

2022 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

File No. 27222120.00 | January 27, 2023

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1.0 INTRODUCTION

This 2022 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 2022 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, 2022 through December 31, 2022.

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, 2022), 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, 2022), 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 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 (March) Event	Third Quarter (August) Event
Arsenic	MW-1, MW-6, MW-7	MW-1, MW-2, MW-3, MW-4, MW-6, MW-7
Boron	MW-2, MW-6, MW-7, MW-8	MW-2, MW-6, MW-7, MW-8
Barium	MW-3, MW-4, MW-7, MW-8	MW-2, MW-3, MW-4, MW-7, MW-8
Calcium	MW-3, MW-7, MW-8	MW-2, MW-3, MW-8
Chloride	MW-1, MW-3, MW-5, MW-7, MW-8	MW-1, MW-3, MW-4, MW-7, MW-8
Fluoride	MW-2	MW-2, MW-3
Lithium	MW-6	MW-6
Molybdenum	MW-3	MW-3
pH	MW-3	MW-3
Selenium	MW-1, MW-5, MW-6	MW-1, MW-6
Sulfate	MW-1, MW-3	MW-1, MW-3
Total Radium	MW-1	MW-1
Total Dissolved Solids (TDS)	MW-2, MW-3, MW-7, MW-8	MW-2, MW-3, MW-7, MW-8

(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 2022. 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 March 4, 2022 and the second sampling event on August 8, 2022 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 submitted to the Nebraska Department of Environment and Energy (NDEE), which include the analytical reports, groundwater contour maps, field data sheets and statistical summaries, 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 2022.

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 (2023):

Perform two semiannual assessment monitoring events in the first and third quarters of 2023.

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 2022.

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 2022.

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 - 2022

Well ID	Designation	Number of Samples Collected	Sampling Dates
MW-1	Downgradient	2 (1 each event)	3/4/2022
			8/8/2022
MW-2	Downgradient	2 (1 each event)	3/4/2022
			8/8/2022
MW-3	Downgradient	2 (1 each event)	3/4/2022
			8/8/2022
MW-4R	Upgradient	2 (1 each event)	3/4/2022
			8/8/2022
MW-5	Downgradient	2 (1 each event)	3/4/2022
			8/8/2022
MW-6	Downgradient	2 (1 each event)	3/4/2022
			8/8/2022
MW-7	Downgradient	2 (1 each event)	3/4/2022
			8/8/2022
MW-8	Downgradient	2 (1 each event)	3/4/2022
			8/8/2022

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

FIGURE 1

Site Map with Monitoring Wells

T:\27222120.00\AUTOCAD\SHEETS\2022 SITE VICINITY MAP.DWG



CLIENT		FREMONT DEPARTMENT OF UTILITIES		SHEET TITLE		REV	DATE	CK	BY
SCS ENGINEERS		LON D. WRIGHT POWER PLANT		SITE VICINITY MAP		Δ			
14755 Grover Street Omaha, NE 68144 PH. (402) 984-6202 FAX. (913) 881-0012		FREMONT, NEBRASKA		PROJECT TITLE		Δ			
PROJ. NO. 27222120.00	DWG. BY MBS	CHK. BY MBS	QA/QC BY ZEM	ANNUAL GROUNDWATER MONITORING		Δ			
DATE 01/09/2023	PROJ. MGR MBS	CORRECTIVE ACTION REPORT				Δ			
DRAWING NO.						Δ			
F-01						Δ			



APPENDIX A

Groundwater Monitoring Program Reports

A1 1st Quarter Groundwater Monitoring Program Report

Lon D. Wright Power Plant Statistical Summary of March 2022 Data

City of Fremont Department of Utilities
401 E Military Road
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SCS ENGINEERS

27222120.00 | April 25, 2022

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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	Supporting information
B.1	Field Data Sheets
B.2	Chain of Custody
B.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 9.6.31. 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 with intrawell prediction limit statistical exceedances that do not have a statistically significant increasing trend as well as exceed the interwell prediction limit but do not show evidence of dramatic increase above background do not qualify for assessment monitoring. 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 necessary. 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.

Since the site remains in assessment monitoring, each well at the site was sampled and analyzed following assessment monitoring procedures. During the March 2022 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 March 2022 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 statistically 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, with the exceptions noted below.

- MW-2 sulfate: October 2016 – April 2017 and July 2017 – June 2018
- MW-4R chloride: October 2016 – June 2017 and August 2017 – June 2018
- MW-4R lead: October 2016 and January 2017 – June 2018
- MW-4R selenium: October 2016 – June 2017 and August 2017 – June 2018
- MW-6 chloride: October 2016 – September 2017 and June 2018
- MW-8 boron: October 2016 – April 2017 and August 2017 – February 2018

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.

Intrawell 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 March 2022 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 March 2022 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. If trends are identified, the trends should be identified as increasing or decreasing and should be checked if 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 March 2022 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 and calcium since no GWPS exists for either constituent. 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 those detected constituents both for the previous monitoring period, August 2021, and the current monitoring period, March 2022.

Table 1. Previously identified to Current identified exceedances

Well	Previously identified exceedances August 2021		Currently identified exceedances March 2022	
	Intrawell	Interwell	Intrawell	Interwell
MW-1	Arsenic		Arsenic	Arsenic
	Chloride		Chloride	
				Fluoride
				Lithium
				Selenium
MW-2			Boron	
			Calcium	Calcium
	Chloride			
	Fluoride	Fluoride	Fluoride	Fluoride
			Lithium	Lithium
				Selenium
			Sulfate	Sulfate
MW-3	Arsenic		Arsenic	
		Barium		Barium
	Chloride	Chloride	Chloride	Chloride
		Molybdenum		Molybdenum
				Sulfate
	Arsenic			

Well	Previously identified exceedances August 2021		Currently identified exceedances March 2022	
	Intrawell	Interwell	Intrawell	Interwell
MW-4R (upgradient)			Barium	
	Calcium		Calcium	
	Selenium			
MW-5	Chloride		Chloride	
MW-6				Barium
		Chloride	Chloride	Chloride
MW-7			Barium	
	Chloride	Chloride	Chloride	Chloride
				TDS
MW-8		Barium		Barium
	Calcium		Calcium	
			Chloride	

Intrawell exceedances were noted for Arsenic (MW-3), Barium (MW-2, MW-4R, MW-7), Boron (MW-2), Calcium (MW-4R, MW-8), and Chloride (MW-1, MW-5, and MW-8), without corresponding interwell exceedances, indicating these may not be exceedances above background. Further, none of the constituent/well pairs identified with exceedances above background (with both intrawell and interwell prediction limit exceedances) statistically exceeded the GWPS (a confidence interval limit exceedance), with the exception of calcium at MW-8. However, Calcium 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 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 March 2022 sampling event are summarized in **Table 2** below.

Table 2. Summary of Statistical Analysis

Well	Detected Constituents	Result	Intrawell Exceedance?	Interwell Exceedance?	Significant Trend?	Confidence Interval Exceedance?	GWPS Exceedance ¹
MW-1	Arsenic (ug/L)	6.43	Yes	Yes	Yes, +		No
	Calcium (mg/L)	104				Yes	n/a
	Chloride (mg/L)	31.8	Yes		Yes, +		No
	Fluoride (mg/L)	1.39		Yes			No
	Lithium (ug/L)	35.6		Yes			No
	Selenium (ug/L)	11.7		Yes	Yes, -		No
	Sulfate (mg/L)	33.4			Yes, -		No
	Total Radium (pCi/L)	1.04			Yes, -		No
MW-2	Boron (ug/L)	193			Yes, +	Yes	n/a
	Calcium (mg/L)	122		Yes		Yes	n/a
	Chloride (mg/L)	26.8	Yes				No
	Fluoride (mg/L)	1.15	Yes	Yes	Yes, +		No
	Lithium (ug/L)	43.1	Yes	Yes			No
	Selenium (ug/L)	12.7		Yes			No
	Sulfate (mg/L)	64.7	Yes	Yes			No
	Total Dissolved Solids (mg/L)	431			Yes, +		No
MW-3	Arsenic (ug/L)	3.75	Yes				No
	Barium (ug/L)	177		Yes	Yes, +		No
	Calcium (mg/L)	104			Yes, +	Yes	n/a
	Chloride (mg/L)	55.3	Yes	Yes	Yes, +		No
	Molybdenum (ug/L)	14.3		Yes	Yes, +		No
	pH (S.U.)	7.2			Yes, -		No
	Sulfate (mg/L)	63.1		Yes	Yes, +		No

	Total Dissolved Solids (mg/L)	404			Yes, +		No
MW-4R (upgradient)	Barium (ug/L)	146			Yes, +		No
	Calcium (mg/L)	100	Yes				n/a
	Chromium (ug/L)	1.9	Yes				No
	Selenium (ug/L)	10.4	Yes	Yes			No
MW-5	Calcium (mg/L)	103				Yes	n/a
	Chloride (mg/L)	37.4	Yes		Yes, +		No
	Fluoride (mg/L)	1.1		Yes			No
	Selenium (ug/L)	5.55			Yes, -		No
MW-6	Arsenic (ug/L)	3.55			Yes, +		No
	Barium (ug/L)	166		Yes			No
	Boron (ug/L)	50ND			Yes, -		n/a
	Chloride (mg/L)	76.9		Yes			No
	Lithium (ug/L)	11.7			Yes, -		No
	Selenium (ug/L)	7.63			Yes, -		No
MW-7	Arsenic (ug/L)	4.03			Yes, +		No
	Barium (ug/L)	138			Yes, +		No
	Boron (ug/L)	50ND			Yes, -		n/a
	Calcium (mg/L)	97.5				Yes	n/a
	Chloride (mg/L)	89	Yes	Yes	Yes, +		No
	Total Dissolved Solids (mg/L)	424		Yes	Yes, +		Yes
MW-8	Barium (ug/L)	181		Yes	Yes, +		No
	Boron (ug/L)	125			Yes, +		n/a
	Calcium (mg/L)	108	Yes	Yes	Yes, +	Yes	n/a
	Chloride (mg/L)	36.6			Yes, +		No
	Total Dissolved Solids (mg/L)	414			Yes, +		No

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

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

n/a - No GWPS has been established.

2 GENERAL COMMENTS

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.

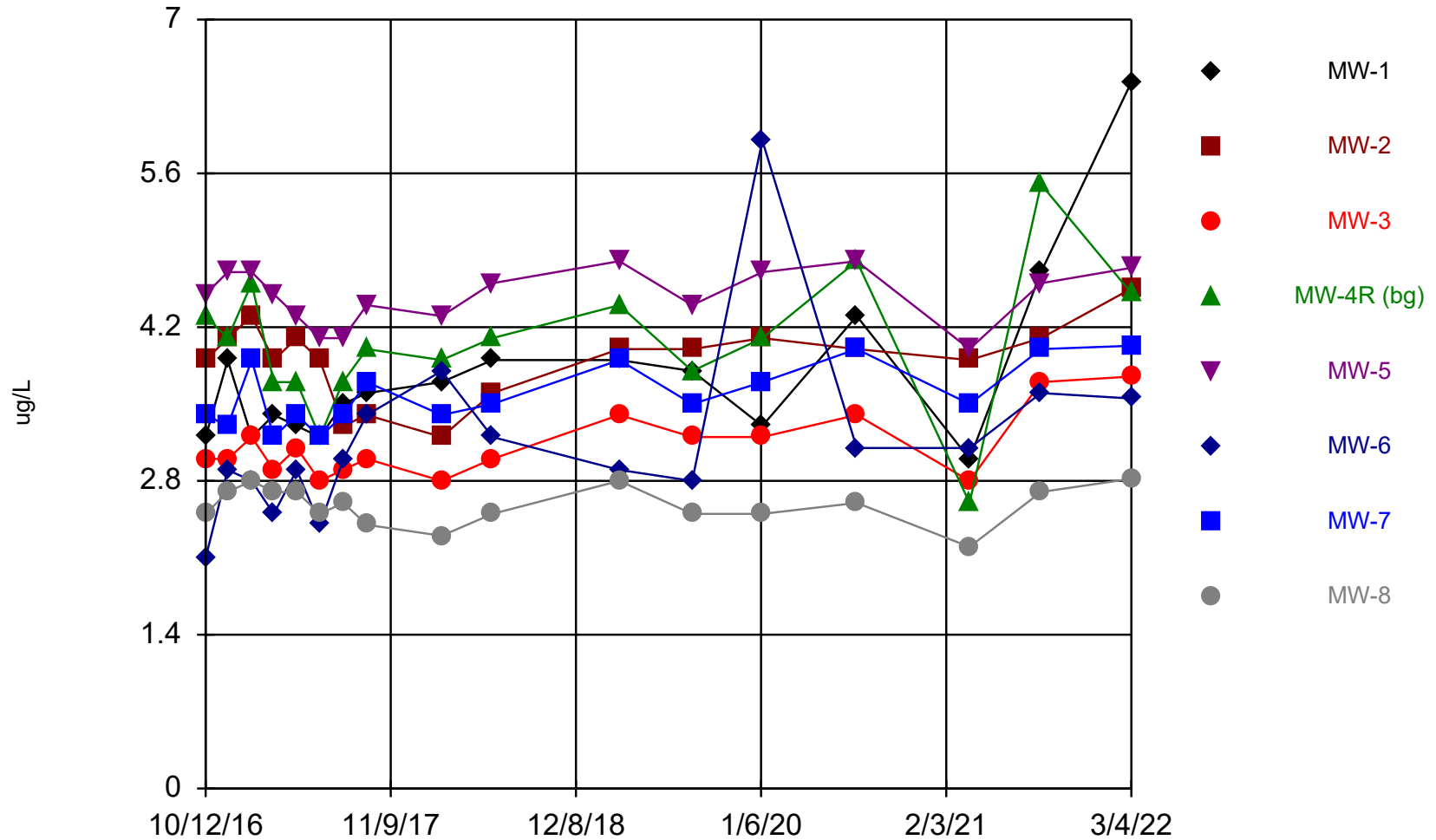
Sanitas Technologies, Sanitas Statistical Software v 9.6.31 and User Guide



Attachment A. Compliance Statistical Analysis

A.1 Time Series Plots

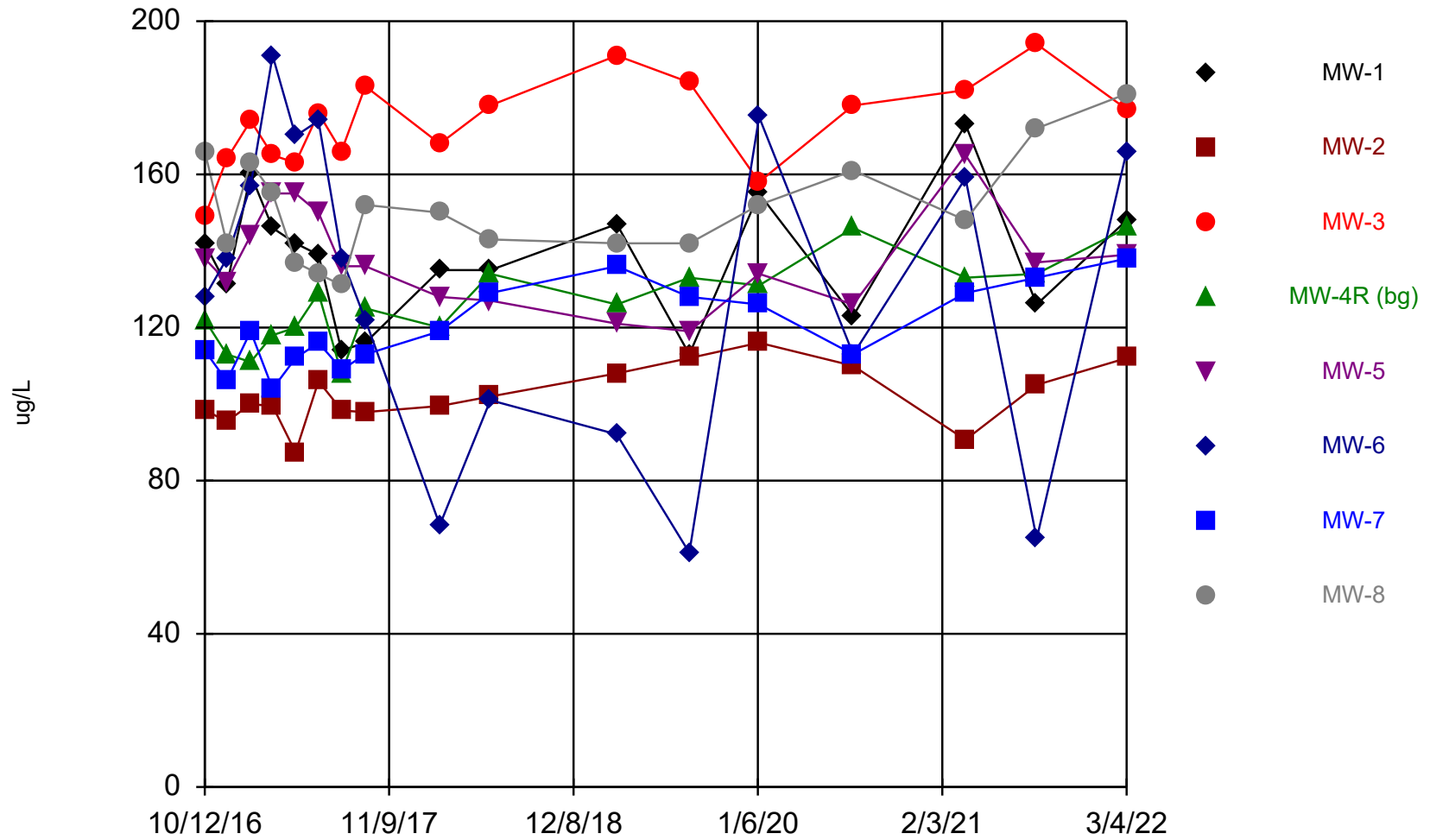
Time Series



Constituent: Arsenic [total] Analysis Run 4/25/2022 4:03 PM View: FDU Combined

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

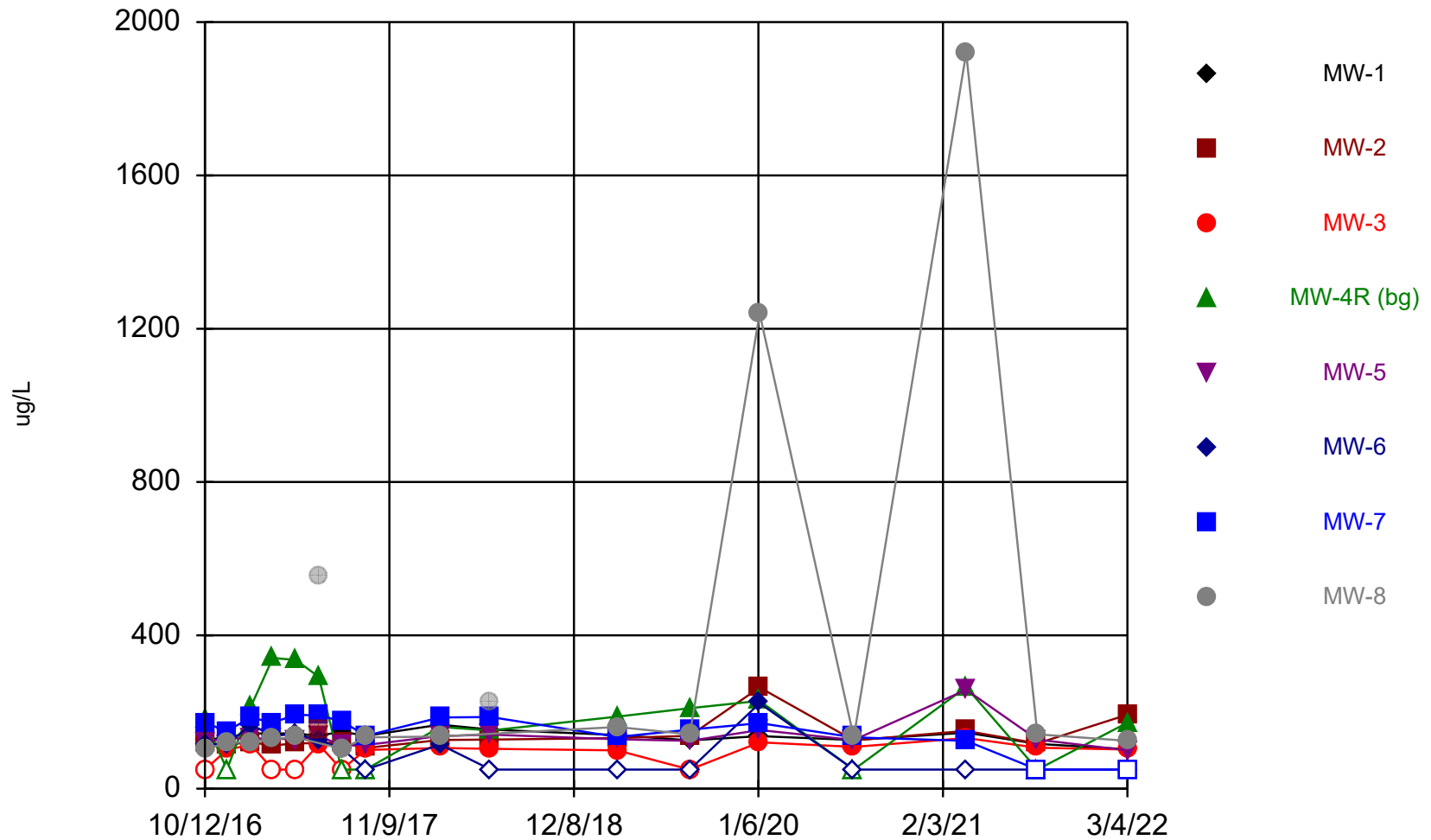
Time Series



Constituent: Barium [total] Analysis Run 4/25/2022 4:03 PM View: FDU Combined

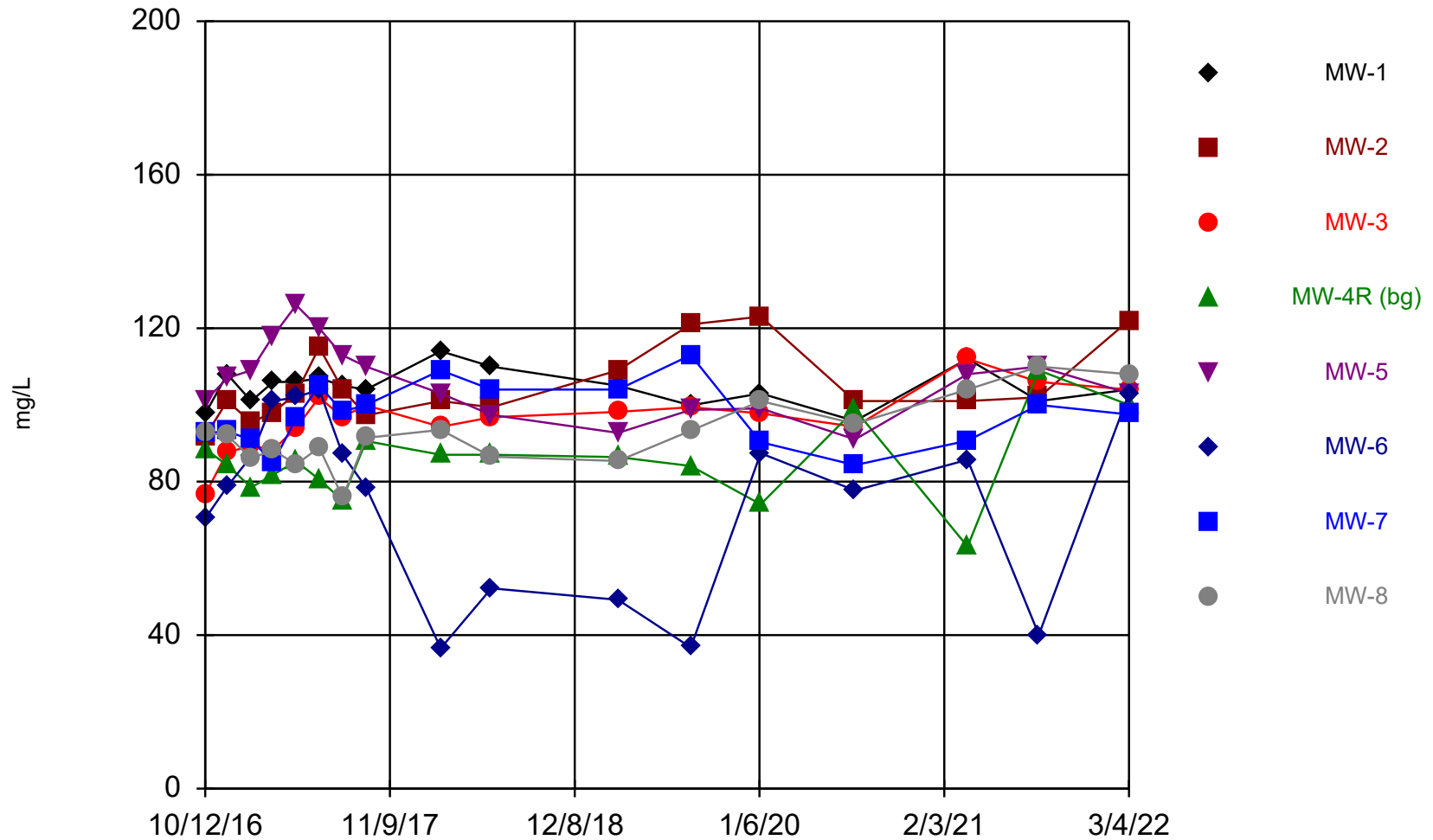
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Time Series



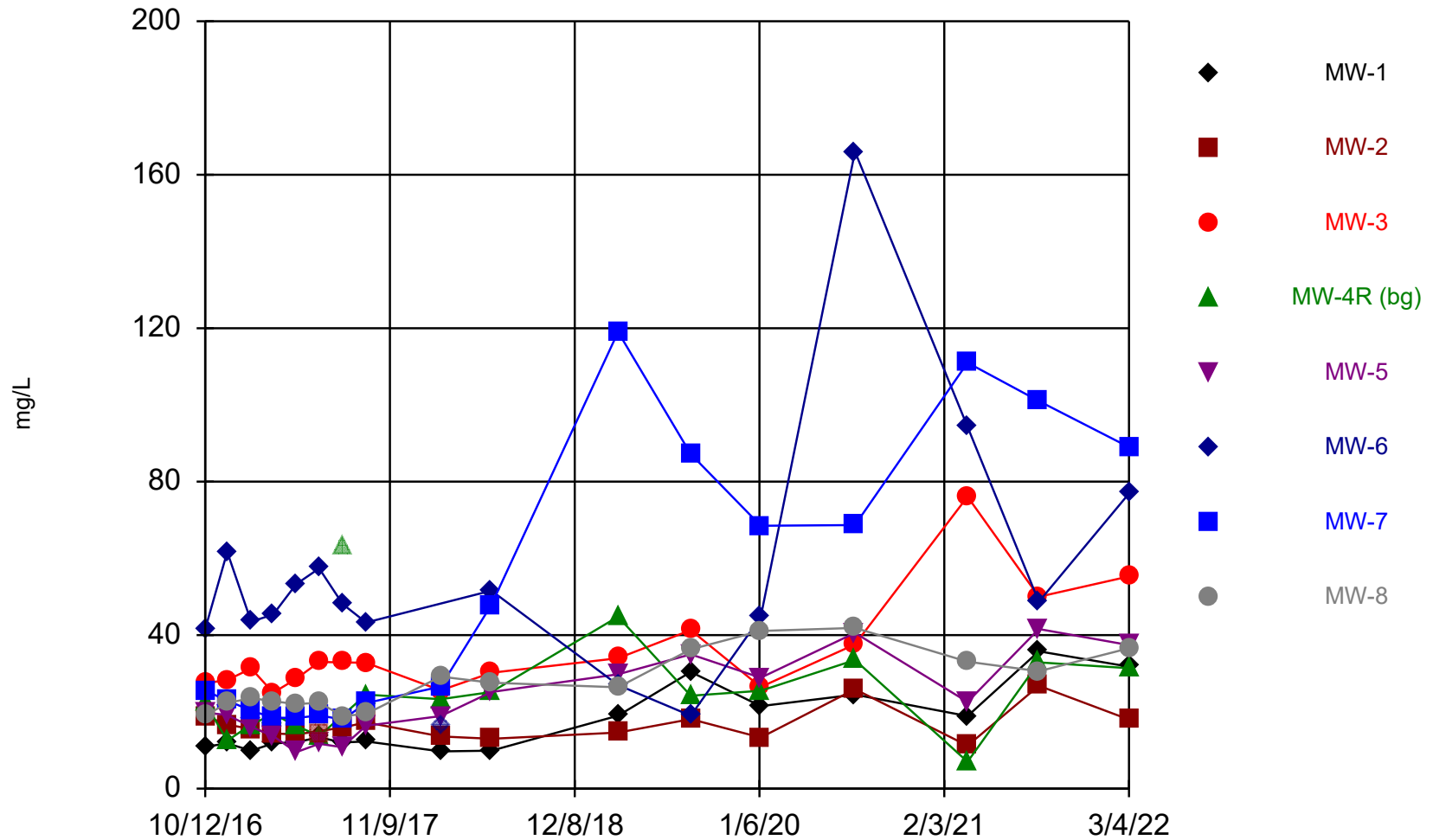
Constituent: Boron Analysis Run 4/25/2022 4:03 PM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Time Series



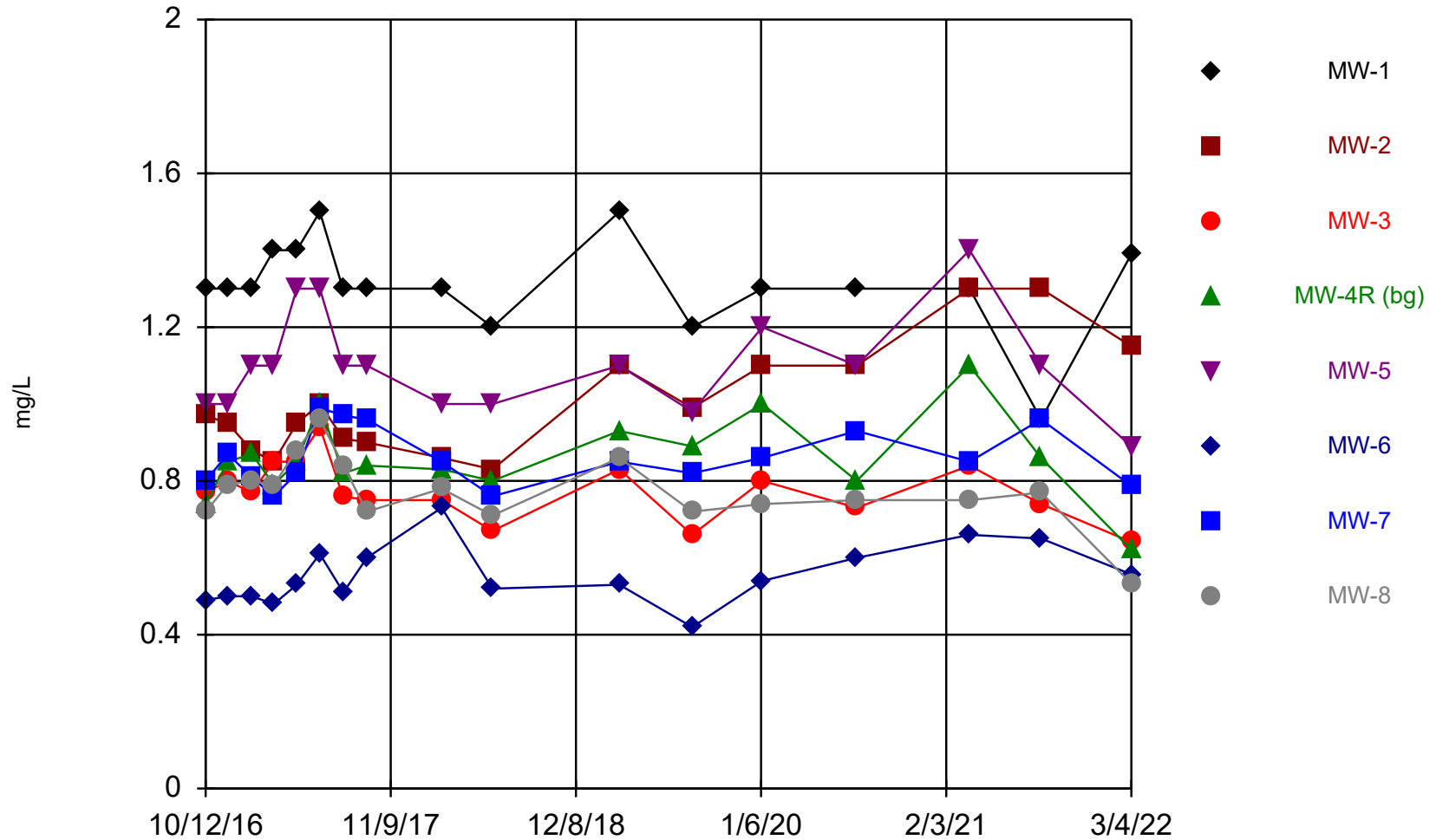
Constituent: Calcium Analysis Run 4/25/2022 4:03 PM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Time Series



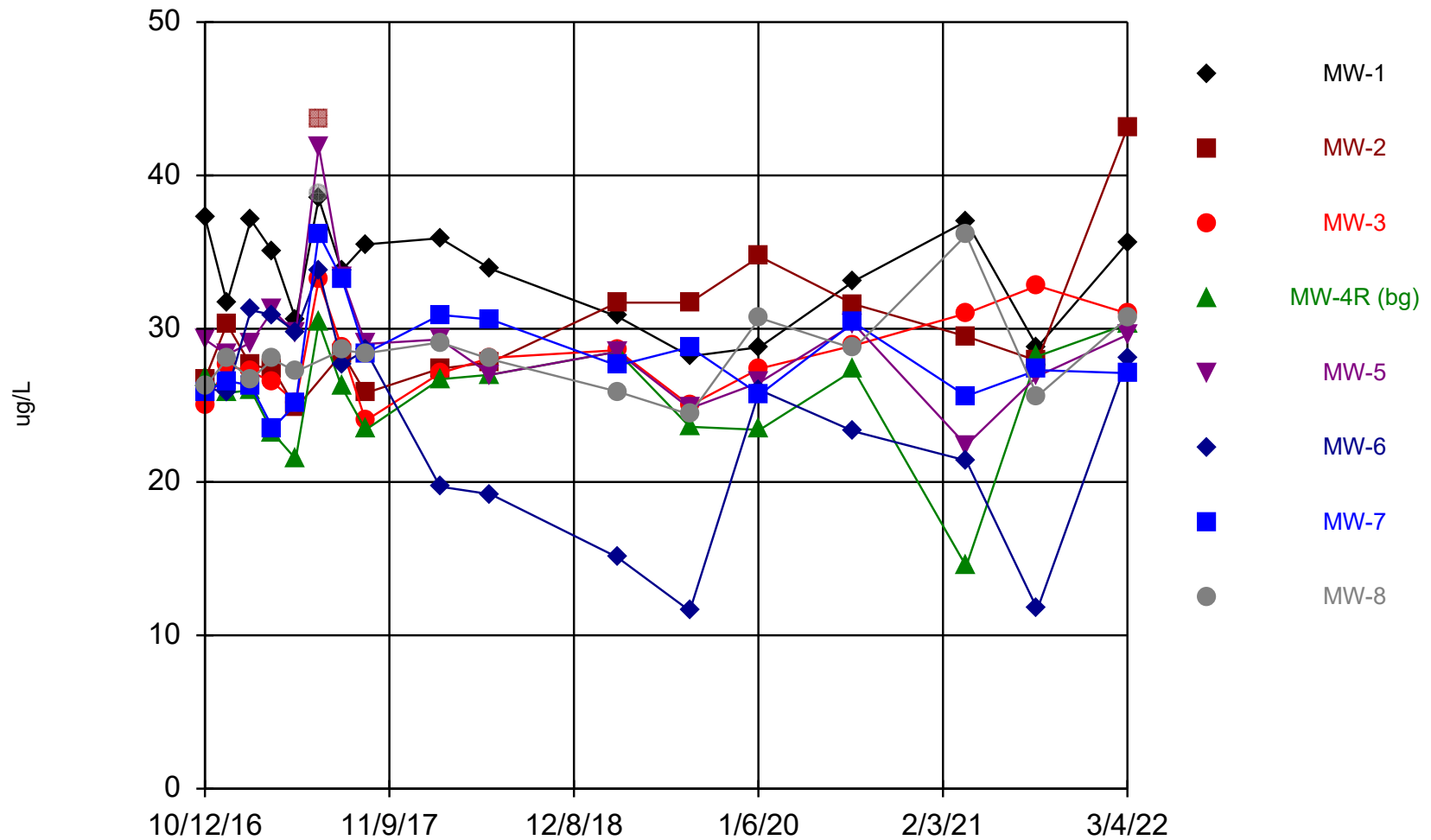
Constituent: Chloride Analysis Run 4/25/2022 4:03 PM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Time Series



Constituent: Fluoride Analysis Run 4/25/2022 4:03 PM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

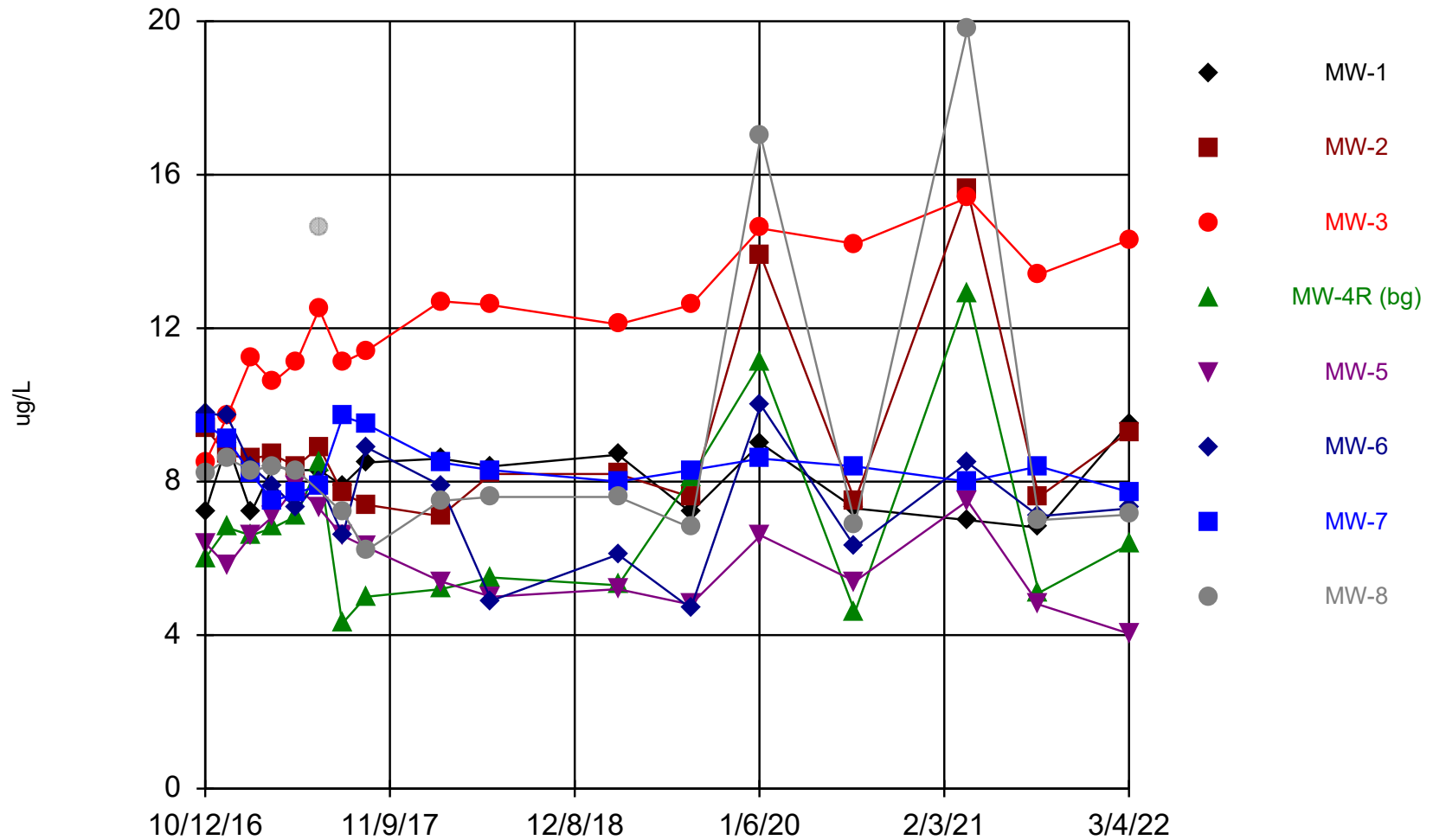
Time Series



Constituent: Lithium Analysis Run 4/25/2022 4:03 PM View: FDU Combined

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

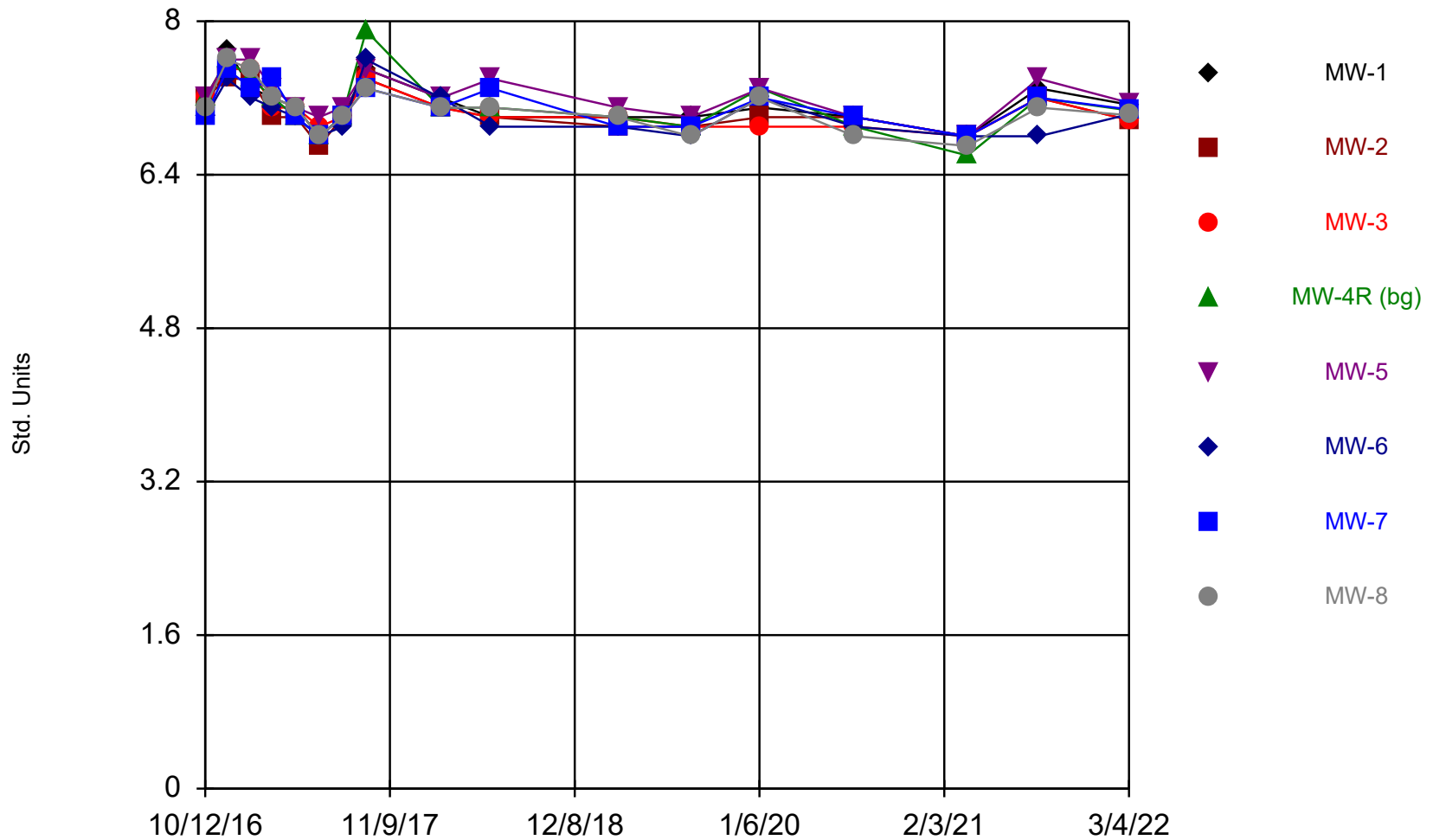
Time Series



Constituent: Molybdenum Analysis Run 4/25/2022 4:03 PM View: FDU Combined

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

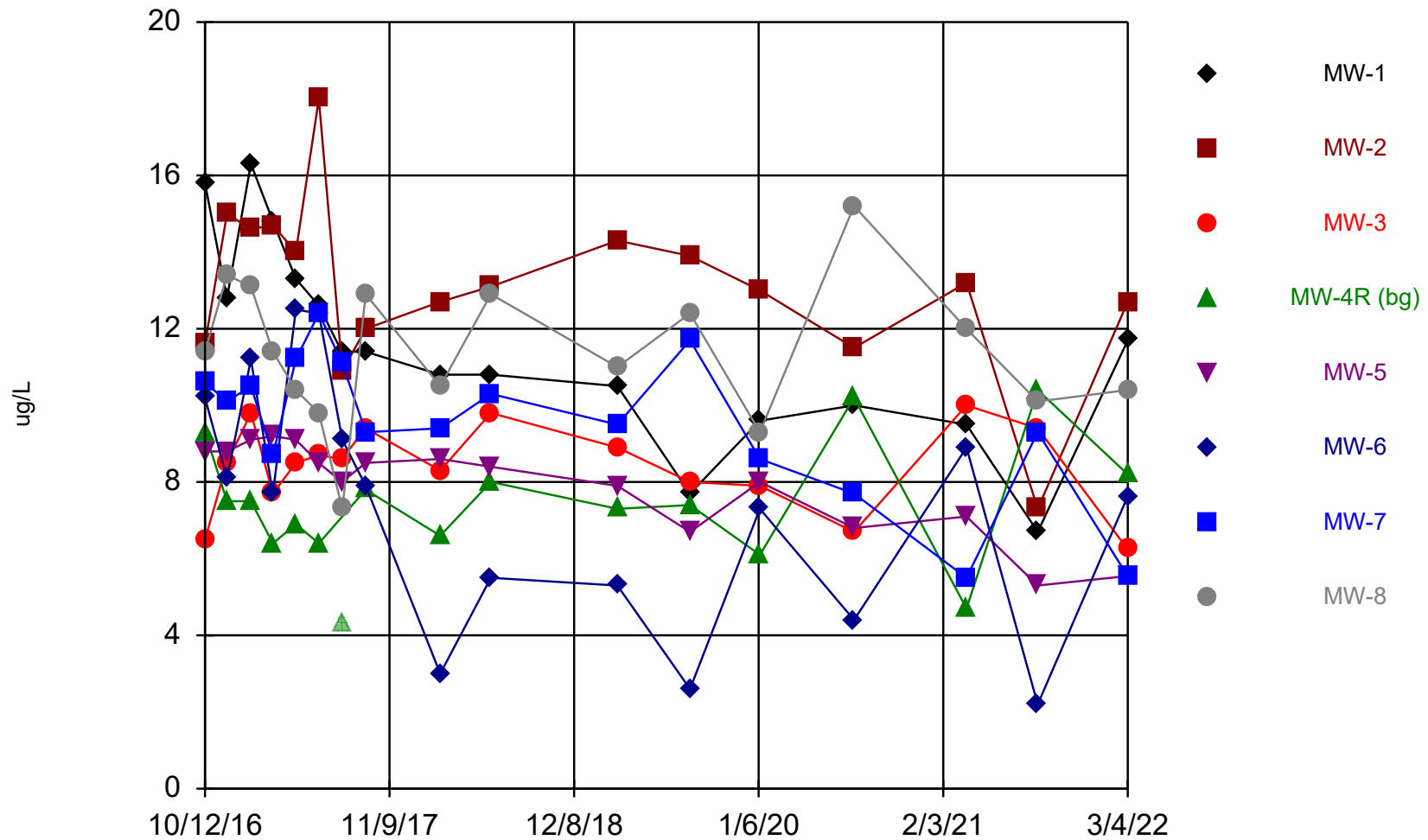
Time Series



Constituent: pH Analysis Run 4/25/2022 4:03 PM View: FDU Combined

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

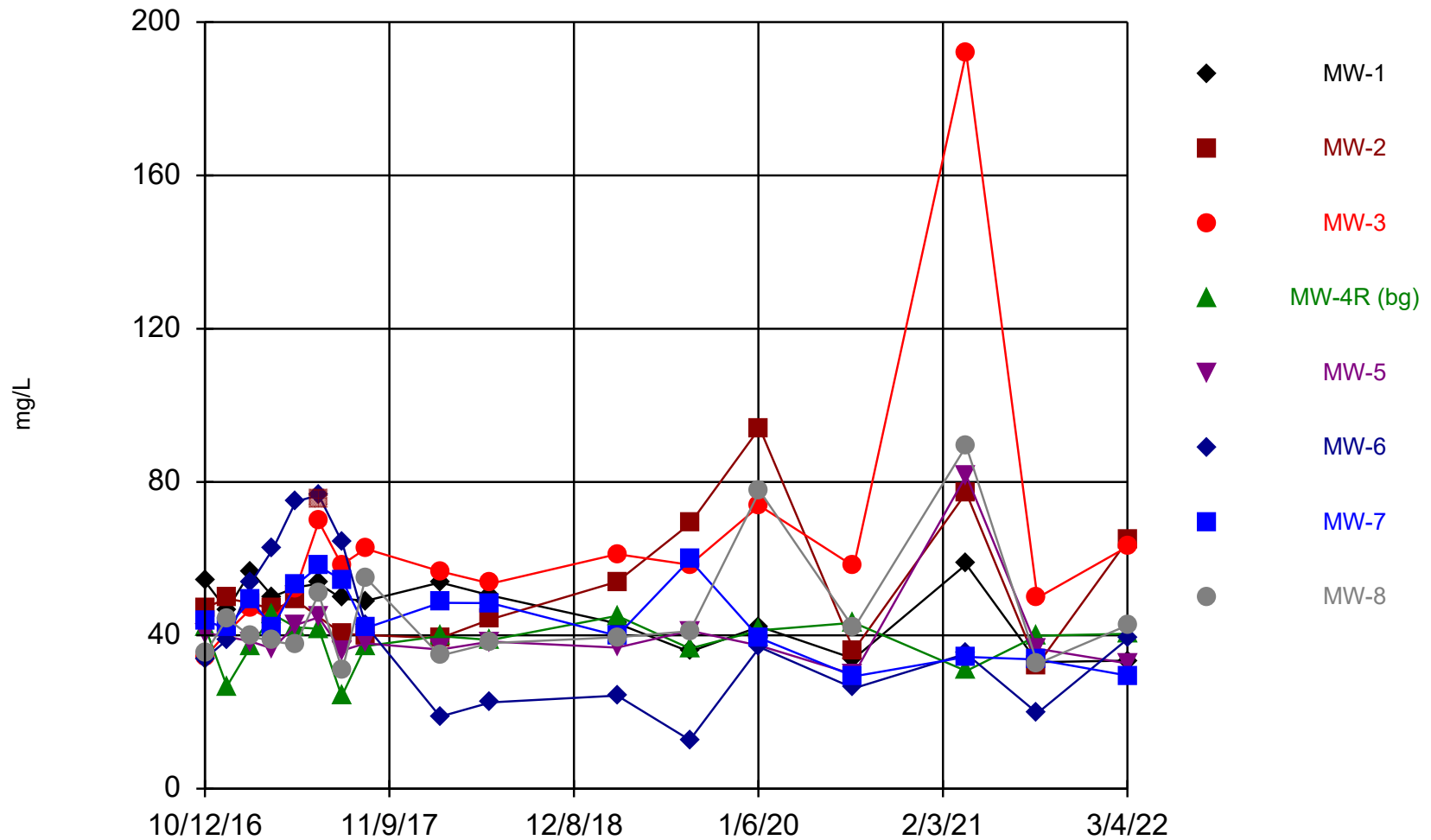
Time Series



Constituent: Selenium [total] Analysis Run 4/25/2022 4:03 PM View: FDU Combined

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

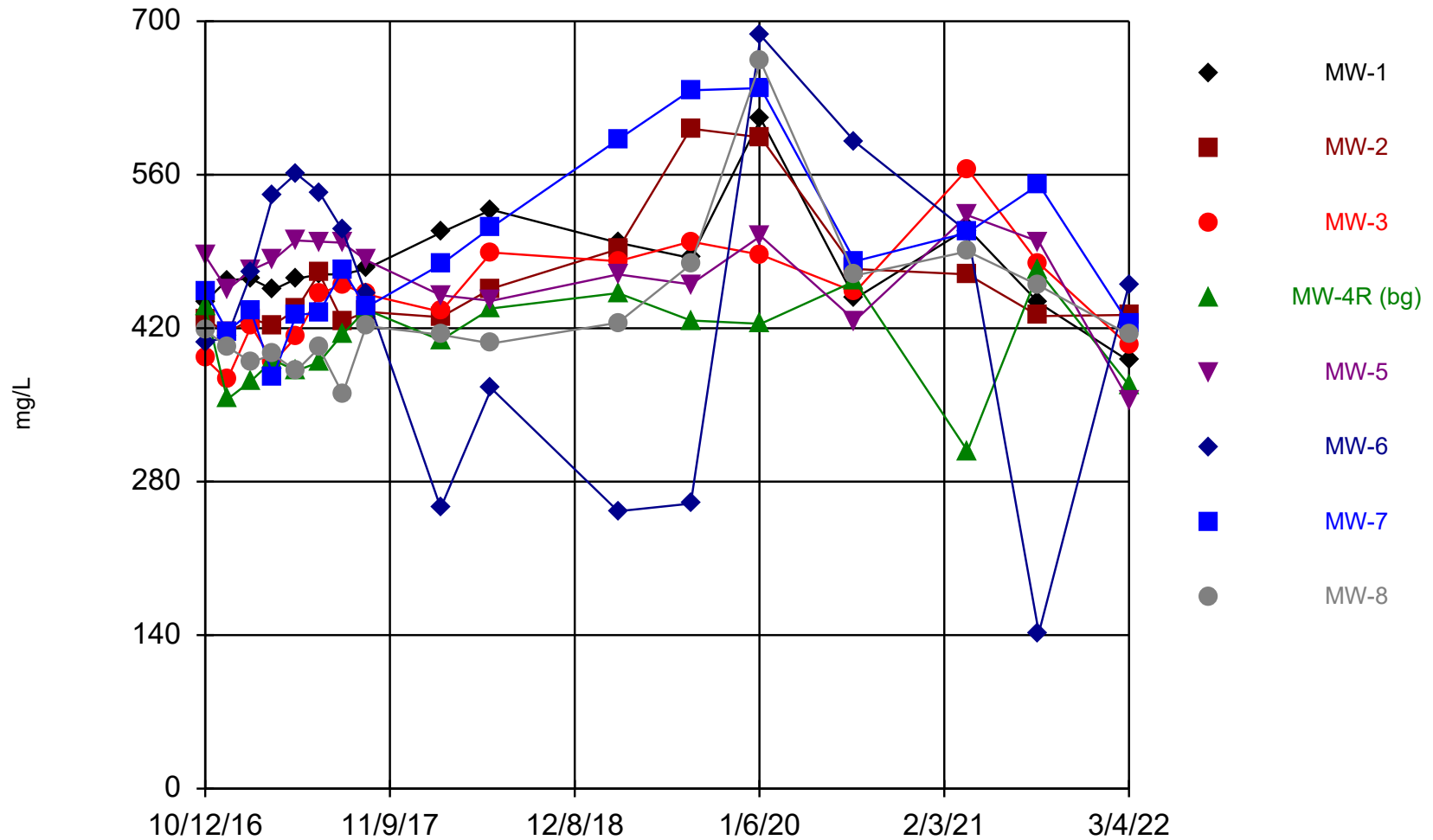
Time Series



Constituent: Sulfate Analysis Run 4/25/2022 4:03 PM View: FDU Combined

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

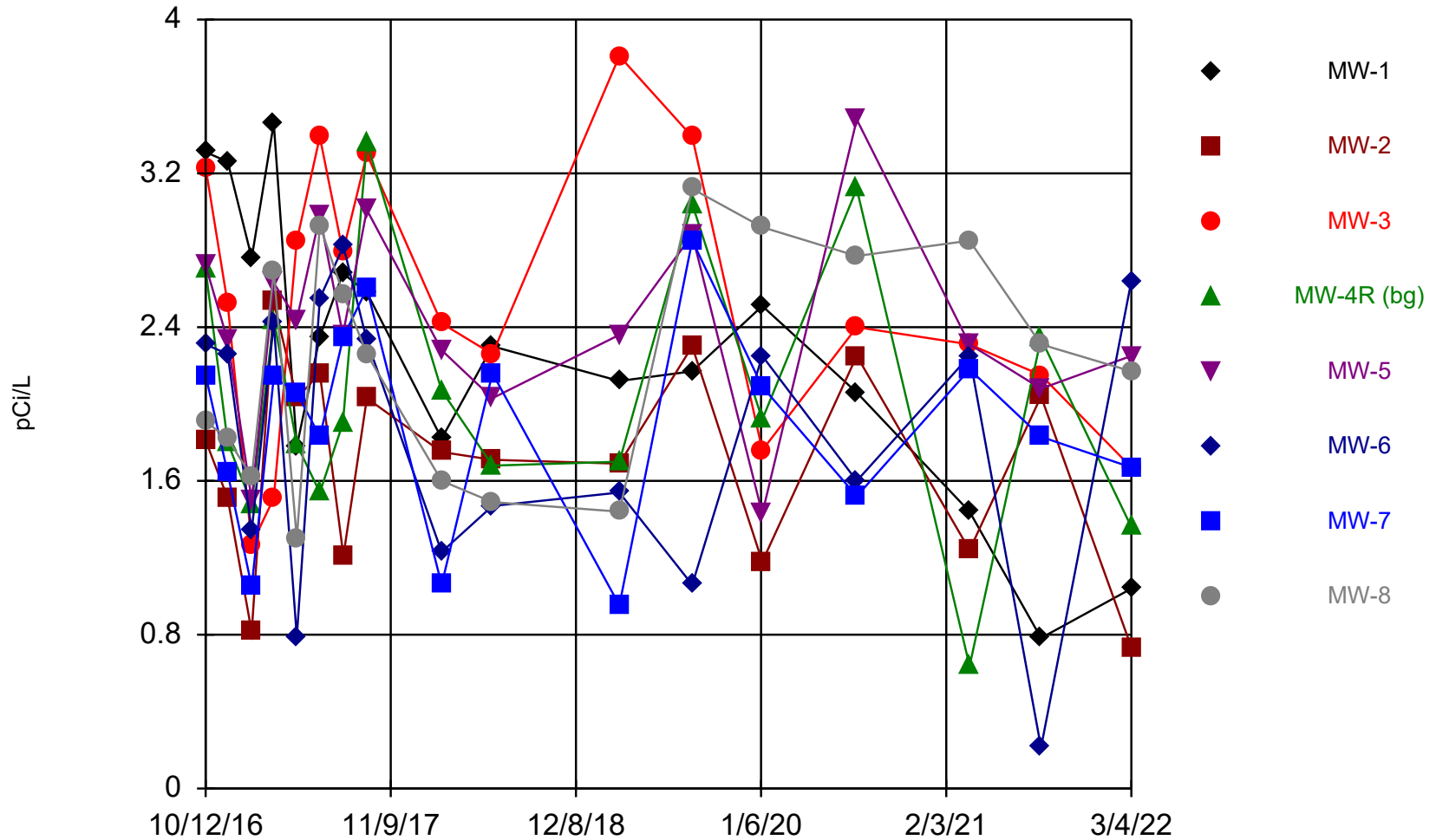
Time Series



Constituent: Total Dissolved Solids Analysis Run 4/25/2022 4:03 PM View: FDU Combined

