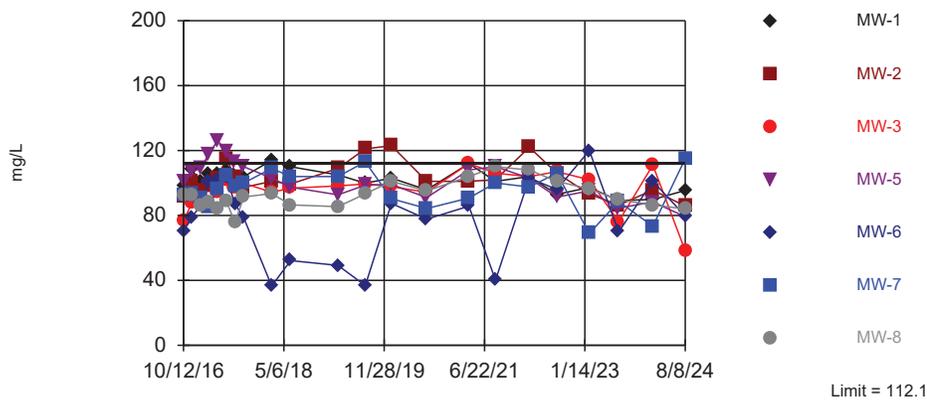


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 22 background values. 36.36% NDs. Annual per-constituent alpha = 0.04656. Individual comparison alpha = 0.0034 (1 of 2). Comparing 6 points to limit. Assumes 1 future value. Seasonality was not detected with 95% confidence.

Constituent: Boron Analysis Run 10/11/2024 11:21 AM View: 2024Q3 Interwell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Exceeds Limit: MW-7

Prediction Limit Interwell Parametric

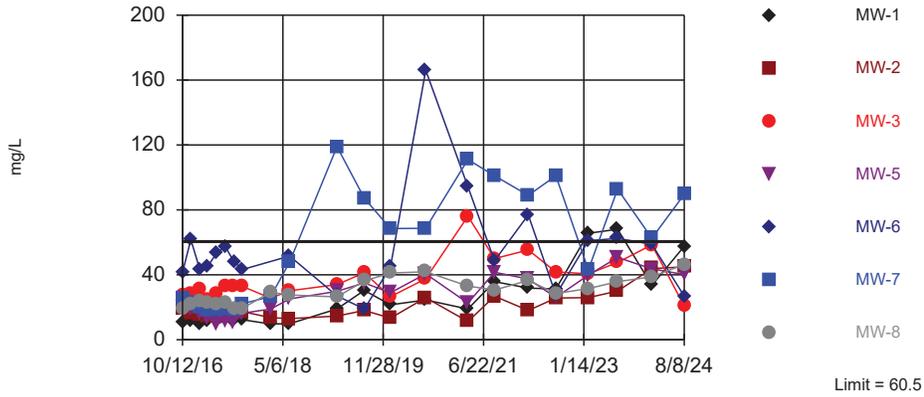


Background Data Summary: Mean=87.04, Std. Dev.=10.13, n=22. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9709, critical = 0.878. Kappa = 2.472 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Individual comparison alpha = 0.0003583. Comparing 7 points to limit.

Constituent: Calcium Analysis Run 10/11/2024 11:21 AM View: 2024Q3 Interwell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Exceeds Limit: MW-7

Prediction Limit
Interwell Parametric

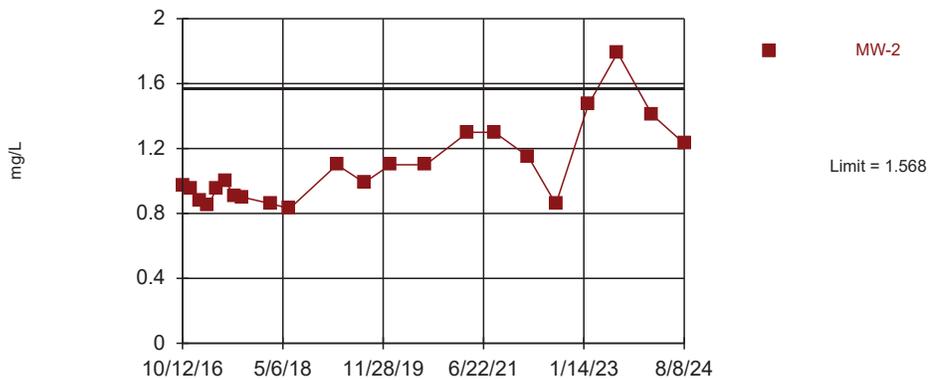


Background Data Summary: Mean=28.41, Std. Dev.=12.88, n=21. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9693, critical = 0.873. Kappa = 2.491 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Individual comparison alpha = 0.0003583. Comparing 7 points to limit.

Constituent: Chloride Analysis Run 10/11/2024 11:21 AM View: 2024Q3 Interwell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit
Interwell Parametric

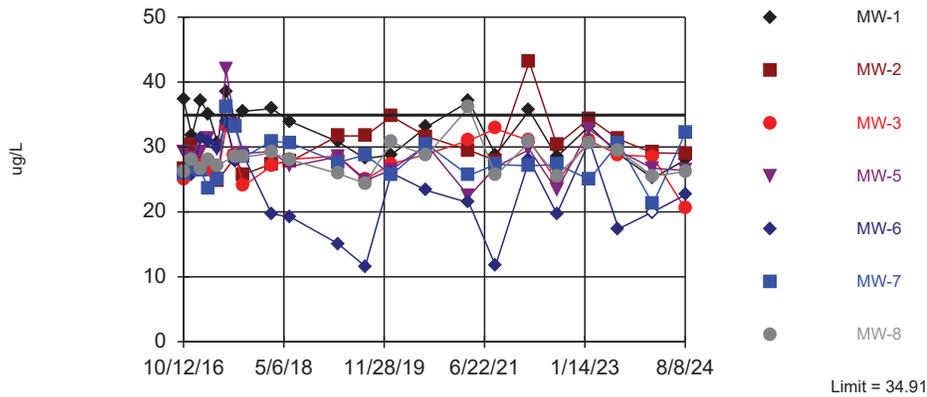


Background Data Summary (after Aitchison's Adjustment): Mean=0.7004, Std. Dev.=0.3511, n=22, 18.18% NDs. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9264, critical = 0.878. Kappa = 2.472 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Individual comparison alpha = 0.0003583. Assumes 6 future values.

Constituent: Fluoride Analysis Run 10/11/2024 11:21 AM View: 2024Q3 Interwell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit
 Interwell Parametric

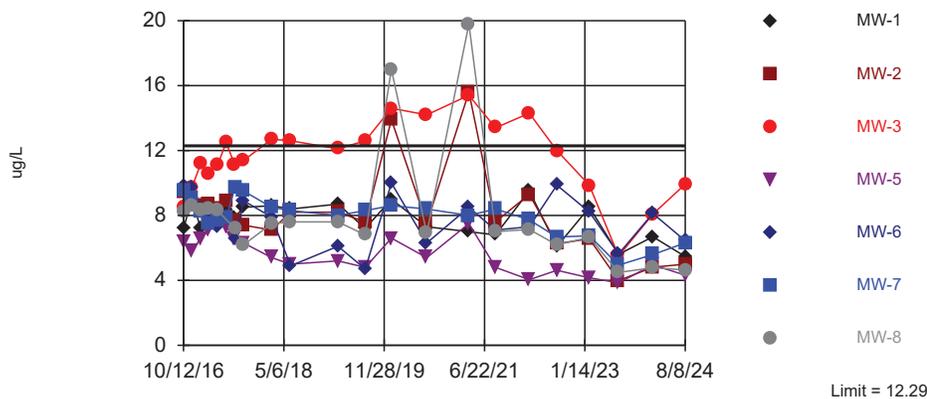


Background Data Summary: Mean=26.05, Std. Dev.=3.585, n=22. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8781, critical = 0.878. Kappa = 2.472 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Individual comparison alpha = 0.0003583. Comparing 7 points to limit.

Constituent: Lithium Analysis Run 10/11/2024 11:21 AM View: 2024Q3 Interwell PL
 Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit
 Interwell Parametric



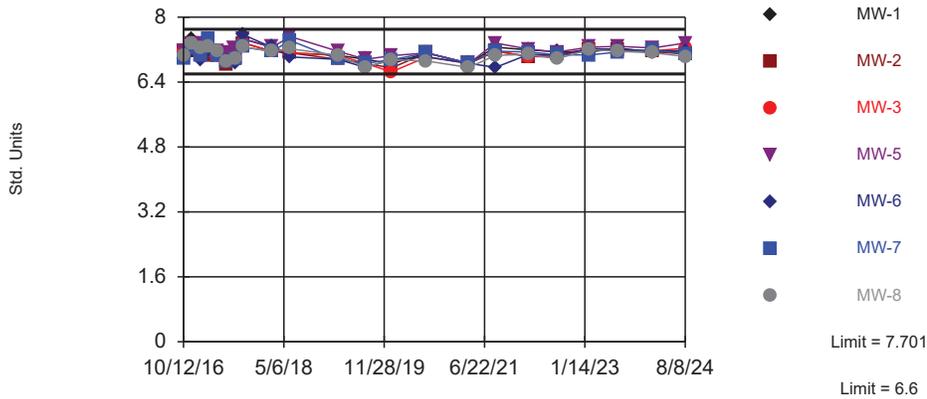
Background Data Summary (based on square root transformation): Mean=2.454, Std. Dev.=0.4253, n=22. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8984, critical = 0.878. Kappa = 2.472 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Individual comparison alpha = 0.0003583. Comparing 7 points to limit.

Constituent: Molybdenum Analysis Run 10/11/2024 11:21 AM View: 2024Q3 Interwell PL
 Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limits

Prediction Limit

Interwell Parametric



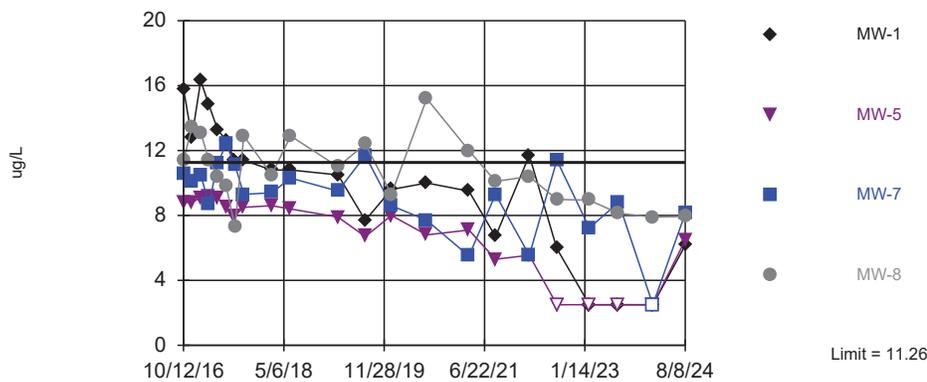
Background Data Summary: Mean=7.15, Std. Dev.=0.2227, n=22. Seasonality was detected with 95% confidence and data were deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.879, critical = 0.878. Kappa = 2.472 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Individual comparison alpha = 0.0001792. Comparing 7 points to limit.

Constituent: pH Analysis Run 10/11/2024 11:21 AM View: 2024Q3 Interwell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit

Interwell Parametric

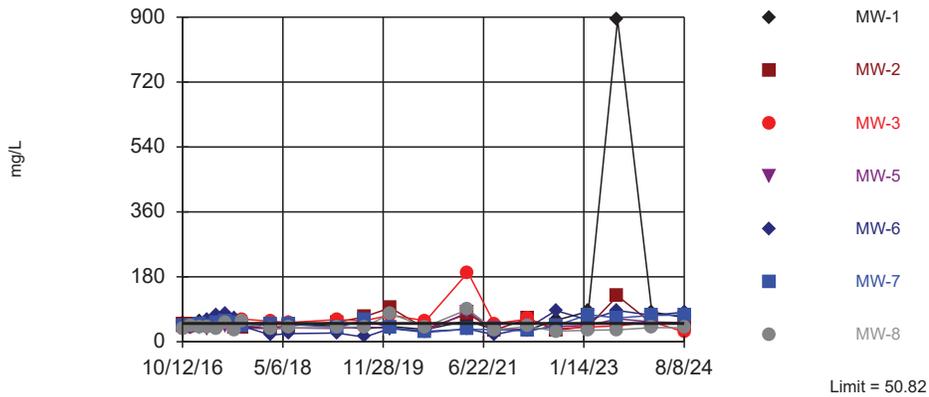


Background Data Summary: Mean=7.661, Std. Dev.=1.446, n=21. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9415, critical = 0.873. Kappa = 2.491 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Individual comparison alpha = 0.0003583. Comparing 4 points to limit. Assumes 3 future values.

Constituent: Selenium Analysis Run 10/11/2024 11:21 AM View: 2024Q3 Interwell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Exceeds Limit: MW-1, MW-5, MW-6, MW-7

Prediction Limit
Interwell Parametric

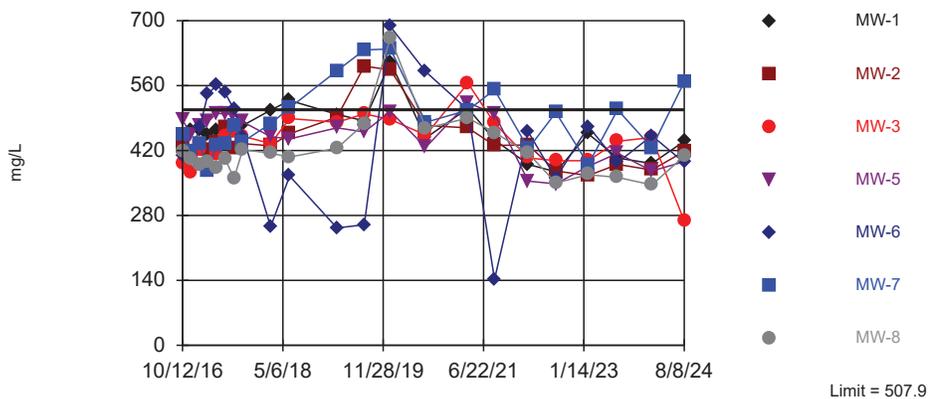


Background Data Summary (based on square transformation): Mean=1568, Std. Dev.=410.7, n=22. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.923, critical = 0.878. Kappa = 2.472 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Individual comparison alpha = 0.0003583. Comparing 7 points to limit.

Constituent: Sulfate Analysis Run 10/11/2024 11:21 AM View: 2024Q3 Interwell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Exceeds Limit: MW-7

Prediction Limit
Interwell Parametric

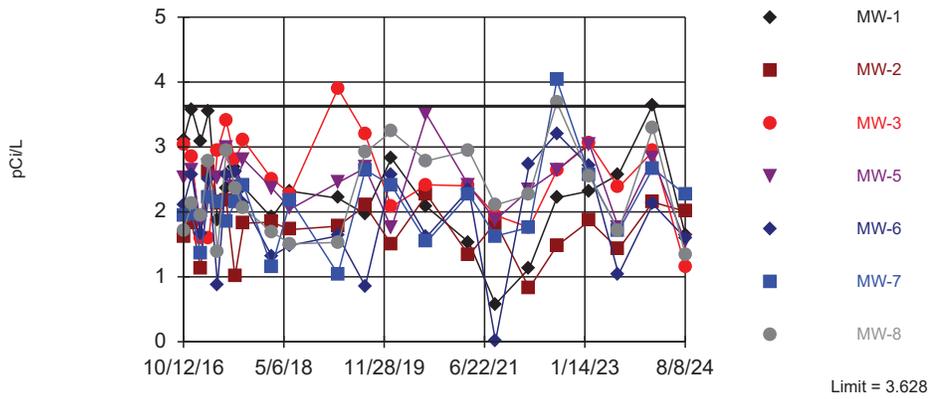


Background Data Summary: Mean=405.9, Std. Dev.=41.27, n=22. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.976, critical = 0.878. Kappa = 2.472 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Individual comparison alpha = 0.0003583. Comparing 7 points to limit.

Constituent: Total Dissolved Solids Analysis Run 10/11/2024 11:21 AM View: 2024Q3 Interwell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Interwell Parametric



Background Data Summary: Mean=2.167, Std. Dev.=0.591, n=22. Seasonality was detected with 95% confidence and data were deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9634, critical = 0.878. Kappa = 2.472 (c=21, w=7, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Individual comparison alpha = 0.0003583. Comparing 7 points to limit.

Constituent: Total Radium Analysis Run 10/11/2024 11:21 AM View: 2024Q3 Interwell PL
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

A.4 Sen's Slope/Mann-Kendall Analysis

Trend Test

Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater Printed 10/11/2024, 1:39 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>Normality</u>	<u>Xform</u>	<u>Alpha</u>	<u>Method</u>
Arsenic (ug/L)	MW-1	0.1338	93	84	Yes	22	0	n/a	n/a	0.02	NP
Arsenic (ug/L)	MW-2	0.03196	54	84	No	22	0	n/a	n/a	0.02	NP
Arsenic (ug/L)	MW-3	0.1073	93	84	Yes	22	0	n/a	n/a	0.02	NP
Arsenic (ug/L)	MW-4R (bg)	0.2475	109	84	Yes	22	0	n/a	n/a	0.02	NP
Arsenic (ug/L)	MW-5	0	2	84	No	22	0	n/a	n/a	0.02	NP
Arsenic (ug/L)	MW-6	0.1734	126	84	Yes	22	0	n/a	n/a	0.02	NP
Arsenic (ug/L)	MW-7	0.04292	60	84	No	22	0	n/a	n/a	0.02	NP
Arsenic (ug/L)	MW-8	0.01012	37	84	No	22	0	n/a	n/a	0.02	NP
Barium (ug/L)	MW-1	-2.182	-43	-84	No	22	0	n/a	n/a	0.02	NP
Barium (ug/L)	MW-2	1.502	70	84	No	22	0	n/a	n/a	0.02	NP
Barium (ug/L)	MW-3	0.6392	14	84	No	22	0	n/a	n/a	0.02	NP
Barium (ug/L)	MW-4R (bg)	1.202	30	84	No	22	0	n/a	n/a	0.02	NP
Barium (ug/L)	MW-5	-3.209	-87	-84	Yes	22	0	n/a	n/a	0.02	NP
Barium (ug/L)	MW-6	-5.003	-53	-84	No	22	0	n/a	n/a	0.02	NP
Barium (ug/L)	MW-7	4.008	84	84	No	22	0	n/a	n/a	0.02	NP
Barium (ug/L)	MW-8	-0.4601	-12	-84	No	22	0	n/a	n/a	0.02	NP
Boron (ug/L)	MW-1	-3.516	-61	-84	No	22	4.545	n/a	n/a	0.02	NP
Boron (ug/L)	MW-2	3.052	57	78	No	21	4.762	n/a	n/a	0.02	NP
Boron (ug/L)	MW-5	-2.123	-65	-84	No	22	4.545	n/a	n/a	0.02	NP
Boron (ug/L)	MW-6	-1.337	-79	-84	No	22	50	n/a	n/a	0.02	NP
Boron (ug/L)	MW-7	-11.53	-134	-84	Yes	22	13.64	n/a	n/a	0.02	NP
Boron (ug/L)	MW-8	-1.426	-13	-73	No	20	10	n/a	n/a	0.02	NP
Calcium (mg/L)	MW-1	-1.552	-97	-84	Yes	22	0	n/a	n/a	0.02	NP
Calcium (mg/L)	MW-2	0	-3	-84	No	22	0	n/a	n/a	0.02	NP
Calcium (mg/L)	MW-3	2.237	83	84	No	22	0	n/a	n/a	0.02	NP
Calcium (mg/L)	MW-4R (bg)	1.226	56	84	No	22	0	n/a	n/a	0.02	NP
Calcium (mg/L)	MW-5	-3.236	-119	-84	Yes	22	0	n/a	n/a	0.02	NP
Calcium (mg/L)	MW-6	0.4002	14	84	No	22	0	n/a	n/a	0.02	NP
Calcium (mg/L)	MW-7	0	1	84	No	22	0	n/a	n/a	0.02	NP
Calcium (mg/L)	MW-8	0.9822	47	84	No	22	0	n/a	n/a	0.02	NP
Chloride (mg/L)	MW-1	4.002	161	84	Yes	22	0	n/a	n/a	0.02	NP
Chloride (mg/L)	MW-2	2.024	82	78	Yes	21	0	n/a	n/a	0.02	NP
Chloride (mg/L)	MW-3	2.873	103	84	Yes	22	0	n/a	n/a	0.02	NP
Chloride (mg/L)	MW-4R (bg)	3.509	124	78	Yes	21	0	n/a	n/a	0.02	NP
Chloride (mg/L)	MW-5	4.155	141	84	Yes	22	0	n/a	n/a	0.02	NP
Chloride (mg/L)	MW-6	0.8132	18	78	No	21	0	n/a	n/a	0.02	NP
Chloride (mg/L)	MW-7	9.871	108	84	Yes	22	0	n/a	n/a	0.02	NP
Chloride (mg/L)	MW-8	2.475	137	84	Yes	22	0	n/a	n/a	0.02	NP
Fluoride (mg/L)	MW-2	0.06239	110	84	Yes	22	0	n/a	n/a	0.02	NP
Lead (ug/L)	MW-4R (bg)	0	-75	-68	Yes	19	89.47	n/a	n/a	0.02	NP
Lithium (ug/L)	MW-1	-0.9421	-100	-84	Yes	22	0	n/a	n/a	0.02	NP
Lithium (ug/L)	MW-2	0.5433	73	78	No	21	0	n/a	n/a	0.02	NP
Lithium (ug/L)	MW-3	0.314	36	84	No	22	0	n/a	n/a	0.02	NP
Lithium (ug/L)	MW-4R (bg)	0.3687	59	84	No	22	0	n/a	n/a	0.02	NP
Lithium (ug/L)	MW-5	-0.3877	-62	-84	No	22	0	n/a	n/a	0.02	NP
Lithium (ug/L)	MW-6	-1.296	-71	-84	No	22	4.545	n/a	n/a	0.02	NP
Lithium (ug/L)	MW-7	-0.05541	-5	-84	No	22	0	n/a	n/a	0.02	NP
Lithium (ug/L)	MW-8	0.1194	14	78	No	21	0	n/a	n/a	0.02	NP
Molybdenum (ug/L)	MW-1	-0.2454	-64	-84	No	22	0	n/a	n/a	0.02	NP
Molybdenum (ug/L)	MW-2	-0.4212	-106	-84	Yes	22	0	n/a	n/a	0.02	NP

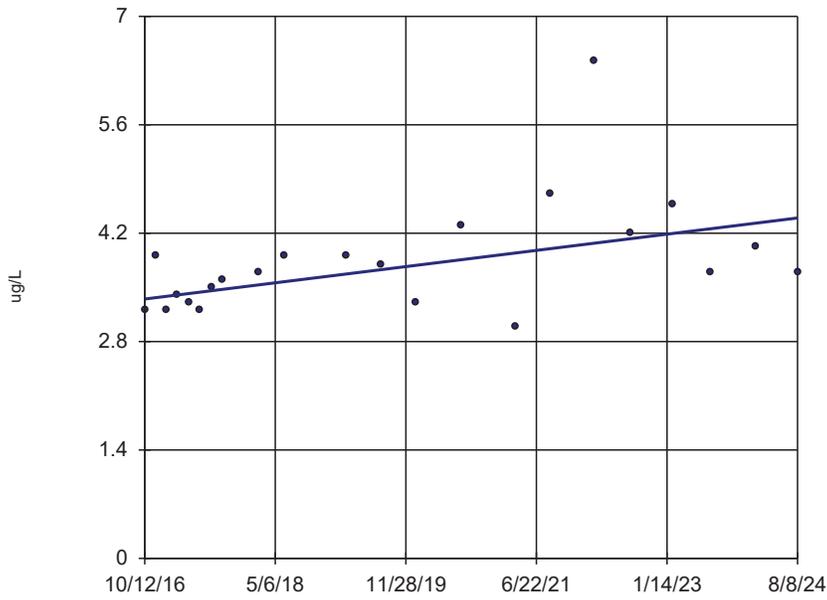
Trend Test

Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater Printed 10/11/2024, 1:39 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>Normality</u>	<u>Xform</u>	<u>Alpha</u>	<u>Method</u>
Molybdenum (ug/L)	MW-3	0.298	37	84	No	22	0	n/a	n/a	0.02	NP
Molybdenum (ug/L)	MW-4R (bg)	-0.2704	-78	-84	No	22	0	n/a	n/a	0.02	NP
Molybdenum (ug/L)	MW-5	-0.3384	-124	-84	Yes	22	0	n/a	n/a	0.02	NP
Molybdenum (ug/L)	MW-6	-0.1965	-45	-84	No	22	0	n/a	n/a	0.02	NP
Molybdenum (ug/L)	MW-7	-0.3394	-103	-84	Yes	22	0	n/a	n/a	0.02	NP
Molybdenum (ug/L)	MW-8	-0.3761	-106	-78	Yes	21	0	n/a	n/a	0.02	NP
pH (Std. Units)	MW-1	0	-8	-84	No	22	0	n/a	n/a	0.02	NP
pH (Std. Units)	MW-2	0	-12	-84	No	22	0	n/a	n/a	0.02	NP
pH (Std. Units)	MW-3	-0.01006	-33	-84	No	22	0	n/a	n/a	0.02	NP
pH (Std. Units)	MW-4R (bg)	-0.002182	-9	-84	No	22	0	n/a	n/a	0.02	NP
pH (Std. Units)	MW-5	-0.009269	-28	-84	No	22	0	n/a	n/a	0.02	NP
pH (Std. Units)	MW-6	0	-2	-84	No	22	0	n/a	n/a	0.02	NP
pH (Std. Units)	MW-7	-0.01527	-18	-84	No	22	0	n/a	n/a	0.02	NP
pH (Std. Units)	MW-8	-0.01943	-56	-84	No	22	0	n/a	n/a	0.02	NP
Selenium (ug/L)	MW-1	-1.486	-182	-84	Yes	22	13.64	n/a	n/a	0.02	NP
Selenium (ug/L)	MW-4R (bg)	0.1024	23	78	No	21	0	n/a	n/a	0.02	NP
Selenium (ug/L)	MW-5	-0.587	-173	-84	Yes	22	18.18	n/a	n/a	0.02	NP
Selenium (ug/L)	MW-7	-0.4562	-96	-84	Yes	22	4.545	n/a	n/a	0.02	NP
Selenium (ug/L)	MW-8	-0.4378	-104	-84	Yes	22	0	n/a	n/a	0.02	NP
Sulfate (mg/L)	MW-1	1.281	21	84	No	22	0	n/a	n/a	0.02	NP
Sulfate (mg/L)	MW-2	0.3994	14	78	No	21	0	n/a	n/a	0.02	NP
Sulfate (mg/L)	MW-3	0.3362	5	84	No	22	0	n/a	n/a	0.02	NP
Sulfate (mg/L)	MW-4R (bg)	0.344	28	84	No	22	0	n/a	n/a	0.02	NP
Sulfate (mg/L)	MW-5	0.7265	41	84	No	22	0	n/a	n/a	0.02	NP
Sulfate (mg/L)	MW-6	2.52	39	84	No	22	0	n/a	n/a	0.02	NP
Sulfate (mg/L)	MW-7	1.406	17	84	No	22	0	n/a	n/a	0.02	NP
Sulfate (mg/L)	MW-8	-0.2946	-13	-84	No	22	0	n/a	n/a	0.02	NP
Total Dissolved Solids (mg/L)	MW-1	-4.049	-37	-84	No	22	0	n/a	n/a	0.02	NP
Total Dissolved Solids (mg/L)	MW-2	-2.468	-22	-84	No	22	0	n/a	n/a	0.02	NP
Total Dissolved Solids (mg/L)	MW-3	3.002	23	84	No	22	0	n/a	n/a	0.02	NP
Total Dissolved Solids (mg/L)	MW-4R (bg)	3.491	24	84	No	22	0	n/a	n/a	0.02	NP
Total Dissolved Solids (mg/L)	MW-5	-12.56	-87	-84	Yes	22	0	n/a	n/a	0.02	NP
Total Dissolved Solids (mg/L)	MW-6	-9.129	-32	-84	No	22	0	n/a	n/a	0.02	NP
Total Dissolved Solids (mg/L)	MW-7	12.2	65	84	No	22	0	n/a	n/a	0.02	NP
Total Dissolved Solids (mg/L)	MW-8	-0.9299	-4	-84	No	22	0	n/a	n/a	0.02	NP
Total Radium (pCi/L)	MW-1	-0.1235	-69	-84	No	22	0	n/a	n/a	0.02	NP
Total Radium (pCi/L)	MW-2	0	0	84	No	22	0	n/a	n/a	0.02	NP
Total Radium (pCi/L)	MW-3	-0.05325	-29	-84	No	22	0	n/a	n/a	0.02	NP
Total Radium (pCi/L)	MW-4R (bg)	0.03941	24	84	No	22	0	n/a	n/a	0.02	NP
Total Radium (pCi/L)	MW-5	-0.02714	-23	-84	No	22	0	n/a	n/a	0.02	NP
Total Radium (pCi/L)	MW-6	-0.00321	-4	-84	No	22	0	n/a	n/a	0.02	NP
Total Radium (pCi/L)	MW-7	0.06353	48	84	No	22	0	n/a	n/a	0.02	NP
Total Radium (pCi/L)	MW-8	0.06232	29	84	No	22	0	n/a	n/a	0.02	NP

Sen's Slope Estimator

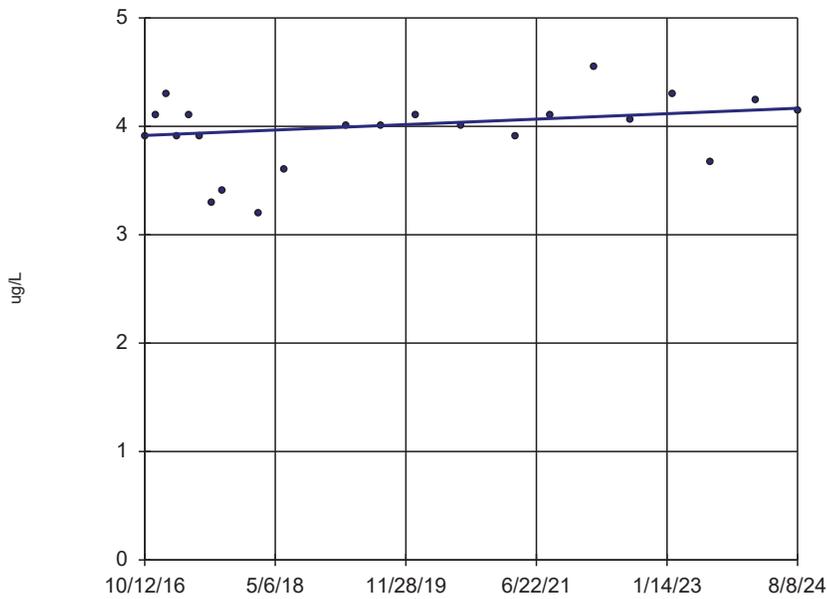
MW-1



Constituent: Arsenic Analysis Run 10/11/2024 1:34 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

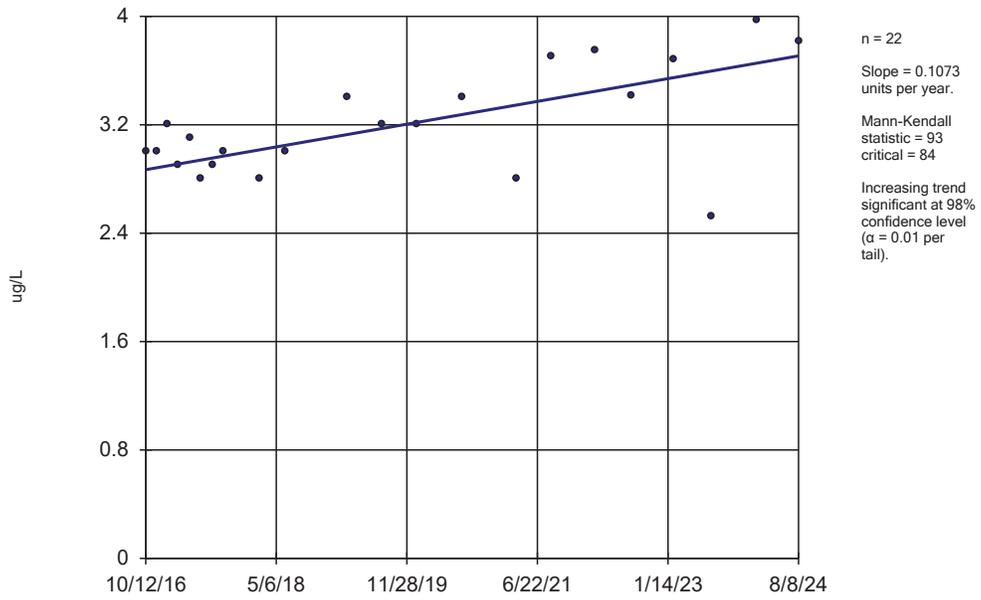
MW-2



Constituent: Arsenic Analysis Run 10/11/2024 1:34 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

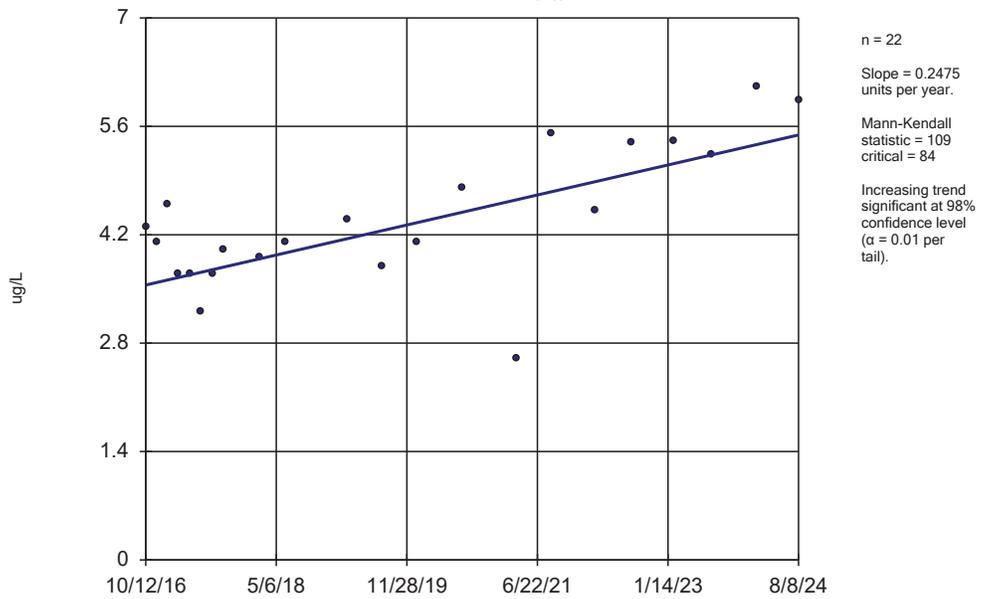
MW-3



Constituent: Arsenic Analysis Run 10/11/2024 1:34 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

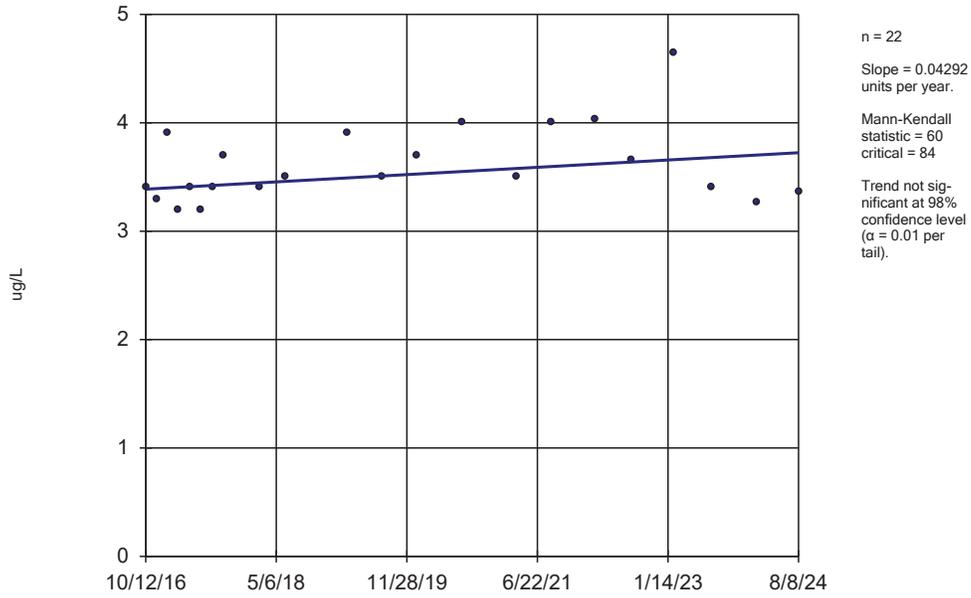
MW-4R (bg)



Constituent: Arsenic Analysis Run 10/11/2024 1:34 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

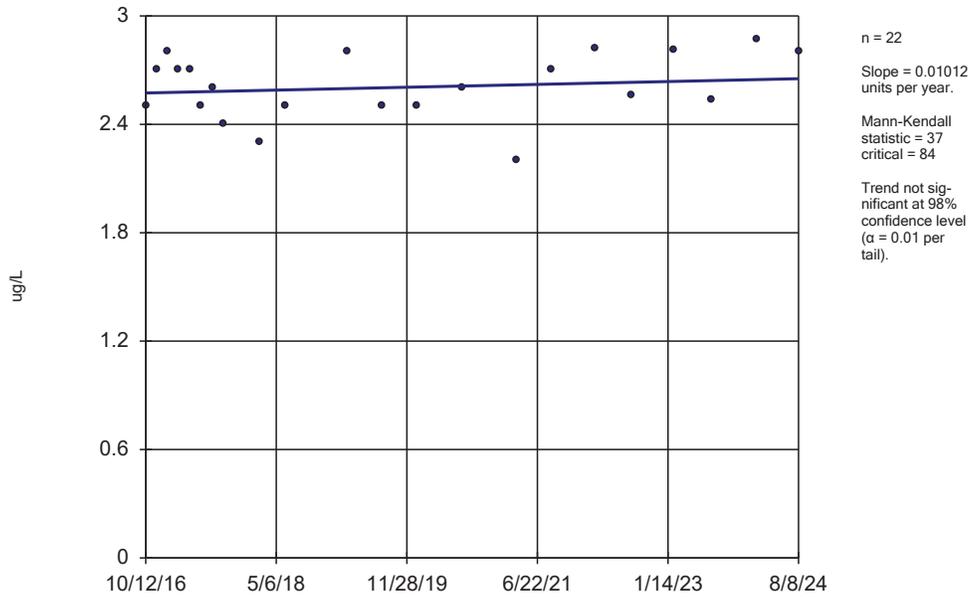
MW-7



Constituent: Arsenic Analysis Run 10/11/2024 1:34 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

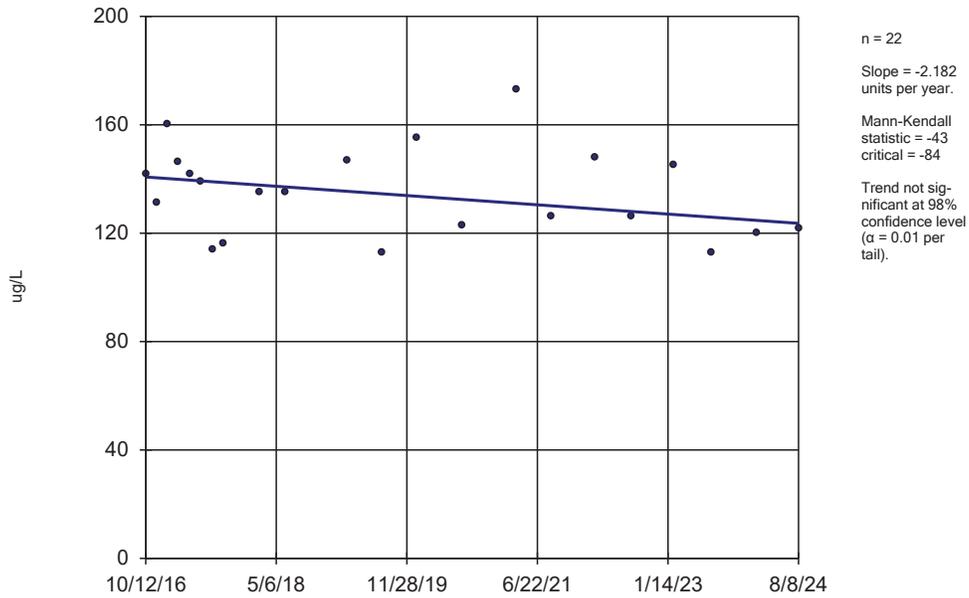
MW-8



Constituent: Arsenic Analysis Run 10/11/2024 1:35 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

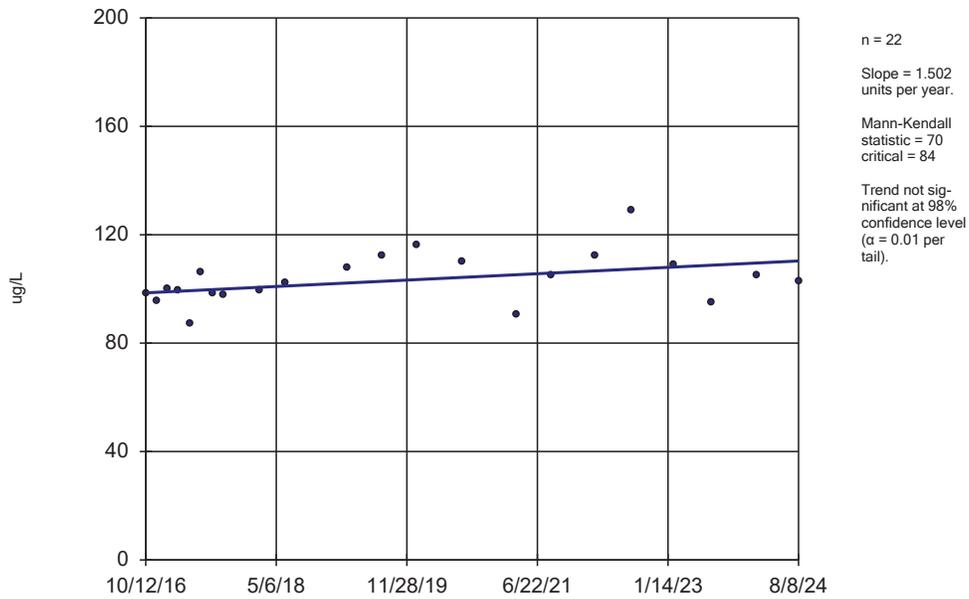
MW-1



Constituent: Barium Analysis Run 10/11/2024 1:35 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

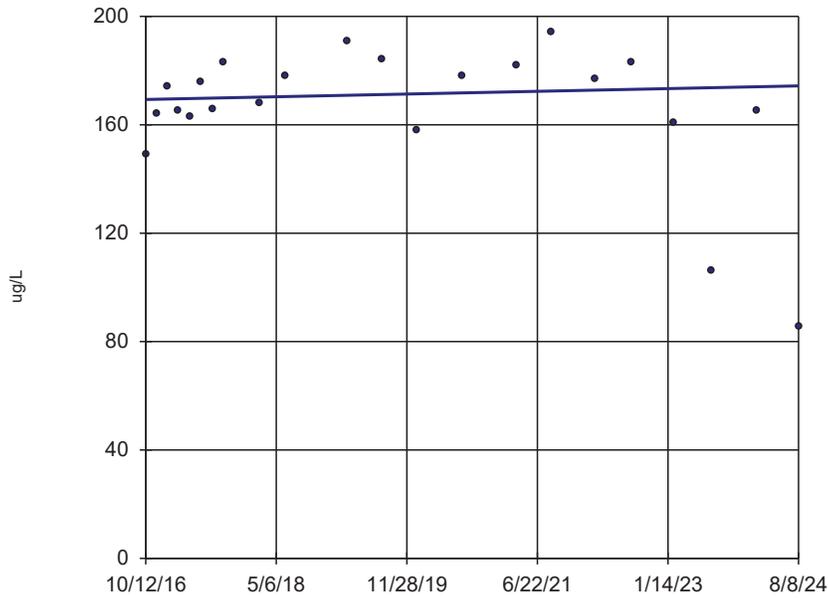
MW-2



Constituent: Barium Analysis Run 10/11/2024 1:35 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

MW-3

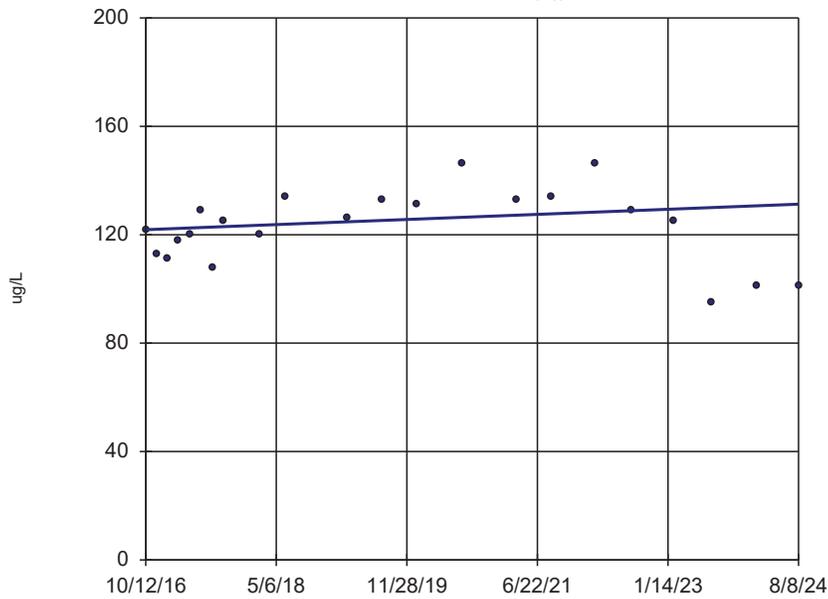


n = 22
Slope = 0.6392
units per year.
Mann-Kendall
statistic = 14
critical = 84
Trend not sig-
nificant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Constituent: Barium Analysis Run 10/11/2024 1:35 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

MW-4R (bg)

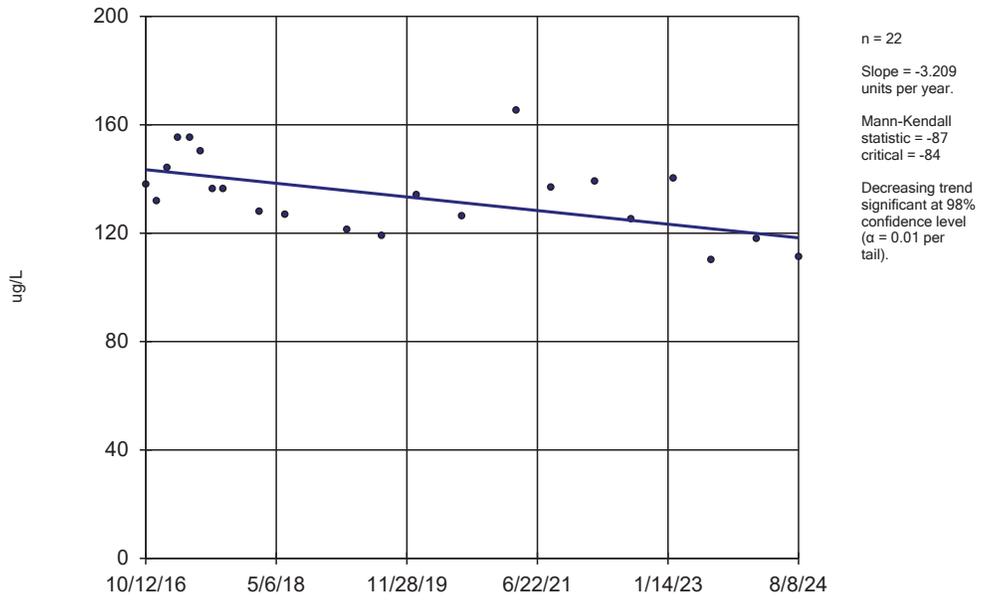


n = 22
Slope = 1.202
units per year.
Mann-Kendall
statistic = 30
critical = 84
Trend not sig-
nificant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Constituent: Barium Analysis Run 10/11/2024 1:35 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

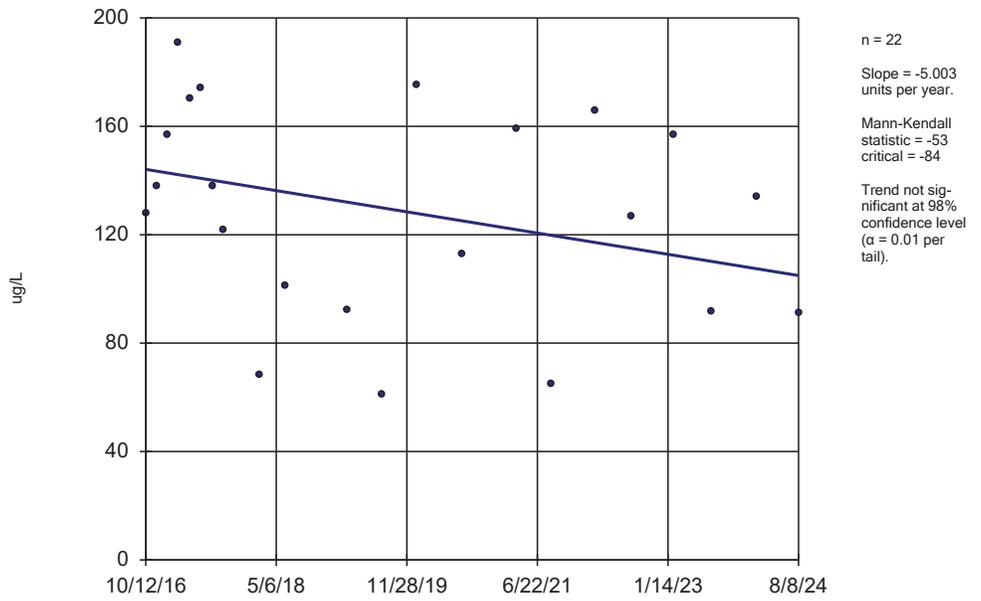
MW-5



Constituent: Barium Analysis Run 10/11/2024 1:35 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

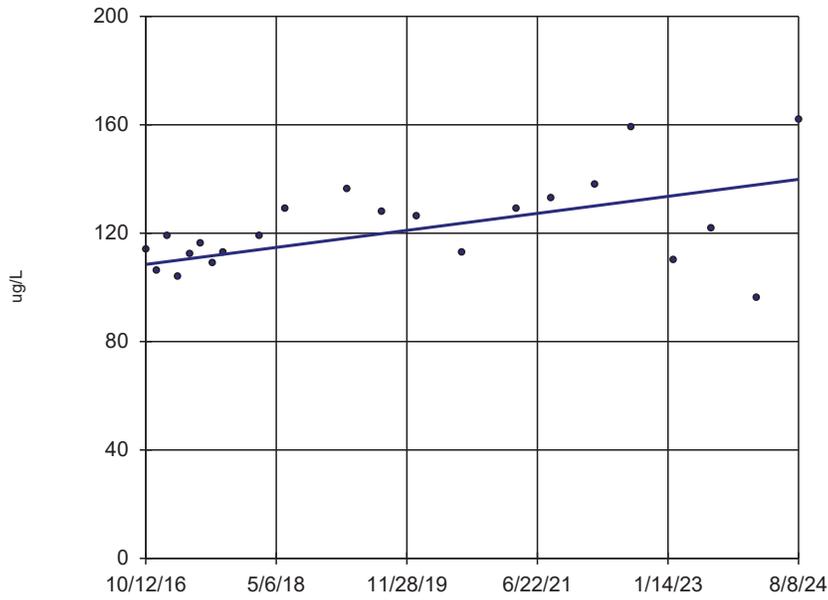
MW-6



Constituent: Barium Analysis Run 10/11/2024 1:35 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

MW-7

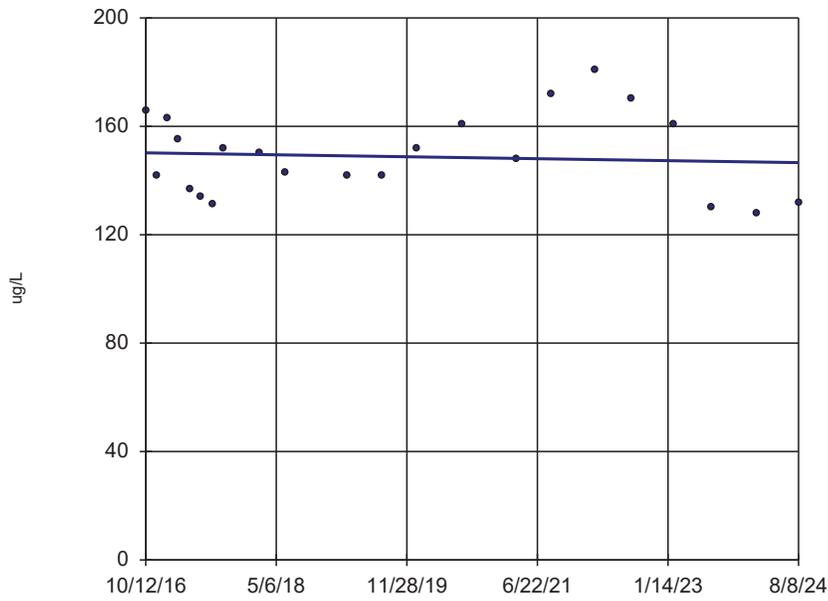


n = 22
Slope = 4.008
units per year.
Mann-Kendall
statistic = 84
critical = 84
Trend not sig-
nificant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Constituent: Barium Analysis Run 10/11/2024 1:35 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

MW-8

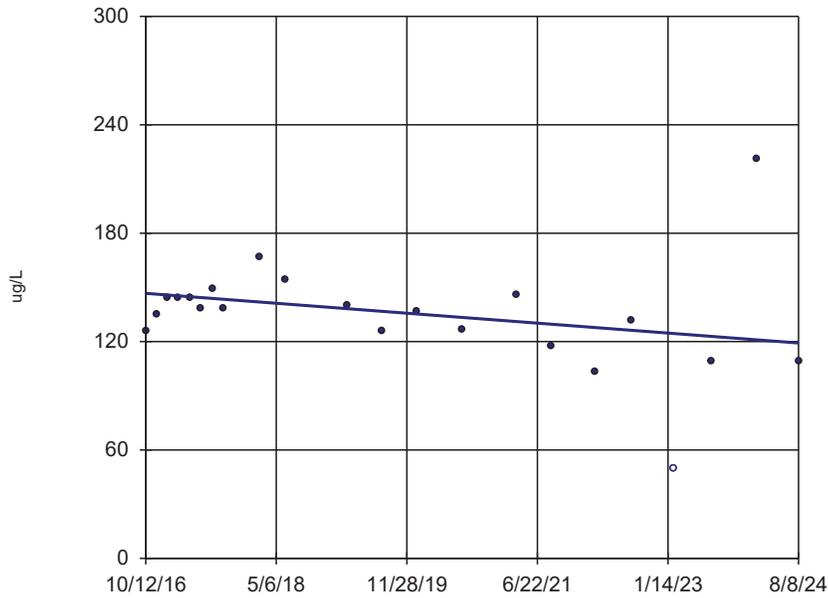


n = 22
Slope = -0.4601
units per year.
Mann-Kendall
statistic = -12
critical = -84
Trend not sig-
nificant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Constituent: Barium Analysis Run 10/11/2024 1:35 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

MW-1

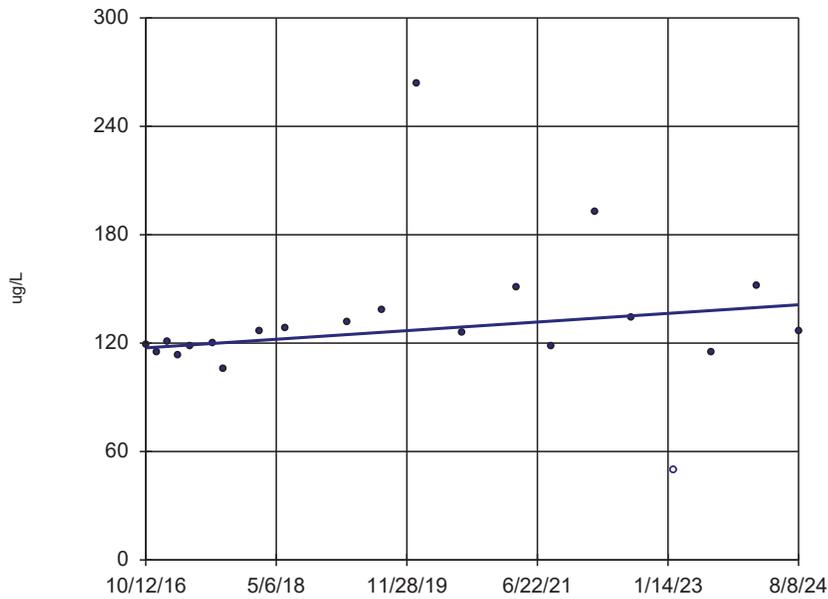


n = 22
Slope = -3.516
units per year.
Mann-Kendall
statistic = -61
critical = -84
Trend not sig-
nificant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Constituent: Boron Analysis Run 10/11/2024 1:35 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

MW-2

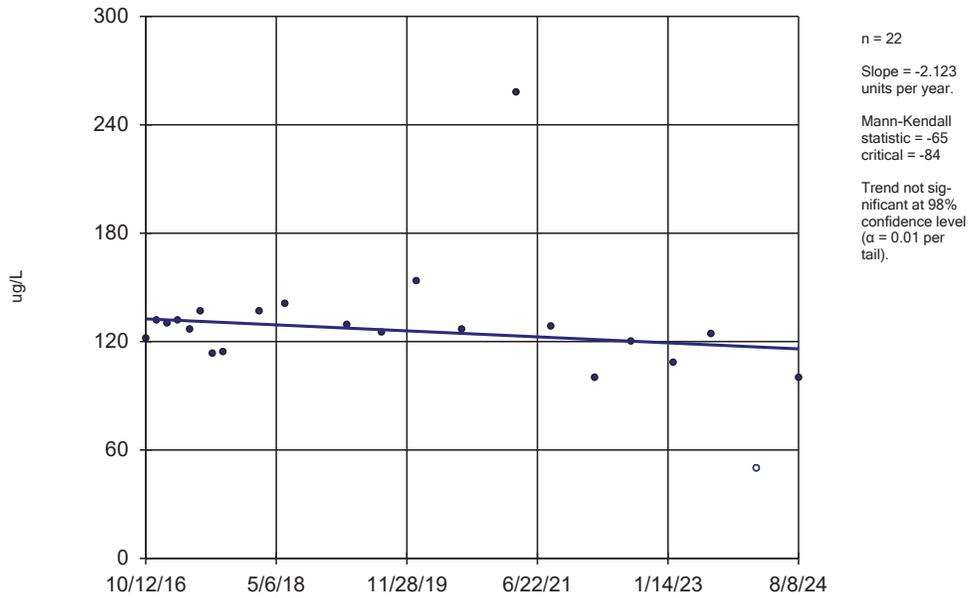


n = 21
Slope = 3.052
units per year.
Mann-Kendall
statistic = 57
critical = 78
Trend not sig-
nificant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Constituent: Boron Analysis Run 10/11/2024 1:35 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

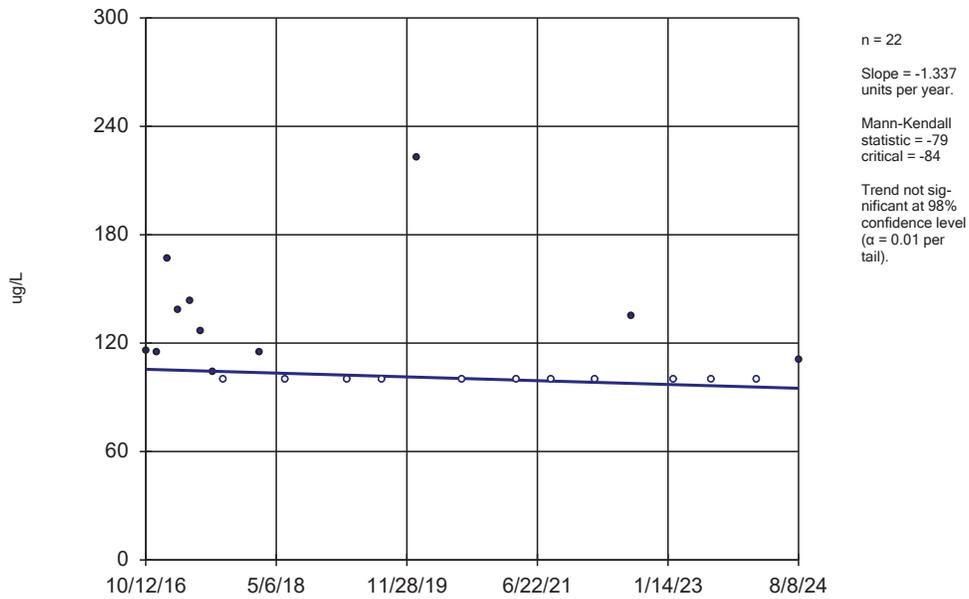
MW-5



Constituent: Boron Analysis Run 10/11/2024 1:35 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

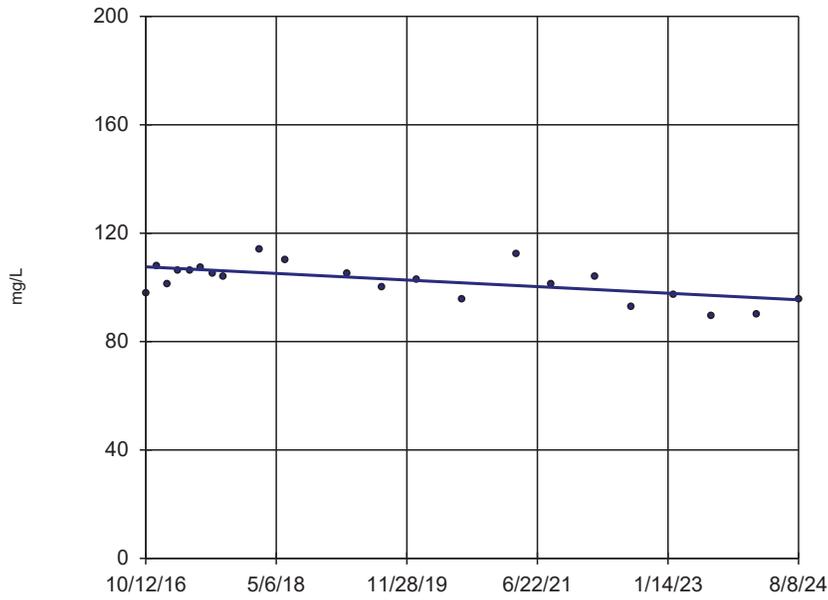
MW-6



Constituent: Boron Analysis Run 10/11/2024 1:35 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

MW-1

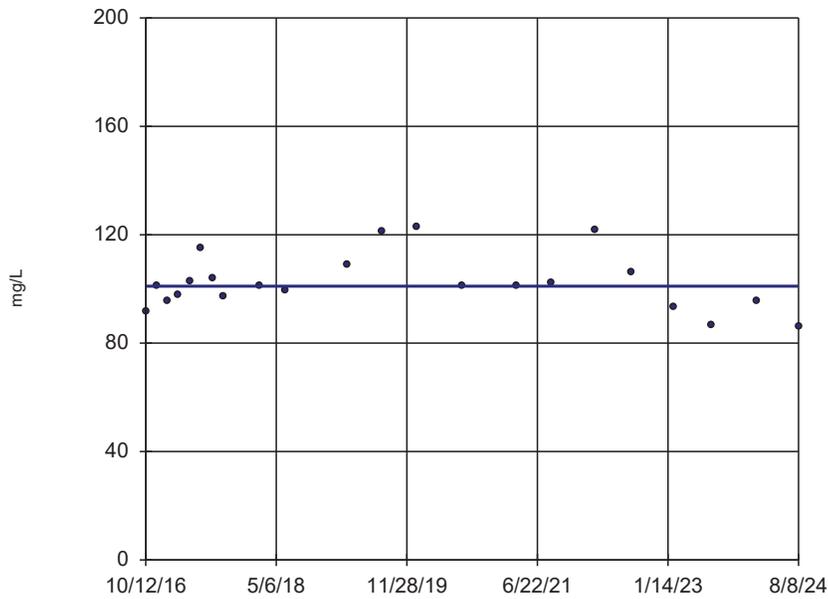


n = 22
Slope = -1.552
units per year.
Mann-Kendall
statistic = -97
critical = -84
Decreasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Constituent: Calcium Analysis Run 10/11/2024 1:35 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

MW-2

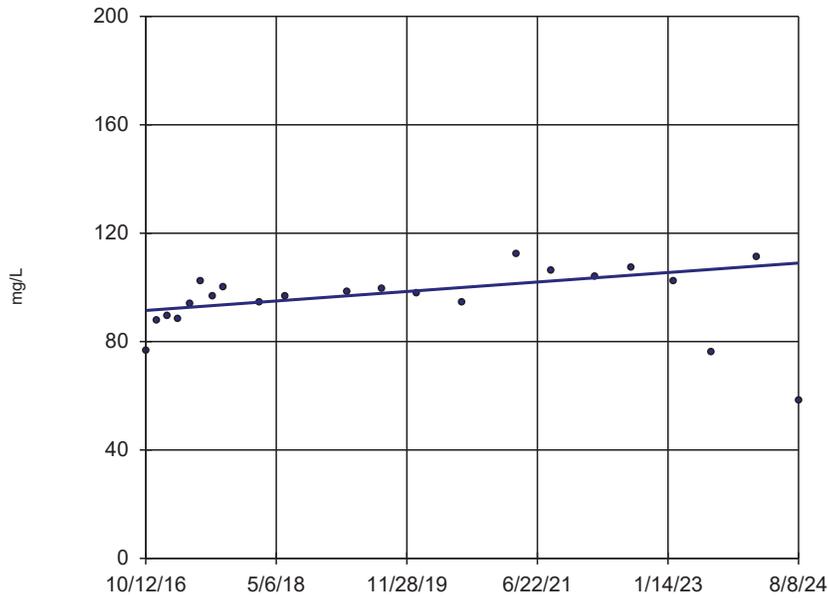


n = 22
Slope = 0
units per year.
Mann-Kendall
statistic = -3
critical = -84
Trend not sig-
nificant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Constituent: Calcium Analysis Run 10/11/2024 1:35 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

MW-3

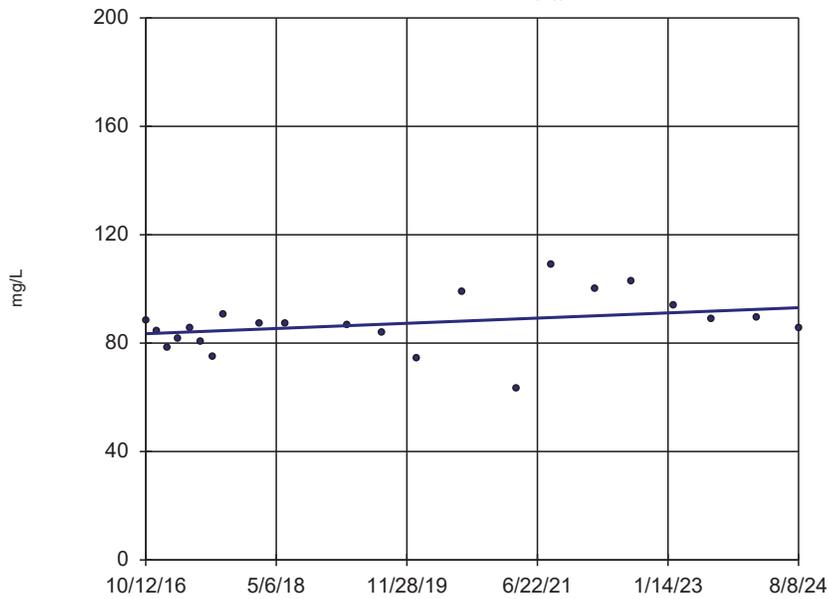


n = 22
Slope = 2.237
units per year.
Mann-Kendall
statistic = 83
critical = 84
Trend not sig-
nificant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Constituent: Calcium Analysis Run 10/11/2024 1:35 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

MW-4R (bg)

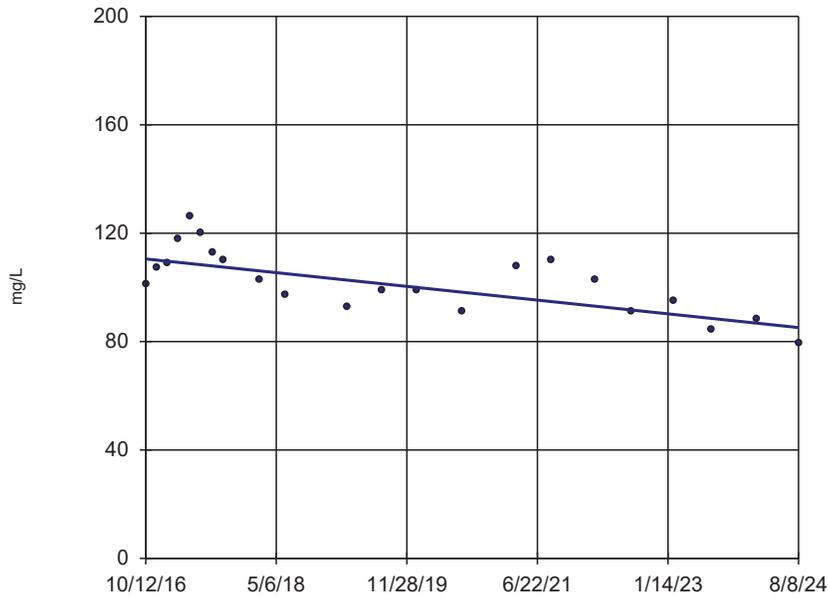


n = 22
Slope = 1.226
units per year.
Mann-Kendall
statistic = 56
critical = 84
Trend not sig-
nificant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Constituent: Calcium Analysis Run 10/11/2024 1:35 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

MW-5

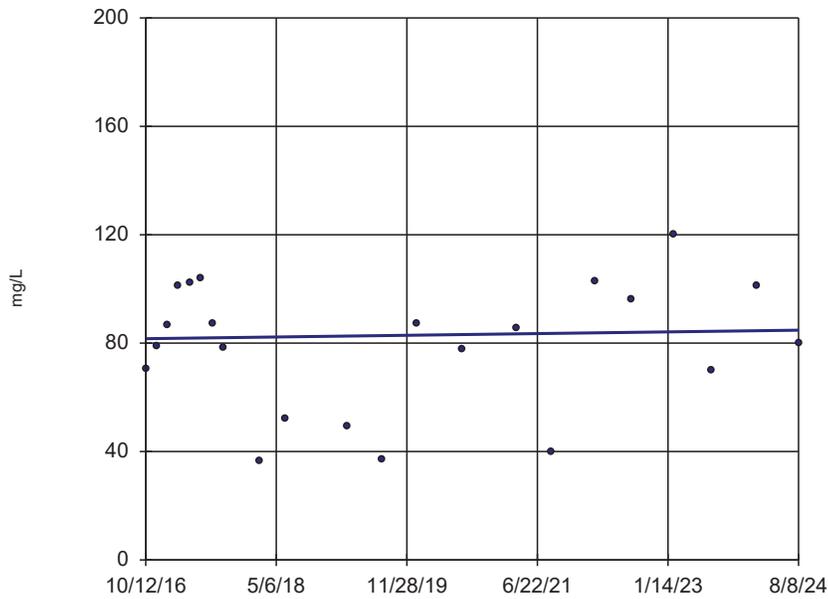


n = 22
Slope = -3.236
units per year.
Mann-Kendall
statistic = -119
critical = -84
Decreasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Constituent: Calcium Analysis Run 10/11/2024 1:35 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

MW-6

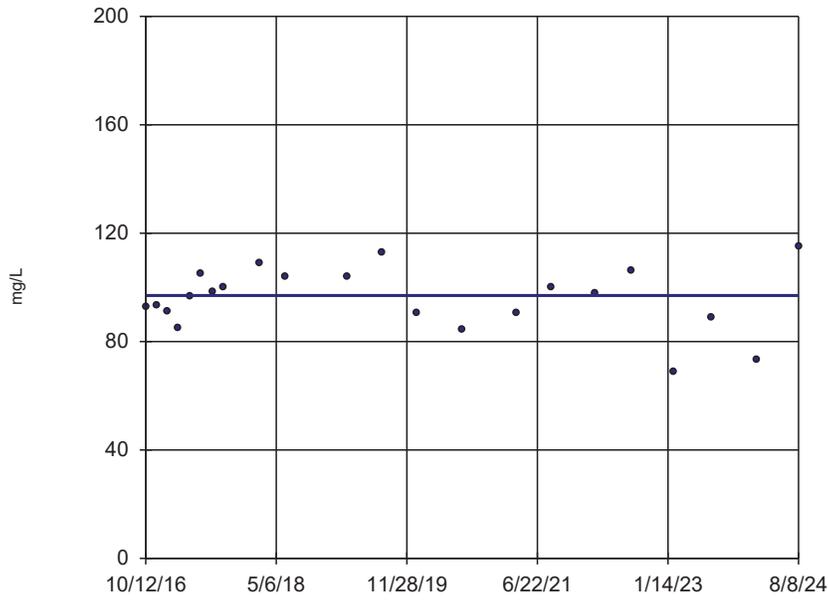


n = 22
Slope = 0.4002
units per year.
Mann-Kendall
statistic = 14
critical = 84
Trend not sig-
nificant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Constituent: Calcium Analysis Run 10/11/2024 1:35 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

MW-7

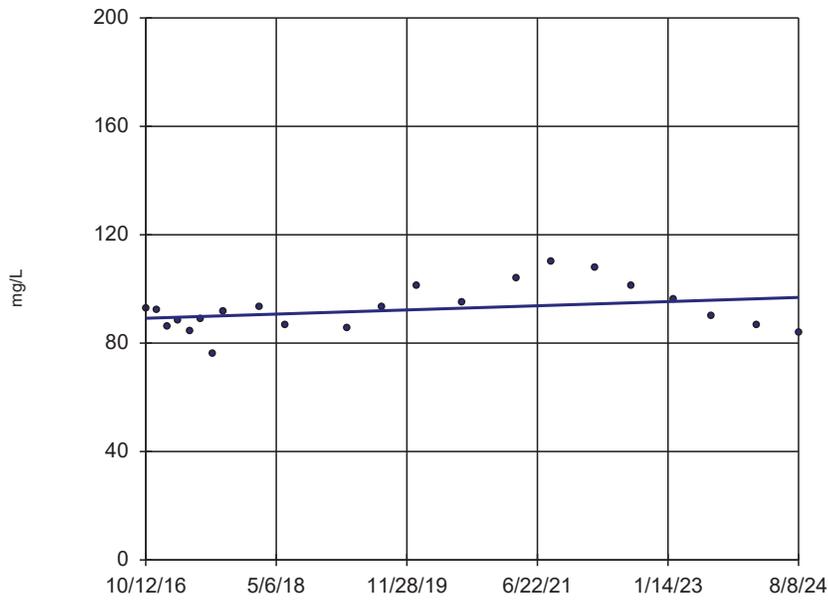


n = 22
Slope = 0
units per year.
Mann-Kendall
statistic = 1
critical = 84
Trend not sig-
nificant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Constituent: Calcium Analysis Run 10/11/2024 1:35 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

MW-8

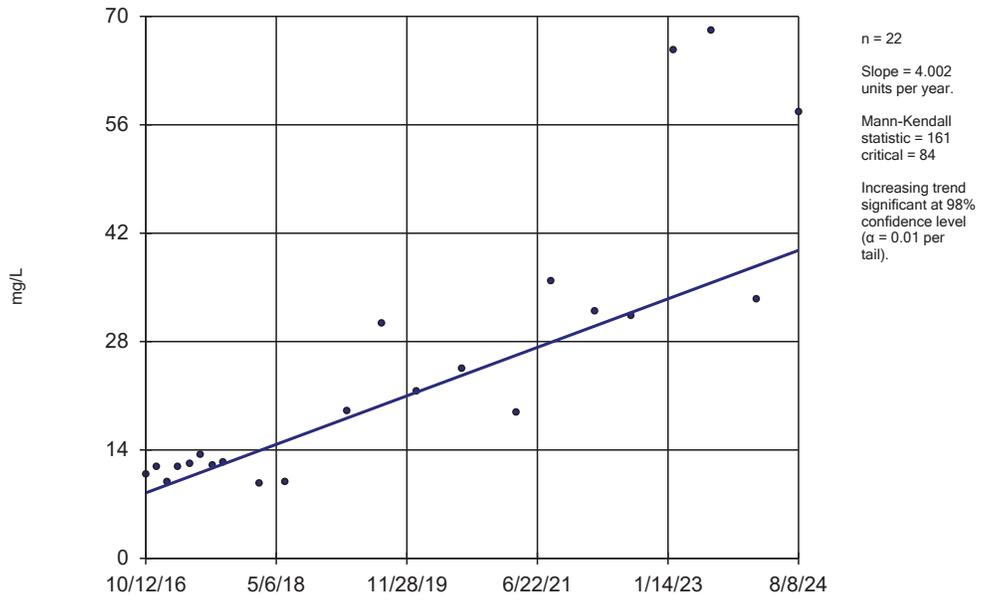


n = 22
Slope = 0.9822
units per year.
Mann-Kendall
statistic = 47
critical = 84
Trend not sig-
nificant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Constituent: Calcium Analysis Run 10/11/2024 1:35 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

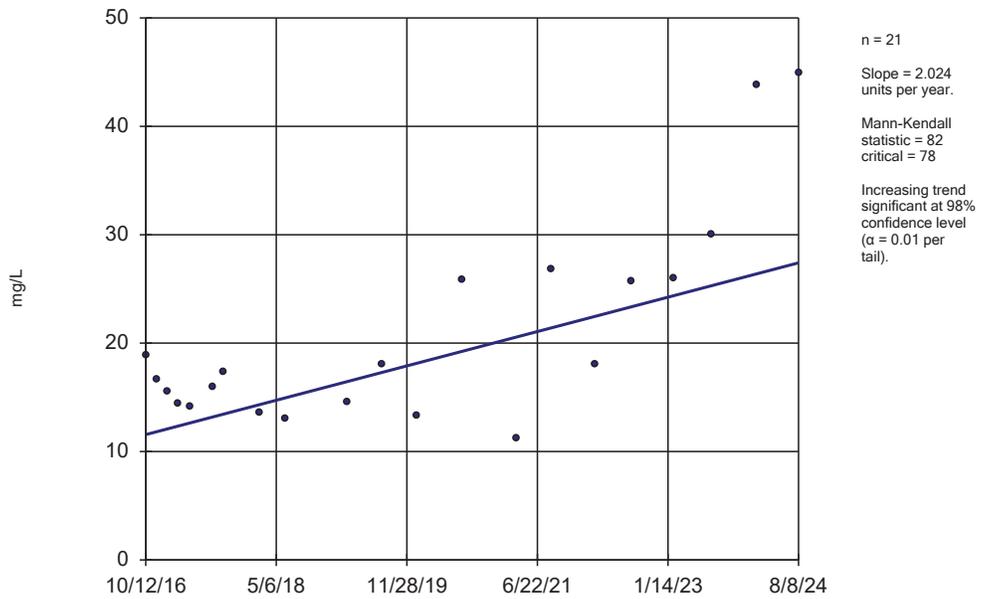
MW-1



Constituent: Chloride Analysis Run 10/11/2024 1:35 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

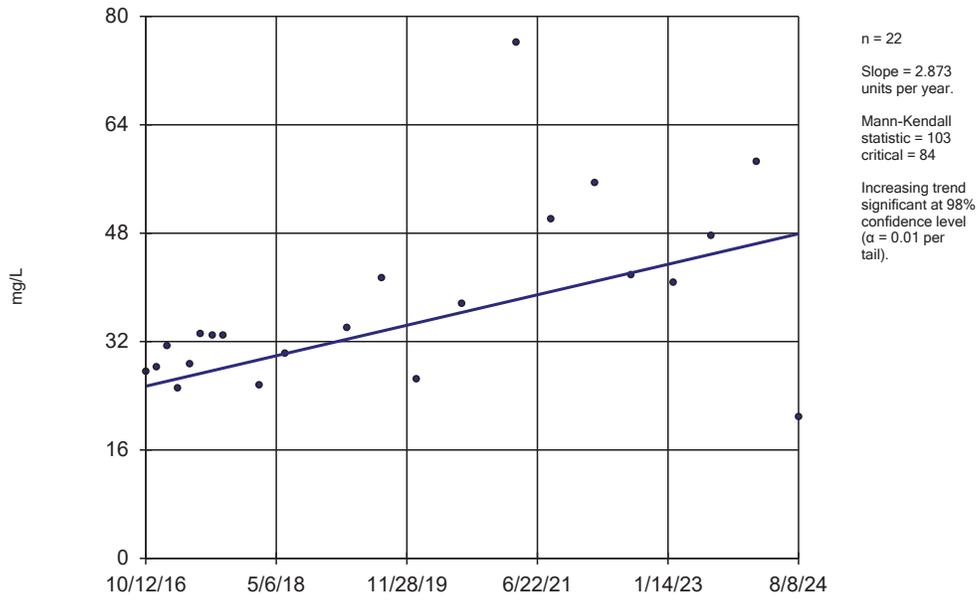
MW-2



Constituent: Chloride Analysis Run 10/11/2024 1:35 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

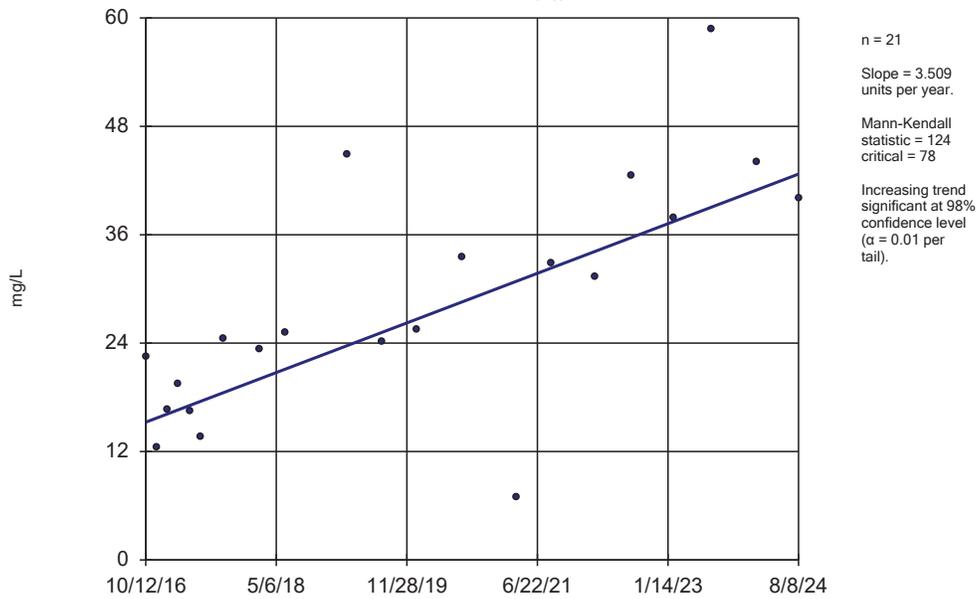
MW-3



Constituent: Chloride Analysis Run 10/11/2024 1:35 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