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

Time Series



Constituent: Total Radium Analysis Run 4/25/2022 4:03 PM View: FDU Combined

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

A.2 Intrawell Prediction Limits

Prediction Limit

Fremont Dept. of Utilities

Client: SCS Engineers

Data: Fremont Department of Utilities Groundwater

Printed 4/25/2022, 4:13 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Date</u>	<u>Observ.</u>	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Arsenic [total] (ug/L)	MW-1	4.325	n/a	3/4/2022	6.43	Yes	10	0	No	0.000...	Param Intra 1 of 2
Arsenic [total] (ug/L)	MW-2	4.899	n/a	3/4/2022	4.55	No	10	0	No	0.000...	Param Intra 1 of 2
Arsenic [total] (ug/L)	MW-3	3.348	n/a	3/4/2022	3.75	Yes	10	0	No	0.000...	Param Intra 1 of 2
Arsenic [total] (ug/L)	MW-4R	5.095	n/a	3/4/2022	4.51	No	10	0	No	0.000...	Param Intra 1 of 2
Arsenic [total] (ug/L)	MW-5	5.084	n/a	3/4/2022	4.74	No	10	0	No	0.000...	Param Intra 1 of 2
Arsenic [total] (ug/L)	MW-6	4.399	n/a	3/4/2022	3.55	No	10	0	No	0.000...	Param Intra 1 of 2
Arsenic [total] (ug/L)	MW-7	4.095	n/a	3/4/2022	4.03	No	10	0	No	0.000...	Param Intra 1 of 2
Arsenic [total] (ug/L)	MW-8	3.043	n/a	3/4/2022	2.82	No	10	0	No	0.000...	Param Intra 1 of 2
Barium [total] (ug/L)	MW-1	174.1	n/a	3/4/2022	137.4	No	10	0	No	0.000...	Param Intra 1 of 2 De...
Barium [total] (ug/L)	MW-2	112.9	n/a	3/4/2022	112	No	10	0	No	0.000...	Param Intra 1 of 2
Barium [total] (ug/L)	MW-3	197.7	n/a	3/4/2022	177	No	10	0	No	0.000...	Param Intra 1 of 2
Barium [total] (ug/L)	MW-4R	144.3	n/a	3/4/2022	146	Yes	10	0	No	0.000...	Param Intra 1 of 2
Barium [total] (ug/L)	MW-5	171.6	n/a	3/4/2022	139	No	10	0	No	0.000...	Param Intra 1 of 2
Barium [total] (ug/L)	MW-6	249.2	n/a	3/4/2022	166	No	10	0	No	0.000...	Param Intra 1 of 2
Barium [total] (ug/L)	MW-7	136	n/a	3/4/2022	138	Yes	10	0	No	0.000...	Param Intra 1 of 2
Barium [total] (ug/L)	MW-8	183.3	n/a	3/4/2022	181	No	10	0	No	0.000...	Param Intra 1 of 2
Boron (ug/L)	MW-1	177.7	n/a	3/4/2022	103	No	10	0	No	0.000...	Param Intra 1 of 2
Boron (ug/L)	MW-2	143.1	n/a	3/4/2022	193	Yes	10	0	No	0.000...	Param Intra 1 of 2
Boron (ug/L)	MW-3	139.9	n/a	3/4/2022	102	No	10	40	x^3	0.000...	Param Intra 1 of 2
Boron (ug/L)	MW-4R	570.9	n/a	3/4/2022	172	No	10	30	No	0.000...	Param Intra 1 of 2
Boron (ug/L)	MW-5	157.3	n/a	3/4/2022	100	No	10	0	No	0.000...	Param Intra 1 of 2
Boron (ug/L)	MW-6	274.3	n/a	3/4/2022	50ND	No	10	20	No	0.000...	Param Intra 1 of 2
Boron (ug/L)	MW-7	230	n/a	3/4/2022	50ND	No	10	0	No	0.000...	Param Intra 1 of 2
Boron (ug/L)	MW-8	181.5	n/a	3/4/2022	125	No	10	0	No	0.000...	Param Intra 1 of 2
Calcium (mg/L)	MW-1	119.5	n/a	3/4/2022	104	No	10	0	No	0.000...	Param Intra 1 of 2
Calcium (mg/L)	MW-2	119.4	n/a	3/4/2022	122	Yes	10	0	No	0.000...	Param Intra 1 of 2
Calcium (mg/L)	MW-3	114.8	n/a	3/4/2022	104	No	10	0	No	0.000...	Param Intra 1 of 2
Calcium (mg/L)	MW-4R	98.37	n/a	3/4/2022	100	Yes	10	0	No	0.000...	Param Intra 1 of 2
Calcium (mg/L)	MW-5	137.5	n/a	3/4/2022	103	No	10	0	No	0.000...	Param Intra 1 of 2
Calcium (mg/L)	MW-6	146	n/a	3/4/2022	103	No	10	0	No	0.000...	Param Intra 1 of 2
Calcium (mg/L)	MW-7	119.5	n/a	3/4/2022	97.5	No	10	0	No	0.000...	Param Intra 1 of 2
Calcium (mg/L)	MW-8	103.8	n/a	3/4/2022	108	Yes	10	0	No	0.000...	Param Intra 1 of 2
Chloride (mg/L)	MW-1	15.09	n/a	3/4/2022	31.8	Yes	10	0	No	0.000...	Param Intra 1 of 2
Chloride (mg/L)	MW-2	20.92	n/a	3/4/2022	18	No	10	0	No	0.000...	Param Intra 1 of 2
Chloride (mg/L)	MW-3	38.52	n/a	3/4/2022	55.3	Yes	10	0	No	0.000...	Param Intra 1 of 2
Chloride (mg/L)	MW-4R	49.68	n/a	3/4/2022	31.4	No	10	0	No	0.000...	Param Intra 1 of 2
Chloride (mg/L)	MW-5	30.73	n/a	3/4/2022	37.4	Yes	10	0	No	0.000...	Param Intra 1 of 2
Chloride (mg/L)	MW-6	76.5	n/a	3/4/2022	76.9	Yes	10	0	No	0.000...	Param Intra 1 of 2
Chloride (mg/L)	MW-7	47.9	n/a	3/4/2022	89	Yes	10	0	n/a	0.01476	NP Intra (normality) ...
Chloride (mg/L)	MW-8	33.09	n/a	3/4/2022	36.6	Yes	10	0	No	0.000...	Param Intra 1 of 2
Fluoride (mg/L)	MW-1	1.578	n/a	3/4/2022	1.39	No	10	0	No	0.000...	Param Intra 1 of 2
Fluoride (mg/L)	MW-2	1.08	n/a	3/4/2022	1.15	Yes	10	0	No	0.000...	Param Intra 1 of 2
Fluoride (mg/L)	MW-3	1.014	n/a	3/4/2022	0.641	No	10	0	No	0.000...	Param Intra 1 of 2
Fluoride (mg/L)	MW-4R	1.043	n/a	3/4/2022	0.621	No	10	0	No	0.000...	Param Intra 1 of 2
Fluoride (mg/L)	MW-5	1.471	n/a	3/4/2022	0.89	No	10	0	x^(1/3)	0.000...	Param Intra 1 of 2
Fluoride (mg/L)	MW-6	0.7825	n/a	3/4/2022	0.557	No	10	0	No	0.000...	Param Intra 1 of 2
Fluoride (mg/L)	MW-7	1.119	n/a	3/4/2022	0.787	No	10	0	No	0.000...	Param Intra 1 of 2
Fluoride (mg/L)	MW-8	1.035	n/a	3/4/2022	0.533	No	10	0	No	0.000...	Param Intra 1 of 2
Lithium (ug/L)	MW-1	42.45	n/a	3/4/2022	35.6	No	10	0	No	0.000...	Param Intra 1 of 2
Lithium (ug/L)	MW-2	33.86	n/a	3/4/2022	43.1	Yes	10	0	No	0.000...	Param Intra 1 of 2

Prediction Limit

Fremont Dept. of Utilities

Client: SCS Engineers

Data: Fremont Department of Utilities Groundwater

Printed 4/25/2022, 4:13 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Date</u>	<u>Observ.</u>	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Lithium (ug/L)	MW-3	35	n/a	3/4/2022	31	No	10	0	No	0.000...	Param Intra 1 of 2
Lithium (ug/L)	MW-4R	33.19	n/a	3/4/2022	30.3	No	10	0	No	0.000...	Param Intra 1 of 2
Lithium (ug/L)	MW-5	41.9	n/a	3/4/2022	29.6	No	10	0	n/a	0.01476	NP Intra (normality) ...
Lithium (ug/L)	MW-6	41.7	n/a	3/4/2022	28	No	10	0	No	0.000...	Param Intra 1 of 2
Lithium (ug/L)	MW-7	40.7	n/a	3/4/2022	27.1	No	10	0	No	0.000...	Param Intra 1 of 2
Lithium (ug/L)	MW-8	30.82	n/a	3/4/2022	30.7	No	10	0	No	0.000...	Param Intra 1 of 2
Molybdenum (ug/L)	MW-1	9.944	n/a	3/4/2022	9.51	No	10	0	No	0.000...	Param Intra 1 of 2
Molybdenum (ug/L)	MW-2	10.47	n/a	3/4/2022	9.3	No	10	0	No	0.000...	Param Intra 1 of 2
Molybdenum (ug/L)	MW-3	15.14	n/a	3/4/2022	14.3	No	10	0	No	0.000...	Param Intra 1 of 2
Molybdenum (ug/L)	MW-4R	9.883	n/a	3/4/2022	6.36	No	10	0	No	0.000...	Param Intra 1 of 2
Molybdenum (ug/L)	MW-5	9.091	n/a	3/4/2022	4.04	No	10	0	No	0.000...	Param Intra 1 of 2
Molybdenum (ug/L)	MW-6	12.34	n/a	3/4/2022	7.3	No	10	0	No	0.000...	Param Intra 1 of 2
Molybdenum (ug/L)	MW-7	9.847	n/a	3/4/2022	8.256	No	10	0	No	0.000...	Param Intra 1 of 2 De...
Molybdenum (ug/L)	MW-8	9.982	n/a	3/4/2022	7.14	No	10	0	No	0.000...	Param Intra 1 of 2
pH (Std. Units)	MW-1	7.982	6.378	3/4/2022	7.13	No	10	0	No	0.000...	Param Intra 1 of 2
pH (Std. Units)	MW-2	7.814	6.426	3/4/2022	6.97	No	10	0	No	0.000...	Param Intra 1 of 2
pH (Std. Units)	MW-3	7.829	6.531	3/4/2022	6.97	No	10	0	No	0.000...	Param Intra 1 of 2
pH (Std. Units)	MW-4R	7.869	6.597	3/4/2022	7.209	No	10	0	No	0.000...	Param Intra 1 of 2 De...
pH (Std. Units)	MW-5	7.952	6.648	3/4/2022	7.15	No	10	0	No	0.000...	Param Intra 1 of 2
pH (Std. Units)	MW-6	7.855	6.365	3/4/2022	7.03	No	10	0	No	0.000...	Param Intra 1 of 2
pH (Std. Units)	MW-7	7.838	6.502	3/4/2022	7.08	No	10	0	No	0.000...	Param Intra 1 of 2
pH (Std. Units)	MW-8	7.888	6.472	3/4/2022	7.02	No	10	0	No	0.000...	Param Intra 1 of 2
Selenium [total] (ug/L)	MW-1	19.12	n/a	3/4/2022	11.7	No	10	0	No	0.000...	Param Intra 1 of 2
Selenium [total] (ug/L)	MW-2	19.91	n/a	3/4/2022	12.7	No	10	0	No	0.000...	Param Intra 1 of 2
Selenium [total] (ug/L)	MW-3	11.57	n/a	3/4/2022	6.24	No	10	0	No	0.000...	Param Intra 1 of 2
Selenium [total] (ug/L)	MW-4R	10.04	n/a	3/4/2022	8.2	No	10	0	No	0.000...	Param Intra 1 of 2
Selenium [total] (ug/L)	MW-5	9.829	n/a	3/4/2022	5.55	No	10	0	No	0.000...	Param Intra 1 of 2
Selenium [total] (ug/L)	MW-6	17.84	n/a	3/4/2022	7.63	No	10	0	No	0.000...	Param Intra 1 of 2
Selenium [total] (ug/L)	MW-7	13.6	n/a	3/4/2022	5.54	No	10	0	No	0.000...	Param Intra 1 of 2
Selenium [total] (ug/L)	MW-8	17.04	n/a	3/4/2022	10.4	No	10	0	No	0.000...	Param Intra 1 of 2
Sulfate (mg/L)	MW-1	60.68	n/a	3/4/2022	33.4	No	10	0	No	0.000...	Param Intra 1 of 2
Sulfate (mg/L)	MW-2	60.44	n/a	3/4/2022	64.7	Yes	10	0	No	0.000...	Param Intra 1 of 2
Sulfate (mg/L)	MW-3	84.08	n/a	3/4/2022	63.1	No	10	0	No	0.000...	Param Intra 1 of 2
Sulfate (mg/L)	MW-4R	58.37	n/a	3/4/2022	40.4	No	10	0	No	0.000...	Param Intra 1 of 2
Sulfate (mg/L)	MW-5	47.75	n/a	3/4/2022	32.7	No	10	0	No	0.000...	Param Intra 1 of 2
Sulfate (mg/L)	MW-6	111.3	n/a	3/4/2022	39	No	10	0	No	0.000...	Param Intra 1 of 2
Sulfate (mg/L)	MW-7	65.39	n/a	3/4/2022	29.5	No	10	0	No	0.000...	Param Intra 1 of 2
Sulfate (mg/L)	MW-8	63.23	n/a	3/4/2022	42.6	No	10	0	No	0.000...	Param Intra 1 of 2
Total Dissolved Solids (mg/L)	MW-1	549.1	n/a	3/4/2022	390	No	10	0	No	0.000...	Param Intra 1 of 2
Total Dissolved Solids (mg/L)	MW-2	484	n/a	3/4/2022	432	No	10	0	No	0.000...	Param Intra 1 of 2
Total Dissolved Solids (mg/L)	MW-3	537.5	n/a	3/4/2022	404	No	10	0	No	0.000...	Param Intra 1 of 2
Total Dissolved Solids (mg/L)	MW-4R	492.5	n/a	3/4/2022	368	No	10	0	No	0.000...	Param Intra 1 of 2
Total Dissolved Solids (mg/L)	MW-5	539.3	n/a	3/4/2022	354	No	10	0	No	0.000...	Param Intra 1 of 2
Total Dissolved Solids (mg/L)	MW-6	739.1	n/a	3/4/2022	460	No	10	0	No	0.000...	Param Intra 1 of 2
Total Dissolved Solids (mg/L)	MW-7	557.1	n/a	3/4/2022	424	No	10	0	No	0.000...	Param Intra 1 of 2
Total Dissolved Solids (mg/L)	MW-8	455.5	n/a	3/4/2022	414	No	10	0	No	0.000...	Param Intra 1 of 2
Total Radium (pCi/L)	MW-1	4.411	n/a	3/4/2022	1.04	No	10	0	No	0.000...	Param Intra 1 of 2
Total Radium (pCi/L)	MW-2	3.235	n/a	3/4/2022	0.735	No	10	0	No	0.000...	Param Intra 1 of 2
Total Radium (pCi/L)	MW-3	4.735	n/a	3/4/2022	1.67	No	10	0	No	0.000...	Param Intra 1 of 2
Total Radium (pCi/L)	MW-4R	3.864	n/a	3/4/2022	1.36	No	10	0	No	0.000...	Param Intra 1 of 2

Prediction Limit

Fremont Dept. of Utilities

Client: SCS Engineers

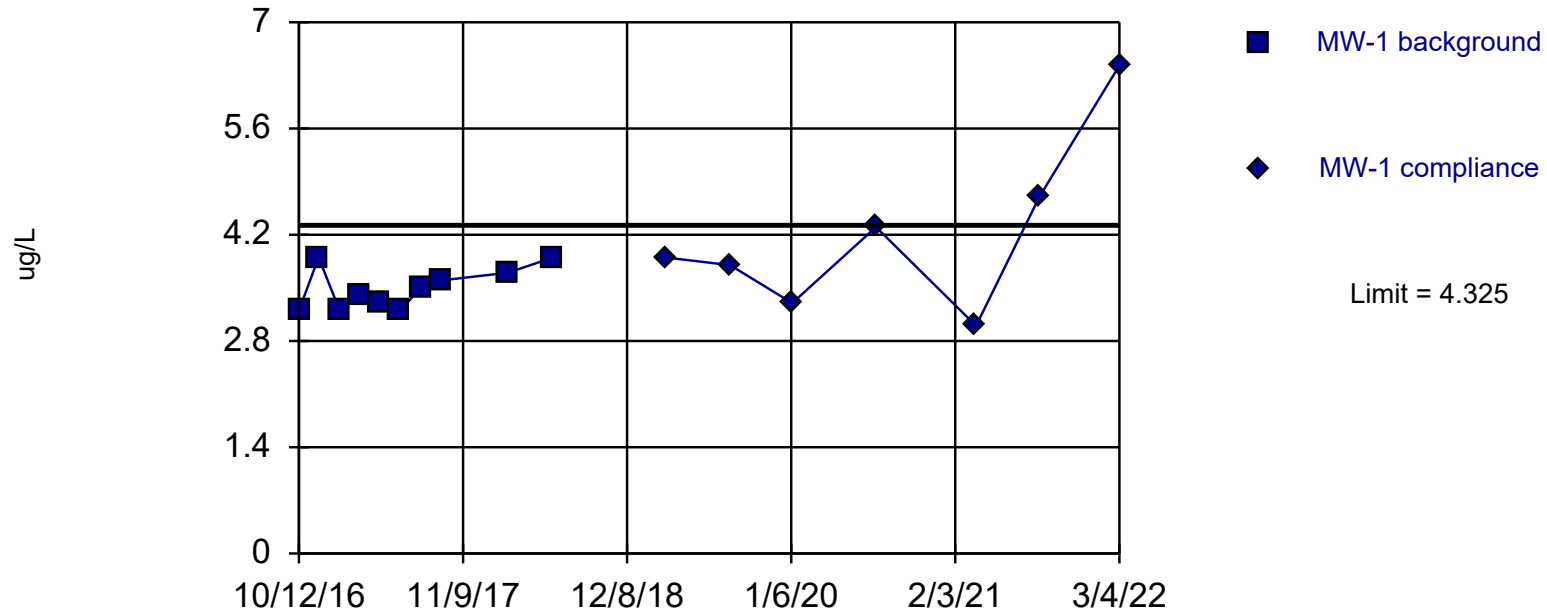
Data: Fremont Department of Utilities Groundwater

Printed 4/25/2022, 4:13 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Date</u>	<u>Observ.</u>	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Total Radium (pCi/L)	MW-5	3.787	n/a	3/4/2022	2.25	No	10	0	No	0.000...	Param Intra 1 of 2
Total Radium (pCi/L)	MW-6	4.008	n/a	3/4/2022	2.64	No	10	0	No	0.000...	Param Intra 1 of 2
Total Radium (pCi/L)	MW-7	3.464	n/a	3/4/2022	1.67	No	10	0	No	0.000...	Param Intra 1 of 2
Total Radium (pCi/L)	MW-8	3.71	n/a	3/4/2022	2.17	No	10	0	No	0.000...	Param Intra 1 of 2

Exceeds Limit

Prediction Limit Intrawell Parametric



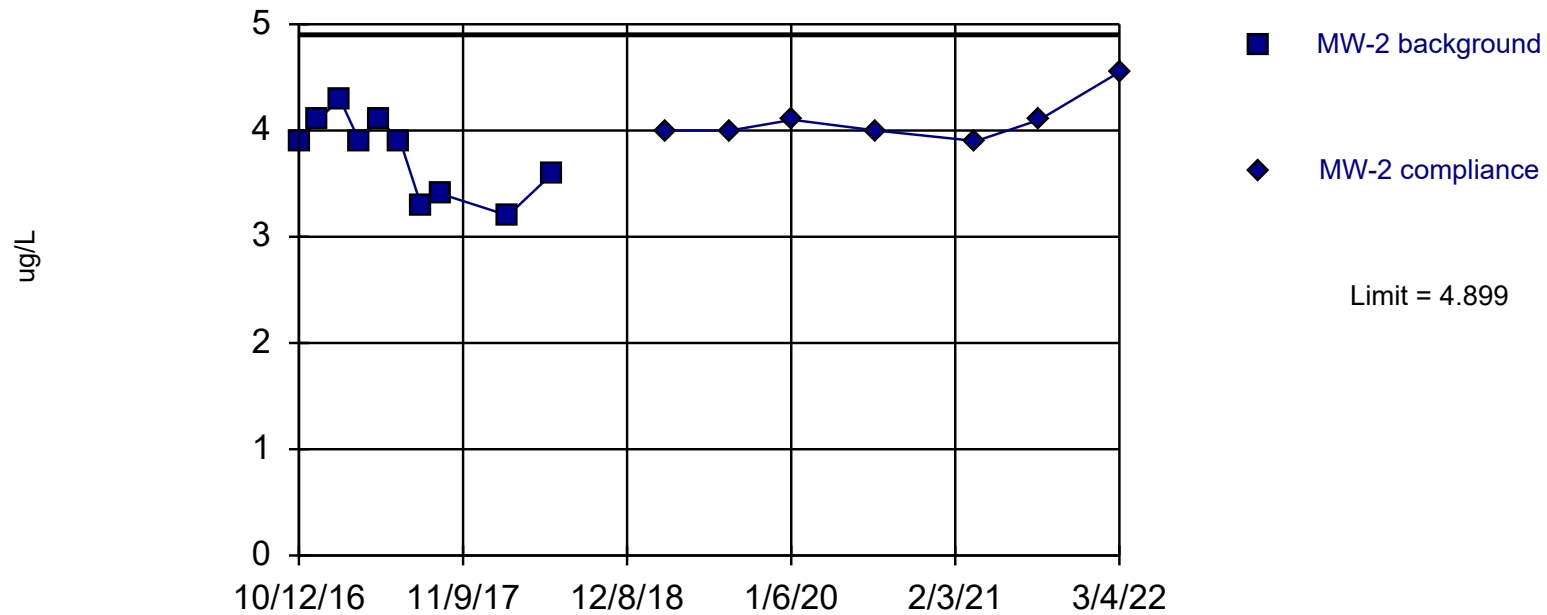
Background Data Summary: Mean=3.49, Std. Dev.=0.2767, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8827, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Arsenic [total] Analysis Run 4/25/2022 4:08 PM View: FDU Combined

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

Within Limit

Prediction Limit Intrawell Parametric



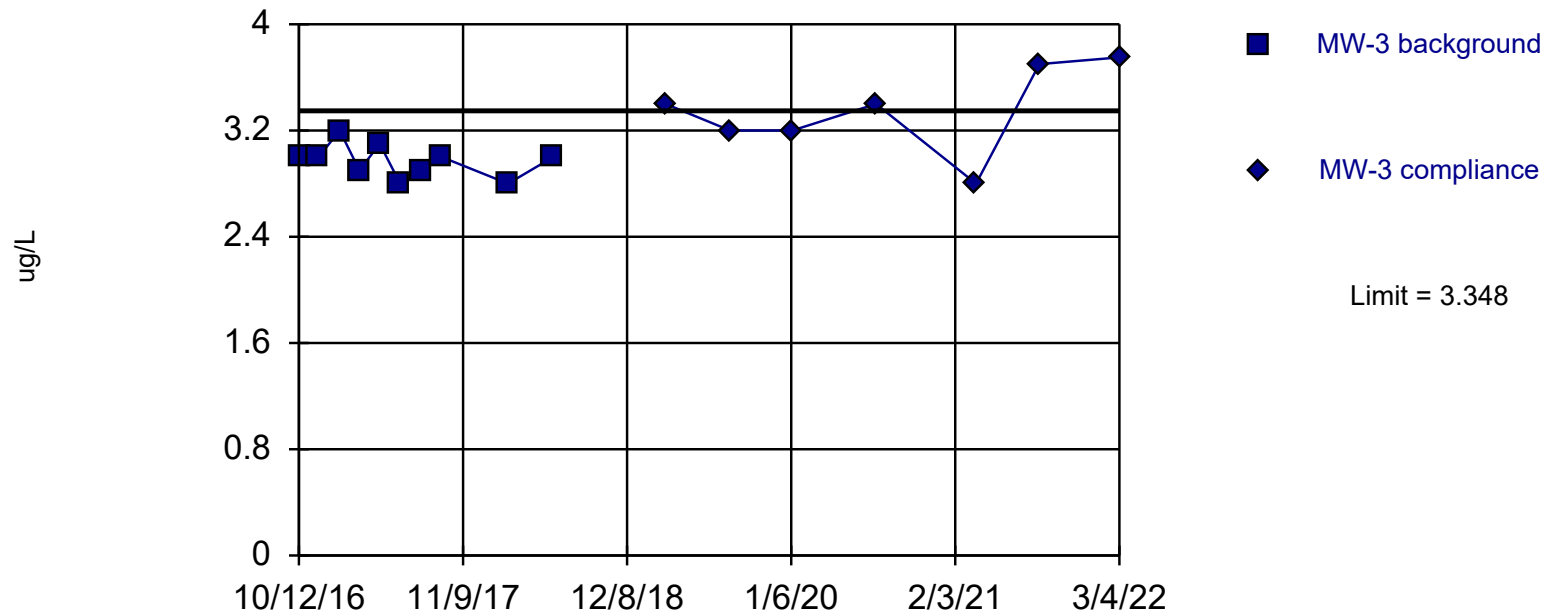
Background Data Summary: Mean=3.77, Std. Dev.=0.3743, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.927, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Arsenic [total] Analysis Run 4/25/2022 4:08 PM View: FDU Combined

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

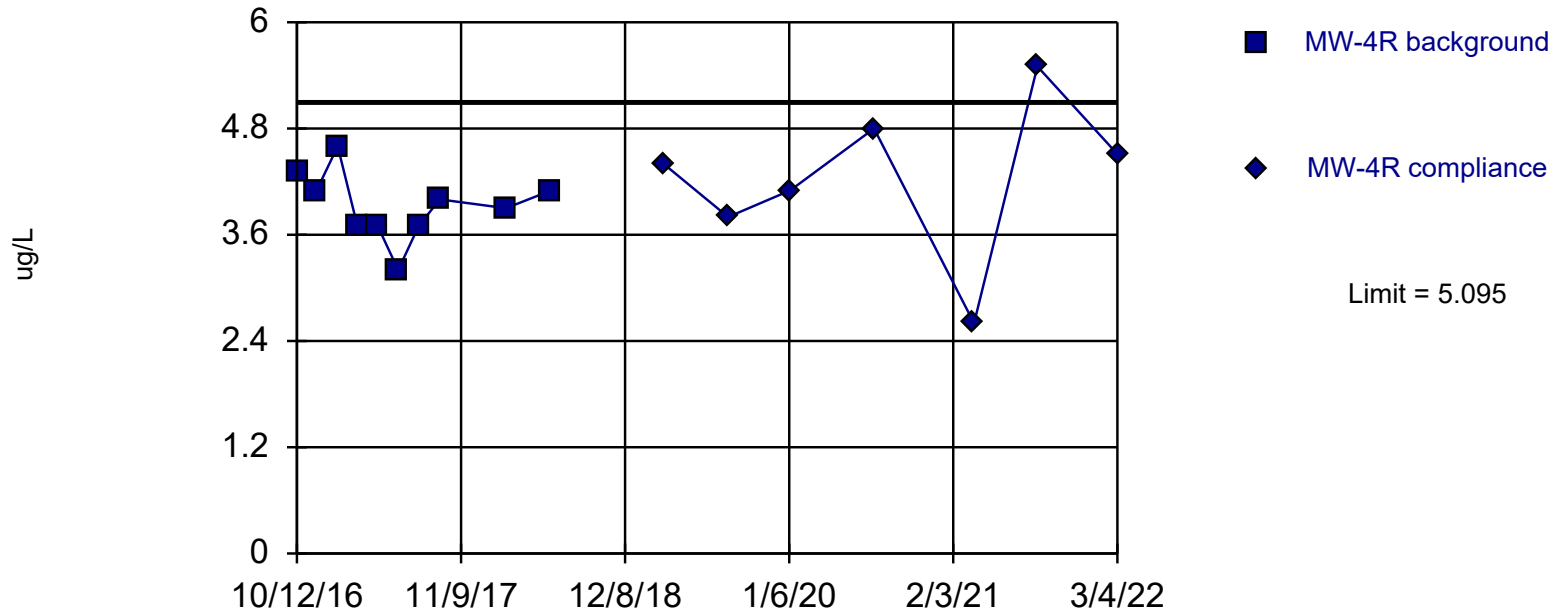
Exceeds Limit

Prediction Limit Intrawell Parametric



Within Limit

Prediction Limit Intrawell Parametric



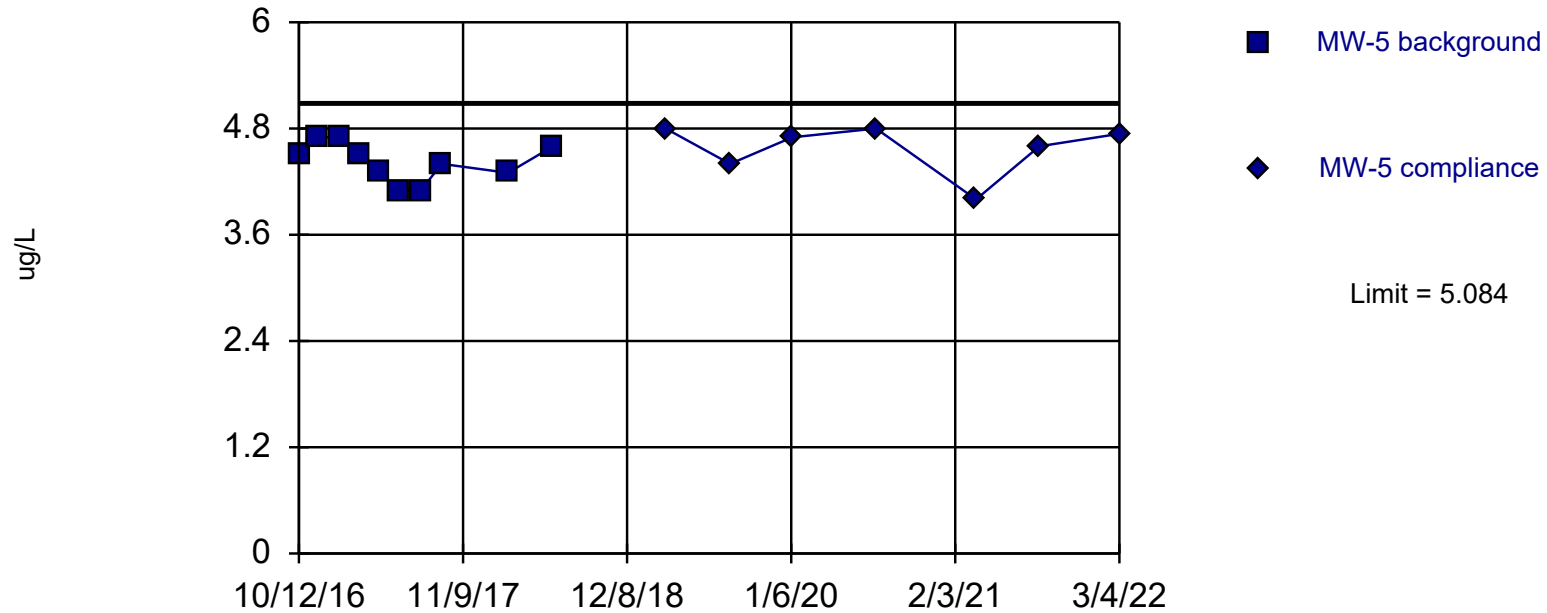
Background Data Summary: Mean=3.93, Std. Dev.=0.386, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9683, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Arsenic [total] Analysis Run 4/25/2022 4:08 PM View: FDU Combined

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

Within Limit

Prediction Limit Intrawell Parametric



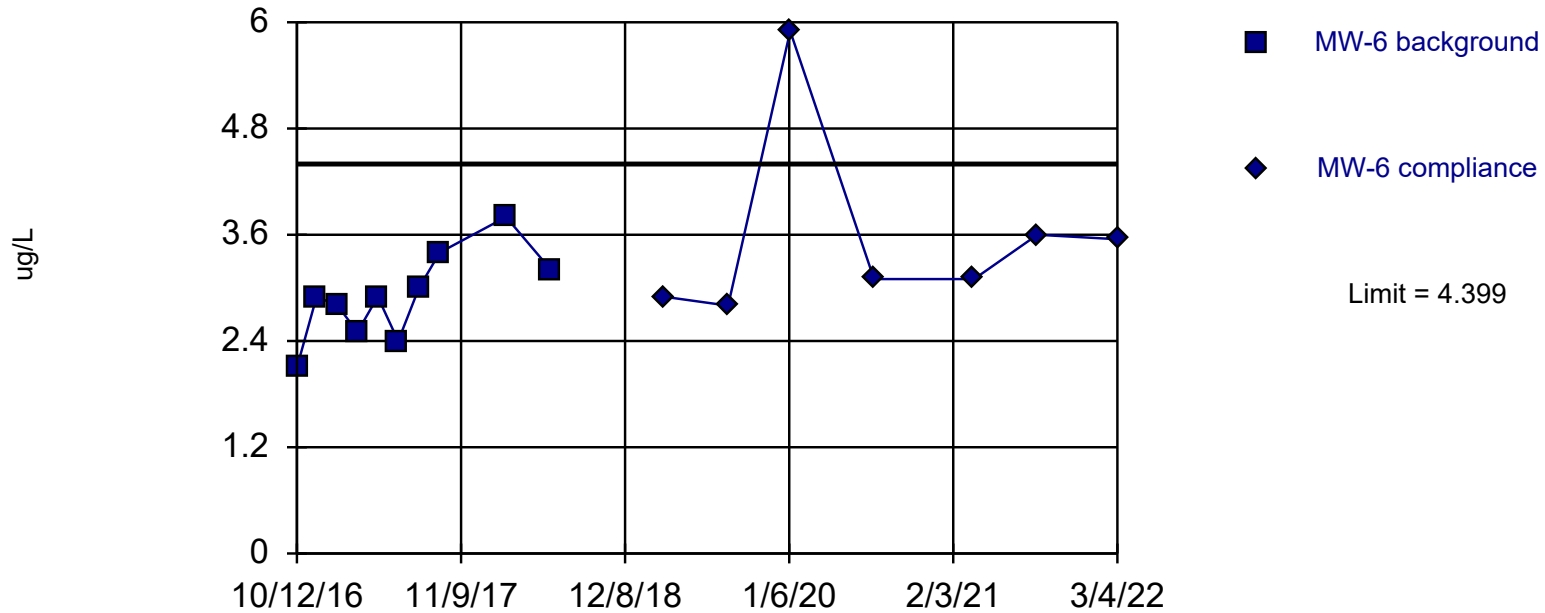
Background Data Summary: Mean=4.42, Std. Dev.=0.2201, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9234, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Arsenic [total] Analysis Run 4/25/2022 4:08 PM View: FDU Combined

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

Within Limit

Prediction Limit Intrawell Parametric



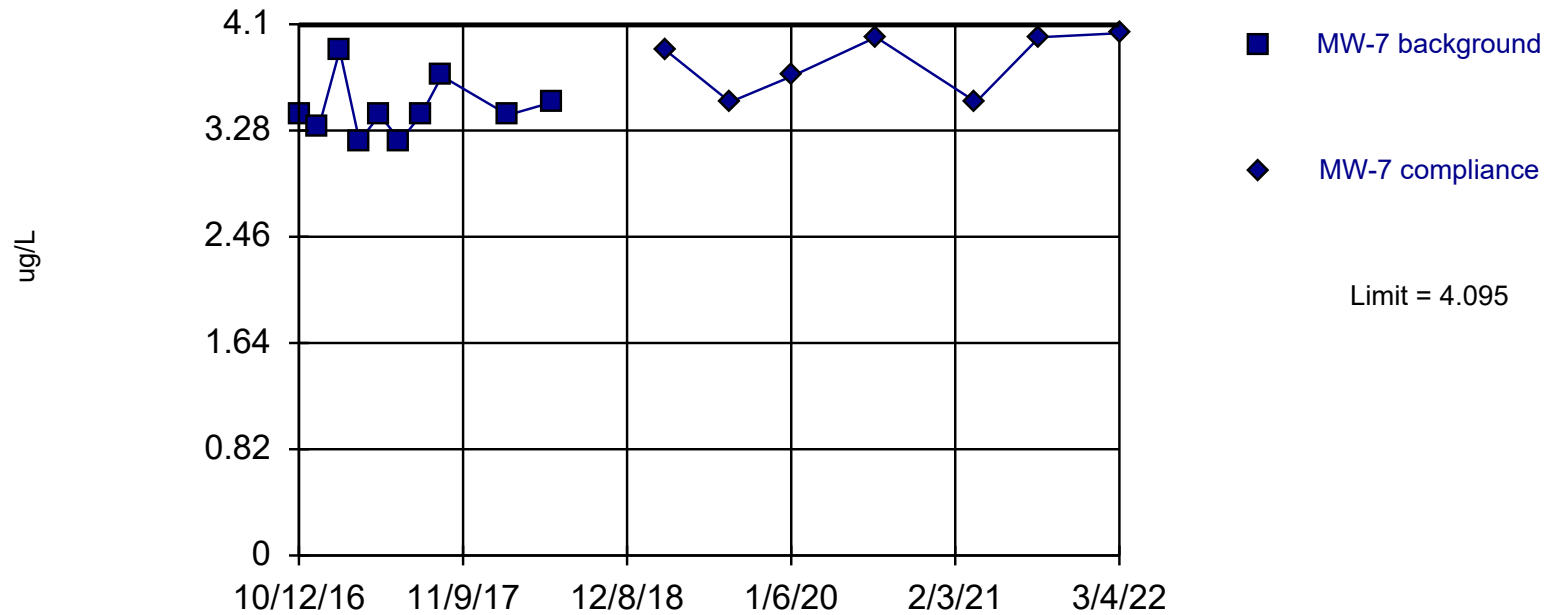
Background Data Summary: Mean=2.9, Std. Dev.=0.4967, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9854, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Arsenic [total] Analysis Run 4/25/2022 4:08 PM View: FDU Combined

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 = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

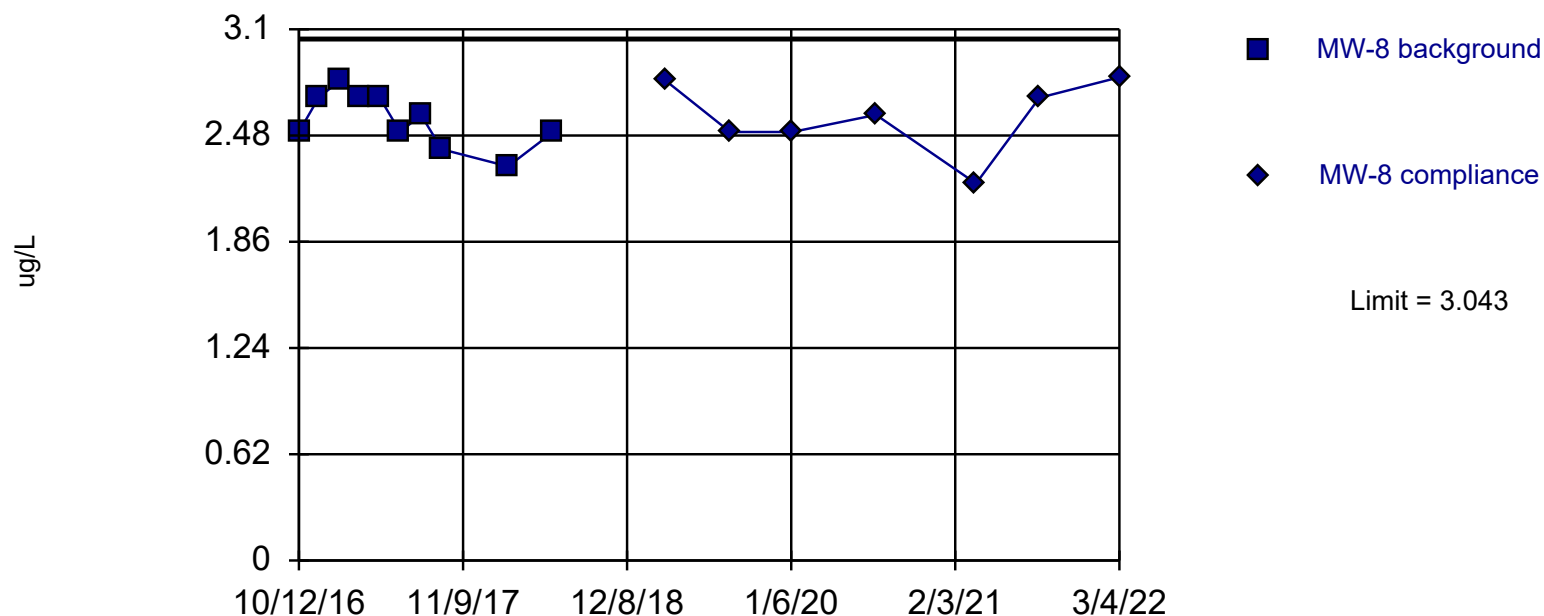
Constituent: Arsenic [total] Analysis Run 4/25/2022 4:08 PM View: FDU Combined

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

Within Limit

Prediction Limit

Intrawell Parametric



Legend:

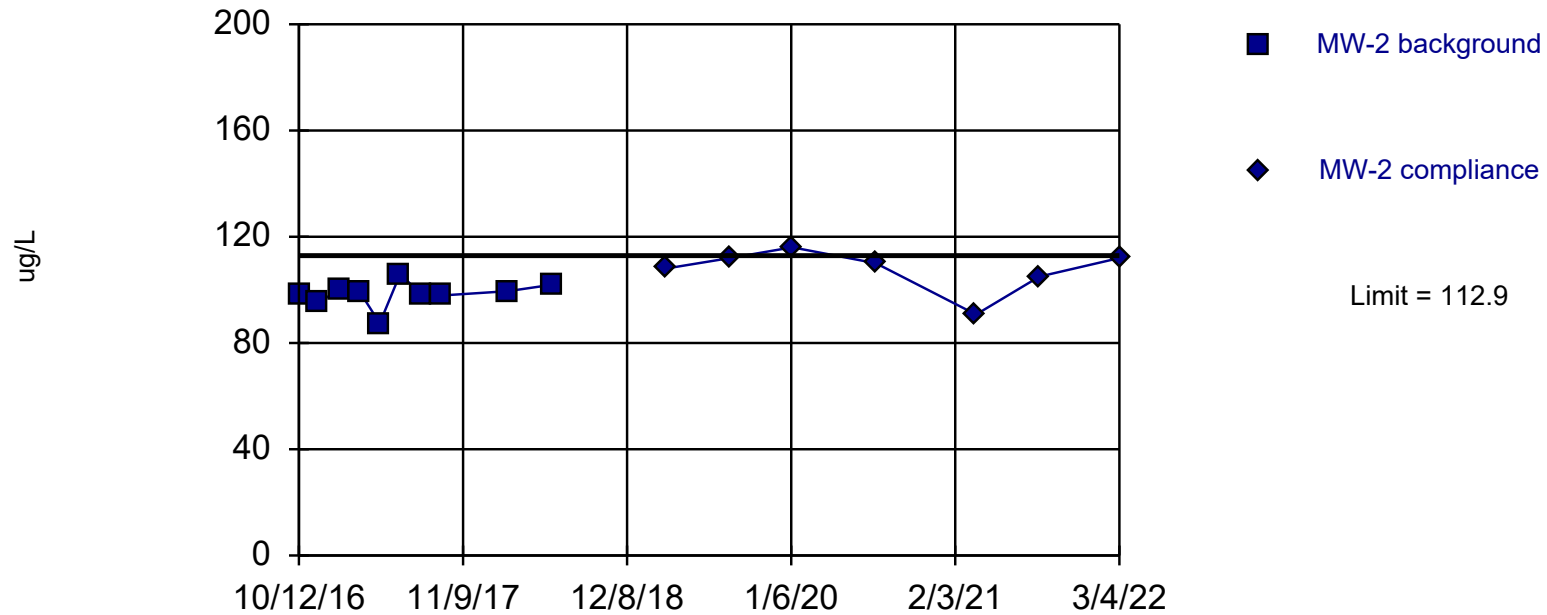
- MW-1 background (Blue squares)
- MW-1 compliance (Blue diamonds)
- Limit = 174.1

Date	MW-1 background (ug/L)	MW-1 compliance (ug/L)
10/12/16	155	
11/1/16	115	
11/15/16	148	
11/25/16	135	
12/10/16	130	
12/20/16	148	
1/10/17	115	
1/20/17	125	
2/10/17	115	
2/20/17	145	
3/10/17		135
3/25/17		125
4/10/17		140
4/25/17		130
5/10/17		165
5/25/17		135
6/10/17		135

Constituent: Barium [total] Analysis Run 4/25/2022 4:08 PM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

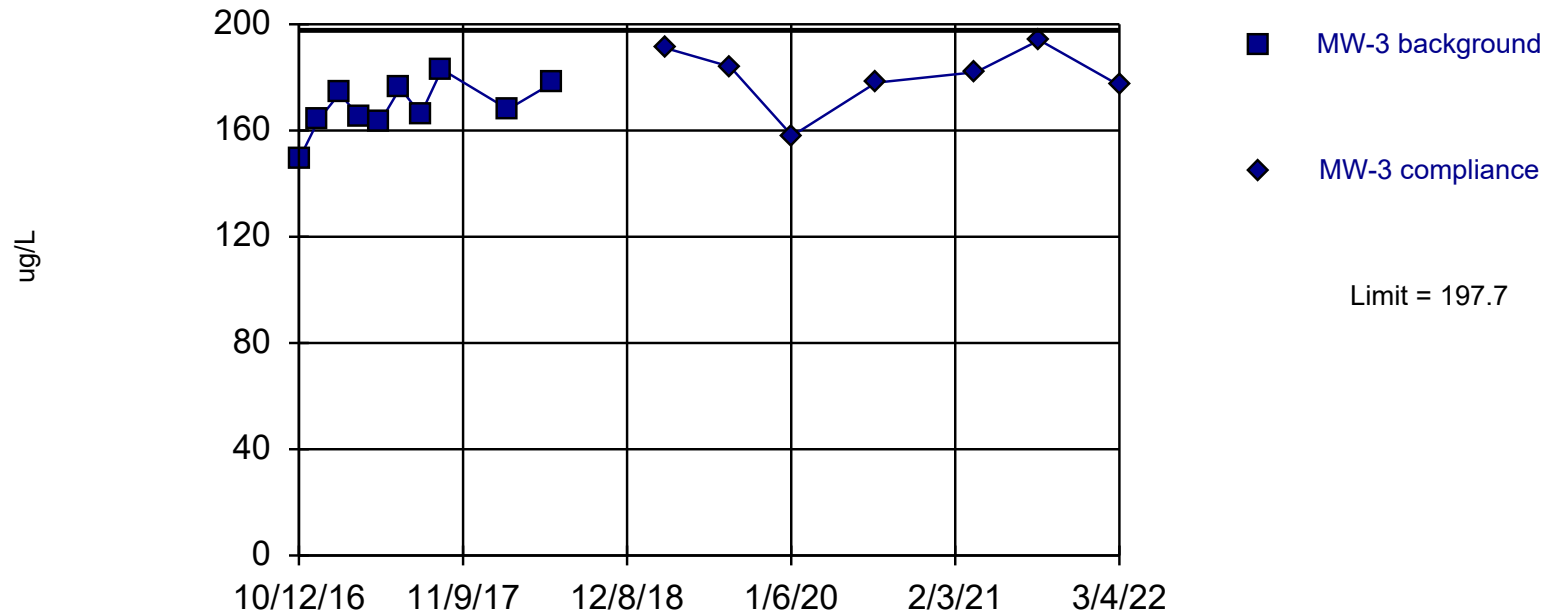
Within Limit

Prediction Limit Intrawell Parametric



Within Limit

Prediction Limit Intrawell Parametric



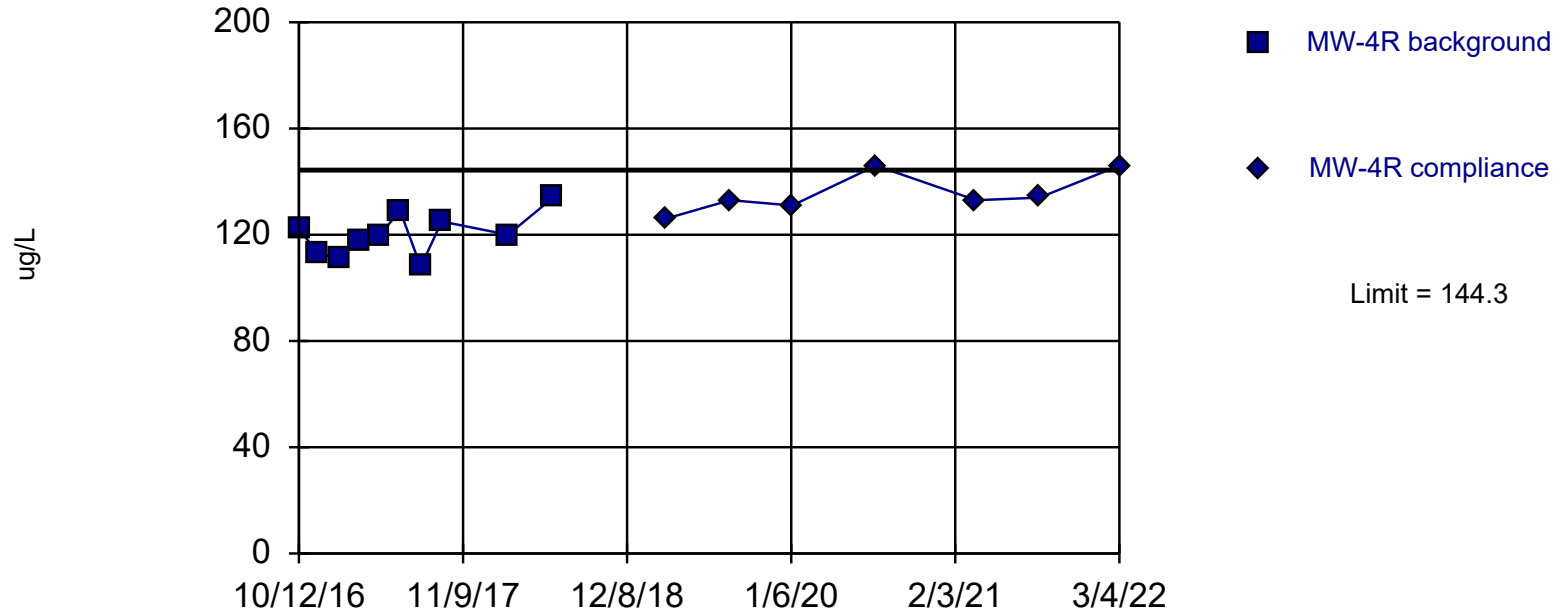
Background Data Summary: Mean=168.6, Std. Dev.=9.64, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9508, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Barium [total] Analysis Run 4/25/2022 4:08 PM View: FDU Combined

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

Exceeds Limit

Prediction Limit Intrawell Parametric



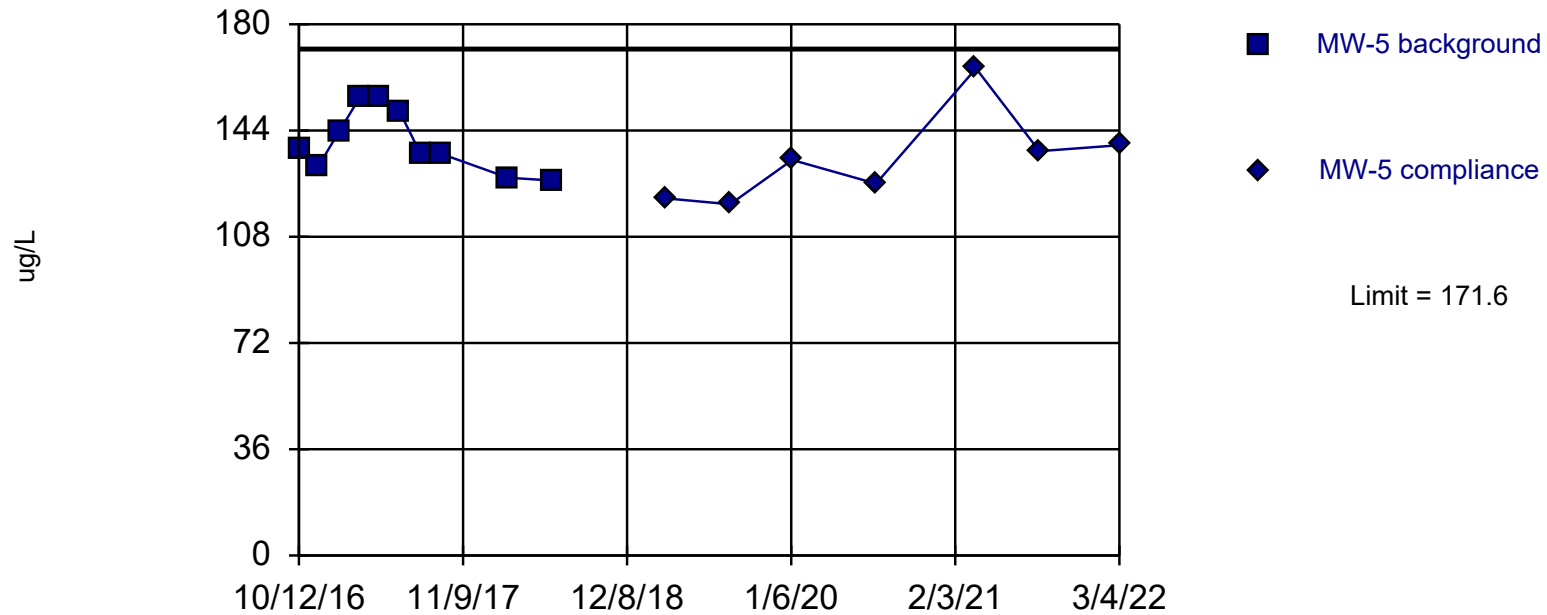
Background Data Summary: Mean=120, Std. Dev.=8.055, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9784, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Barium [total] Analysis Run 4/25/2022 4:08 PM View: FDU Combined

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

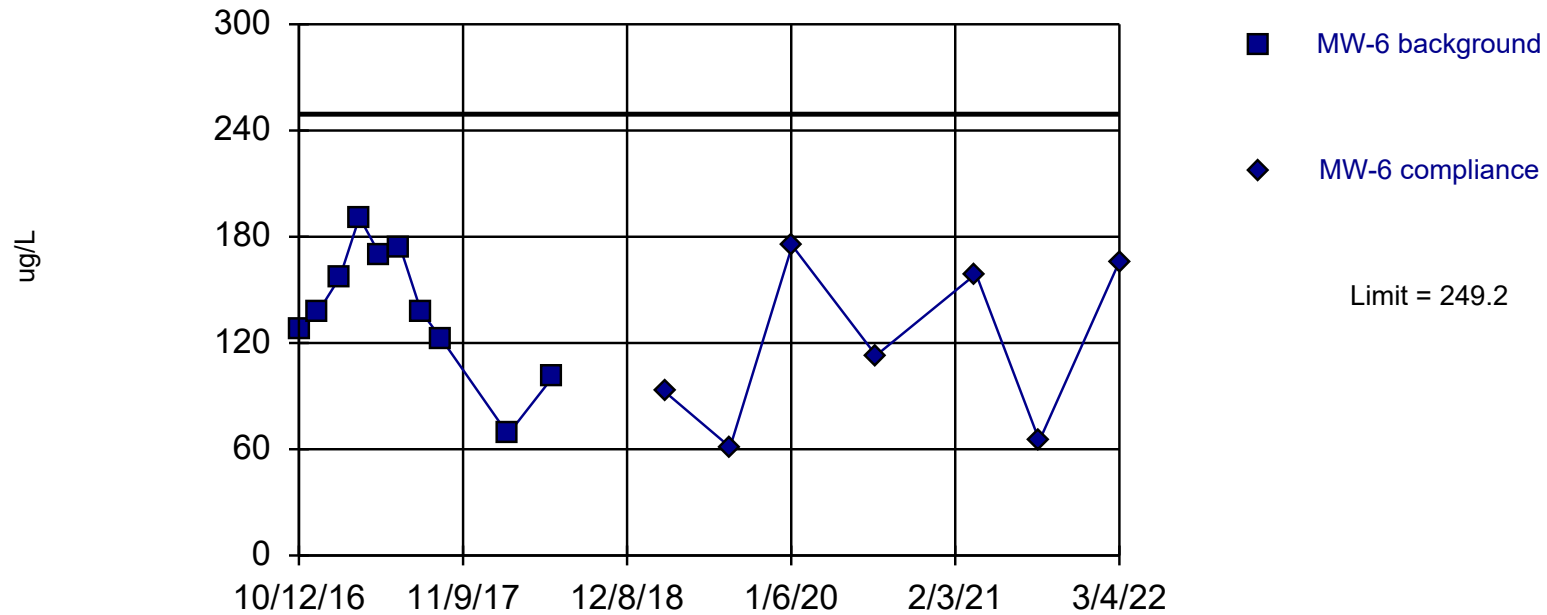
Within Limit

Prediction Limit Intrawell Parametric



Within Limit

Prediction Limit Intrawell Parametric



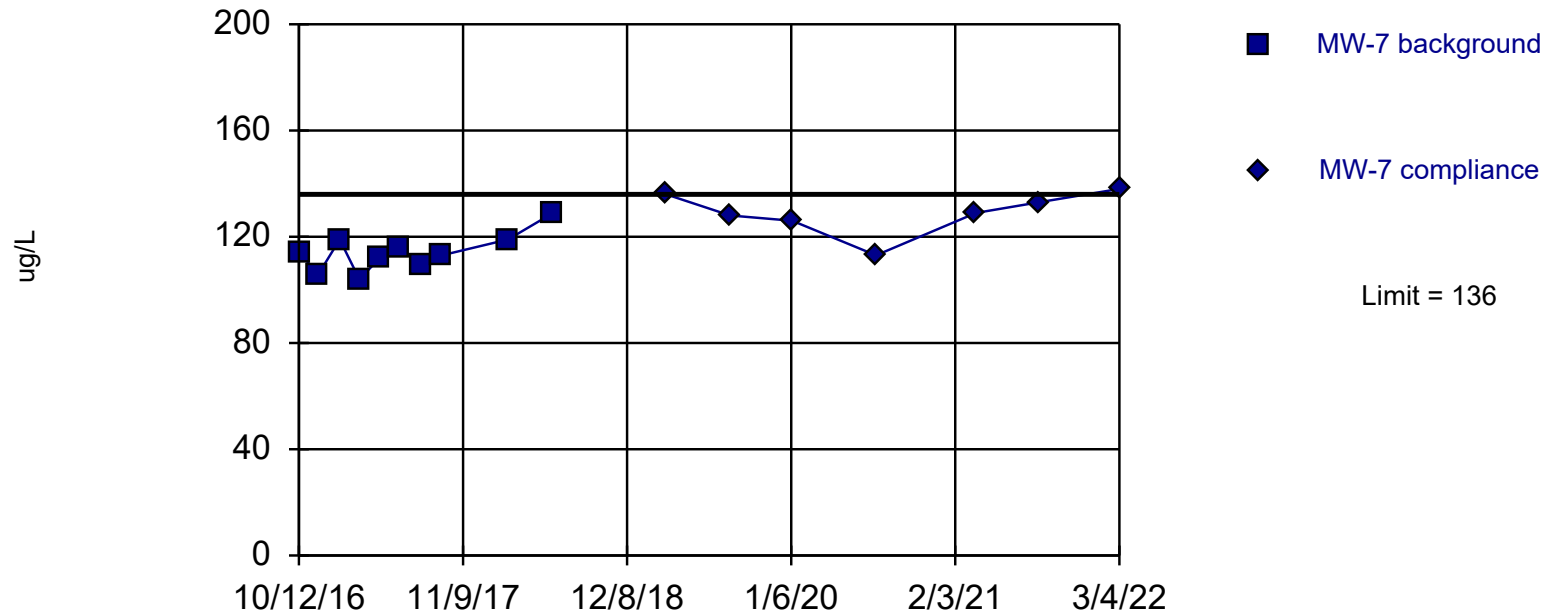
Background Data Summary: Mean=138.7, Std. Dev.=36.6, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9715, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Barium [total] Analysis Run 4/25/2022 4:09 PM View: FDU Combined

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

Exceeds Limit

Prediction Limit Intrawell Parametric



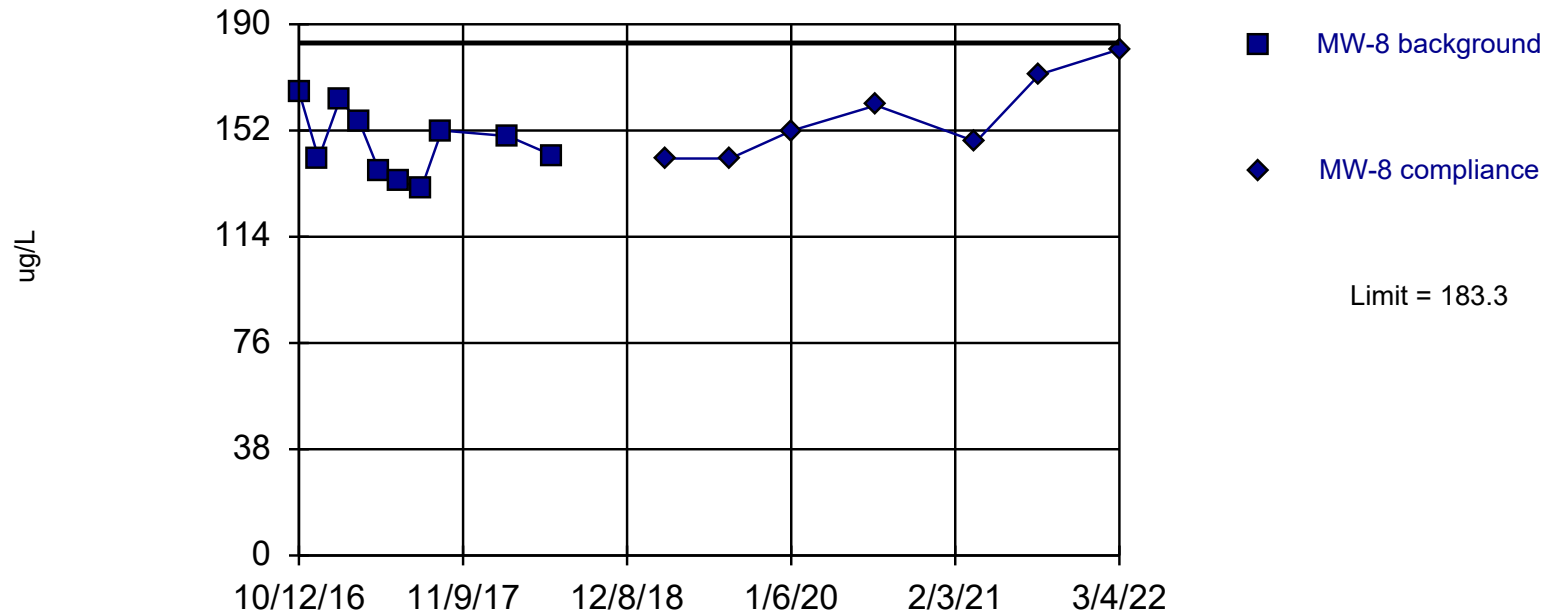
Background Data Summary: Mean=114.1, Std. Dev.=7.249, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.959, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Barium [total] Analysis Run 4/25/2022 4:09 PM View: FDU Combined

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

Within Limit

Prediction Limit Intrawell Parametric



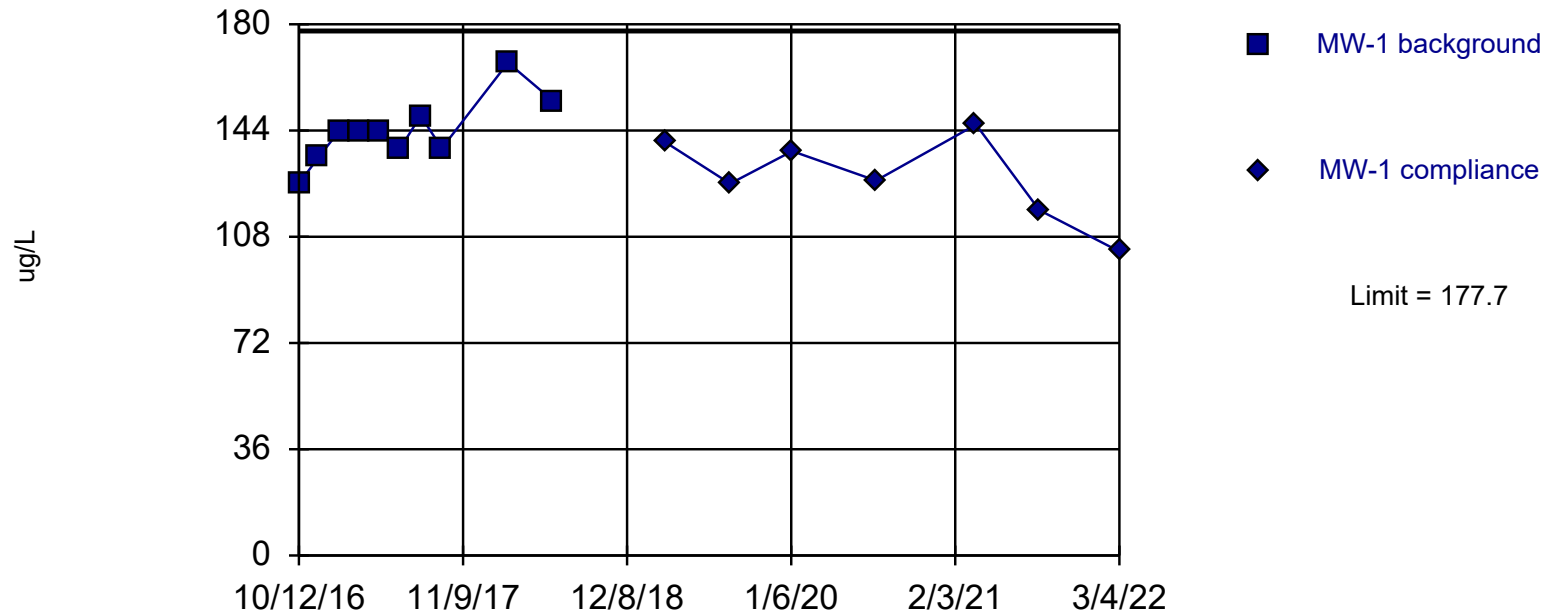
Background Data Summary: Mean=147.3, Std. Dev.=11.93, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9563, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Barium [total] Analysis Run 4/25/2022 4:09 PM View: FDU Combined