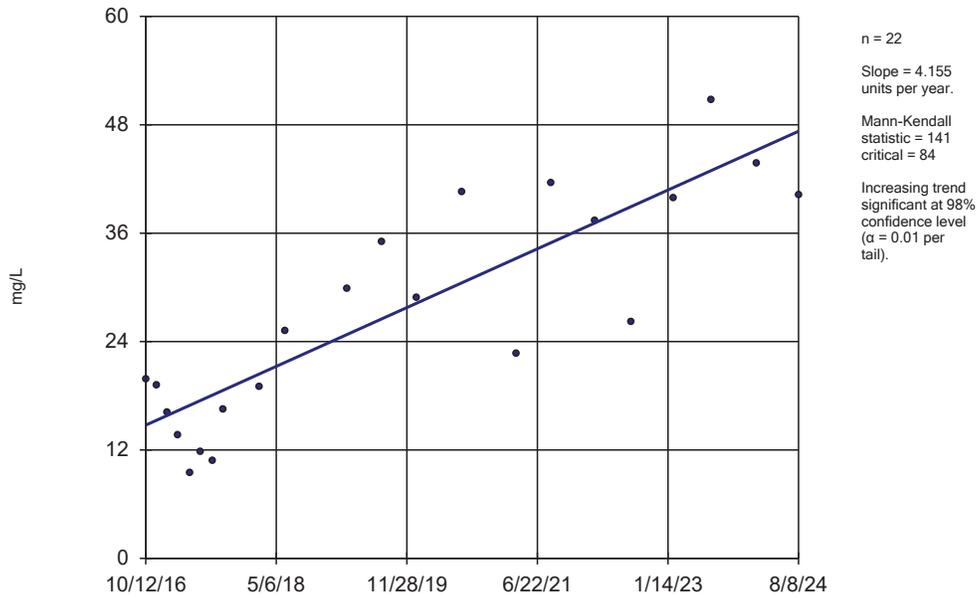
MW-4R (bg)



Constituent: Chloride Analysis Run 10/11/2024 1:35 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

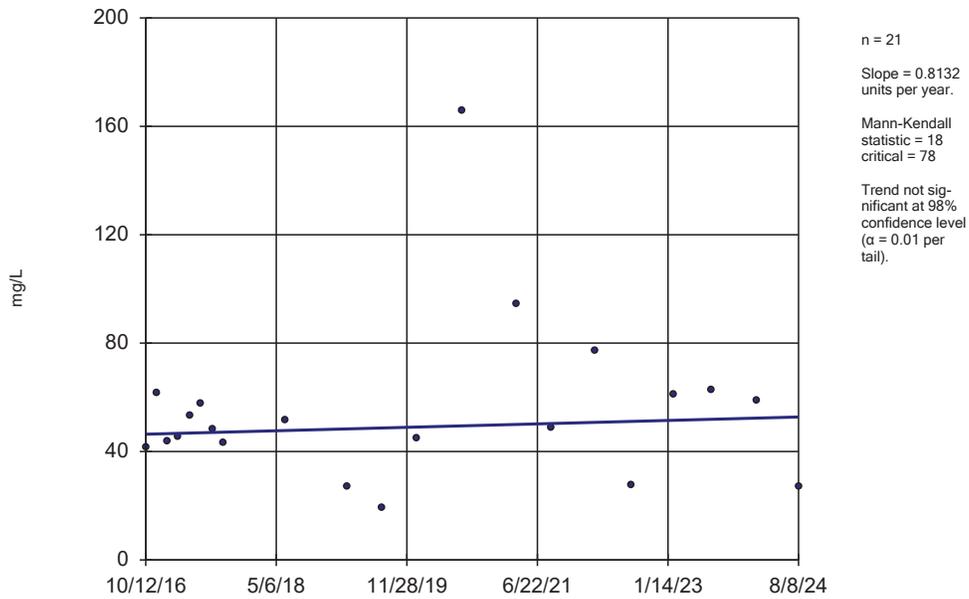
MW-5



Constituent: Chloride Analysis Run 10/11/2024 1:35 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

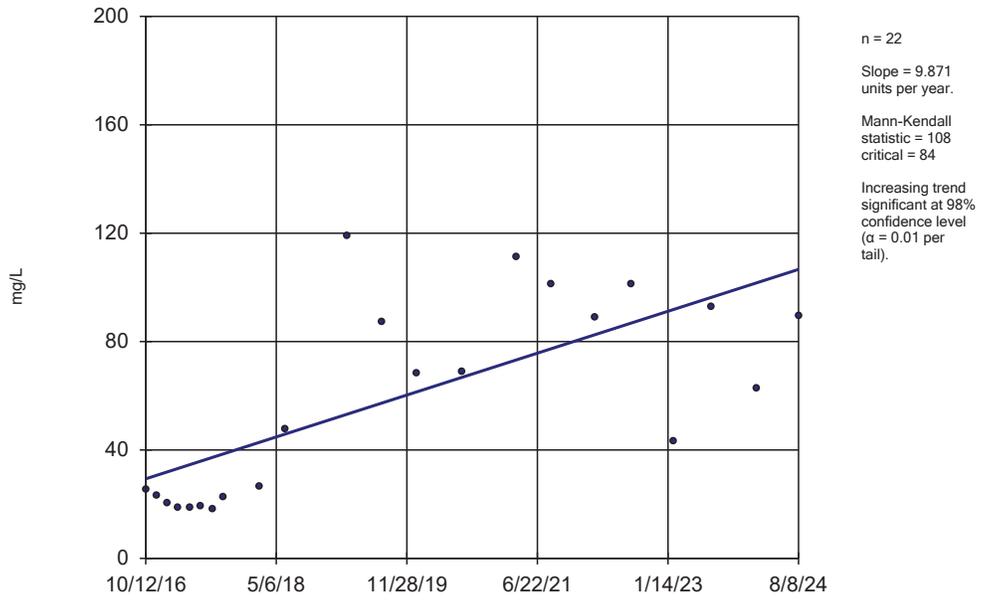
MW-6



Constituent: Chloride Analysis Run 10/11/2024 1:35 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

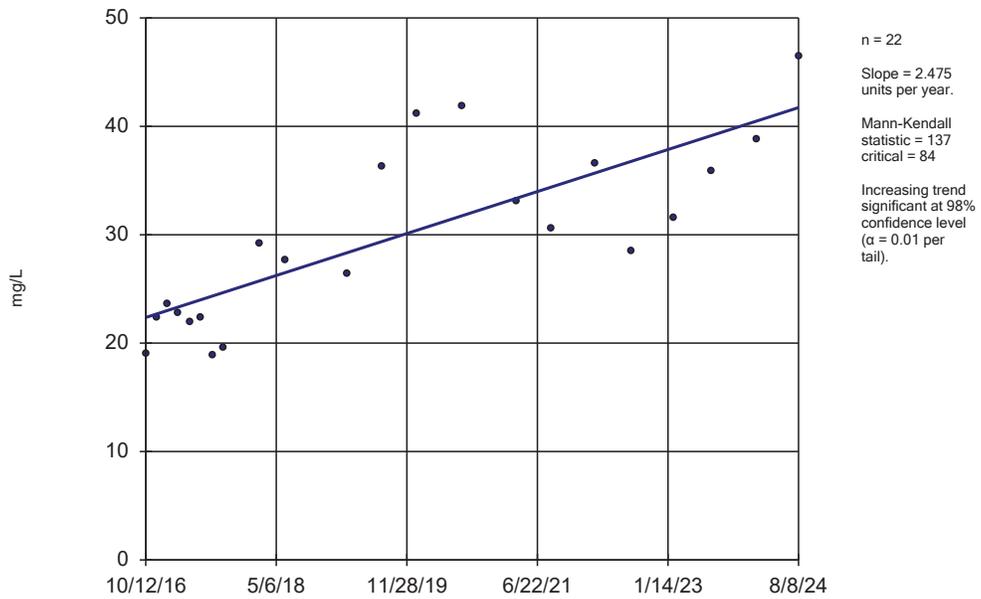
MW-7



Constituent: Chloride Analysis Run 10/11/2024 1:35 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

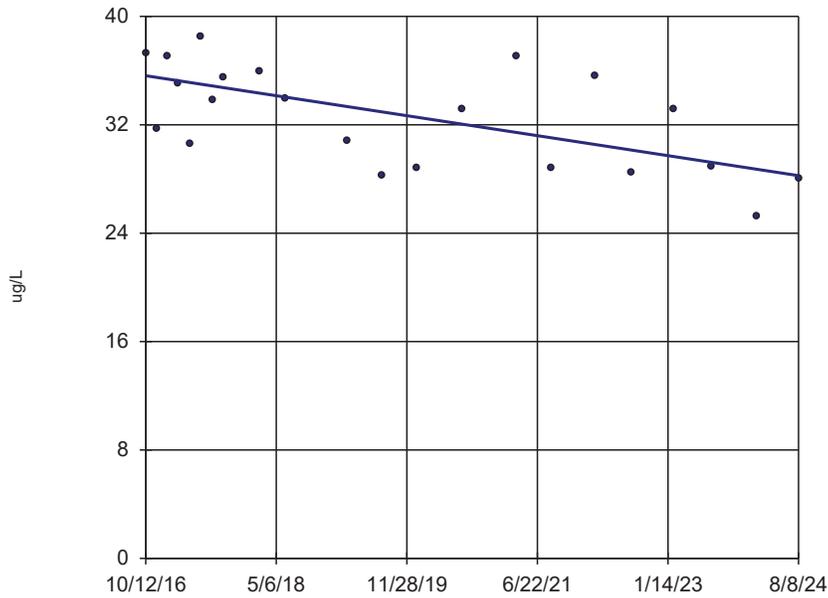
MW-8



Constituent: Chloride Analysis Run 10/11/2024 1:35 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

MW-1

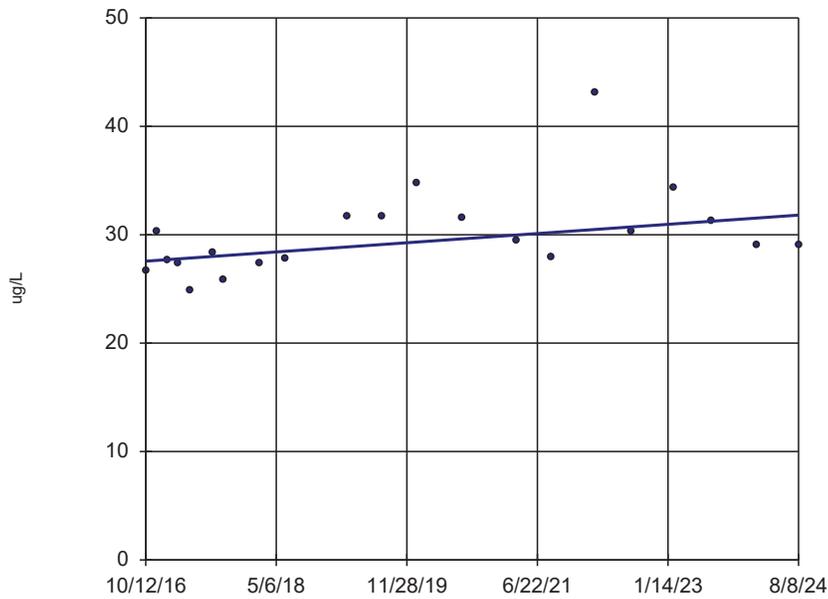


n = 22
Slope = -0.9421
units per year.
Mann-Kendall
statistic = -100
critical = -84
Decreasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Constituent: Lithium Analysis Run 10/11/2024 1:35 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

MW-2

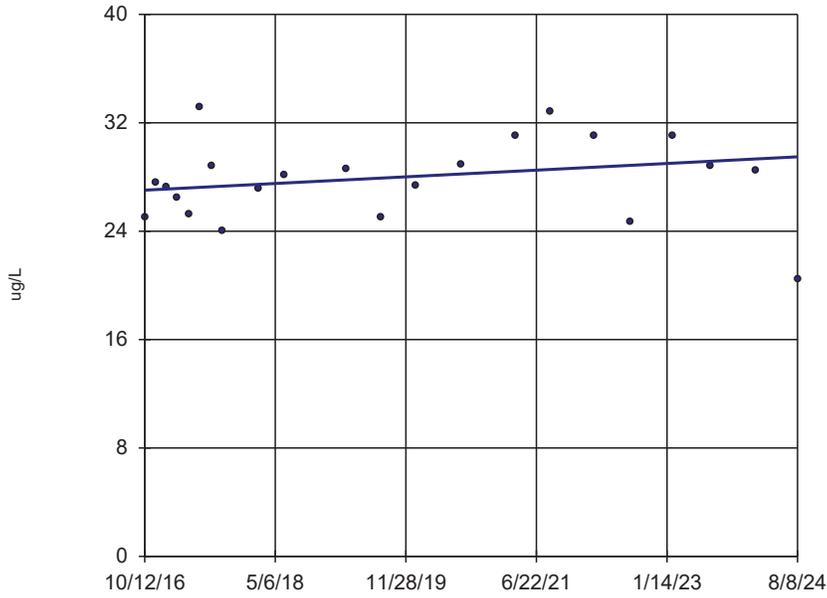


n = 21
Slope = 0.5433
units per year.
Mann-Kendall
statistic = 73
critical = 78
Trend not sig-
nificant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Constituent: Lithium Analysis Run 10/11/2024 1:35 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

MW-3

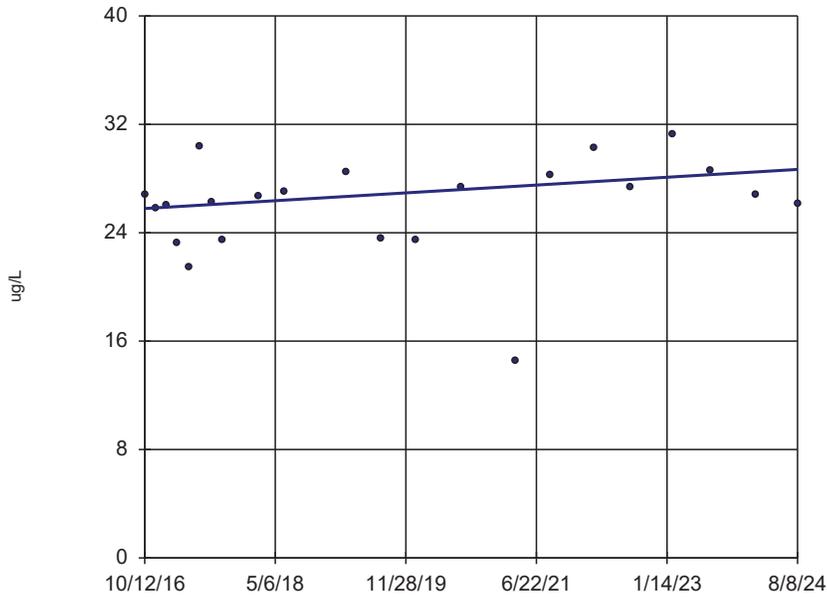


n = 22
Slope = 0.314
units per year.
Mann-Kendall
statistic = 36
critical = 84
Trend not sig-
nificant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Constituent: Lithium Analysis Run 10/11/2024 1:35 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

MW-4R (bg)

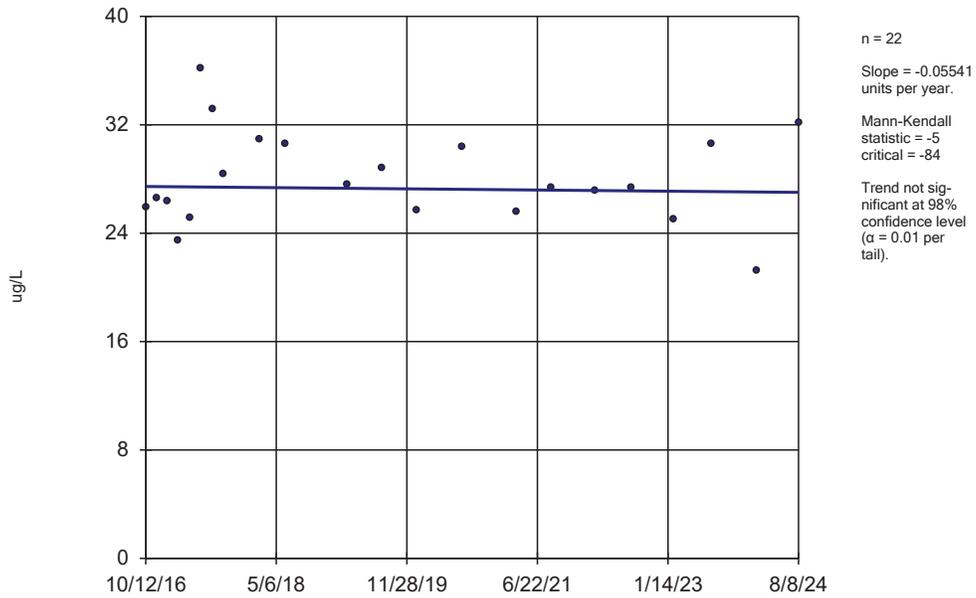


n = 22
Slope = 0.3687
units per year.
Mann-Kendall
statistic = 59
critical = 84
Trend not sig-
nificant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Constituent: Lithium Analysis Run 10/11/2024 1:35 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

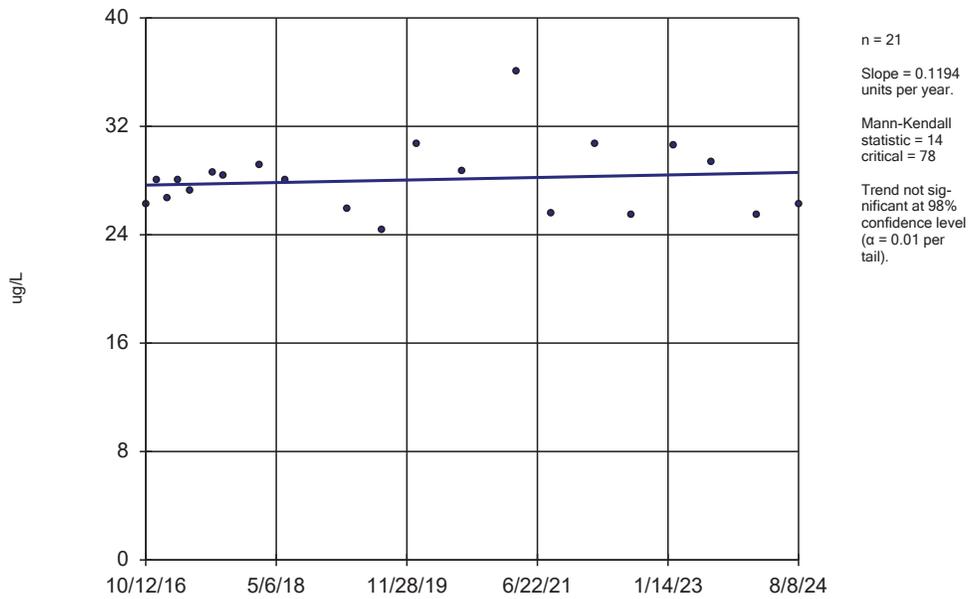
MW-7



Constituent: Lithium Analysis Run 10/11/2024 1:36 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

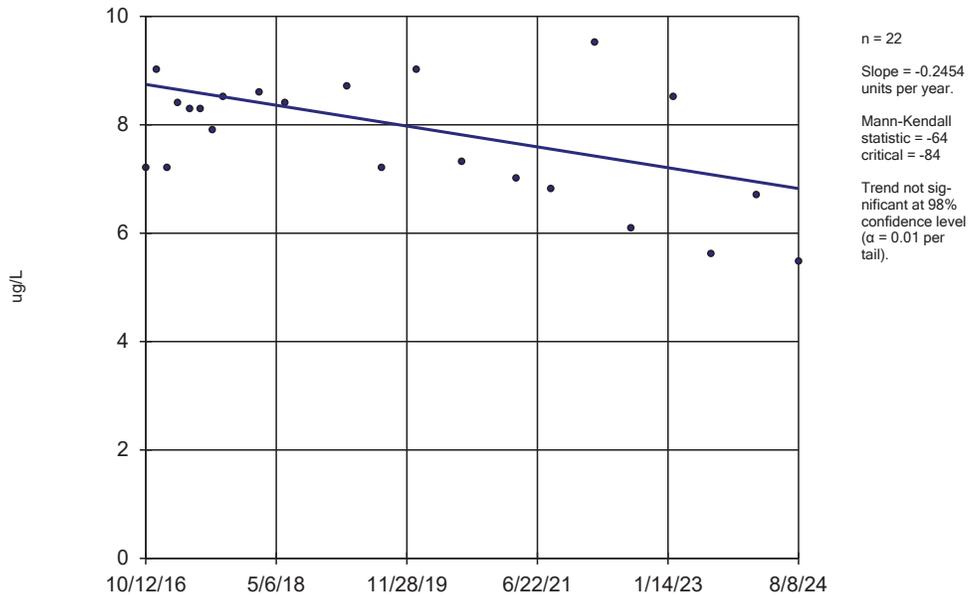
MW-8



Constituent: Lithium Analysis Run 10/11/2024 1:36 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

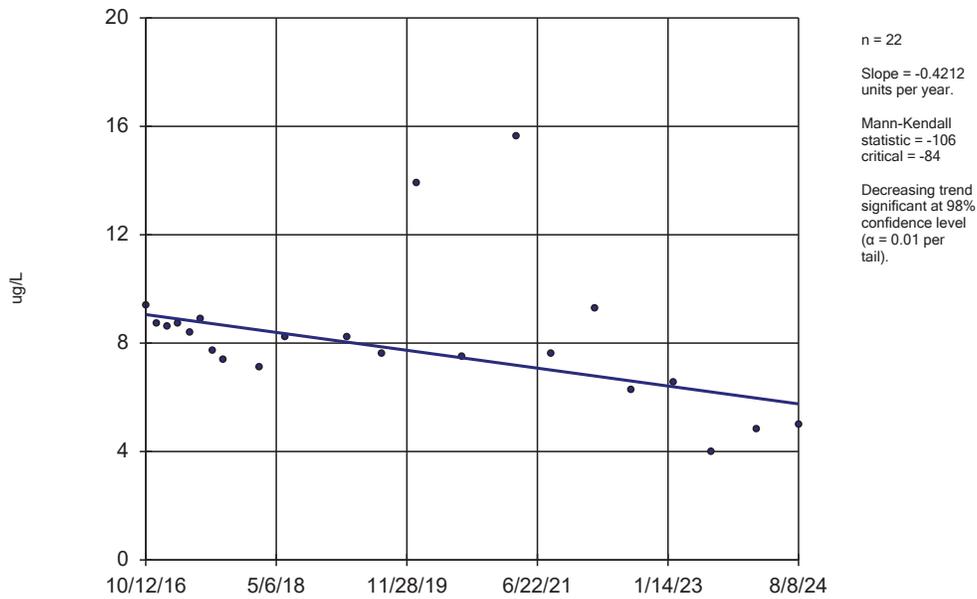
MW-1



Constituent: Molybdenum Analysis Run 10/11/2024 1:36 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

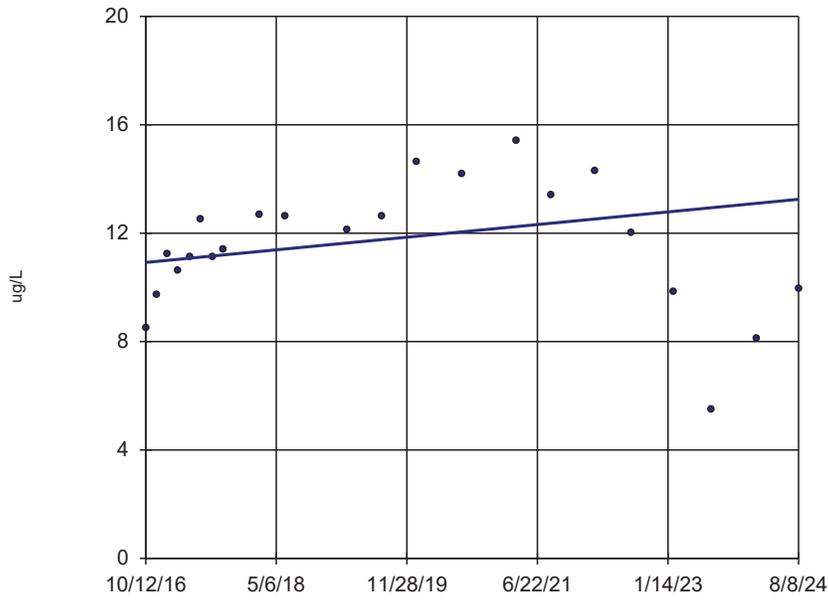
MW-2



Constituent: Molybdenum Analysis Run 10/11/2024 1:36 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

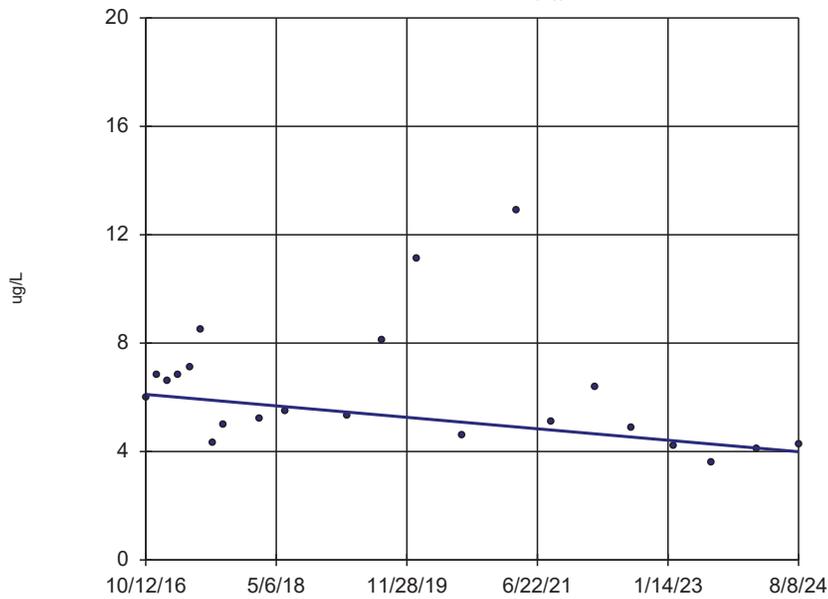
MW-3



Constituent: Molybdenum Analysis Run 10/11/2024 1:36 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

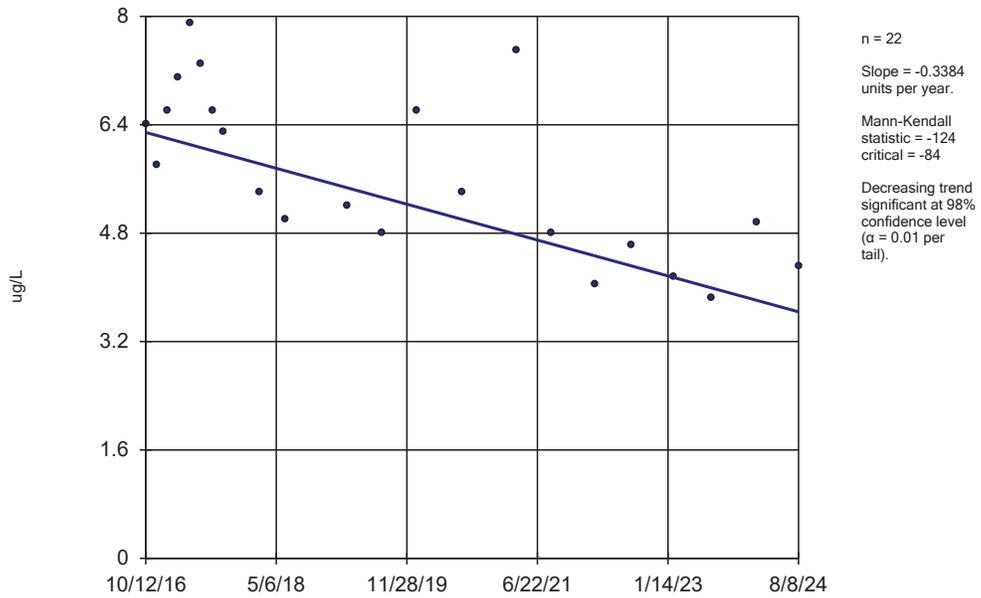
MW-4R (bg)



Constituent: Molybdenum Analysis Run 10/11/2024 1:36 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

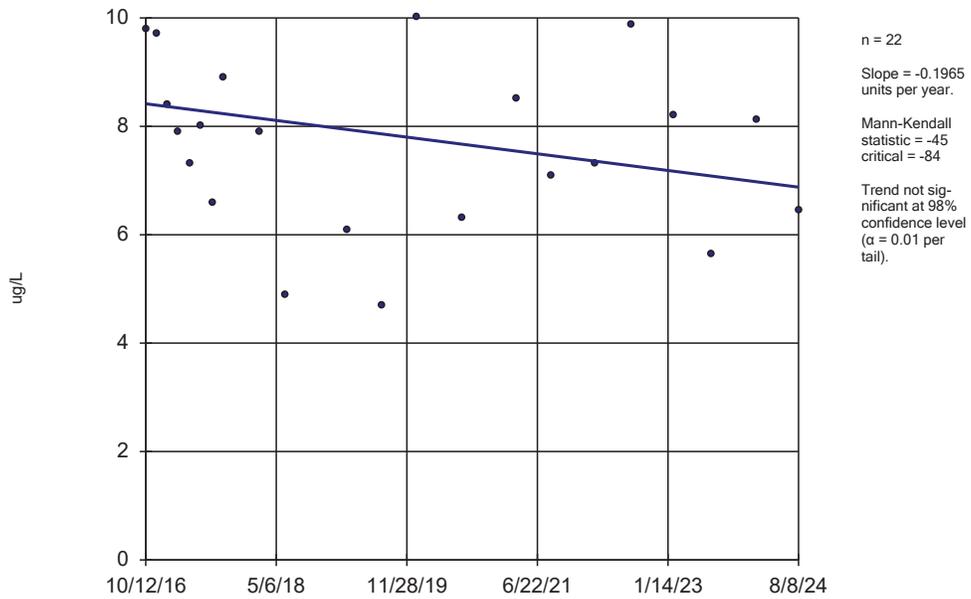
MW-5



Constituent: Molybdenum Analysis Run 10/11/2024 1:36 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

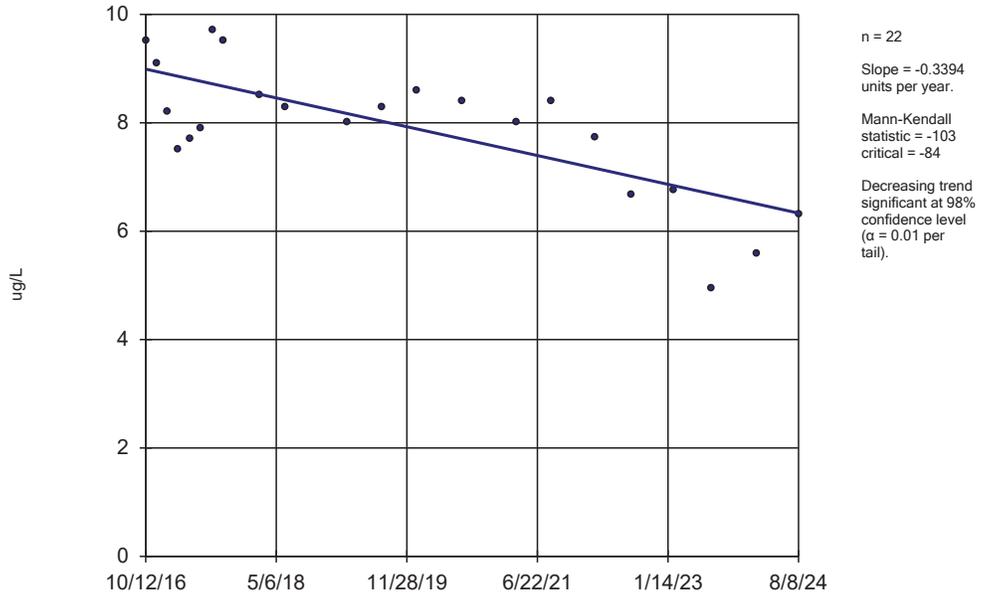
MW-6



Constituent: Molybdenum Analysis Run 10/11/2024 1:36 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

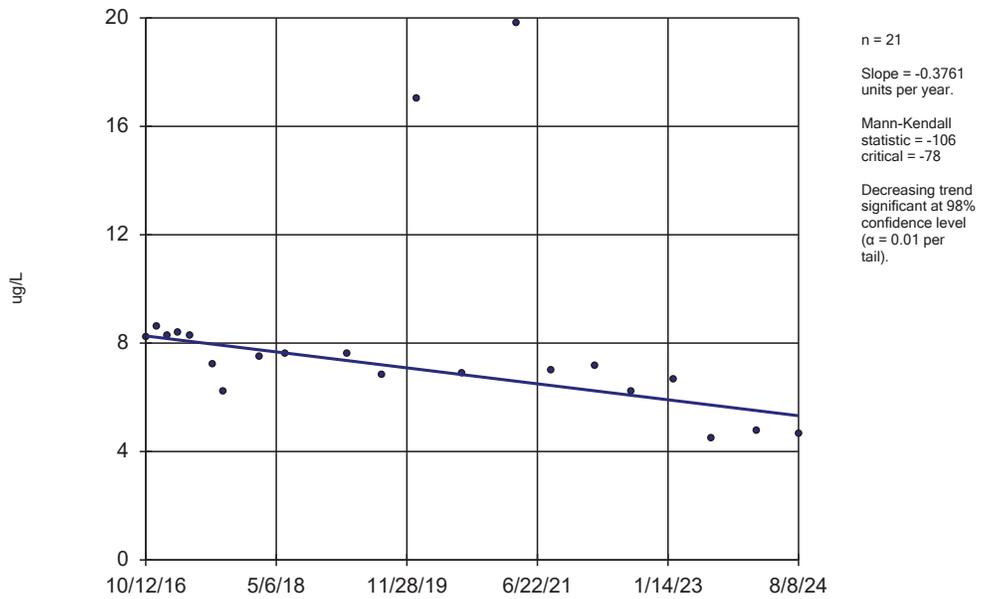
MW-7



Constituent: Molybdenum Analysis Run 10/11/2024 1:36 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

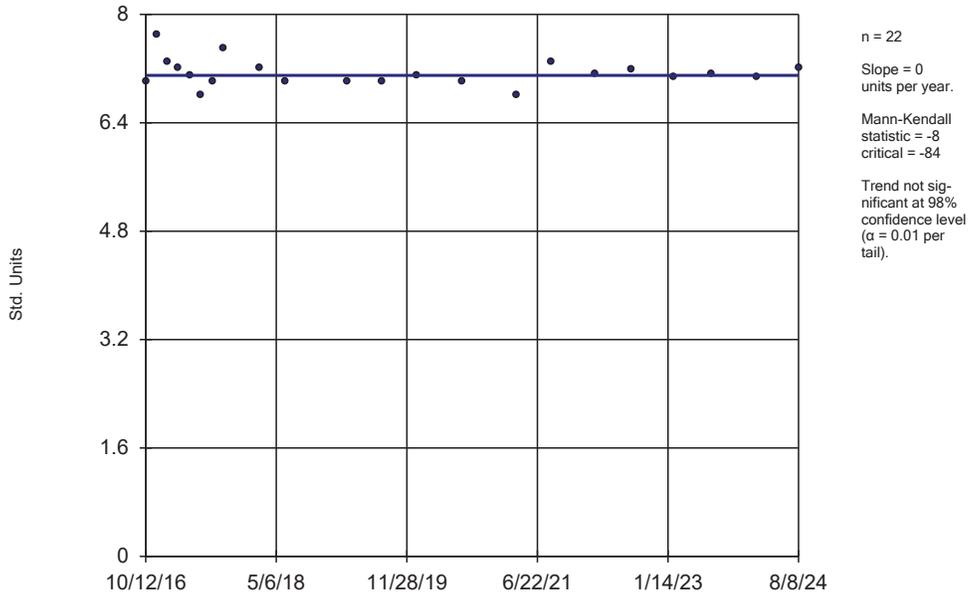
MW-8



Constituent: Molybdenum Analysis Run 10/11/2024 1:36 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

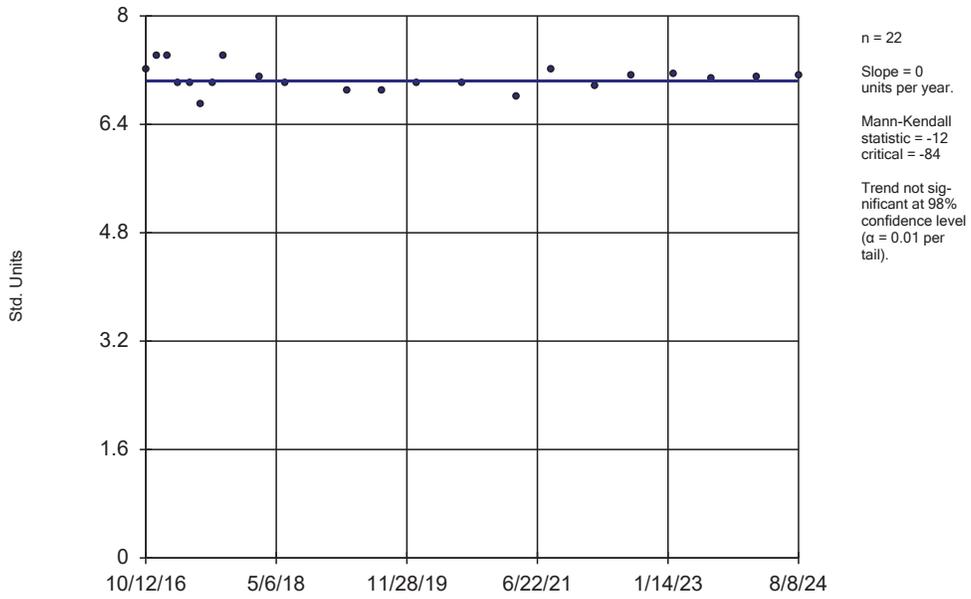
MW-1



Constituent: pH Analysis Run 10/11/2024 1:36 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

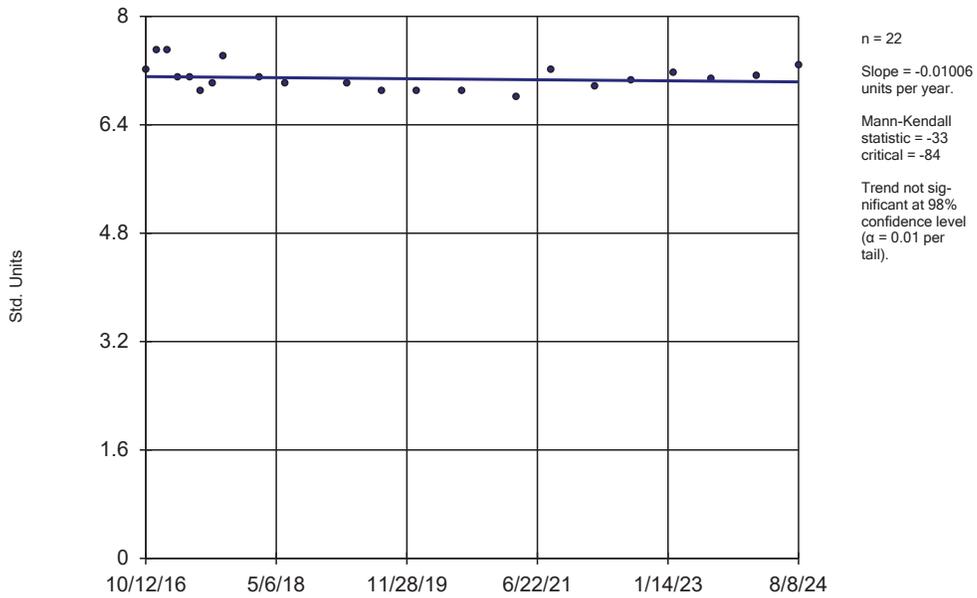
MW-2



Constituent: pH Analysis Run 10/11/2024 1:36 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

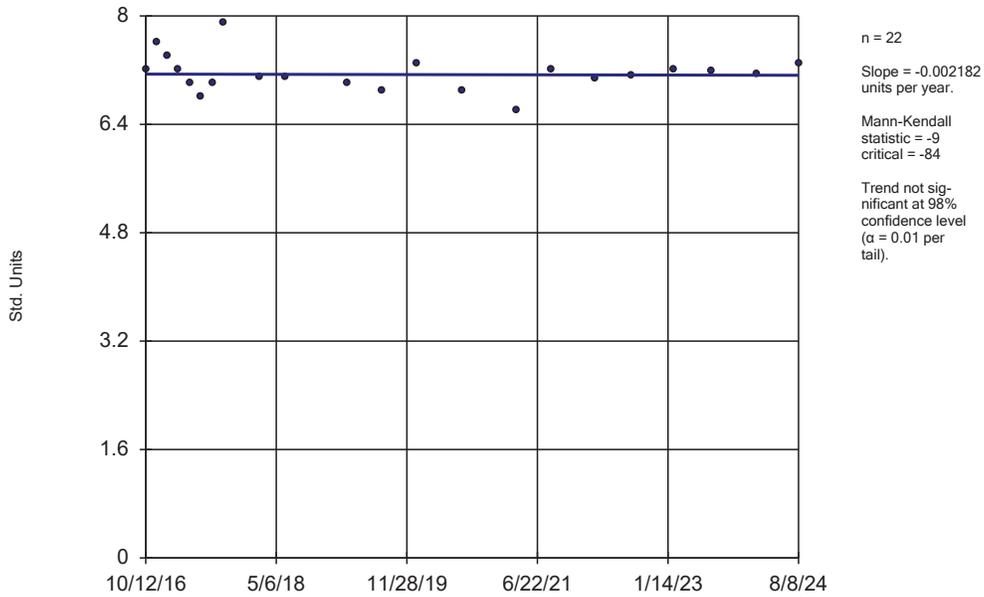
MW-3



Constituent: pH Analysis Run 10/11/2024 1:36 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

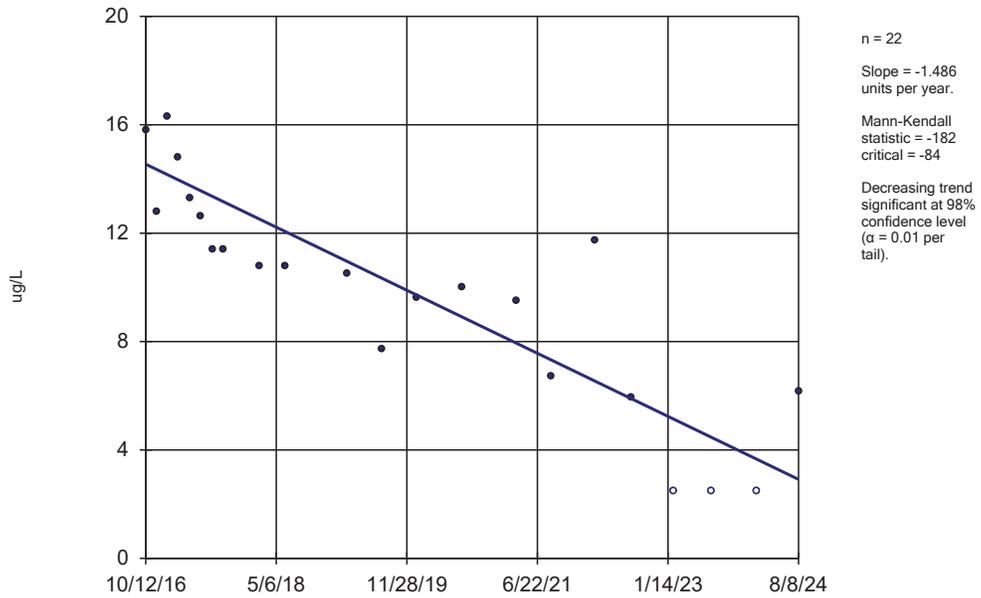
MW-4R (bg)



Constituent: pH Analysis Run 10/11/2024 1:36 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

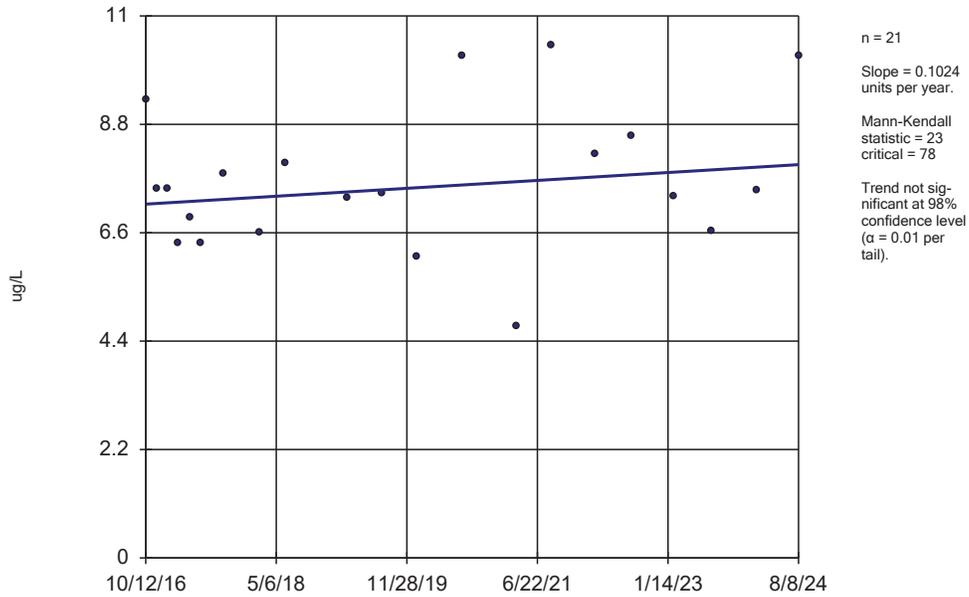
MW-1



Constituent: Selenium Analysis Run 10/11/2024 1:36 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

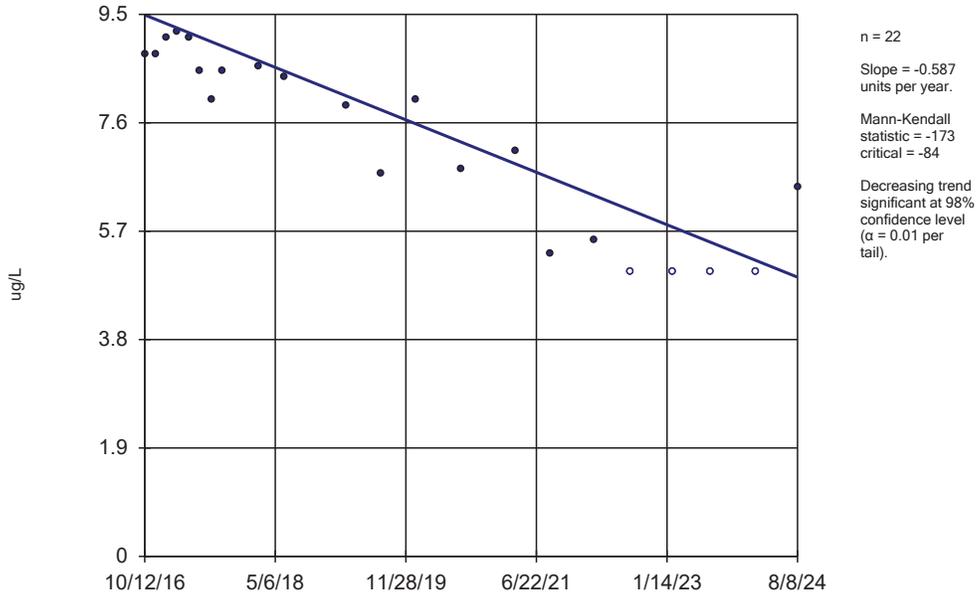
MW-4R (bg)



Constituent: Selenium Analysis Run 10/11/2024 1:36 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

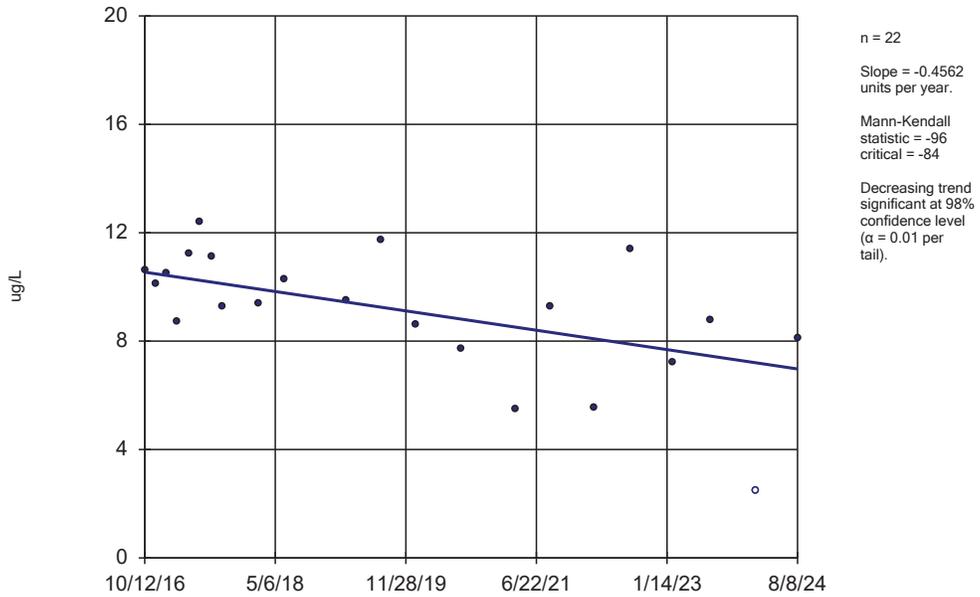
MW-5



Constituent: Selenium Analysis Run 10/11/2024 1:36 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

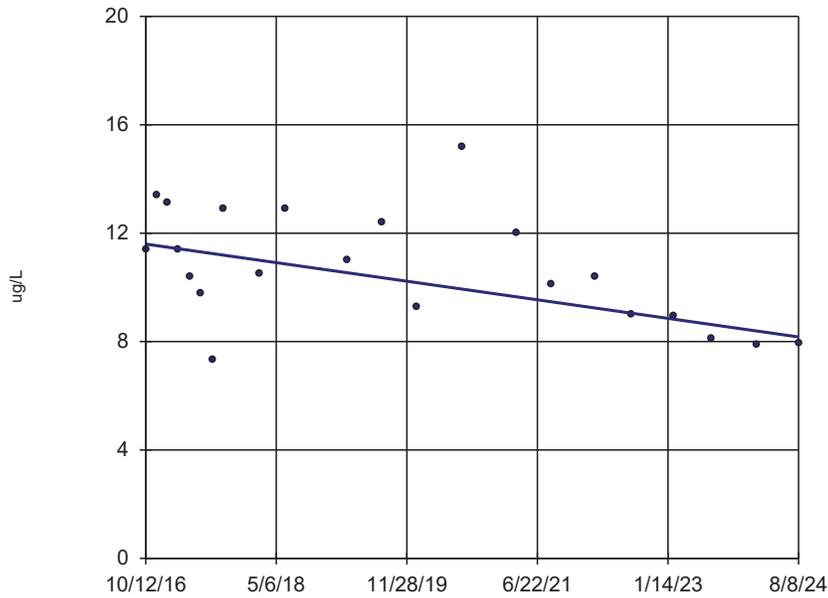
MW-7



Constituent: Selenium Analysis Run 10/11/2024 1:36 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

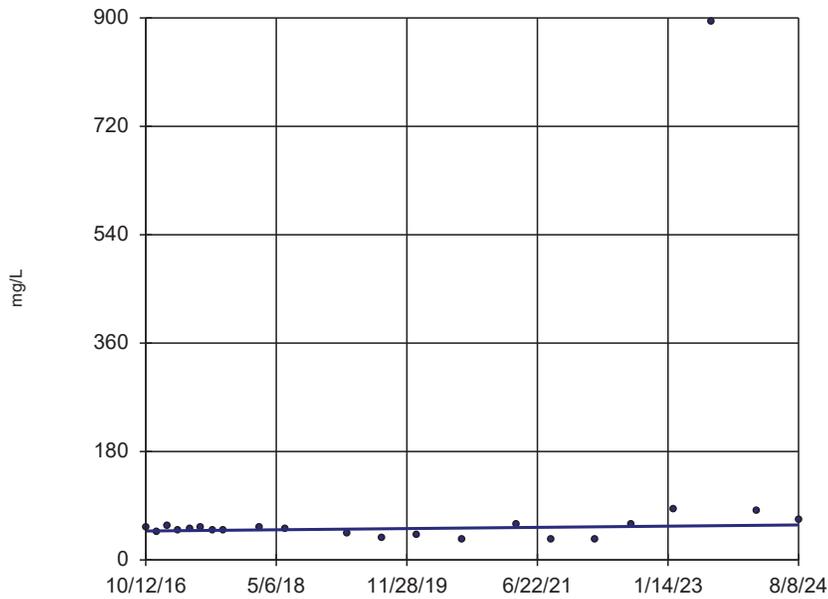
MW-8



Constituent: Selenium Analysis Run 10/11/2024 1:36 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

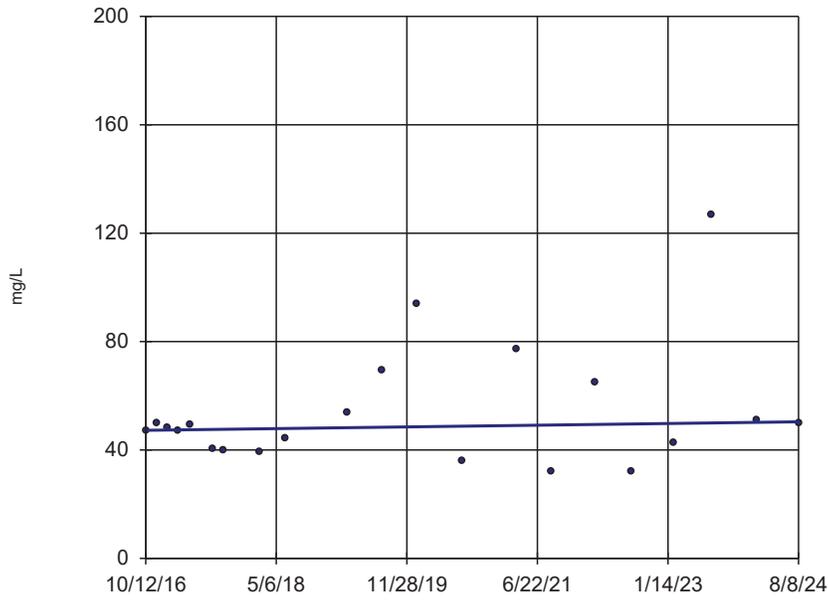
MW-1



Constituent: Sulfate Analysis Run 10/11/2024 1:36 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

MW-2

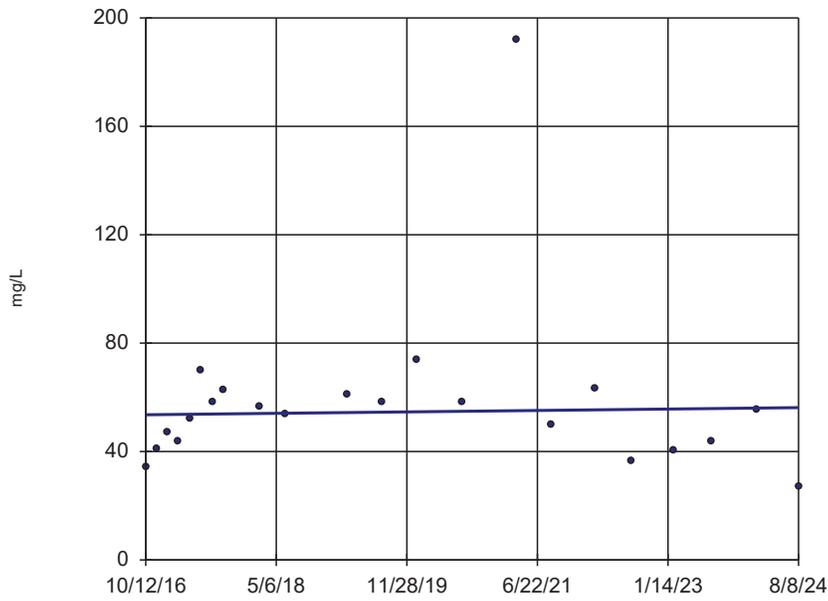


n = 21
Slope = 0.3994
units per year.
Mann-Kendall
statistic = 14
critical = 78
Trend not sig-
nificant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Constituent: Sulfate Analysis Run 10/11/2024 1:36 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

MW-3

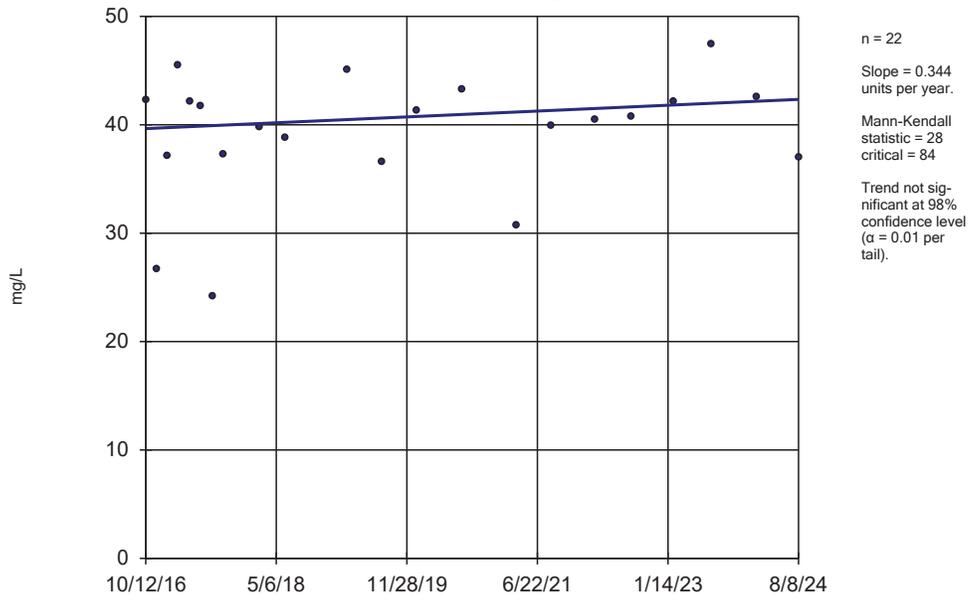


n = 22
Slope = 0.3362
units per year.
Mann-Kendall
statistic = 5
critical = 84
Trend not sig-
nificant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Constituent: Sulfate Analysis Run 10/11/2024 1:36 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

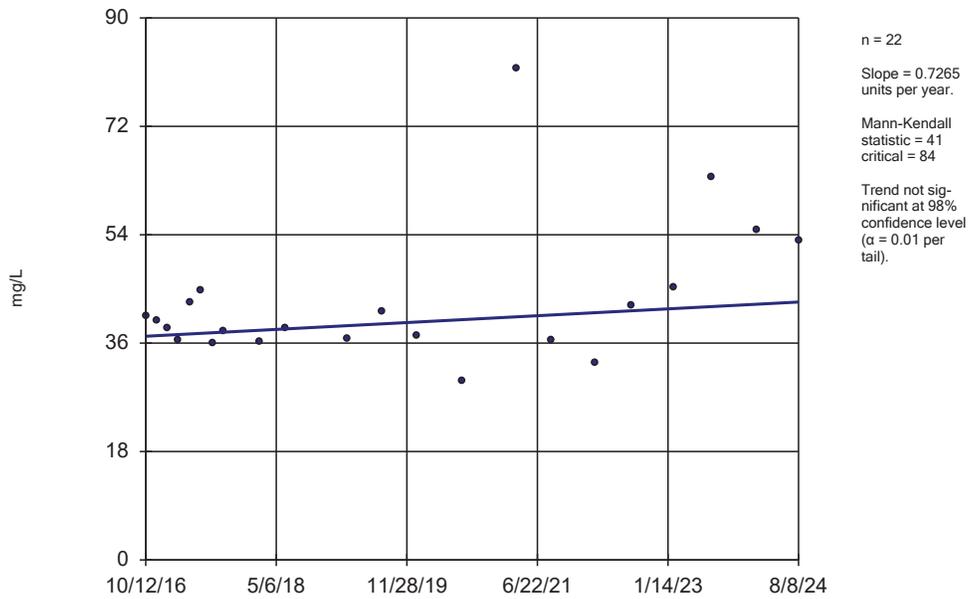
MW-4R (bg)



Constituent: Sulfate Analysis Run 10/11/2024 1:36 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

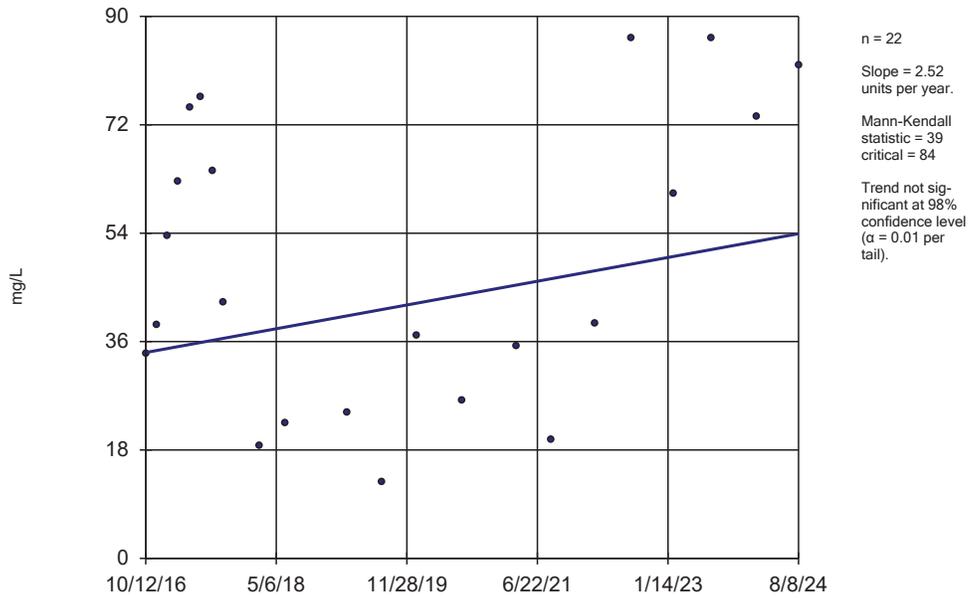
MW-5



Constituent: Sulfate Analysis Run 10/11/2024 1:36 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

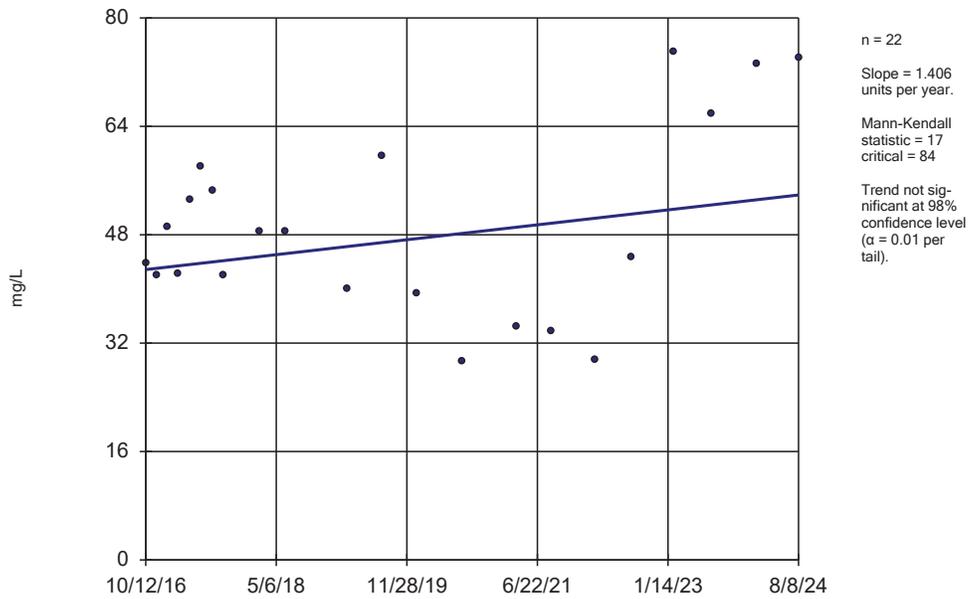
MW-6



Constituent: Sulfate Analysis Run 10/11/2024 1:36 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

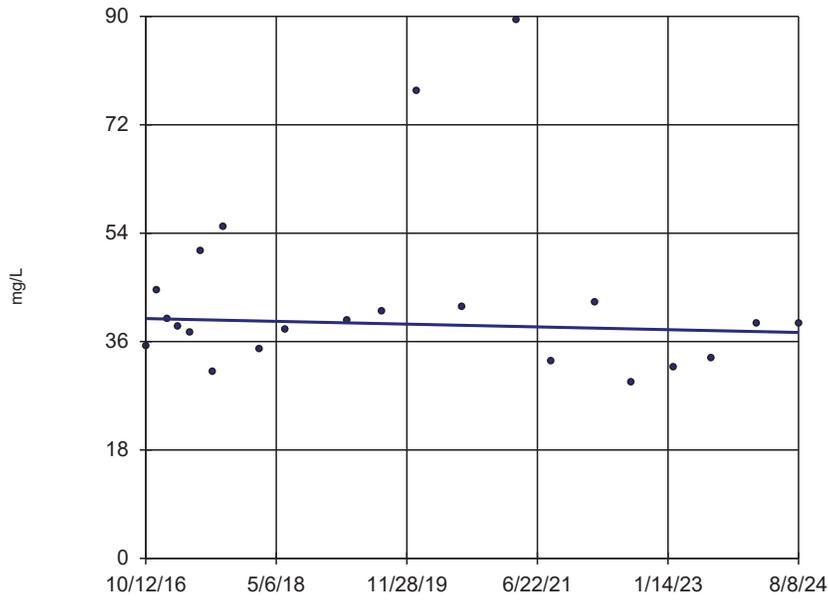
MW-7



Constituent: Sulfate Analysis Run 10/11/2024 1:36 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

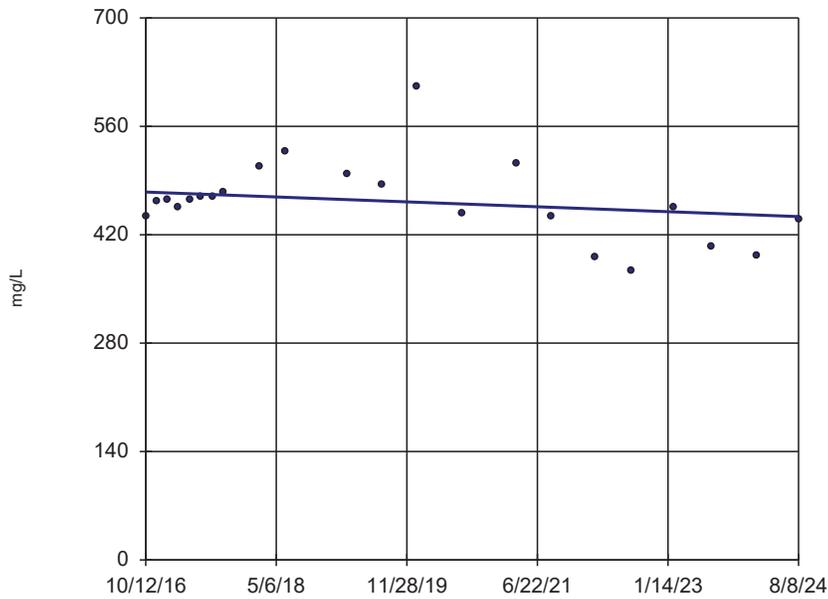
MW-8



Constituent: Sulfate Analysis Run 10/11/2024 1:36 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

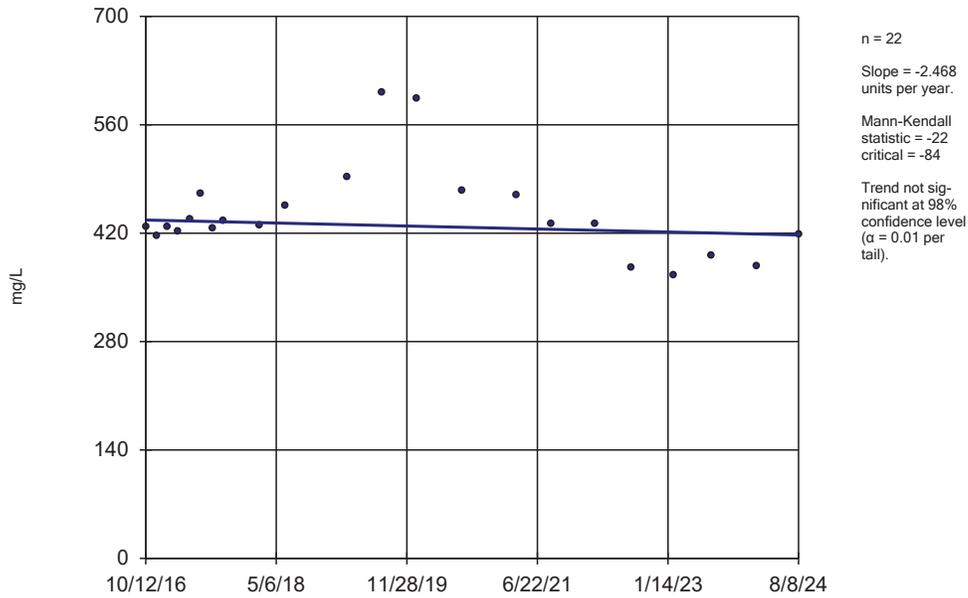
MW-1



Constituent: Total Dissolved Solids Analysis Run 10/11/2024 1:36 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

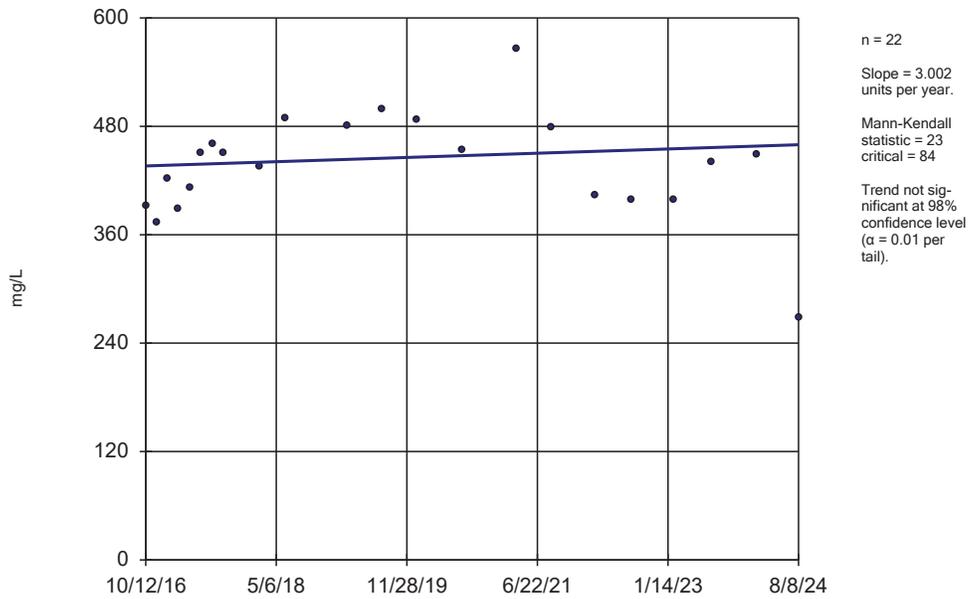
MW-2



Constituent: Total Dissolved Solids Analysis Run 10/11/2024 1:36 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

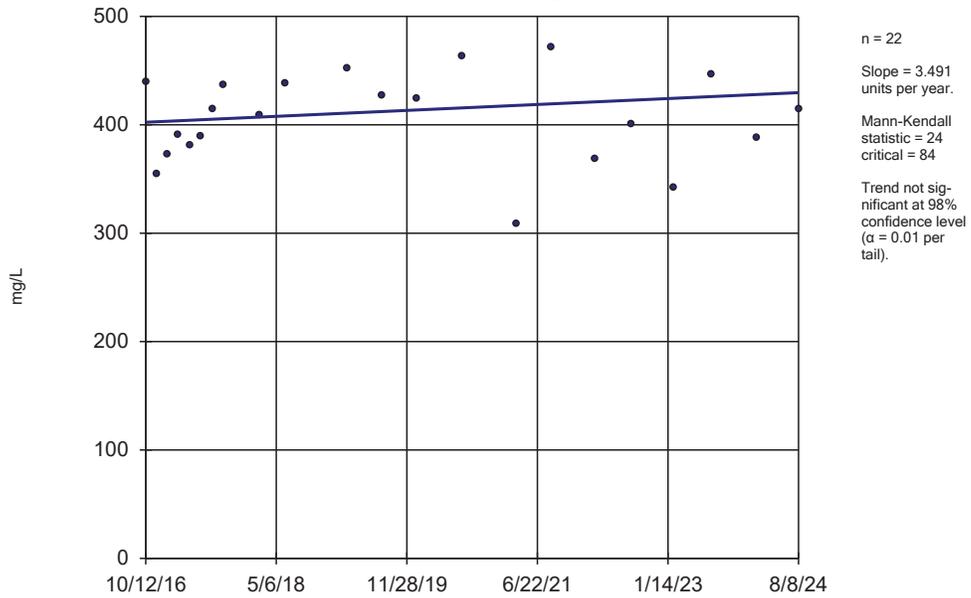
MW-3



Constituent: Total Dissolved Solids Analysis Run 10/11/2024 1:36 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

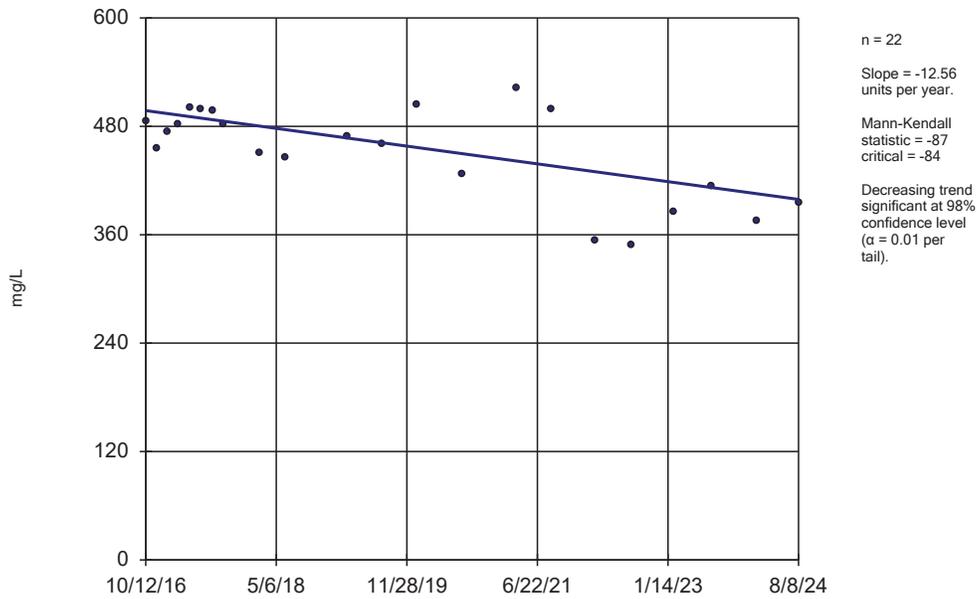
MW-4R (bg)



Constituent: Total Dissolved Solids Analysis Run 10/11/2024 1:36 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

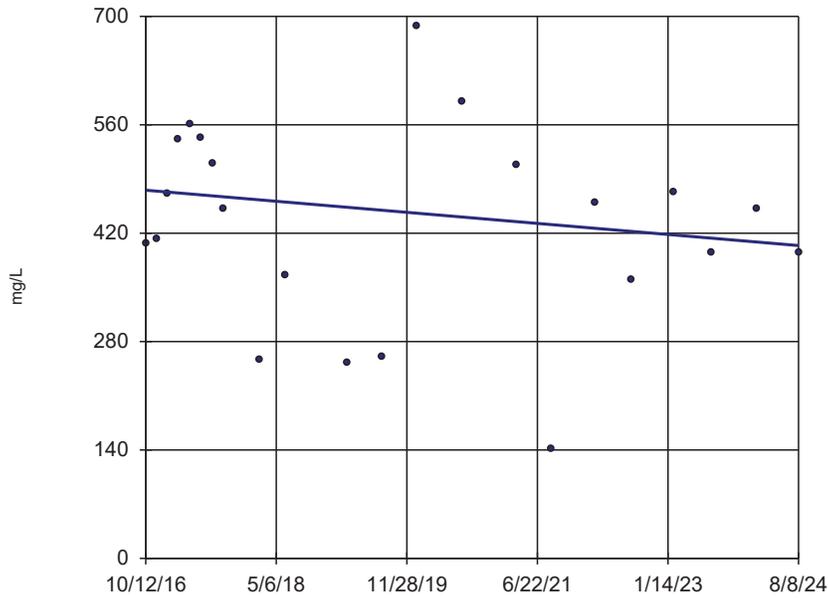
MW-5



Constituent: Total Dissolved Solids Analysis Run 10/11/2024 1:36 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

MW-6

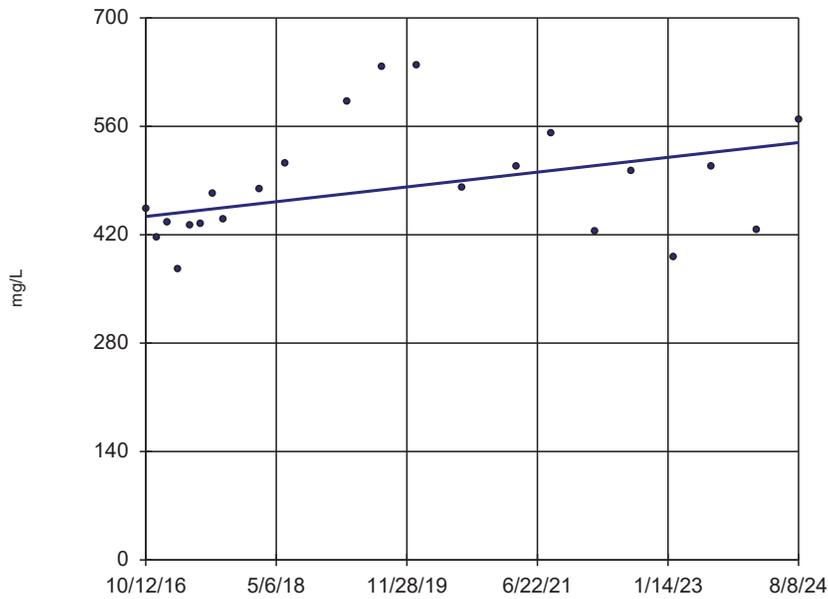


n = 22
Slope = -9.129
units per year.
Mann-Kendall
statistic = -32
critical = -84
Trend not sig-
nificant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Constituent: Total Dissolved Solids Analysis Run 10/11/2024 1:36 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

MW-7

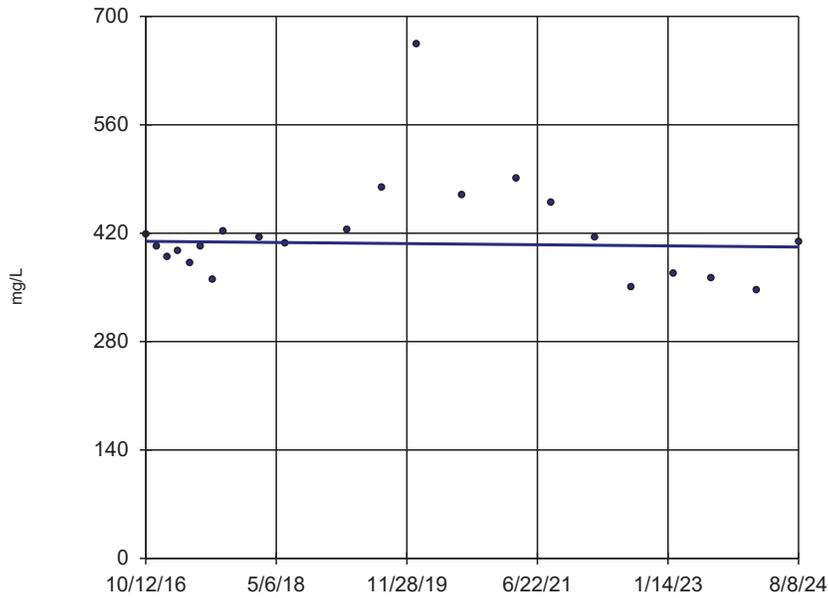


n = 22
Slope = 12.2
units per year.
Mann-Kendall
statistic = 65
critical = 84
Trend not sig-
nificant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Constituent: Total Dissolved Solids Analysis Run 10/11/2024 1:36 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

MW-8

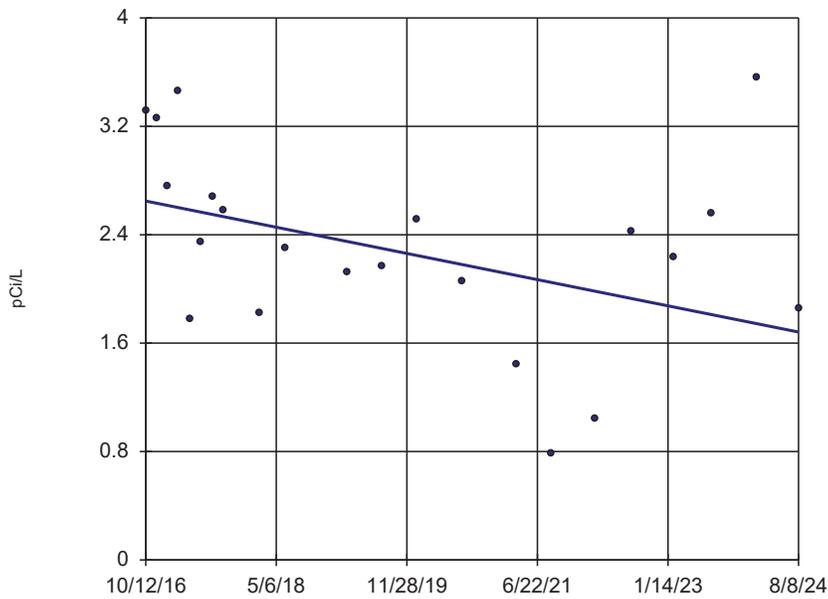


n = 22
Slope = -0.9299
units per year.
Mann-Kendall
statistic = -4
critical = -84
Trend not sig-
nificant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Constituent: Total Dissolved Solids Analysis Run 10/11/2024 1:36 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