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

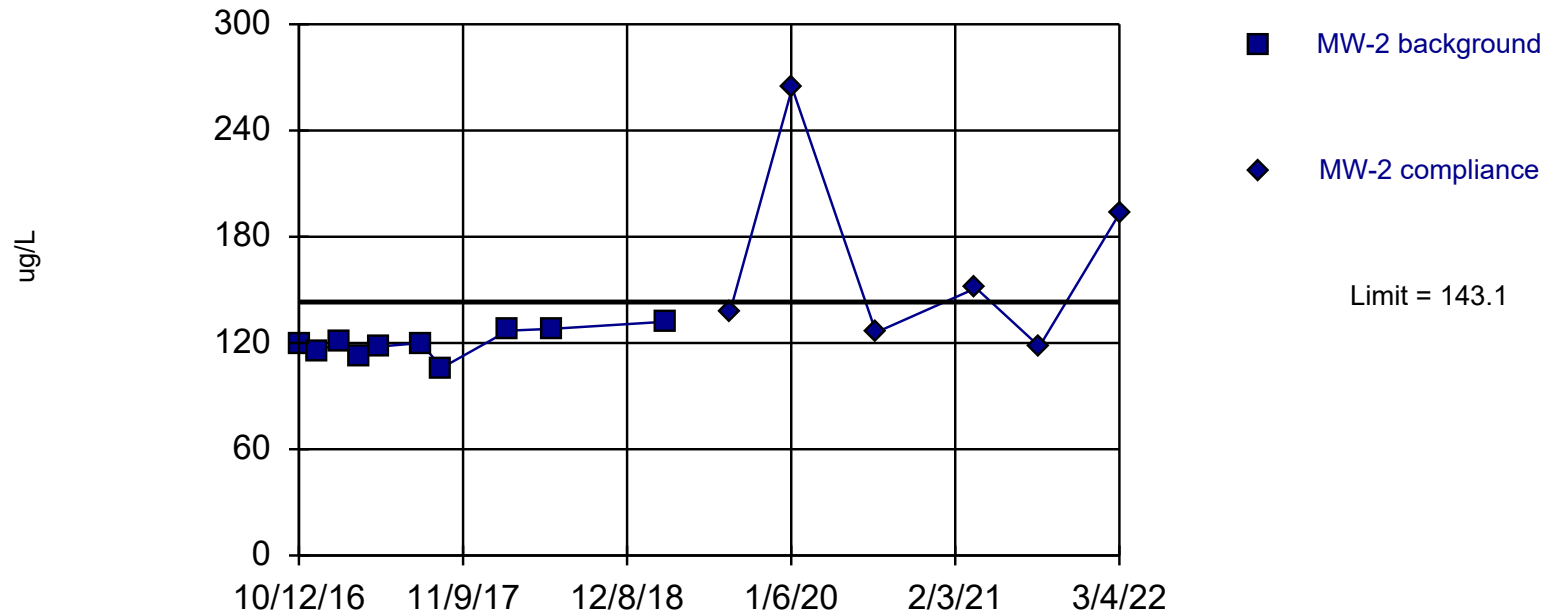
Within Limit

Prediction Limit Intrawell Parametric



Exceeds Limit

Prediction Limit Intrawell Parametric

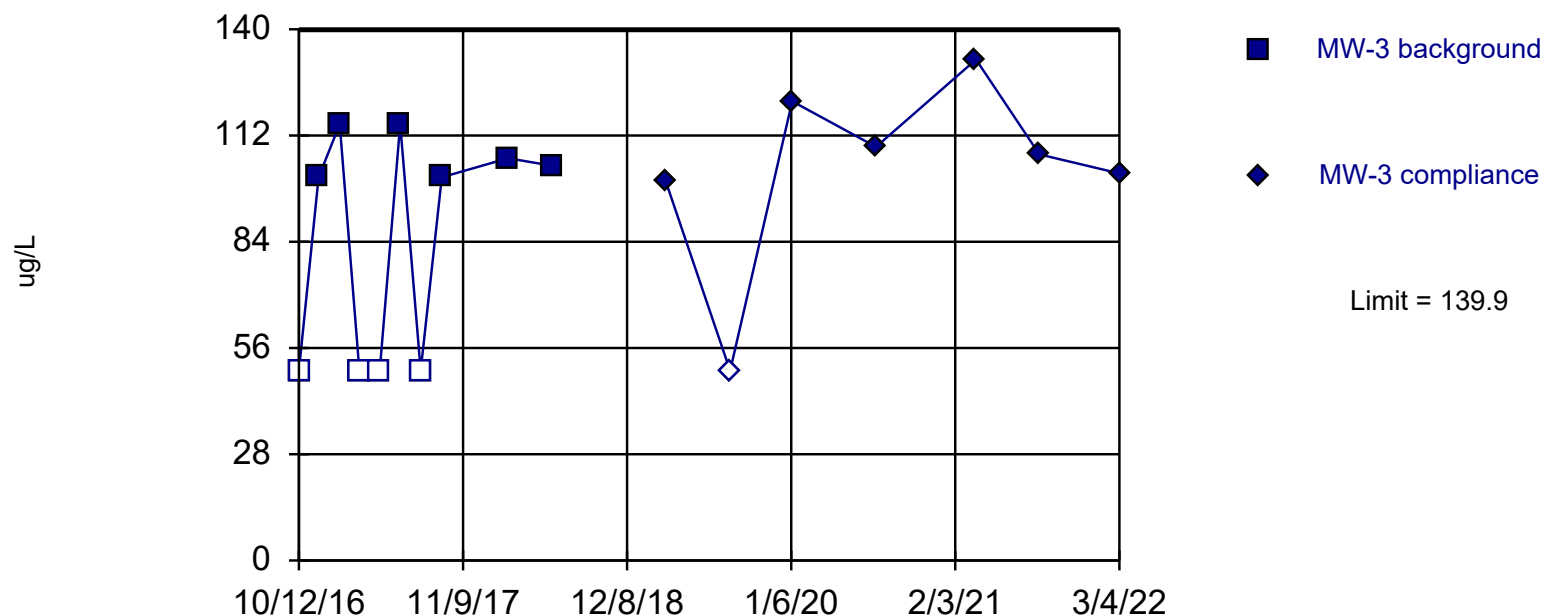


Background Data Summary: Mean=119.9, Std. Dev.=7.695, n=10. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9784, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Within Limit

Prediction Limit

Intrawell Parametric



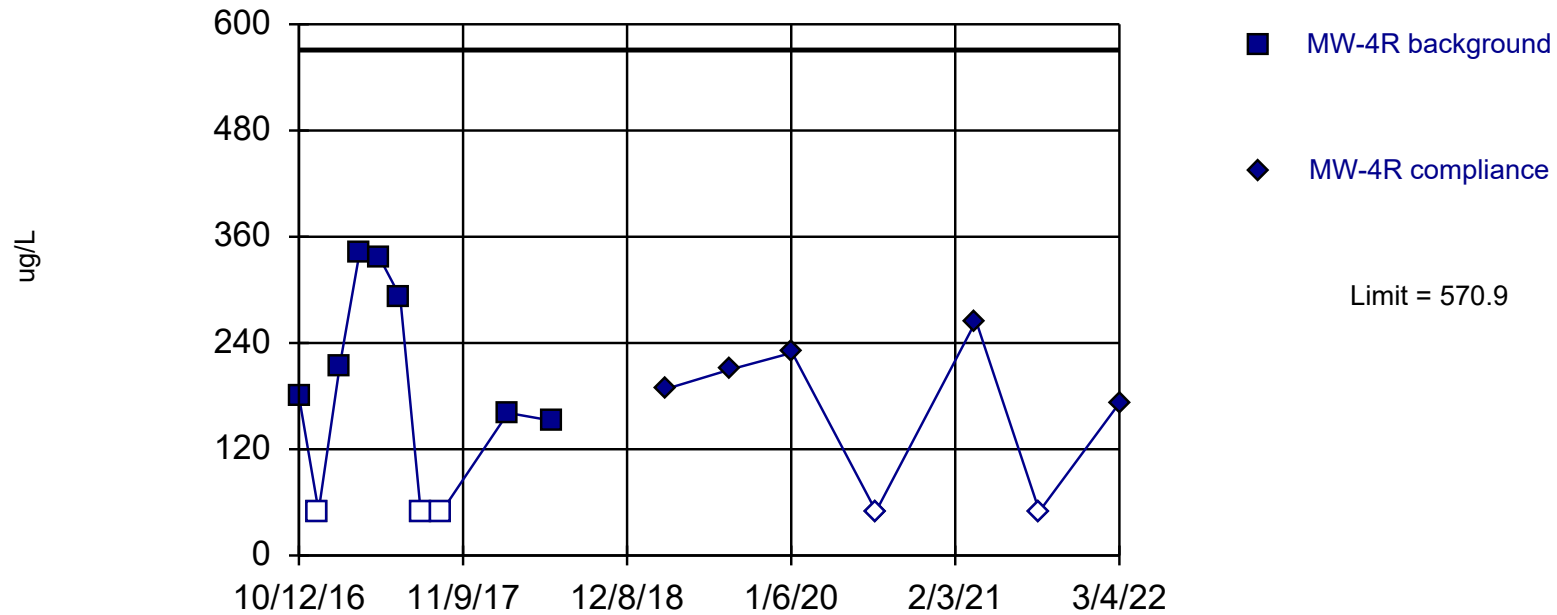
Background Data Summary (based on cube transformation) (after Aitchison's Adjustment): Mean=741823, Std. Dev.=660806, n=10, 40% NDs. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8047, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Boron Analysis Run 4/25/2022 4:09 PM View: FDU Combined

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

Within Limit

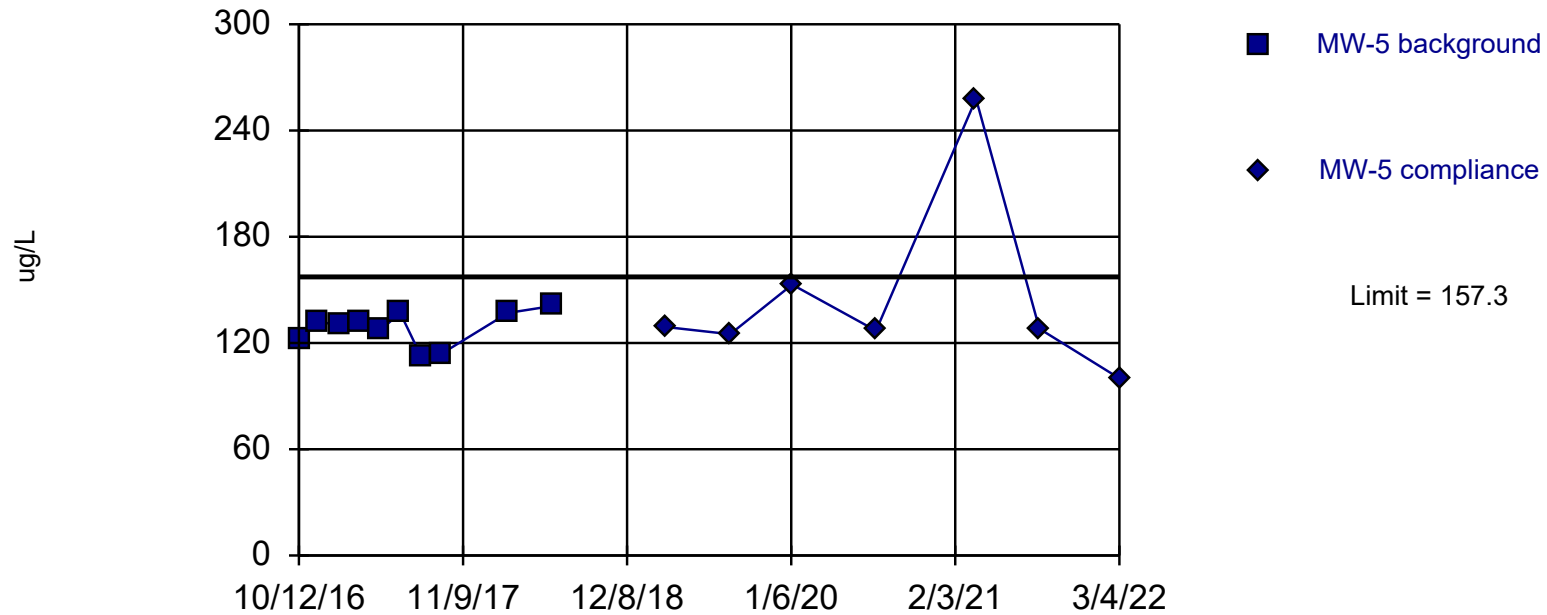
Prediction Limit Intrawell Parametric



Background Data Summary (after Aitchison's Adjustment): Mean=167.6, Std. Dev.=133.7, n=10, 30% NDs. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8919, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Within Limit

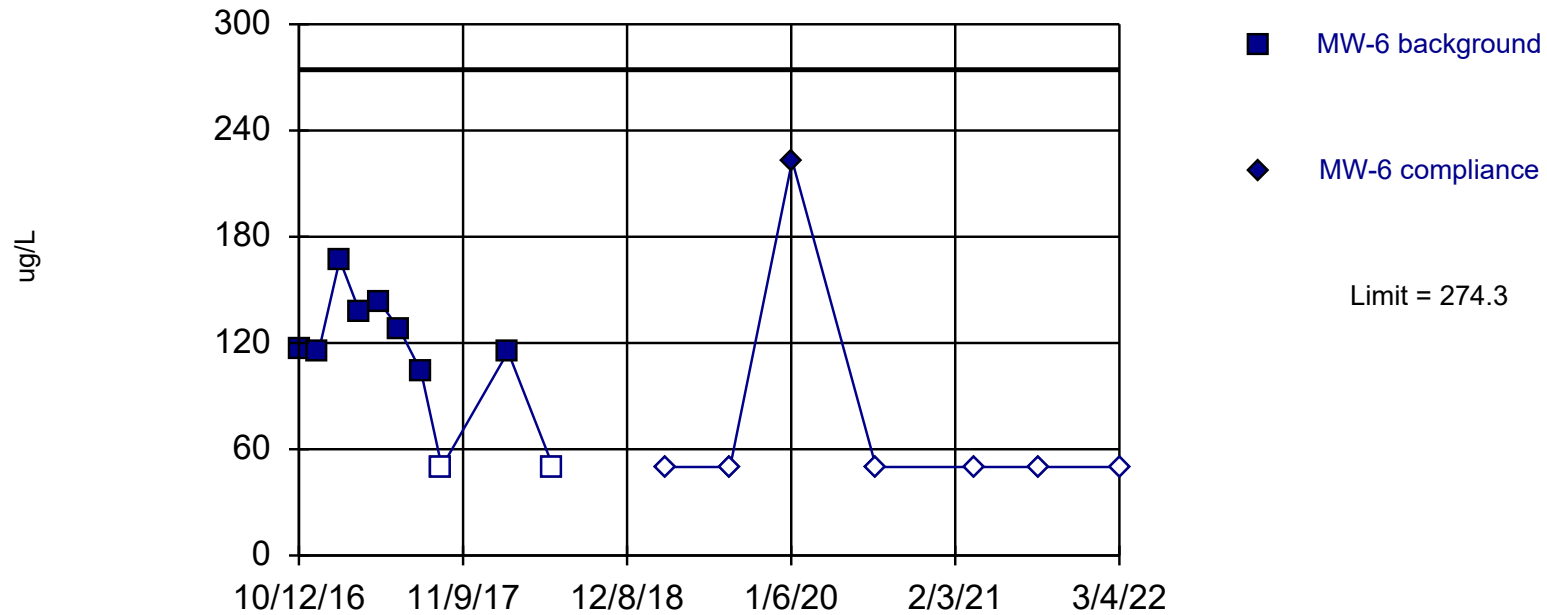
Prediction Limit Intrawell Parametric



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 = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Within Limit

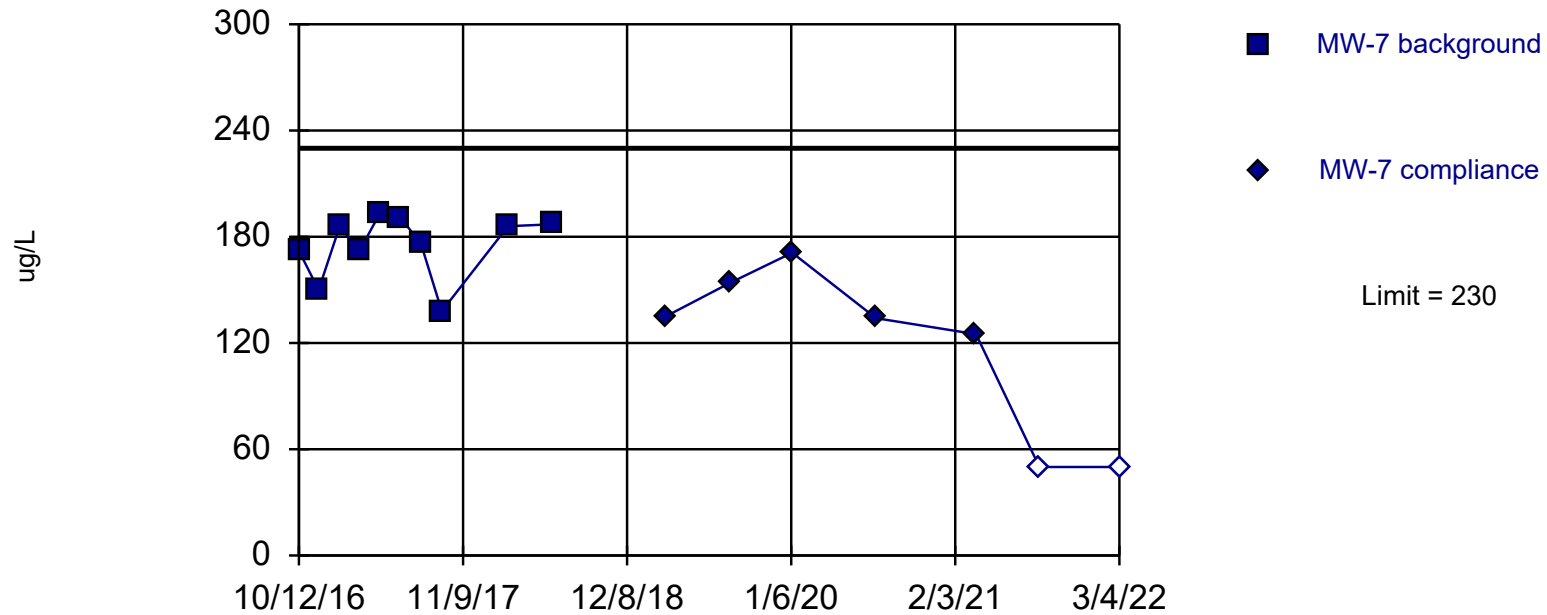
Prediction Limit Intrawell Parametric



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 = 0.8959, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Within Limit

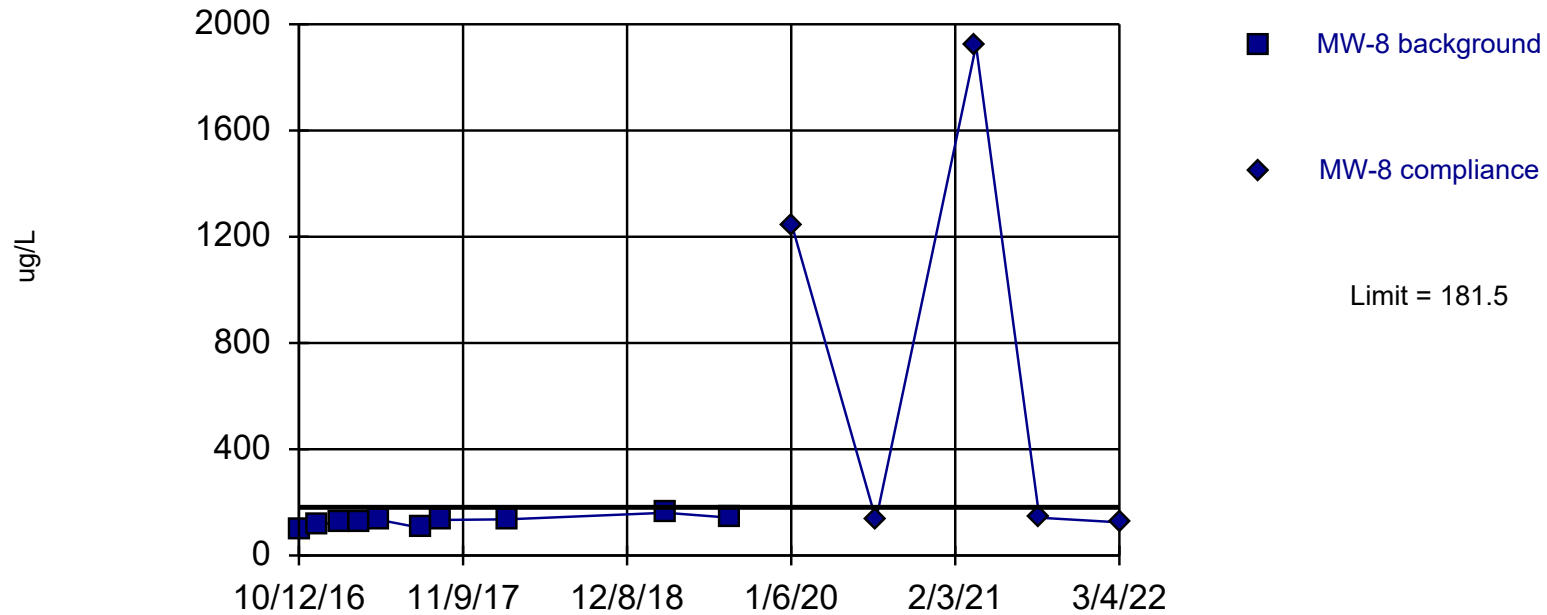
Prediction Limit Intrawell Parametric



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 = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Within Limit

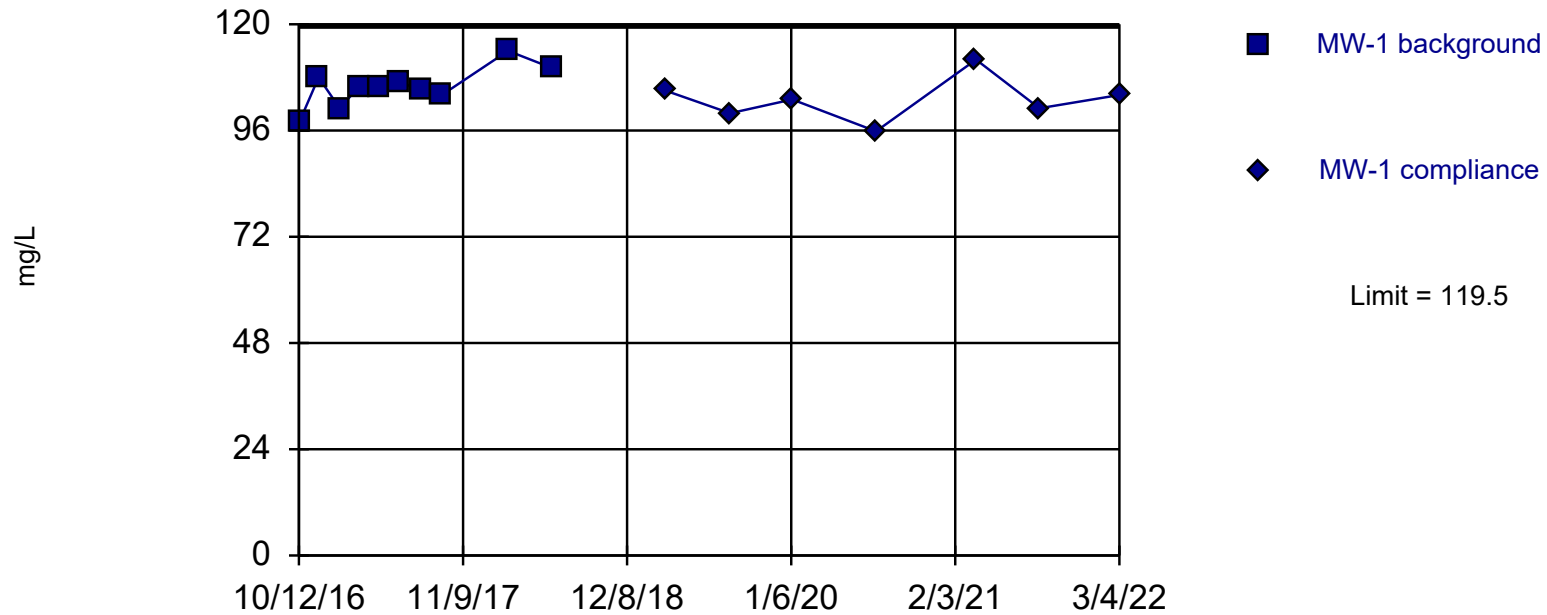
Prediction Limit Intrawell Parametric



Background Data Summary: Mean=128.4, Std. Dev.=17.6, n=10. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9527, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

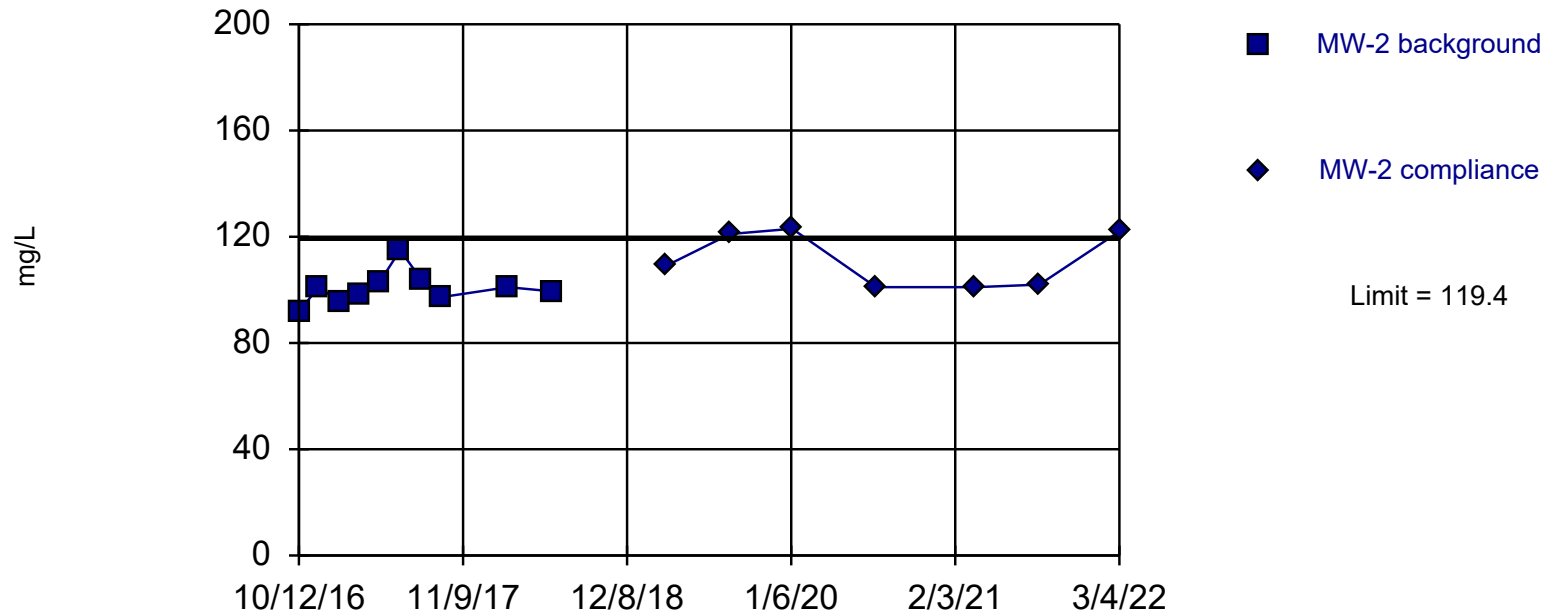
Within Limit

Prediction Limit Intrawell Parametric



Exceeds Limit

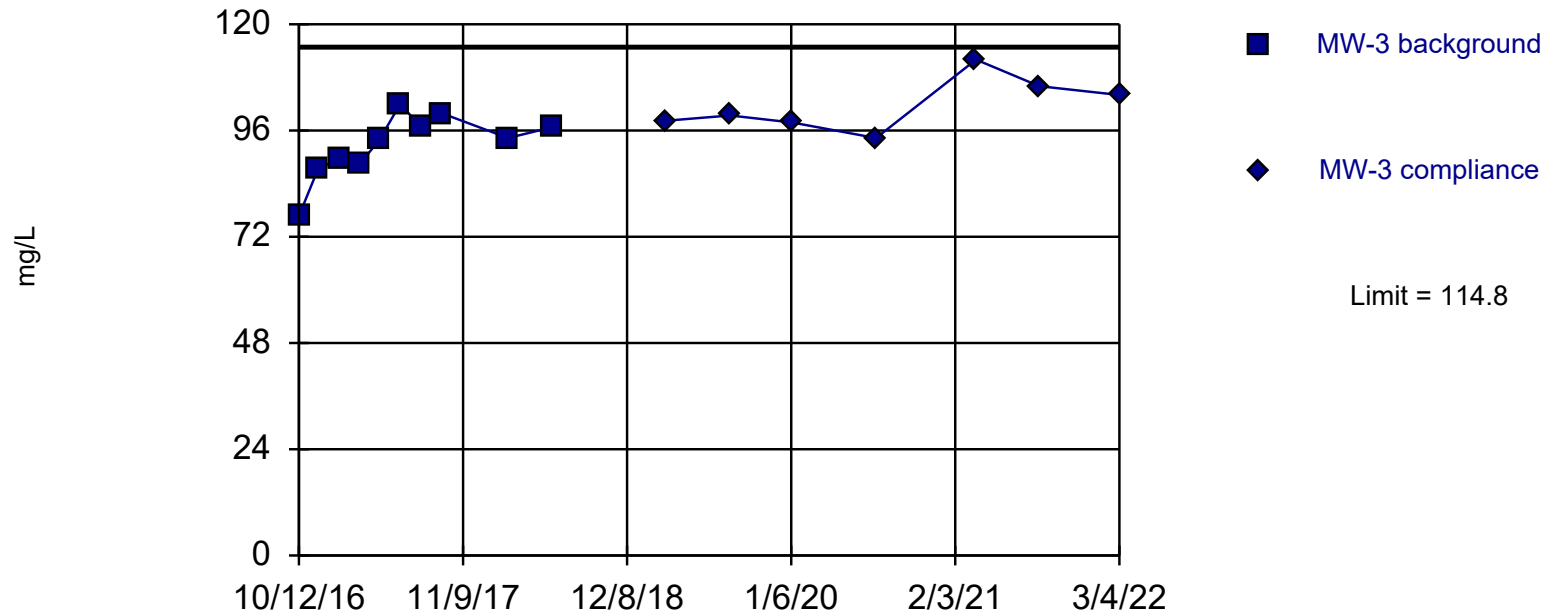
Prediction Limit Intrawell Parametric



Background Data Summary: Mean=100.6, Std. Dev.=6.214, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9079, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

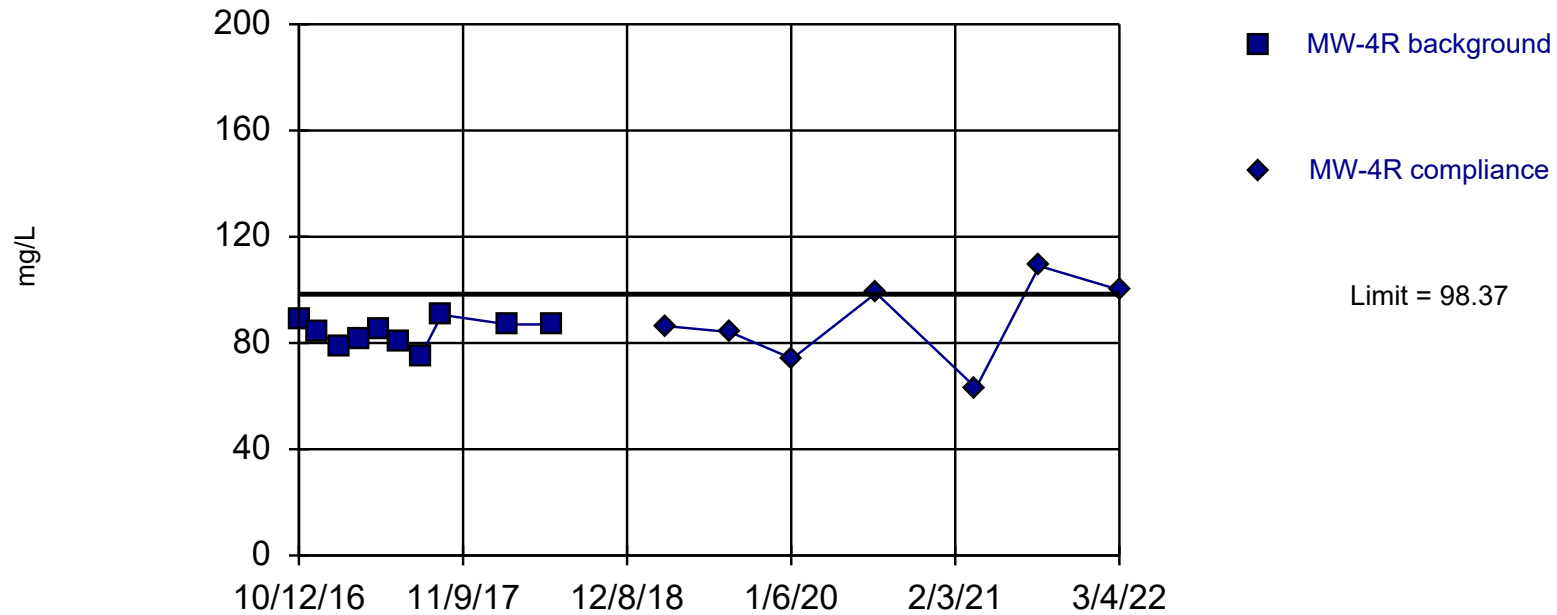
Within Limit

Prediction Limit Intrawell Parametric



Exceeds Limit

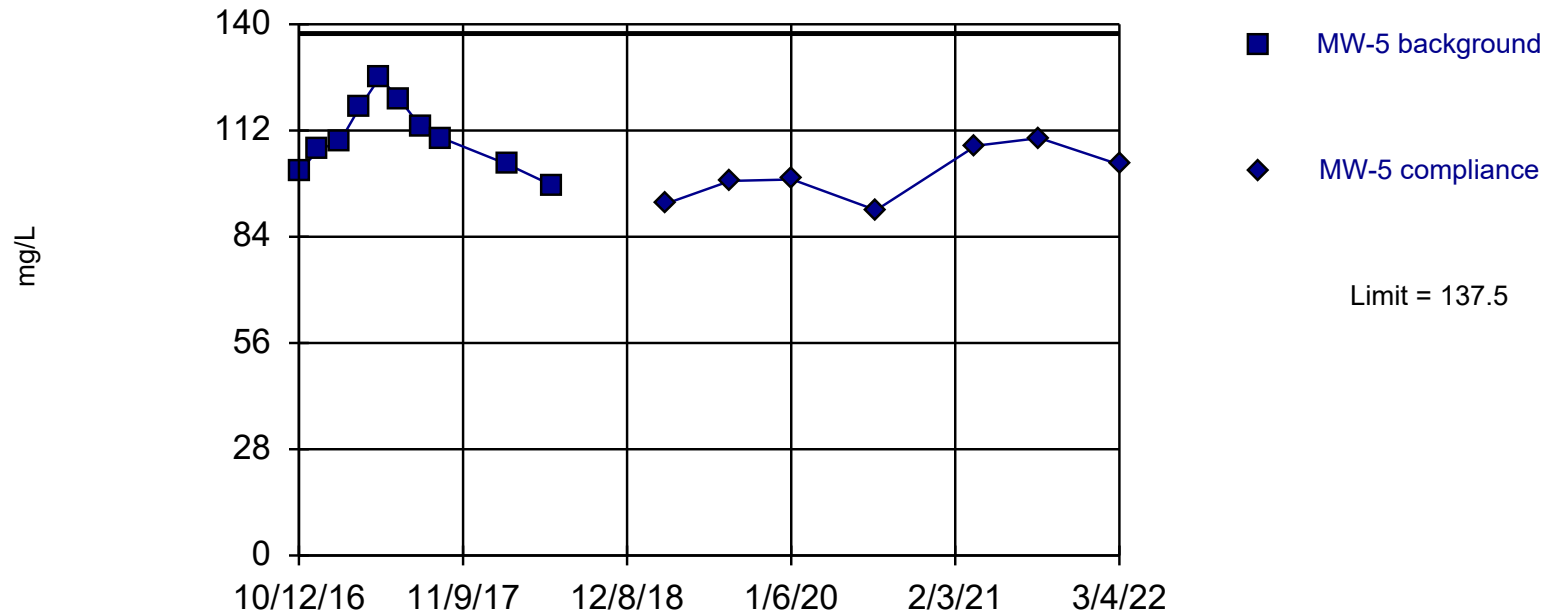
Prediction Limit Intrawell Parametric



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 = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Within Limit

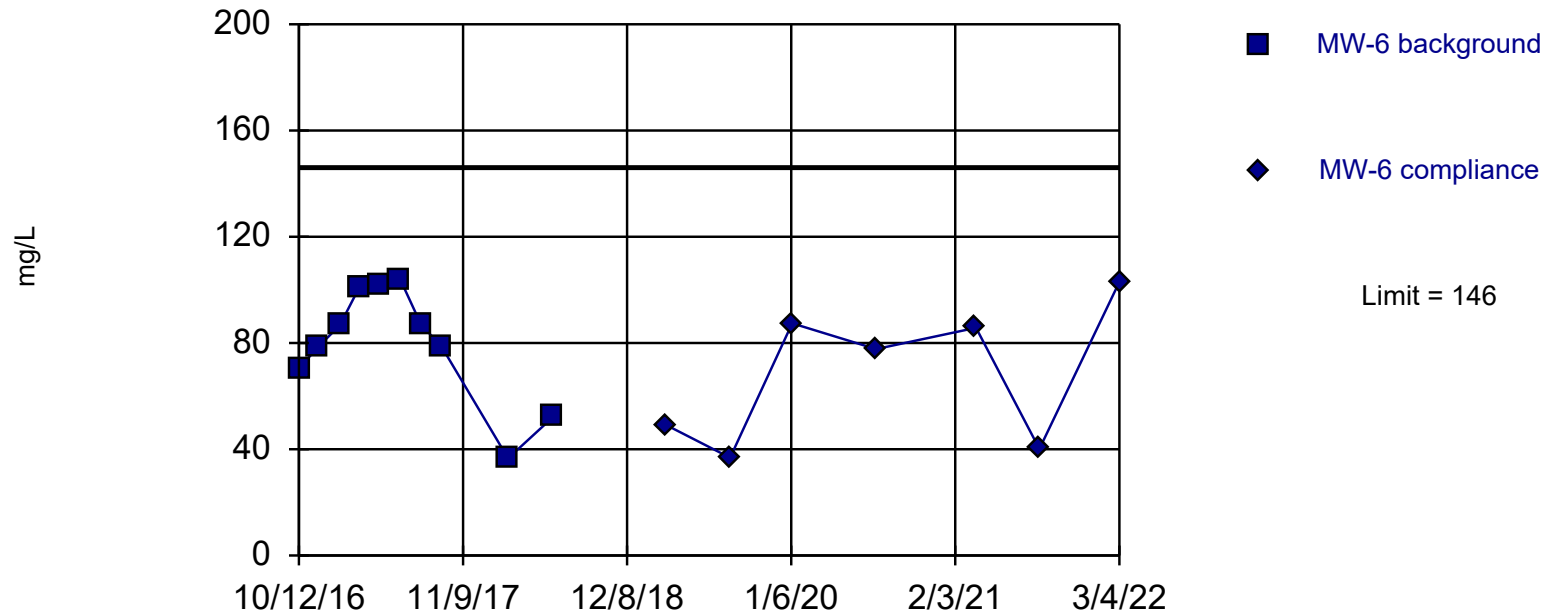
Prediction Limit Intrawell Parametric



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 = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Within Limit

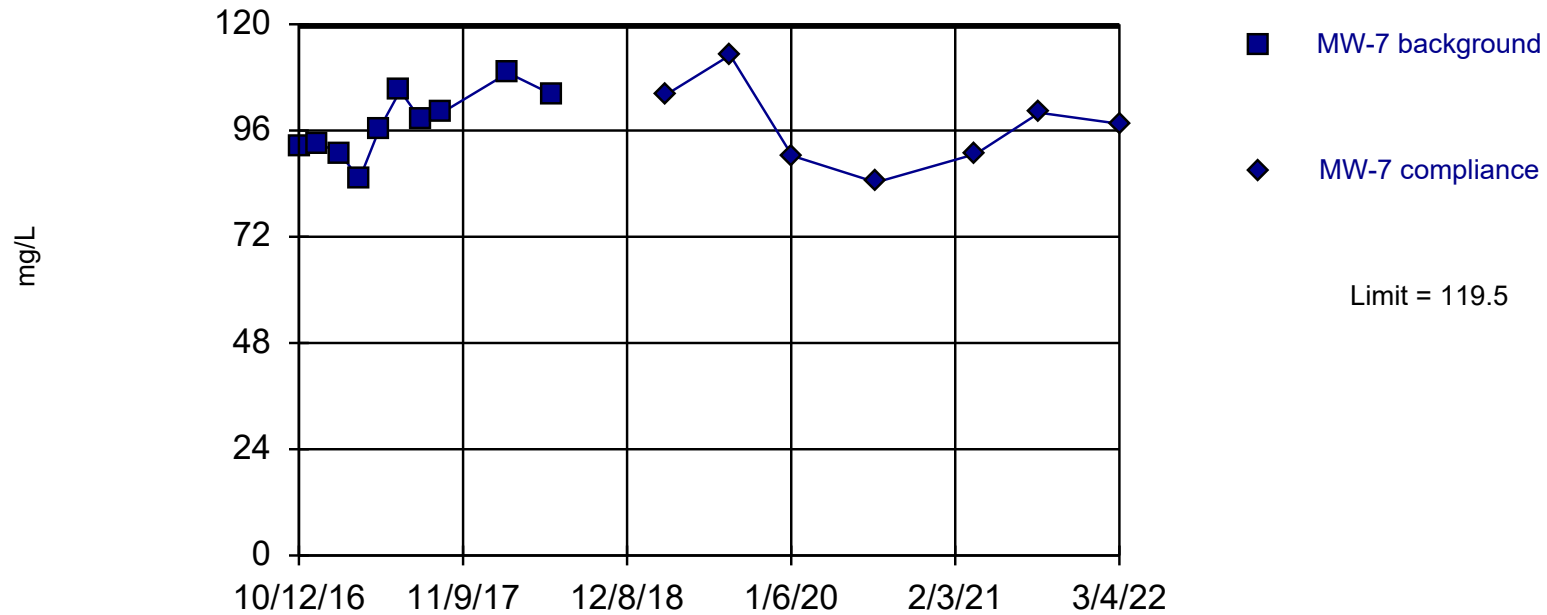
Prediction Limit Intrawell Parametric



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 = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

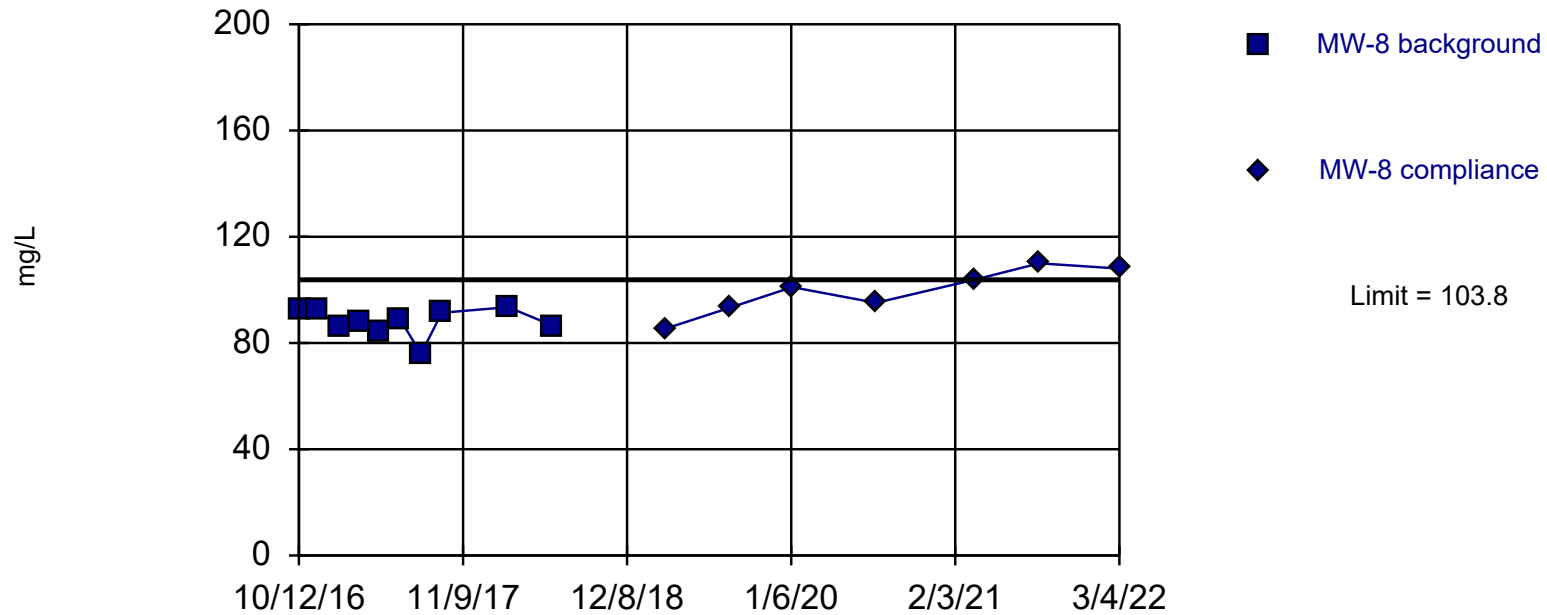
Within Limit

Prediction Limit Intrawell Parametric



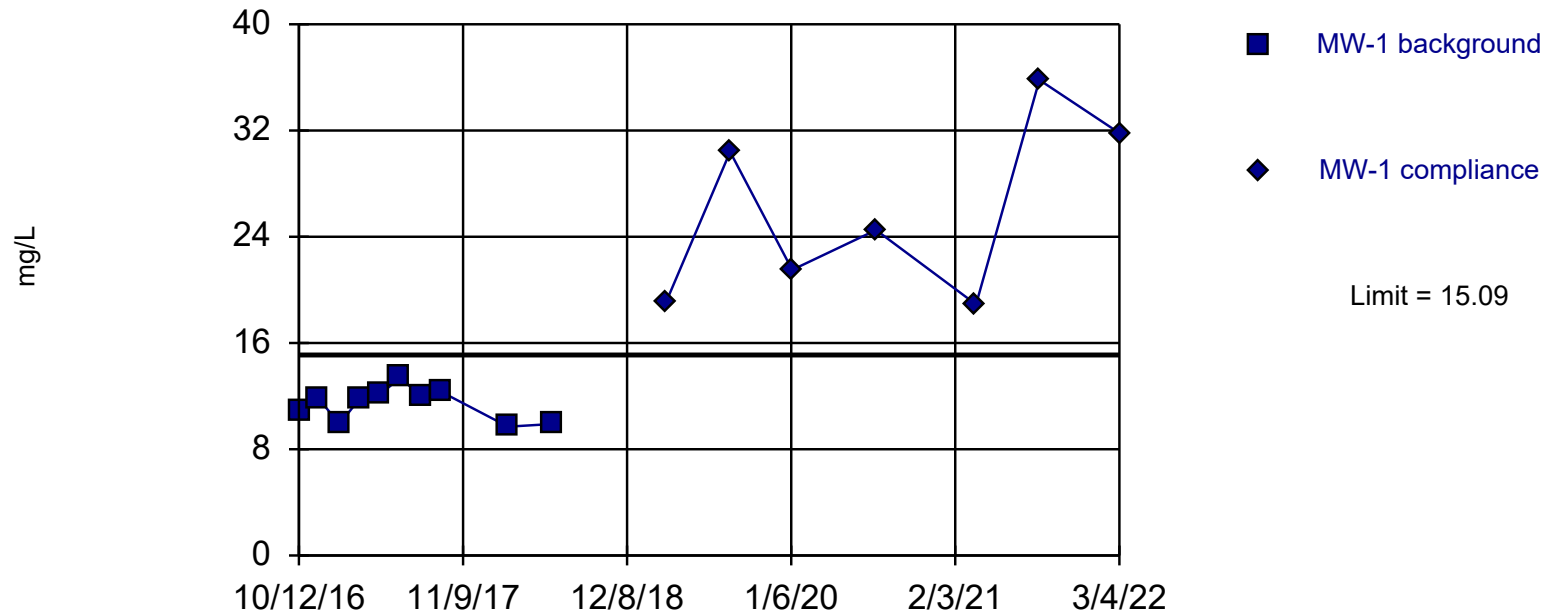
Exceeds Limit

Prediction Limit Intrawell Parametric



Exceeds Limit

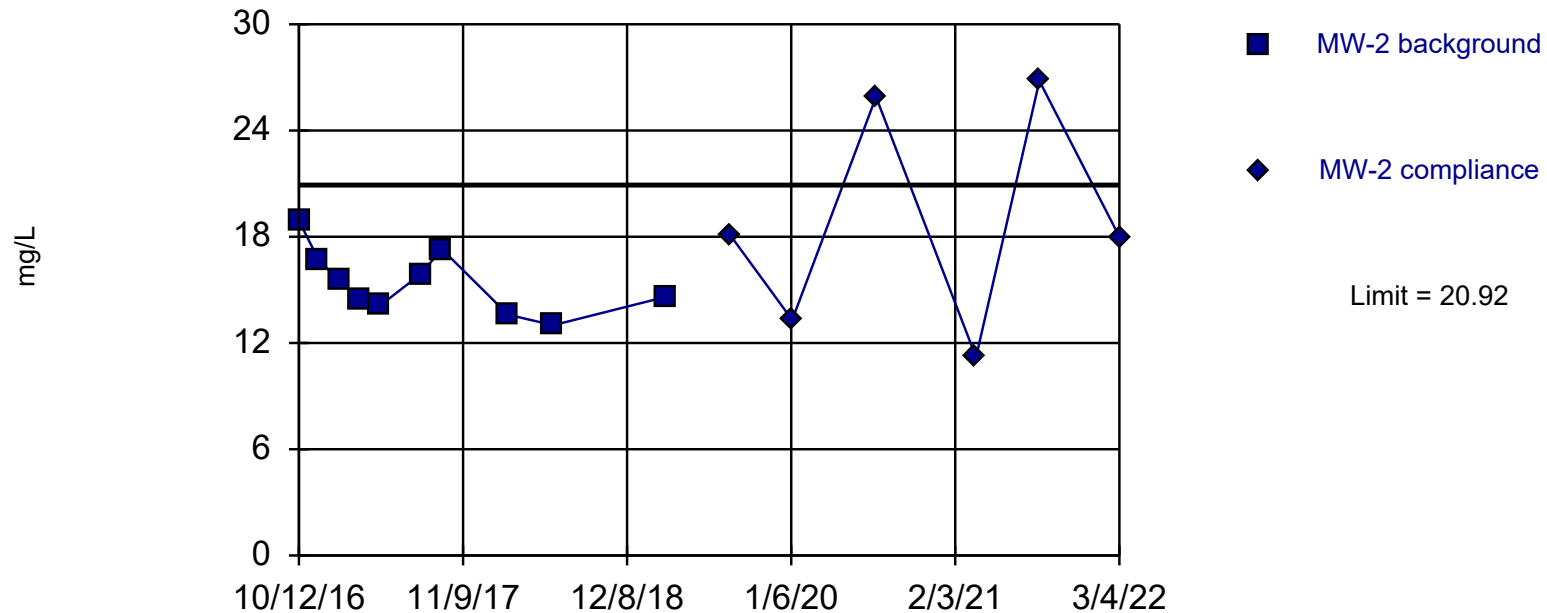
Prediction Limit Intrawell Parametric



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 = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Within Limit

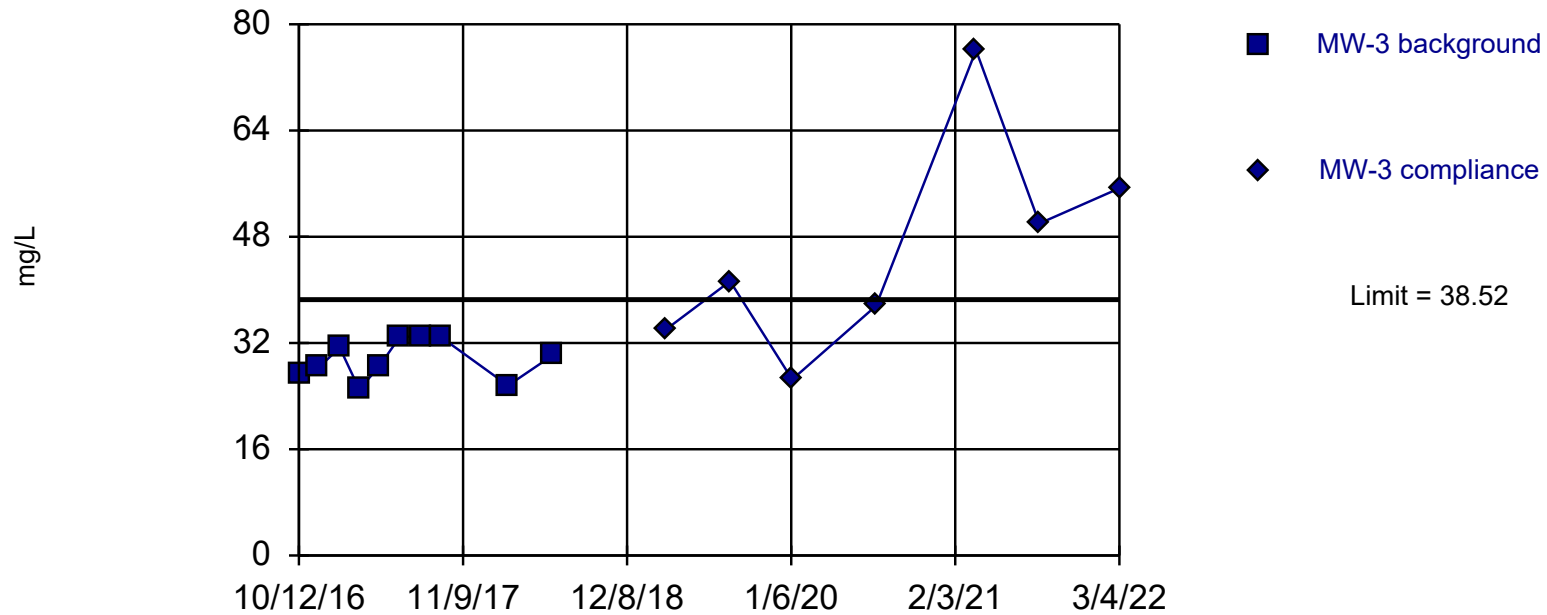
Prediction Limit Intrawell Parametric



Background Data Summary: Mean=15.4, Std. Dev.=1.83, n=10. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9603, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Exceeds Limit

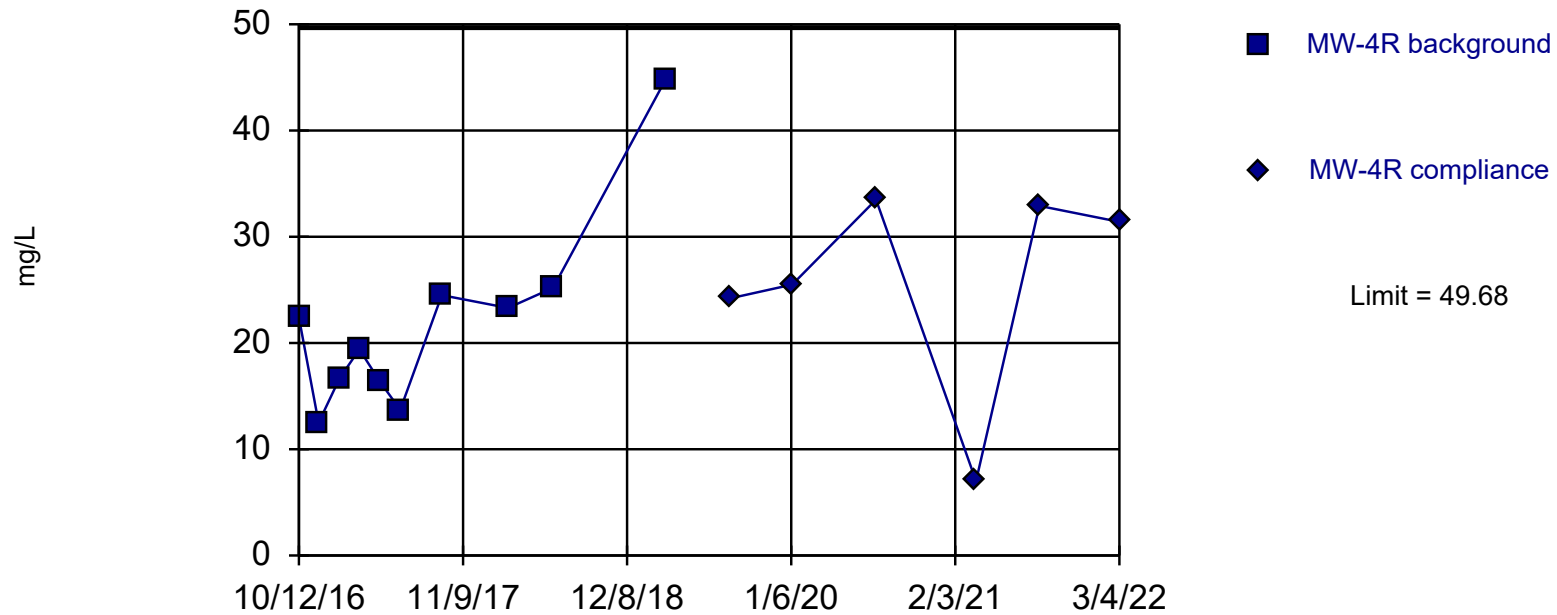
Prediction Limit Intrawell Parametric



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 = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Within Limit

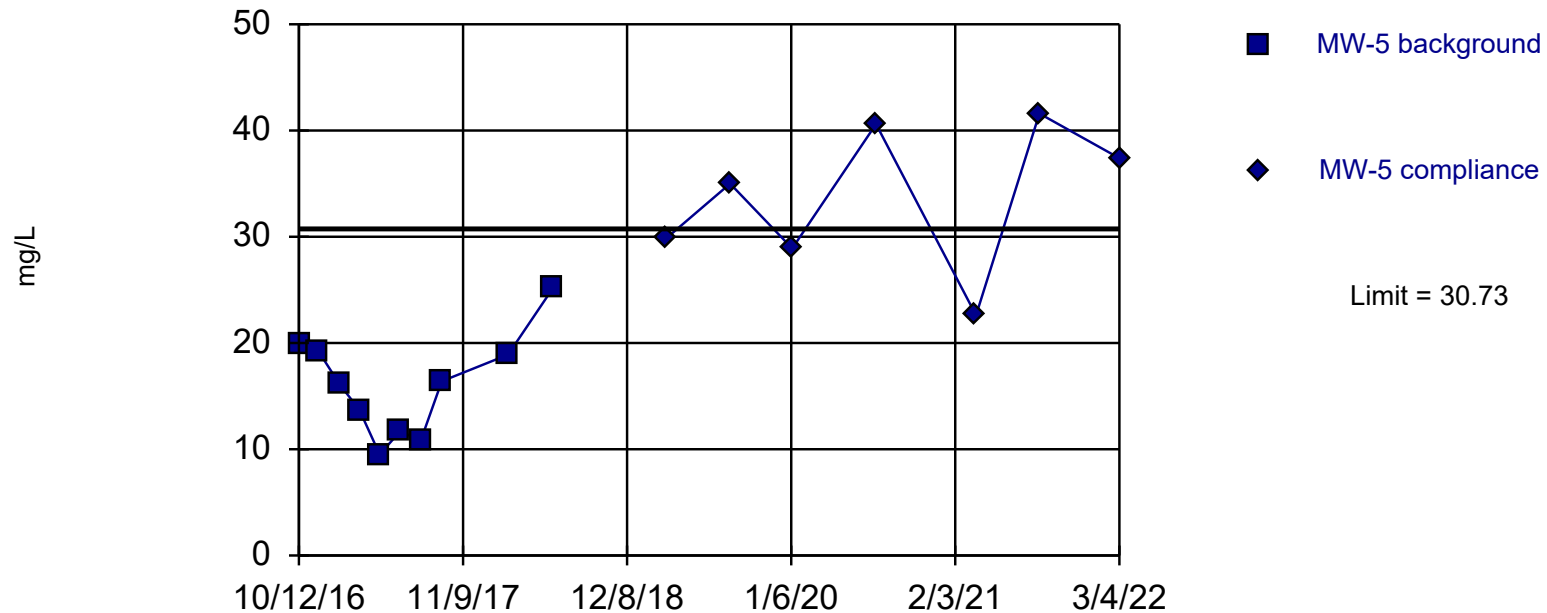
Prediction Limit Intrawell Parametric



Background Data Summary: Mean=21.89, Std. Dev.=9.21, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8176, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Exceeds Limit

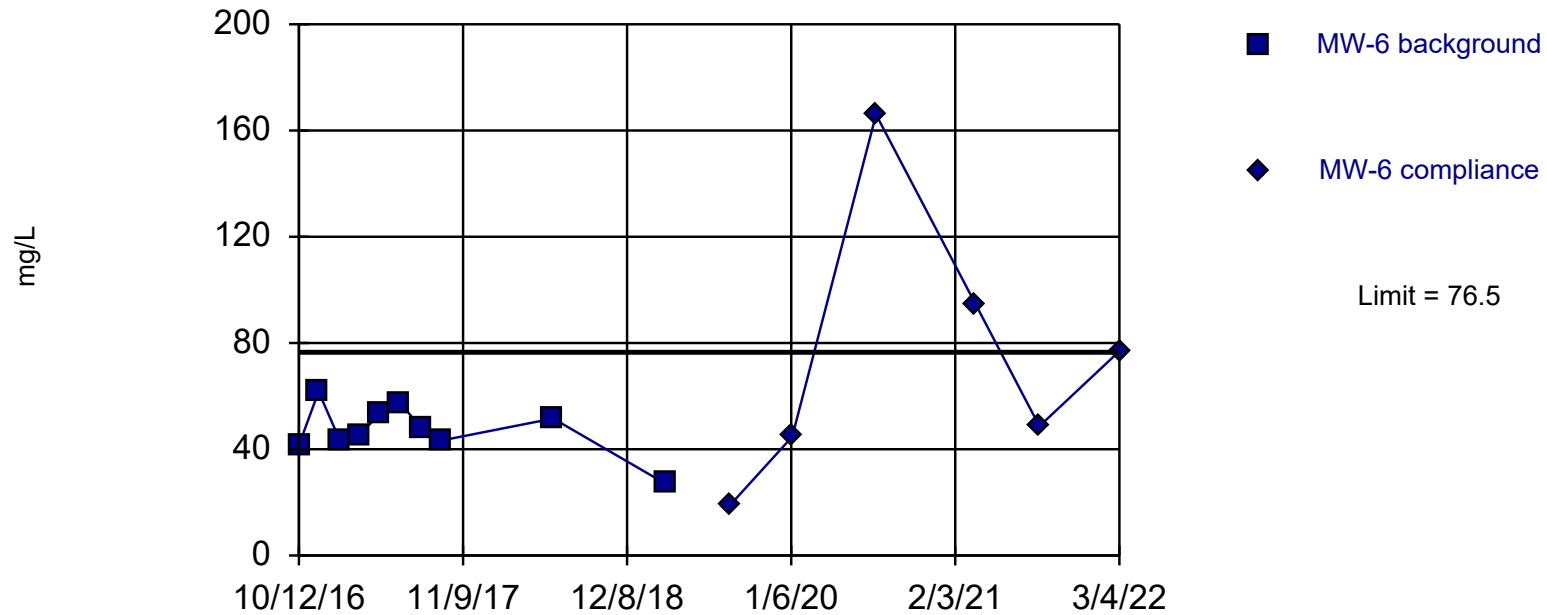
Prediction Limit Intrawell Parametric



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 = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Exceeds Limit

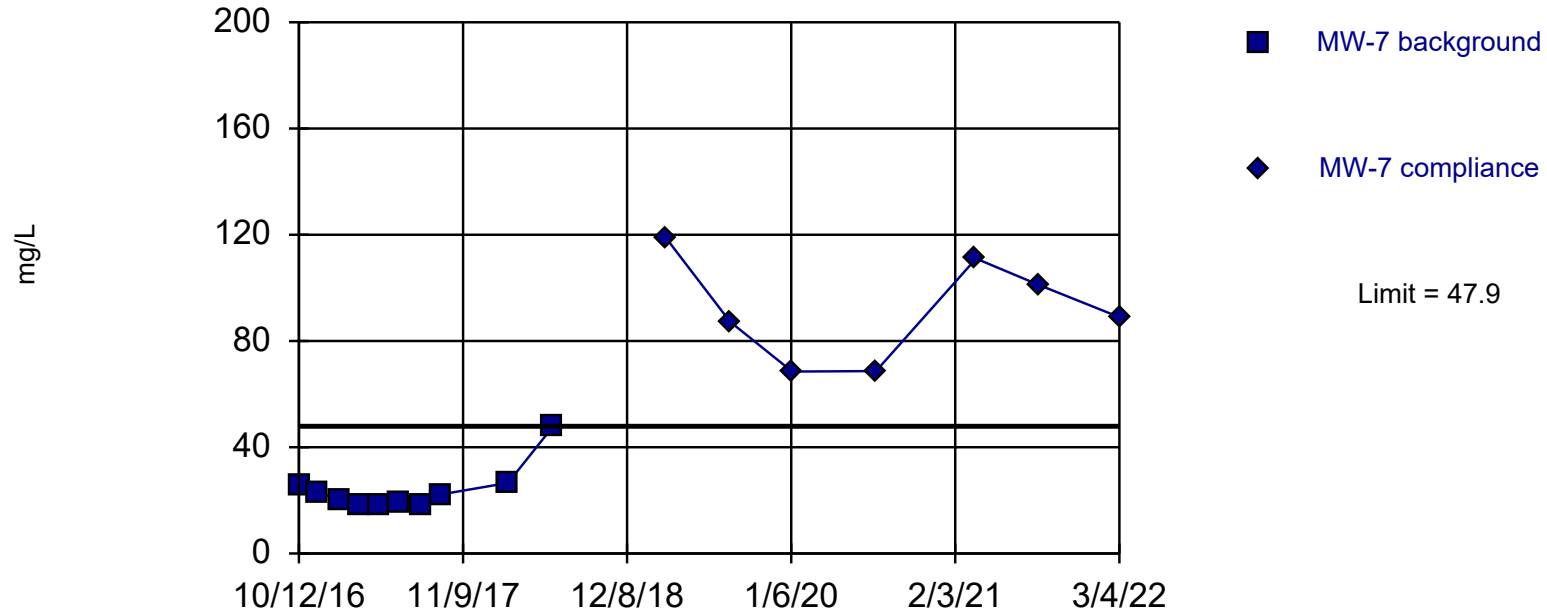
Prediction Limit Intrawell Parametric



Background Data Summary: Mean=47.29, Std. Dev.=9.679, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9535, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Exceeds Limit

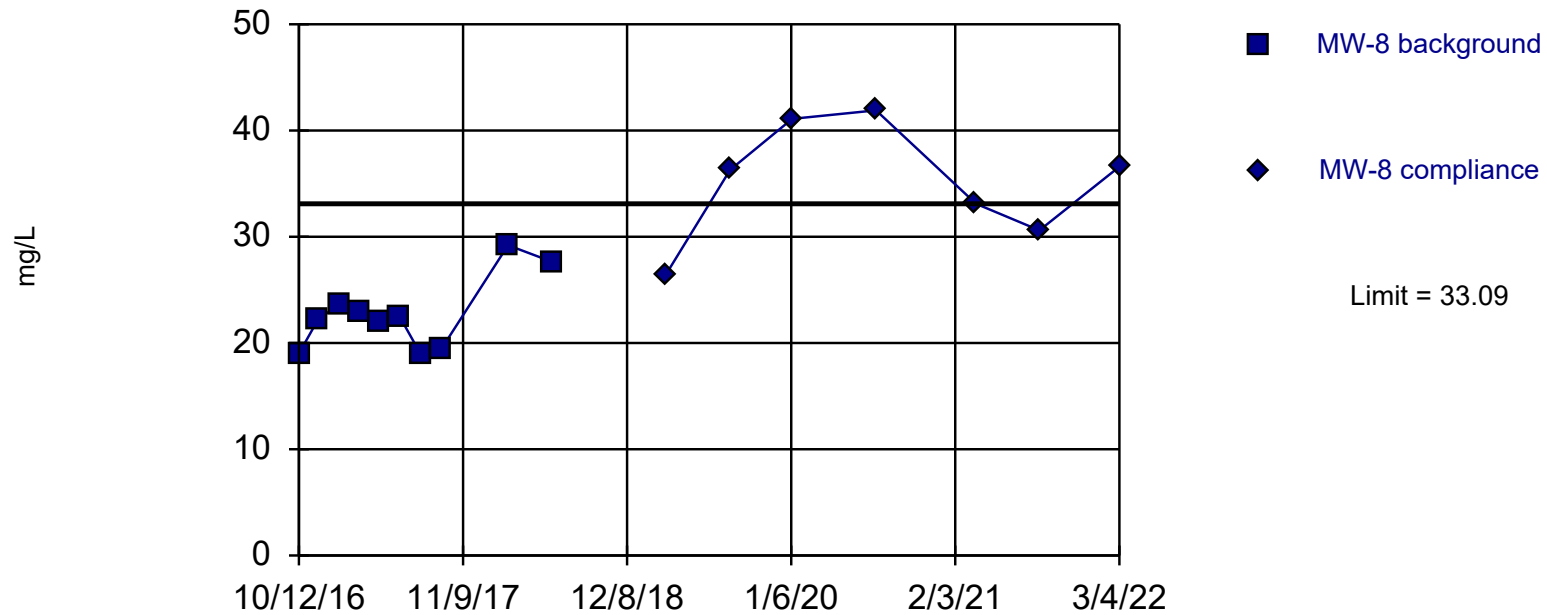
Prediction Limit Intrawell Non-parametric



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.

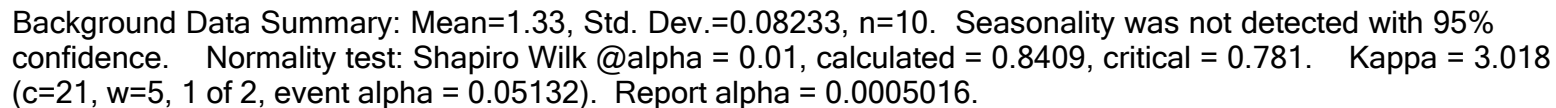
Exceeds Limit

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 = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

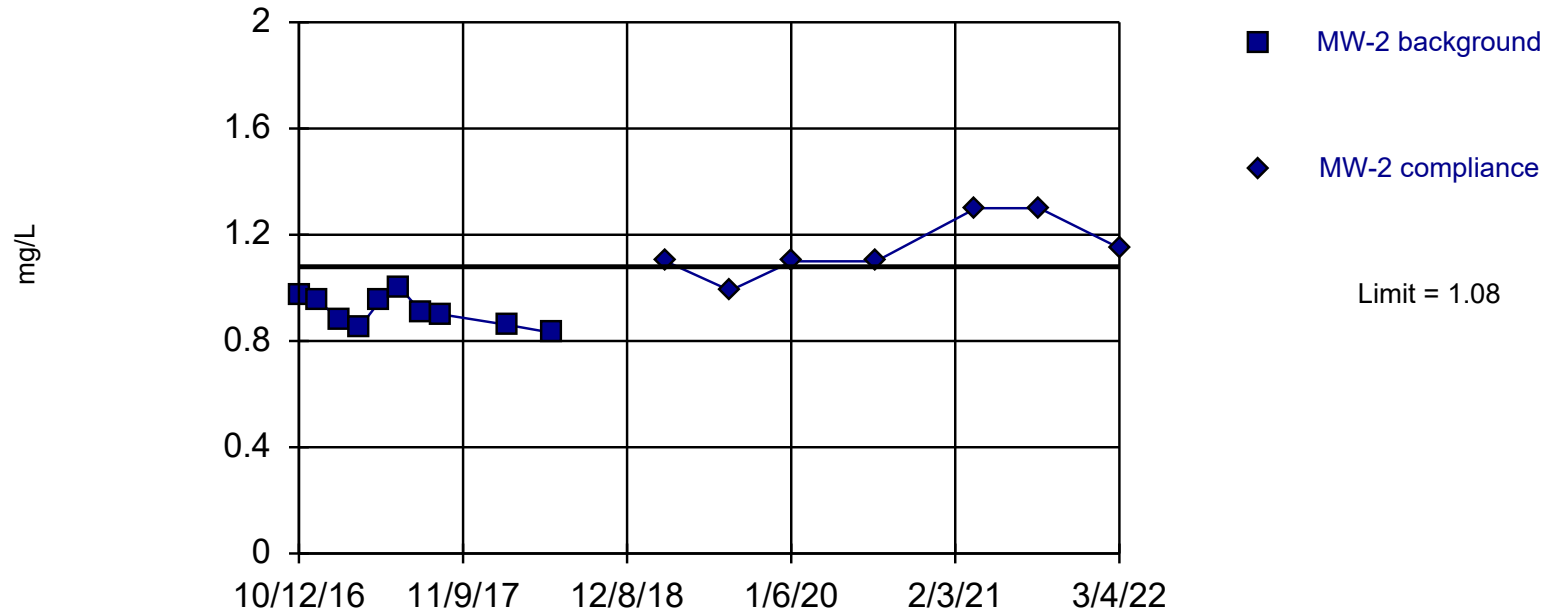
Intrawell Parametric



Constituent: Fluoride Analysis Run 4/25/2022 4:09 PM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Exceeds Limit

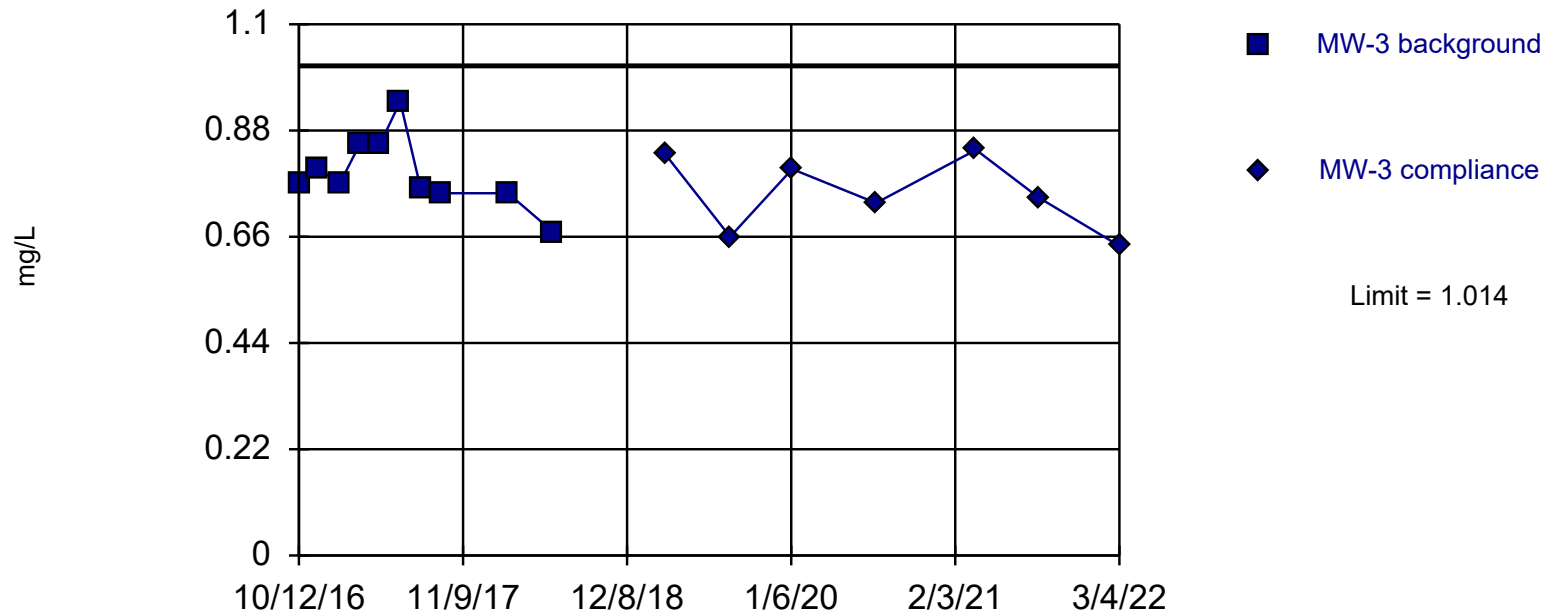
Prediction Limit Intrawell Parametric



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 = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Within Limit

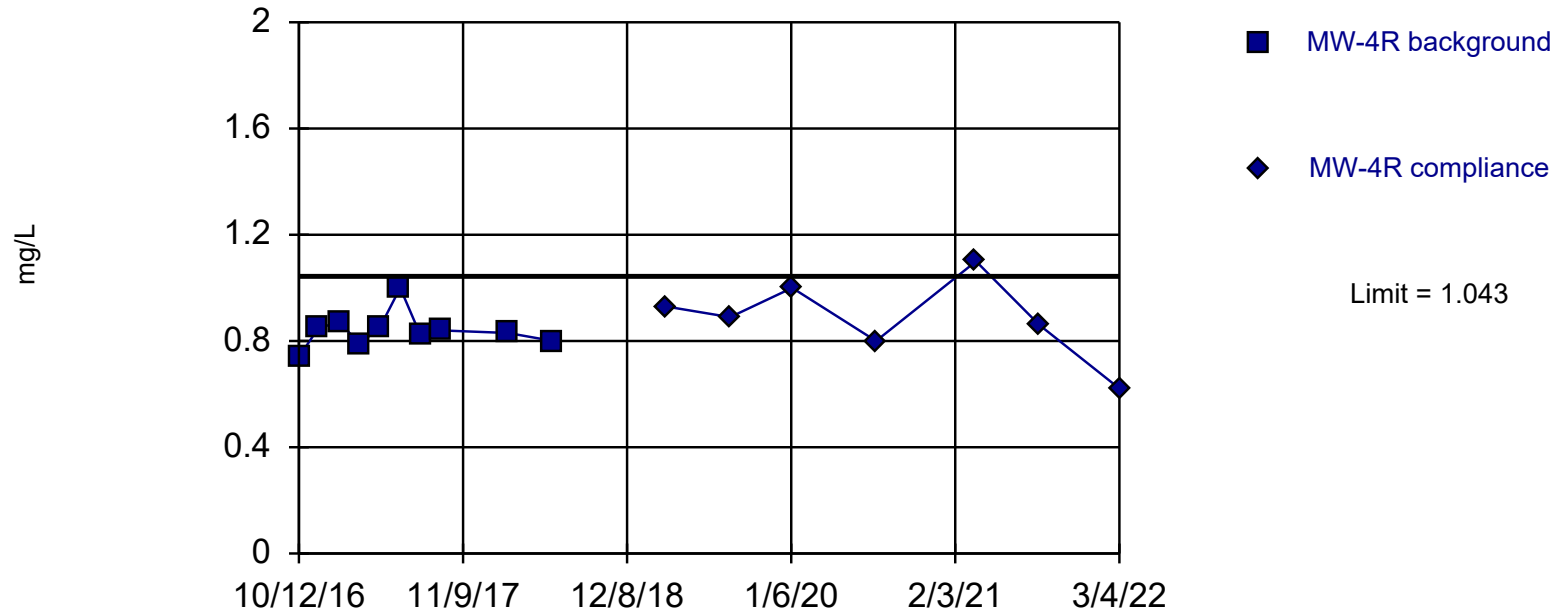
Prediction Limit Intrawell Parametric



Background Data Summary: Mean=0.791, Std. Dev.=0.07385, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9344, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

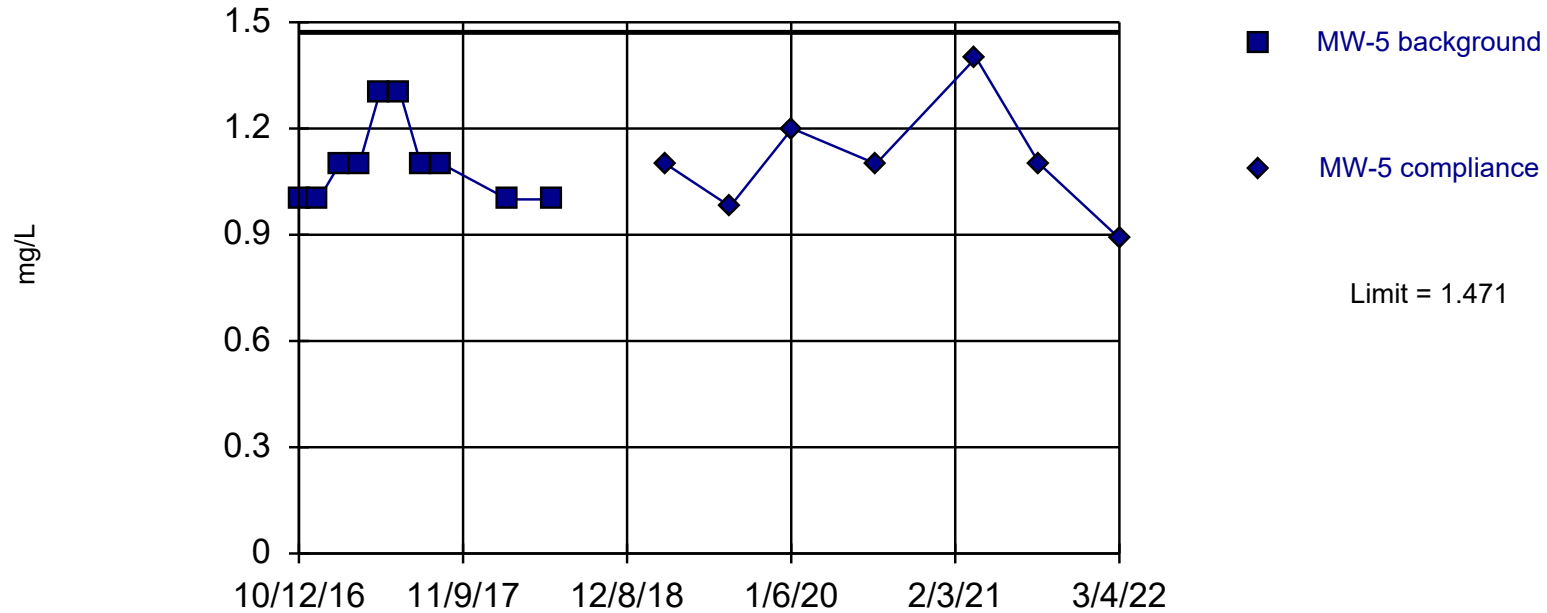
Within Limit

Prediction Limit Intrawell Parametric



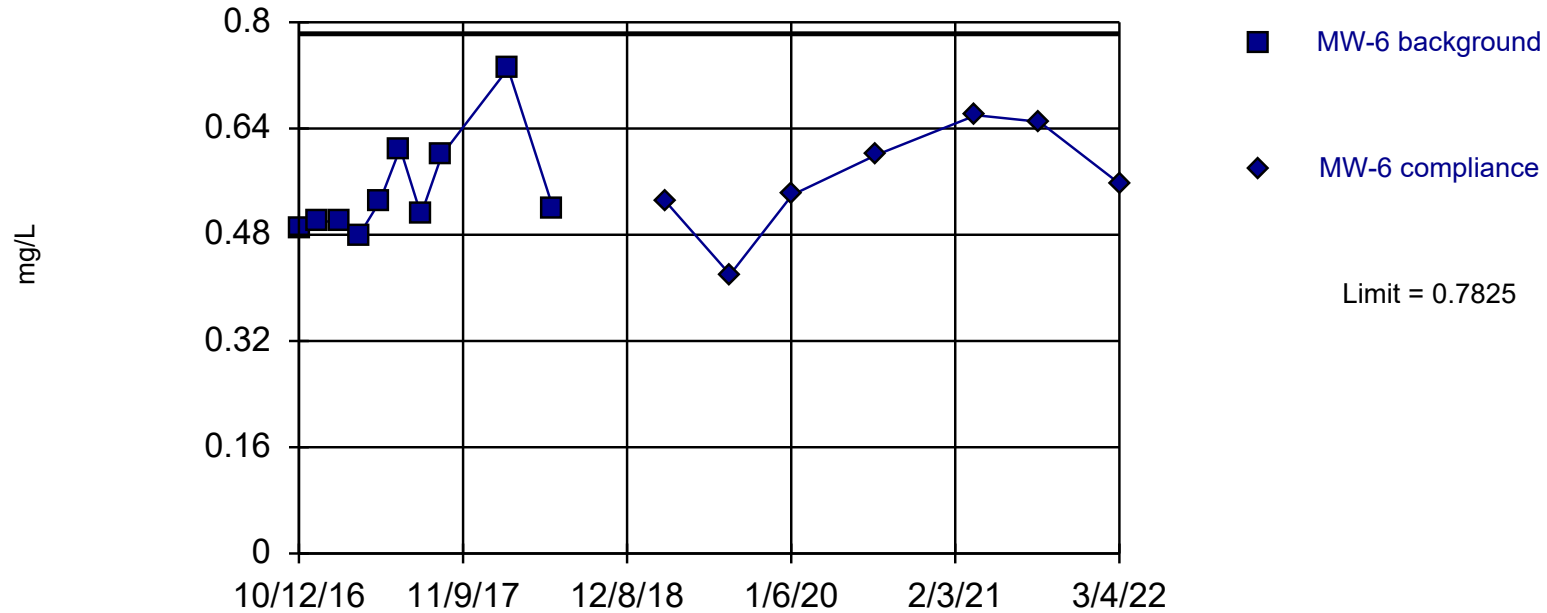
Within Limit

Prediction Limit Intrawell Parametric



Within Limit

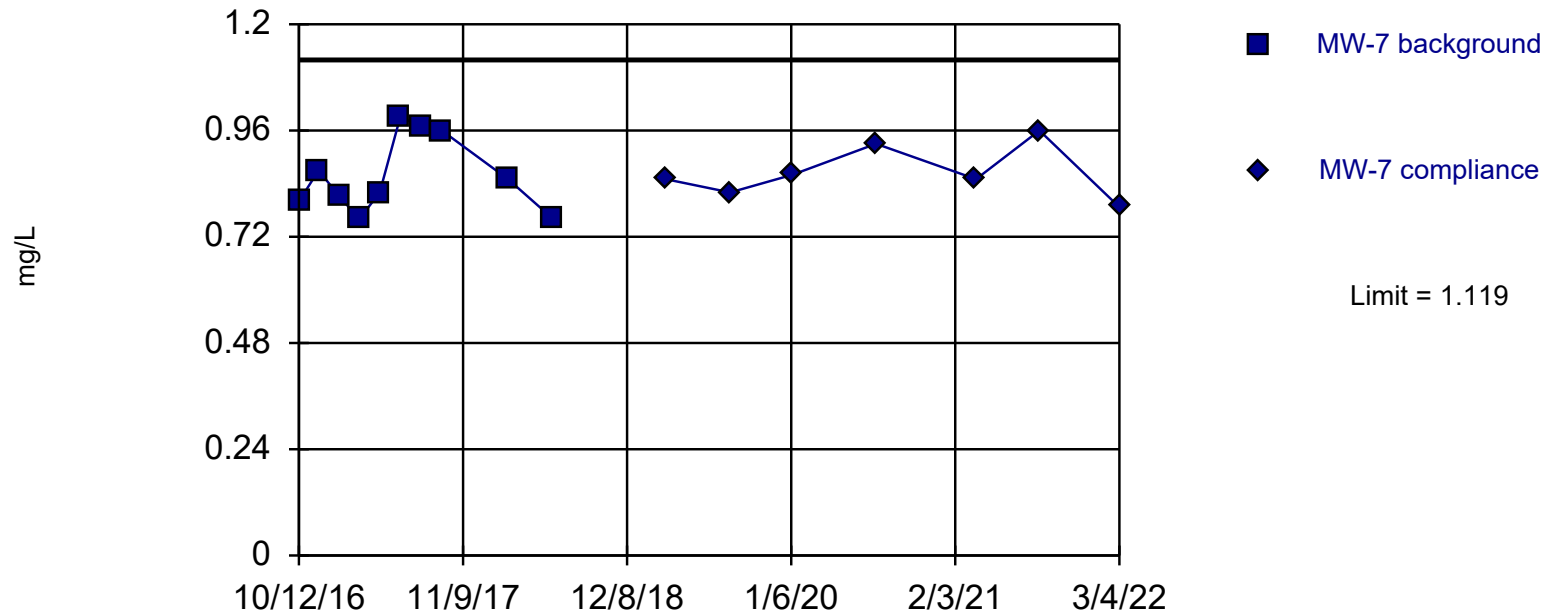
Prediction Limit Intrawell Parametric



Background Data Summary: Mean=0.547, Std. Dev.=0.07804, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.7927, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Within Limit

Prediction Limit Intrawell Parametric



Background Data Summary: Mean=0.859, Std. Dev.=0.08621, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8894, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

The graph displays two data series for MW-8 concentration over time. The y-axis represents concentration in mg/L, ranging from 0 to 1.1 with major gridlines every 0.22 units. The x-axis shows dates from 10/12/16 to 3/4/22. A horizontal line at 1.035 mg/L indicates the compliance limit.

MW-8 background data (squares):

Date	Concentration (mg/L)
10/12/16	0.66
11/1/16	0.72
11/3/16	0.73
11/5/16	0.72
11/7/16	0.80
11/9/16	0.90
11/11/16	0.76
11/13/16	0.66
11/15/16	0.66
11/17/16	0.71
11/19/16	0.65

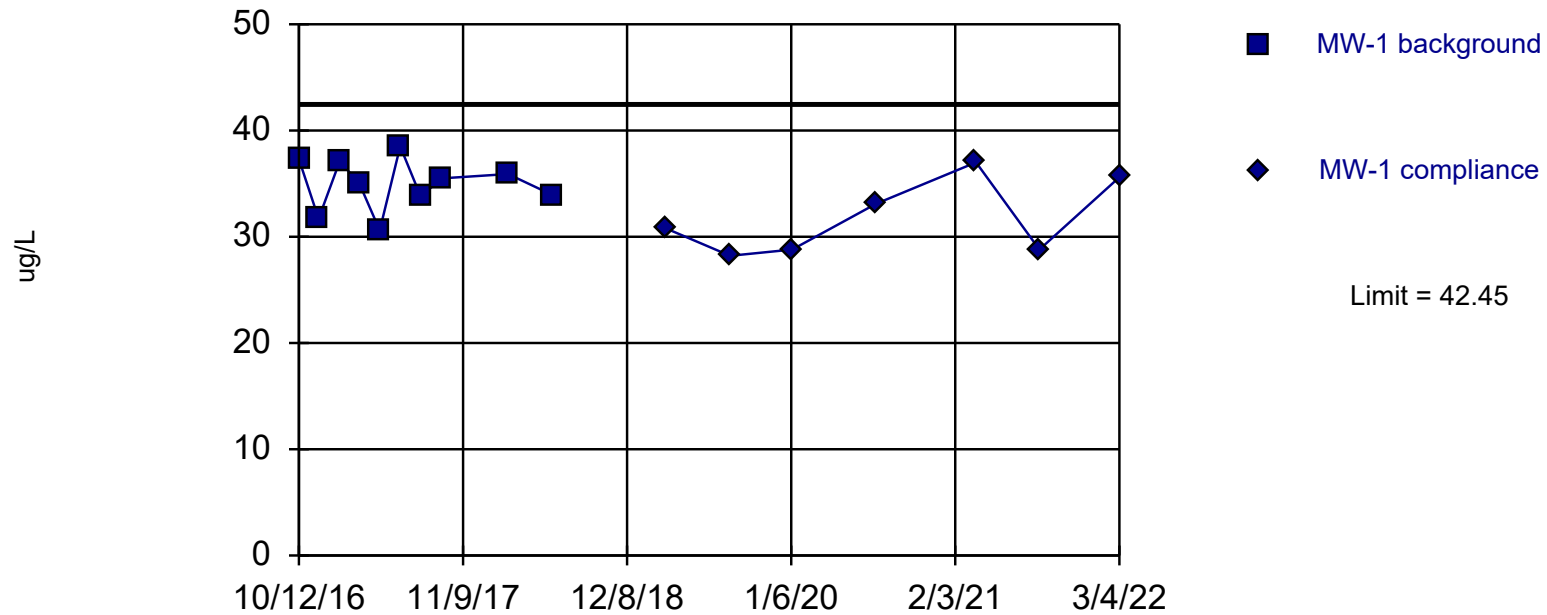
MW-8 compliance data (diamonds):

Date	Concentration (mg/L)
12/8/18	0.78
1/6/20	0.66
1/6/20	0.67
2/3/21	0.68
2/3/21	0.68
3/4/22	0.50

Constituent: Fluoride Analysis Run 4/25/2022 4:09 PM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

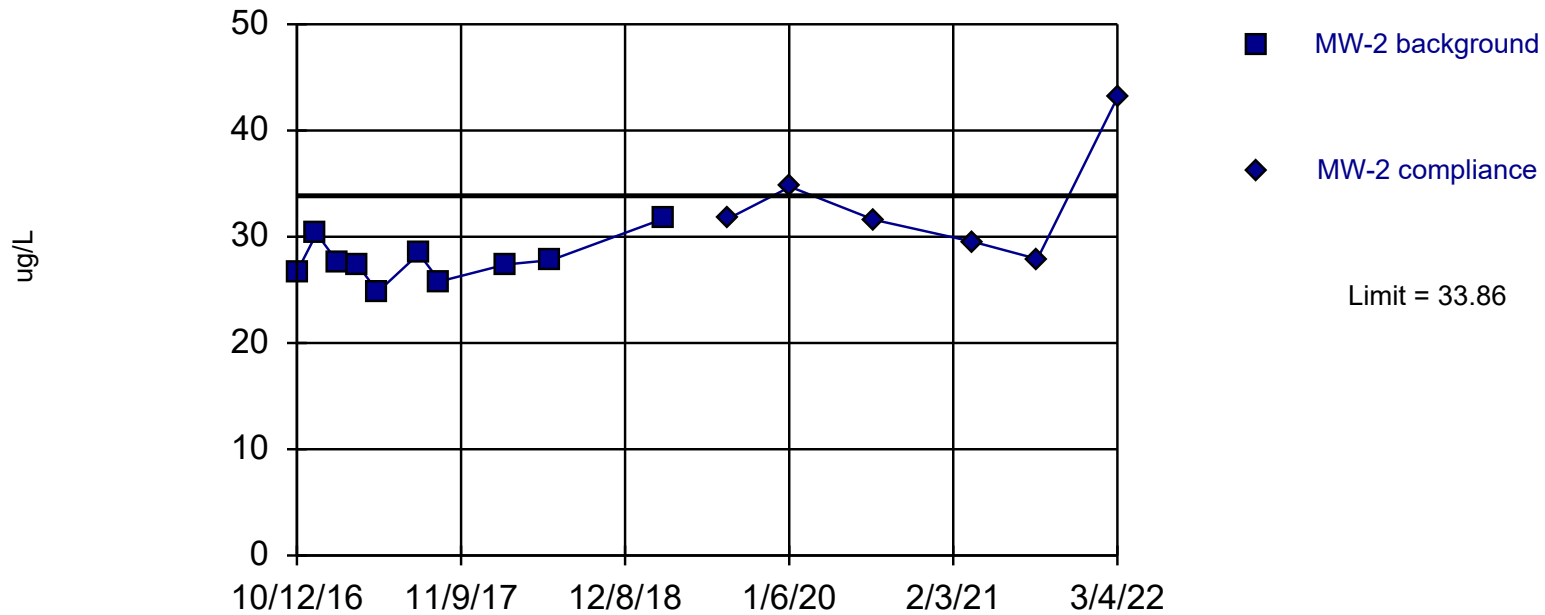
Prediction Limit Intrawell Parametric



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 = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Exceeds Limit

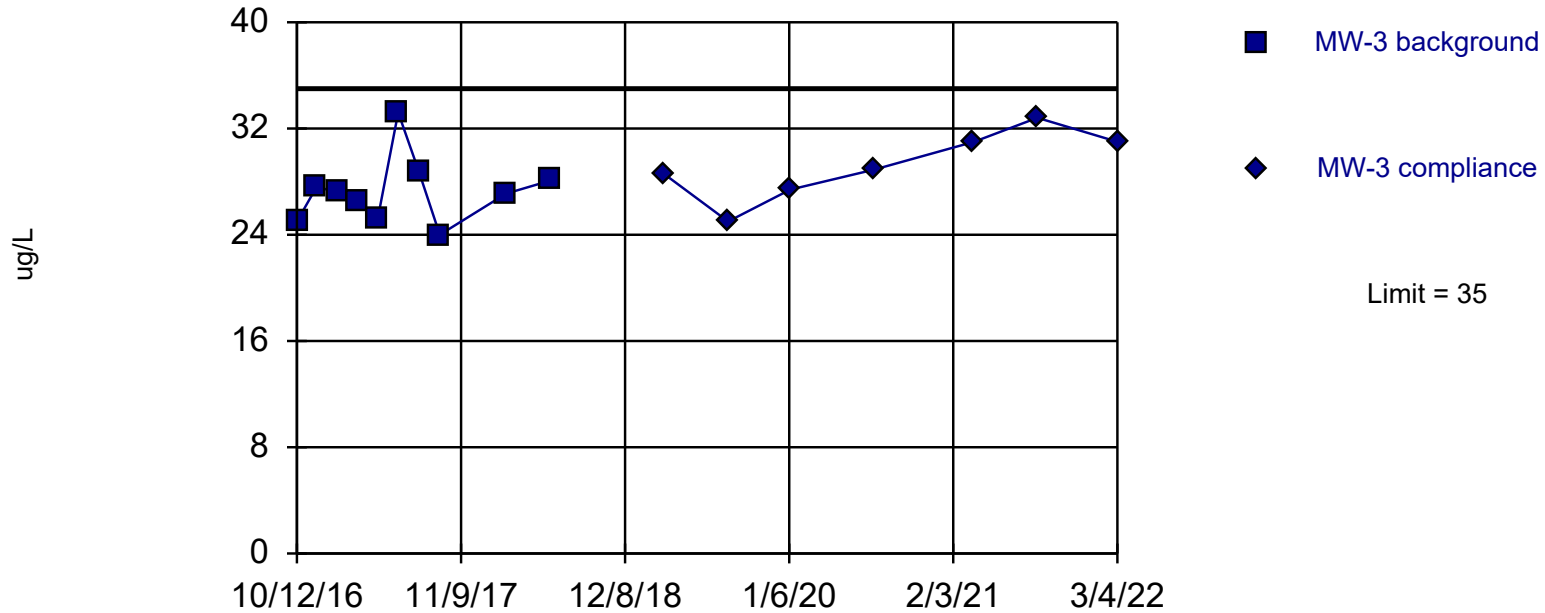
Prediction Limit Intrawell Parametric



Background Data Summary: Mean=27.79, Std. Dev.=2.011, n=10. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9443, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Within Limit

Prediction Limit Intrawell Parametric

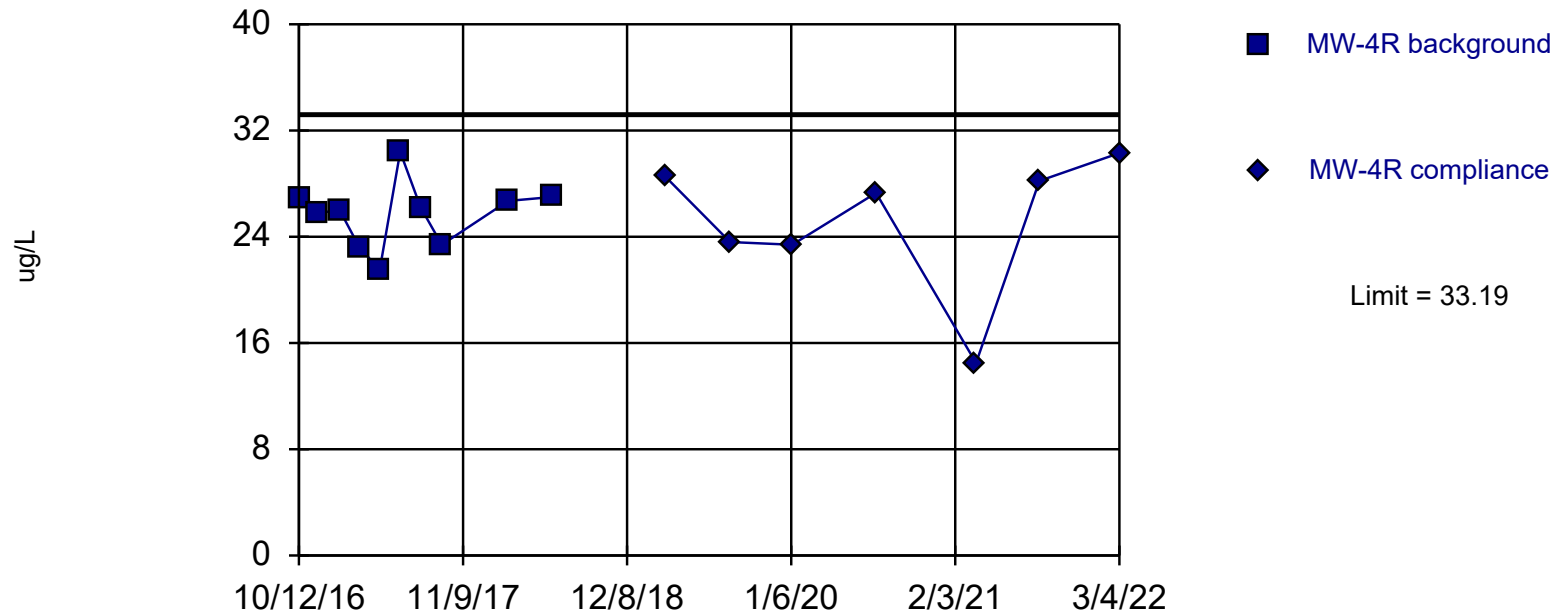


Background Data Summary: Mean=27.27, Std. Dev.=2.562, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8998, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Lithium Analysis Run 4/25/2022 4:10 PM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

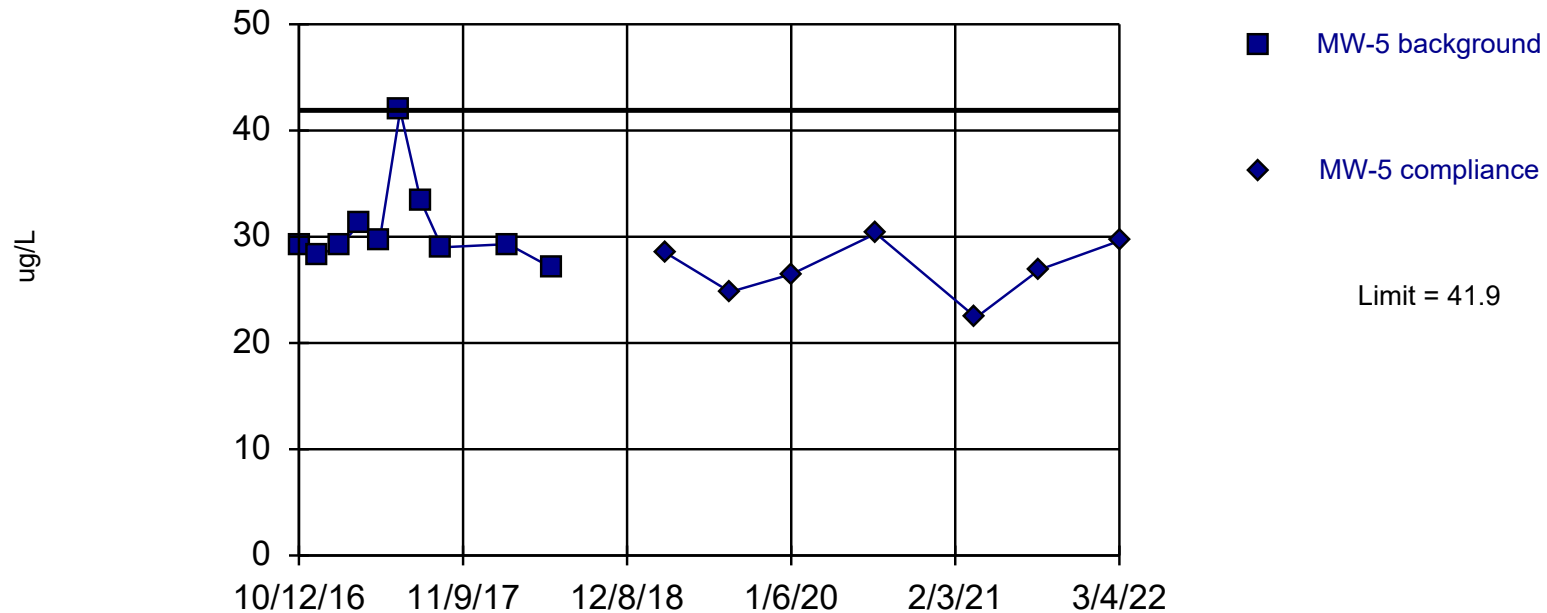
Prediction Limit Intrawell Parametric



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 = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Within Limit

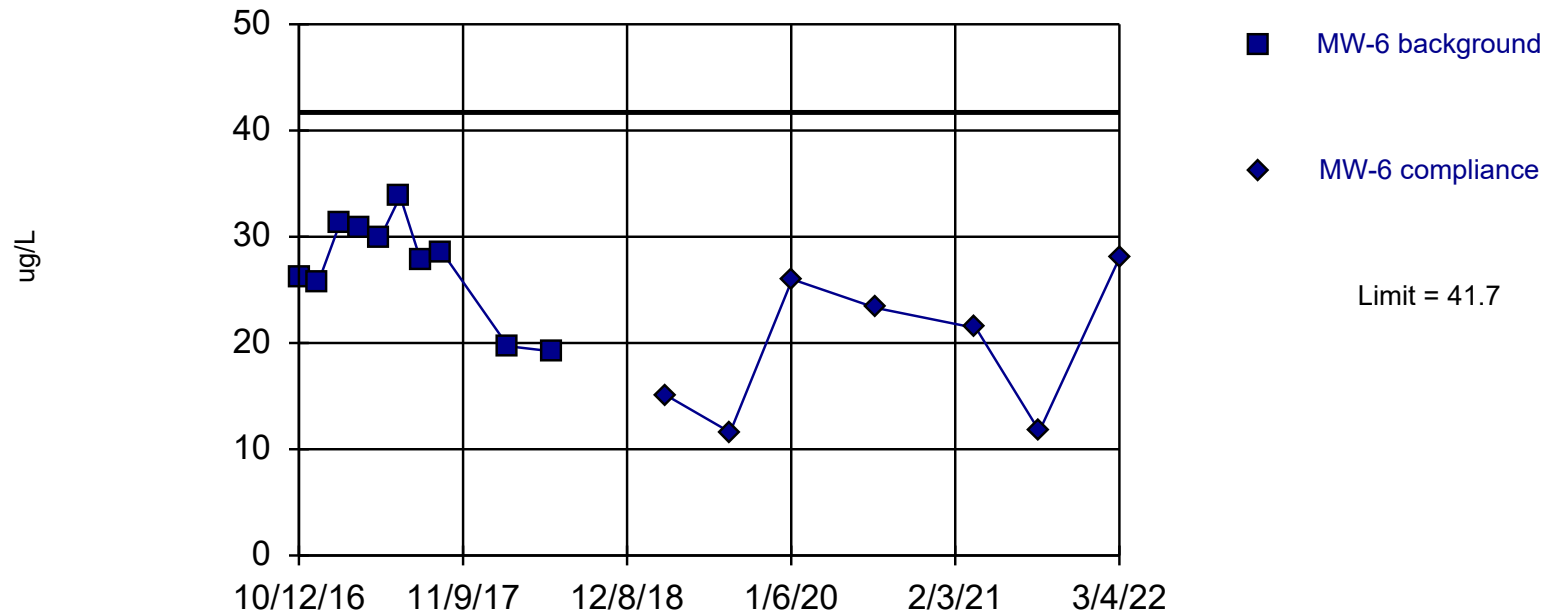
Prediction Limit Intrawell Non-parametric



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.

Within Limit

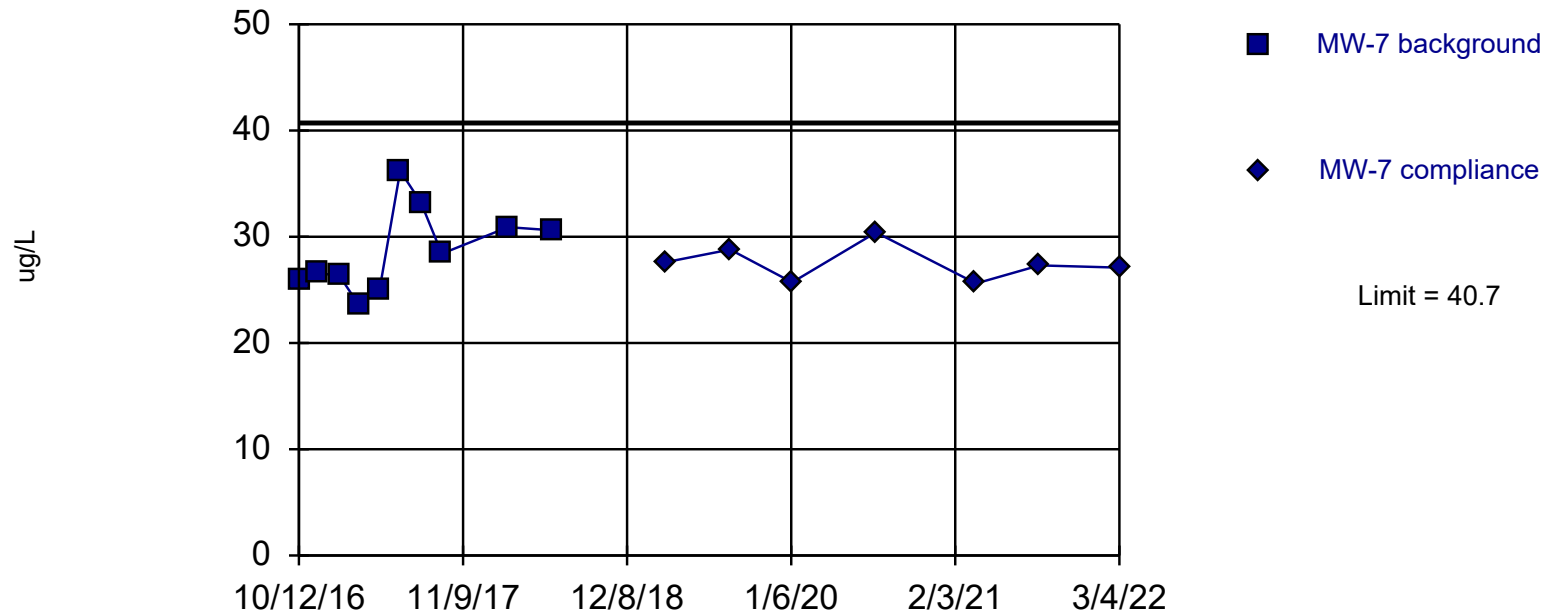
Prediction Limit Intrawell Parametric



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 = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Within Limit

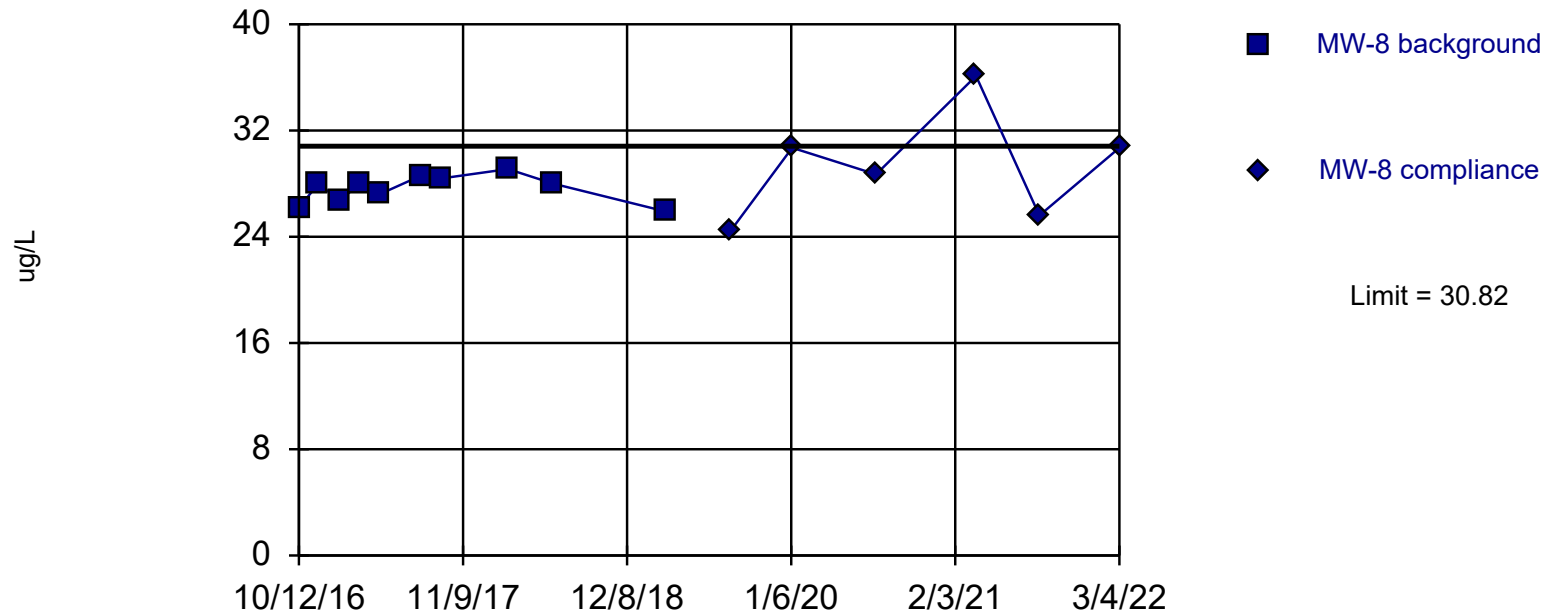
Prediction Limit Intrawell Parametric



Background Data Summary: Mean=28.67, Std. Dev.=3.987, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9444, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Within Limit

Prediction Limit Intrawell Parametric

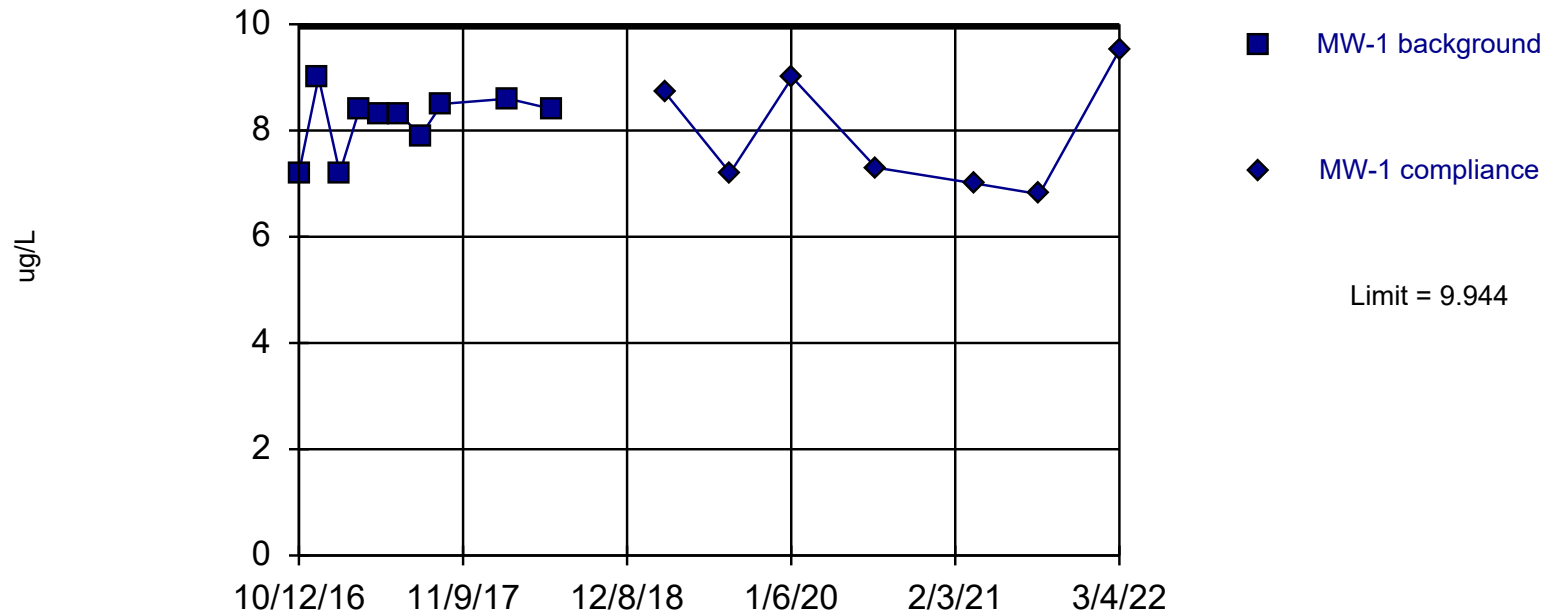


Background Data Summary: Mean=27.61, Std. Dev.=1.064, n=10. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.936, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Lithium Analysis Run 4/25/2022 4:10 PM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric



Within Limit

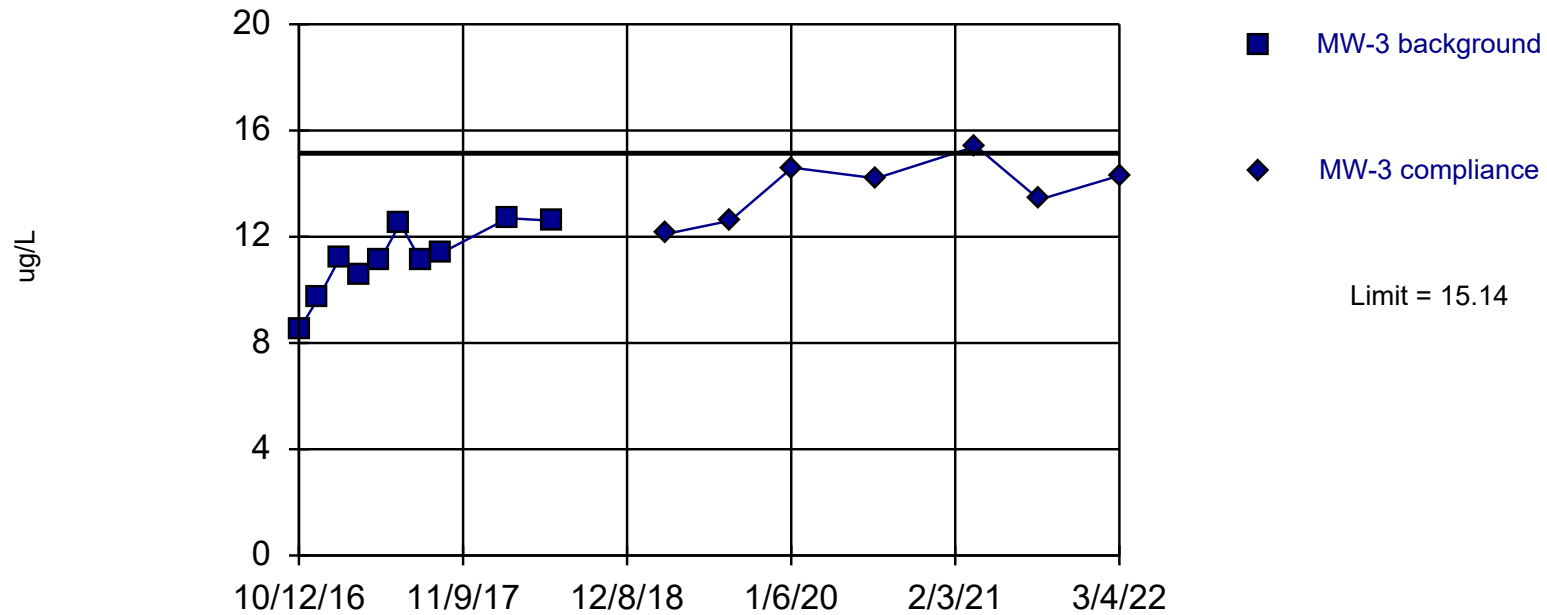


Within Limit

Within Limit

Within Limit

Prediction Limit Intrawell Parametric



Background Data Summary: Mean=11.14, Std. Dev.=1.326, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9184, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

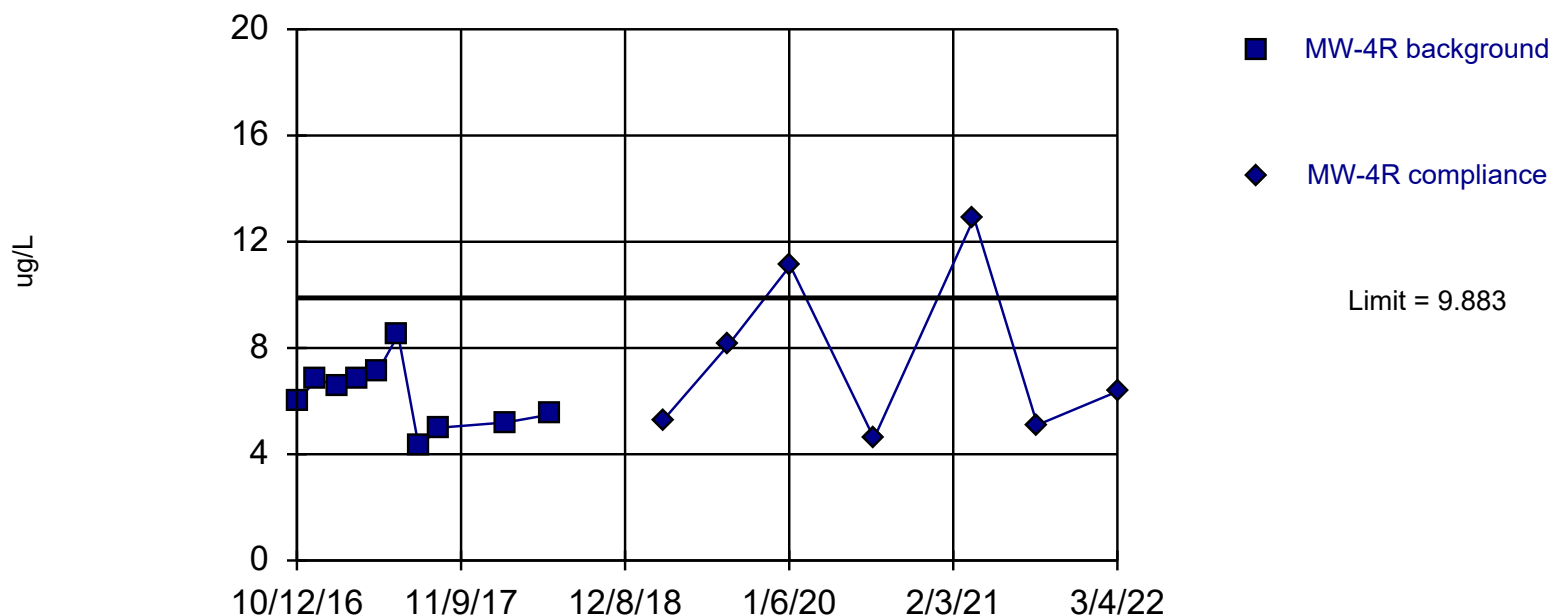
Constituent: Molybdenum Analysis Run 4/25/2022 4:10 PM View: FDU Combined

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

Within Limit

Prediction Limit

Intrawell Parametric



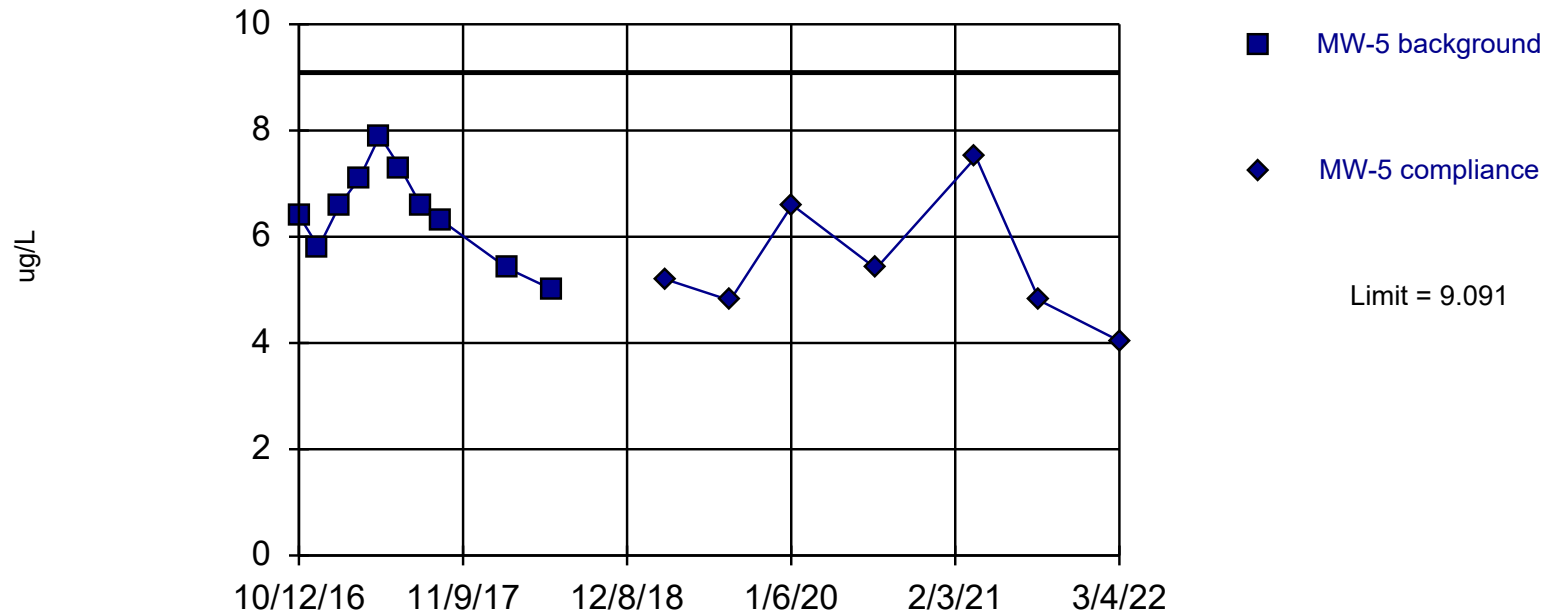
Background Data Summary: Mean=6.18, Std. Dev.=1.227, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9705, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Molybdenum Analysis Run 4/25/2022 4:10 PM View: FDU Combined