MW-1

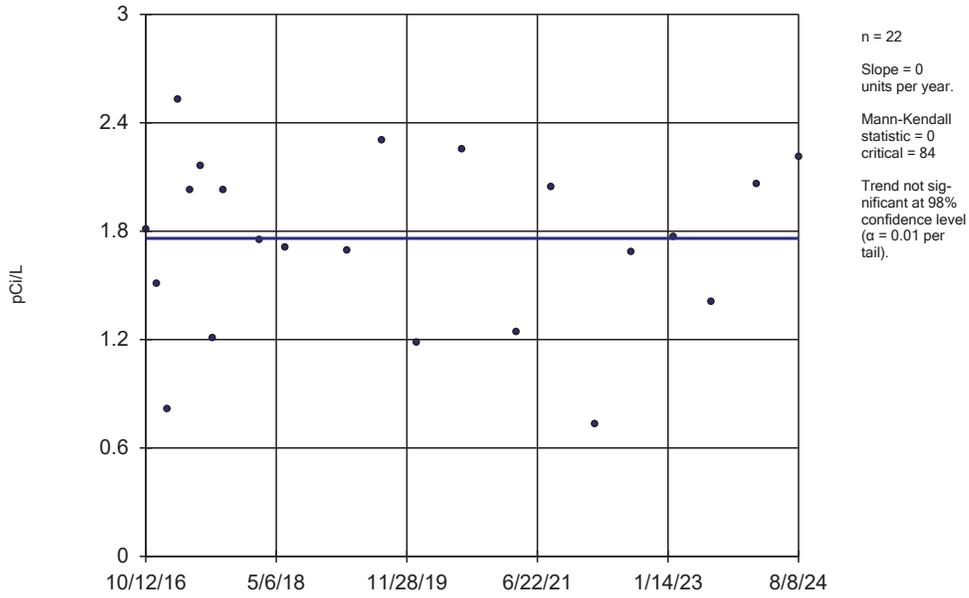


n = 22
Slope = -0.1235
units per year.
Mann-Kendall
statistic = -69
critical = -84
Trend not sig-
nificant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Constituent: Total Radium Analysis Run 10/11/2024 1:37 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

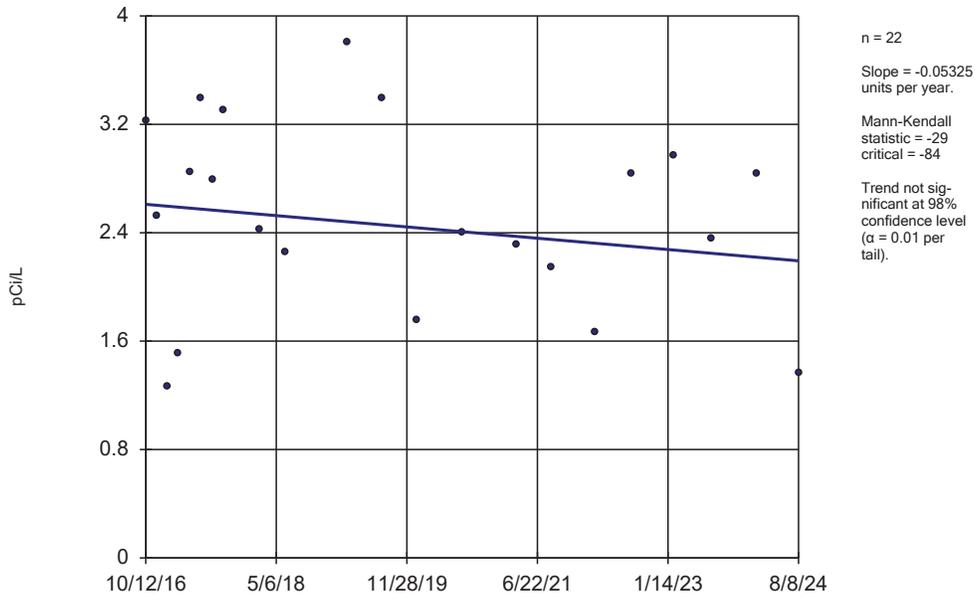
MW-2



Constituent: Total Radium Analysis Run 10/11/2024 1:37 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

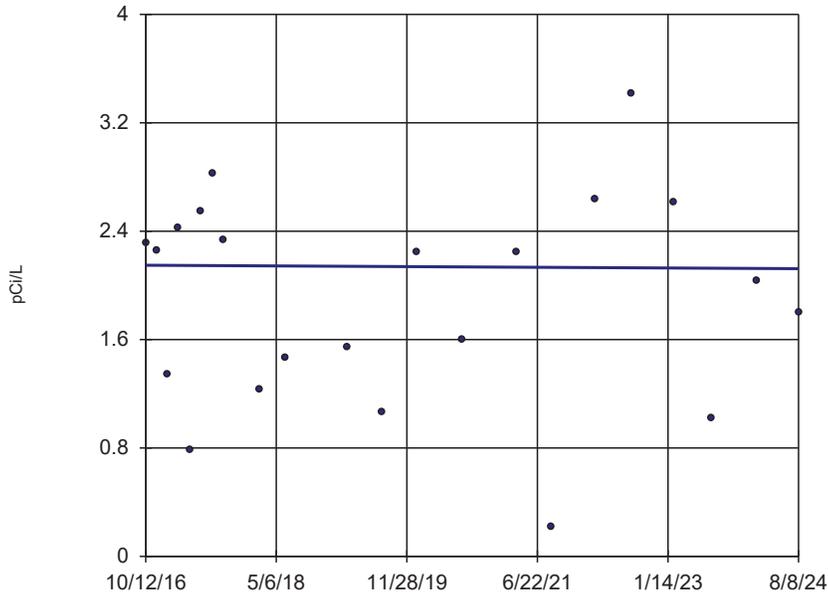
MW-3



Constituent: Total Radium Analysis Run 10/11/2024 1:37 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

MW-6

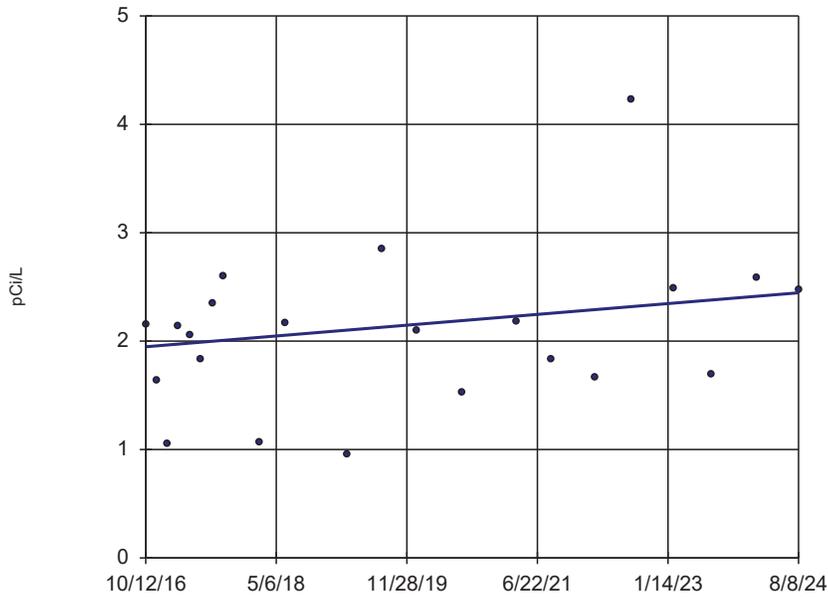


n = 22
Slope = -0.00321
units per year.
Mann-Kendall
statistic = -4
critical = -84
Trend not sig-
nificant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Constituent: Total Radium Analysis Run 10/11/2024 1:37 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

MW-7

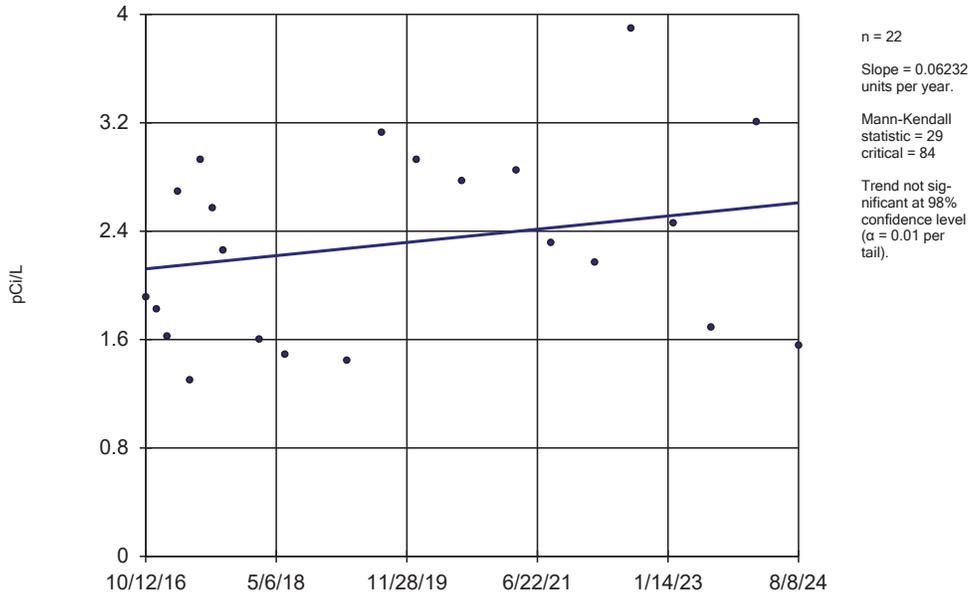


n = 22
Slope = 0.06353
units per year.
Mann-Kendall
statistic = 48
critical = 84
Trend not sig-
nificant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Constituent: Total Radium Analysis Run 10/11/2024 1:37 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

MW-8



Constituent: Total Radium Analysis Run 10/11/2024 1:37 PM View: 2024Q3 Trend Analysis
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

A.5 Confidence Interval Analysis

Confidence Interval

Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater Printed 10/11/2024, 3:34 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Arsenic (ug/L)	MW-1	4.144	3.459	10	No	22	0	ln(x)	0.01	Param.
Arsenic (ug/L)	MW-2	4.122	3.765	10	No	22	0	No	0.01	Param.
Arsenic (ug/L)	MW-3	3.416	2.998	10	No	22	0	No	0.01	Param.
Arsenic (ug/L)	MW-4R (bg)	4.893	3.936	10	No	22	0	No	0.01	Param.
Arsenic (ug/L)	MW-5	4.628	4.337	10	No	22	0	No	0.01	Param.
Arsenic (ug/L)	MW-6	3.717	2.875	10	No	22	0	sqrt(x)	0.01	Param.
Arsenic (ug/L)	MW-7	3.786	3.419	10	No	22	0	sqrt(x)	0.01	Param.
Arsenic (ug/L)	MW-8	2.705	2.513	10	No	22	0	No	0.01	Param.
Barium (ug/L)	MW-1	143.8	126.3	2000	No	22	0	No	0.01	Param.
Barium (ug/L)	MW-2	108.5	98.69	2000	No	22	0	No	0.01	Param.
Barium (ug/L)	MW-3	178.8	158.4	2000	No	22	0	x^3	0.01	Param.
Barium (ug/L)	MW-4R (bg)	130.1	115.4	2000	No	22	0	No	0.01	Param.
Barium (ug/L)	MW-5	141.6	126.2	2000	No	22	0	No	0.01	Param.
Barium (ug/L)	MW-6	148.9	107.4	2000	No	22	0	No	0.01	Param.
Barium (ug/L)	MW-7	131.2	113.6	2000	No	22	0	No	0.01	Param.
Barium (ug/L)	MW-8	157.7	141.5	2000	No	22	0	No	0.01	Param.
Boron (ug/L)	MW-1	146	117	153.3	No	22	4.545	No	0.01	NP (normality)
Boron (ug/L)	MW-2	138	115	153.3	No	21	4.762	No	0.01	NP (normality)
Boron (ug/L)	MW-5	132	114	153.3	No	22	4.545	No	0.01	NP (normality)
Boron (ug/L)	MW-6	127	100	153.3	No	22	50	No	0.01	NP (normality)
Boron (ug/L)	MW-7	164	114.7	153.3	No	22	13.64	No	0.01	Param.
Boron (ug/L)	MW-8	142	104	153.3	No	20	10	No	0.01	NP (normality)
Calcium (mg/L)	MW-1	105.6	98.39	87.04	Yes	22	0	No	0.01	Param.
Calcium (mg/L)	MW-2	107.9	96.8	87.04	Yes	22	0	No	0.01	Param.
Calcium (mg/L)	MW-3	101.8	88.43	87.04	Yes	22	0	No	0.01	Param.
Calcium (mg/L)	MW-4R (bg)	92.48	81.6	87.04	No	22	0	No	0.01	Param.
Calcium (mg/L)	MW-5	108.4	95.71	87.04	Yes	22	0	No	0.01	Param.
Calcium (mg/L)	MW-6	91.95	66.54	87.04	No	22	0	No	0.01	Param.
Calcium (mg/L)	MW-7	102	89.5	87.04	Yes	22	0	No	0.01	Param.
Calcium (mg/L)	MW-8	96.94	87.98	87.04	Yes	22	0	No	0.01	Param.
Chloride (mg/L)	MW-1	28.69	14.42	250	No	22	0	ln(x)	0.01	Param.
Chloride (mg/L)	MW-2	24.56	15.59	250	No	21	0	x^(1/3)	0.01	Param.
Chloride (mg/L)	MW-3	44.62	30.41	250	No	22	0	No	0.01	Param.
Chloride (mg/L)	MW-4R (bg)	35.52	21.31	250	No	21	0	No	0.01	Param.
Chloride (mg/L)	MW-5	33.77	20.57	250	No	22	0	No	0.01	Param.
Chloride (mg/L)	MW-6	67.42	38.8	250	No	21	0	sqrt(x)	0.01	Param.
Chloride (mg/L)	MW-7	89.5	22.3	250	No	22	0	No	0.01	NP (normality)
Chloride (mg/L)	MW-8	34.11	25.38	250	No	22	0	No	0.01	Param.
Fluoride (mg/L)	MW-2	1.203	0.9532	4	No	22	0	sqrt(x)	0.01	Param.
Lead (ug/L)	MW-4R (bg)	1	0.5	15	No	19	89.47	No	0.01	NP (NDs)
Lithium (ug/L)	MW-1	34.54	30.5	40	No	22	0	No	0.01	Param.
Lithium (ug/L)	MW-2	32.02	27.86	40	No	21	0	sqrt(x)	0.01	Param.
Lithium (ug/L)	MW-3	29.39	26.15	40	No	22	0	No	0.01	Param.
Lithium (ug/L)	MW-4R (bg)	27.97	24.12	40	No	22	0	No	0.01	Param.
Lithium (ug/L)	MW-5	30.86	26.76	40	No	22	0	sqrt(x)	0.01	Param.
Lithium (ug/L)	MW-6	27.08	20.25	40	No	22	4.545	No	0.01	Param.
Lithium (ug/L)	MW-7	29.81	26.14	40	No	22	0	No	0.01	Param.
Lithium (ug/L)	MW-8	29.51	26.64	40	No	21	0	No	0.01	Param.
Molybdenum (ug/L)	MW-1	8.317	7.106	100	No	22	0	No	0.01	Param.
Molybdenum (ug/L)	MW-2	9.342	6.72	100	No	22	0	sqrt(x)	0.01	Param.

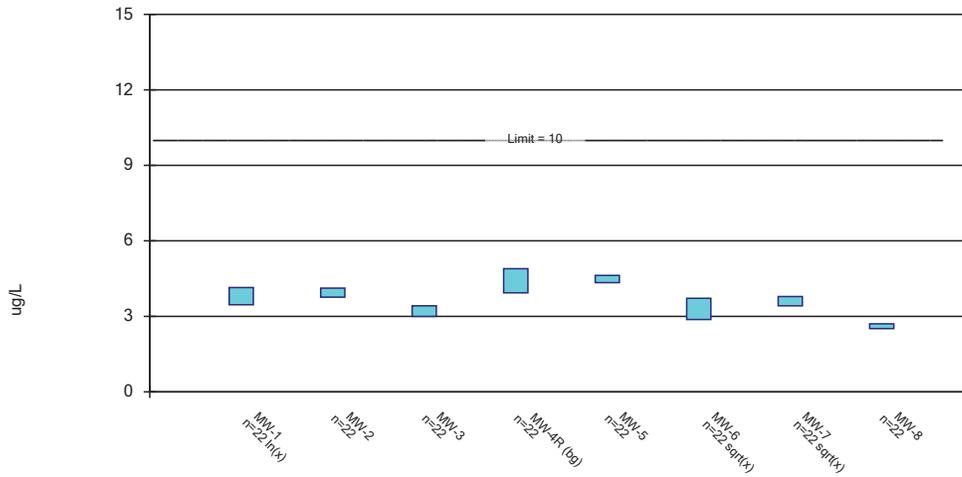
Confidence Interval

Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater Printed 10/11/2024, 3:34 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Molybdenum (ug/L)	MW-3	12.77	10.26	100	No	22	0	No	0.01	Param.
Molybdenum (ug/L)	MW-4R (bg)	7.196	4.955	100	No	22	0	sqrt(x)	0.01	Param.
Molybdenum (ug/L)	MW-5	6.313	5.018	100	No	22	0	No	0.01	Param.
Molybdenum (ug/L)	MW-6	8.454	6.788	100	No	22	0	No	0.01	Param.
Molybdenum (ug/L)	MW-7	8.545	7.235	100	No	22	0	No	0.01	Param.
Molybdenum (ug/L)	MW-8	8.3	6.2	100	No	21	0	No	0.01	NP (normality)
pH (Std. Units)	MW-1	7.25	7.005	8.5	No	22	0	No	0.005	Param.
pH (Std. Units)	MW-2	7.179	6.962	8.5	No	22	0	No	0.005	Param.
pH (Std. Units)	MW-3	7.213	6.983	8.5	No	22	0	No	0.005	Param.
pH (Std. Units)	MW-4R (bg)	7.309	6.985	8.5	No	22	0	No	0.005	Param.
pH (Std. Units)	MW-5	7.343	7.1	8.5	No	22	0	No	0.005	Param.
pH (Std. Units)	MW-6	7.178	6.93	8.5	No	22	0	No	0.005	Param.
pH (Std. Units)	MW-7	7.21	6.988	8.5	No	22	0	No	0.005	Param.
pH (Std. Units)	MW-8	7.206	6.952	8.5	No	22	0	No	0.005	Param.
Selenium (ug/L)	MW-1	11.96	7.61	50	No	22	13.64	No	0.01	Param.
Selenium (ug/L)	MW-4R (bg)	8.459	6.864	50	No	21	0	No	0.01	Param.
Selenium (ug/L)	MW-5	8.6	5.55	50	No	22	18.18	No	0.01	NP (Cohens/xfrm)
Selenium (ug/L)	MW-7	10.32	7.815	50	No	22	4.545	No	0.01	Param.
Selenium (ug/L)	MW-8	11.82	9.579	50	No	22	0	No	0.01	Param.
Sulfate (mg/L)	MW-1	58.5	43.1	250	No	22	0	No	0.01	NP (normality)
Sulfate (mg/L)	MW-2	61.31	42.08	250	No	21	0	ln(x)	0.01	Param.
Sulfate (mg/L)	MW-3	61.2	40.8	250	No	22	0	No	0.01	NP (normality)
Sulfate (mg/L)	MW-4R (bg)	42.29	36.71	250	No	22	0	x^2	0.01	Param.
Sulfate (mg/L)	MW-5	44.7	36.5	250	No	22	0	No	0.01	NP (normality)
Sulfate (mg/L)	MW-6	61.61	35.74	250	No	22	0	No	0.01	Param.
Sulfate (mg/L)	MW-7	56.5	41.68	250	No	22	0	No	0.01	Param.
Sulfate (mg/L)	MW-8	42.6	34.7	250	No	22	0	No	0.01	NP (normality)
Total Dissolved Solids (mg/L)	MW-1	490.8	435.5	500	No	22	0	No	0.01	Param.
Total Dissolved Solids (mg/L)	MW-2	469	418	500	No	22	0	No	0.01	NP (normality)
Total Dissolved Solids (mg/L)	MW-3	467.6	404.6	500	No	22	0	No	0.01	Param.
Total Dissolved Solids (mg/L)	MW-4R (bg)	428.1	383.8	500	No	22	0	No	0.01	Param.
Total Dissolved Solids (mg/L)	MW-5	478.9	423.4	500	No	22	0	No	0.01	Param.
Total Dissolved Solids (mg/L)	MW-6	499.4	363.2	500	No	22	0	No	0.01	Param.
Total Dissolved Solids (mg/L)	MW-7	525	445.4	500	No	22	0	No	0.01	Param.
Total Dissolved Solids (mg/L)	MW-8	425	381	500	No	22	0	No	0.01	NP (normality)
Total Radium (pCi/L)	MW-1	2.706	1.934	5	No	22	0	No	0.01	Param.
Total Radium (pCi/L)	MW-2	1.99	1.475	5	No	22	0	No	0.01	Param.
Total Radium (pCi/L)	MW-3	2.896	2.14	5	No	22	0	No	0.01	Param.
Total Radium (pCi/L)	MW-4R (bg)	2.504	1.781	5	No	22	0	No	0.01	Param.
Total Radium (pCi/L)	MW-5	2.694	2.131	5	No	22	0	No	0.01	Param.
Total Radium (pCi/L)	MW-6	2.318	1.495	5	No	22	0	No	0.01	Param.
Total Radium (pCi/L)	MW-7	2.451	1.693	5	No	22	0	No	0.01	Param.
Total Radium (pCi/L)	MW-8	2.673	1.923	5	No	22	0	No	0.01	Param.

Parametric Confidence Interval

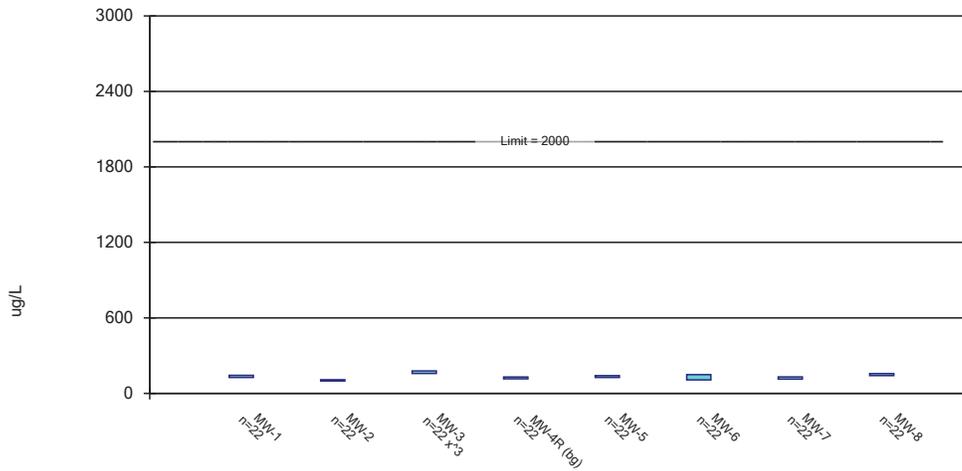
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Arsenic Analysis Run 10/11/2024 3:30 PM View: 2024Q3 Confidence Interval
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Parametric Confidence Interval

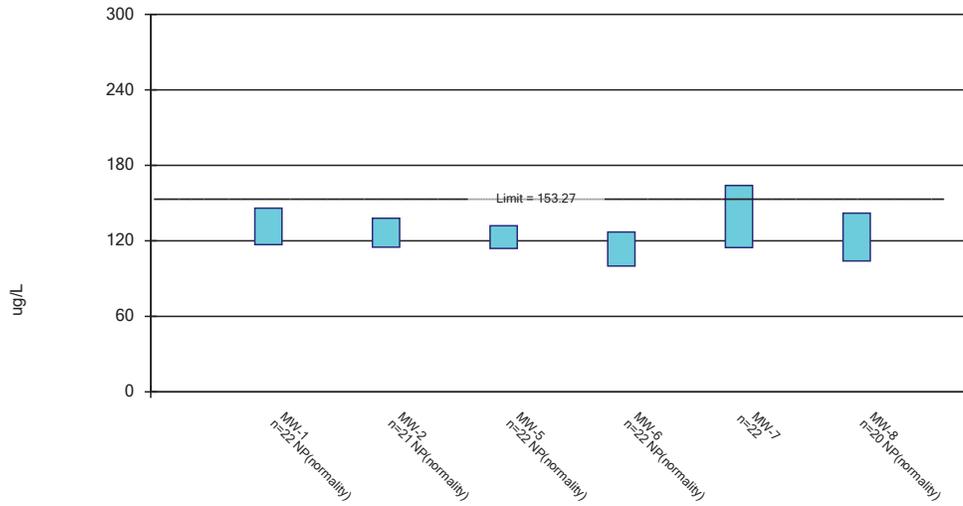
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Barium Analysis Run 10/11/2024 3:30 PM View: 2024Q3 Confidence Interval
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Parametric and Non-Parametric (NP) Confidence Interval

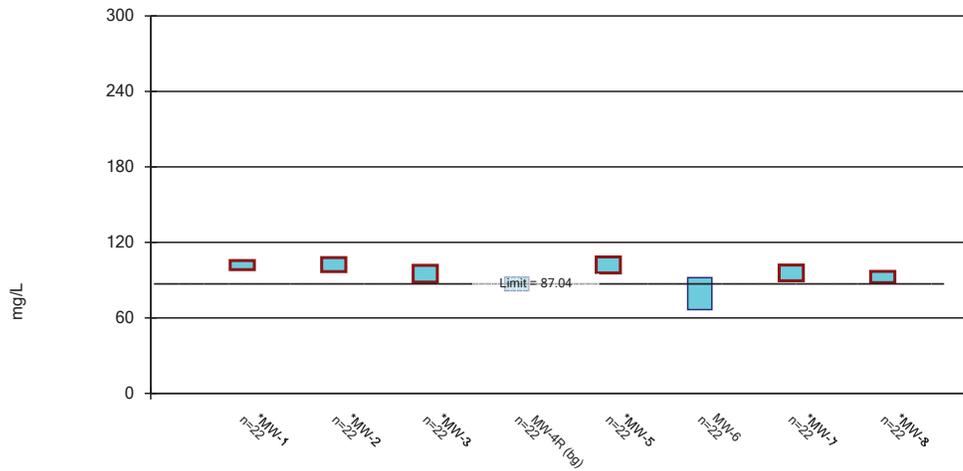
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Boron Analysis Run 10/11/2024 3:30 PM View: 2024Q3 Confidence Interval
 Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Parametric Confidence Interval

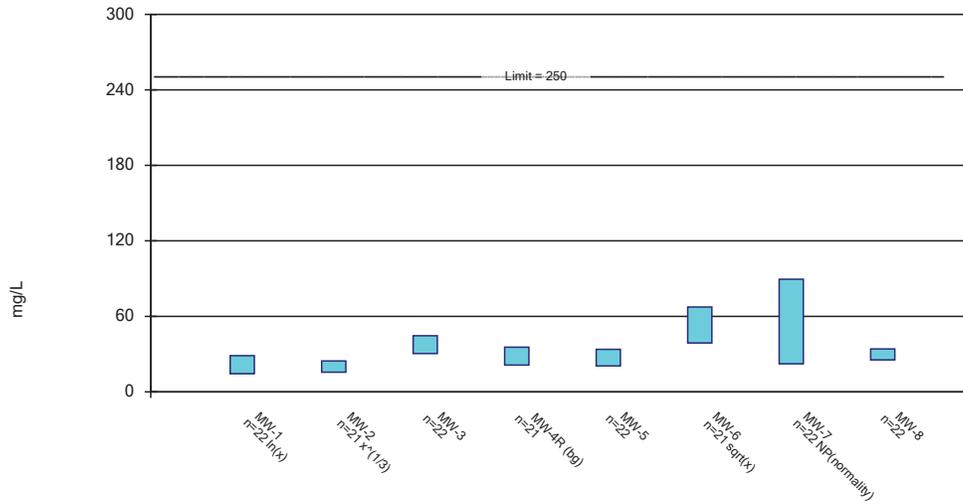
Compliance limit is exceeded.* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Calcium Analysis Run 10/11/2024 3:30 PM View: 2024Q3 Confidence Interval
 Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Parametric and Non-Parametric (NP) Confidence Interval

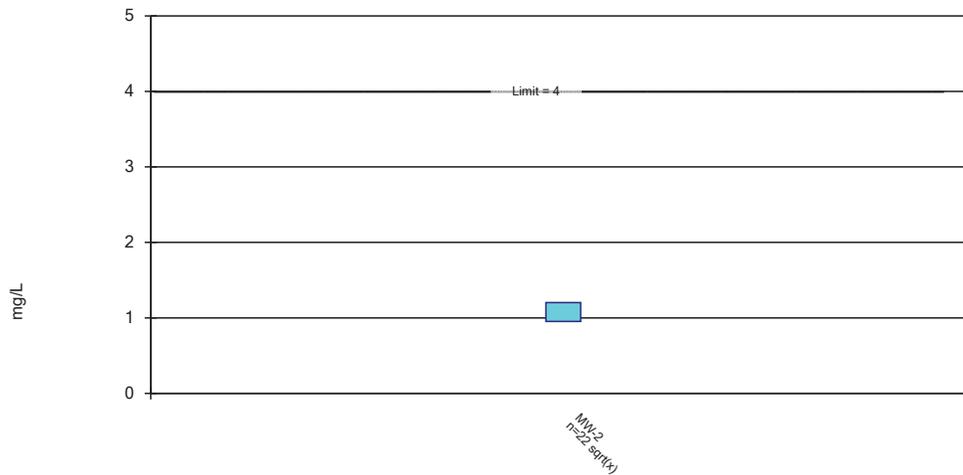
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Chloride Analysis Run 10/11/2024 3:30 PM View: 2024Q3 Confidence Interval
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Fluoride Analysis Run 10/11/2024 3:30 PM View: 2024Q3 Confidence Interval
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Non-Parametric Confidence Interval

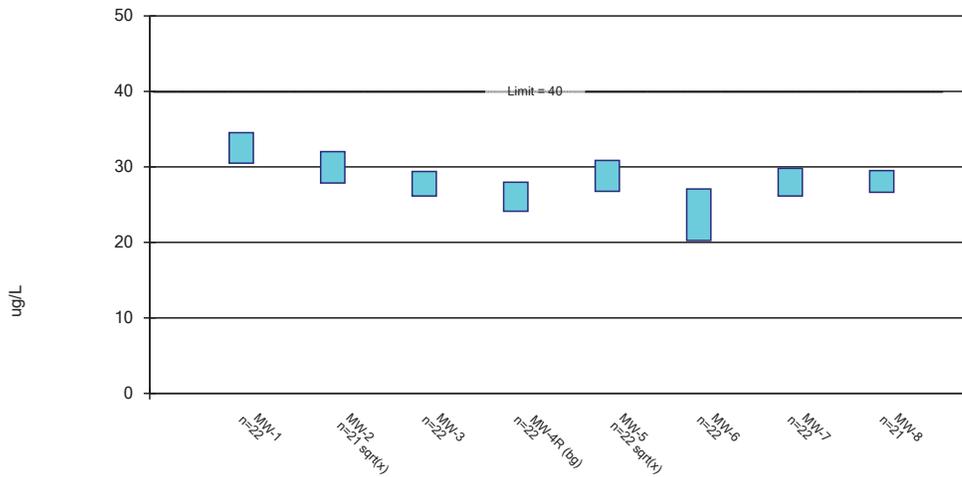
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Lead Analysis Run 10/11/2024 3:30 PM View: 2024Q3 Confidence Interval
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Parametric Confidence Interval

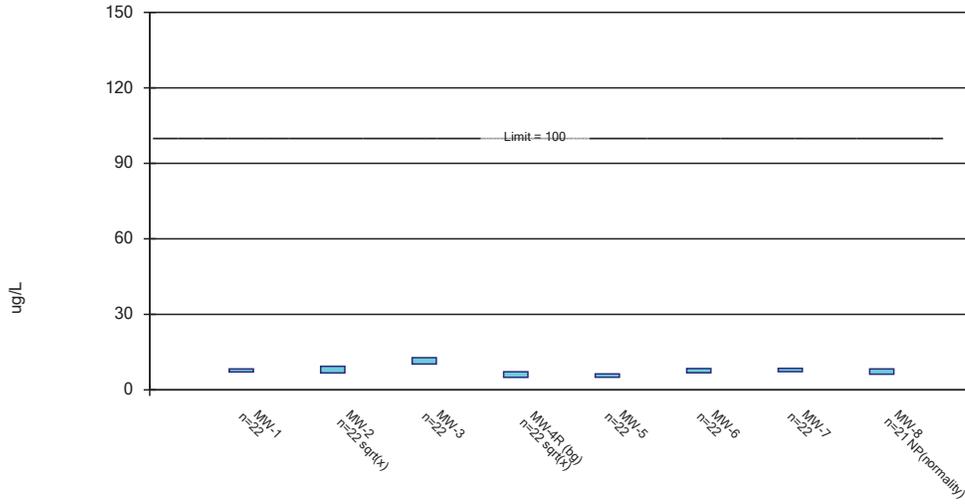
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Lithium Analysis Run 10/11/2024 3:30 PM View: 2024Q3 Confidence Interval
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Parametric and Non-Parametric (NP) Confidence Interval

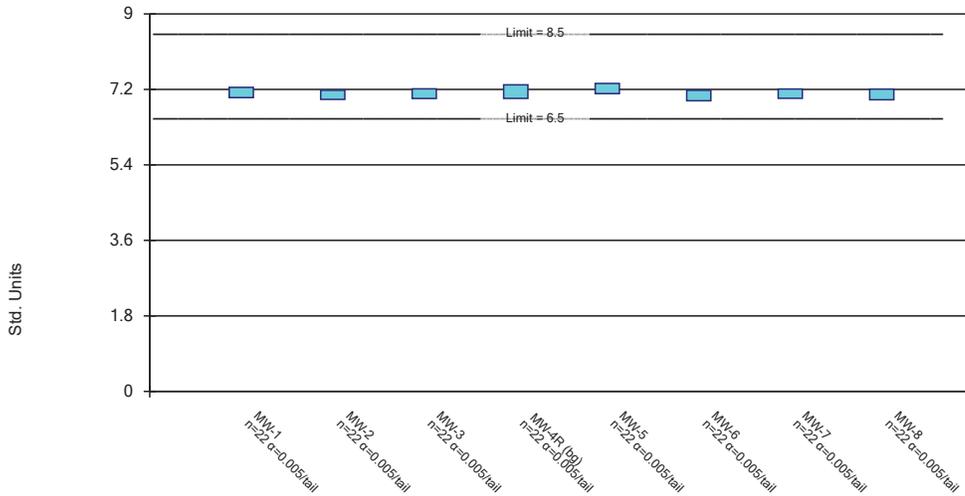
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Molybdenum Analysis Run 10/11/2024 3:30 PM View: 2024Q3 Confidence Interval
 Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Parametric Confidence Interval

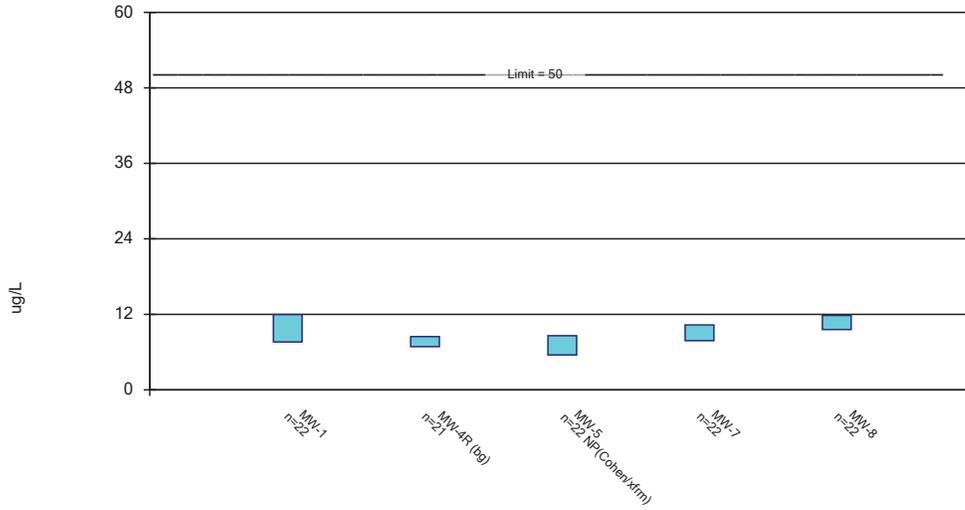
Compliance Limit is not exceeded. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: pH Analysis Run 10/11/2024 3:30 PM View: 2024Q3 Confidence Interval
 Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Parametric and Non-Parametric (NP) Confidence Interval

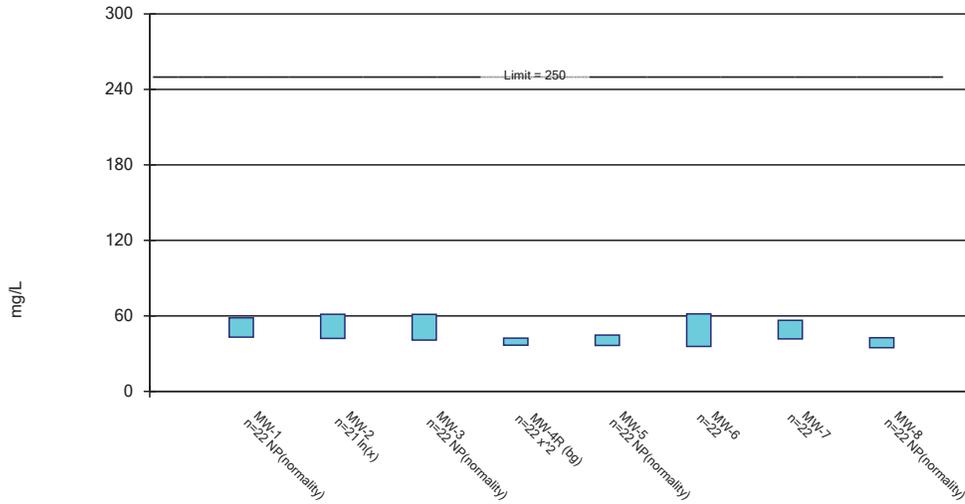
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Selenium Analysis Run 10/11/2024 3:30 PM View: 2024Q3 Confidence Interval
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Parametric and Non-Parametric (NP) Confidence Interval

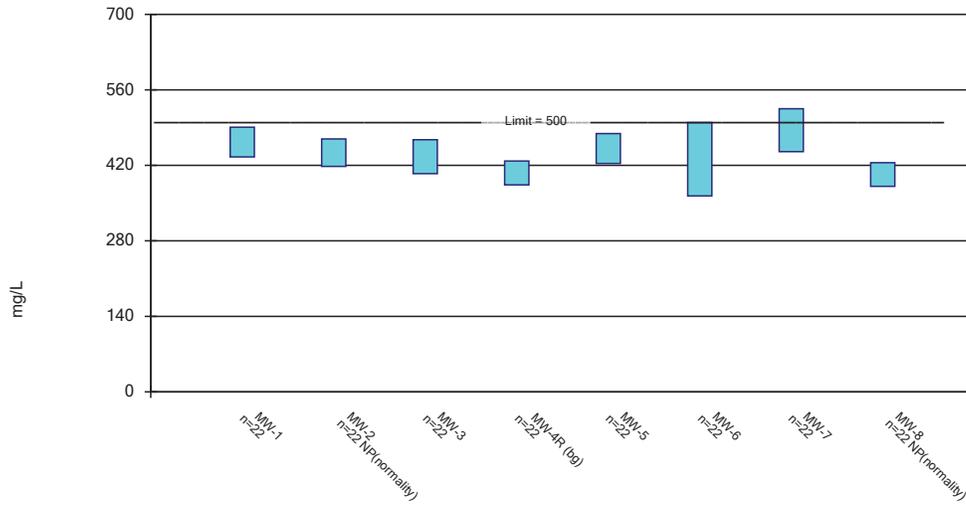
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Sulfate Analysis Run 10/11/2024 3:31 PM View: 2024Q3 Confidence Interval
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Parametric and Non-Parametric (NP) Confidence Interval

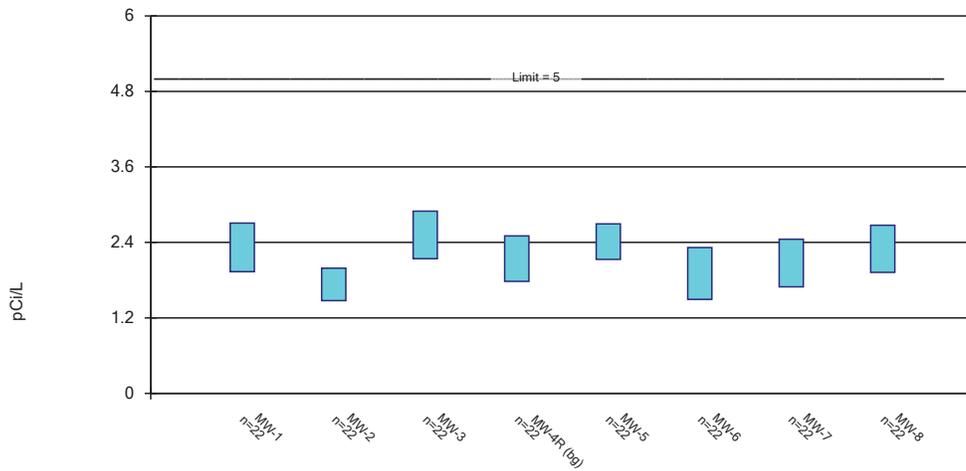
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Total Dissolved Solids Analysis Run 10/11/2024 3:31 PM View: 2024Q3 Confidence Interval
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Parametric Confidence Interval

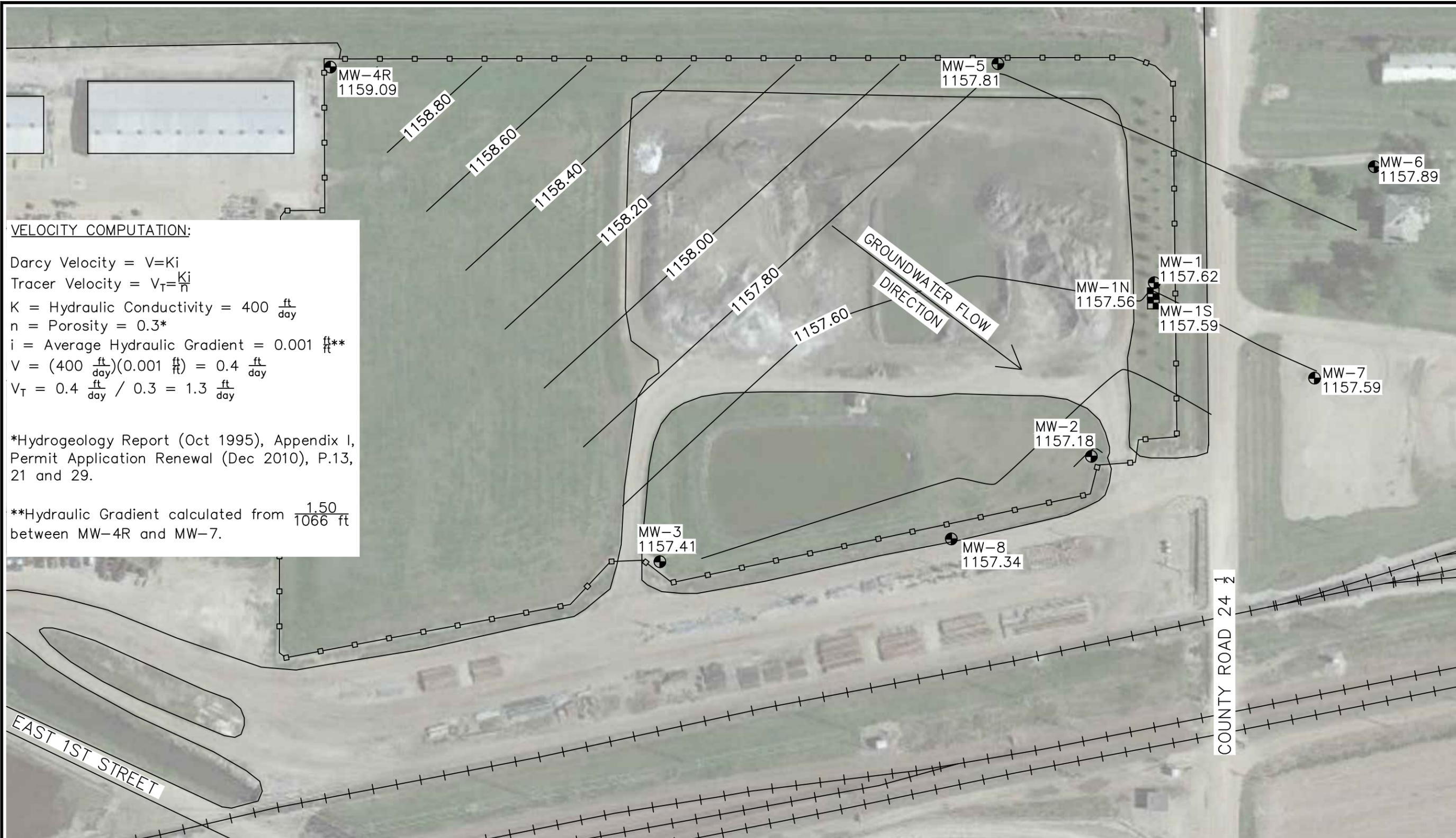
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Total Radium Analysis Run 10/11/2024 3:31 PM View: 2024Q3 Confidence Interval
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

B Figures

T:\27224080.00\Data and Calculations\3Q 2024\DWG\2024 03 Groundwater Contours.dwg Sep 18, 2024 - 11:12am Layout Name: 11x17 By: 5287bsg



VELOCITY COMPUTATION:

Darcy Velocity = $V=Ki$
 Tracer Velocity = $V_T = \frac{Ki}{n}$

$K = \text{Hydraulic Conductivity} = 400 \frac{\text{ft}}{\text{day}}$
 $n = \text{Porosity} = 0.3^*$
 $i = \text{Average Hydraulic Gradient} = 0.001 \frac{\text{ft}}{\text{ft}}^{**}$

$V = (400 \frac{\text{ft}}{\text{day}})(0.001 \frac{\text{ft}}{\text{ft}}) = 0.4 \frac{\text{ft}}{\text{day}}$
 $V_T = 0.4 \frac{\text{ft}}{\text{day}} / 0.3 = 1.3 \frac{\text{ft}}{\text{day}}$

*Hydrogeology Report (Oct 1995), Appendix I, Permit Application Renewal (Dec 2010), P.13, 21 and 29.
 **Hydraulic Gradient calculated from $\frac{1.50}{1066 \text{ ft}}$ between MW-4R and MW-7.