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

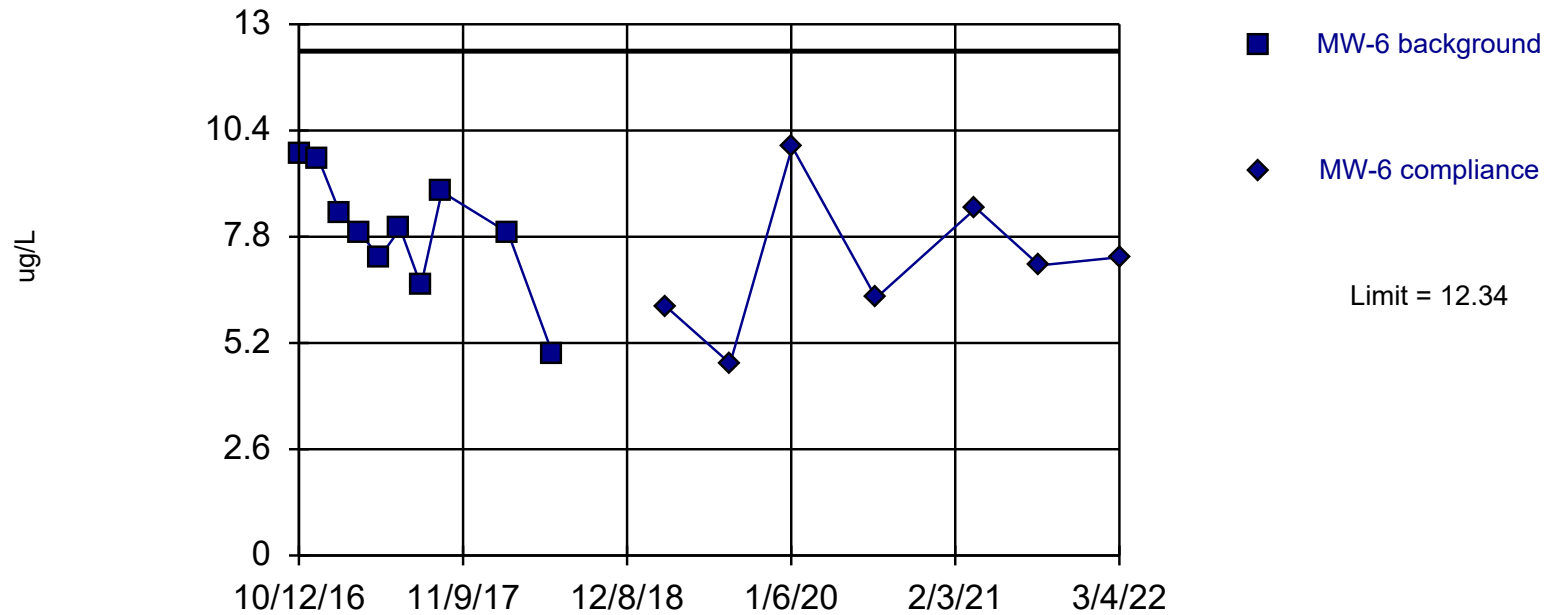
Within Limit

Prediction Limit Intrawell Parametric



Within Limit

Prediction Limit Intrawell Parametric



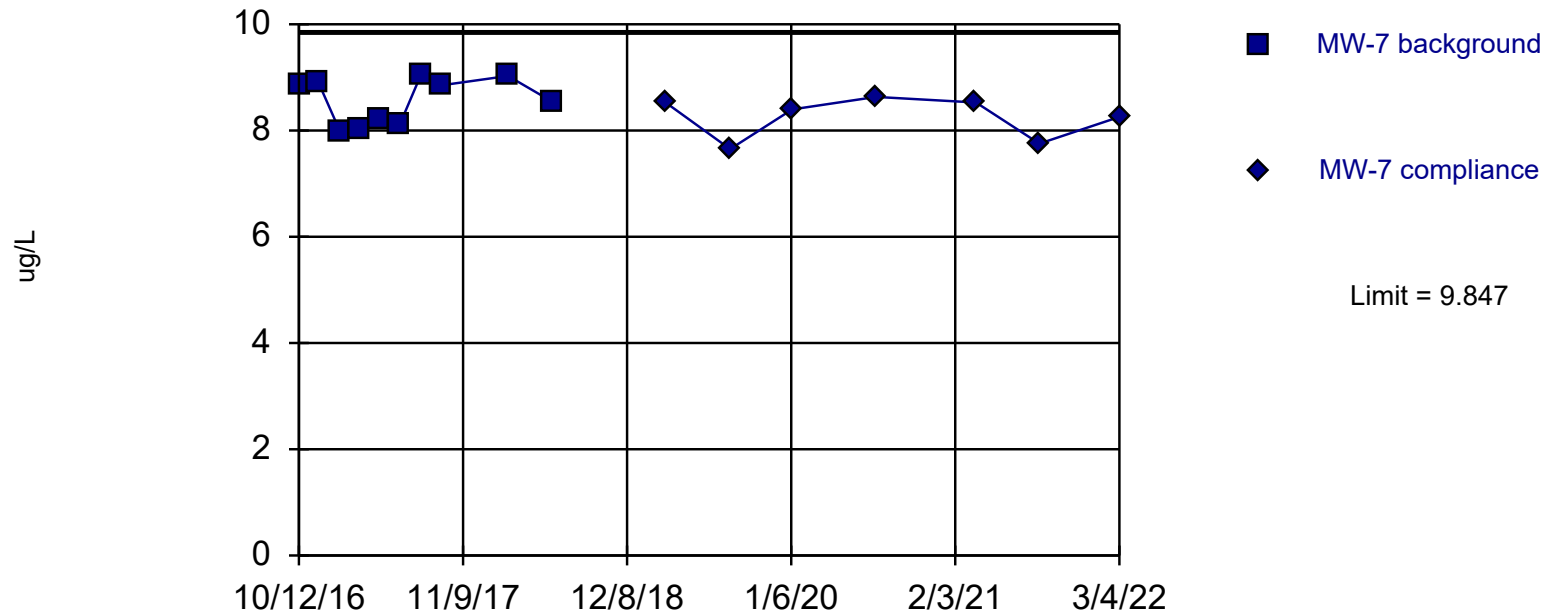
Background Data Summary: Mean=7.94, Std. Dev.=1.458, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9391, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Molybdenum Analysis Run 4/25/2022 4:10 PM View: FDU Combined

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

Within Limit

Prediction Limit Intrawell Parametric



Background Data Summary: Mean=8.559, Std. Dev.=0.4268, n=10. Seasonality was detected with 95% confidence and data were deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8595, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

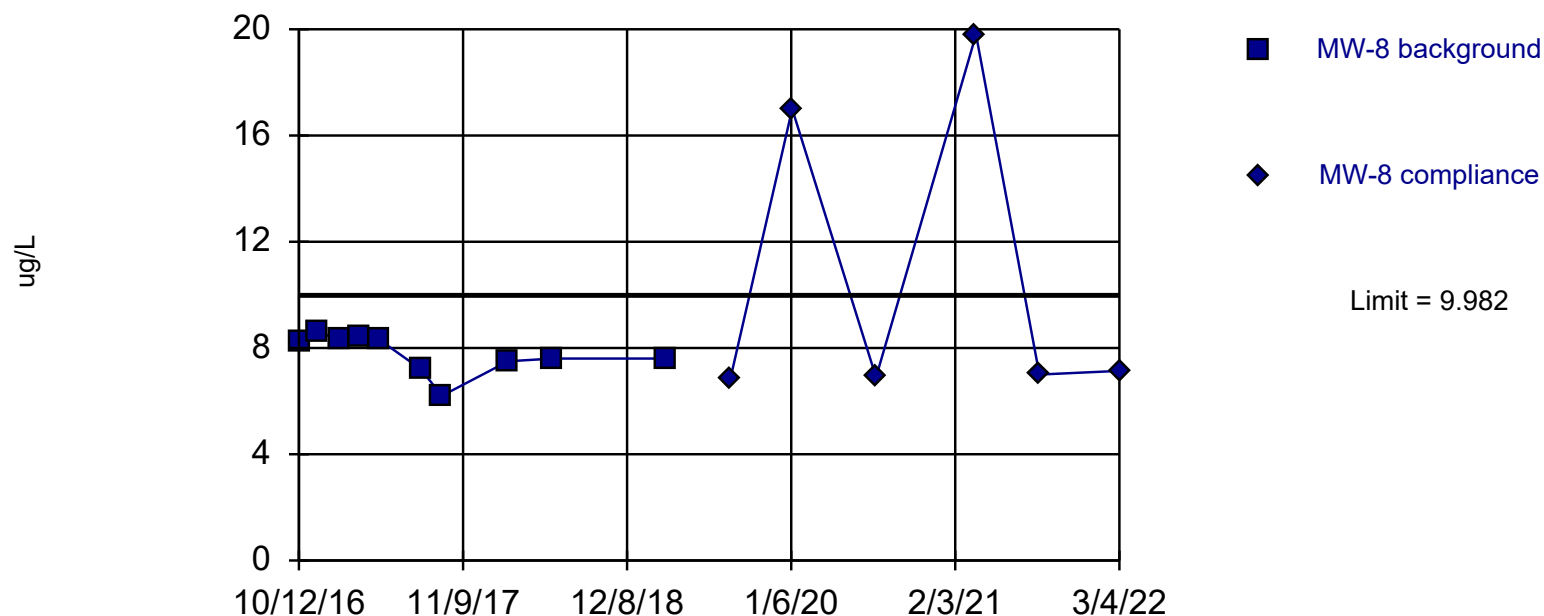
Constituent: Molybdenum Analysis Run 4/25/2022 4:10 PM View: FDU Combined

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

Within Limit

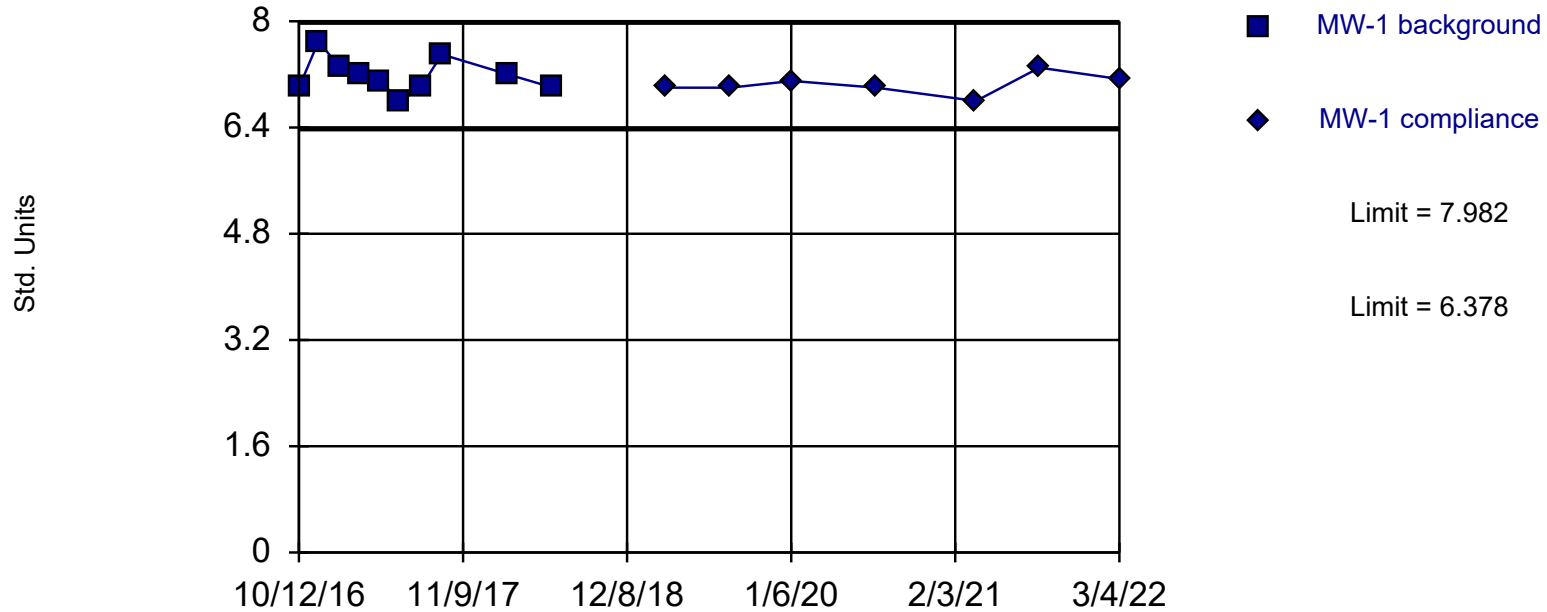
Prediction Limit

Intrawell Parametric



Within Limits

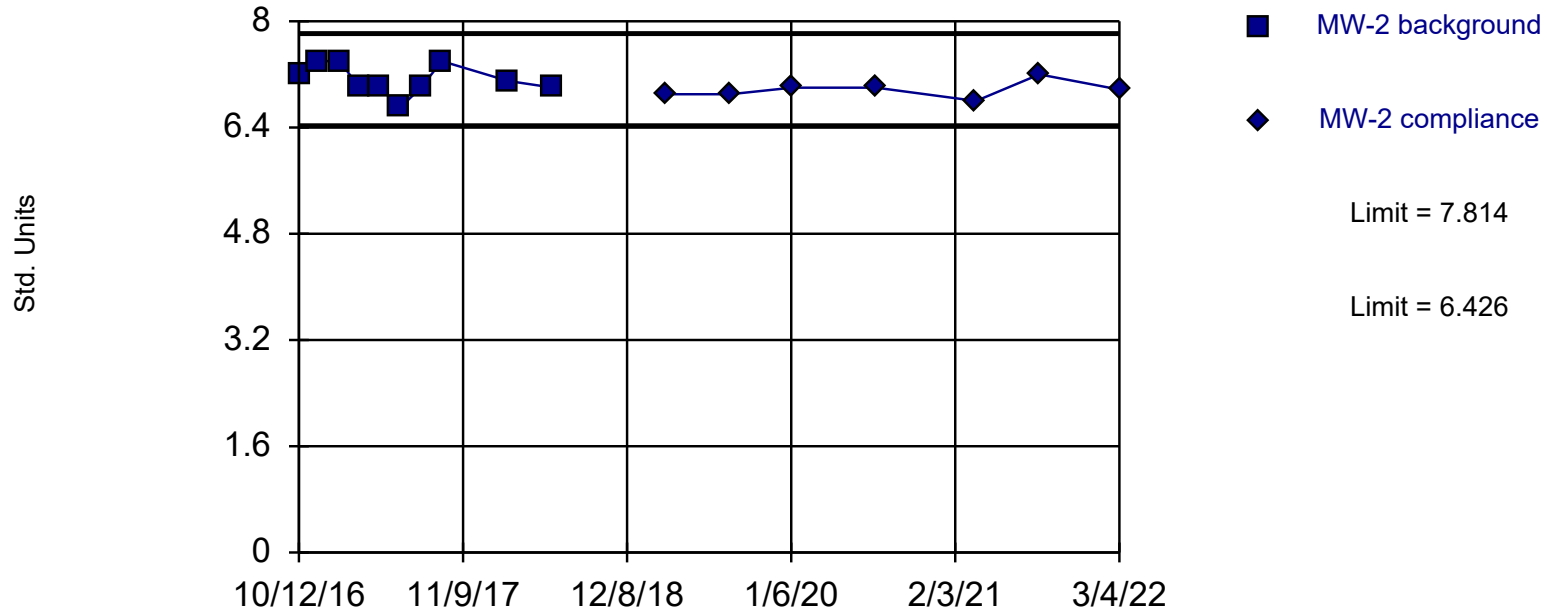
Prediction Limit Intrawell Parametric



Background Data Summary: Mean=7.18, Std. Dev.=0.2658, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9414, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Within Limits

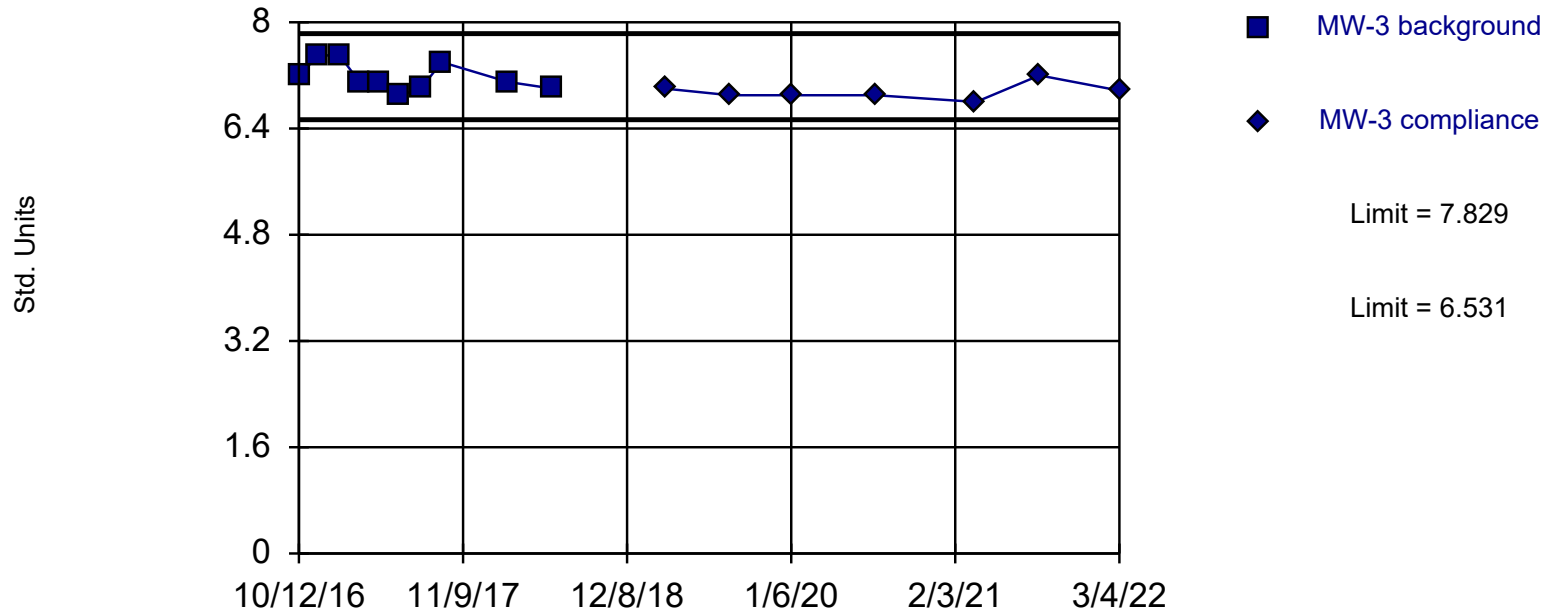
Prediction Limit Intrawell Parametric



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 = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Within Limits

Prediction Limit Intrawell Parametric

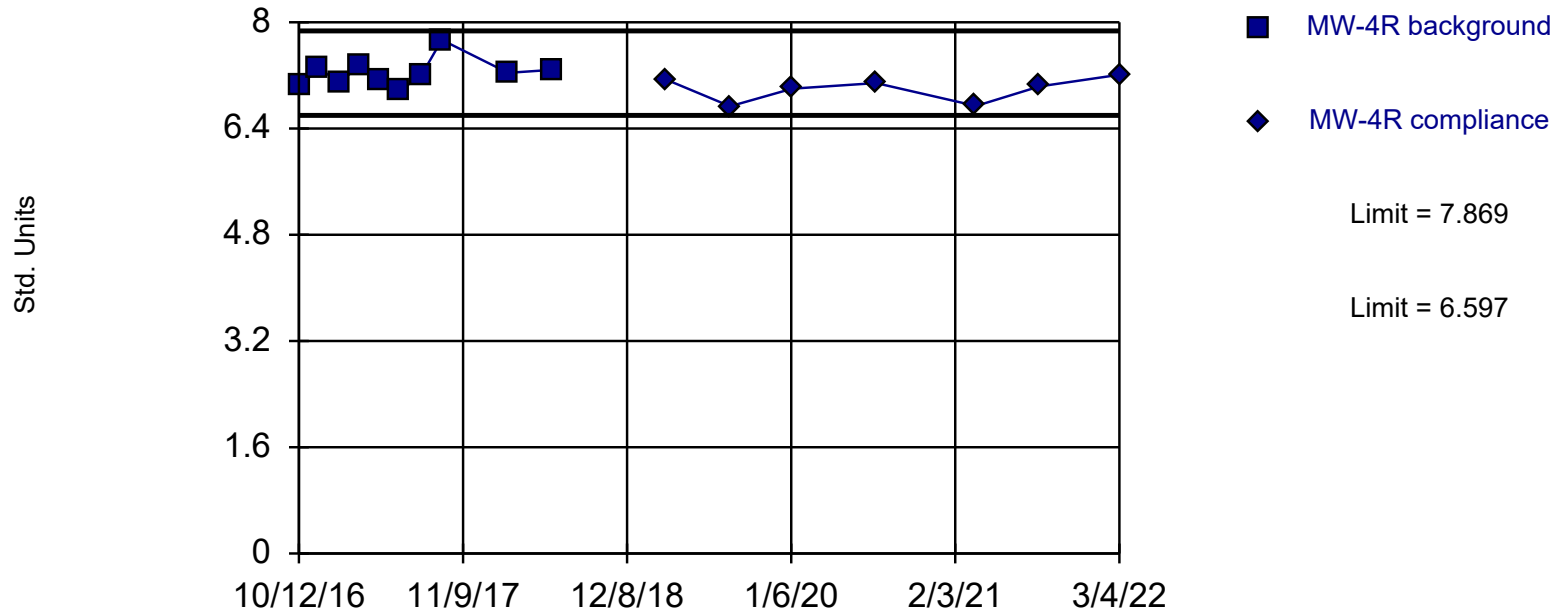


Background Data Summary: Mean=7.18, Std. Dev.=0.215, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.885, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: pH Analysis Run 4/25/2022 4:10 PM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limits

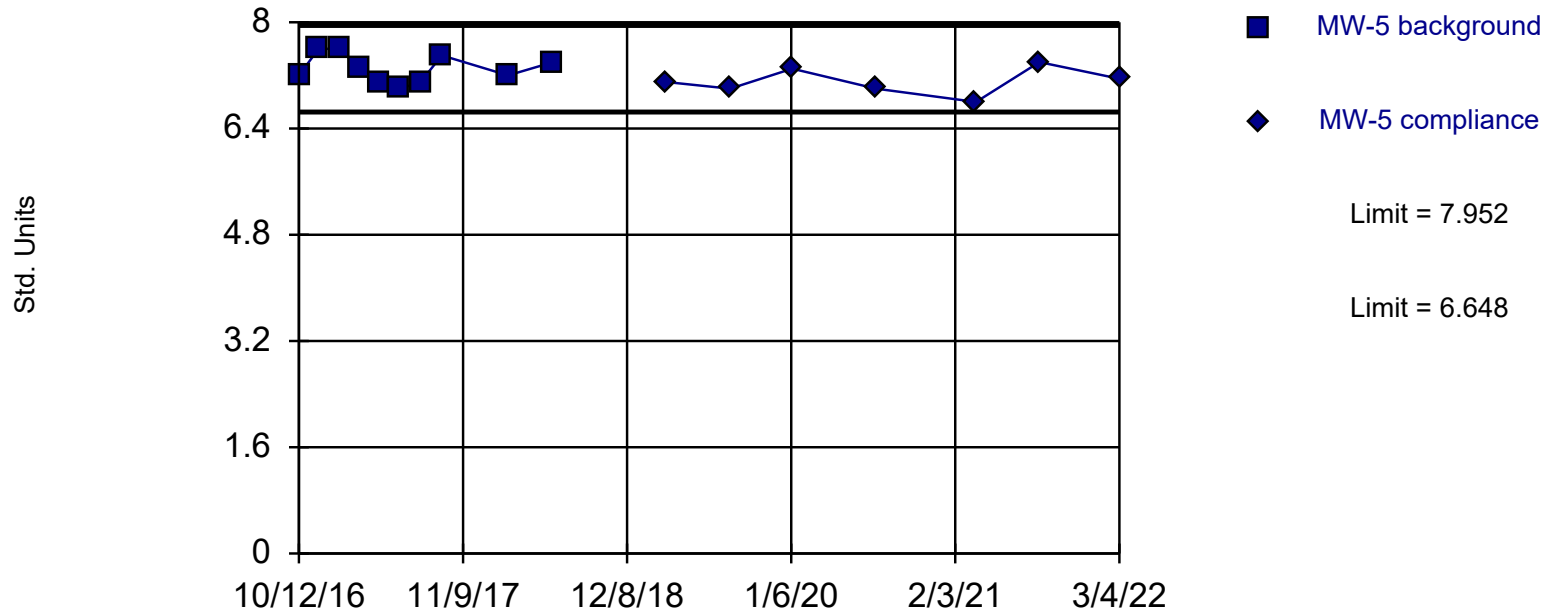
Prediction Limit Intrawell Parametric



Background Data Summary: Mean=7.233, Std. Dev.=0.2108, n=10. Seasonality was detected with 95% confidence and data were deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8812, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Within Limits

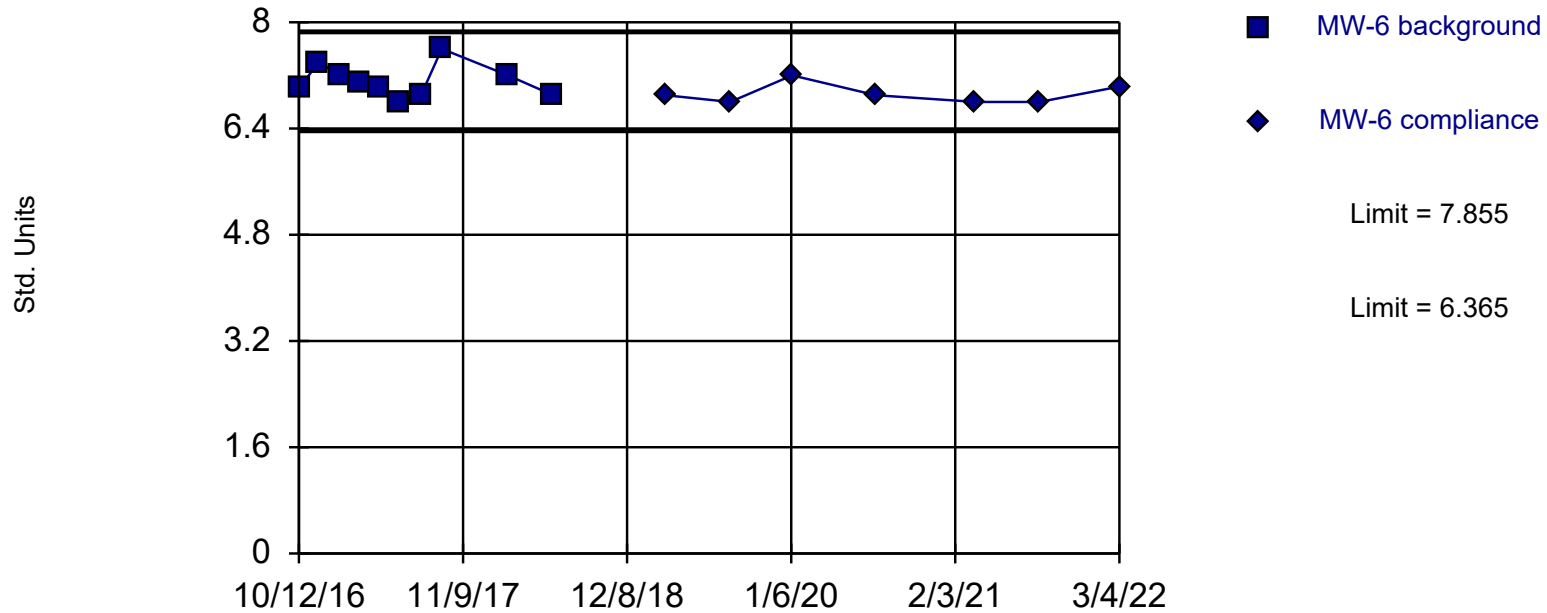
Prediction Limit Intrawell Parametric



Background Data Summary: Mean=7.3, Std. Dev.=0.216, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9241, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Within Limits

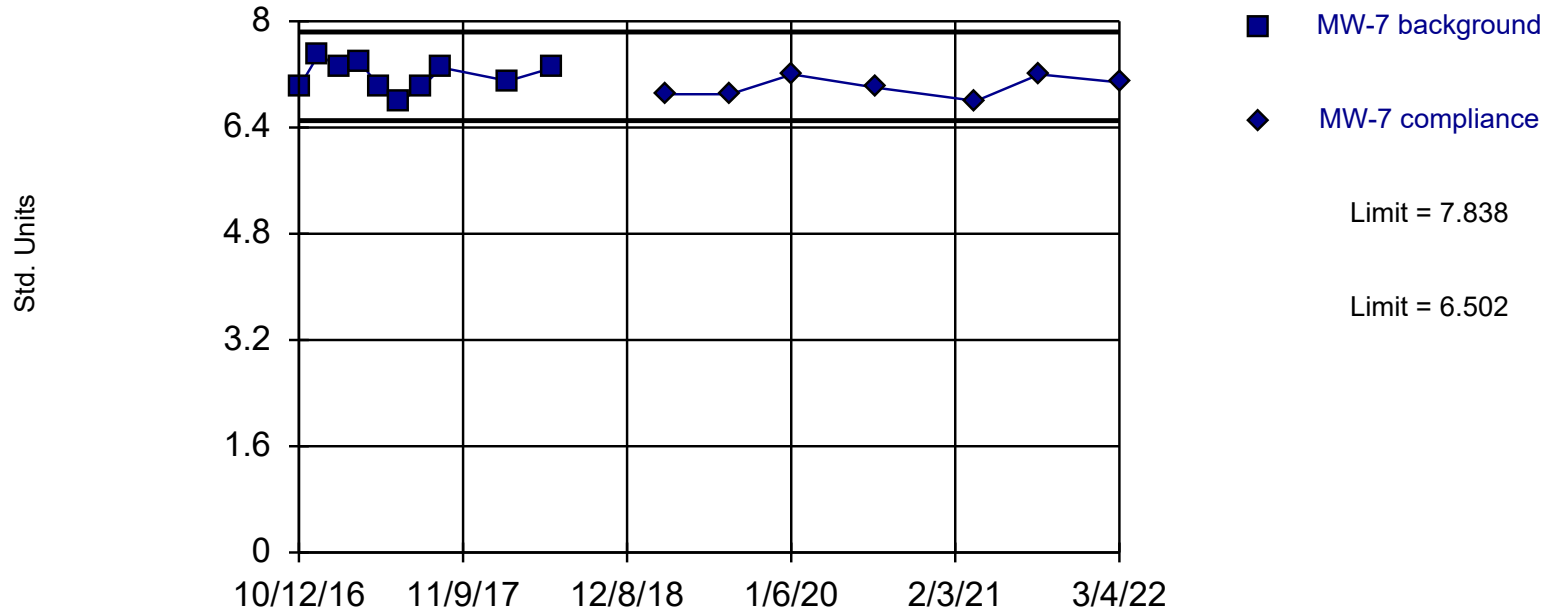
Prediction Limit Intrawell Parametric



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 = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Within Limits

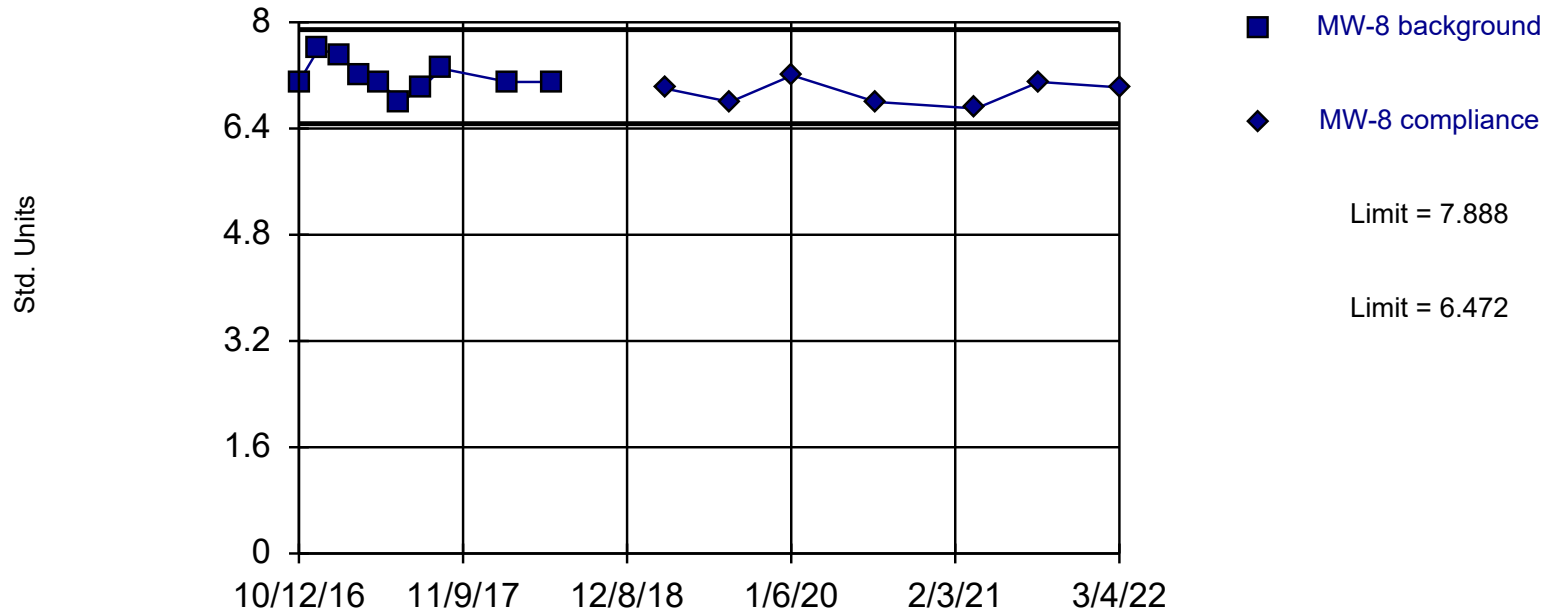
Prediction Limit Intrawell Parametric



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 = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Within Limits

Prediction Limit Intrawell Parametric

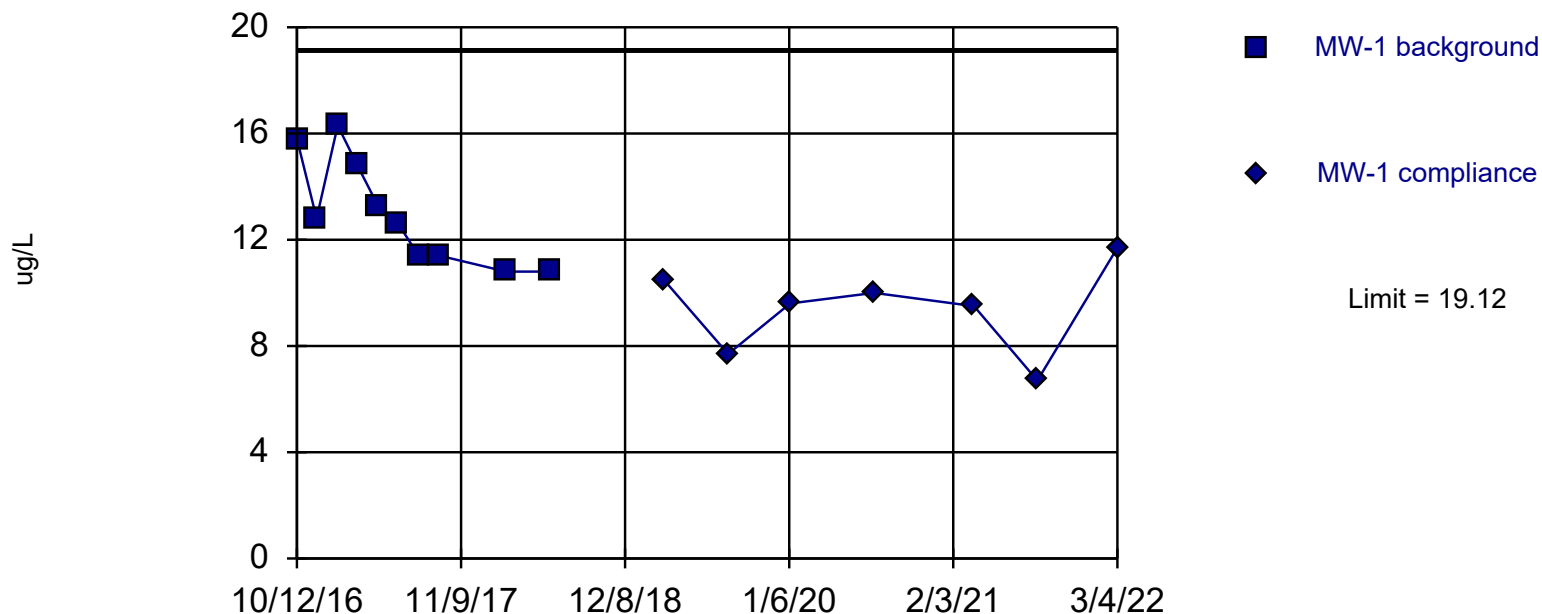


Background Data Summary: Mean=7.18, Std. Dev.=0.2348, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9288, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: pH Analysis Run 4/25/2022 4:10 PM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

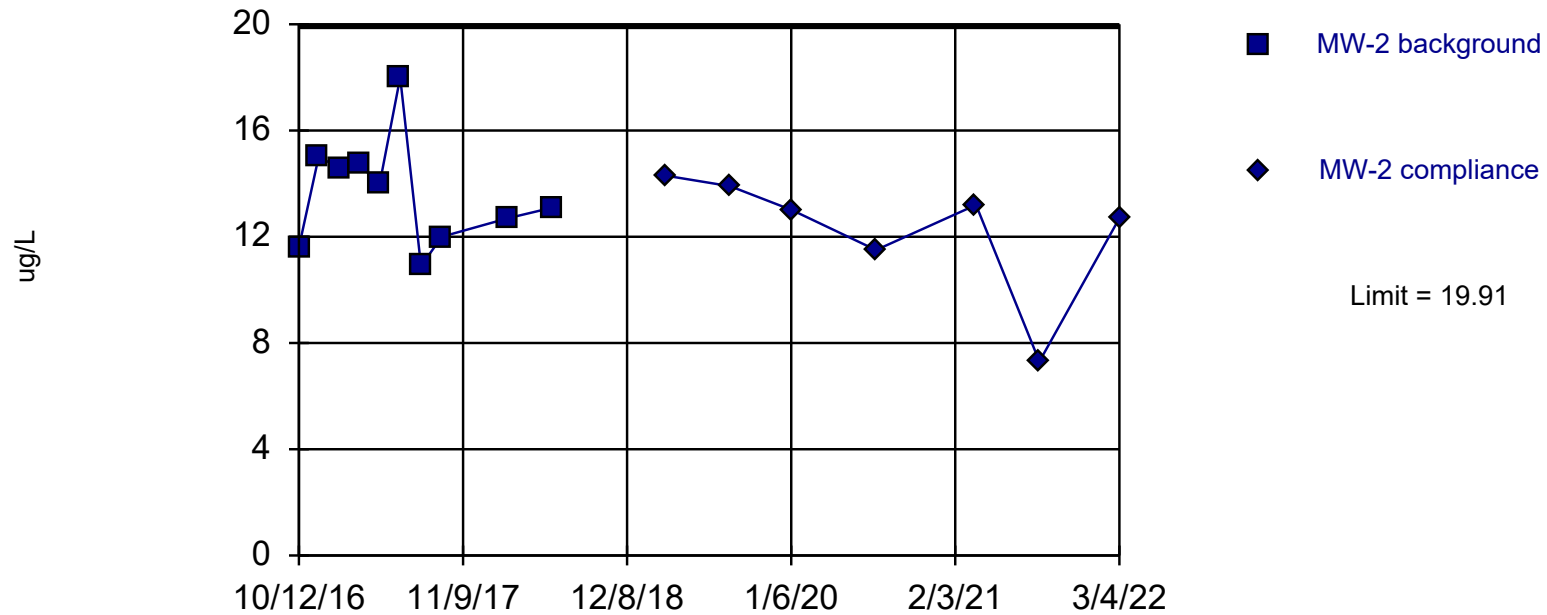
Within Limit

Prediction Limit Intrawell Parametric



Within Limit

Prediction Limit Intrawell Parametric



Background Data Summary: Mean=13.66, Std. Dev.=2.07, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9461, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Selenium [total] Analysis Run 4/25/2022 4:10 PM View: FDU Combined

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

ug/L

12

9.6

7.2

4.8

2.4

0

10/12/16 11/9/17 12/8/18 1/6/20 2/3/21 3/4/22

MW-3 background

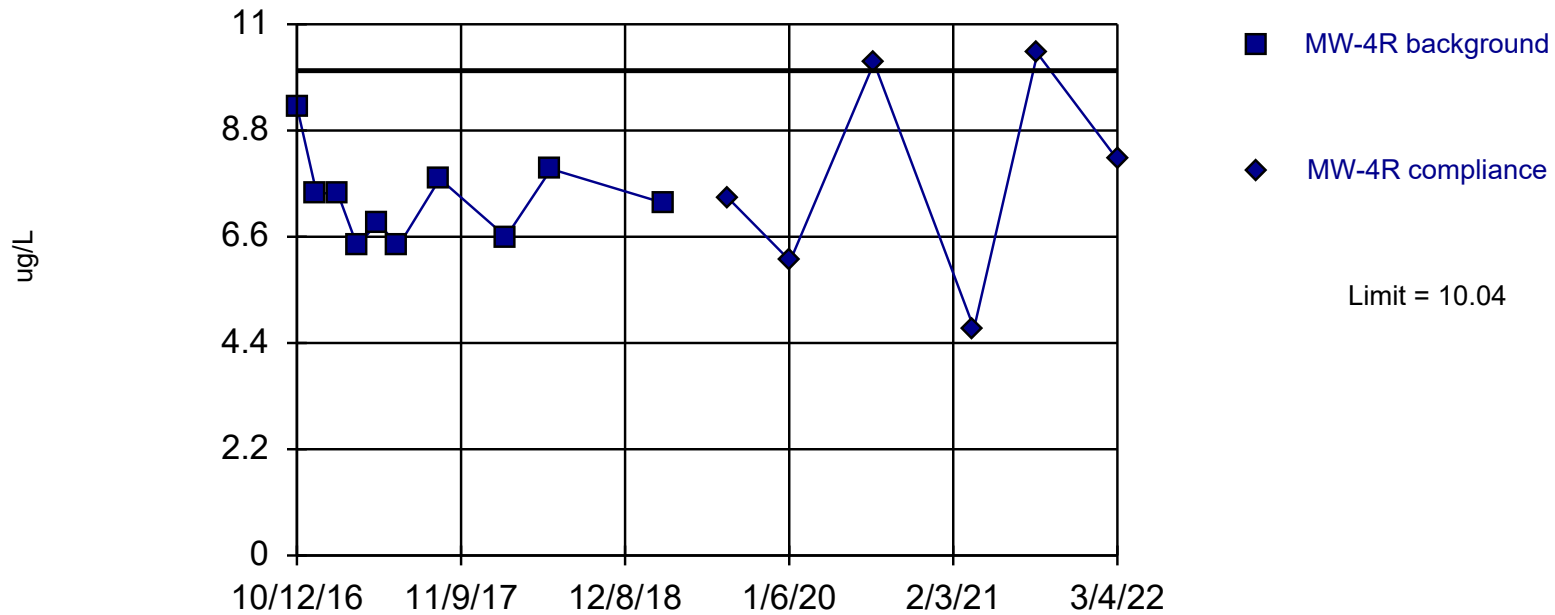
MW-3 compliance

Limit = 11.57

Constituent: Selenium [total] Analysis Run 4/25/2022 4:10 PM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric



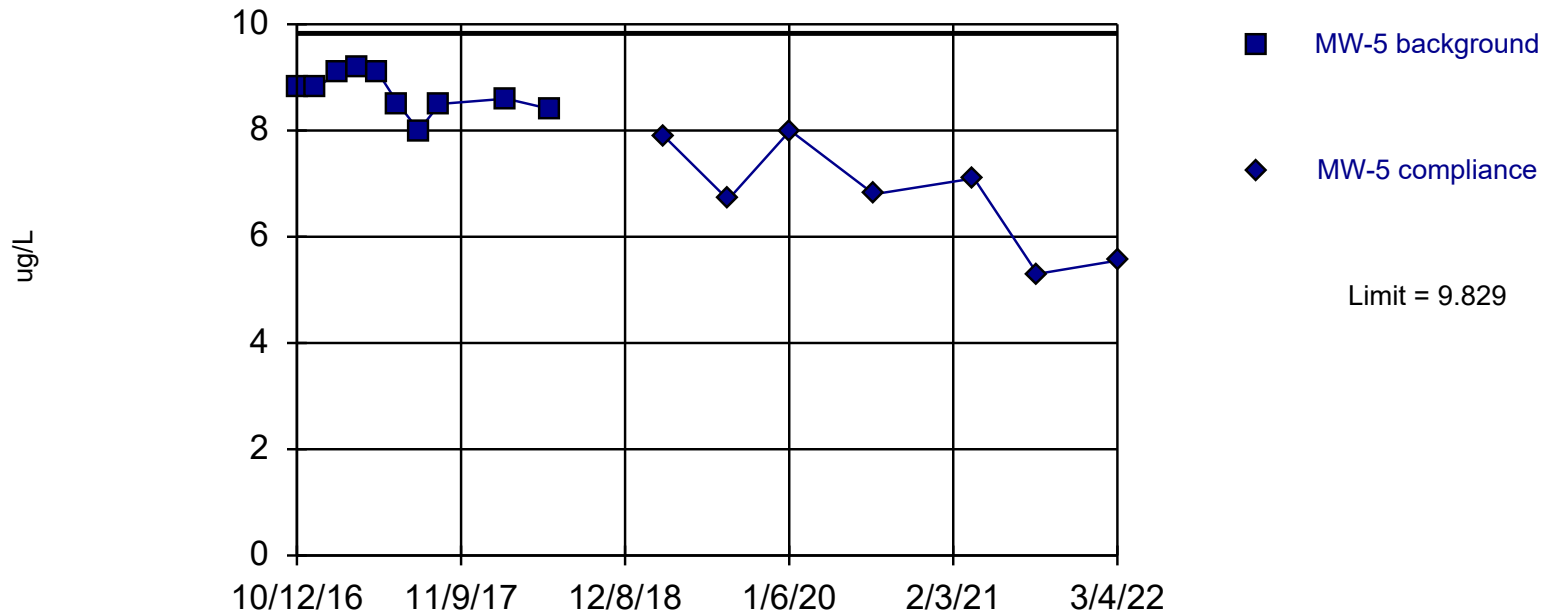
Background Data Summary: Mean=7.37, Std. Dev.=0.8845, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9085, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Selenium [total] Analysis Run 4/25/2022 4:10 PM View: FDU Combined

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

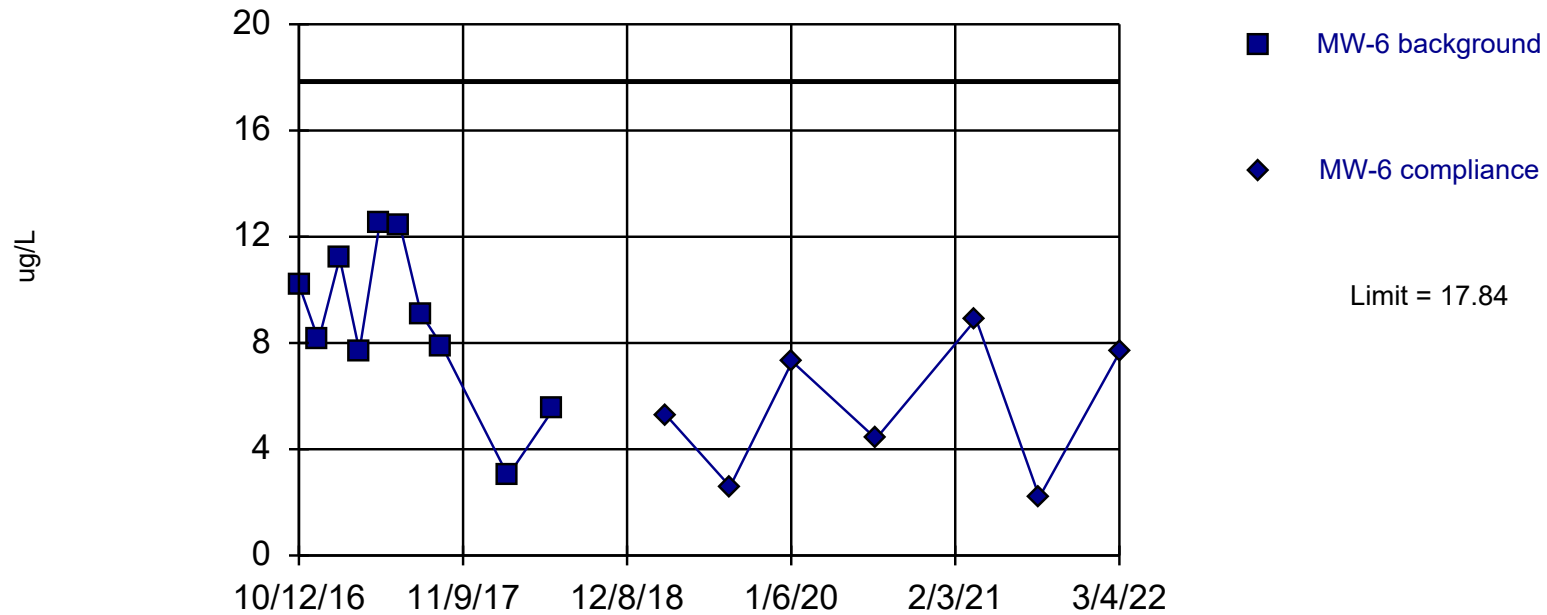
Within Limit

Prediction Limit Intrawell Parametric



Within Limit

Prediction Limit Intrawell Parametric



Background Data Summary: Mean=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 = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

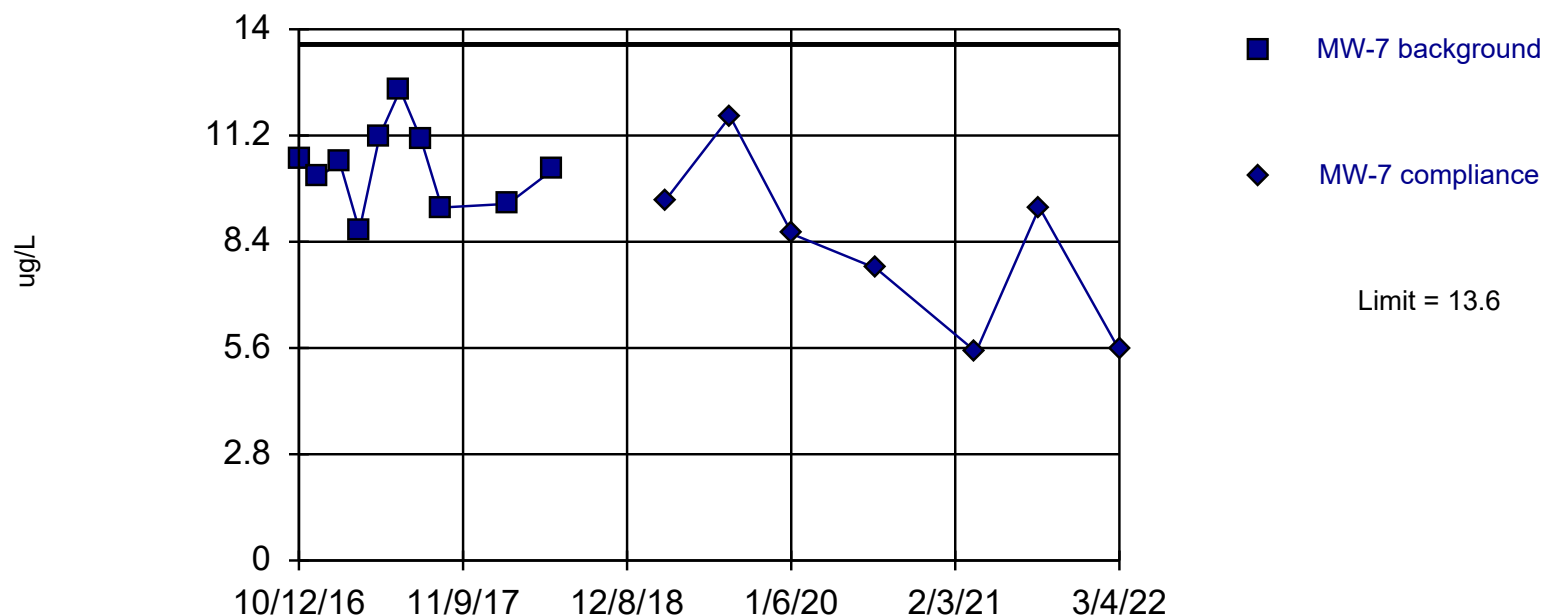
Constituent: Selenium [total] Analysis Run 4/25/2022 4:10 PM View: FDU Combined

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

Within Limit

Prediction Limit

Intrawell Parametric



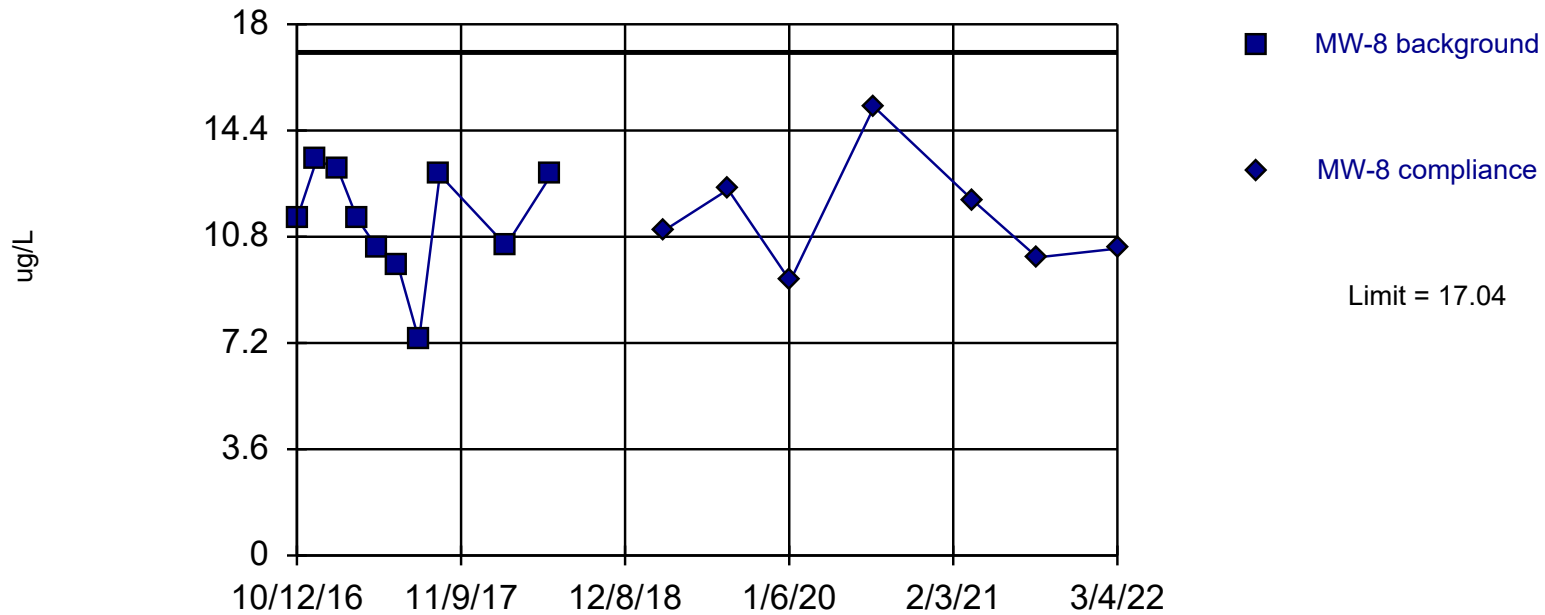
Background Data Summary: Mean=10.36, Std. Dev.=1.073, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9769, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Selenium [total] Analysis Run 4/25/2022 4:10 PM View: FDU Combined

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

Within Limit

Prediction Limit Intrawell Parametric



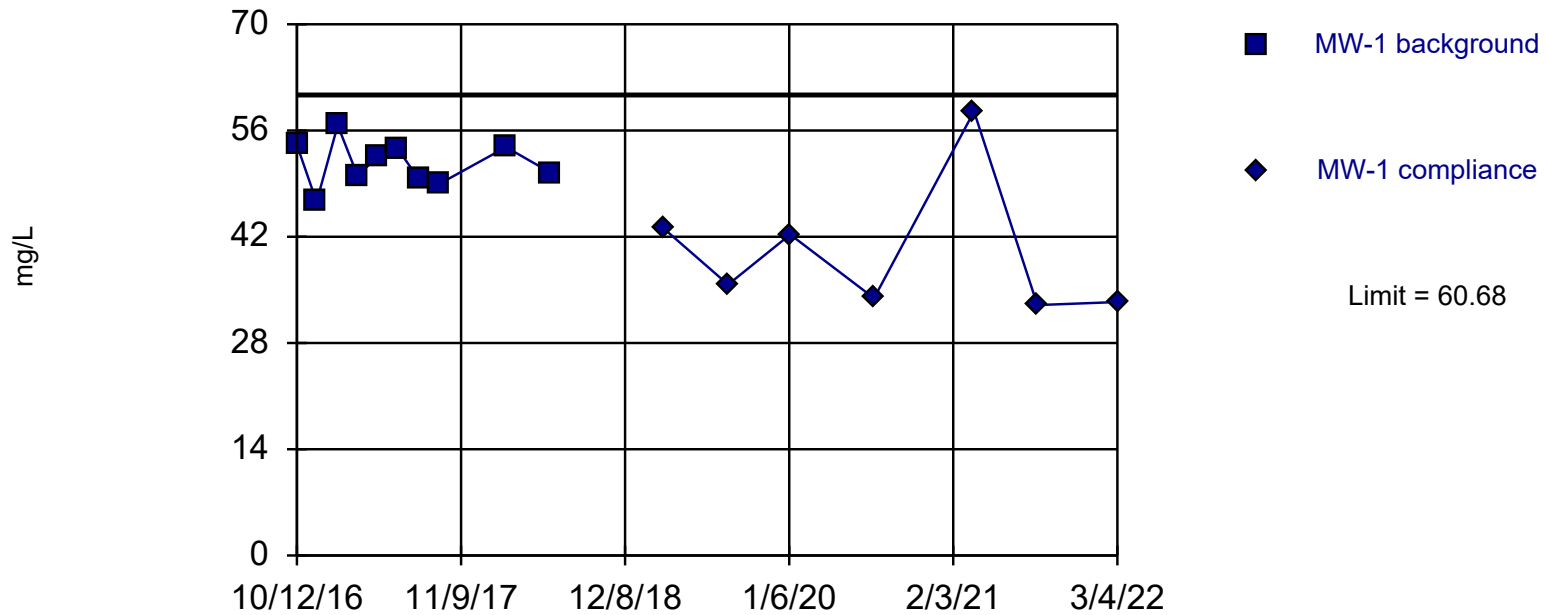
Background Data Summary: Mean=11.31, Std. Dev.=1.9, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9028, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Selenium [total] Analysis Run 4/25/2022 4:10 PM View: FDU Combined

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

Within Limit

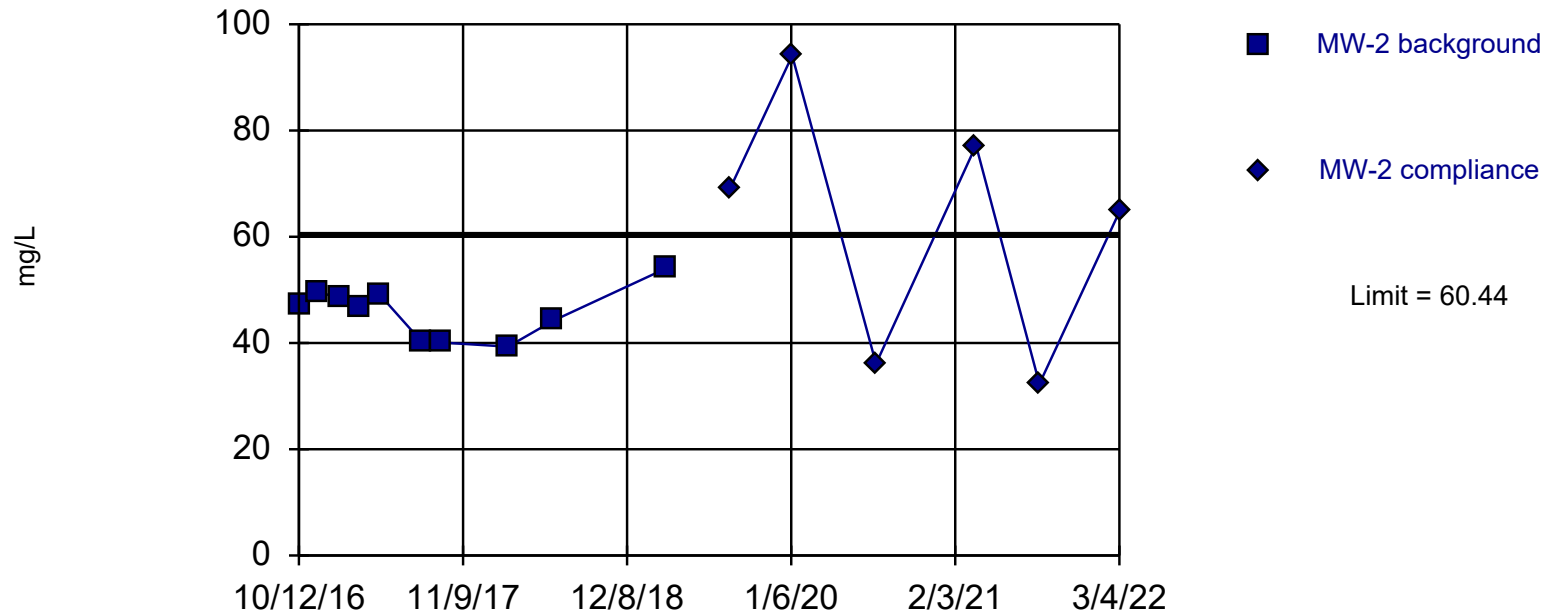
Prediction Limit Intrawell Parametric



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 = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Exceeds Limit

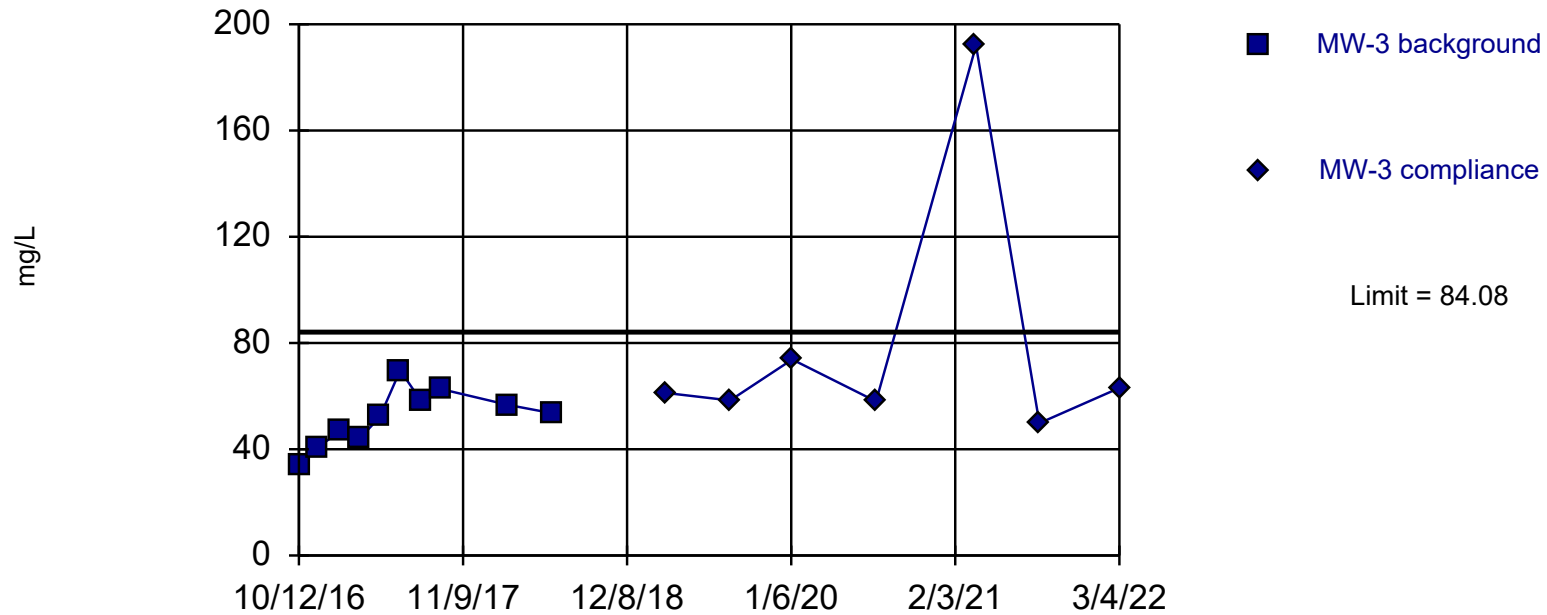
Prediction Limit Intrawell Parametric



Background Data Summary: Mean=45.91, Std. Dev.=4.815, n=10. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9335, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Within Limit

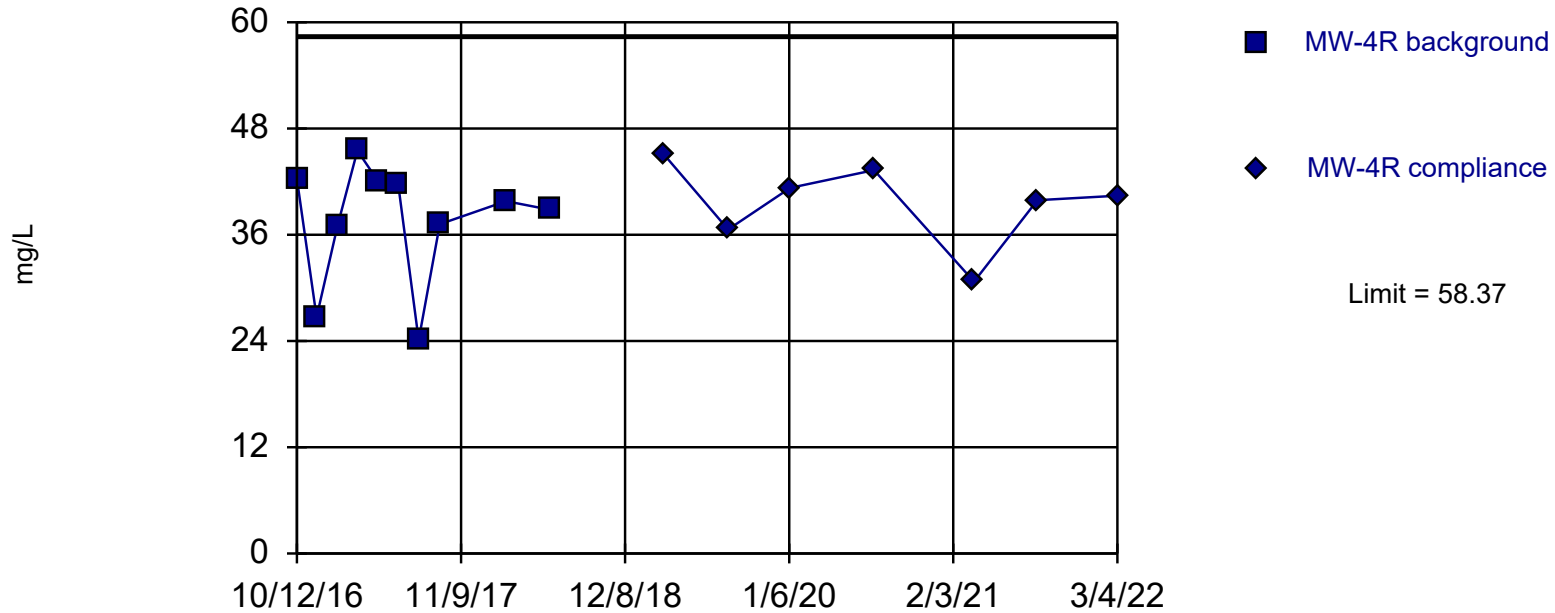
Prediction Limit Intrawell Parametric



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 = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Within Limit

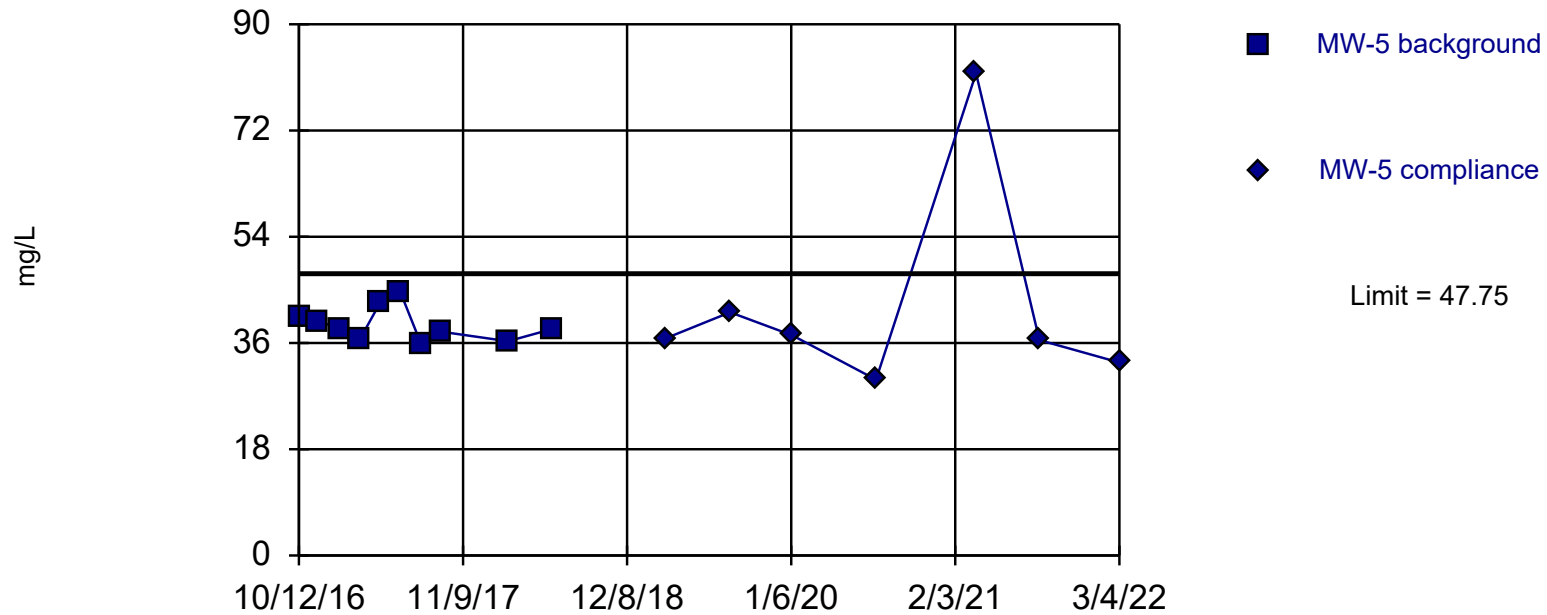
Prediction Limit Intrawell Parametric



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 = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

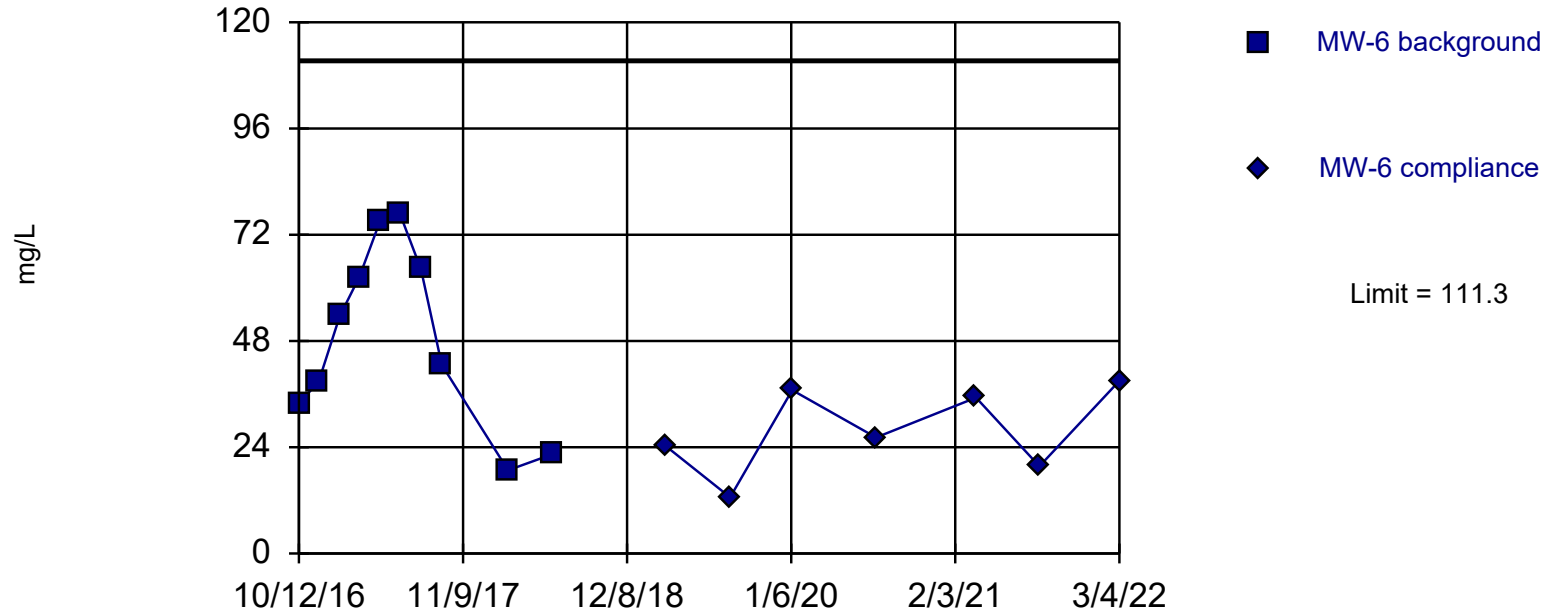
Within Limit

Prediction Limit Intrawell Parametric



Within Limit

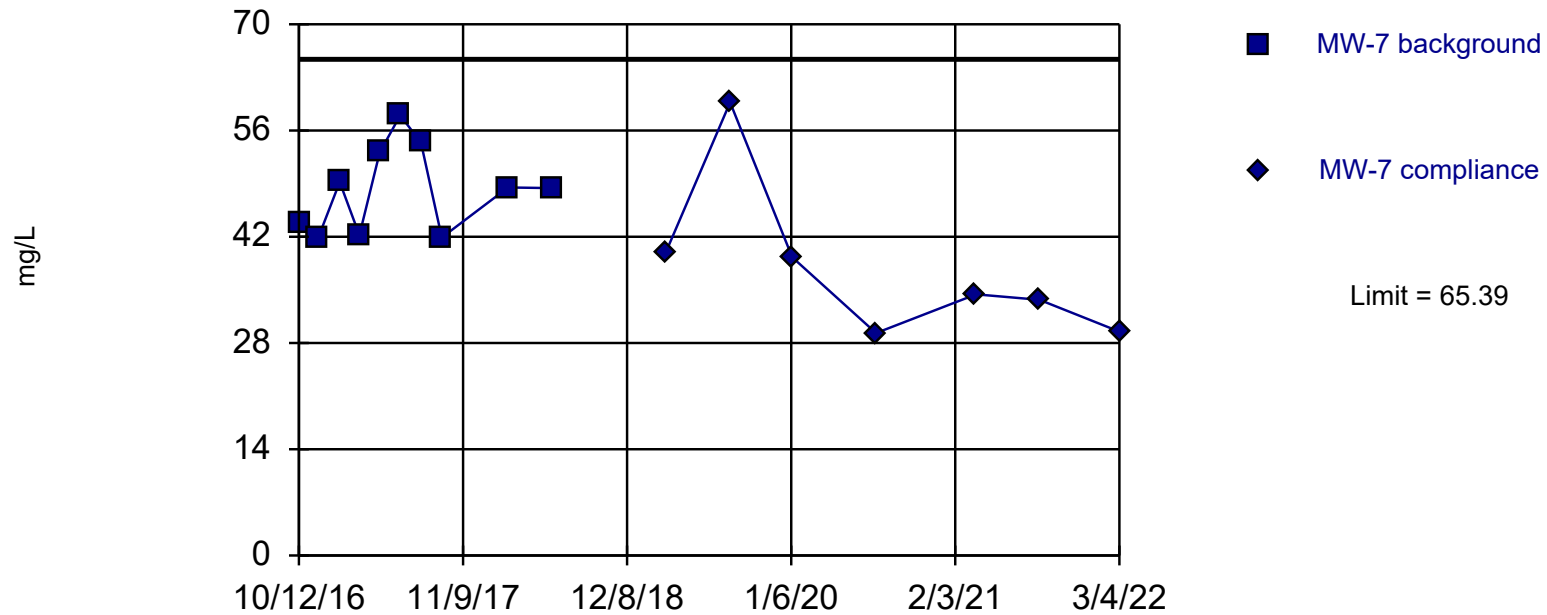
Prediction Limit Intrawell Parametric



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 = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Within Limit

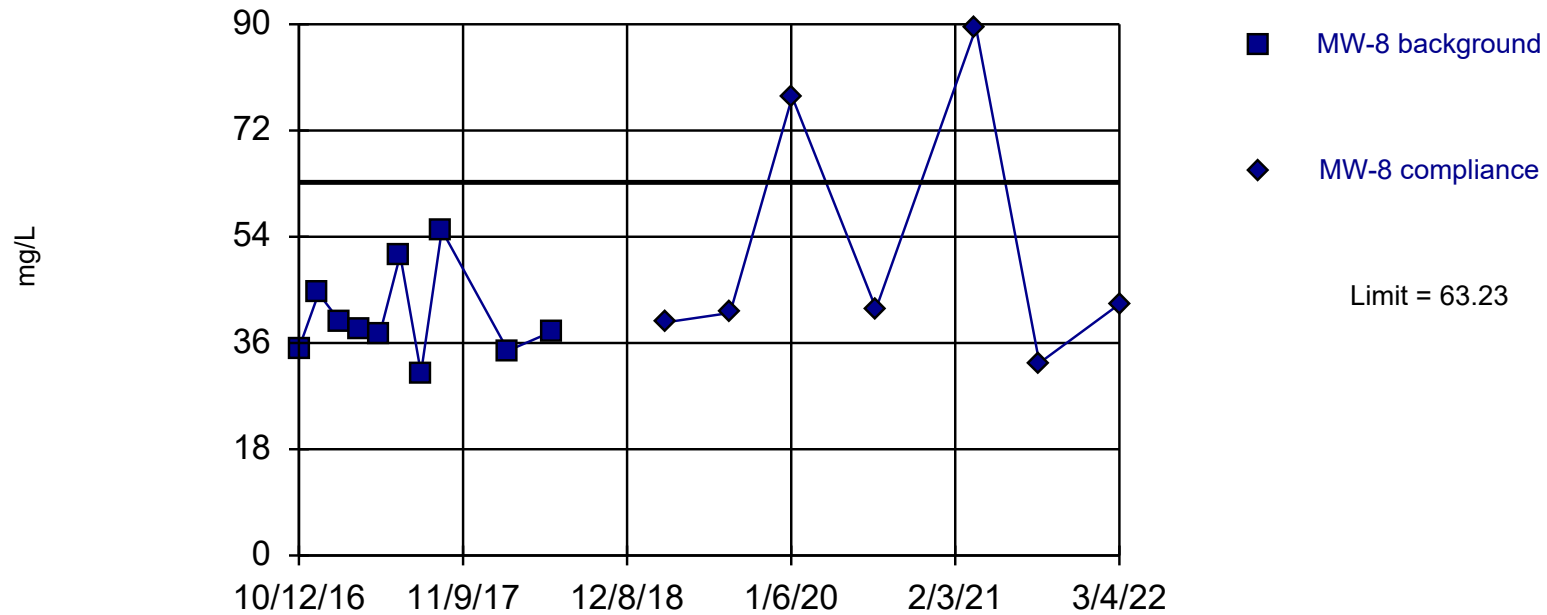
Prediction Limit Intrawell Parametric



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 = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Within Limit

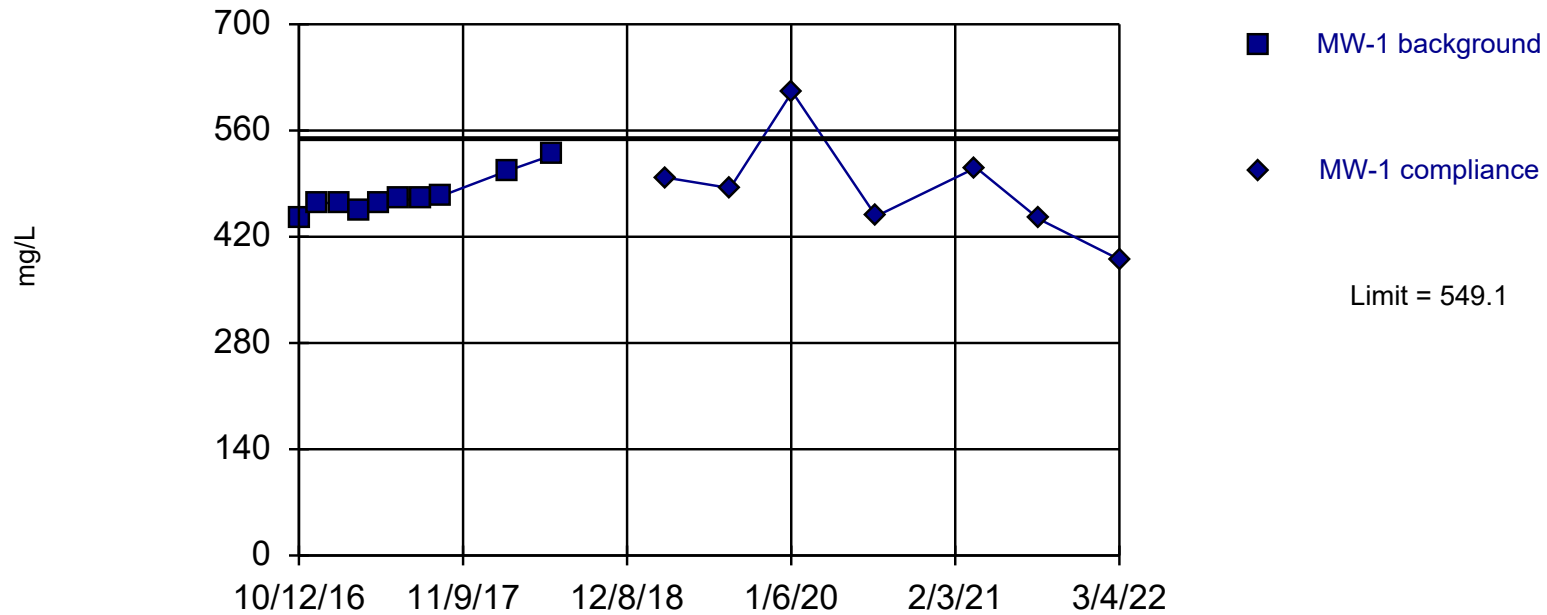
Prediction Limit Intrawell Parametric



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 = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

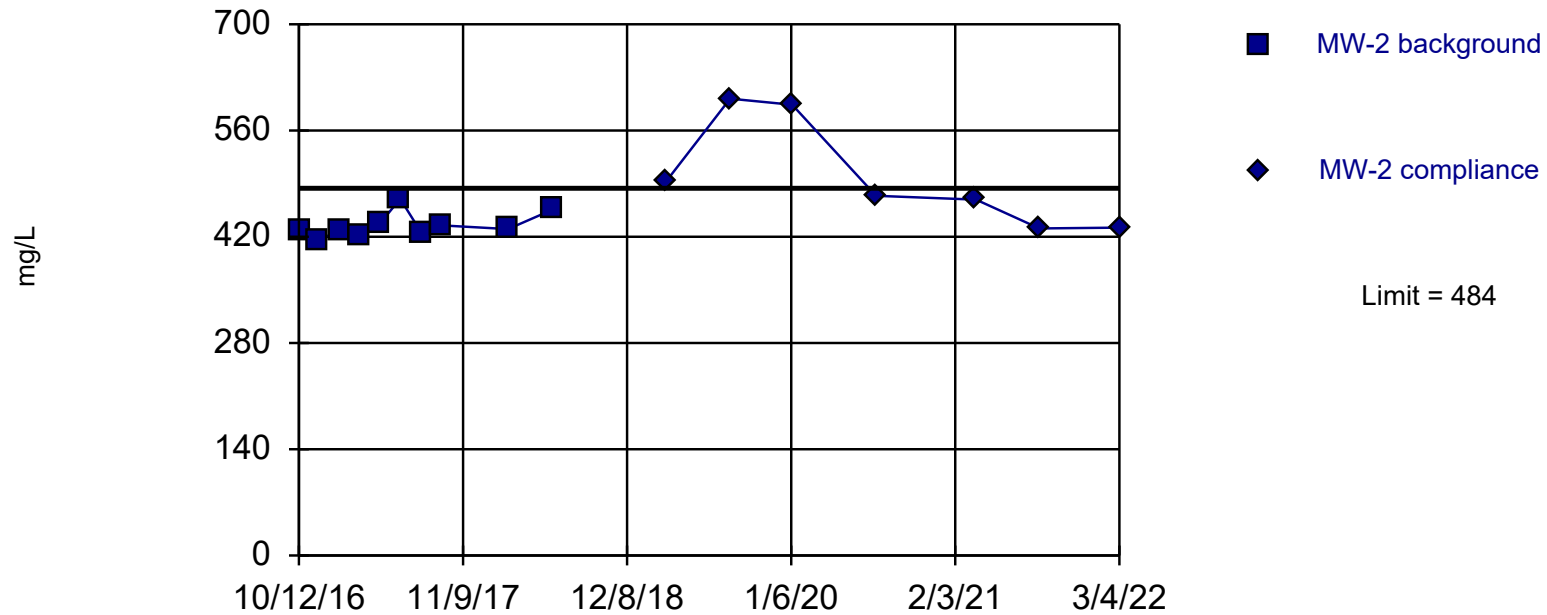
Within Limit

Prediction Limit Intrawell Parametric



Within Limit

Prediction Limit Intrawell Parametric



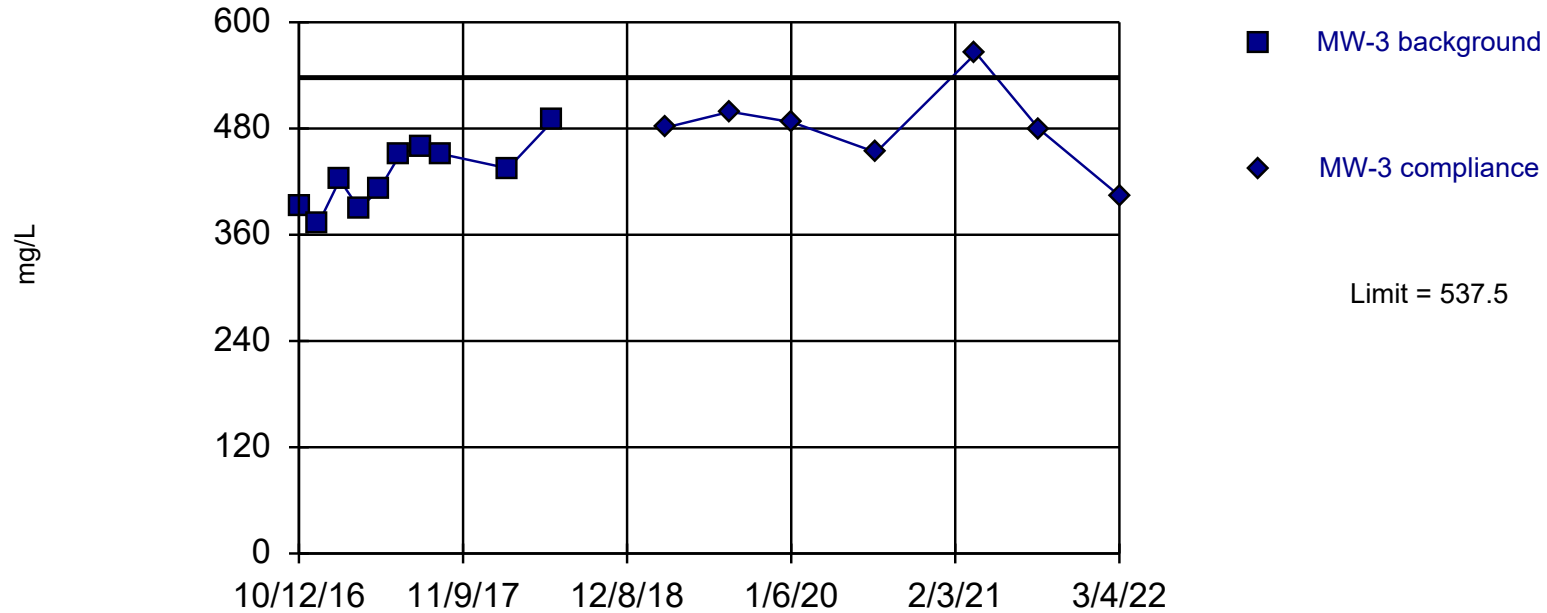
Background Data Summary: Mean=434.9, Std. Dev.=16.26, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8566, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Total Dissolved Solids Analysis Run 4/25/2022 4:11 PM View: FDU Combined

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

Within Limit

Prediction Limit Intrawell Parametric



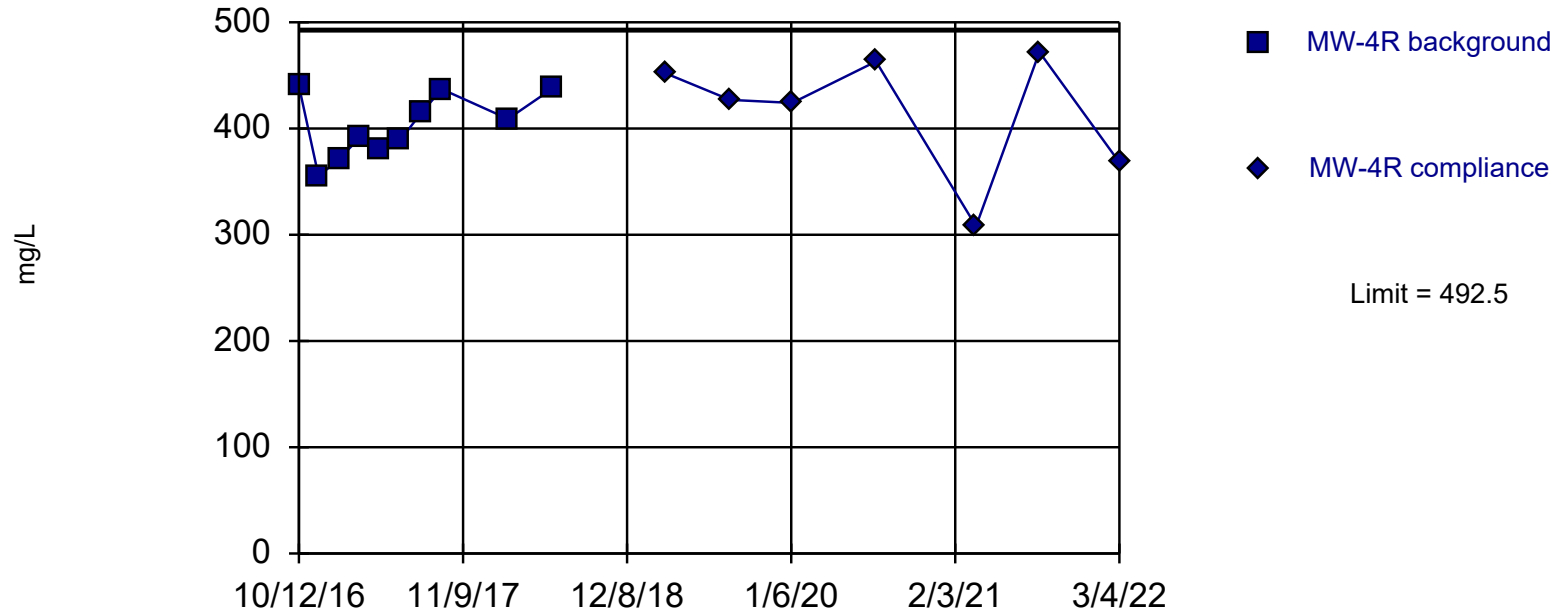
Background Data Summary: Mean=427.4, Std. Dev.=36.49, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.971, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Total Dissolved Solids Analysis Run 4/25/2022 4:11 PM View: FDU Combined

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

Within Limit

Prediction Limit Intrawell Parametric



Background Data Summary: Mean=402.6, Std. Dev.=29.8, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.931, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Total Dissolved Solids Analysis Run 4/25/2022 4:11 PM View: FDU Combined

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

mg/L

Limit = 539.3

Legend:

- MW-5 background (Blue squares)
- MW-5 compliance (Red diamonds)

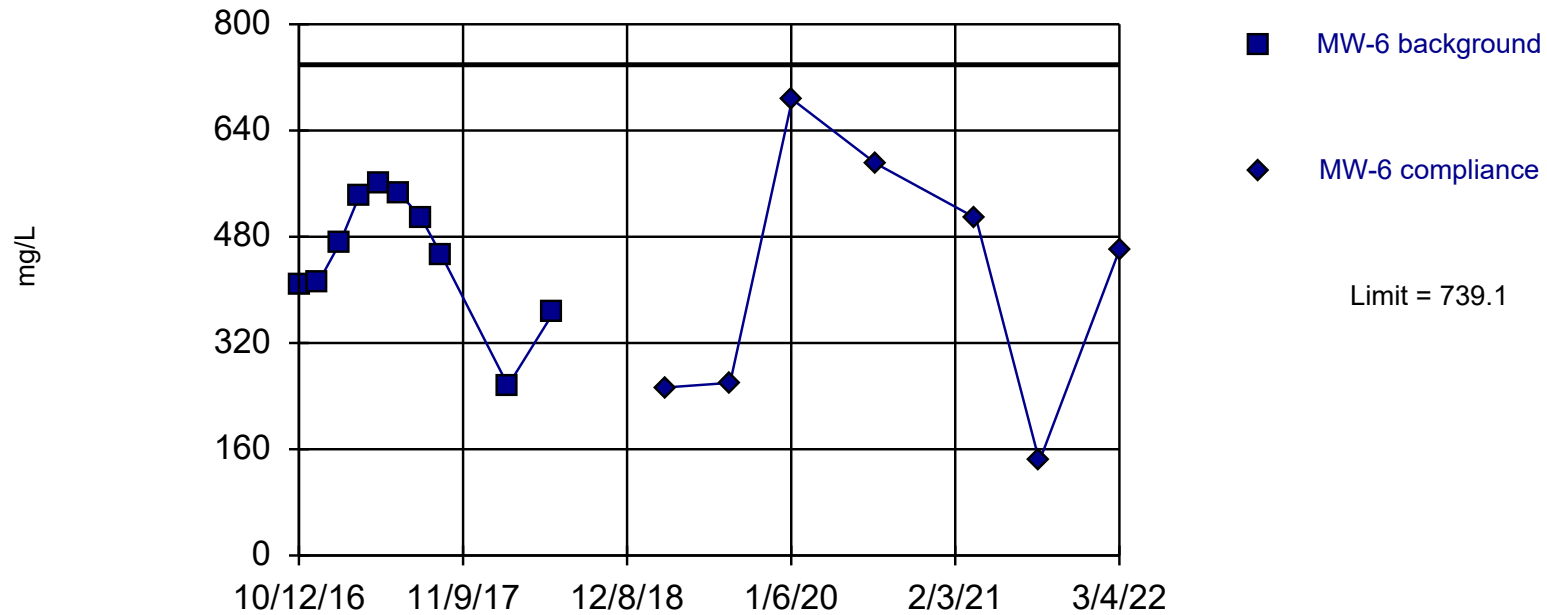
Date	MW-5 background (mg/L)	MW-5 compliance (mg/L)
10/12/16	480	
11/1/16	465	
11/4/16	475	
11/7/16	480	
11/10/16	490	
11/13/16	490	
11/16/16	490	
11/19/16	480	
11/22/16		475
11/25/16	465	
11/28/16	465	
12/1/16		475
12/4/16		465
12/7/16		485
12/10/16		465
12/13/16		500
12/16/16		465
12/19/16		530
12/22/16		480
12/25/16		540
12/28/16		480
1/1/17		355

Constituent: Total Dissolved Solids Analysis Run 4/25/2022 4:11 PM View: FDU Combined

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

Within Limit

Prediction Limit Intrawell Parametric



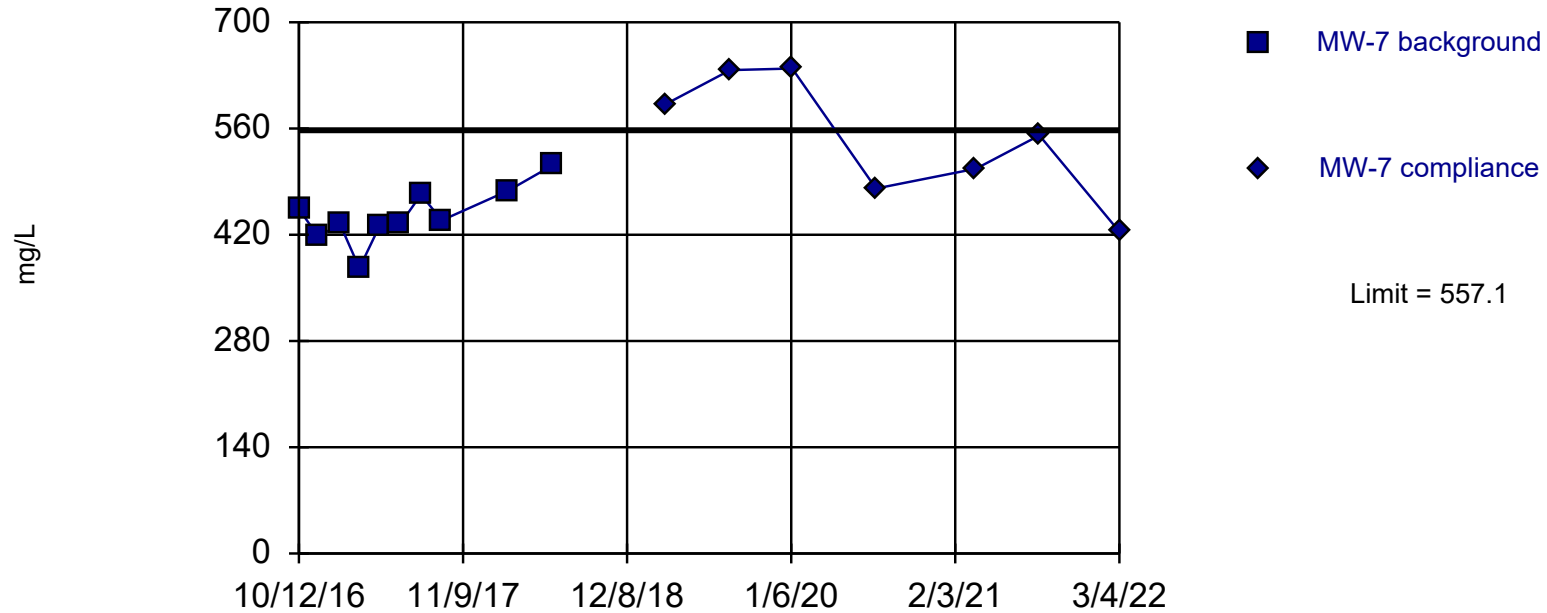
Background Data Summary: Mean=451.7, Std. Dev.=95.24, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9297, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Total Dissolved Solids Analysis Run 4/25/2022 4:11 PM View: FDU Combined

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

Within Limit

Prediction Limit Intrawell Parametric



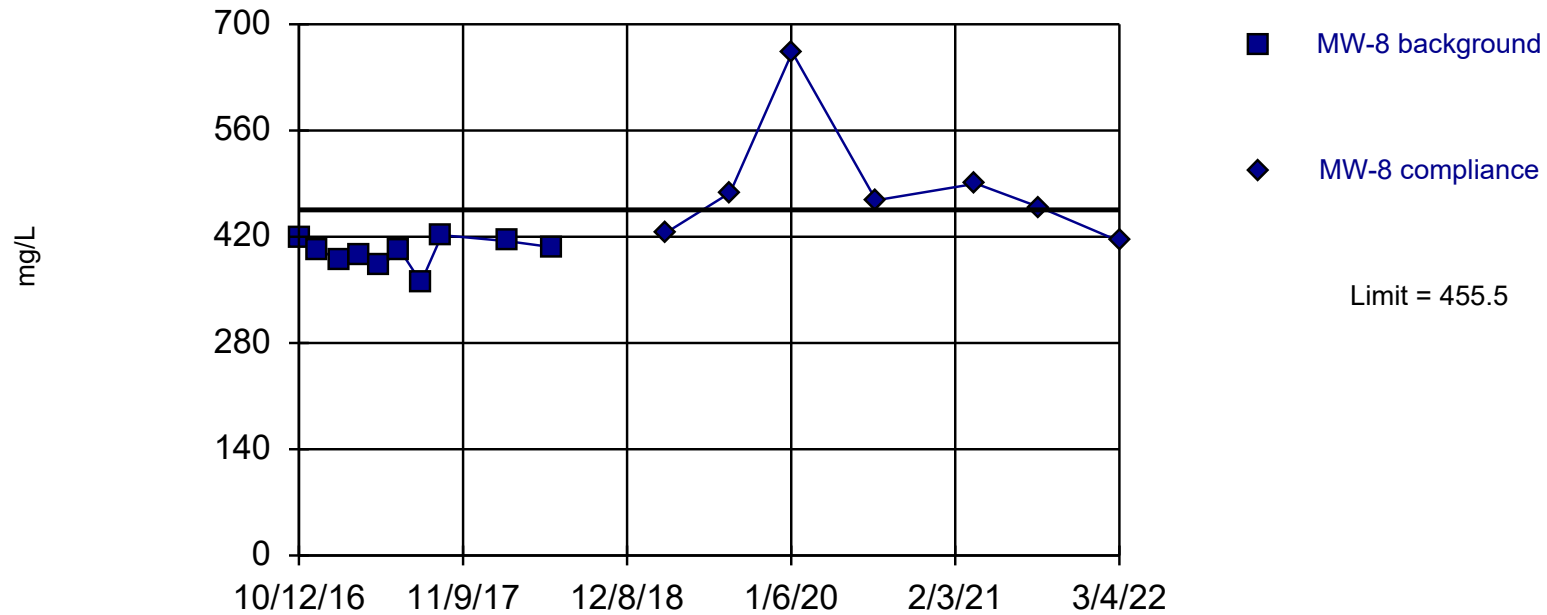
Background Data Summary: Mean=445, Std. Dev.=37.14, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9661, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Total Dissolved Solids Analysis Run 4/25/2022 4:11 PM View: FDU Combined

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 = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

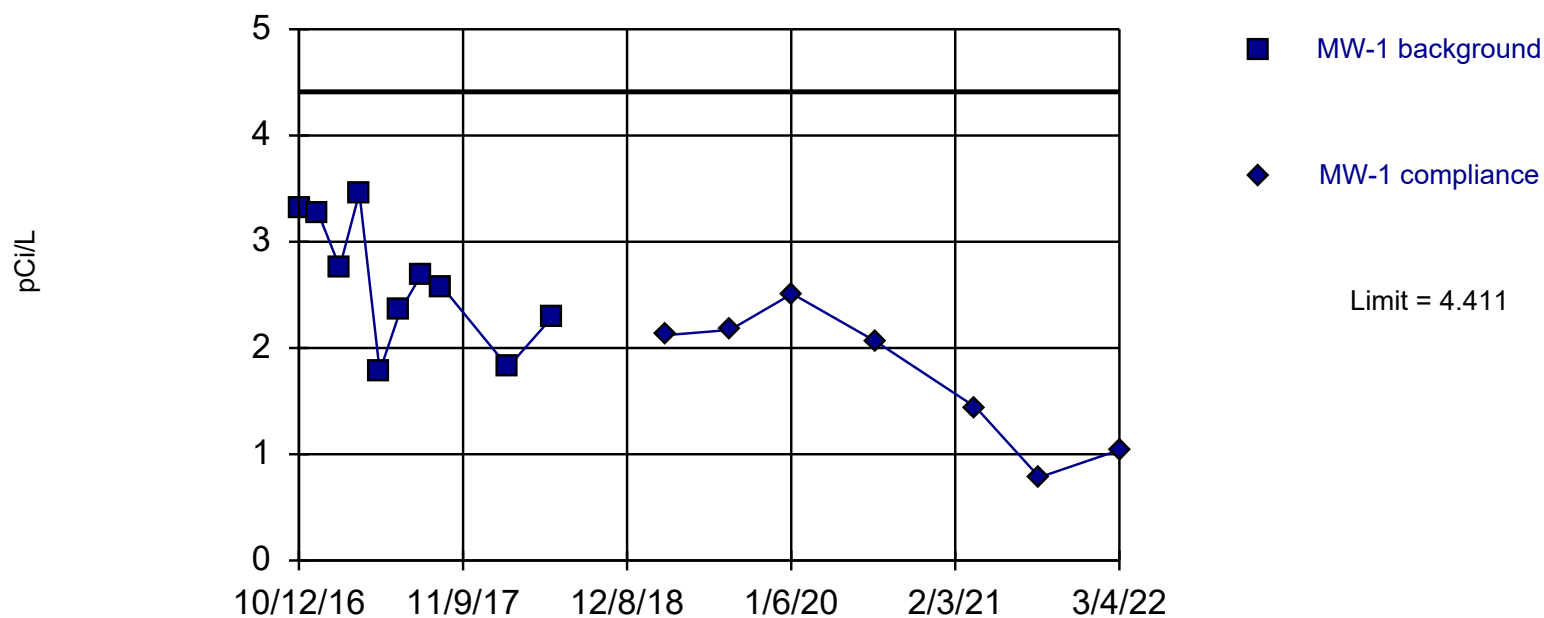
Constituent: Total Dissolved Solids Analysis Run 4/25/2022 4:11 PM View: FDU Combined

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

Within Limit

Prediction Limit

Intrawell Parametric



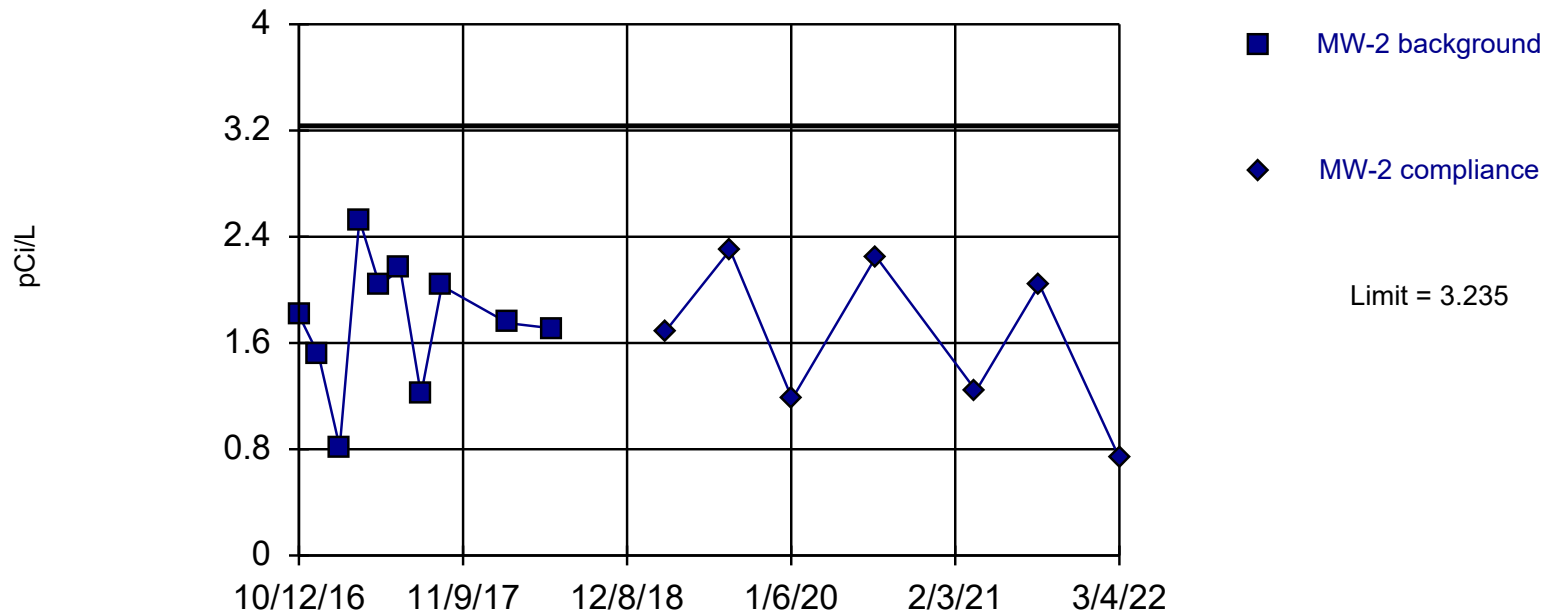
Background Data Summary: Mean=2.63, Std. Dev.=0.5903, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.937, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Total Radium Analysis Run 4/25/2022 4:11 PM View: FDU Combined

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

Within Limit

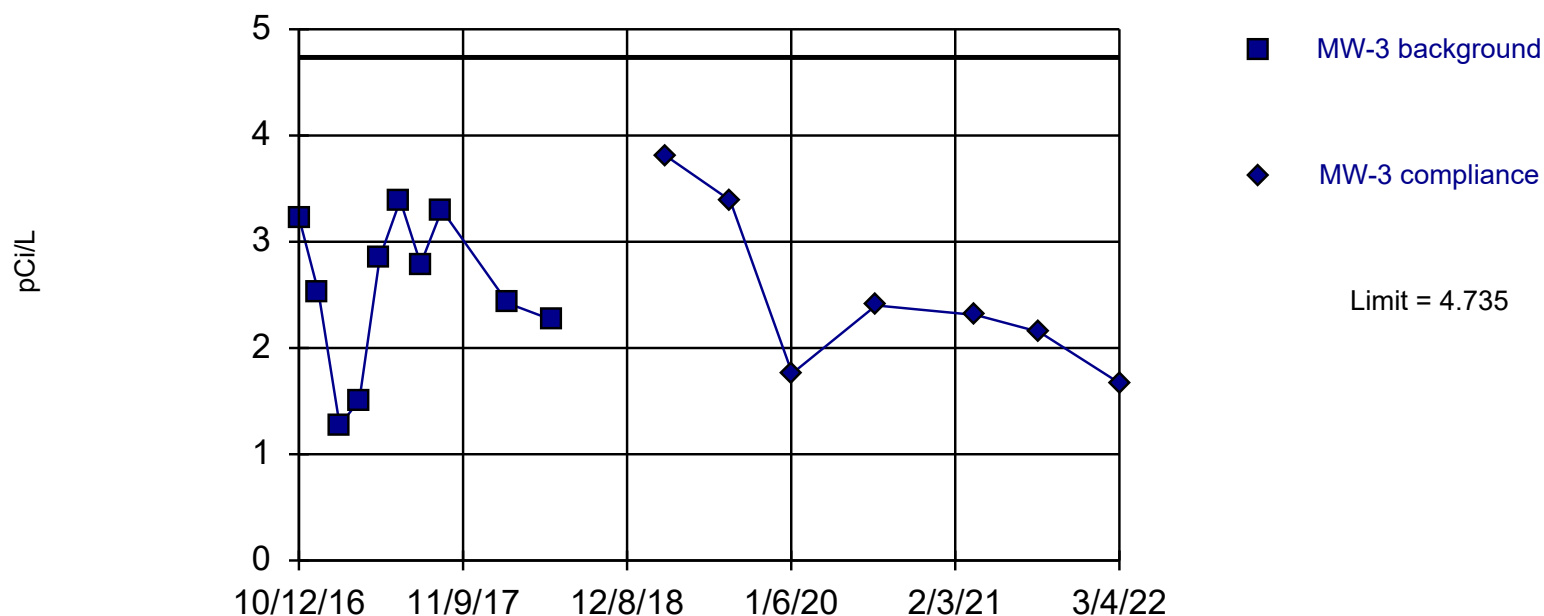
Prediction Limit Intrawell Parametric



Within Limit

Prediction Limit

Intrawell Parametric



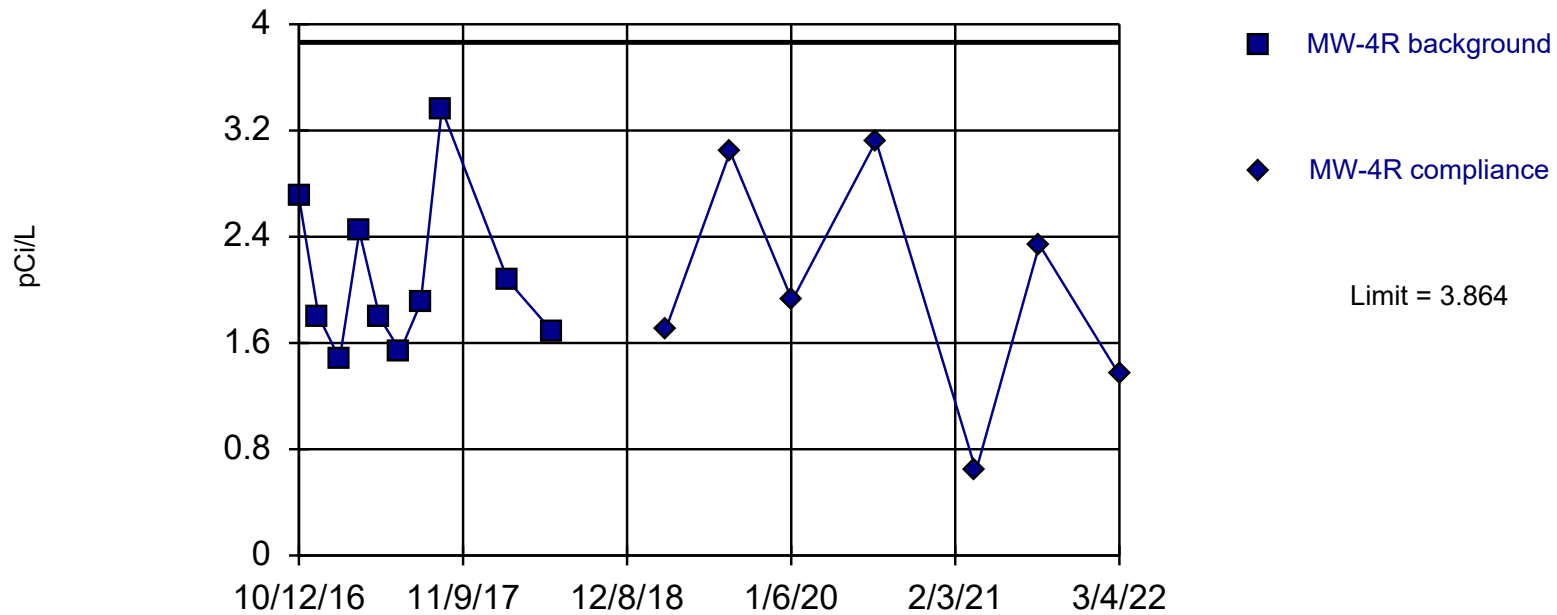
Background Data Summary: Mean=2.554, Std. Dev.=0.7226, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9177, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Total Radium Analysis Run 4/25/2022 4:11 PM View: FDU Combined

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

Within Limit

Prediction Limit Intrawell Parametric



Background Data Summary: Mean=2.076, Std. Dev.=0.5924, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8741, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

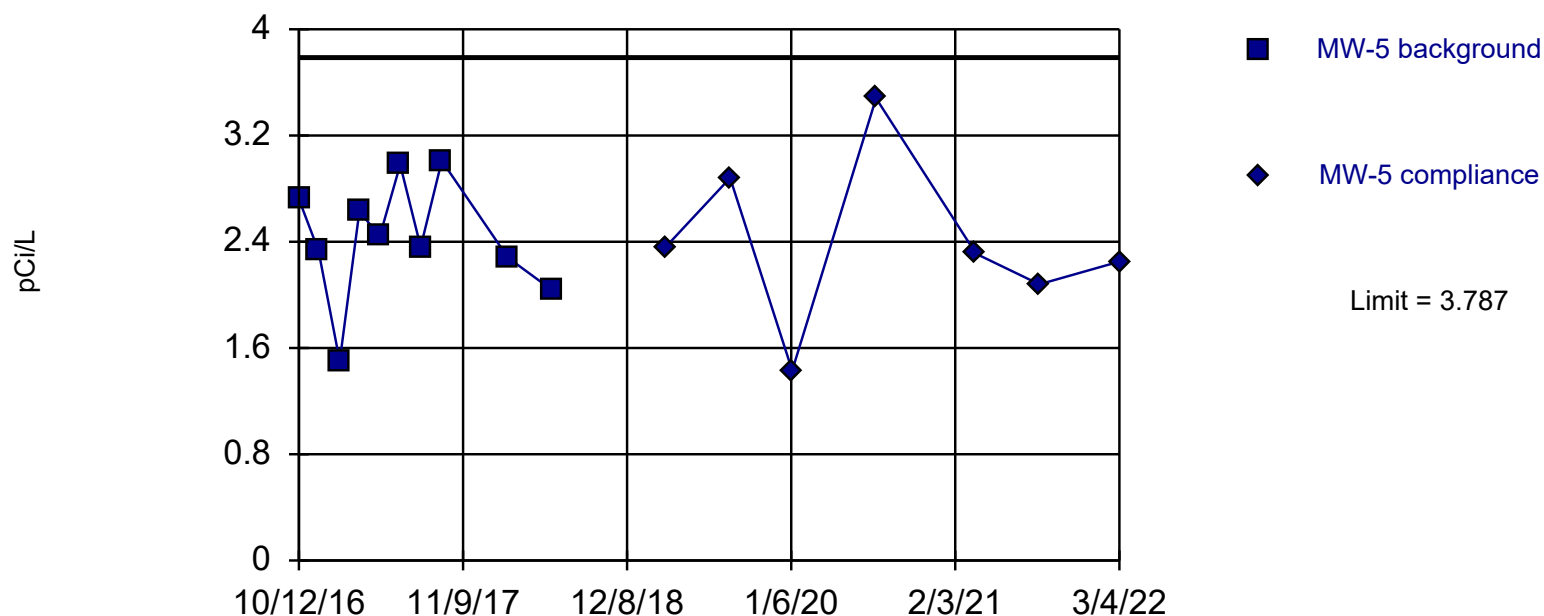
Constituent: Total Radium Analysis Run 4/25/2022 4:11 PM View: FDU Combined

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 = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

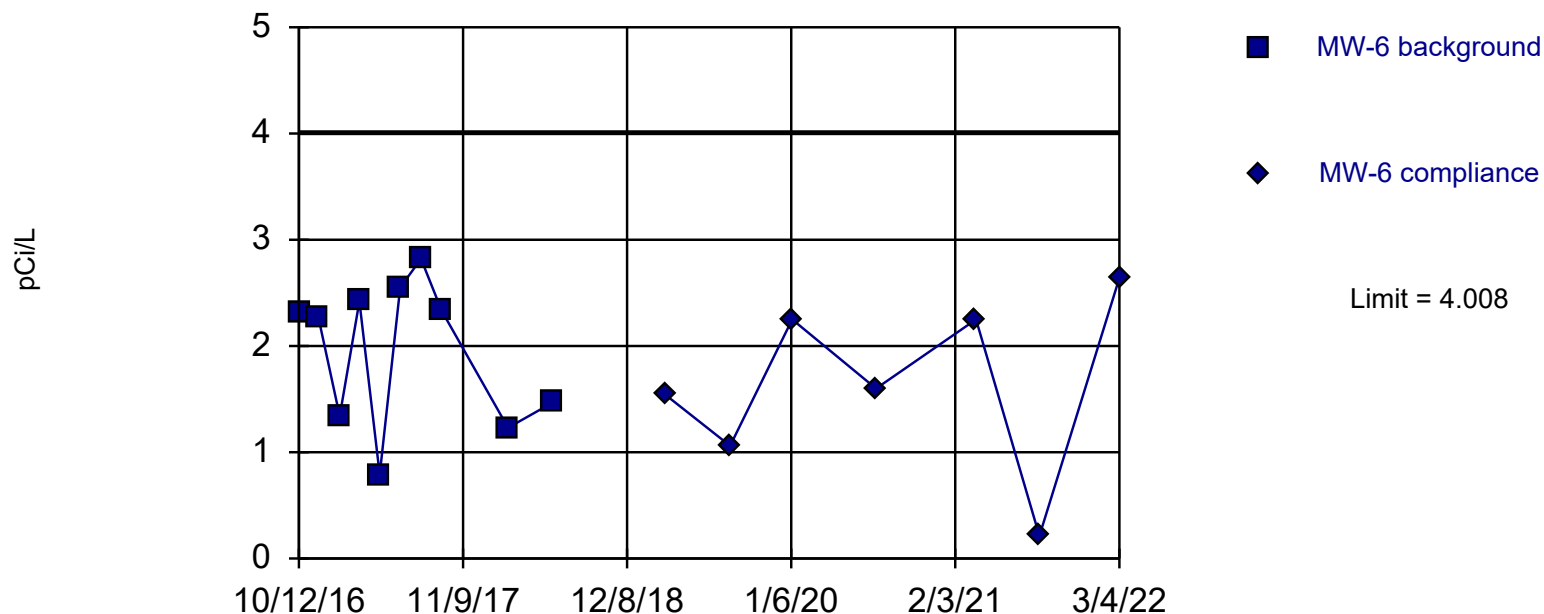
Constituent: Total Radium Analysis Run 4/25/2022 4:11 PM View: FDU Combined

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

Within Limit

Prediction Limit

Intrawell Parametric



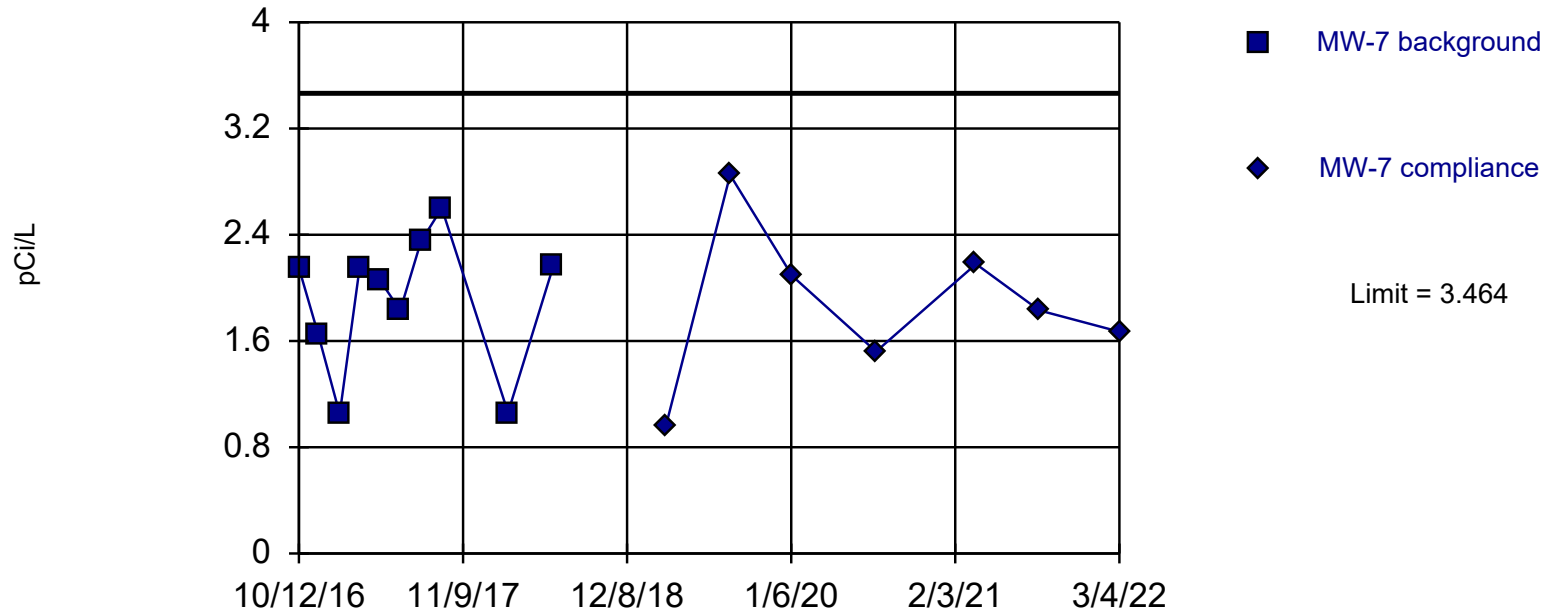
Background Data Summary: Mean=1.952, Std. Dev.=0.6812, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8997, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Total Radium Analysis Run 4/25/2022 4:11 PM View: FDU Combined