- LEGEND**
- ++++ RAILROAD TRACKS
 - — ESTIMATED POTENTIOMETRIC CONTOUR
 - — POTENTIOMETRIC CONTOUR
 - FENCE
 - ⊕ MONITORING WELL 1162.50 FEET ABOVE MEAN SEA LEVEL
 - ⊞ PIEZOMETER

NOTES:
 1. DEPTHS TO GROUNDWATER MEASURED 08/08/2024.



CK:		REV:		DATE:	
BY:		Δ	Δ	Δ	Δ
SHEET TITLE					
POTENTIOMETRIC CONTOUR MAP			PROJECT TITLE		
			SEMIANNUAL GROUNDWATER SAMPLING		
CLIENT					
FREMONT DEPARTMENT OF UTILITIES					
LON D. WRIGHT POWER PLANT					
FREMONT, NEBRASKA					
SCS ENGINEERS					
14755 GROVER STREET OMAHA, NEBRASKA 68144 PH: (402) 884-6202 FAX: (402) 884-6203					
PROJ. NO. 27224080.00	DWN. BY: BSG	CHK. BY: MBS	PROJ. MGR. MJM		
CADD FILE: 2024 03 GROUNDWATER CONTOURS.DWG					
DATE: 09/18/2024					
FIGURE NO. 1					

C Supporting information

C.1 Field Data Sheets

Field Data Sheet

Project Name: FDU GW Sampling
 Project Location: Fremont, NE
 Project Number: 27219045.02

Monitoring Point: MW-1
 Date(s): 8/8/24

Field Team Members

Name: C. Joyce Affiliation: SCS Engineers
 Name: _____ Affiliation: SCS Engineers

Weather Conditions

Mean Temp: 70 °F (Mean) Wind Direction: N S E W (circle two if needed)
 Precipitation: None Light Heavy Sky: Cloudy Sunny Partly

Well Observations

Well Pad OK Locks

Yes	No
X	
	X

 Casing _____ Protective Casing Well
 Protective Casing _____
 Reference Mark/Identification _____

Groundwater Level Measurements

Total Depth: 29.00 feet below TOC
 Static Water Level: 23.08 feet below TOC
 Date/Time Measured: 8/8/24 12:10 TD - SWL: 5.92 water column (ft.)

Purging Activities

Purged By: C. Joyce Purge Date: 8/8/24
 Purge Method: Bailer Dedicated Pump Non-Dedicated Pump Peristaltic Pump (circle one)
 Well Diameter: 1-inch 2-inch 3-inch 4-inch Other _____ (circle one)
 Purge Volume Calculation: 5.92 x 10 x 3 = 177.6 Min Purge Volume: 200 mL
 Initial Parameter Readings: Temp (°C) 12.7 pH 6.57 ORP 173
 Sp. Cond. 0.746 Turbidity 2.2 DO 7.70
 Physical appearance of purge water: Clear
 10% 0.2 SU 10%

Purge Time	Cumulative Purge Vol. (mL)	Purge Rate (ml/m)	Temp (°C)	pH	ORP (mV)	Specific Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Water Level (ft below TOC)
12:20	600	200	16.91	6.58	171	0.768	1.3	7.27	23.10
12:24	1400	200	16.57	6.56	172	0.771	1.2	7.17	23.10
12:28	2200	200	15.65	6.55	174	0.782	1.0	7.14	23.10

Sampling Activities

Sampled By: C. Joyce Sample Date/Time: 8/8/24 12:29
 Sample Method: Bailer Dedicated Pump Non-Dedicated Pump Peristaltic Pump (circle one)
 Sample Parameters: Temp (°C) 15.65 pH 6.55 ORP 174
 Sp. Cond. 0.783 Turbidity 1.0 DO 7.14
 Water Level 23.10 (feet below TOC)

Observations/Comments: (i.e., equipment malfunctions, contamination sources, sampling difficulties; duplicate sample)

Hinge on Well Protector is broken & needs repair.

Electronic Form Completed By: _____ Date: _____

Field Data Sheet

Project Name: FDU GW Sampling
 Project Location: Fremont, NE
 Project Number: 27219045.02

Monitoring Point: MW-1N
 Date(s): 8/8/2024

Field Team Members

Name: C. Joyce Affiliation: SCS Engineers
 Name: _____ Affiliation: SCS Engineers

Weather Conditions

Mean Temp: 70 °F (Mean) Wind Direction: N S E W (circle two if needed)
 Precipitation: None Light Heavy Sky: Cloudy Sunny Partly

Well Observations

Well Pad: Buried Locks:

Yes	No
<input checked="" type="checkbox"/>	<input type="checkbox"/>

 Casing: OK Protective Casing Well:

<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>

 Protective Casing: _____
 Reference Mark/Identification: _____

Groundwater Level Measurements

Date/Time Measured: 8/8/24 1242 Total Depth: 62.24 feet below TOC
 Static Water Level: 23.91 feet below TOC
 TD - SWL: _____ water column (ft.)

Purging Activities

Purged By: _____ Purge Date: _____
 Purge Method: Bailer Dedicated Pump Non-Dedicated Pump Peristaltic Pump (circle one)
 Well Diameter: 1-inch 2-inch 3-inch 4-inch Other _____ (circle one)
 Purge Volume Calculation: _____ Min Purge Volume: _____ mL
 Initial Parameter Readings: Temp (°C) _____ pH _____ ORP _____
 Sp. Cond. _____ Turbidity _____ DO _____
 Physical appearance of purge water: _____

Purge Time	Cumulative Purge Vol. (mL)	Purge Rate (ml/m)	10%			0.2 SU			10%		
			Temp (°C)	pH	ORP (mV)	Specific Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Water Level (ft below TOC)		

Sampling Activities

Sampled By: _____ Sample Date/Time: _____
 Sample Method: Bailer Dedicated Pump Non-Dedicated Pump Peristaltic Pump (circle one)
 Sample Parameters: Temp (°C) _____ pH _____ ORP _____
 Sp. Cond. _____ Turbidity _____ DO _____
 Water Level _____ (feet below TOC)

Observations/Comments: (i.e., equipment malfunctions, contamination sources, sampling difficulties; duplicate sample)

Water level only

Electronic Form Completed By: _____ Date: _____

Field Data Sheet

Project Name: FDU GW Sampling
 Project Location: Fremont, NE
 Project Number: 27219045.02

Monitoring Point: MW-1S
 Date(s): 8/8/24

Field Team Members

Name: C. Taylor Affiliation: SCS Engineers
 Name: _____ Affiliation: SCS Engineers

Weather Conditions

Mean Temp: 70 °F (Mean) Wind Direction: N S E W (circle two if needed)
 Precipitation: None Light Heavy Sky: Cloudy Sunny Partly

Well Observations

Well Pad Buried
 Casing OK
 Protective Casing _____
 Reference Mark/Identification _____

Locks	Yes	No
Protective Casing	<input checked="" type="checkbox"/>	
Well		<input checked="" type="checkbox"/>

Groundwater Level Measurements

Date/Time Measured: 8/8/24 12:43 Total Depth: 92.19 feet below TOC
 Static Water Level: 23.58 feet below TOC 23.88
 TD - SWL: _____ water column (ft.)

Purging Activities

Purged By: _____ Purge Date: _____
 Purge Method: Bailer Dedicated Pump Non-Dedicated Pump Peristaltic Pump (circle one)
 Well Diameter: 1-inch 2-inch 3-inch 4-inch Other _____ (circle one)
 Purge Volume Calculation: _____ Min Purge Volume: _____ mL
 Initial Parameter Readings: Temp (°C) _____ pH _____ ORP _____
 Sp. Cond. _____ Turbidity _____ DO _____
 Physical appearance of purge water: _____

Purge Time	Cumulative Purge Vol. (mL)	Purge Rate (mL/m)	10%			0.2 SU			10%		
			Temp (°C)	pH	ORP (mV)	Specific Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Water Level (ft below TOC)		

Sampling Activities

Sampled By: _____ Sample Date/Time: _____
 Sample Method: Bailer Dedicated Pump Non-Dedicated Pump Peristaltic Pump (circle one)
 Sample Parameters: Temp (°C) _____ pH _____ ORP _____
 Sp. Cond. _____ Turbidity _____ DO _____
 Water Level _____ (feet below TOC)

Observations/Comments: (i.e., equipment malfunctions, contamination sources, sampling difficulties; duplicate sample)

Water level only

Electronic Form Completed By: _____ Date: _____

Field Data Sheet

Project Name: FDU GW Sampling
 Project Location: Fremont, NE
 Project Number: 27219045.02

Monitoring Point: MW-2
 Date(s): 8/8/24

Field Team Members

Name: C. Joyce Affiliation: SCS Engineers
 Name: _____ Affiliation: SCS Engineers

Weather Conditions

Mean Temp: 72 °F (Mean) Wind Direction: N S E W (circle two if needed)
 Precipitation: None Light Heavy Sky: Cloudy Sunny Partly

Well Observations

Well Pad: Burred Locks:

Yes	No
<input checked="" type="checkbox"/>	<input type="checkbox"/>

 Casing: OK Protective Casing Well:

<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
-------------------------------------	-------------------------------------

 Protective Casing: _____
 Reference Mark/Identification: _____

Groundwater Level Measurements

Date/Time Measured: 8/8/24 12:51 Total Depth: 28.00 feet below TOC
 Static Water Level: 19.79 feet below TOC
 TD - SWL: 8.21 water column (ft.)

Purging Activities

Purged By: C. Joyce Purge Date: 8/8/24
 Purge Method: Bailer Dedicated Pump Non-Dedicated Pump Peristaltic Pump (circle one)
 Well Diameter: 1-inch 2-inch 3-inch 4-inch Other _____ (circle one)
 Purge Volume Calculation: $8.21 \times 10 \times 3 = 248.7$ Min Purge Volume: 250 mL
 Initial Parameter Readings: Temp (°C) 16.86 pH 6.71 ORP 174
 Sp. Cond. 0.713 Turbidity 0.7 DO 8.04
 Physical appearance of purge water: Clear

Purge Time	Cumulative Purge Vol. (mL)	Purge Rate (ml/m)	10%			0.2 SU			10%		
			Temp (°C)	pH	ORP (mV)	Specific Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Water Level (ft below TOC)		
1256	1200	400	15.49	6.65	174	0.711	0.3	6.21	19.73		
1300	2800	400	15.26	6.56	175	0.709	0.1	4.86	19.73		
1321	4400	400	15.15	6.55	176	0.709	0.1	4.75	19.73		

Sampling Activities

Sampled By: C. Joyce Sample Date/Time: 8/8/24 1306
 Sample Method: Bailer Dedicated Pump Non-Dedicated Pump Peristaltic Pump (circle one)
 Sample Parameters: Temp (°C) 15.15 pH 6.55 ORP 176
 Sp. Cond. 0.709 Turbidity 0.1 DO 4.75
 Water Level 19.93 (feet below TOC)

Observations/Comments: (i.e., equipment malfunctions, contamination sources, sampling difficulties; duplicate sample)

Electronic Form Completed By: _____ Date: _____

Field Data Sheet

Project Name: FDU GW Sampling
 Project Location: Fremont, NE
 Project Number: 27219045.02

Monitoring Point: MW-3
 Date(s): 8/8/2024

Field Team Members

Name: C. Joyce Affiliation: SCS Engineers
 Name: _____ Affiliation: SCS Engineers

Weather Conditions

Mean Temp: 69 °F (Mean) Wind Direction: N S E W (circle two if needed)
 Precipitation: None Light Heavy Sky: Cloudy Sunny Partly

Well Observations

Well Pad: Barred Locks:

Yes	No
<input checked="" type="checkbox"/>	<input type="checkbox"/>

 Casing: OK Protective Casing Well:

<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>

 Protective Casing: OK
 Reference Mark/Identification: DR

Groundwater Level Measurements

Date/Time Measured: 8/8/24 1040 Total Depth: 28.00 feet below TOC
 Static Water Level: 21.05 feet below TOC
 TD - SWL: 6.95 water column (ft.)

Purging Activities

Purged By: C. Joyce Purge Date: 8/8/24
 Purge Method: Bailer Dedicated Pump Non-Dedicated Pump Peristaltic Pump (circle one)
 Well Diameter: 1-inch 2-inch 3-inch 4-inch Other _____ (circle one)
 Purge Volume Calculation: 2.95 x 10 x 3 = 238.5 Min Purge Volume: 250 mL
 Initial Parameter Readings: Temp (°C) 16.44 pH 6.49 ORP 166
 Sp. Cond. 0.649 Turbidity 2.6 DO 8.00
 Physical appearance of purge water: Clear

Purge Time	Cumulative Purge Vol. (mL)	Purge Rate (mL/m)	10%			0.2 SU			10%		
			Temp (°C)	pH	ORP (mV)	Specific Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Water Level (ft below TOC)		
<u>1040</u>	<u>900</u>	<u>300</u>	<u>15.36</u>	<u>6.53</u>	<u>163</u>	<u>0.571</u>	<u>1.6</u>	<u>8.44</u>	<u>21.05</u>		
<u>1054</u>	<u>2100</u>	<u>300</u>	<u>15.09</u>	<u>6.55</u>	<u>162</u>	<u>0.546</u>	<u>1.2</u>	<u>9.15</u>	<u>21.05</u>		
<u>1058</u>	<u>3300</u>	<u>300</u>	<u>14.91</u>	<u>6.60</u>	<u>162</u>	<u>0.484</u>	<u>1.2</u>	<u>9.25</u>	<u>21.05</u>		

Sampling Activities

Sampled By: C. Joyce Sample Date/Time: 8/8/24, 1100
 Sample Method: Bailer Dedicated Pump Non-Dedicated Pump Peristaltic Pump (circle one)
 Sample Parameters: Temp (°C) 14.91 pH 6.60 ORP 162
 Sp. Cond. 0.484 Turbidity 1.2 DO 9.25
 Water Level 21.05 (feet below TOC)

Observations/Comments: (i.e., equipment malfunctions, contamination sources, sampling difficulties; duplicate sample)

Electronic Form Completed By: _____ Date: _____

Field Data Sheet

Project Name: FDU GW Sampling
 Project Location: Fremont, NE
 Project Number: 27219045.02

Monitoring Point: MW-4R
 Date(s): 8/8/2024

Field Team Members

Name: C. Joyce Affiliation: SCS Engineers
 Name: _____ Affiliation: SCS Engineers

Weather Conditions

Mean Temp: 67 °F (Mean) Wind Direction: N S E W (circle two if needed)
 Precipitation: None Light Heavy Sky: Cloudy Sunny Partly

Well Observations

Well Pad: Good
 Casing: _____
 Protective Casing: _____
 Reference Mark/Identification: _____

Locks	Yes	No
Protective Casing	X	
Well		X

Groundwater Level Measurements

Date/Time Measured: 8/8/2024-0940 Total Depth: 28.00 feet below TOC
 Static Water Level: 19.20 feet below TOC
 TD - SWL: 8.80 water column (ft.)

Purging Activities

Purged By: C. Joyce Purge Date: 8/8/24
 Purge Method: Bailer Dedicated Pump Non-Dedicated Pump Peristaltic Pump (circle one)
 Well Diameter: 1-inch 2-inch 3-inch 4-inch Other _____ (circle one)
 Purge Volume Calculation: 3.80 * 10.3 = 264 Min Purge Volume: 300 mL
 Initial Parameter Readings: Temp (°C) 15.03 pH 8.20 ORP 51
 Sp. Cond. 0.695 Turbidity 20.3 DO 8.83
 Physical appearance of purge water: Clear

Purge Time	Cumulative Purge Vol. (mL)	Purge Rate (ml/m)	10%			10%			Dissolved Oxygen (mg/L)	Water Level (ft below TOC)
			Temp (°C)	pH	ORP (mV)	Specific Conductivity (mS/cm)	Turbidity (NTU)			
0850	800	300	14.32	7.00	109	0.699	22.4	8.17	19.20	
0954	2000	300	14.19	6.66	128	0.703	28.4	7.91	19.20	
0958	3200	300	14.00	6.45	144	0.707	25.1	7.88	19.20	
1002	4400	300	14.28	6.19	162	0.702	22.2	7.41	19.20	
1006	5600	300	14.01	6.04	174	0.707	18.5	7.87	19.20	
1010	6800	300	13.75	6.03	179	0.710	14.4	7.66	19.20	

Sampling Activities

Sampled By: C. Joyce Sample Date/Time: 1010 8/8/24
 Sample Method: Bailer Dedicated Pump Non-Dedicated Pump Peristaltic Pump (circle one)
 Sample Parameters: Temp (°C) 13.76 pH 6.03 ORP 179
 Sp. Cond. 0.710 Turbidity 14.4 DO 3.66
 Water Level 19.20 (feet below TOC)

Observations/Comments: (i.e., equipment malfunctions, contamination sources, sampling difficulties; duplicate sample)

Electronic Form Completed By: _____

Date: _____

Field Data Sheet

Project Name: FDU GW Sampling
 Project Location: Fremont, NE
 Project Number: 27219045.02

Monitoring Point: MW-5
 Date(s): 8/8/24

Field Team Members

Name: C. Joyce Affiliation: SCS Engineers
 Name: _____ Affiliation: SCS Engineers

Weather Conditions

Mean Temp: 70 °F (Mean) Wind Direction: N S E W (circle two if needed)
 Precipitation: None Light Heavy Sky: Cloudy Sunny Partly

Well Observations

Well Pad Buried Locks

Yes	No
<input checked="" type="checkbox"/>	<input type="checkbox"/>

 Casing OK Protective Casing

<input checked="" type="checkbox"/>	<input type="checkbox"/>
-------------------------------------	--------------------------

 Protective Casing _____ Well

<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	-------------------------------------

 Reference Mark/Identification I

Groundwater Level Measurements

Date/Time Measured: 8/8/24 11:23 Total Depth: 28.00 feet below TOC
 Static Water Level: 19.51 feet below TOC
 TD - SWL: 8.49 water column (ft.)

Purging Activities

Purged By: C. Joyce Purge Date: 8/8/24
 Purge Method: Bailer Dedicated Pump Non-Dedicated Pump Peristaltic Pump (circle one)
 Well Diameter: 1-inch 2-inch 3-inch 4-inch Other _____ (circle one)
 Purge Volume Calculation: 8.49 * 3.14 * 25.17 = 654.7 Min Purge Volume: 300 mL
 Initial Parameter Readings: Temp (°C) 16.20 pH 6.55 ORP 187
 Sp. Cond. 0.682 Turbidity 2.0 DO 6.26
 Physical appearance of purge water: Clear

Purge Time	Cumulative Purge Vol. (mL)	Purge Rate (mL/m)	10%			0.2 SU			10%		
			Temp (°C)	pH	ORP (mV)	Specific Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Water Level (ft below TOC)		
<u>11:34</u>	<u>800</u>	<u>400</u>	<u>14.73</u>	<u>6.55</u>	<u>181</u>	<u>0.676</u>	<u>0.9</u>	<u>7.69</u>	<u>19.53</u>		
<u>11:37</u>	<u>2000</u>	<u>400</u>	<u>14.60</u>	<u>6.56</u>	<u>180</u>	<u>0.679</u>	<u>0.6</u>	<u>8.02</u>	<u>19.55</u>		
<u>11:46</u>	<u>3200</u>	<u>400</u>	<u>14.52</u>	<u>6.57</u>	<u>180</u>	<u>0.679</u>	<u>0.7</u>	<u>7.92</u>	<u>19.55</u>		

Sampling Activities

Sampled By: C. Joyce Sample Date/Time: 8/8/24 11:41
 Sample Method: Bailer Dedicated Pump Non-Dedicated Pump Peristaltic Pump (circle one)
 Sample Parameters: Temp (°C) 14.52 pH 6.57 ORP 180
 Sp. Cond. 0.679 Turbidity 0.7 DO 7.92
 Water Level 19.55 (feet below TOC)

Observations/Comments: (i.e., equipment malfunctions, contamination sources, sampling difficulties; duplicate sample)

Electronic Form Completed By: _____ Date: _____

Field Data Sheet

Project Name: FDU GW Sampling
 Project Location: Fremont, NE
 Project Number: 27219045.02

Monitoring Point: MW-6
 Date(s): 8/8/24

Field Team Members

Name: C. Joyce Affiliation: SCS Engineers
 Name: _____ Affiliation: SCS Engineers

Weather Conditions

Mean Temp: 70 °F (Mean) Wind Direction: N S E W (circle two if needed)
 Precipitation: None Light Heavy Sky: Cloudy Sunny Partly

Well Observations

Well Pad: Beviced - Rx
 Casing: OK
 Protective Casing: _____
 Reference Mark/Identification: _____

Locks	Yes	No
Protective Casing	X	
Well		X

Groundwater Level Measurements

Date/Time Measured: 8/8/24 1428 Total Depth: 28.00 feet below TOC
 Static Water Level: 19.65 feet below TOC
 TD - SWL: 8.35 water column (ft.)

Purging Activities

Purged By: C. Joyce Purge Date: 8/8/24
 Purge Method: Bailer Dedicated Pump Non-Dedicated Pump Peristaltic Pump (circle one)
 Well Diameter: 1-inch 2-inch 3-inch 4-inch Other _____ (circle one)
 Purge Volume Calculation: 8.35 x 10 x 3 = 250.5 Min Purge Volume: 300 mL
 Initial Parameter Readings: Temp (°C) 16.49 pH 6.43 ORP 198
 Sp. Cond. 0.736 Turbidity 0.1 DO 9.59
 Physical appearance of purge water: clear

Purge Time	Cumulative Purge Vol. (mL)	Purge Rate (ml/m)	10%			0.2 SU			10%		
			Temp (°C)	pH	ORP (mV)	Specific Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Water Level (ft below TOC)		
<u>1434</u>	<u>1600</u>	<u>400</u>	<u>14.46</u>	<u>6.45</u>	<u>196</u>	<u>0.635</u>	<u>0.0</u>	<u>9.05</u>	<u>19.67</u>		
<u>1437</u>	<u>2800</u>	<u>400</u>	<u>14.51</u>	<u>6.45</u>	<u>197</u>	<u>0.636</u>	<u>0.0</u>	<u>9.05</u>	<u>19.67</u>		
<u>1440</u>	<u>4000</u>	<u>400</u>	<u>14.50</u>	<u>6.46</u>	<u>198</u>	<u>0.639</u>	<u>0.0</u>	<u>9.76</u>	<u>19.67</u>		

Sampling Activities

Sampled By: C. Joyce Sample Date/Time: 8/8/24 1442
 Sample Method: Bailer Dedicated Pump Non-Dedicated Pump Peristaltic Pump (circle one)
 Sample Parameters: Temp (°C) 14.50 pH 6.46 ORP 198
 Sp. Cond. 0.639 Turbidity 0.0 DO 9.76
 Water Level 19.67 (feet below TOC)

Observations/Comments: (i.e., equipment malfunctions, contamination sources, sampling difficulties; duplicate sample)
collected Blind Duplicate from this location Reference Time 13:59

Electronic Form Completed By: _____ Date: _____

Field Data Sheet

Project Name: FDU GW Sampling
 Project Location: Fremont, NE
 Project Number: 27219045.02

Monitoring Point: MW-7
 Date(s): 8/8/24

Field Team Members

Name: C. Joyce Affiliation: SCS Engineers
 Name: _____ Affiliation: SCS Engineers

Weather Conditions

Mean Temp: 70 °F (Mean) Wind Direction: N S E W (circle two if needed)
 Precipitation: None Light Heavy Sky: Cloudy Sunny Partly

Well Observations

Well Pad OK Locks

Yes	No
<input checked="" type="checkbox"/>	<input type="checkbox"/>
Protective Casing	
Well	

 Casing _____
 Protective Casing _____
 Reference Mark/Identification _____

Groundwater Level Measurements

Date/Time Measured: 8/8/24 1352 Total Depth: 28.00 feet below TOC
 Static Water Level: 19.53 feet below TOC
 TD - SWL: 8.47 water column (ft.)

Purging Activities

Purged By: C. Joyce Purge Date: 8/8/24
 Purge Method: Bailer Dedicated Pump Non-Dedicated Pump Peristaltic Pump (circle one)
 Well Diameter: 1-inch 2-inch 3-inch 4-inch Other _____ (circle one)
 Purge Volume Calculation: 8.47 x 10 x 3 = 254.1 Min Purge Volume: 300 mL
 Initial Parameter Readings: Temp (°C) 17.44 pH 6.45 ORP 187
 Sp. Cond. 0.891 Turbidity 0.6 DO 7.68
 Physical appearance of purge water: clear

Purge Time	Cumulative Purge Vol. (mL)	Purge Rate (mL/m)	10%			0.2 SU			10%		
			Temp (°C)	pH	ORP (mV)	Specific Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Water Level (ft below TOC)		
<u>1402</u>	<u>1200</u>	<u>400</u>	<u>15.37</u>	<u>6.38</u>	<u>189</u>	<u>0.962</u>	<u>0.1</u>	<u>6.52</u>	<u>19.54</u>		
<u>1406</u>	<u>2800</u>	<u>400</u>	<u>15.26</u>	<u>6.40</u>	<u>189</u>	<u>0.967</u>	<u>0.0</u>	<u>6.11</u>	<u>19.54</u>		
<u>1411</u>	<u>4800</u>	<u>400</u>	<u>15.13</u>	<u>6.41</u>	<u>189</u>	<u>0.963</u>	<u>0.0</u>	<u>6.09</u>	<u>19.54</u>		

Sampling Activities

Sampled By: C. Joyce Sample Date/Time: 8/8/24 14:13
 Sample Method: Bailer Dedicated Pump Non-Dedicated Pump Peristaltic Pump (circle one)
 Sample Parameters: Temp (°C) 15.13 pH 6.41 ORP 189
 Sp. Cond. 0.963 Turbidity 0.6 DO 6.09
 Water Level 19.54 (feet below TOC)

Observations/Comments: (i.e., equipment malfunctions, contamination sources, sampling difficulties; duplicate sample)

Electronic Form Completed By: _____ Date: _____

Field Data Sheet

Project Name: FDU GW Sampling
 Project Location: Fremont, NE
 Project Number: 27219045.02

Monitoring Point: MW-8
 Date(s): 8/8/2024

Field Team Members

Name: C. Joyce Affiliation: SCS Engineers
 Name: _____ Affiliation: SCS Engineers

Weather Conditions

Mean Temp: 70 °F (Mean) Wind Direction: N S E W (circle two if needed)
 Precipitation: None Light Heavy Sky: Cloudy Sunny Partly

Well Observations

Well Pad OK
 Casing _____
 Protective Casing _____
 Reference Mark/Identification _____

Locks	Yes	No
Protective Casing	X	
Well		X

Groundwater Level Measurements

Date/Time Measured: 8/8/2024 1326
 Total Depth: 28.00 feet below TOC
 Static Water Level: 20.02 feet below TOC
 TD - SWL: 7.98 water column (ft.)

Purging Activities

Purged By: C. Joyce Purge Date: 8/8/24
 Purge Method: Bailer Dedicated Pump Non-Dedicated Pump Peristaltic Pump (circle one)
 Well Diameter: 1-inch 2-inch 3-inch 4-inch Other _____ (circle one)
 Purge Volume Calculation: 7.98 · 3 · 10 = 239.4 Min Purge Volume: 250 mL
 Initial Parameter Readings: Temp (°C) 14.19 pH 6.56 ORP 181
 Sp. Cond. 0.652 Turbidity 1.4 DO 8.16
 Physical appearance of purge water: Clear

Purge Time	Cumulative Purge Vol. (mL)	Purge Rate (mL/m)	10%			0.2 SU			10%		
			Temp (°C)	pH	ORP (mV)	Specific Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Water Level (ft below TOC)		
<u>1332</u>	<u>600</u>	<u>400</u>	<u>16.31</u>	<u>6.53</u>	<u>183</u>	<u>0.677</u>	<u>0.3</u>	<u>7.29</u>	<u>20.06</u>		
<u>1335</u>	<u>1800</u>	<u>400</u>	<u>15.55</u>	<u>6.51</u>	<u>181</u>	<u>0.703</u>	<u>0.0</u>	<u>6.67</u>	<u>20.06</u>		
<u>1338</u>	<u>3000</u>	<u>400</u>	<u>15.30</u>	<u>6.50</u>	<u>181</u>	<u>0.704</u>	<u>0.0</u>	<u>5.59</u>	<u>20.06</u>		

Sampling Activities

Sampled By: C. Joyce Sample Date/Time: 8/8/24 1340
 Sample Method: Bailer Dedicated Pump Non-Dedicated Pump Peristaltic Pump (circle one)
 Sample Parameters: Temp (°C) 15.30 pH 6.50 ORP 181
 Sp. Cond. 0.704 Turbidity 0.0 DO 5.59
 Water Level 20.06 (feet below TOC)

Observations/Comments: (i.e., equipment malfunctions, contamination sources, sampling difficulties; duplicate sample)

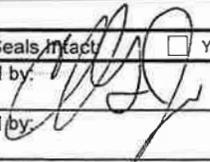
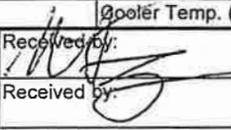
Electronic Form Completed By: _____ Date: _____

C.2 Chain of Custody

Cedar Falls, IA 50613
phone 319.277.2401 fax 319.277.2425

Regulatory Program: DW NPDES RCRA Other:

Eurofins Environment Testing America

Client Contact		Project Manager: Morgan Sykes		Site Contact: C. Joyce		Date: 8/8/24		COC No:						
SCS Engineers		Email: msykes@scsengineers.com		Lab Contact: Mary Yang		Carrier: Eurofins Courier		1 of 1 COCs						
14755 Grover Street		Tel/Fax: (402) 884-6202						TALS Project #:						
Omaha Nebraska, 68144		Analysis Turnaround Time						Sampler: C. Joyce						
(402) 884-6202 Phone		<input checked="" type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS						For Lab Use Only:						
(913)681-0012 FAX		TAT if different from Below 10						Walk-in Client:						
Project Name: City of Fremont		<input type="checkbox"/> 2 weeks						Lab Sampling:						
Site: FDU		<input type="checkbox"/> 1 week						Job / SDG No.:						
P.O # 27224080.00		<input type="checkbox"/> 2 days												
		<input type="checkbox"/> 1 day												
Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	7470A Mercury	60201601074714B/7473 Total Metals*	9056 Chloride-Fluoride-Sulfate	2540C TDS	9040 pH	Total Radium	Sample Specific Notes:
MW-1	8/8/24	1229	G	WT			X	X	X	X	X	X	X	
MW-2	8/8/24	1306	G	WT			X	X	X	X	X	X	X	
MW-3	8/8/24	1100	G	WT			X	X	X	X	X	X	X	
MW-4R	8/8/24	1010	G	WT			X	X	X	X	X	X	X	
MW-5	8/8/24	1141	G	WT			X	X	X	X	X	X	X	
MW-6	8/8/24	14:42	G	WT			X	X	X	X	X	X	X	
MW-7	8/8/24	1413	G	WT			X	X	X	X	X	X	X	
MW-8	8/8/24	1340	G	WT			X	X	X	X	X	X	X	
Duplicate	8/8/24	2359	G	WT			X	X	X	X	X	X	X	
Preservation Used: 1= Ice, 2=HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other														
Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.						Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)								
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown						<input type="checkbox"/> Return to Client <input checked="" type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for _____ Months								
Special Instructions/QC Requirements & Comments: *Total Metals - As, Ba, Be, Bo, Ca, Cd, Co, Cr, Hg, Li, Mo, Pb, Sb, Se and Ti														
Custody Seals Intact <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		 cooler Temp. (°C): Obs'd:		 Corr'd:		Therm ID No.:						
Relinquished by: 		Company: SCS		Date/Time: 8/8/24 1610		Received by: 		Company: Eurofins		Date/Time: 8/8/2024 4:15				
Relinquished by:		Company:		Date/Time:		Received by:		Company:		Date/Time:				
Relinquished by:		Company:		Date/Time:		Received in Laboratory by:		Company:		Date/Time:				

C.3 Testing Results



ANALYTICAL REPORT

PREPARED FOR

Attn: Morgan Sykes
SCS Engineers
14755 Grover St
Omaha, Nebraska 68144

Generated 8/22/2024 5:19:23 PM

JOB DESCRIPTION

FDU - City of Fremont

JOB NUMBER

310-287889-1

Eurofins Cedar Falls

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



Generated
8/22/2024 5:19:23 PM

Authorized for release by
Mary Yang, Client Service Manager
Mary.Yang@ET.EurofinsUS.com
(319)595-2025



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Case Narrative

Client: SCS Engineers
Project: FDU - City of Fremont

Job ID: 310-287889-1

Job ID: 310-287889-1

Eurofins Cedar Falls

Job Narrative 310-287889-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The samples were received on 8/9/2024 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 1.8°C and 3.3°C.

HPLC/IC

Method 9056A_ORGFM_28D: The following samples were diluted due to the nature of the sample matrix: MW-1 (310-287889-1), MW-3 (310-287889-3), MW-4R (310-287889-4), MW-5 (310-287889-5), MW-6 (310-287889-6), MW-7 (310-287889-7), MW-8 (310-287889-8) and Duplicate (310-287889-9). 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 7470A: The continuing calibration verification (CCV) associated with batch 310-431067 recovered above the upper control limit for Mercury. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is impacted: Duplicate (310-287889-9).

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.

Eurofins Cedar Falls

Sample Summary

Client: SCS Engineers
Project/Site: FDU - City of Fremont

Job ID: 310-287889-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-287889-1	MW-1	Water	08/08/24 12:29	08/09/24 16:40
310-287889-2	MW-2	Water	08/08/24 13:06	08/09/24 16:40
310-287889-3	MW-3	Water	08/08/24 11:00	08/09/24 16:40
310-287889-4	MW-4R	Water	08/08/24 10:10	08/09/24 16:40
310-287889-5	MW-5	Water	08/08/24 11:41	08/09/24 16:40
310-287889-6	MW-6	Water	08/08/24 14:42	08/09/24 16:40
310-287889-7	MW-7	Water	08/08/24 14:13	08/09/24 16:40
310-287889-8	MW-8	Water	08/08/24 13:40	08/09/24 16:40
310-287889-9	Duplicate	Water	08/08/24 23:59	08/09/24 16:40

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Detection Summary

Client: SCS Engineers
Project/Site: FDU - City of Fremont

Job ID: 310-287889-1

Client Sample ID: MW-1

Lab Sample ID: 310-287889-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	57.6		5.00		mg/L	5		9056A	Total/NA
Sulfate	67.0		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.00370		0.00200		mg/L	1		6020B	Total/NA
Barium	0.122		0.00200		mg/L	1		6020B	Total/NA
Boron	0.109		0.100		mg/L	1		6020B	Total/NA
Calcium	95.4		0.500		mg/L	1		6020B	Total/NA
Lithium	0.0280		0.0100		mg/L	1		6020B	Total/NA
Molybdenum	0.00547		0.00200		mg/L	1		6020B	Total/NA
Selenium	0.00616		0.00500		mg/L	1		6020B	Total/NA
pH	7.21	HF	1.00		SU	1		9040C	Total/NA
Total Dissolved Solids	440		50.0		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-2

Lab Sample ID: 310-287889-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	44.9		5.00		mg/L	5		9056A	Total/NA
Fluoride	1.23		1.00		mg/L	5		9056A	Total/NA
Sulfate	49.9		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.00415		0.00200		mg/L	1		6020B	Total/NA
Barium	0.103		0.00200		mg/L	1		6020B	Total/NA
Boron	0.127		0.100		mg/L	1		6020B	Total/NA
Calcium	85.8		0.500		mg/L	1		6020B	Total/NA
Lithium	0.0290		0.0100		mg/L	1		6020B	Total/NA
Molybdenum	0.00500		0.00200		mg/L	1		6020B	Total/NA
pH	7.13	HF	1.00		SU	1		9040C	Total/NA
Total Dissolved Solids	418		50.0		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-3

Lab Sample ID: 310-287889-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	20.8		5.00		mg/L	5		9056A	Total/NA
Sulfate	27.2		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.00382		0.00200		mg/L	1		6020B	Total/NA
Barium	0.0853		0.00200		mg/L	1		6020B	Total/NA
Calcium	58.2		0.500		mg/L	1		6020B	Total/NA
Lithium	0.0205		0.0100		mg/L	1		6020B	Total/NA
Molybdenum	0.00993		0.00200		mg/L	1		6020B	Total/NA
pH	7.27	HF	1.00		SU	1		9040C	Total/NA
Total Dissolved Solids	268		50.0		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-4R

Lab Sample ID: 310-287889-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	40.0		5.00		mg/L	5		9056A	Total/NA
Sulfate	37.0		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.00594		0.00200		mg/L	1		6020B	Total/NA
Barium	0.101		0.00200		mg/L	1		6020B	Total/NA
Calcium	85.4		0.500		mg/L	1		6020B	Total/NA
Lead	0.000814		0.000500		mg/L	1		6020B	Total/NA
Lithium	0.0261		0.0100		mg/L	1		6020B	Total/NA
Molybdenum	0.00424		0.00200		mg/L	1		6020B	Total/NA
Selenium	0.0102		0.00500		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: FDU - City of Fremont

Job ID: 310-287889-1

Client Sample ID: MW-4R (Continued)

Lab Sample ID: 310-287889-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
pH	7.29	HF	1.00		SU	1		9040C	Total/NA
Total Dissolved Solids	414		50.0		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-5

Lab Sample ID: 310-287889-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	40.2		5.00		mg/L	5		9056A	Total/NA
Sulfate	53.0		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.00430		0.00200		mg/L	1		6020B	Total/NA
Barium	0.111		0.00200		mg/L	1		6020B	Total/NA
Boron	0.100		0.100		mg/L	1		6020B	Total/NA
Calcium	79.2		0.500		mg/L	1		6020B	Total/NA
Lithium	0.0264		0.0100		mg/L	1		6020B	Total/NA
Molybdenum	0.00432		0.00200		mg/L	1		6020B	Total/NA
Selenium	0.00647		0.00500		mg/L	1		6020B	Total/NA
pH	7.40	HF	1.00		SU	1		9040C	Total/NA
Total Dissolved Solids	396		50.0		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-6

Lab Sample ID: 310-287889-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	26.9		5.00		mg/L	5		9056A	Total/NA
Sulfate	81.9		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.00389		0.00200		mg/L	1		6020B	Total/NA
Barium	0.0912		0.00200		mg/L	1		6020B	Total/NA
Boron	0.111		0.100		mg/L	1		6020B	Total/NA
Calcium	79.7		0.500		mg/L	1		6020B	Total/NA
Lithium	0.0226		0.0100		mg/L	1		6020B	Total/NA
Molybdenum	0.00644		0.00200		mg/L	1		6020B	Total/NA
pH	7.21	HF	1.00		SU	1		9040C	Total/NA
Total Dissolved Solids	394		50.0		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-7

Lab Sample ID: 310-287889-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	89.5		5.00		mg/L	5		9056A	Total/NA
Sulfate	74.2		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.00337		0.00200		mg/L	1		6020B	Total/NA
Barium	0.162		0.00200		mg/L	1		6020B	Total/NA
Boron	0.108		0.100		mg/L	1		6020B	Total/NA
Calcium	115		0.500		mg/L	1		6020B	Total/NA
Lithium	0.0321		0.0100		mg/L	1		6020B	Total/NA
Molybdenum	0.00631		0.00200		mg/L	1		6020B	Total/NA
Selenium	0.00812		0.00500		mg/L	1		6020B	Total/NA
pH	7.13	HF	1.00		SU	1		9040C	Total/NA
Total Dissolved Solids	568		50.0		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-8

Lab Sample ID: 310-287889-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	46.4		5.00		mg/L	5		9056A	Total/NA
Sulfate	39.1		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.00280		0.00200		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: FDU - City of Fremont

Job ID: 310-287889-1

Client Sample ID: MW-8 (Continued)

Lab Sample ID: 310-287889-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.132		0.00200		mg/L		1	6020B	Total/NA
Boron	0.100		0.100		mg/L		1	6020B	Total/NA
Calcium	84.0		0.500		mg/L		1	6020B	Total/NA
Lithium	0.0262		0.0100		mg/L		1	6020B	Total/NA
Molybdenum	0.00464		0.00200		mg/L		1	6020B	Total/NA
Selenium	0.00794		0.00500		mg/L		1	6020B	Total/NA
pH	7.07	HF	1.00		SU		1	9040C	Total/NA
Total Dissolved Solids	408		50.0		mg/L		1	SM 2540C	Total/NA

Client Sample ID: Duplicate

Lab Sample ID: 310-287889-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	27.1		5.00		mg/L		5	9056A	Total/NA
Sulfate	81.7		5.00		mg/L		5	9056A	Total/NA
Arsenic	0.00397		0.00200		mg/L		1	6020B	Total/NA
Barium	0.0930		0.00200		mg/L		1	6020B	Total/NA
Boron	0.116		0.100		mg/L		1	6020B	Total/NA
Calcium	82.5		0.500		mg/L		1	6020B	Total/NA
Lithium	0.0235		0.0100		mg/L		1	6020B	Total/NA
Molybdenum	0.00653		0.00200		mg/L		1	6020B	Total/NA
pH	7.30	HF	1.00		SU		1	9040C	Total/NA
Total Dissolved Solids	410		50.0		mg/L		1	SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

Client Sample Results

Client: SCS Engineers
Project/Site: FDU - City of Fremont

Job ID: 310-287889-1

Client Sample ID: MW-1

Lab Sample ID: 310-287889-1

Date Collected: 08/08/24 12:29

Matrix: Water

Date Received: 08/09/24 16:40

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	57.6		5.00		mg/L			08/16/24 11:46	5
Fluoride	<1.00		1.00		mg/L			08/16/24 11:46	5
Sulfate	67.0		5.00		mg/L			08/16/24 11:46	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		08/13/24 09:00	08/16/24 13:16	1
Arsenic	0.00370		0.00200		mg/L		08/13/24 09:00	08/15/24 16:22	1
Barium	0.122		0.00200		mg/L		08/13/24 09:00	08/15/24 16:22	1
Beryllium	<0.00100		0.00100		mg/L		08/13/24 09:00	08/15/24 16:22	1
Boron	0.109		0.100		mg/L		08/13/24 09:00	08/16/24 13:16	1
Cadmium	<0.000200		0.000200		mg/L		08/13/24 09:00	08/15/24 16:22	1
Calcium	95.4		0.500		mg/L		08/13/24 09:00	08/15/24 16:22	1
Chromium	<0.00500		0.00500		mg/L		08/13/24 09:00	08/15/24 16:22	1
Cobalt	<0.000500		0.000500		mg/L		08/13/24 09:00	08/15/24 16:22	1
Lead	<0.000500		0.000500		mg/L		08/13/24 09:00	08/15/24 16:22	1
Lithium	0.0280		0.0100		mg/L		08/13/24 09:00	08/15/24 16:22	1
Molybdenum	0.00547		0.00200		mg/L		08/13/24 09:00	08/15/24 16:22	1
Selenium	0.00616		0.00500		mg/L		08/13/24 09:00	08/15/24 16:22	1
Thallium	<0.00100		0.00100		mg/L		08/13/24 09:00	08/15/24 16:22	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		08/20/24 15:30	08/21/24 15:08	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	440		50.0		mg/L			08/13/24 15:37	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 9040C)	7.21	HF	1.00		SU			08/09/24 17:28	1

Client Sample Results

Client: SCS Engineers
Project/Site: FDU - City of Fremont

Job ID: 310-287889-1

Client Sample ID: MW-2

Lab Sample ID: 310-287889-2

Date Collected: 08/08/24 13:06

Matrix: Water

Date Received: 08/09/24 16:40

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	44.9		5.00		mg/L			08/16/24 12:46	5
Fluoride	1.23		1.00		mg/L			08/16/24 12:46	5
Sulfate	49.9		5.00		mg/L			08/16/24 12:46	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		08/13/24 09:00	08/16/24 13:18	1
Arsenic	0.00415		0.00200		mg/L		08/13/24 09:00	08/15/24 16:25	1
Barium	0.103		0.00200		mg/L		08/13/24 09:00	08/15/24 16:25	1
Beryllium	<0.00100		0.00100		mg/L		08/13/24 09:00	08/15/24 16:25	1
Boron	0.127		0.100		mg/L		08/13/24 09:00	08/16/24 13:18	1
Cadmium	<0.000200		0.000200		mg/L		08/13/24 09:00	08/15/24 16:25	1
Calcium	85.8		0.500		mg/L		08/13/24 09:00	08/15/24 16:25	1
Chromium	<0.00500		0.00500		mg/L		08/13/24 09:00	08/15/24 16:25	1
Cobalt	<0.000500		0.000500		mg/L		08/13/24 09:00	08/15/24 16:25	1
Lead	<0.000500		0.000500		mg/L		08/13/24 09:00	08/15/24 16:25	1
Lithium	0.0290		0.0100		mg/L		08/13/24 09:00	08/15/24 16:25	1
Molybdenum	0.00500		0.00200		mg/L		08/13/24 09:00	08/15/24 16:25	1
Selenium	<0.00500		0.00500		mg/L		08/13/24 09:00	08/15/24 16:25	1
Thallium	<0.00100		0.00100		mg/L		08/13/24 09:00	08/15/24 16:25	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		08/20/24 15:30	08/21/24 15:10	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	418		50.0		mg/L			08/13/24 15:37	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 9040C)	7.13	HF	1.00		SU			08/09/24 17:30	1

Client Sample Results

Client: SCS Engineers
 Project/Site: FDU - City of Fremont

Job ID: 310-287889-1

Client Sample ID: MW-3

Lab Sample ID: 310-287889-3

Date Collected: 08/08/24 11:00

Matrix: Water

Date Received: 08/09/24 16:40

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	20.8		5.00		mg/L			08/16/24 12:58	5
Fluoride	<1.00		1.00		mg/L			08/16/24 12:58	5
Sulfate	27.2		5.00		mg/L			08/16/24 12:58	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		08/13/24 09:00	08/16/24 13:23	1
Arsenic	0.00382		0.00200		mg/L		08/13/24 09:00	08/15/24 16:29	1
Barium	0.0853		0.00200		mg/L		08/13/24 09:00	08/15/24 16:29	1
Beryllium	<0.00100		0.00100		mg/L		08/13/24 09:00	08/15/24 16:29	1
Boron	<0.100		0.100		mg/L		08/13/24 09:00	08/16/24 13:23	1
Cadmium	<0.000200		0.000200		mg/L		08/13/24 09:00	08/15/24 16:29	1
Calcium	58.2		0.500		mg/L		08/13/24 09:00	08/15/24 16:29	1
Chromium	<0.00500		0.00500		mg/L		08/13/24 09:00	08/15/24 16:29	1
Cobalt	<0.000500		0.000500		mg/L		08/13/24 09:00	08/15/24 16:29	1
Lead	<0.000500		0.000500		mg/L		08/13/24 09:00	08/15/24 16:29	1
Lithium	0.0205		0.0100		mg/L		08/13/24 09:00	08/15/24 16:29	1
Molybdenum	0.00993		0.00200		mg/L		08/13/24 09:00	08/15/24 16:29	1
Selenium	<0.00500		0.00500		mg/L		08/13/24 09:00	08/15/24 16:29	1
Thallium	<0.00100		0.00100		mg/L		08/13/24 09:00	08/15/24 16:29	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		08/20/24 15:30	08/21/24 15:12	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	268		50.0		mg/L			08/13/24 15:37	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 9040C)	7.27	HF	1.00		SU			08/09/24 17:31	1

Client Sample Results

Client: SCS Engineers
Project/Site: FDU - City of Fremont

Job ID: 310-287889-1

Client Sample ID: MW-4R

Lab Sample ID: 310-287889-4

Date Collected: 08/08/24 10:10

Matrix: Water

Date Received: 08/09/24 16:40

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	40.0		5.00		mg/L			08/16/24 13:10	5
Fluoride	<1.00		1.00		mg/L			08/16/24 13:10	5
Sulfate	37.0		5.00		mg/L			08/16/24 13:10	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		08/13/24 09:00	08/16/24 13:25	1
Arsenic	0.00594		0.00200		mg/L		08/13/24 09:00	08/15/24 16:31	1
Barium	0.101		0.00200		mg/L		08/13/24 09:00	08/15/24 16:31	1
Beryllium	<0.00100		0.00100		mg/L		08/13/24 09:00	08/15/24 16:31	1
Boron	<0.100		0.100		mg/L		08/13/24 09:00	08/16/24 13:25	1
Cadmium	<0.000200		0.000200		mg/L		08/13/24 09:00	08/15/24 16:31	1
Calcium	85.4		0.500		mg/L		08/13/24 09:00	08/15/24 16:31	1
Chromium	<0.00500		0.00500		mg/L		08/13/24 09:00	08/15/24 16:31	1
Cobalt	<0.000500		0.000500		mg/L		08/13/24 09:00	08/15/24 16:31	1
Lead	0.000814		0.000500		mg/L		08/13/24 09:00	08/15/24 16:31	1
Lithium	0.0261		0.0100		mg/L		08/13/24 09:00	08/15/24 16:31	1
Molybdenum	0.00424		0.00200		mg/L		08/13/24 09:00	08/15/24 16:31	1
Selenium	0.0102		0.00500		mg/L		08/13/24 09:00	08/15/24 16:31	1
Thallium	<0.00100		0.00100		mg/L		08/13/24 09:00	08/15/24 16:31	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		08/20/24 15:30	08/21/24 15:14	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	414		50.0		mg/L			08/13/24 15:37	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 9040C)	7.29	HF	1.00		SU			08/09/24 17:32	1

Client Sample Results

Client: SCS Engineers
Project/Site: FDU - City of Fremont

Job ID: 310-287889-1

Client Sample ID: MW-5

Lab Sample ID: 310-287889-5

Date Collected: 08/08/24 11:41

Matrix: Water

Date Received: 08/09/24 16:40

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	40.2		5.00		mg/L			08/16/24 13:23	5
Fluoride	<1.00		1.00		mg/L			08/16/24 13:23	5
Sulfate	53.0		5.00		mg/L			08/16/24 13:23	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		08/13/24 09:00	08/16/24 13:27	1
Arsenic	0.00430		0.00200		mg/L		08/13/24 09:00	08/15/24 16:42	1
Barium	0.111		0.00200		mg/L		08/13/24 09:00	08/15/24 16:42	1
Beryllium	<0.00100		0.00100		mg/L		08/13/24 09:00	08/15/24 16:42	1
Boron	0.100		0.100		mg/L		08/13/24 09:00	08/16/24 13:27	1
Cadmium	<0.000200		0.000200		mg/L		08/13/24 09:00	08/15/24 16:42	1
Calcium	79.2		0.500		mg/L		08/13/24 09:00	08/15/24 16:42	1
Chromium	<0.00500		0.00500		mg/L		08/13/24 09:00	08/15/24 16:42	1
Cobalt	<0.000500		0.000500		mg/L		08/13/24 09:00	08/15/24 16:42	1
Lead	<0.000500		0.000500		mg/L		08/13/24 09:00	08/15/24 16:42	1
Lithium	0.0264		0.0100		mg/L		08/13/24 09:00	08/15/24 16:42	1
Molybdenum	0.00432		0.00200		mg/L		08/13/24 09:00	08/15/24 16:42	1
Selenium	0.00647		0.00500		mg/L		08/13/24 09:00	08/15/24 16:42	1
Thallium	<0.00100		0.00100		mg/L		08/13/24 09:00	08/15/24 16:42	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		08/20/24 15:30	08/21/24 15:16	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	396		50.0		mg/L			08/13/24 15:37	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 9040C)	7.40	HF	1.00		SU			08/09/24 17:33	1

Client Sample Results

Client: SCS Engineers
 Project/Site: FDU - City of Fremont

Job ID: 310-287889-1

Client Sample ID: MW-6

Lab Sample ID: 310-287889-6

Date Collected: 08/08/24 14:42

Matrix: Water

Date Received: 08/09/24 16:40

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	26.9		5.00		mg/L			08/16/24 13:35	5
Fluoride	<1.00		1.00		mg/L			08/16/24 13:35	5
Sulfate	81.9		5.00		mg/L			08/16/24 13:35	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		08/13/24 09:00	08/16/24 13:29	1
Arsenic	0.00389		0.00200		mg/L		08/13/24 09:00	08/15/24 16:44	1
Barium	0.0912		0.00200		mg/L		08/13/24 09:00	08/15/24 16:44	1
Beryllium	<0.00100		0.00100		mg/L		08/13/24 09:00	08/15/24 16:44	1
Boron	0.111		0.100		mg/L		08/13/24 09:00	08/16/24 13:29	1
Cadmium	<0.000200		0.000200		mg/L		08/13/24 09:00	08/15/24 16:44	1
Calcium	79.7		0.500		mg/L		08/13/24 09:00	08/15/24 16:44	1
Chromium	<0.00500		0.00500		mg/L		08/13/24 09:00	08/15/24 16:44	1
Cobalt	<0.000500		0.000500		mg/L		08/13/24 09:00	08/15/24 16:44	1
Lead	<0.000500		0.000500		mg/L		08/13/24 09:00	08/15/24 16:44	1
Lithium	0.0226		0.0100		mg/L		08/13/24 09:00	08/15/24 16:44	1
Molybdenum	0.00644		0.00200		mg/L		08/13/24 09:00	08/15/24 16:44	1
Selenium	<0.00500		0.00500		mg/L		08/13/24 09:00	08/15/24 16:44	1
Thallium	<0.00100		0.00100		mg/L		08/13/24 09:00	08/15/24 16:44	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		08/20/24 15:30	08/21/24 15:18	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	394		50.0		mg/L			08/13/24 15:37	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 9040C)	7.21	HF	1.00		SU			08/09/24 17:34	1

Client Sample Results

Client: SCS Engineers
 Project/Site: FDU - City of Fremont

Job ID: 310-287889-1

Client Sample ID: MW-7

Lab Sample ID: 310-287889-7

Date Collected: 08/08/24 14:13

Matrix: Water

Date Received: 08/09/24 16:40

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	89.5		5.00		mg/L			08/16/24 13:47	5
Fluoride	<1.00		1.00		mg/L			08/16/24 13:47	5
Sulfate	74.2		5.00		mg/L			08/16/24 13:47	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		08/13/24 09:00	08/16/24 13:32	1
Arsenic	0.00337		0.00200		mg/L		08/13/24 09:00	08/15/24 16:46	1
Barium	0.162		0.00200		mg/L		08/13/24 09:00	08/15/24 16:46	1
Beryllium	<0.00100		0.00100		mg/L		08/13/24 09:00	08/15/24 16:46	1
Boron	0.108		0.100		mg/L		08/13/24 09:00	08/16/24 13:32	1
Cadmium	<0.000200		0.000200		mg/L		08/13/24 09:00	08/15/24 16:46	1
Calcium	115		0.500		mg/L		08/13/24 09:00	08/15/24 16:46	1
Chromium	<0.00500		0.00500		mg/L		08/13/24 09:00	08/15/24 16:46	1
Cobalt	<0.000500		0.000500		mg/L		08/13/24 09:00	08/15/24 16:46	1
Lead	<0.000500		0.000500		mg/L		08/13/24 09:00	08/15/24 16:46	1
Lithium	0.0321		0.0100		mg/L		08/13/24 09:00	08/15/24 16:46	1
Molybdenum	0.00631		0.00200		mg/L		08/13/24 09:00	08/15/24 16:46	1
Selenium	0.00812		0.00500		mg/L		08/13/24 09:00	08/15/24 16:46	1
Thallium	<0.00100		0.00100		mg/L		08/13/24 09:00	08/15/24 16:46	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		08/20/24 15:30	08/21/24 15:21	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	568		50.0		mg/L			08/15/24 12:46	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 9040C)	7.13	HF	1.00		SU			08/09/24 17:35	1

Client Sample Results

Client: SCS Engineers
 Project/Site: FDU - City of Fremont

Job ID: 310-287889-1

Client Sample ID: MW-8

Lab Sample ID: 310-287889-8

Date Collected: 08/08/24 13:40

Matrix: Water

Date Received: 08/09/24 16:40

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	46.4		5.00		mg/L			08/16/24 13:59	5
Fluoride	<1.00		1.00		mg/L			08/16/24 13:59	5
Sulfate	39.1		5.00		mg/L			08/16/24 13:59	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		08/13/24 09:00	08/16/24 13:34	1
Arsenic	0.00280		0.00200		mg/L		08/13/24 09:00	08/15/24 16:49	1
Barium	0.132		0.00200		mg/L		08/13/24 09:00	08/15/24 16:49	1
Beryllium	<0.00100		0.00100		mg/L		08/13/24 09:00	08/15/24 16:49	1
Boron	0.100		0.100		mg/L		08/13/24 09:00	08/16/24 13:34	1
Cadmium	<0.000200		0.000200		mg/L		08/13/24 09:00	08/15/24 16:49	1
Calcium	84.0		0.500		mg/L		08/13/24 09:00	08/15/24 16:49	1
Chromium	<0.00500		0.00500		mg/L		08/13/24 09:00	08/15/24 16:49	1
Cobalt	<0.000500		0.000500		mg/L		08/13/24 09:00	08/15/24 16:49	1
Lead	<0.000500		0.000500		mg/L		08/13/24 09:00	08/15/24 16:49	1
Lithium	0.0262		0.0100		mg/L		08/13/24 09:00	08/15/24 16:49	1
Molybdenum	0.00464		0.00200		mg/L		08/13/24 09:00	08/15/24 16:49	1
Selenium	0.00794		0.00500		mg/L		08/13/24 09:00	08/15/24 16:49	1
Thallium	<0.00100		0.00100		mg/L		08/13/24 09:00	08/15/24 16:49	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		08/20/24 15:30	08/21/24 15:23	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	408		50.0		mg/L			08/15/24 12:46	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 9040C)	7.07	HF	1.00		SU			08/09/24 17:36	1

Client Sample Results

Client: SCS Engineers
Project/Site: FDU - City of Fremont

Job ID: 310-287889-1

Client Sample ID: Duplicate

Lab Sample ID: 310-287889-9

Date Collected: 08/08/24 23:59

Matrix: Water

Date Received: 08/09/24 16:40

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	27.1		5.00		mg/L			08/16/24 14:11	5
Fluoride	<1.00		1.00		mg/L			08/16/24 14:11	5
Sulfate	81.7		5.00		mg/L			08/16/24 14:11	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		08/13/24 09:00	08/16/24 13:36	1
Arsenic	0.00397		0.00200		mg/L		08/13/24 09:00	08/15/24 16:51	1
Barium	0.0930		0.00200		mg/L		08/13/24 09:00	08/15/24 16:51	1
Beryllium	<0.00100		0.00100		mg/L		08/13/24 09:00	08/15/24 16:51	1
Boron	0.116		0.100		mg/L		08/13/24 09:00	08/16/24 13:36	1
Cadmium	<0.000200		0.000200		mg/L		08/13/24 09:00	08/15/24 16:51	1
Calcium	82.5		0.500		mg/L		08/13/24 09:00	08/15/24 16:51	1
Chromium	<0.00500		0.00500		mg/L		08/13/24 09:00	08/15/24 16:51	1
Cobalt	<0.000500		0.000500		mg/L		08/13/24 09:00	08/15/24 16:51	1
Lead	<0.000500		0.000500		mg/L		08/13/24 09:00	08/15/24 16:51	1
Lithium	0.0235		0.0100		mg/L		08/13/24 09:00	08/15/24 16:51	1
Molybdenum	0.00653		0.00200		mg/L		08/13/24 09:00	08/15/24 16:51	1
Selenium	<0.00500		0.00500		mg/L		08/13/24 09:00	08/15/24 16:51	1
Thallium	<0.00100		0.00100		mg/L		08/13/24 09:00	08/15/24 16:51	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200	^+	0.000200		mg/L		08/20/24 15:30	08/21/24 15:29	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (SM 2540C)	410		50.0		mg/L			08/15/24 12:46	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 9040C)	7.30	HF	1.00		SU			08/09/24 17:37	1

Definitions/Glossary

Client: SCS Engineers
Project/Site: FDU - City of Fremont

Job ID: 310-287889-1

Qualifiers

Metals

Qualifier	Qualifier Description
^+	Continuing Calibration Verification (CCV) is outside acceptance limits, high biased.

General Chemistry

Qualifier	Qualifier Description
HF	Parameter with a holding time of 15 minutes. Test performed by laboratory at client's request. Sample was analyzed outside of hold time.

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: FDU - City of Fremont

Job ID: 310-287889-1

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 310-430769/3
Matrix: Water
Analysis Batch: 430769

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		mg/L			08/16/24 09:57	1
Fluoride	<0.200		0.200		mg/L			08/16/24 09:57	1
Sulfate	<1.00		1.00		mg/L			08/16/24 09:57	1

Lab Sample ID: LCS 310-430769/4
Matrix: Water
Analysis Batch: 430769

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	10.94		mg/L		109	90 - 110
Fluoride	2.00	2.034		mg/L		102	90 - 110
Sulfate	10.0	10.24		mg/L		102	90 - 110

Lab Sample ID: 310-287889-1 MS
Matrix: Water
Analysis Batch: 430769

Client Sample ID: MW-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	57.6		25.0	80.29		mg/L		91	80 - 120
Fluoride	<1.00		5.00	5.777		mg/L		101	80 - 120
Sulfate	67.0		25.0	90.92		mg/L		96	80 - 120

Lab Sample ID: 310-287889-1 MSD
Matrix: Water
Analysis Batch: 430769

Client Sample ID: MW-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	57.6		25.0	78.05		mg/L		82	80 - 120	3	15
Fluoride	<1.00		5.00	5.730		mg/L		100	80 - 120	1	15
Sulfate	67.0		25.0	90.02		mg/L		92	80 - 120	1	15

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-430126/1-A
Matrix: Water
Analysis Batch: 430554

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 430126

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		08/13/24 09:00	08/15/24 15:41	1
Arsenic	<0.00200		0.00200		mg/L		08/13/24 09:00	08/15/24 15:41	1
Barium	<0.00200		0.00200		mg/L		08/13/24 09:00	08/15/24 15:41	1
Beryllium	<0.00100		0.00100		mg/L		08/13/24 09:00	08/15/24 15:41	1
Cadmium	<0.000200		0.000200		mg/L		08/13/24 09:00	08/15/24 15:41	1
Calcium	<0.500		0.500		mg/L		08/13/24 09:00	08/15/24 15:41	1
Chromium	<0.00500		0.00500		mg/L		08/13/24 09:00	08/15/24 15:41	1
Cobalt	<0.000500		0.000500		mg/L		08/13/24 09:00	08/15/24 15:41	1
Lead	<0.000500		0.000500		mg/L		08/13/24 09:00	08/15/24 15:41	1
Lithium	<0.0100		0.0100		mg/L		08/13/24 09:00	08/15/24 15:41	1
Molybdenum	<0.00200		0.00200		mg/L		08/13/24 09:00	08/15/24 15:41	1
Selenium	<0.00500		0.00500		mg/L		08/13/24 09:00	08/15/24 15:41	1

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QC Sample Results

Client: SCS Engineers
Project/Site: FDU - City of Fremont

Job ID: 310-287889-1

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

Lab Sample ID: MB 310-430126/1-A
Matrix: Water
Analysis Batch: 430554

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 430126

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Thallium	<0.00100		0.00100		mg/L		08/13/24 09:00	08/15/24 15:41	1

Lab Sample ID: MB 310-430126/1-A
Matrix: Water
Analysis Batch: 430653

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 430126

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	<0.100		0.100		mg/L		08/13/24 09:00	08/16/24 12:31	1

Lab Sample ID: LCS 310-430126/2-A
Matrix: Water
Analysis Batch: 430554

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 430126

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	0.200	0.2062		mg/L		103	80 - 120
Barium	0.100	0.1035		mg/L		104	80 - 120
Beryllium	0.100	0.1026		mg/L		103	80 - 120
Cadmium	0.100	0.1085		mg/L		109	80 - 120
Calcium	2.00	2.018		mg/L		101	80 - 120
Chromium	0.100	0.09913		mg/L		99	80 - 120
Cobalt	0.100	0.1132		mg/L		113	80 - 120
Lead	0.200	0.2221		mg/L		111	80 - 120
Lithium	0.200	0.2165		mg/L		108	80 - 120
Molybdenum	0.200	0.1974		mg/L		99	80 - 120
Selenium	0.400	0.3922		mg/L		98	80 - 120
Thallium	0.100	0.1157		mg/L		116	80 - 120

Lab Sample ID: LCS 310-430126/2-A
Matrix: Water
Analysis Batch: 430653

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 430126

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	0.200	0.2292		mg/L		115	80 - 120
Boron	0.200	0.2018		mg/L		101	80 - 120

Lab Sample ID: 310-287889-2 DU
Matrix: Water
Analysis Batch: 430554

Client Sample ID: MW-2
Prep Type: Total/NA
Prep Batch: 430126

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Arsenic	0.00415		0.004198		mg/L		1	20
Barium	0.103		0.1034		mg/L		0.4	20
Beryllium	<0.00100		<0.00100		mg/L		NC	20
Cadmium	<0.000200		<0.000200		mg/L		NC	20
Calcium	85.8		85.73		mg/L		0.1	20
Chromium	<0.00500		<0.00500		mg/L		NC	20
Cobalt	<0.000500		<0.000500		mg/L		NC	20
Lead	<0.000500		<0.000500		mg/L		NC	20
Lithium	0.0290		0.02904		mg/L		0.2	20
Molybdenum	0.00500		0.004867		mg/L		3	20

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QC Sample Results

Client: SCS Engineers
Project/Site: FDU - City of Fremont

Job ID: 310-287889-1

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

Lab Sample ID: 310-287889-2 DU
Matrix: Water
Analysis Batch: 430554

Client Sample ID: MW-2
Prep Type: Total/NA
Prep Batch: 430126

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Selenium	<0.00500		0.005014		mg/L		NC	20
Thallium	<0.00100		<0.00100		mg/L		NC	20

Lab Sample ID: 310-287889-2 DU
Matrix: Water
Analysis Batch: 430653

Client Sample ID: MW-2
Prep Type: Total/NA
Prep Batch: 430126

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Boron	0.127		0.1162		mg/L		9	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 310-430370/1-A
Matrix: Water
Analysis Batch: 431067

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 430370

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Mercury	<0.000200		0.000200		mg/L		08/20/24 15:30	08/21/24 14:27	1

Lab Sample ID: LCS 310-430370/2-A
Matrix: Water
Analysis Batch: 431067

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 430370

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Mercury	0.00167	0.001611		mg/L		97	80 - 120

Method: 9040C - pH

Lab Sample ID: LCS 310-430007/1
Matrix: Water
Analysis Batch: 430007

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

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
pH	7.00	7.030		SU		100	98 - 102

Lab Sample ID: 310-287889-1 DU
Matrix: Water
Analysis Batch: 430007

Client Sample ID: MW-1
Prep Type: Total/NA

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
pH	7.21	HF	7.190		SU		0.3	20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 310-430251/1
Matrix: Water
Analysis Batch: 430251

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Total Dissolved Solids	<50.0		50.0		mg/L			08/13/24 15:37	1

Eurofins Cedar Falls

QC Sample Results

Client: SCS Engineers
Project/Site: FDU - City of Fremont

Job ID: 310-287889-1

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: LCS 310-430251/2
Matrix: Water
Analysis Batch: 430251

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	1000	996.0		mg/L		100	88 - 110

Lab Sample ID: 310-287889-5 DU
Matrix: Water
Analysis Batch: 430251

Client Sample ID: MW-5
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	396		370.0		mg/L		7	16

Lab Sample ID: MB 310-430490/1
Matrix: Water
Analysis Batch: 430490

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<50.0		50.0		mg/L			08/15/24 12:46	1

Lab Sample ID: LCS 310-430490/2
Matrix: Water
Analysis Batch: 430490

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	1000	984.0		mg/L		98	88 - 110

Lab Sample ID: 310-287889-7 DU
Matrix: Water
Analysis Batch: 430490

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

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	568		566.0		mg/L		0.4	16

QC Association Summary

Client: SCS Engineers
 Project/Site: FDU - City of Fremont

Job ID: 310-287889-1

HPLC/IC

Analysis Batch: 430769

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-287889-1	MW-1	Total/NA	Water	9056A	
310-287889-2	MW-2	Total/NA	Water	9056A	
310-287889-3	MW-3	Total/NA	Water	9056A	
310-287889-4	MW-4R	Total/NA	Water	9056A	
310-287889-5	MW-5	Total/NA	Water	9056A	
310-287889-6	MW-6	Total/NA	Water	9056A	
310-287889-7	MW-7	Total/NA	Water	9056A	
310-287889-8	MW-8	Total/NA	Water	9056A	
310-287889-9	Duplicate	Total/NA	Water	9056A	
MB 310-430769/3	Method Blank	Total/NA	Water	9056A	
LCS 310-430769/4	Lab Control Sample	Total/NA	Water	9056A	
310-287889-1 MS	MW-1	Total/NA	Water	9056A	
310-287889-1 MSD	MW-1	Total/NA	Water	9056A	

Metals

Prep Batch: 430126

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-287889-1	MW-1	Total/NA	Water	3005A	
310-287889-2	MW-2	Total/NA	Water	3005A	
310-287889-3	MW-3	Total/NA	Water	3005A	
310-287889-4	MW-4R	Total/NA	Water	3005A	
310-287889-5	MW-5	Total/NA	Water	3005A	
310-287889-6	MW-6	Total/NA	Water	3005A	
310-287889-7	MW-7	Total/NA	Water	3005A	
310-287889-8	MW-8	Total/NA	Water	3005A	
310-287889-9	Duplicate	Total/NA	Water	3005A	
MB 310-430126/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-430126/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-287889-2 DU	MW-2	Total/NA	Water	3005A	

Prep Batch: 430370

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-287889-1	MW-1	Total/NA	Water	7470A	
310-287889-2	MW-2	Total/NA	Water	7470A	
310-287889-3	MW-3	Total/NA	Water	7470A	
310-287889-4	MW-4R	Total/NA	Water	7470A	
310-287889-5	MW-5	Total/NA	Water	7470A	
310-287889-6	MW-6	Total/NA	Water	7470A	
310-287889-7	MW-7	Total/NA	Water	7470A	
310-287889-8	MW-8	Total/NA	Water	7470A	
310-287889-9	Duplicate	Total/NA	Water	7470A	
MB 310-430370/1-A	Method Blank	Total/NA	Water	7470A	
LCS 310-430370/2-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 430554

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-287889-1	MW-1	Total/NA	Water	6020B	430126
310-287889-2	MW-2	Total/NA	Water	6020B	430126
310-287889-3	MW-3	Total/NA	Water	6020B	430126
310-287889-4	MW-4R	Total/NA	Water	6020B	430126

Eurofins Cedar Falls

QC Association Summary

Client: SCS Engineers
 Project/Site: FDU - City of Fremont

Job ID: 310-287889-1

Metals (Continued)

Analysis Batch: 430554 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-287889-5	MW-5	Total/NA	Water	6020B	430126
310-287889-6	MW-6	Total/NA	Water	6020B	430126
310-287889-7	MW-7	Total/NA	Water	6020B	430126
310-287889-8	MW-8	Total/NA	Water	6020B	430126
310-287889-9	Duplicate	Total/NA	Water	6020B	430126
MB 310-430126/1-A	Method Blank	Total/NA	Water	6020B	430126
LCS 310-430126/2-A	Lab Control Sample	Total/NA	Water	6020B	430126
310-287889-2 DU	MW-2	Total/NA	Water	6020B	430126

Analysis Batch: 430653

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-287889-1	MW-1	Total/NA	Water	6020B	430126
310-287889-2	MW-2	Total/NA	Water	6020B	430126
310-287889-3	MW-3	Total/NA	Water	6020B	430126
310-287889-4	MW-4R	Total/NA	Water	6020B	430126
310-287889-5	MW-5	Total/NA	Water	6020B	430126
310-287889-6	MW-6	Total/NA	Water	6020B	430126
310-287889-7	MW-7	Total/NA	Water	6020B	430126
310-287889-8	MW-8	Total/NA	Water	6020B	430126
310-287889-9	Duplicate	Total/NA	Water	6020B	430126
MB 310-430126/1-A	Method Blank	Total/NA	Water	6020B	430126
LCS 310-430126/2-A	Lab Control Sample	Total/NA	Water	6020B	430126
310-287889-2 DU	MW-2	Total/NA	Water	6020B	430126

Analysis Batch: 431067

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-287889-1	MW-1	Total/NA	Water	7470A	430370
310-287889-2	MW-2	Total/NA	Water	7470A	430370
310-287889-3	MW-3	Total/NA	Water	7470A	430370
310-287889-4	MW-4R	Total/NA	Water	7470A	430370
310-287889-5	MW-5	Total/NA	Water	7470A	430370
310-287889-6	MW-6	Total/NA	Water	7470A	430370
310-287889-7	MW-7	Total/NA	Water	7470A	430370
310-287889-8	MW-8	Total/NA	Water	7470A	430370
310-287889-9	Duplicate	Total/NA	Water	7470A	430370
MB 310-430370/1-A	Method Blank	Total/NA	Water	7470A	430370
LCS 310-430370/2-A	Lab Control Sample	Total/NA	Water	7470A	430370

General Chemistry

Analysis Batch: 430007

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-287889-1	MW-1	Total/NA	Water	9040C	
310-287889-2	MW-2	Total/NA	Water	9040C	
310-287889-3	MW-3	Total/NA	Water	9040C	
310-287889-4	MW-4R	Total/NA	Water	9040C	
310-287889-5	MW-5	Total/NA	Water	9040C	
310-287889-6	MW-6	Total/NA	Water	9040C	
310-287889-7	MW-7	Total/NA	Water	9040C	
310-287889-8	MW-8	Total/NA	Water	9040C	
310-287889-9	Duplicate	Total/NA	Water	9040C	

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QC Association Summary

Client: SCS Engineers
Project/Site: FDU - City of Fremont

Job ID: 310-287889-1

General Chemistry (Continued)

Analysis Batch: 430007 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 310-430007/1	Lab Control Sample	Total/NA	Water	9040C	
310-287889-1 DU	MW-1	Total/NA	Water	9040C	

Analysis Batch: 430251

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-287889-1	MW-1	Total/NA	Water	SM 2540C	
310-287889-2	MW-2	Total/NA	Water	SM 2540C	
310-287889-3	MW-3	Total/NA	Water	SM 2540C	
310-287889-4	MW-4R	Total/NA	Water	SM 2540C	
310-287889-5	MW-5	Total/NA	Water	SM 2540C	
310-287889-6	MW-6	Total/NA	Water	SM 2540C	
MB 310-430251/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-430251/2	Lab Control Sample	Total/NA	Water	SM 2540C	
310-287889-5 DU	MW-5	Total/NA	Water	SM 2540C	

Analysis Batch: 430490

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-287889-7	MW-7	Total/NA	Water	SM 2540C	
310-287889-8	MW-8	Total/NA	Water	SM 2540C	
310-287889-9	Duplicate	Total/NA	Water	SM 2540C	
MB 310-430490/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-430490/2	Lab Control Sample	Total/NA	Water	SM 2540C	
310-287889-7 DU	MW-7	Total/NA	Water	SM 2540C	

Lab Chronicle

Client: SCS Engineers
 Project/Site: FDU - City of Fremont

Job ID: 310-287889-1

Client Sample ID: MW-1

Lab Sample ID: 310-287889-1

Date Collected: 08/08/24 12:29

Matrix: Water

Date Received: 08/09/24 16:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	430769	QTZ5	EET CF	08/16/24 11:46
Total/NA	Prep	3005A			430126	DHM5	EET CF	08/13/24 09:00
Total/NA	Analysis	6020B		1	430554	NFT2	EET CF	08/15/24 16:22
Total/NA	Prep	3005A			430126	DHM5	EET CF	08/13/24 09:00
Total/NA	Analysis	6020B		1	430653	NFT2	EET CF	08/16/24 13:16
Total/NA	Prep	7470A			430370	DHM5	EET CF	08/20/24 15:30
Total/NA	Analysis	7470A		1	431067	DHM5	EET CF	08/21/24 15:08
Total/NA	Analysis	9040C		1	430007	A3GU	EET CF	08/09/24 17:28
Total/NA	Analysis	SM 2540C		1	430251	MDU9	EET CF	08/13/24 15:37

Client Sample ID: MW-2

Lab Sample ID: 310-287889-2

Date Collected: 08/08/24 13:06

Matrix: Water

Date Received: 08/09/24 16:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	430769	QTZ5	EET CF	08/16/24 12:46
Total/NA	Prep	3005A			430126	DHM5	EET CF	08/13/24 09:00
Total/NA	Analysis	6020B		1	430554	NFT2	EET CF	08/15/24 16:25
Total/NA	Prep	3005A			430126	DHM5	EET CF	08/13/24 09:00
Total/NA	Analysis	6020B		1	430653	NFT2	EET CF	08/16/24 13:18
Total/NA	Prep	7470A			430370	DHM5	EET CF	08/20/24 15:30
Total/NA	Analysis	7470A		1	431067	DHM5	EET CF	08/21/24 15:10
Total/NA	Analysis	9040C		1	430007	A3GU	EET CF	08/09/24 17:30
Total/NA	Analysis	SM 2540C		1	430251	MDU9	EET CF	08/13/24 15:37