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

Within Limit

Prediction Limit Intrawell Parametric



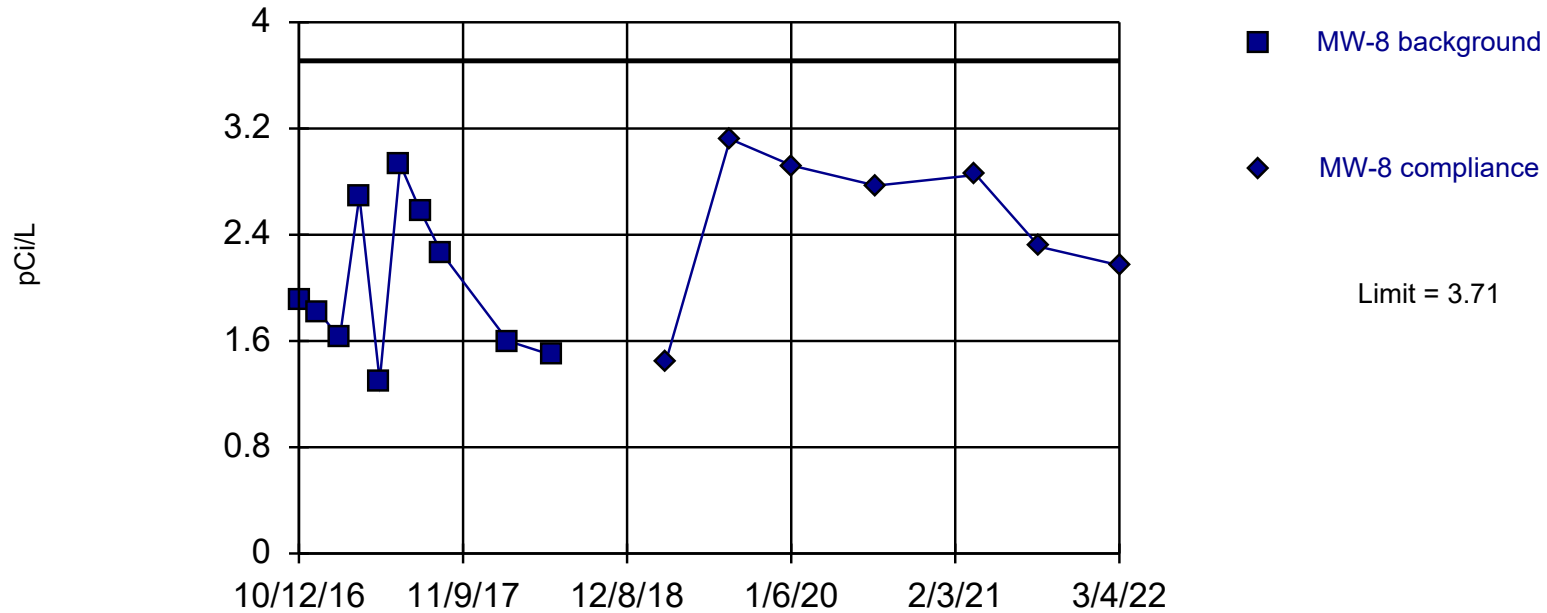
Background Data Summary: Mean=1.904, Std. Dev.=0.5171, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8953, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Total Radium Analysis Run 4/25/2022 4:11 PM View: FDU Combined

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 = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Total Radium Analysis Run 4/25/2022 4:11 PM View: FDU Combined

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

A.3 Interwell Prediction Limits

Prediction Limit

Fremont Dept. of Utilities

Client: SCS Engineers

Data: Fremont Department of Utilities Groundwater

Printed 4/25/2022, 4:21 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Date</u>	<u>Observ.</u>	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Arsenic [total] (ug/L)	MW-1	5.673	n/a	3/4/2022	6.43	Yes	17	0	No	0.000...	Param Inter 1 of 2
Arsenic [total] (ug/L)	MW-2	5.673	n/a	3/4/2022	4.55	No	17	0	No	0.000...	Param Inter 1 of 2
Arsenic [total] (ug/L)	MW-3	5.673	n/a	3/4/2022	3.75	No	17	0	No	0.000...	Param Inter 1 of 2
Arsenic [total] (ug/L)	MW-5	5.673	n/a	3/4/2022	4.74	No	17	0	No	0.000...	Param Inter 1 of 2
Arsenic [total] (ug/L)	MW-6	5.673	n/a	3/4/2022	3.55	No	17	0	No	0.000...	Param Inter 1 of 2
Arsenic [total] (ug/L)	MW-7	5.673	n/a	3/4/2022	4.03	No	17	0	No	0.000...	Param Inter 1 of 2
Arsenic [total] (ug/L)	MW-8	5.673	n/a	3/4/2022	2.82	No	17	0	No	0.000...	Param Inter 1 of 2
Barium [total] (ug/L)	MW-1	153.9	n/a	3/4/2022	148	No	17	0	No	0.000...	Param Inter 1 of 2
Barium [total] (ug/L)	MW-2	153.9	n/a	3/4/2022	112	No	17	0	No	0.000...	Param Inter 1 of 2
Barium [total] (ug/L)	MW-3	153.9	n/a	3/4/2022	177	Yes	17	0	No	0.000...	Param Inter 1 of 2
Barium [total] (ug/L)	MW-5	153.9	n/a	3/4/2022	139	No	17	0	No	0.000...	Param Inter 1 of 2
Barium [total] (ug/L)	MW-6	153.9	n/a	3/4/2022	166	Yes	17	0	No	0.000...	Param Inter 1 of 2
Barium [total] (ug/L)	MW-7	153.9	n/a	3/4/2022	138	No	17	0	No	0.000...	Param Inter 1 of 2
Barium [total] (ug/L)	MW-8	153.9	n/a	3/4/2022	181	Yes	17	0	No	0.000...	Param Inter 1 of 2
Boron (ug/L)	MW-1	462.3	n/a	3/4/2022	103	No	17	29.41	No	0.000...	Param Inter 1 of 2
Boron (ug/L)	MW-2	462.3	n/a	3/4/2022	193	No	17	29.41	No	0.000...	Param Inter 1 of 2
Boron (ug/L)	MW-3	462.3	n/a	3/4/2022	102	No	17	29.41	No	0.000...	Param Inter 1 of 2
Boron (ug/L)	MW-5	462.3	n/a	3/4/2022	100	No	17	29.41	No	0.000...	Param Inter 1 of 2
Boron (ug/L)	MW-6	462.3	n/a	3/4/2022	50ND	No	17	29.41	No	0.000...	Param Inter 1 of 2
Boron (ug/L)	MW-7	462.3	n/a	3/4/2022	50ND	No	17	29.41	No	0.000...	Param Inter 1 of 2
Boron (ug/L)	MW-8	462.3	n/a	3/4/2022	125	No	17	29.41	No	0.000...	Param Inter 1 of 2
Calcium (mg/L)	MW-1	112.1	n/a	3/4/2022	104	No	17	0	No	0.000...	Param Inter 1 of 2
Calcium (mg/L)	MW-2	112.1	n/a	3/4/2022	122	Yes	17	0	No	0.000...	Param Inter 1 of 2
Calcium (mg/L)	MW-3	112.1	n/a	3/4/2022	104	No	17	0	No	0.000...	Param Inter 1 of 2
Calcium (mg/L)	MW-5	112.1	n/a	3/4/2022	103	No	17	0	No	0.000...	Param Inter 1 of 2
Calcium (mg/L)	MW-6	112.1	n/a	3/4/2022	103	No	17	0	No	0.000...	Param Inter 1 of 2
Calcium (mg/L)	MW-7	112.1	n/a	3/4/2022	97.5	No	17	0	No	0.000...	Param Inter 1 of 2
Calcium (mg/L)	MW-8	112.1	n/a	3/4/2022	108	No	17	0	No	0.000...	Param Inter 1 of 2
Chloride (mg/L)	MW-1	47.07	n/a	3/4/2022	31.8	No	16	0	No	0.000...	Param Inter 1 of 2
Chloride (mg/L)	MW-2	47.07	n/a	3/4/2022	18	No	16	0	No	0.000...	Param Inter 1 of 2
Chloride (mg/L)	MW-3	47.07	n/a	3/4/2022	55.3	Yes	16	0	No	0.000...	Param Inter 1 of 2
Chloride (mg/L)	MW-5	47.07	n/a	3/4/2022	37.4	No	16	0	No	0.000...	Param Inter 1 of 2
Chloride (mg/L)	MW-6	47.07	n/a	3/4/2022	76.9	Yes	16	0	No	0.000...	Param Inter 1 of 2
Chloride (mg/L)	MW-7	47.07	n/a	3/4/2022	89	Yes	16	0	No	0.000...	Param Inter 1 of 2
Chloride (mg/L)	MW-8	47.07	n/a	3/4/2022	36.6	No	16	0	No	0.000...	Param Inter 1 of 2
Fluoride (mg/L)	MW-1	1.131	n/a	3/4/2022	1.39	Yes	17	0	No	0.000...	Param Inter 1 of 2
Fluoride (mg/L)	MW-2	1.131	n/a	3/4/2022	1.15	Yes	17	0	No	0.000...	Param Inter 1 of 2
Fluoride (mg/L)	MW-3	1.131	n/a	3/4/2022	0.641	No	17	0	No	0.000...	Param Inter 1 of 2
Fluoride (mg/L)	MW-5	1.131	n/a	3/4/2022	0.89	No	17	0	No	0.000...	Param Inter 1 of 2
Fluoride (mg/L)	MW-6	1.131	n/a	3/4/2022	0.557	No	17	0	No	0.000...	Param Inter 1 of 2
Fluoride (mg/L)	MW-7	1.131	n/a	3/4/2022	0.787	No	17	0	No	0.000...	Param Inter 1 of 2
Fluoride (mg/L)	MW-8	1.131	n/a	3/4/2022	0.533	No	17	0	No	0.000...	Param Inter 1 of 2
Lithium (ug/L)	MW-1	34.89	n/a	3/4/2022	35.6	Yes	17	0	No	0.000...	Param Inter 1 of 2
Lithium (ug/L)	MW-2	34.89	n/a	3/4/2022	43.1	Yes	17	0	No	0.000...	Param Inter 1 of 2
Lithium (ug/L)	MW-3	34.89	n/a	3/4/2022	31	No	17	0	No	0.000...	Param Inter 1 of 2
Lithium (ug/L)	MW-5	34.89	n/a	3/4/2022	29.6	No	17	0	No	0.000...	Param Inter 1 of 2
Lithium (ug/L)	MW-6	34.89	n/a	3/4/2022	28	No	17	0	No	0.000...	Param Inter 1 of 2
Lithium (ug/L)	MW-7	34.89	n/a	3/4/2022	27.1	No	17	0	No	0.000...	Param Inter 1 of 2
Lithium (ug/L)	MW-8	34.89	n/a	3/4/2022	30.7	No	17	0	No	0.000...	Param Inter 1 of 2
Molybdenum (ug/L)	MW-1	12.96	n/a	3/4/2022	9.51	No	17	0	sqrt(x)	0.000...	Param Inter 1 of 2

Prediction Limit

Fremont Dept. of Utilities

Client: SCS Engineers

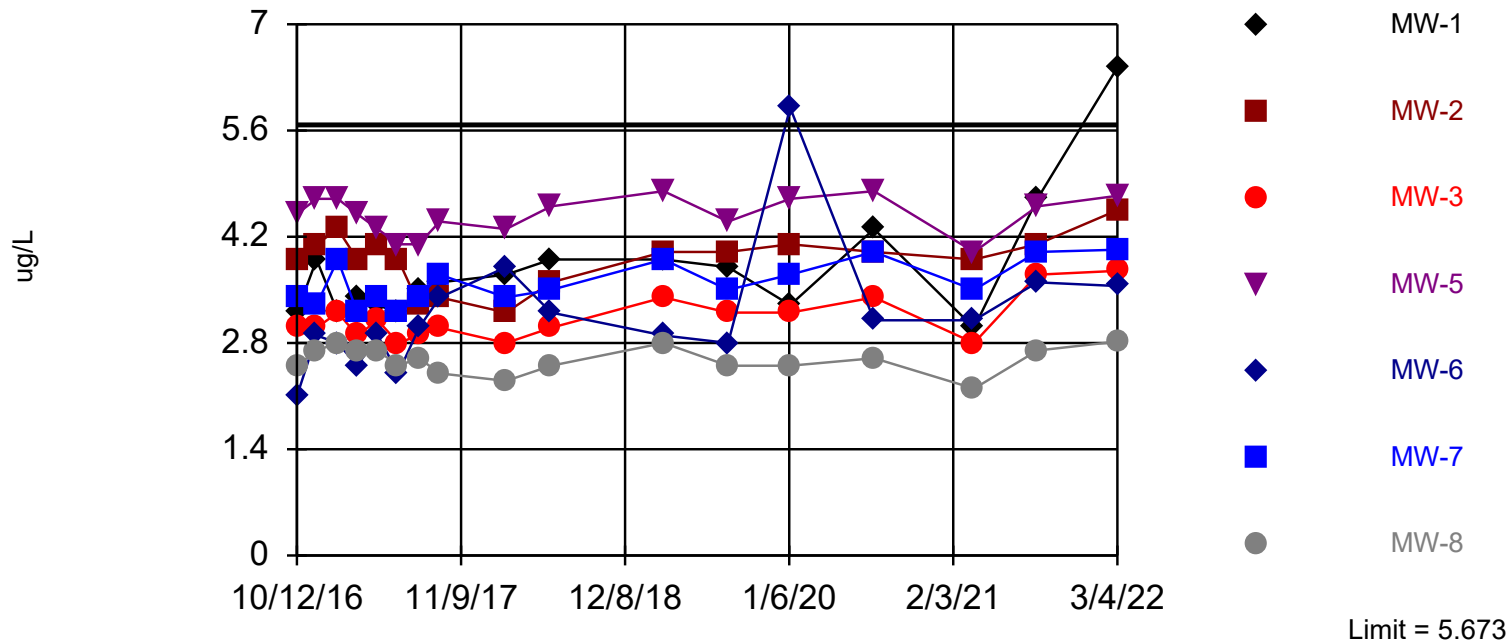
Data: Fremont Department of Utilities Groundwater

Printed 4/25/2022, 4:21 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Date</u>	<u>Observ.</u>	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Molybdenum (ug/L)	MW-2	12.96	n/a	3/4/2022	9.3	No	17	0	sqrt(x)	0.000...	Param Inter 1 of 2
Molybdenum (ug/L)	MW-3	12.96	n/a	3/4/2022	14.3	Yes	17	0	sqrt(x)	0.000...	Param Inter 1 of 2
Molybdenum (ug/L)	MW-5	12.96	n/a	3/4/2022	4.04	No	17	0	sqrt(x)	0.000...	Param Inter 1 of 2
Molybdenum (ug/L)	MW-6	12.96	n/a	3/4/2022	7.3	No	17	0	sqrt(x)	0.000...	Param Inter 1 of 2
Molybdenum (ug/L)	MW-7	12.96	n/a	3/4/2022	7.73	No	17	0	sqrt(x)	0.000...	Param Inter 1 of 2
Molybdenum (ug/L)	MW-8	12.96	n/a	3/4/2022	7.14	No	17	0	sqrt(x)	0.000...	Param Inter 1 of 2
pH (Std. Units)	MW-1	7.748	6.53	3/4/2022	7.208	No	17	0	No	0.000...	Param Inter 1 of 2 De...
pH (Std. Units)	MW-2	7.748	6.53	3/4/2022	7.048	No	17	0	No	0.000...	Param Inter 1 of 2 De...
pH (Std. Units)	MW-3	7.748	6.53	3/4/2022	7.048	No	17	0	No	0.000...	Param Inter 1 of 2 De...
pH (Std. Units)	MW-5	7.748	6.53	3/4/2022	7.228	No	17	0	No	0.000...	Param Inter 1 of 2 De...
pH (Std. Units)	MW-6	7.748	6.53	3/4/2022	7.108	No	17	0	No	0.000...	Param Inter 1 of 2 De...
pH (Std. Units)	MW-7	7.748	6.53	3/4/2022	7.158	No	17	0	No	0.000...	Param Inter 1 of 2 De...
pH (Std. Units)	MW-8	7.748	6.53	3/4/2022	7.098	No	17	0	No	0.000...	Param Inter 1 of 2 De...
Selenium [total] (ug/L)	MW-1	11.31	n/a	3/4/2022	11.7	Yes	16	0	No	0.000...	Param Inter 1 of 2
Selenium [total] (ug/L)	MW-2	11.31	n/a	3/4/2022	12.7	Yes	16	0	No	0.000...	Param Inter 1 of 2
Selenium [total] (ug/L)	MW-3	11.31	n/a	3/4/2022	6.24	No	16	0	No	0.000...	Param Inter 1 of 2
Selenium [total] (ug/L)	MW-5	11.31	n/a	3/4/2022	5.55	No	16	0	No	0.000...	Param Inter 1 of 2
Selenium [total] (ug/L)	MW-6	11.31	n/a	3/4/2022	7.63	No	16	0	No	0.000...	Param Inter 1 of 2
Selenium [total] (ug/L)	MW-7	11.31	n/a	3/4/2022	5.54	No	16	0	No	0.000...	Param Inter 1 of 2
Selenium [total] (ug/L)	MW-8	11.31	n/a	3/4/2022	10.4	No	16	0	No	0.000...	Param Inter 1 of 2
Sulfate (mg/L)	MW-1	53.49	n/a	3/4/2022	33.4	No	17	0	No	0.000...	Param Inter 1 of 2
Sulfate (mg/L)	MW-2	53.49	n/a	3/4/2022	64.7	Yes	17	0	No	0.000...	Param Inter 1 of 2
Sulfate (mg/L)	MW-3	53.49	n/a	3/4/2022	63.1	Yes	17	0	No	0.000...	Param Inter 1 of 2
Sulfate (mg/L)	MW-5	53.49	n/a	3/4/2022	32.7	No	17	0	No	0.000...	Param Inter 1 of 2
Sulfate (mg/L)	MW-6	53.49	n/a	3/4/2022	39	No	17	0	No	0.000...	Param Inter 1 of 2
Sulfate (mg/L)	MW-7	53.49	n/a	3/4/2022	29.5	No	17	0	No	0.000...	Param Inter 1 of 2
Sulfate (mg/L)	MW-8	53.49	n/a	3/4/2022	42.6	No	17	0	No	0.000...	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	MW-1	515.8	n/a	3/4/2022	390	No	17	0	No	0.000...	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	MW-2	515.8	n/a	3/4/2022	432	No	17	0	No	0.000...	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	MW-3	515.8	n/a	3/4/2022	404	No	17	0	No	0.000...	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	MW-5	515.8	n/a	3/4/2022	354	No	17	0	No	0.000...	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	MW-6	515.8	n/a	3/4/2022	460	No	17	0	No	0.000...	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	MW-7	515.8	n/a	3/4/2022	424	No	17	0	No	0.000...	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	MW-8	515.8	n/a	3/4/2022	414	No	17	0	No	0.000...	Param Inter 1 of 2
Total Radium (pCi/L)	MW-1	3.82	n/a	3/4/2022	1.04	No	17	0	No	0.000...	Param Inter 1 of 2
Total Radium (pCi/L)	MW-2	3.82	n/a	3/4/2022	0.735	No	17	0	No	0.000...	Param Inter 1 of 2
Total Radium (pCi/L)	MW-3	3.82	n/a	3/4/2022	1.67	No	17	0	No	0.000...	Param Inter 1 of 2
Total Radium (pCi/L)	MW-5	3.82	n/a	3/4/2022	2.25	No	17	0	No	0.000...	Param Inter 1 of 2
Total Radium (pCi/L)	MW-6	3.82	n/a	3/4/2022	2.64	No	17	0	No	0.000...	Param Inter 1 of 2
Total Radium (pCi/L)	MW-7	3.82	n/a	3/4/2022	1.67	No	17	0	No	0.000...	Param Inter 1 of 2
Total Radium (pCi/L)	MW-8	3.82	n/a	3/4/2022	2.17	No	17	0	No	0.000...	Param Inter 1 of 2

Exceeds Limit: MW-1

Prediction Limit Interwell Parametric



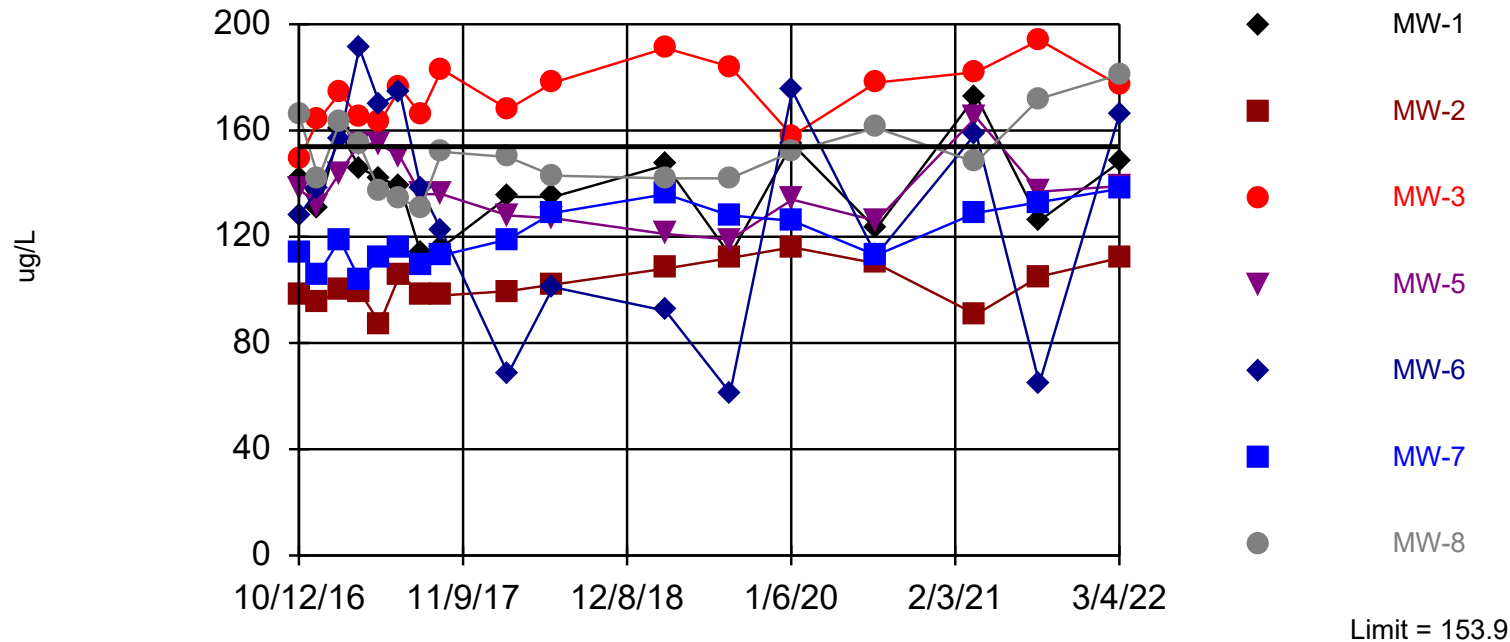
Background Data Summary: Mean=4.059, Std. Dev.=0.6447, n=17. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9658, critical = 0.851. Kappa = 2.503 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Individual comparison alpha = 0.0005016. Comparing 7 points to limit.

Constituent: Arsenic [total] Analysis Run 4/25/2022 4:14 PM View: FDU Combined

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

Exceeds Limit: MW-3, MW-6, MW-8

Prediction Limit Interwell Parametric



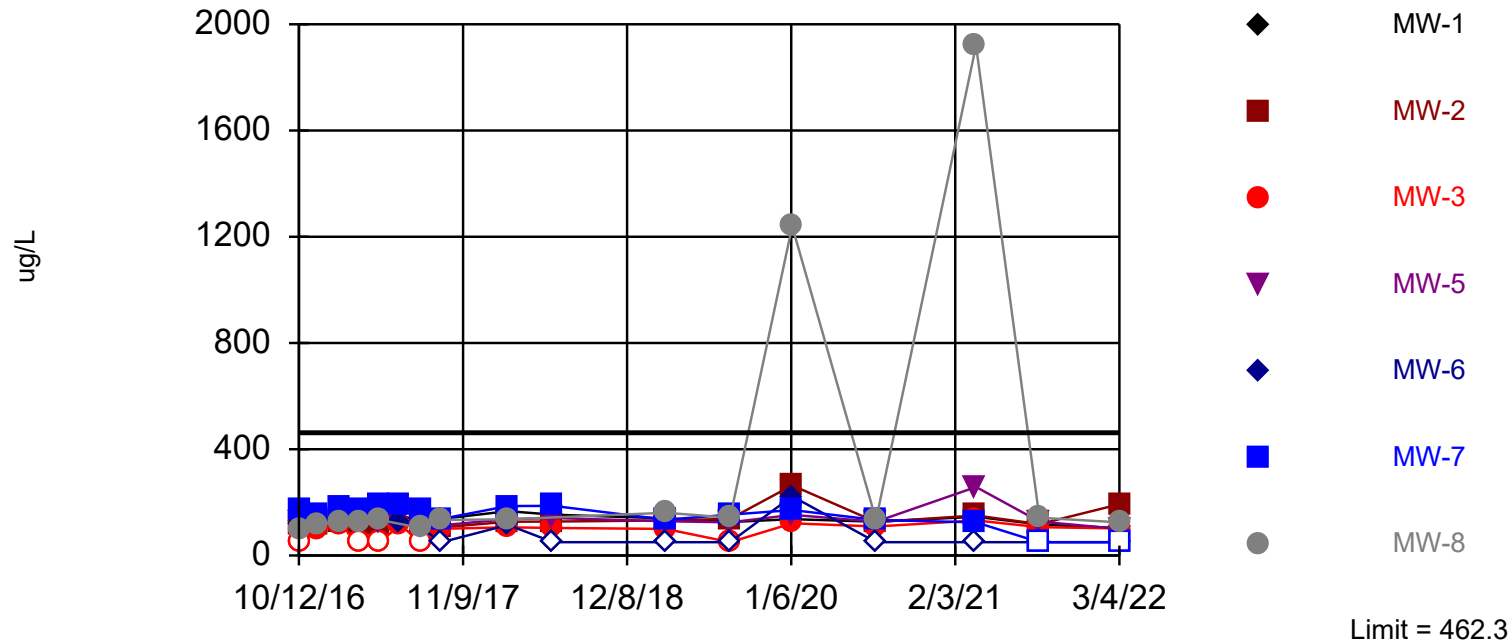
Background Data Summary: Mean=126.4, Std. Dev.=10.98, n=17. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.962, critical = 0.851. Kappa = 2.503 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Individual comparison alpha = 0.0005016. Comparing 7 points to limit.

Constituent: Barium [total] Analysis Run 4/25/2022 4:14 PM View: FDU Combined

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

Within Limit

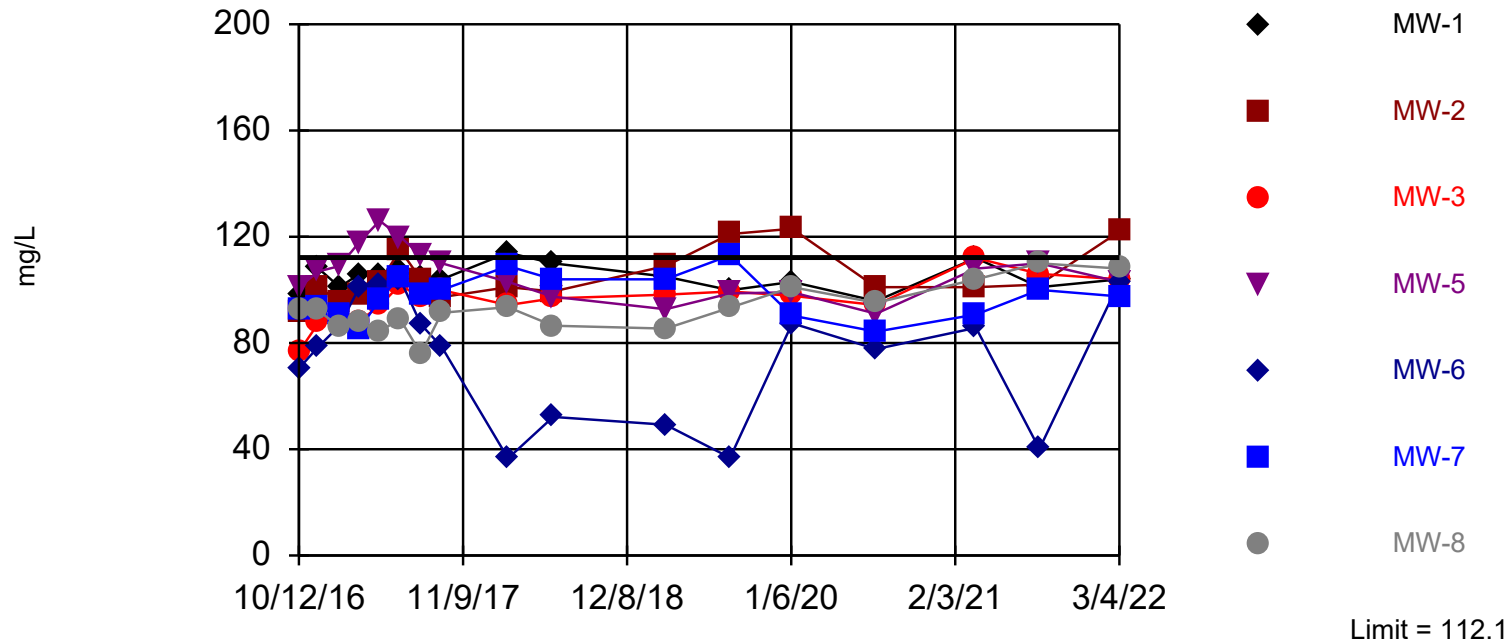
Prediction Limit Interwell Parametric



Background Data Summary (after Aitchison's Adjustment): Mean=161.2, Std. Dev.=120.3, n=17, 29.41% NDs. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9059, critical = 0.851. Kappa = 2.503 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Individual comparison alpha = 0.0005016. Comparing 7 points to limit.

Exceeds Limit: MW-2

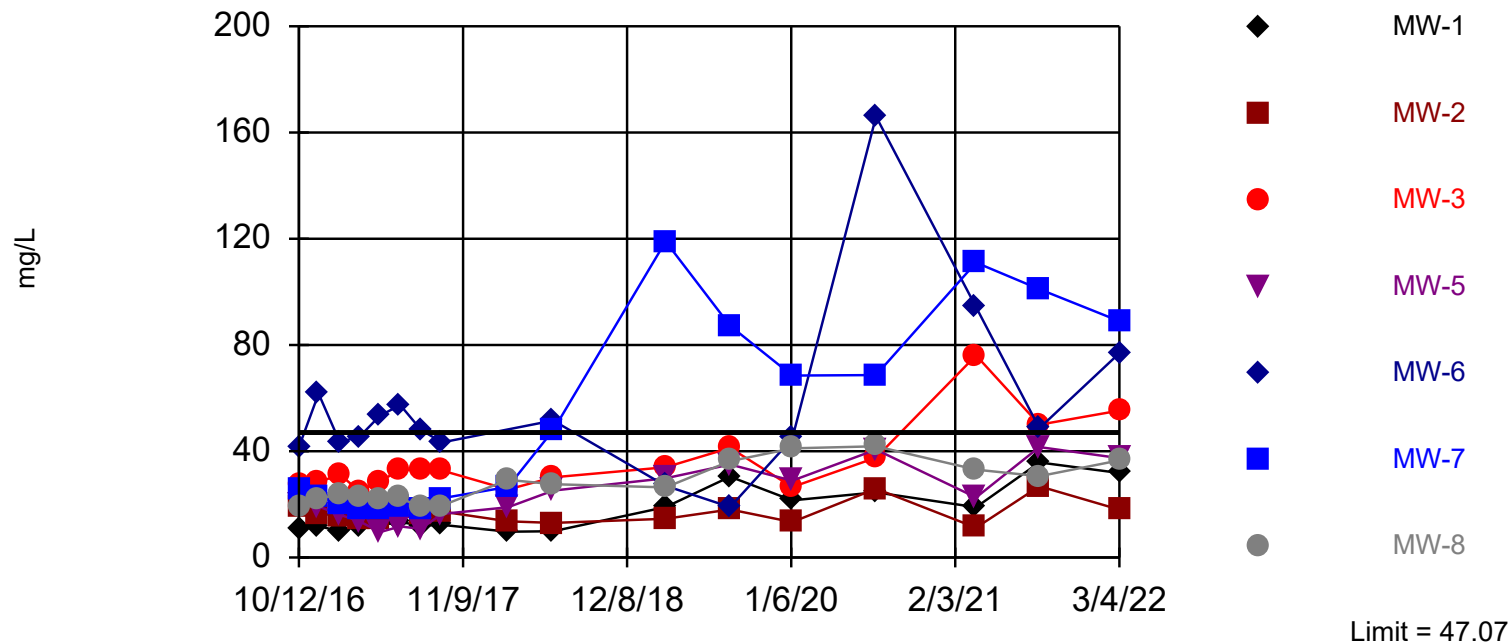
Prediction Limit Interwell Parametric



Background Data Summary: Mean=85.55, Std. Dev.=10.63, n=17. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9641, critical = 0.851. Kappa = 2.503 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Individual comparison alpha = 0.0005016. Comparing 7 points to limit.

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

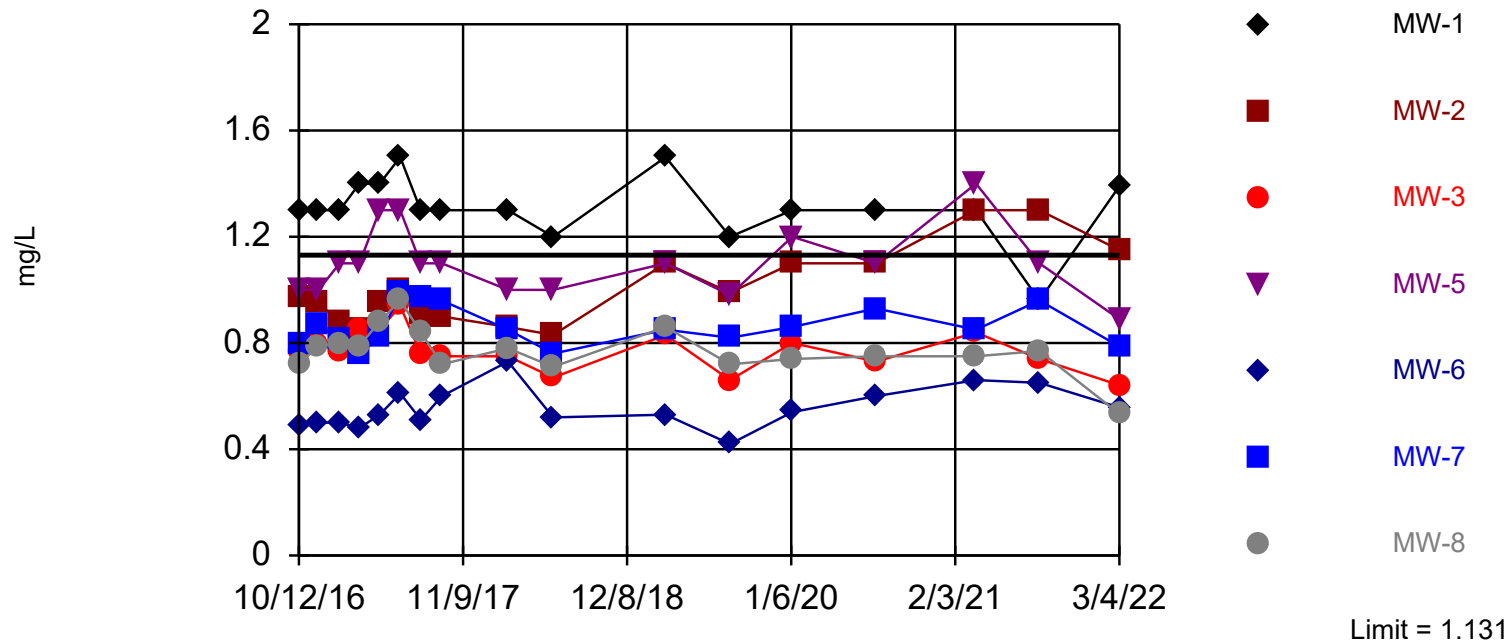
Prediction Limit Interwell Parametric



Background Data Summary: Mean=23.34, Std. Dev.=9.368, n=16. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9718, critical = 0.844. Kappa = 2.533 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Individual comparison alpha = 0.0005016. Comparing 7 points to limit.

Exceeds Limit: MW-1, MW-2

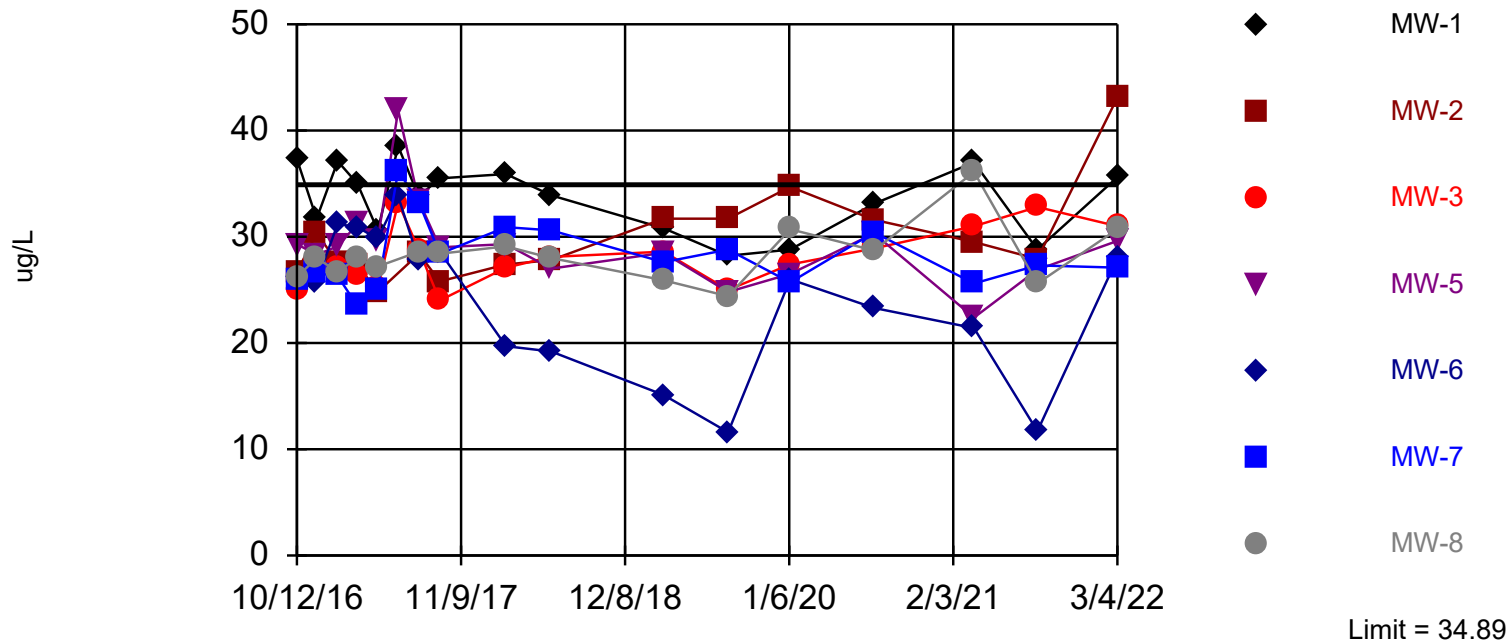
Prediction Limit Interwell Parametric



Background Data Summary: Mean=0.8583, Std. Dev.=0.1088, n=17. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9495, critical = 0.851. Kappa = 2.503 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Individual comparison alpha = 0.0005016. Comparing 7 points to limit.

Exceeds Limit: MW-1, MW-2

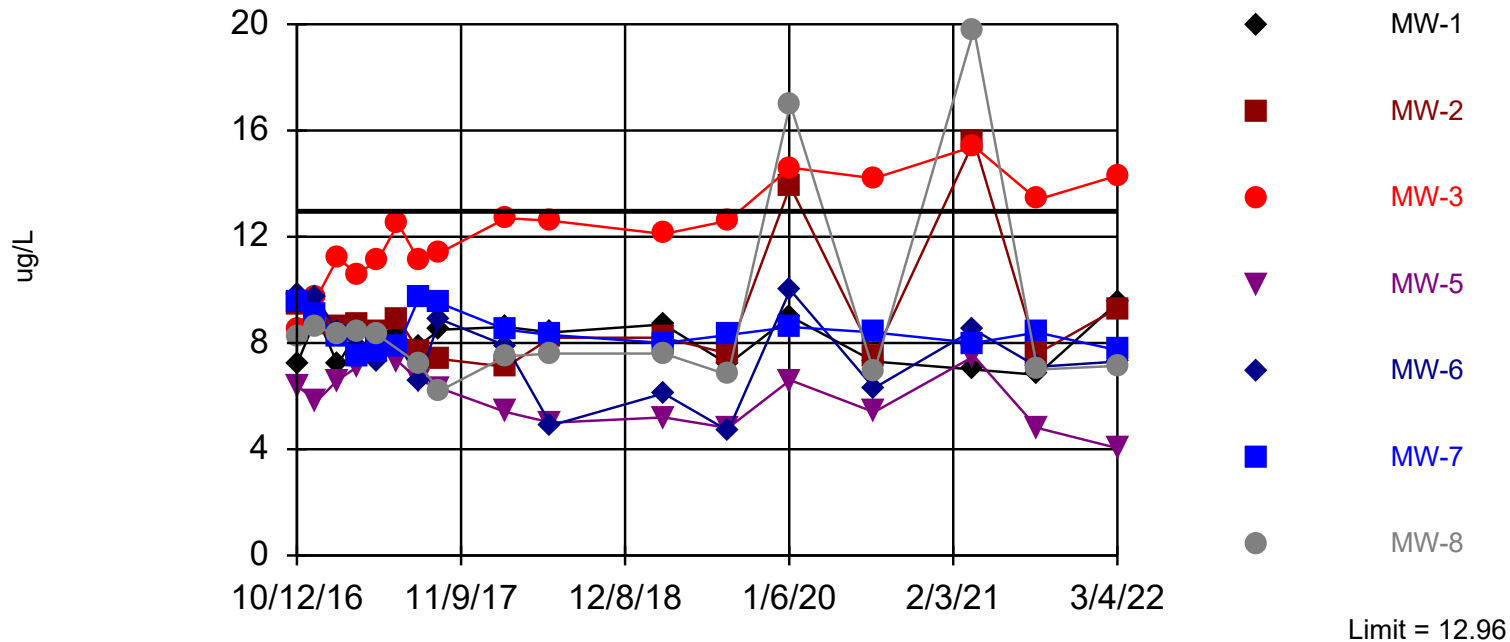
Prediction Limit Interwell Parametric



Background Data Summary: Mean=25.46, Std. Dev.=3.771, n=17. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.88, critical = 0.851. Kappa = 2.503 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Individual comparison alpha = 0.0005016. Comparing 7 points to limit.

Exceeds Limit: MW-3

Prediction Limit Interwell Parametric



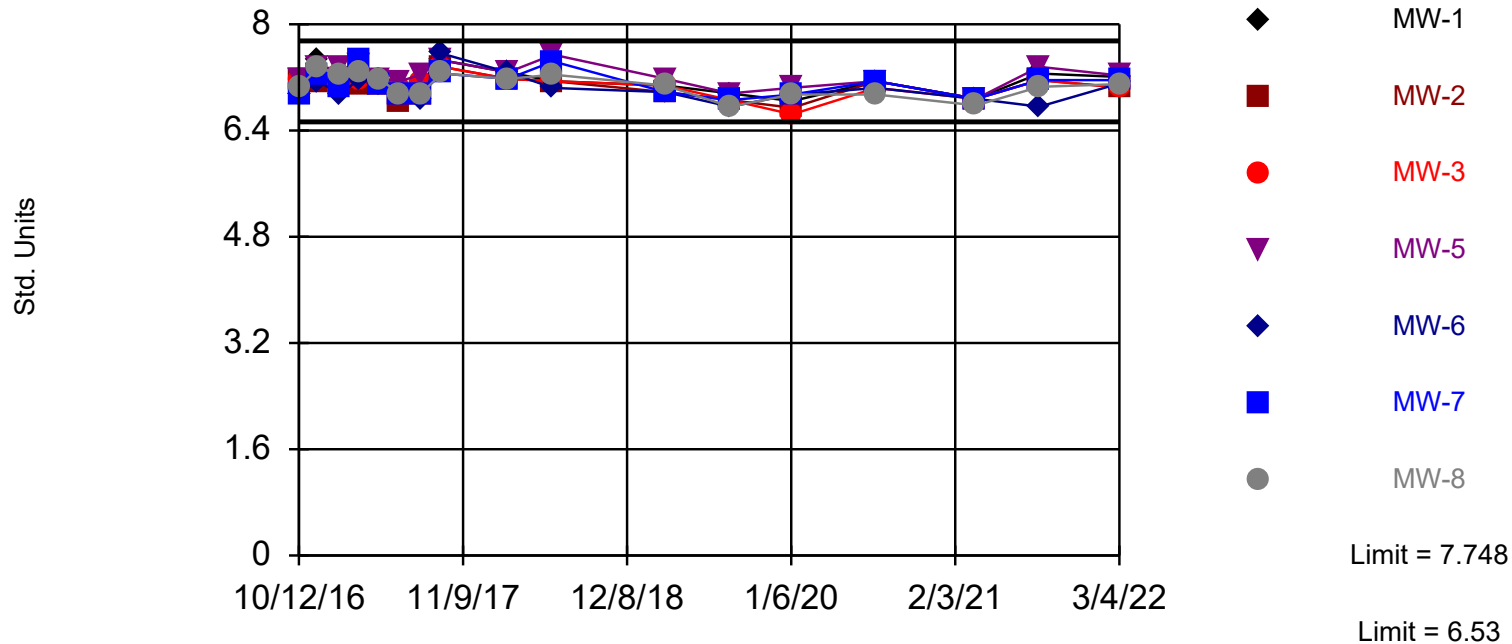
Background Data Summary (based on square root transformation): Mean=2.573, Std. Dev.=0.41, n=17. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8906, critical = 0.851. Kappa = 2.503 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Individual comparison alpha = 0.0005016. Comparing 7 points to limit.

Constituent: Molybdenum Analysis Run 4/25/2022 4:14 PM View: FDU Combined

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

Within Limits

Prediction Limit Interwell Parametric



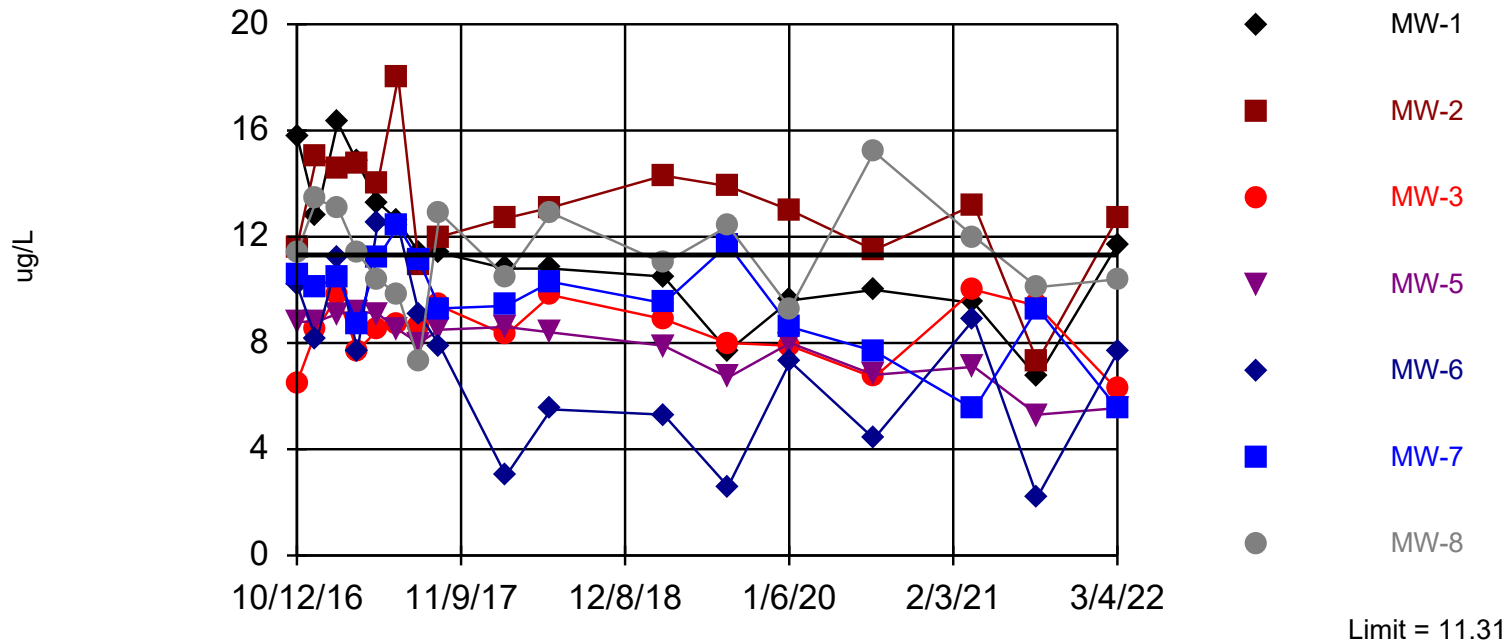
Background Data Summary: Mean=7.139, Std. Dev.=0.2434, n=17. Seasonality was detected with 95% confidence and data were deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8658, critical = 0.851. Kappa = 2.503 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Individual comparison alpha = 0.0002508. Comparing 7 points to limit.

Constituent: pH Analysis Run 4/25/2022 4:14 PM View: FDU Combined

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

Exceeds Limit: MW-1, MW-2

Prediction Limit Interwell Parametric



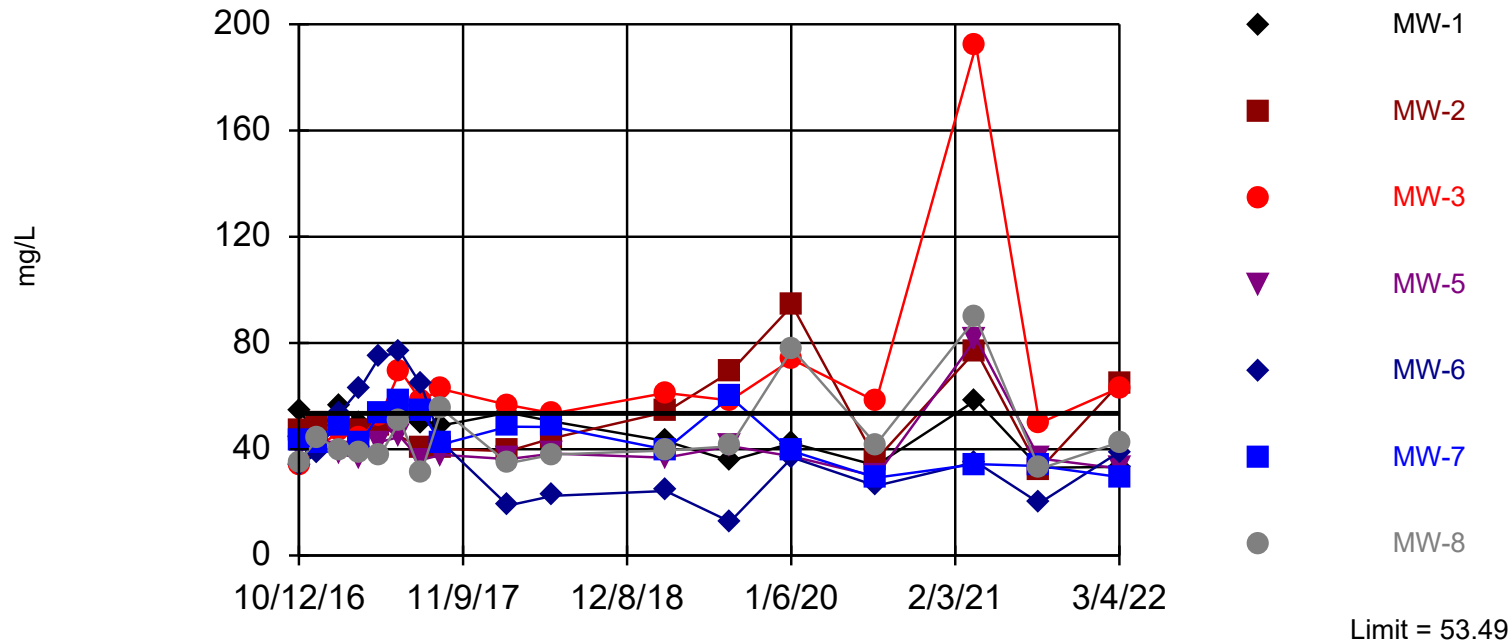
Background Data Summary: Mean=7.544, Std. Dev.=1.487, n=16. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9512, critical = 0.844. Kappa = 2.533 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Individual comparison alpha = 0.0005016. Comparing 7 points to limit.

Constituent: Selenium [total] Analysis Run 4/25/2022 4:14 PM View: FDU Combined

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

Exceeds Limit: MW-2, MW-3

Prediction Limit Interwell Parametric

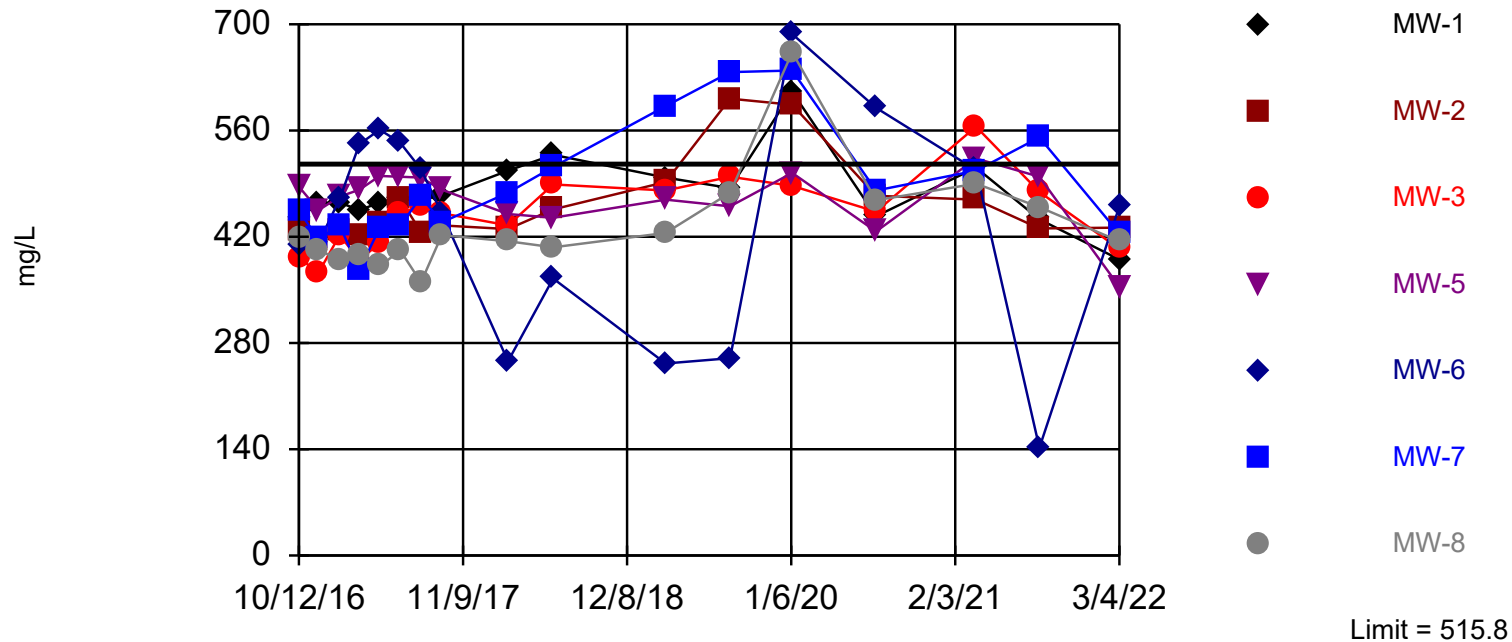


Background Data Summary: Mean=38.39, Std. Dev.=6.036, n=17. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8647, critical = 0.851. Kappa = 2.503 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Individual comparison alpha = 0.0005016. Comparing 7 points to limit.

Constituent: Sulfate Analysis Run 4/25/2022 4:14 PM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Interwell Parametric



Background Data Summary: Mean=408.2, Std. Dev.=42.98, n=17. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9644, critical = 0.851. Kappa = 2.503 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Individual comparison alpha = 0.0005016. Comparing 7 points to limit.

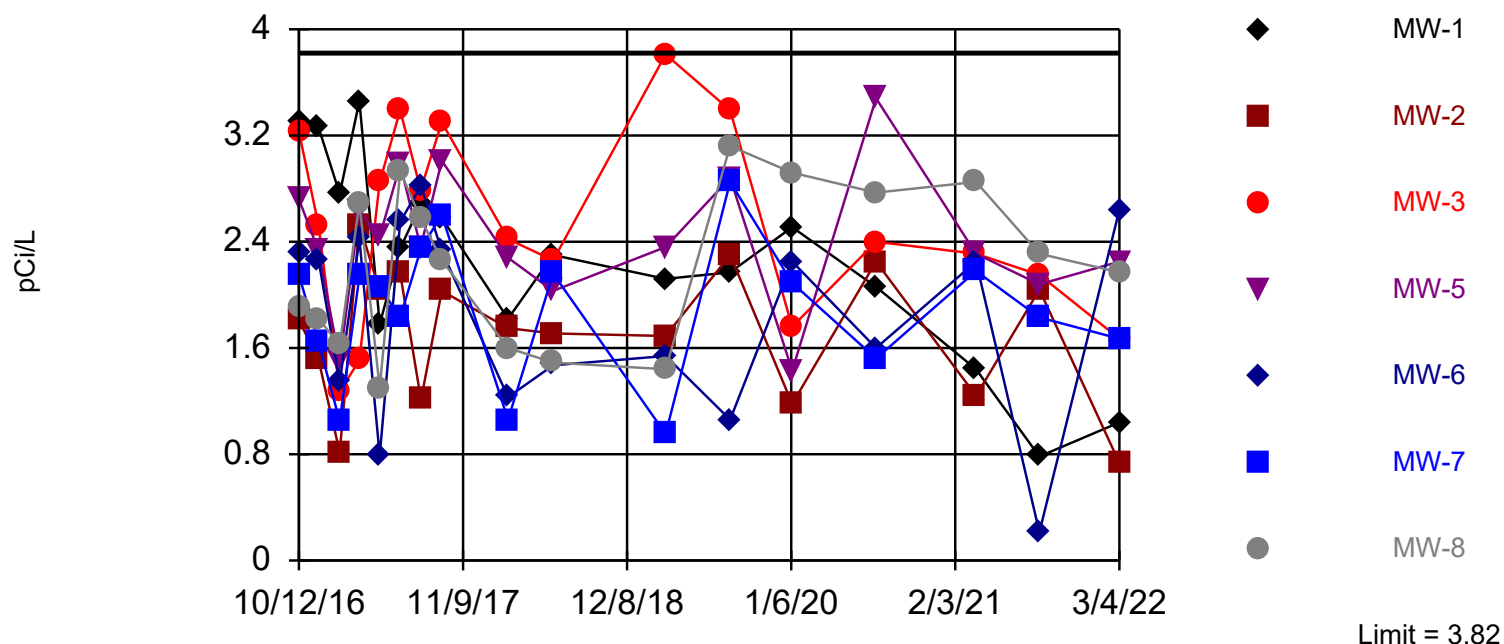
Constituent: Total Dissolved Solids Analysis Run 4/25/2022 4:14 PM View: FDU Combined

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

Within Limit

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=2.052, Std. Dev.=0.7065, n=17. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9587, critical = 0.851. Kappa = 2.503 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Individual comparison alpha = 0.0005016. Comparing 7 points to limit.