Client Sample ID: MW-3

Lab Sample ID: 310-287889-3

Date Collected: 08/08/24 11:00

Matrix: Water

Date Received: 08/09/24 16:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	430769	QTZ5	EET CF	08/16/24 12:58
Total/NA	Prep	3005A			430126	DHM5	EET CF	08/13/24 09:00
Total/NA	Analysis	6020B		1	430554	NFT2	EET CF	08/15/24 16:29
Total/NA	Prep	3005A			430126	DHM5	EET CF	08/13/24 09:00
Total/NA	Analysis	6020B		1	430653	NFT2	EET CF	08/16/24 13:23
Total/NA	Prep	7470A			430370	DHM5	EET CF	08/20/24 15:30
Total/NA	Analysis	7470A		1	431067	DHM5	EET CF	08/21/24 15:12
Total/NA	Analysis	9040C		1	430007	A3GU	EET CF	08/09/24 17:31
Total/NA	Analysis	SM 2540C		1	430251	MDU9	EET CF	08/13/24 15:37

Lab Chronicle

Client: SCS Engineers
 Project/Site: FDU - City of Fremont

Job ID: 310-287889-1

Client Sample ID: MW-4R
 Date Collected: 08/08/24 10:10
 Date Received: 08/09/24 16:40

Lab Sample ID: 310-287889-4
 Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	430769	QTZ5	EET CF	08/16/24 13:10
Total/NA	Prep	3005A			430126	DHM5	EET CF	08/13/24 09:00
Total/NA	Analysis	6020B		1	430554	NFT2	EET CF	08/15/24 16:31
Total/NA	Prep	3005A			430126	DHM5	EET CF	08/13/24 09:00
Total/NA	Analysis	6020B		1	430653	NFT2	EET CF	08/16/24 13:25
Total/NA	Prep	7470A			430370	DHM5	EET CF	08/20/24 15:30
Total/NA	Analysis	7470A		1	431067	DHM5	EET CF	08/21/24 15:14
Total/NA	Analysis	9040C		1	430007	A3GU	EET CF	08/09/24 17:32
Total/NA	Analysis	SM 2540C		1	430251	MDU9	EET CF	08/13/24 15:37

Client Sample ID: MW-5
 Date Collected: 08/08/24 11:41
 Date Received: 08/09/24 16:40

Lab Sample ID: 310-287889-5
 Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	430769	QTZ5	EET CF	08/16/24 13:23
Total/NA	Prep	3005A			430126	DHM5	EET CF	08/13/24 09:00
Total/NA	Analysis	6020B		1	430554	NFT2	EET CF	08/15/24 16:42
Total/NA	Prep	3005A			430126	DHM5	EET CF	08/13/24 09:00
Total/NA	Analysis	6020B		1	430653	NFT2	EET CF	08/16/24 13:27
Total/NA	Prep	7470A			430370	DHM5	EET CF	08/20/24 15:30
Total/NA	Analysis	7470A		1	431067	DHM5	EET CF	08/21/24 15:16
Total/NA	Analysis	9040C		1	430007	A3GU	EET CF	08/09/24 17:33
Total/NA	Analysis	SM 2540C		1	430251	MDU9	EET CF	08/13/24 15:37

Client Sample ID: MW-6
 Date Collected: 08/08/24 14:42
 Date Received: 08/09/24 16:40

Lab Sample ID: 310-287889-6
 Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	430769	QTZ5	EET CF	08/16/24 13:35
Total/NA	Prep	3005A			430126	DHM5	EET CF	08/13/24 09:00
Total/NA	Analysis	6020B		1	430554	NFT2	EET CF	08/15/24 16:44
Total/NA	Prep	3005A			430126	DHM5	EET CF	08/13/24 09:00
Total/NA	Analysis	6020B		1	430653	NFT2	EET CF	08/16/24 13:29
Total/NA	Prep	7470A			430370	DHM5	EET CF	08/20/24 15:30
Total/NA	Analysis	7470A		1	431067	DHM5	EET CF	08/21/24 15:18
Total/NA	Analysis	9040C		1	430007	A3GU	EET CF	08/09/24 17:34
Total/NA	Analysis	SM 2540C		1	430251	MDU9	EET CF	08/13/24 15:37

Lab Chronicle

Client: SCS Engineers
Project/Site: FDU - City of Fremont

Job ID: 310-287889-1

Client Sample ID: MW-7

Lab Sample ID: 310-287889-7

Date Collected: 08/08/24 14:13

Matrix: Water

Date Received: 08/09/24 16:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	430769	QTZ5	EET CF	08/16/24 13:47
Total/NA	Prep	3005A			430126	DHM5	EET CF	08/13/24 09:00
Total/NA	Analysis	6020B		1	430554	NFT2	EET CF	08/15/24 16:46
Total/NA	Prep	3005A			430126	DHM5	EET CF	08/13/24 09:00
Total/NA	Analysis	6020B		1	430653	NFT2	EET CF	08/16/24 13:32
Total/NA	Prep	7470A			430370	DHM5	EET CF	08/20/24 15:30
Total/NA	Analysis	7470A		1	431067	DHM5	EET CF	08/21/24 15:21
Total/NA	Analysis	9040C		1	430007	A3GU	EET CF	08/09/24 17:35
Total/NA	Analysis	SM 2540C		1	430490	MDU9	EET CF	08/15/24 12:46

Client Sample ID: MW-8

Lab Sample ID: 310-287889-8

Date Collected: 08/08/24 13:40

Matrix: Water

Date Received: 08/09/24 16:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	430769	QTZ5	EET CF	08/16/24 13:59
Total/NA	Prep	3005A			430126	DHM5	EET CF	08/13/24 09:00
Total/NA	Analysis	6020B		1	430554	NFT2	EET CF	08/15/24 16:49
Total/NA	Prep	3005A			430126	DHM5	EET CF	08/13/24 09:00
Total/NA	Analysis	6020B		1	430653	NFT2	EET CF	08/16/24 13:34
Total/NA	Prep	7470A			430370	DHM5	EET CF	08/20/24 15:30
Total/NA	Analysis	7470A		1	431067	DHM5	EET CF	08/21/24 15:23
Total/NA	Analysis	9040C		1	430007	A3GU	EET CF	08/09/24 17:36
Total/NA	Analysis	SM 2540C		1	430490	MDU9	EET CF	08/15/24 12:46

Client Sample ID: Duplicate

Lab Sample ID: 310-287889-9

Date Collected: 08/08/24 23:59

Matrix: Water

Date Received: 08/09/24 16:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	430769	QTZ5	EET CF	08/16/24 14:11
Total/NA	Prep	3005A			430126	DHM5	EET CF	08/13/24 09:00
Total/NA	Analysis	6020B		1	430554	NFT2	EET CF	08/15/24 16:51
Total/NA	Prep	3005A			430126	DHM5	EET CF	08/13/24 09:00
Total/NA	Analysis	6020B		1	430653	NFT2	EET CF	08/16/24 13:36
Total/NA	Prep	7470A			430370	DHM5	EET CF	08/20/24 15:30
Total/NA	Analysis	7470A		1	431067	DHM5	EET CF	08/21/24 15:29
Total/NA	Analysis	9040C		1	430007	A3GU	EET CF	08/09/24 17:37
Total/NA	Analysis	SM 2540C		1	430490	MDU9	EET CF	08/15/24 12:46

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: FDU - City of Fremont

Job ID: 310-287889-1

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	12-01-25

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	Water	Lithium

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Method Summary

Client: SCS Engineers
Project/Site: FDU - City of Fremont

Job ID: 310-287889-1

Method	Method Description	Protocol	Laboratory
9056A	Anions, Ion Chromatography	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
7470A	Mercury (CVAA)	SW846	EET CF
9040C	pH	SW846	EET CF
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
7470A	Preparation, Mercury	SW846	EET CF

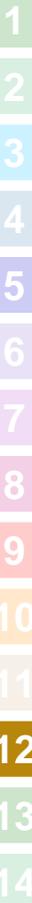
Protocol References:

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.

Laboratory References:

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





Environment Testing
America



310-287889 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: <u>SLS</u>			
City/State:	CITY	STATE	Project:
Receipt Information			
Date/Time Received:	DATE <u>8/9/24</u>	TIME <u>11:040</u>	Received By: <u>AB</u>
Delivery Type: <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> FedEx Ground <input type="checkbox"/> US Mail <input type="checkbox"/> Spee-Dee <input checked="" type="checkbox"/> Lab Courier <input type="checkbox"/> Lab Field Services <input type="checkbox"/> Client Drop-off <input type="checkbox"/> Other _____			
Condition of Cooler/Containers			
Sample(s) received in Cooler?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler ID:	
Multiple Coolers?	<input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Cooler # <u>1</u> of <u>2</u>	
Cooler Custody Seals Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Sample Custody Seals Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Sample custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Which VOA samples are in cooler? ↓	
Temperature Record			
Coolant:	<input checked="" type="checkbox"/> Wet ice <input type="checkbox"/> Blue ice <input type="checkbox"/> Dry ice <input type="checkbox"/> Other: _____	<input type="checkbox"/> NONE	
Thermometer ID:	<u>X</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>3.5</u>	Corrected Temp (°C):	<u>3.3</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? <input type="checkbox"/> Yes <input type="checkbox"/> No a) If yes: Is there evidence that the chilling process began? <input type="checkbox"/> Yes <input type="checkbox"/> 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?) <input type="checkbox"/> Yes <input type="checkbox"/> 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>SC9</u>			
City/State:	CITY	STATE	Project:
Receipt Information			
Date/Time Received:	DATE <u>8/9/21</u>	TIME <u>1640</u>	Received By: <u>XJB</u>
Delivery Type: <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> FedEx Ground <input type="checkbox"/> US Mail <input type="checkbox"/> Spee-Dee <input checked="" type="checkbox"/> Lab Courier <input type="checkbox"/> Lab Field Services <input type="checkbox"/> Client Drop-off <input type="checkbox"/> Other: _____			
Condition of Cooler/Containers			
Sample(s) received in Cooler?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler ID:	
Multiple Coolers?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler # <u>2</u> of <u>2</u>	
Cooler Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Cooler custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Sample Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Sample custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Which VOA samples are in cooler? ↓	
Temperature Record			
Coolant:	<input checked="" type="checkbox"/> Wet ice <input type="checkbox"/> Blue ice <input type="checkbox"/> Dry ice <input type="checkbox"/> Other: _____	<input type="checkbox"/> NONE	
Thermometer ID:	<u>X</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>18</u>	Corrected Temp (°C): <u>18</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? <input type="checkbox"/> Yes <input type="checkbox"/> No a) If yes: Is there evidence that the chilling process began? <input type="checkbox"/> Yes <input type="checkbox"/> 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?) <input type="checkbox"/> Yes <input type="checkbox"/> No			
NOTE If yes, contact PM before proceeding If no, proceed with login			
Additional Comments			



Cedar Falls, IA 50613
phone 319.277.2401 fax 319 277 2425

Regulatory Program: DW NPDES RCRA Other

Eurofins Environment Testing America
COC No 1 of 1 COCs

Client Contact SCS Engineers 14755 Grover Street Omaha Nebraska 68144 (402) 884-6202 Phone (913) 881-0012 FAX Project Name City of Fremont Site FDU P O # 27224080 00		Project Manager: Morgan Sykes Email: msykes@scsengineers.com Tel/Fax: (402) 884-6202 Analysis Turnaround Time <input checked="" type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS TAT: if different from Below ___ 10 ___ <input type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day		Site Contact: C. Soyle Date: 8/24 Lab Contact: Mary Yang Carrier: Eurofins Courier		TALS Project # Sampler: C. Soyle For Lab Use Only: Walk-in Client: Lab Sampling Job / SDG No							
Sample Identification		Sample Date 8/8/24 8/8/24 8/8/24 8/8/24 8/8/24 8/8/24 8/8/24 8/8/24 8/8/24 Duplicate	Sample Time 12:29 13:06 11:00 10:10 11:41 14:42 14:13 13:40 23:59	Sample Type (C=Comp, G=Grab) G G G G G G G G G	Matrix WT WT WT WT WT WT WT WT WT	# of Cont. 1 1 1 1 1 1 1 1 1 1	Filtered Sample (Y/N) X X X X X X X X X	Perform MS / MSD (Y/N) X X X X X X X X X	7470A Mercury 6020/6010/7471B/7473 Total Metals 9056 Chloride-Fluoride-Sulfate 2540C TDS 9040 pH Total Radium	Sample Specific Notes: (Large scribble)			
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4= HNO3; 5= NaOH; 6= Other Possible Hazard Identification: _____ Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown													
Special Instructions/QC Requirements & Comments: *Total Metals - As, Ba, Be, Bo, Ca, Cd, Co, Cr, Hg, Li, Mo, Pb, Sb, Se and Tl													
Custody Seals intact <input type="checkbox"/> Yes <input type="checkbox"/> No		Relinquished by: [Signature] Relinquished by: [Signature] Relinquished by: [Signature]		Company: SGS Company: Company:		Date/Time: 8/8/24 1610 Date/Time: Date/Time:		Rec'd by: [Signature] Received by: Received in Laboratory by:		Company: Eurofins Company: Company:		Date/Time: 8/24/2024 4:15 Date/Time: Date/Time: 8/24 16:00	



Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-287889-1

Login Number: 287889

List Source: Eurofins Cedar Falls

List Number: 1

Creator: Yang, Mary E

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 <math><6\text{mm}</math> (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: Morgan Sykes
SCS Engineers
14755 Grover St
Omaha, Nebraska 68144

Generated 9/13/2024 1:38:36 AM

JOB DESCRIPTION

FDU - City of Fremont

JOB NUMBER

310-287889-2

Eurofins Cedar Falls

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



Generated
9/13/2024 1:38:36 AM

Authorized for release by
Samuel Miller, Project Management Assistant I
Samuel.Miller@et.eurofinsus.com
(319)277-2401



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Case Narrative

Client: SCS Engineers
Project: FDU - City of Fremont

Job ID: 310-287889-2

Job ID: 310-287889-2

Eurofins Cedar Falls

Job Narrative 310-287889-2

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The samples were received on 8/9/2024 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 1.8°C and 3.3°C.

Gas Flow Proportional Counter

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

Rad

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

Eurofins Cedar Falls

Sample Summary

Client: SCS Engineers
Project/Site: FDU - City of Fremont

Job ID: 310-287889-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-287889-1	MW-1	Water	08/08/24 12:29	08/09/24 16:40
310-287889-2	MW-2	Water	08/08/24 13:06	08/09/24 16:40
310-287889-3	MW-3	Water	08/08/24 11:00	08/09/24 16:40
310-287889-4	MW-4R	Water	08/08/24 10:10	08/09/24 16:40
310-287889-5	MW-5	Water	08/08/24 11:41	08/09/24 16:40
310-287889-6	MW-6	Water	08/08/24 14:42	08/09/24 16:40
310-287889-7	MW-7	Water	08/08/24 14:13	08/09/24 16:40
310-287889-8	MW-8	Water	08/08/24 13:40	08/09/24 16:40
310-287889-9	Duplicate	Water	08/08/24 23:59	08/09/24 16:40

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

Detection Summary

Client: SCS Engineers
Project/Site: FDU - City of Fremont

Job ID: 310-287889-2

Client Sample ID: MW-1	Lab Sample ID: 310-287889-1
<input type="checkbox"/> No Detections.	
Client Sample ID: MW-2	Lab Sample ID: 310-287889-2
<input type="checkbox"/> No Detections.	
Client Sample ID: MW-3	Lab Sample ID: 310-287889-3
<input type="checkbox"/> No Detections.	
Client Sample ID: MW-4R	Lab Sample ID: 310-287889-4
<input type="checkbox"/> No Detections.	
Client Sample ID: MW-5	Lab Sample ID: 310-287889-5
<input type="checkbox"/> No Detections.	
Client Sample ID: MW-6	Lab Sample ID: 310-287889-6
<input type="checkbox"/> No Detections.	
Client Sample ID: MW-7	Lab Sample ID: 310-287889-7
<input type="checkbox"/> No Detections.	
Client Sample ID: MW-8	Lab Sample ID: 310-287889-8
<input type="checkbox"/> No Detections.	
Client Sample ID: Duplicate	Lab Sample ID: 310-287889-9
<input type="checkbox"/> No Detections.	

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

Client Sample Results

Client: SCS Engineers
 Project/Site: FDU - City of Fremont

Job ID: 310-287889-2

Client Sample ID: MW-1

Lab Sample ID: 310-287889-1

Date Collected: 08/08/24 12:29

Matrix: Water

Date Received: 08/09/24 16:40

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.395		0.123	0.128	1.00	0.0933	pCi/L	08/16/24 07:13	09/09/24 10:13	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	98.7		30 - 110					08/16/24 07:13	09/09/24 10:13	1

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.46		0.455	0.474	1.00	0.531	pCi/L	08/16/24 07:21	09/04/24 12:31	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	98.7		30 - 110					08/16/24 07:21	09/04/24 12:31	1
Y Carrier	86.4		30 - 110					08/16/24 07:21	09/04/24 12:31	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.85		0.471	0.491	5.00	0.531	pCi/L		09/13/24 00:54	1

Client Sample Results

Client: SCS Engineers
 Project/Site: FDU - City of Fremont

Job ID: 310-287889-2

Client Sample ID: MW-2

Lab Sample ID: 310-287889-2

Date Collected: 08/08/24 13:06

Matrix: Water

Date Received: 08/09/24 16:40

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.432		0.135	0.141	1.00	0.112	pCi/L	08/16/24 07:13	09/09/24 10:13	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.7		30 - 110					08/16/24 07:13	09/09/24 10:13	1

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.78		0.527	0.552	1.00	0.603	pCi/L	08/16/24 07:21	09/04/24 12:31	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.7		30 - 110					08/16/24 07:21	09/04/24 12:31	1
Y Carrier	80.4		30 - 110					08/16/24 07:21	09/04/24 12:31	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	2.21		0.544	0.570	5.00	0.603	pCi/L		09/13/24 00:54	1

Client Sample Results

Client: SCS Engineers
Project/Site: FDU - City of Fremont

Job ID: 310-287889-2

Client Sample ID: MW-3

Lab Sample ID: 310-287889-3

Date Collected: 08/08/24 11:00

Matrix: Water

Date Received: 08/09/24 16:40

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.311		0.118	0.121	1.00	0.118	pCi/L	08/16/24 07:13	09/09/24 10:13	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	97.2		30 - 110					08/16/24 07:13	09/09/24 10:13	1

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.05		0.422	0.433	1.00	0.525	pCi/L	08/16/24 07:21	09/04/24 12:31	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	97.2		30 - 110					08/16/24 07:21	09/04/24 12:31	1
Y Carrier	76.6		30 - 110					08/16/24 07:21	09/04/24 12:31	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.36		0.438	0.450	5.00	0.525	pCi/L		09/13/24 00:54	1

Client Sample Results

Client: SCS Engineers
 Project/Site: FDU - City of Fremont

Job ID: 310-287889-2

Client Sample ID: MW-4R

Lab Sample ID: 310-287889-4

Date Collected: 08/08/24 10:10

Matrix: Water

Date Received: 08/09/24 16:40

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.401		0.128	0.133	1.00	0.0958	pCi/L	08/16/24 07:13	09/09/24 10:13	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	94.7		30 - 110					08/16/24 07:13	09/09/24 10:13	1

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.70		0.516	0.539	1.00	0.578	pCi/L	08/16/24 07:21	09/04/24 12:31	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	94.7		30 - 110					08/16/24 07:21	09/04/24 12:31	1
Y Carrier	77.4		30 - 110					08/16/24 07:21	09/04/24 12:31	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	2.10		0.532	0.555	5.00	0.578	pCi/L		09/13/24 00:54	1

Client Sample Results

Client: SCS Engineers
 Project/Site: FDU - City of Fremont

Job ID: 310-287889-2

Client Sample ID: MW-5

Lab Sample ID: 310-287889-5

Date Collected: 08/08/24 11:41

Matrix: Water

Date Received: 08/09/24 16:40

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.373		0.139	0.143	1.00	0.147	pCi/L	08/16/24 07:13	09/09/24 10:15	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.1		30 - 110					08/16/24 07:13	09/09/24 10:15	1

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.36		0.490	0.506	1.00	0.610	pCi/L	08/16/24 07:21	09/04/24 12:32	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.1		30 - 110					08/16/24 07:21	09/04/24 12:32	1
Y Carrier	80.0		30 - 110					08/16/24 07:21	09/04/24 12:32	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.74		0.509	0.526	5.00	0.610	pCi/L		09/13/24 00:54	1

Client Sample Results

Client: SCS Engineers
 Project/Site: FDU - City of Fremont

Job ID: 310-287889-2

Client Sample ID: MW-6

Lab Sample ID: 310-287889-6

Date Collected: 08/08/24 14:42

Matrix: Water

Date Received: 08/09/24 16:40

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.467		0.146	0.152	1.00	0.139	pCi/L	08/16/24 07:13	09/09/24 10:16	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	94.2		30 - 110					08/16/24 07:13	09/09/24 10:16	1

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.33		0.452	0.469	1.00	0.544	pCi/L	08/16/24 07:21	09/04/24 12:32	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	94.2		30 - 110					08/16/24 07:21	09/04/24 12:32	1
Y Carrier	86.0		30 - 110					08/16/24 07:21	09/04/24 12:32	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.80		0.475	0.493	5.00	0.544	pCi/L		09/13/24 00:54	1

Client Sample Results

Client: SCS Engineers
 Project/Site: FDU - City of Fremont

Job ID: 310-287889-2

Client Sample ID: MW-7

Lab Sample ID: 310-287889-7

Date Collected: 08/08/24 14:13

Matrix: Water

Date Received: 08/09/24 16:40

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.526		0.156	0.163	1.00	0.149	pCi/L	08/16/24 07:13	09/09/24 10:16	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.6		30 - 110					08/16/24 07:13	09/09/24 10:16	1

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.95		0.528	0.558	1.00	0.554	pCi/L	08/16/24 07:21	09/04/24 12:32	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.6		30 - 110					08/16/24 07:21	09/04/24 12:32	1
Y Carrier	78.1		30 - 110					08/16/24 07:21	09/04/24 12:32	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	2.47		0.551	0.581	5.00	0.554	pCi/L		09/13/24 00:54	1

Client Sample Results

Client: SCS Engineers
 Project/Site: FDU - City of Fremont

Job ID: 310-287889-2

Client Sample ID: MW-8

Lab Sample ID: 310-287889-8

Date Collected: 08/08/24 13:40

Matrix: Water

Date Received: 08/09/24 16:40

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.333		0.119	0.122	1.00	0.111	pCi/L	08/16/24 07:13	09/09/24 10:16	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		30 - 110					08/16/24 07:13	09/09/24 10:16	1

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.22		0.435	0.449	1.00	0.530	pCi/L	08/16/24 07:21	09/04/24 12:32	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		30 - 110					08/16/24 07:21	09/04/24 12:32	1
Y Carrier	82.6		30 - 110					08/16/24 07:21	09/04/24 12:32	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.55		0.451	0.465	5.00	0.530	pCi/L		09/13/24 00:54	1

Client Sample Results

Client: SCS Engineers
 Project/Site: FDU - City of Fremont

Job ID: 310-287889-2

Client Sample ID: Duplicate

Lab Sample ID: 310-287889-9

Date Collected: 08/08/24 23:59

Matrix: Water

Date Received: 08/09/24 16:40

Method: SW846 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.303		0.120	0.123	1.00	0.121	pCi/L	08/16/24 07:18	09/09/24 10:16	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.4		30 - 110					08/16/24 07:18	09/09/24 10:16	1

Method: SW846 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.448	U	0.331	0.333	1.00	0.498	pCi/L	08/16/24 07:21	09/04/24 12:32	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.4		30 - 110					08/16/24 07:21	09/04/24 12:32	1
Y Carrier	86.0		30 - 110					08/16/24 07:21	09/04/24 12:32	1

Method: TAL-STL Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.751		0.352	0.355	5.00	0.498	pCi/L		09/13/24 00:54	1

Definitions/Glossary

Client: SCS Engineers
Project/Site: FDU - City of Fremont

Job ID: 310-287889-2

Qualifiers

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

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: FDU - City of Fremont

Job ID: 310-287889-2

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-675295/1-A
Matrix: Water
Analysis Batch: 678588

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 675295

Analyte	MB	MB	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	0.1613		0.0996	0.101	1.00	0.134	pCi/L	08/16/24 07:13	09/09/24 07:49	1
Carrier	MB %Yield	MB Qualifier	Limits		Prepared	Analyzed	Dil Fac			
Ba Carrier	97.2		30 - 110					08/16/24 07:13	09/09/24 07:49	1

Lab Sample ID: LCS 160-675295/2-A
Matrix: Water
Analysis Batch: 678588

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 675295

Analyte	Spike Added	LCS	LCS	Total	RL	MDC	Unit	%Rec	%Rec Limits
		Result	Qual	Uncert. (2σ+/-)					
Radium-226	9.58	8.539		0.941	1.00	0.123	pCi/L	89	75 - 125
Carrier	LCS %Yield	LCS Qualifier	Limits		Prepared	Analyzed	Dil Fac		
Ba Carrier	100		30 - 110					08/16/24 07:13	09/09/24 07:49

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-675297/1-A
Matrix: Water
Analysis Batch: 677964

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 675297

Analyte	MB	MB	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-228	0.5560		0.368	0.372	1.00	0.547	pCi/L	08/16/24 07:21	09/04/24 12:29	1
Carrier	MB %Yield	MB Qualifier	Limits		Prepared	Analyzed	Dil Fac			
Ba Carrier	97.2		30 - 110					08/16/24 07:21	09/04/24 12:29	1
Y Carrier	82.6		30 - 110		08/16/24 07:21	09/04/24 12:29	1			

Lab Sample ID: LCS 160-675297/2-A
Matrix: Water
Analysis Batch: 677964

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 675297

Analyte	Spike Added	LCS	LCS	Total	RL	MDC	Unit	%Rec	%Rec Limits
		Result	Qual	Uncert. (2σ+/-)					
Radium-228	8.54	8.154		1.15	1.00	0.476	pCi/L	95	75 - 125
Carrier	LCS %Yield	LCS Qualifier	Limits		Prepared	Analyzed	Dil Fac		
Ba Carrier	100		30 - 110					08/16/24 07:21	09/04/24 12:29
Y Carrier	86.7		30 - 110		08/16/24 07:21	09/04/24 12:29	1		

QC Association Summary

Client: SCS Engineers
 Project/Site: FDU - City of Fremont

Job ID: 310-287889-2

Rad

Prep Batch: 675295

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-287889-1	MW-1	Total/NA	Water	PrecSep-21	
310-287889-2	MW-2	Total/NA	Water	PrecSep-21	
310-287889-3	MW-3	Total/NA	Water	PrecSep-21	
310-287889-4	MW-4R	Total/NA	Water	PrecSep-21	
310-287889-5	MW-5	Total/NA	Water	PrecSep-21	
310-287889-6	MW-6	Total/NA	Water	PrecSep-21	
310-287889-7	MW-7	Total/NA	Water	PrecSep-21	
310-287889-8	MW-8	Total/NA	Water	PrecSep-21	
310-287889-9	Duplicate	Total/NA	Water	PrecSep-21	
MB 160-675295/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-675295/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

Prep Batch: 675297

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-287889-1	MW-1	Total/NA	Water	PrecSep_0	
310-287889-2	MW-2	Total/NA	Water	PrecSep_0	
310-287889-3	MW-3	Total/NA	Water	PrecSep_0	
310-287889-4	MW-4R	Total/NA	Water	PrecSep_0	
310-287889-5	MW-5	Total/NA	Water	PrecSep_0	
310-287889-6	MW-6	Total/NA	Water	PrecSep_0	
310-287889-7	MW-7	Total/NA	Water	PrecSep_0	
310-287889-8	MW-8	Total/NA	Water	PrecSep_0	
310-287889-9	Duplicate	Total/NA	Water	PrecSep_0	
MB 160-675297/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-675297/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: SCS Engineers
Project/Site: FDU - City of Fremont

Job ID: 310-287889-2

Client Sample ID: MW-1

Lab Sample ID: 310-287889-1

Date Collected: 08/08/24 12:29

Matrix: Water

Date Received: 08/09/24 16:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			675295	BMW	EET SL	08/16/24 07:13
Total/NA	Analysis	9315		1	678583	FLC	EET SL	09/09/24 10:13
Total/NA	Prep	PrecSep_0			675297	BMW	EET SL	08/16/24 07:21
Total/NA	Analysis	9320		1	677964	SWS	EET SL	09/04/24 12:31
Total/NA	Analysis	Ra226_Ra228		1	678912	FLC	EET SL	09/13/24 00:54

Client Sample ID: MW-2

Lab Sample ID: 310-287889-2

Date Collected: 08/08/24 13:06

Matrix: Water

Date Received: 08/09/24 16:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			675295	BMW	EET SL	08/16/24 07:13
Total/NA	Analysis	9315		1	678583	FLC	EET SL	09/09/24 10:13
Total/NA	Prep	PrecSep_0			675297	BMW	EET SL	08/16/24 07:21
Total/NA	Analysis	9320		1	677964	SWS	EET SL	09/04/24 12:31
Total/NA	Analysis	Ra226_Ra228		1	678912	FLC	EET SL	09/13/24 00:54

Client Sample ID: MW-3

Lab Sample ID: 310-287889-3

Date Collected: 08/08/24 11:00

Matrix: Water

Date Received: 08/09/24 16:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			675295	BMW	EET SL	08/16/24 07:13
Total/NA	Analysis	9315		1	678583	FLC	EET SL	09/09/24 10:13
Total/NA	Prep	PrecSep_0			675297	BMW	EET SL	08/16/24 07:21
Total/NA	Analysis	9320		1	677964	SWS	EET SL	09/04/24 12:31
Total/NA	Analysis	Ra226_Ra228		1	678912	FLC	EET SL	09/13/24 00:54

Client Sample ID: MW-4R

Lab Sample ID: 310-287889-4

Date Collected: 08/08/24 10:10

Matrix: Water

Date Received: 08/09/24 16:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			675295	BMW	EET SL	08/16/24 07:13
Total/NA	Analysis	9315		1	678583	FLC	EET SL	09/09/24 10:13
Total/NA	Prep	PrecSep_0			675297	BMW	EET SL	08/16/24 07:21
Total/NA	Analysis	9320		1	677964	SWS	EET SL	09/04/24 12:31
Total/NA	Analysis	Ra226_Ra228		1	678912	FLC	EET SL	09/13/24 00:54

Lab Chronicle

Client: SCS Engineers
 Project/Site: FDU - City of Fremont

Job ID: 310-287889-2

Client Sample ID: MW-5

Lab Sample ID: 310-287889-5

Date Collected: 08/08/24 11:41

Matrix: Water

Date Received: 08/09/24 16:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			675295	BMW	EET SL	08/16/24 07:13
Total/NA	Analysis	9315		1	678586	FLC	EET SL	09/09/24 10:15
Total/NA	Prep	PrecSep_0			675297	BMW	EET SL	08/16/24 07:21
Total/NA	Analysis	9320		1	677964	SWS	EET SL	09/04/24 12:32
Total/NA	Analysis	Ra226_Ra228		1	678912	FLC	EET SL	09/13/24 00:54

Client Sample ID: MW-6

Lab Sample ID: 310-287889-6

Date Collected: 08/08/24 14:42

Matrix: Water

Date Received: 08/09/24 16:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			675295	BMW	EET SL	08/16/24 07:13
Total/NA	Analysis	9315		1	678586	FLC	EET SL	09/09/24 10:16
Total/NA	Prep	PrecSep_0			675297	BMW	EET SL	08/16/24 07:21
Total/NA	Analysis	9320		1	677964	SWS	EET SL	09/04/24 12:32
Total/NA	Analysis	Ra226_Ra228		1	678912	FLC	EET SL	09/13/24 00:54

Client Sample ID: MW-7

Lab Sample ID: 310-287889-7

Date Collected: 08/08/24 14:13

Matrix: Water

Date Received: 08/09/24 16:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			675295	BMW	EET SL	08/16/24 07:13
Total/NA	Analysis	9315		1	678586	FLC	EET SL	09/09/24 10:16
Total/NA	Prep	PrecSep_0			675297	BMW	EET SL	08/16/24 07:21
Total/NA	Analysis	9320		1	677964	SWS	EET SL	09/04/24 12:32
Total/NA	Analysis	Ra226_Ra228		1	678912	FLC	EET SL	09/13/24 00:54

Client Sample ID: MW-8

Lab Sample ID: 310-287889-8

Date Collected: 08/08/24 13:40

Matrix: Water

Date Received: 08/09/24 16:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			675295	BMW	EET SL	08/16/24 07:13
Total/NA	Analysis	9315		1	678586	FLC	EET SL	09/09/24 10:16
Total/NA	Prep	PrecSep_0			675297	BMW	EET SL	08/16/24 07:21
Total/NA	Analysis	9320		1	677964	SWS	EET SL	09/04/24 12:32
Total/NA	Analysis	Ra226_Ra228		1	678912	FLC	EET SL	09/13/24 00:54

Lab Chronicle

Client: SCS Engineers
Project/Site: FDU - City of Fremont

Job ID: 310-287889-2

Client Sample ID: Duplicate

Lab Sample ID: 310-287889-9

Date Collected: 08/08/24 23:59

Matrix: Water

Date Received: 08/09/24 16:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			675295	BMW	EET SL	08/16/24 07:18
Total/NA	Analysis	9315		1	678586	FLC	EET SL	09/09/24 10:16
Total/NA	Prep	PrecSep_0			675297	BMW	EET SL	08/16/24 07:21
Total/NA	Analysis	9320		1	677984	FLC	EET SL	09/04/24 12:32
Total/NA	Analysis	Ra226_Ra228		1	678912	FLC	EET SL	09/13/24 00:54

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566



Accreditation/Certification Summary

Client: SCS Engineers
Project/Site: FDU - City of Fremont

Job ID: 310-287889-2

Laboratory: Eurofins St. Louis

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

Authority	Program	Identification Number	Expiration Date
Iowa	State	373	12-01-24

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
9315	PrecSep-21	Water	Radium-226
9320	PrecSep_0	Water	Radium-228
Ra226_Ra228		Water	Combined Radium 226 + 228

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

Method Summary

Client: SCS Engineers
Project/Site: FDU - City of Fremont

Job ID: 310-287889-2

Method	Method Description	Protocol	Laboratory
9315	Radium-226 (GFPC)	SW846	EET SL
9320	Radium-228 (GFPC)	SW846	EET SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	EET SL
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL

Protocol References:

None = None

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

TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566





Environment Testing
America



310-287889 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: <u>SLS</u>			
City/State:	CITY	STATE	Project:
Receipt Information			
Date/Time Received:	DATE	TIME	Received By:
	<u>8/9/24</u>	<u>11:040</u>	<u>AB</u>
Delivery Type: <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> FedEx Ground <input type="checkbox"/> US Mail <input type="checkbox"/> Spee-Dee			
<input checked="" type="checkbox"/> Lab Courier <input type="checkbox"/> Lab Field Services <input type="checkbox"/> Client Drop-off <input type="checkbox"/> Other _____			
Condition of Cooler/Containers			
Sample(s) received in Cooler?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler ID:	
Multiple Coolers?	<input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Cooler # <u>1</u> of <u>2</u>	
Cooler Custody Seals Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Sample Custody Seals Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Sample custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Which VOA samples are in cooler? ↓	
Temperature Record			
Coolant:	<input checked="" type="checkbox"/> Wet ice <input type="checkbox"/> Blue ice <input type="checkbox"/> Dry ice <input type="checkbox"/> Other: _____ <input type="checkbox"/> NONE		
Thermometer ID:	<u>X</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>3.5</u>	Corrected Temp (°C):	<u>3.3</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? <input type="checkbox"/> Yes <input type="checkbox"/> No			
a) If yes: Is there evidence that the chilling process began? <input type="checkbox"/> Yes <input type="checkbox"/> 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?) <input type="checkbox"/> Yes <input type="checkbox"/> 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>SC9</u>			
City/State:	CITY	STATE	Project:
Receipt Information			
Date/Time Received:	DATE <u>8/9/21</u>	TIME <u>1640</u>	Received By: <u>XB</u>
Delivery Type: <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> FedEx Ground <input type="checkbox"/> US Mail <input type="checkbox"/> Spee-Dee <input checked="" type="checkbox"/> Lab Courier <input type="checkbox"/> Lab Field Services <input type="checkbox"/> Client Drop-off <input type="checkbox"/> Other: _____			
Condition of Cooler/Containers			
Sample(s) received in Cooler?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler ID:	
Multiple Coolers?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler # <u>2</u> of <u>2</u>	
Cooler Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Cooler custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Sample Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Sample custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Which VOA samples are in cooler? ↓	
Temperature Record			
Coolant:	<input checked="" type="checkbox"/> Wet ice <input type="checkbox"/> Blue ice <input type="checkbox"/> Dry ice <input type="checkbox"/> Other: _____	<input type="checkbox"/> NONE	
Thermometer ID:	<u>X</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>18</u>	Corrected Temp (°C):	<u>18</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? <input type="checkbox"/> Yes <input type="checkbox"/> No a) If yes: Is there evidence that the chilling process began? <input type="checkbox"/> Yes <input type="checkbox"/> 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?) <input type="checkbox"/> Yes <input type="checkbox"/> No			
NOTE If yes, contact PM before proceeding If no, proceed with login			
Additional Comments			



Cedar Falls, IA 50613
phone 319.277.2401 fax 319 277 2425

Regulatory Program: DW NPDES RCRA Other

Eurofins Environment Testing America
COC No 1 of 1 COCs

Client Contact SCS Engineers 14755 Grover Street Omaha Nebraska 68144 (402) 884-6202 Phone (913) 881-0012 FAX Project Name City of Fremont Site FDU P O # 27224080 00		Project Manager: Morgan Sykes Email: msykes@scsengineers.com Tel/Fax: (402) 884-6202 Analysis Turnaround Time <input checked="" type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS TAT: if different from Below ___ 10 ___ <input type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day		Site Contact: C. Soyle Date: 8/8/24 Lab Contact: Mary Yang Carrier: Eurofins Courier		TALS Project # Sampler: C. Soyle For Lab Use Only: Walk-in Client: Lab Sampling Job / SDG No					
Sample Identification		Sample Date 8/8/24 8/8/24 8/8/24 8/8/24 8/8/24 8/8/24 8/8/24 8/8/24 8/8/24 Duplicate	Sample Time 12:29 13:06 11:00 10:10 11:41 14:42 14:13 13:40 23:59	Sample Type (C=Comp, G=Grab) G G G G G G G G G	Matrix WT WT WT WT WT WT WT WT WT	# of Cont. 1 1 1 1 1 1 1 1 1 1	Filtered Sample (Y/N) X X X X X X X X X	Perform MS / MSD (Y/N) X X X X X X X X X	7470A Mercury 6020/6010/7471B/7473 Total Metals 9056 Chloride-Fluoride-Sulfate 2540C TDS 9040 pH Total Radium	Sample Specific Notes: 	
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4= HNO3; 5= NaOH; 6= Other Possible Hazard Identification: _____ Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown											
Special Instructions/QC Requirements & Comments: *Total Metals - As, Ba, Be, Bo, Ca, Cd, Co, Cr, Hg, Li, Mo, Pb, Sb, Se and Tl											
Custody Seals intact <input type="checkbox"/> Yes <input type="checkbox"/> No		Relinquished by:		Relinquished by:		Relinquished by:		Date/Time: 8/8/24 1610 Date/Time: Date/Time:		Therm ID No _____ Date/Time: 8/8/2024 4:15 Date/Time: Date/Time: 8/8/24 16:00	



Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-287889-2

Login Number: 287889

List Source: Eurofins Cedar Falls

List Number: 1

Creator: Yang, Mary E

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ 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 <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-287889-2

Login Number: 287889

List Number: 2

Creator: Pinette, Meadow L

List Source: Eurofins St. Louis

List Creation: 08/13/24 12:53 PM

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
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?	N/A	
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 <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Tracer/Carrier Summary

Client: SCS Engineers
 Project/Site: FDU - City of Fremont

Job ID: 310-287889-2

Method: 9315 - Radium-226 (GFPC)

Matrix: Water

Prep Type: Total/NA

Percent Yield (Acceptance Limits)

Lab Sample ID	Client Sample ID	Ba (30-110)
310-287889-1	MW-1	98.7
310-287889-2	MW-2	93.7
310-287889-3	MW-3	97.2
310-287889-4	MW-4R	94.7
310-287889-5	MW-5	92.1
310-287889-6	MW-6	94.2
310-287889-7	MW-7	92.6
310-287889-8	MW-8	101
310-287889-9	Duplicate	92.4
LCS 160-675295/2-A	Lab Control Sample	100
MB 160-675295/1-A	Method Blank	97.2

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 9320 - Radium-228 (GFPC)

Matrix: Water

Prep Type: Total/NA

Percent Yield (Acceptance Limits)

Lab Sample ID	Client Sample ID	Ba (30-110)	Y (30-110)
310-287889-1	MW-1	98.7	86.4
310-287889-2	MW-2	93.7	80.4
310-287889-3	MW-3	97.2	76.6
310-287889-4	MW-4R	94.7	77.4
310-287889-5	MW-5	92.1	80.0
310-287889-6	MW-6	94.2	86.0
310-287889-7	MW-7	92.6	78.1
310-287889-8	MW-8	101	82.6
310-287889-9	Duplicate	92.4	86.0
LCS 160-675297/2-A	Lab Control Sample	100	86.7
MB 160-675297/1-A	Method Blank	97.2	82.6

Tracer/Carrier Legend

Ba = Ba Carrier

Y = Y Carrier



01/20/2025

Eurofins Cedar Falls