Constituent: Total Radium Analysis Run 4/25/2022 4:14 PM View: FDU Combined

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 4/25/2022, 4:27 PM

<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Normality</u>	<u>Xform</u>	<u>Alpha</u>	<u>Method</u>
Arsenic [total] (ug/L)	MW-1	0.2783	59	58	Yes	17	0	n/a	n/a	0.02	NP
Arsenic [total] (ug/L)	MW-2	0.0307	19	58	No	17	0	n/a	n/a	0.02	NP
Arsenic [total] (ug/L)	MW-3	0.108	46	58	No	17	0	n/a	n/a	0.02	NP
Arsenic [total] (ug/L)	MW-4R (bg)	0.1086	26	58	No	17	0	n/a	n/a	0.02	NP
Arsenic [total] (ug/L)	MW-5	0.02145	17	58	No	17	0	n/a	n/a	0.02	NP
Arsenic [total] (ug/L)	MW-6	0.19	65	58	Yes	17	0	n/a	n/a	0.02	NP
Arsenic [total] (ug/L)	MW-7	0.1198	73	58	Yes	17	0	n/a	n/a	0.02	NP
Arsenic [total] (ug/L)	MW-8	0	-8	-58	No	17	0	n/a	n/a	0.02	NP
Barium [total] (ug/L)	MW-1	0	0	58	No	17	0	n/a	n/a	0.02	NP
Barium [total] (ug/L)	MW-2	2.91	56	58	No	17	0	n/a	n/a	0.02	NP
Barium [total] (ug/L)	MW-3	4.238	65	58	Yes	17	0	n/a	n/a	0.02	NP
Barium [total] (ug/L)	MW-4R (bg)	5.169	86	58	Yes	17	0	n/a	n/a	0.02	NP
Barium [total] (ug/L)	MW-5	-2.797	-26	-58	No	17	0	n/a	n/a	0.02	NP
Barium [total] (ug/L)	MW-6	-7.356	-27	-58	No	17	0	n/a	n/a	0.02	NP
Barium [total] (ug/L)	MW-7	4.785	75	58	Yes	17	0	n/a	n/a	0.02	NP
Barium [total] (ug/L)	MW-8	2.72	22	58	No	17	0	n/a	n/a	0.02	NP
Boron (ug/L)	MW-1	-2.52	-25	-58	No	17	0	n/a	n/a	0.02	NP
Boron (ug/L)	MW-2	7.449	59	53	Yes	16	0	n/a	n/a	0.02	NP
Boron (ug/L)	MW-3	2.579	38	58	No	17	29.41	n/a	n/a	0.02	NP
Boron (ug/L)	MW-4R (bg)	-1.521	-12	-58	No	17	29.41	n/a	n/a	0.02	NP
Boron (ug/L)	MW-5	0.9945	7	58	No	17	0	n/a	n/a	0.02	NP
Boron (ug/L)	MW-6	-17.15	-61	-58	Yes	17	47.06	n/a	n/a	0.02	NP
Boron (ug/L)	MW-7	-14.66	-67	-58	Yes	17	11.76	n/a	n/a	0.02	NP
Boron (ug/L)	MW-8	8.216	57	48	Yes	15	0	n/a	n/a	0.02	NP
Calcium (mg/L)	MW-1	-0.4313	-14	-58	No	17	0	n/a	n/a	0.02	NP
Calcium (mg/L)	MW-2	2.969	58	58	No	17	0	n/a	n/a	0.02	NP
Calcium (mg/L)	MW-3	3.306	81	58	Yes	17	0	n/a	n/a	0.02	NP
Calcium (mg/L)	MW-4R (bg)	2.121	19	58	No	17	0	n/a	n/a	0.02	NP
Calcium (mg/L)	MW-5	-2.501	-34	-58	No	17	0	n/a	n/a	0.02	NP
Calcium (mg/L)	MW-6	-1.966	-14	-58	No	17	0	n/a	n/a	0.02	NP
Calcium (mg/L)	MW-7	1.347	16	58	No	17	0	n/a	n/a	0.02	NP
Calcium (mg/L)	MW-8	3.598	64	58	Yes	17	0	n/a	n/a	0.02	NP
Chloride (mg/L)	MW-1	3.58	80	58	Yes	17	0	n/a	n/a	0.02	NP
Chloride (mg/L)	MW-2	-0.09982	-2	-53	No	16	0	n/a	n/a	0.02	NP
Chloride (mg/L)	MW-3	4.424	74	58	Yes	17	0	n/a	n/a	0.02	NP
Chloride (mg/L)	MW-4R (bg)	2.923	52	53	No	16	0	n/a	n/a	0.02	NP
Chloride (mg/L)	MW-5	5.053	72	58	Yes	17	0	n/a	n/a	0.02	NP
Chloride (mg/L)	MW-6	2.674	20	53	No	16	0	n/a	n/a	0.02	NP
Chloride (mg/L)	MW-7	15	72	58	Yes	17	0	n/a	n/a	0.02	NP
Chloride (mg/L)	MW-8	3.215	78	58	Yes	17	0	n/a	n/a	0.02	NP
Fluoride (mg/L)	MW-1	0	-21	-58	No	17	0	n/a	n/a	0.02	NP
Fluoride (mg/L)	MW-2	0.05571	59	58	Yes	17	0	n/a	n/a	0.02	NP
Fluoride (mg/L)	MW-3	-0.01782	-48	-58	No	17	0	n/a	n/a	0.02	NP
Fluoride (mg/L)	MW-4R (bg)	0.00921	17	58	No	17	0	n/a	n/a	0.02	NP
Fluoride (mg/L)	MW-5	0	0	58	No	17	0	n/a	n/a	0.02	NP
Fluoride (mg/L)	MW-6	0.016	57	58	No	17	0	n/a	n/a	0.02	NP
Fluoride (mg/L)	MW-7	0.006228	12	58	No	17	0	n/a	n/a	0.02	NP
Fluoride (mg/L)	MW-8	-0.01218	-33	-58	No	17	0	n/a	n/a	0.02	NP
Lithium (ug/L)	MW-1	-0.8273	-33	-58	No	17	0	n/a	n/a	0.02	NP
Lithium (ug/L)	MW-2	1.264	52	53	No	16	0	n/a	n/a	0.02	NP

Trend Test

Fremont Dept. of Utilities

Client: SCS Engineers

Data: Fremont Department of Utilities Groundwater

Printed 4/25/2022, 4:27 PM

<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Normality</u>	<u>Xform</u>	<u>Alpha</u>	<u>Method</u>
Lithium (ug/L)	MW-3	0.7954	52	58	No	17	0	n/a	n/a	0.02	NP
Lithium (ug/L)	MW-4R (bg)	0.372	23	58	No	17	0	n/a	n/a	0.02	NP
Lithium (ug/L)	MW-5	-0.6483	-39	-58	No	17	0	n/a	n/a	0.02	NP
Lithium (ug/L)	MW-6	-2.336	-54	-58	No	17	0	n/a	n/a	0.02	NP
Lithium (ug/L)	MW-7	0.1112	2	58	No	17	0	n/a	n/a	0.02	NP
Lithium (ug/L)	MW-8	0.6246	32	53	No	16	0	n/a	n/a	0.02	NP
Molybdenum (ug/L)	MW-1	0	2	58	No	17	0	n/a	n/a	0.02	NP
Molybdenum (ug/L)	MW-2	-0.1856	-19	-58	No	17	0	n/a	n/a	0.02	NP
Molybdenum (ug/L)	MW-3	1.005	102	58	Yes	17	0	n/a	n/a	0.02	NP
Molybdenum (ug/L)	MW-4R (bg)	0.08165	5	58	No	17	0	n/a	n/a	0.02	NP
Molybdenum (ug/L)	MW-5	-0.3853	-51	-58	No	17	0	n/a	n/a	0.02	NP
Molybdenum (ug/L)	MW-6	-0.457	-42	-58	No	17	0	n/a	n/a	0.02	NP
Molybdenum (ug/L)	MW-7	-0.09252	-16	-58	No	17	0	n/a	n/a	0.02	NP
Molybdenum (ug/L)	MW-8	-0.2324	-24	-53	No	16	0	n/a	n/a	0.02	NP
pH (Std. Units)	MW-1	-0.02403	-23	-58	No	17	0	n/a	n/a	0.02	NP
pH (Std. Units)	MW-2	-0.04302	-42	-58	No	17	0	n/a	n/a	0.02	NP
pH (Std. Units)	MW-3	-0.07322	-66	-58	Yes	17	0	n/a	n/a	0.02	NP
pH (Std. Units)	MW-4R (bg)	-0.0756	-40	-58	No	17	0	n/a	n/a	0.02	NP
pH (Std. Units)	MW-5	-0.06537	-38	-58	No	17	0	n/a	n/a	0.02	NP
pH (Std. Units)	MW-6	-0.04755	-44	-58	No	17	0	n/a	n/a	0.02	NP
pH (Std. Units)	MW-7	-0.04316	-30	-58	No	17	0	n/a	n/a	0.02	NP
pH (Std. Units)	MW-8	-0.08533	-53	-58	No	17	0	n/a	n/a	0.02	NP
Selenium [total] (ug/L)	MW-1	-1.302	-98	-58	Yes	17	0	n/a	n/a	0.02	NP
Selenium [total] (ug/L)	MW-2	-0.4247	-41	-58	No	17	0	n/a	n/a	0.02	NP
Selenium [total] (ug/L)	MW-3	0	1	58	No	17	0	n/a	n/a	0.02	NP
Selenium [total] (ug/L)	MW-4R (bg)	0.1114	6	53	No	16	0	n/a	n/a	0.02	NP
Selenium [total] (ug/L)	MW-5	-0.599	-96	-58	Yes	17	0	n/a	n/a	0.02	NP
Selenium [total] (ug/L)	MW-6	-1.226	-62	-58	Yes	17	0	n/a	n/a	0.02	NP
Selenium [total] (ug/L)	MW-7	-0.7202	-57	-58	No	17	0	n/a	n/a	0.02	NP
Selenium [total] (ug/L)	MW-8	-0.2006	-21	-58	No	17	0	n/a	n/a	0.02	NP
Sulfate (mg/L)	MW-1	-3.882	-64	-58	Yes	17	0	n/a	n/a	0.02	NP
Sulfate (mg/L)	MW-2	2.61	4	53	No	16	0	n/a	n/a	0.02	NP
Sulfate (mg/L)	MW-3	5.109	65	58	Yes	17	0	n/a	n/a	0.02	NP
Sulfate (mg/L)	MW-4R (bg)	-0.175	-2	-58	No	17	0	n/a	n/a	0.02	NP
Sulfate (mg/L)	MW-5	-0.7654	-34	-58	No	17	0	n/a	n/a	0.02	NP
Sulfate (mg/L)	MW-6	-5.095	-34	-58	No	17	0	n/a	n/a	0.02	NP
Sulfate (mg/L)	MW-7	-2.739	-58	-58	No	17	0	n/a	n/a	0.02	NP
Sulfate (mg/L)	MW-8	1.065	28	58	No	17	0	n/a	n/a	0.02	NP
Total Dissolved Solids (mg/L)	MW-1	9.69	30	58	No	17	0	n/a	n/a	0.02	NP
Total Dissolved Solids (mg/L)	MW-2	10.83	55	58	No	17	0	n/a	n/a	0.02	NP
Total Dissolved Solids (mg/L)	MW-3	24.76	67	58	Yes	17	0	n/a	n/a	0.02	NP
Total Dissolved Solids (mg/L)	MW-4R (bg)	12.95	36	58	No	17	0	n/a	n/a	0.02	NP
Total Dissolved Solids (mg/L)	MW-5	-5.76	-14	-58	No	17	0	n/a	n/a	0.02	NP
Total Dissolved Solids (mg/L)	MW-6	-12.09	-12	-58	No	17	0	n/a	n/a	0.02	NP
Total Dissolved Solids (mg/L)	MW-7	27.28	64	58	Yes	17	0	n/a	n/a	0.02	NP
Total Dissolved Solids (mg/L)	MW-8	16.14	61	58	Yes	17	0	n/a	n/a	0.02	NP
Total Radium (pCi/L)	MW-1	-0.3426	-86	-58	Yes	17	0	n/a	n/a	0.02	NP
Total Radium (pCi/L)	MW-2	-0.05504	-15	-58	No	17	0	n/a	n/a	0.02	NP
Total Radium (pCi/L)	MW-3	-0.1342	-23	-58	No	17	0	n/a	n/a	0.02	NP
Total Radium (pCi/L)	MW-4R (bg)	-0.03145	-6	-58	No	17	0	n/a	n/a	0.02	NP

Trend Test

Fremont Dept. of Utilities

Client: SCS Engineers

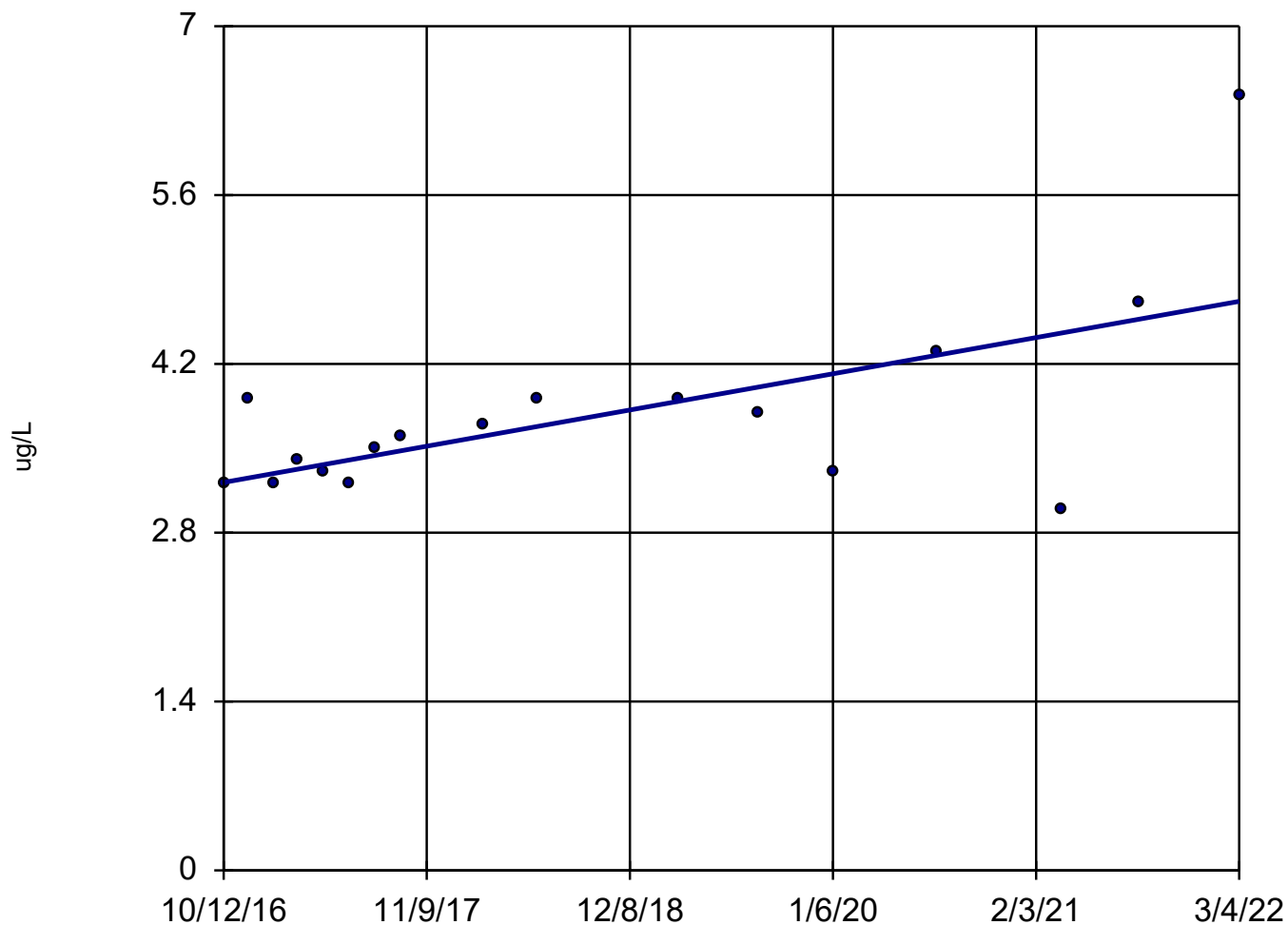
Data: Fremont Department of Utilities Groundwater

Printed 4/25/2022, 4:27 PM

<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Normality</u>	<u>Xform</u>	<u>Alpha</u>	<u>Method</u>
Total Radium (pCi/L)	MW-5	-0.03959	-21	-58	No	17	0	n/a	n/a	0.02	NP
Total Radium (pCi/L)	MW-6	-0.03696	-13	-58	No	17	0	n/a	n/a	0.02	NP
Total Radium (pCi/L)	MW-7	0.002849	1	58	No	17	0	n/a	n/a	0.02	NP
Total Radium (pCi/L)	MW-8	0.07876	16	58	No	17	0	n/a	n/a	0.02	NP

Sen's Slope Estimator

MW-1



n = 17

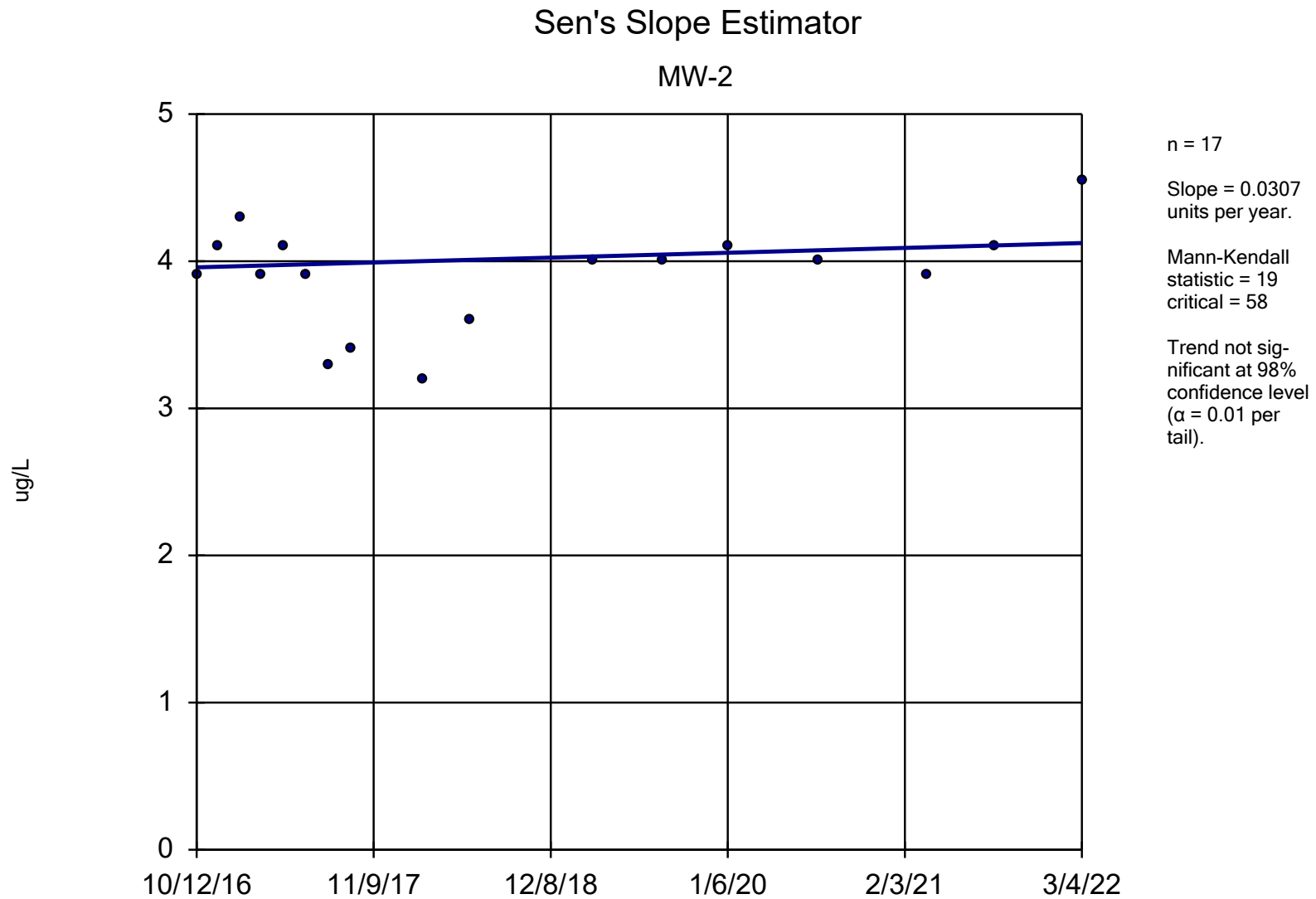
Slope = 0.2783
units per year.

Mann-Kendall
statistic = 59
critical = 58

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

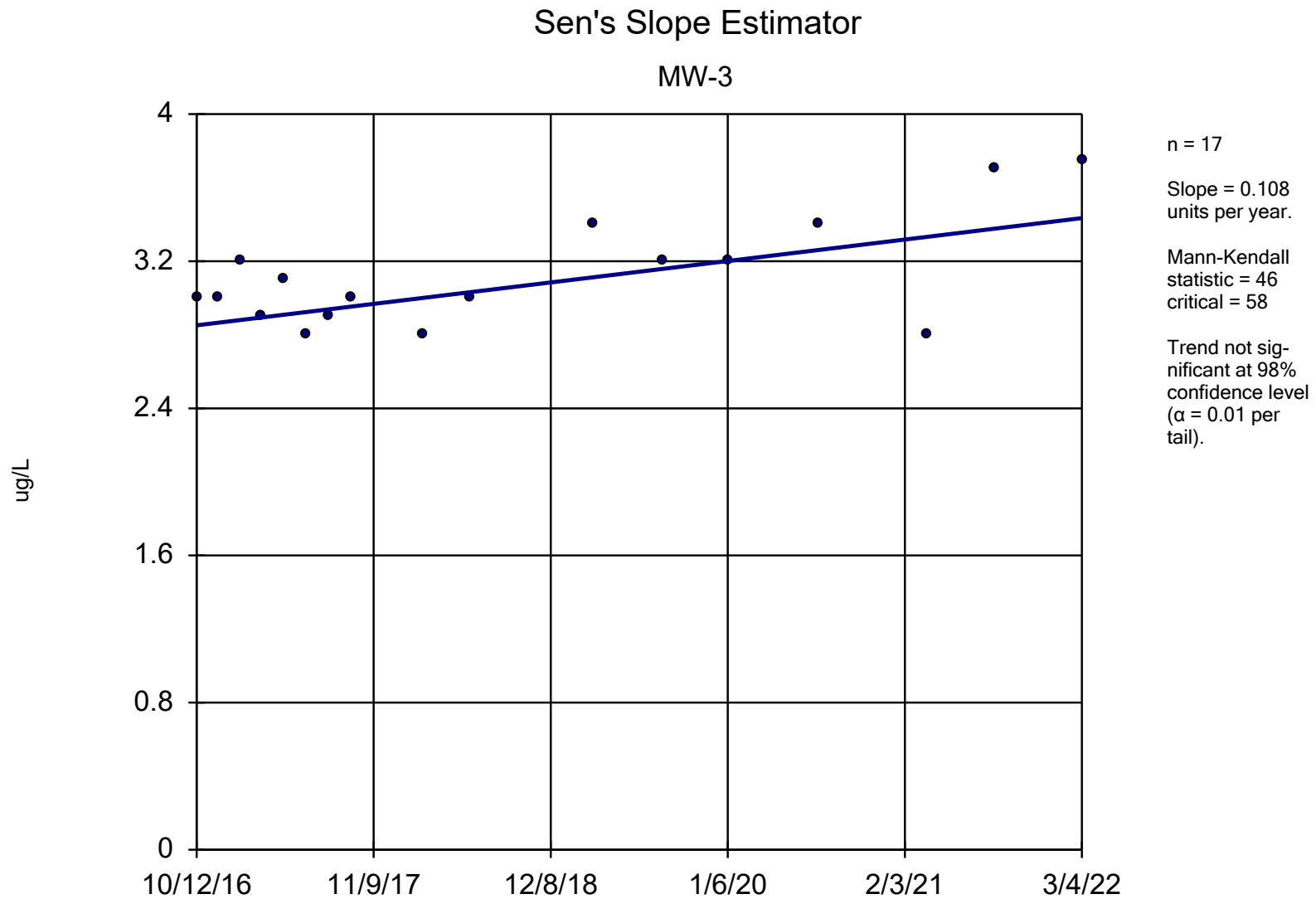
Constituent: Arsenic [total] Analysis Run 4/25/2022 4:22 PM View: FDU Combined

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



Constituent: Arsenic [total] Analysis Run 4/25/2022 4:22 PM View: FDU Combined

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

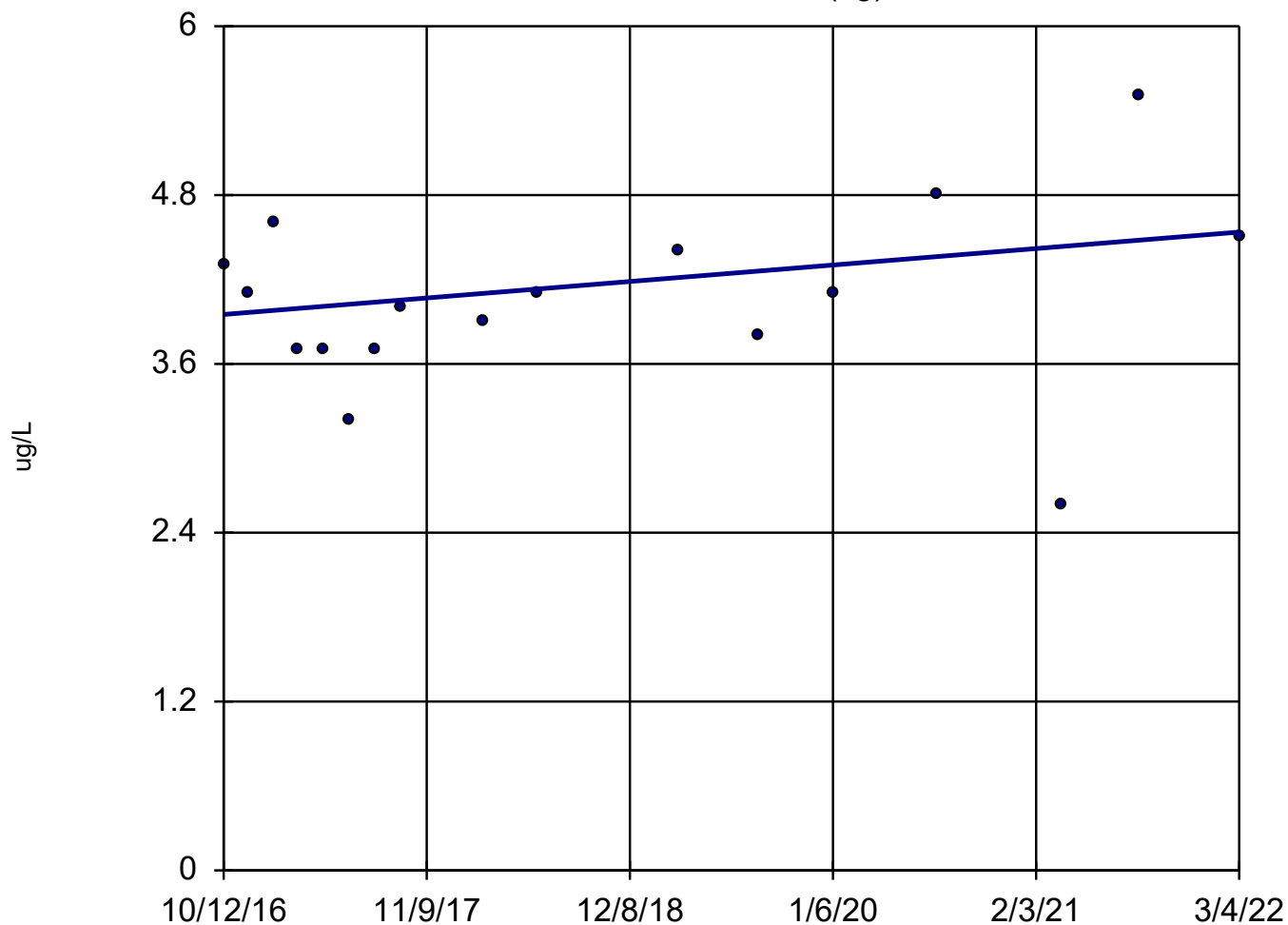


Constituent: Arsenic [total] Analysis Run 4/25/2022 4:22 PM View: FDU Combined

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

Sen's Slope Estimator

MW-4R (bg)



n = 17

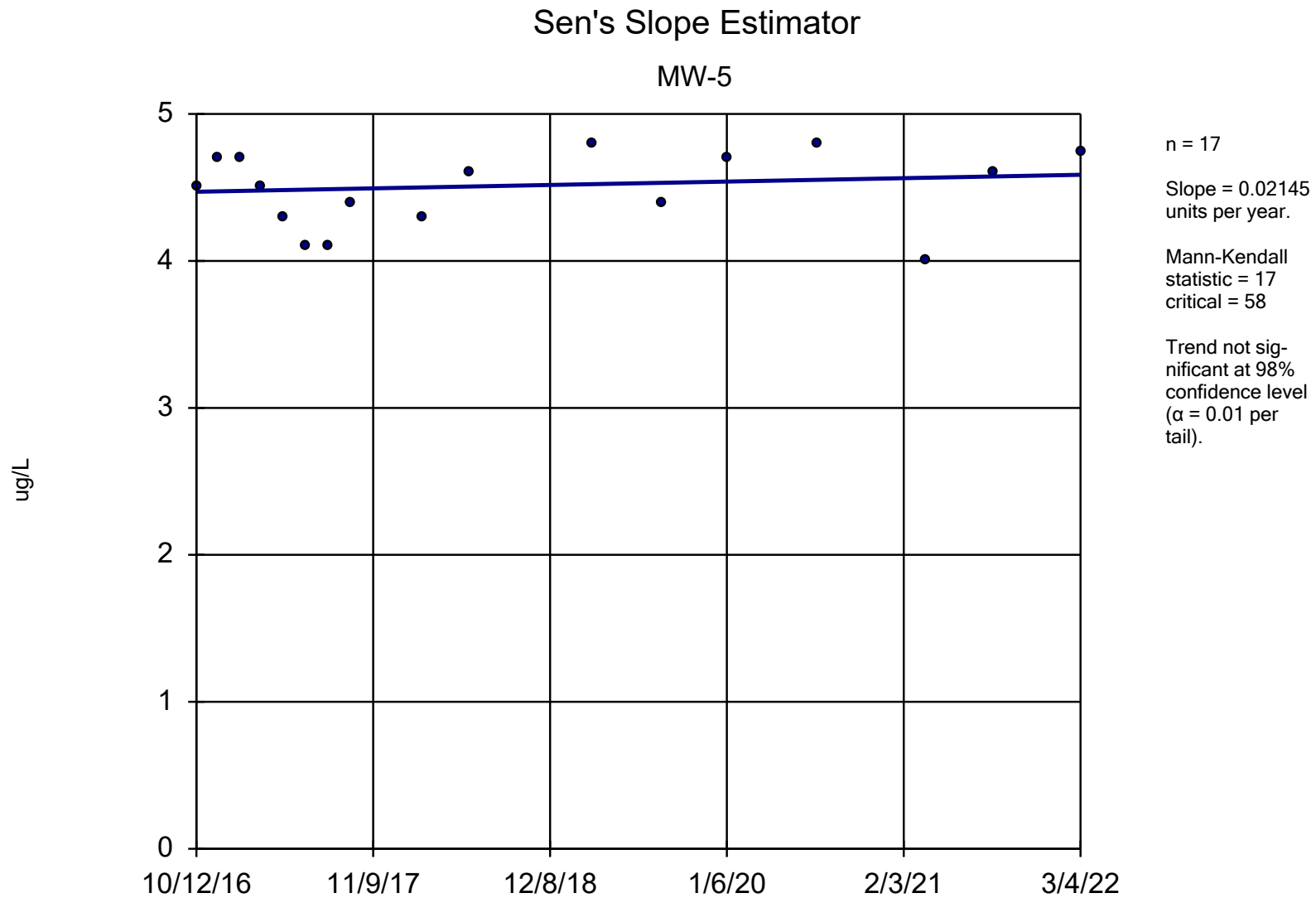
Slope = 0.1086
units per year.

Mann-Kendall
statistic = 26
critical = 58

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

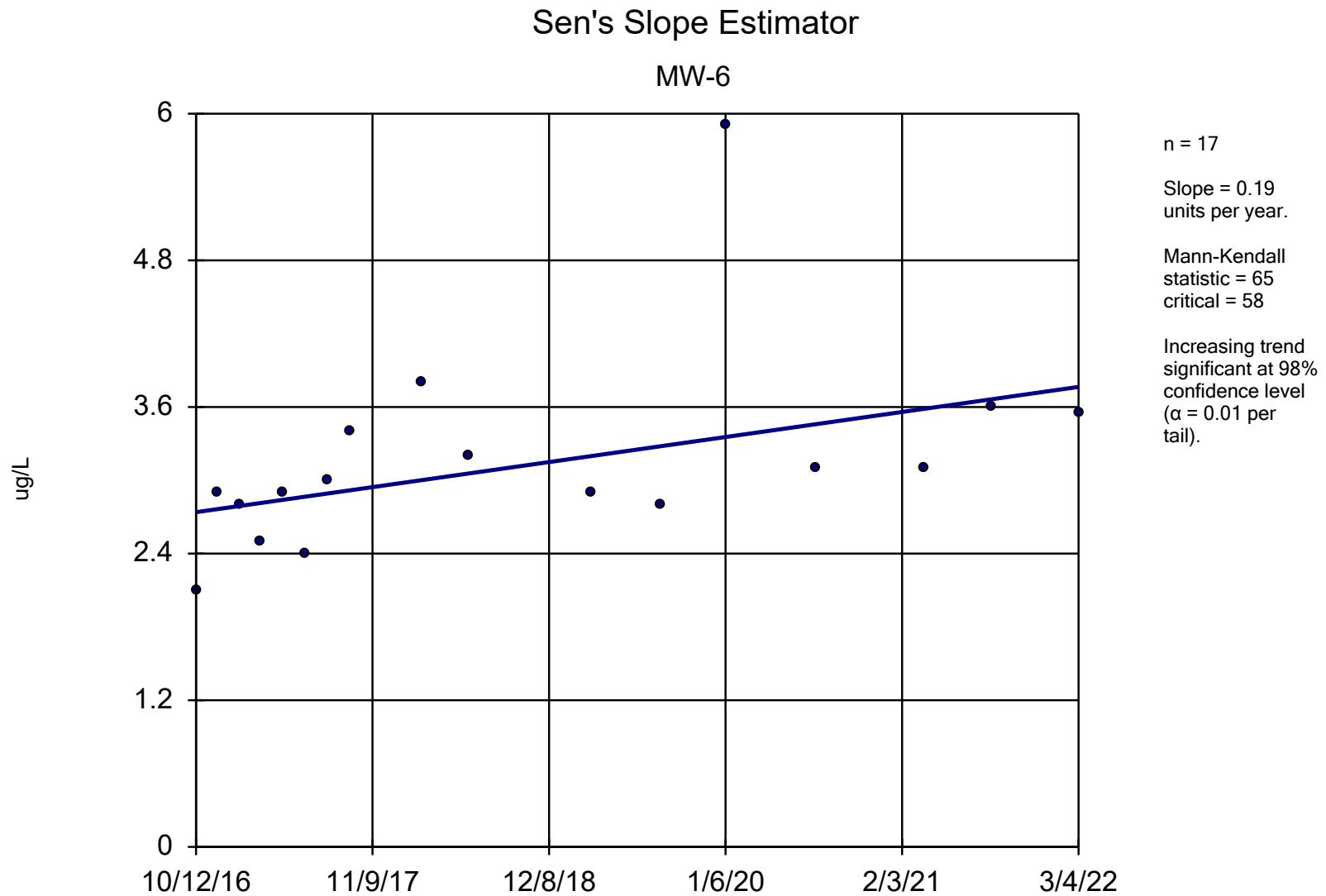
Constituent: Arsenic [total] Analysis Run 4/25/2022 4:22 PM View: FDU Combined

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



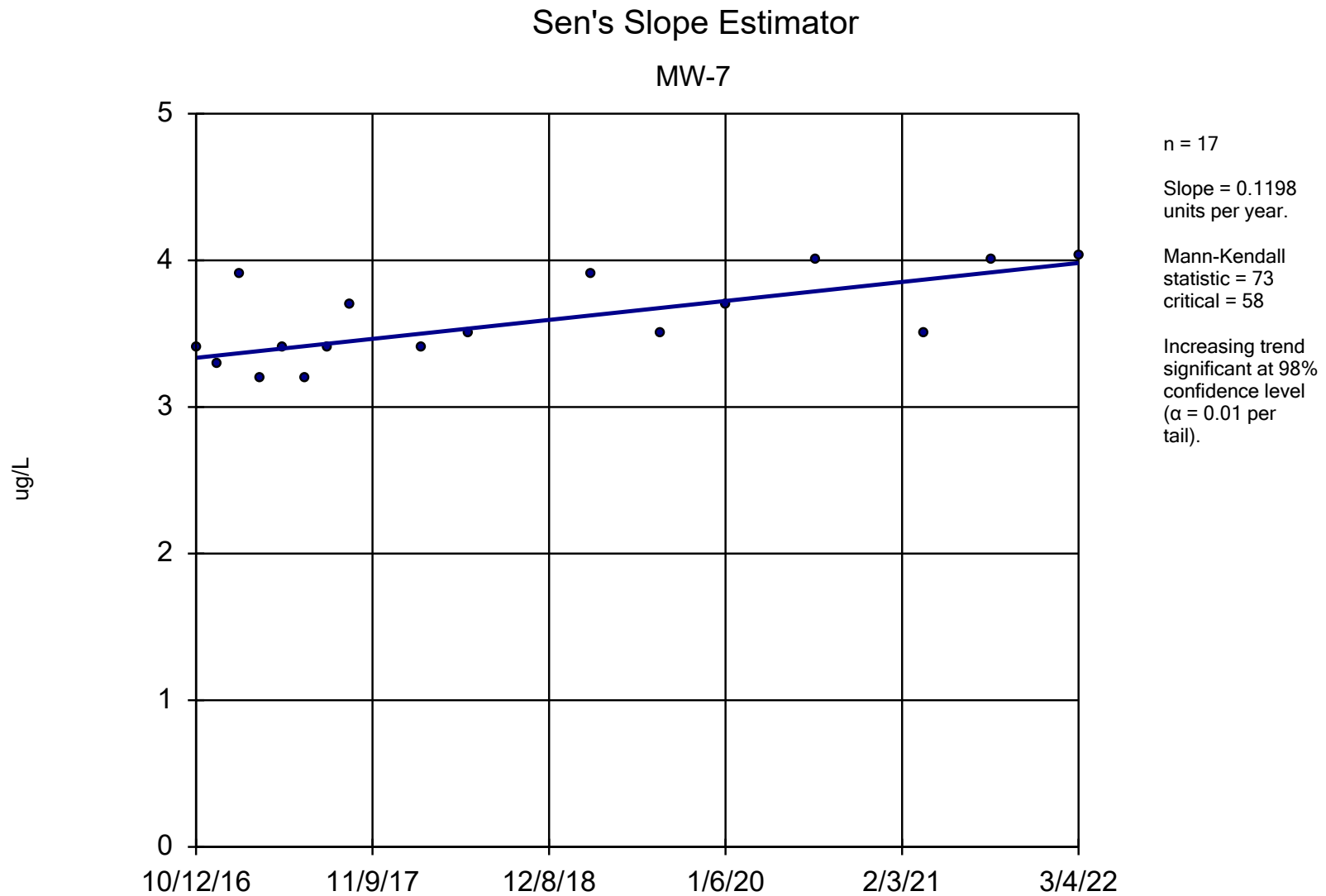
Constituent: Arsenic [total] Analysis Run 4/25/2022 4:22 PM View: FDU Combined

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



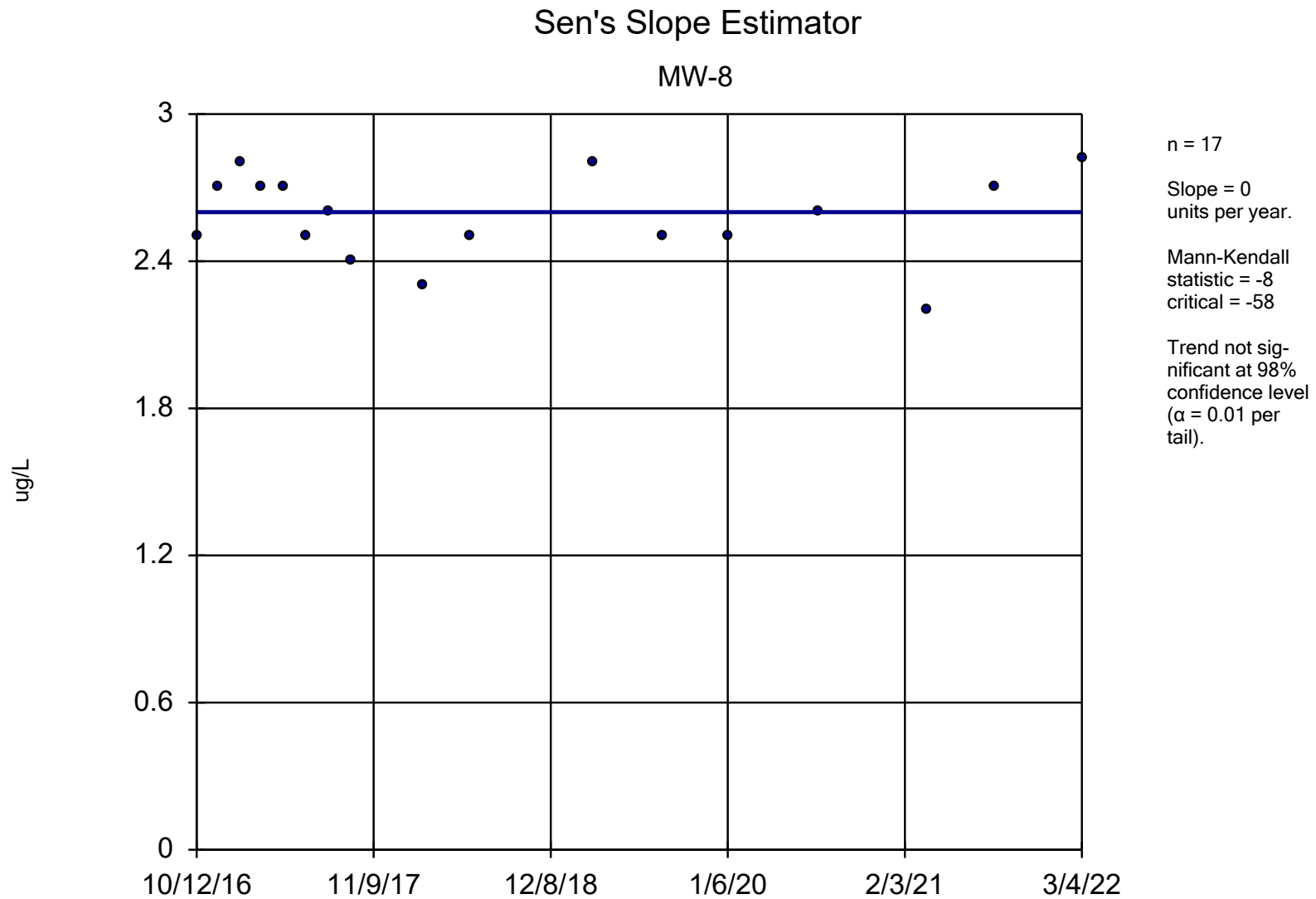
Constituent: Arsenic [total] Analysis Run 4/25/2022 4:22 PM View: FDU Combined

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



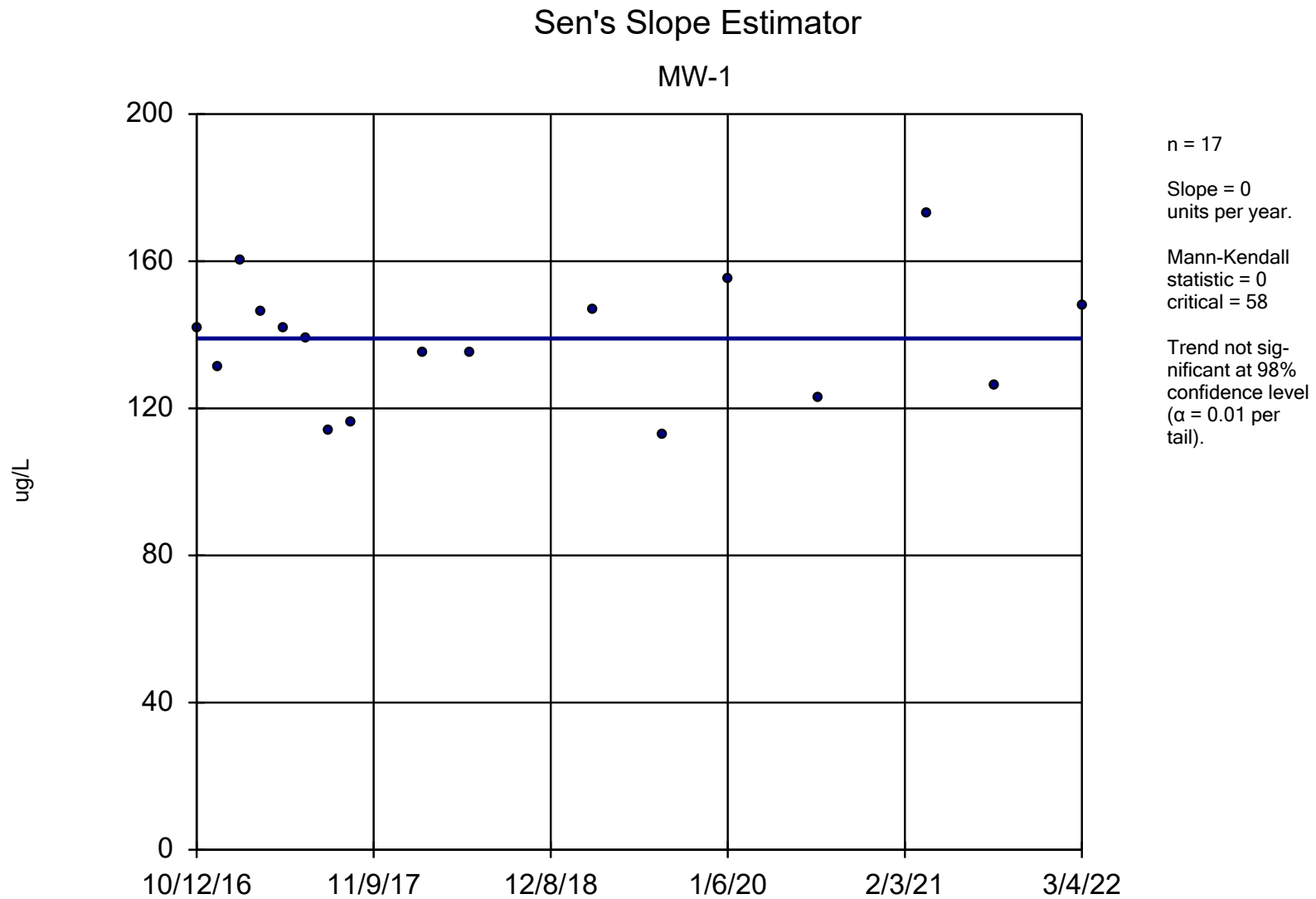
Constituent: Arsenic [total] Analysis Run 4/25/2022 4:22 PM View: FDU Combined

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



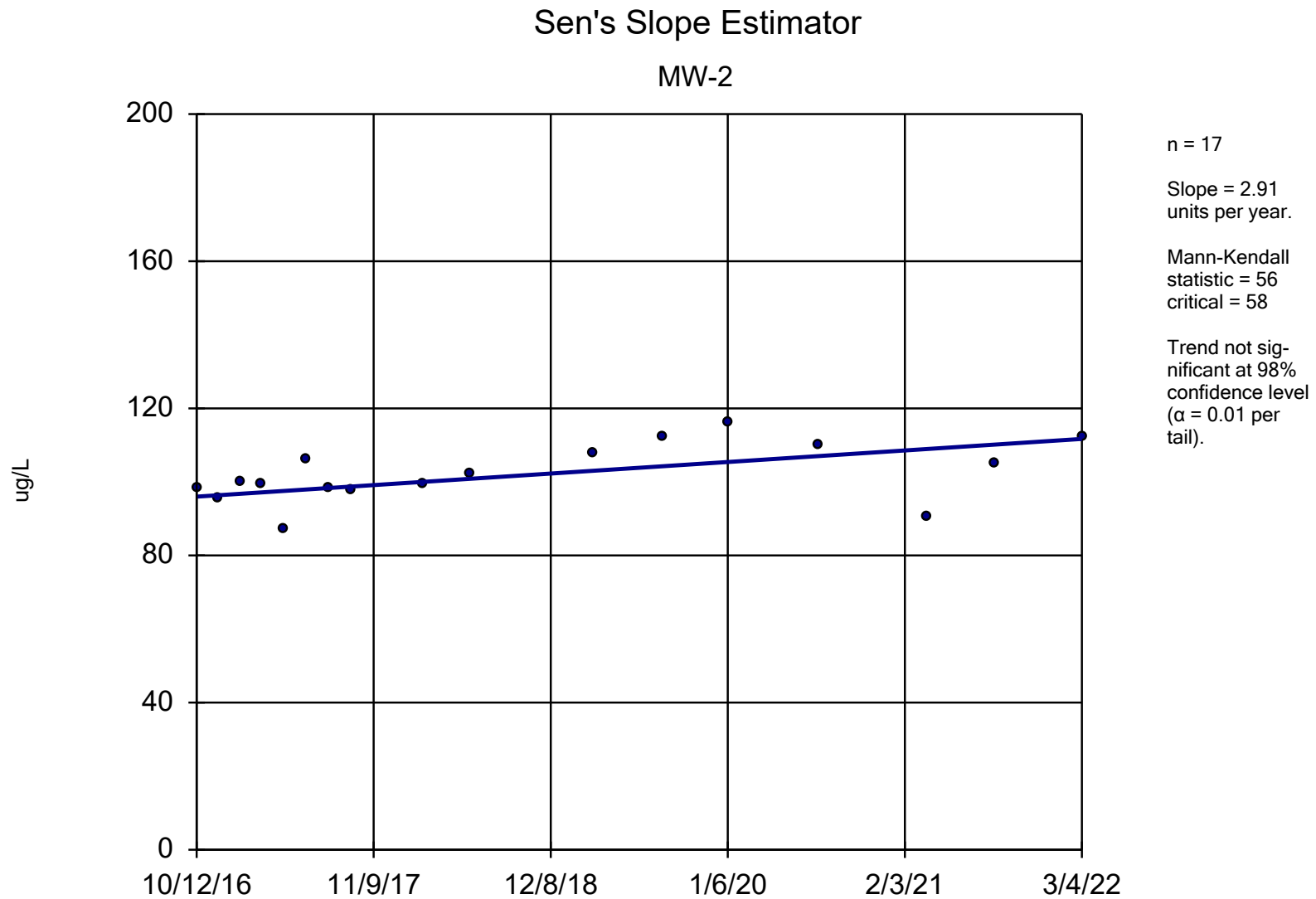
Constituent: Arsenic [total] Analysis Run 4/25/2022 4:22 PM View: FDU Combined

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



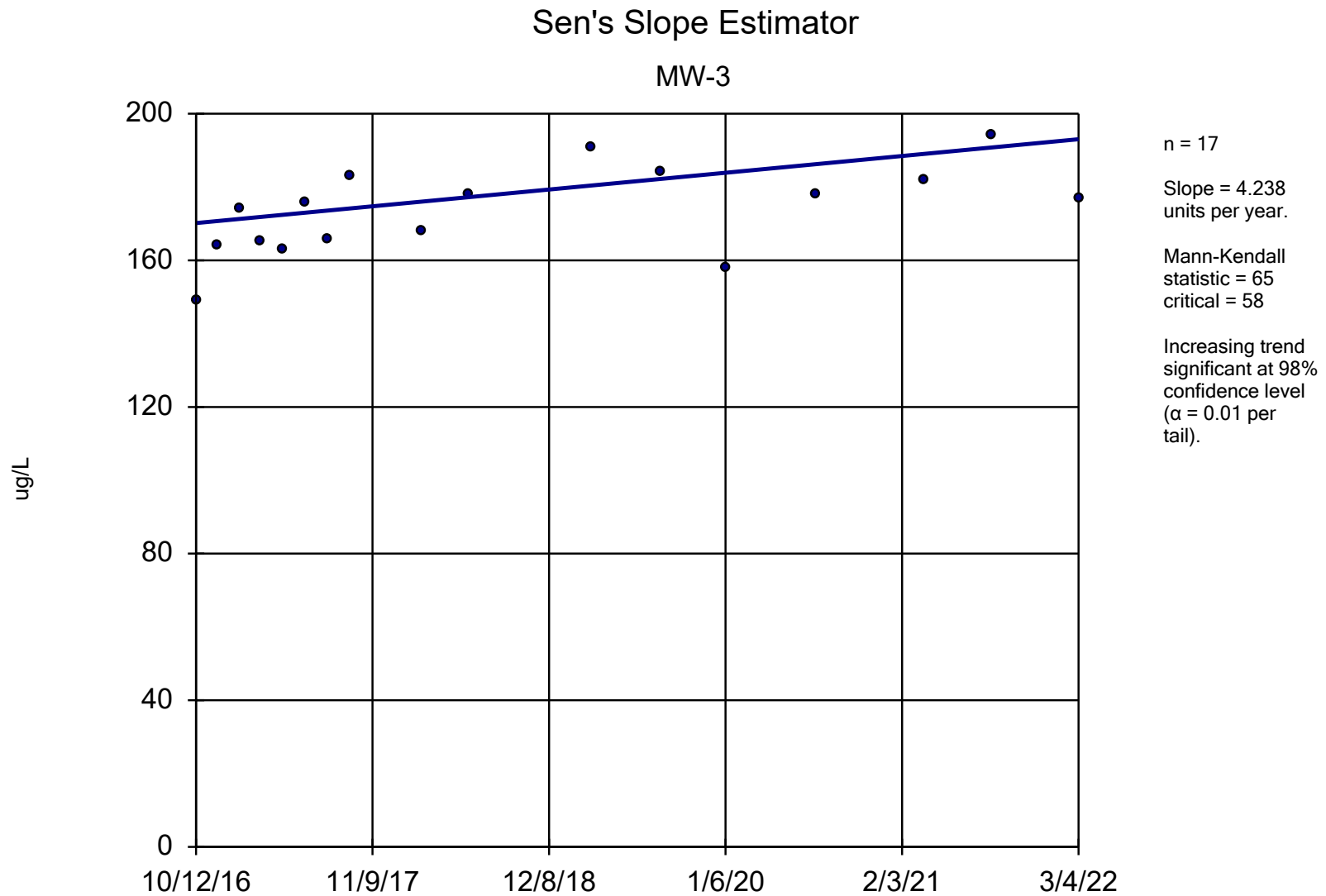
Constituent: Barium [total] Analysis Run 4/25/2022 4:22 PM View: FDU Combined

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



Constituent: Barium [total] Analysis Run 4/25/2022 4:22 PM View: FDU Combined

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

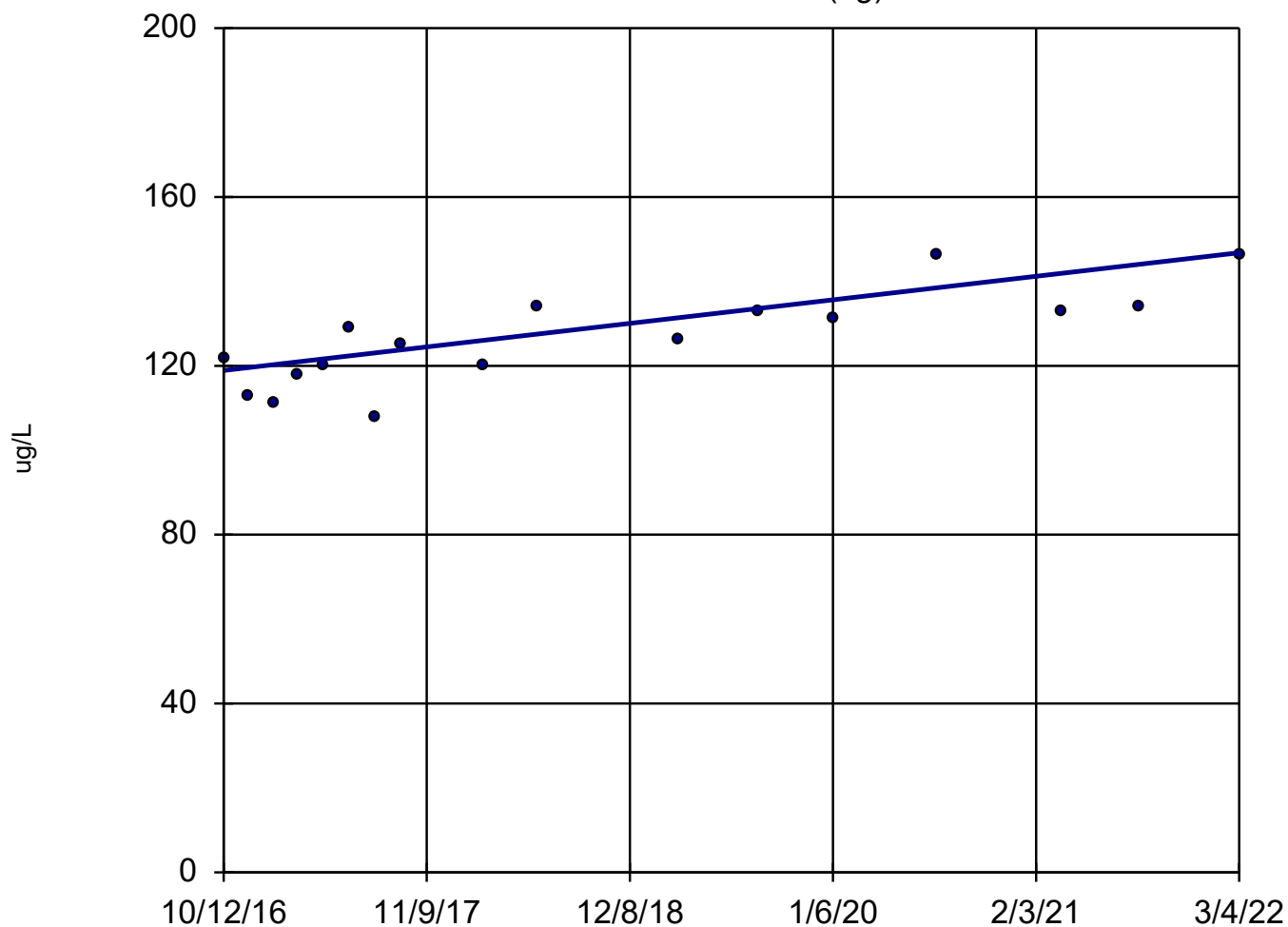


Constituent: Barium [total] Analysis Run 4/25/2022 4:22 PM View: FDU Combined

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

Sen's Slope Estimator

MW-4R (bg)



n = 17

Slope = 5.169
units per year.

Mann-Kendall
statistic = 86
critical = 58

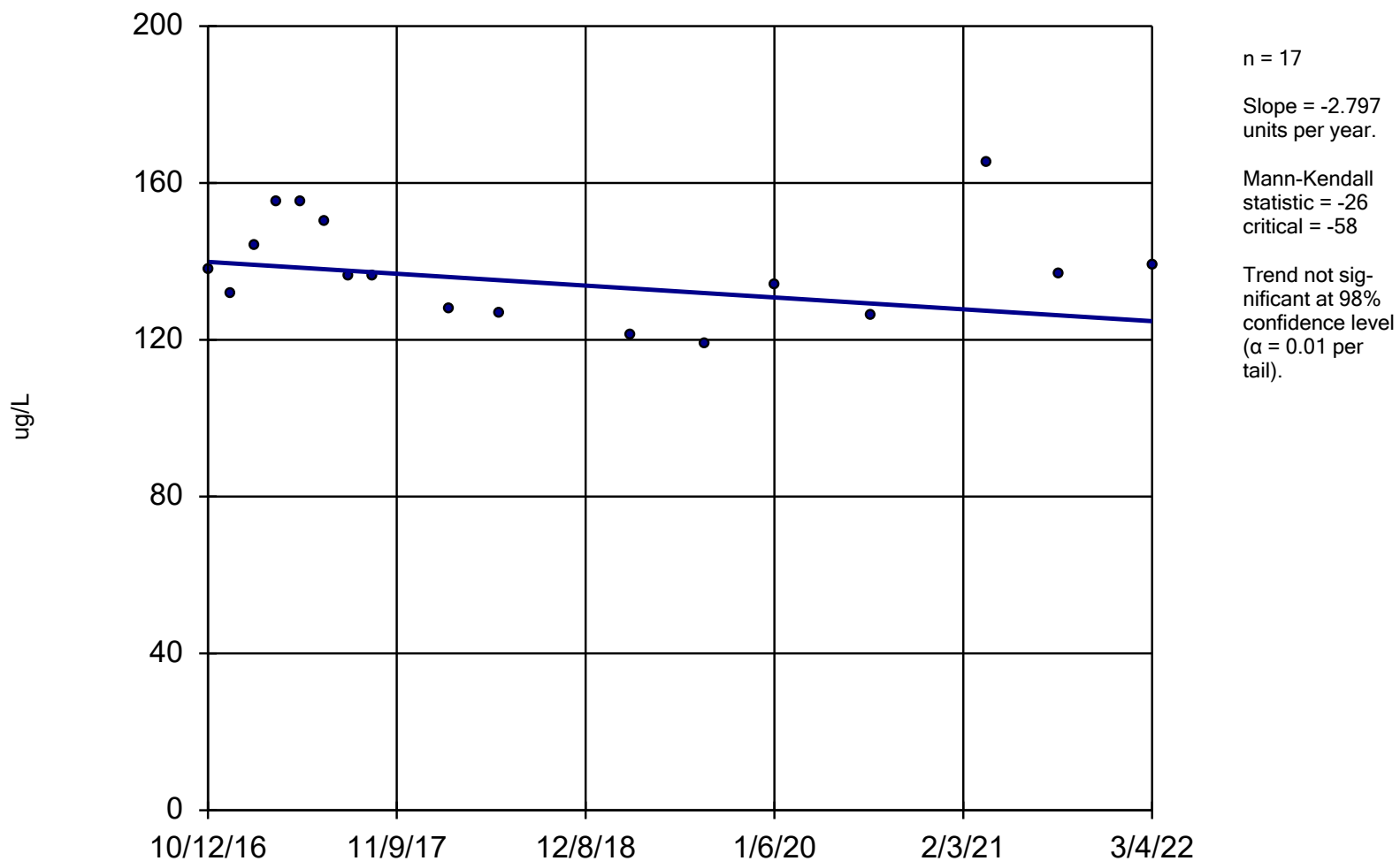
Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Constituent: Barium [total] Analysis Run 4/25/2022 4:22 PM View: FDU Combined

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

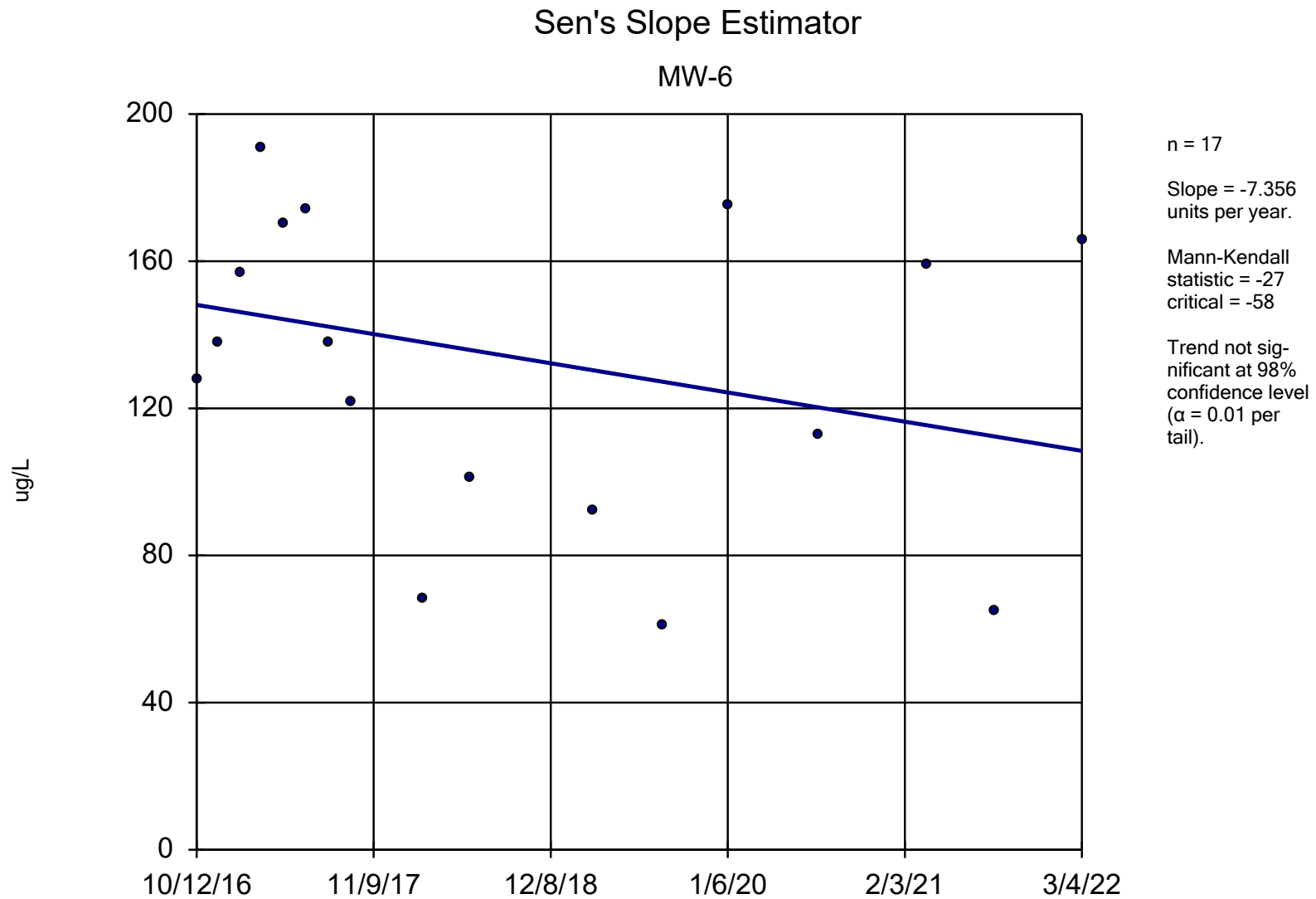
Sen's Slope Estimator

MW-5



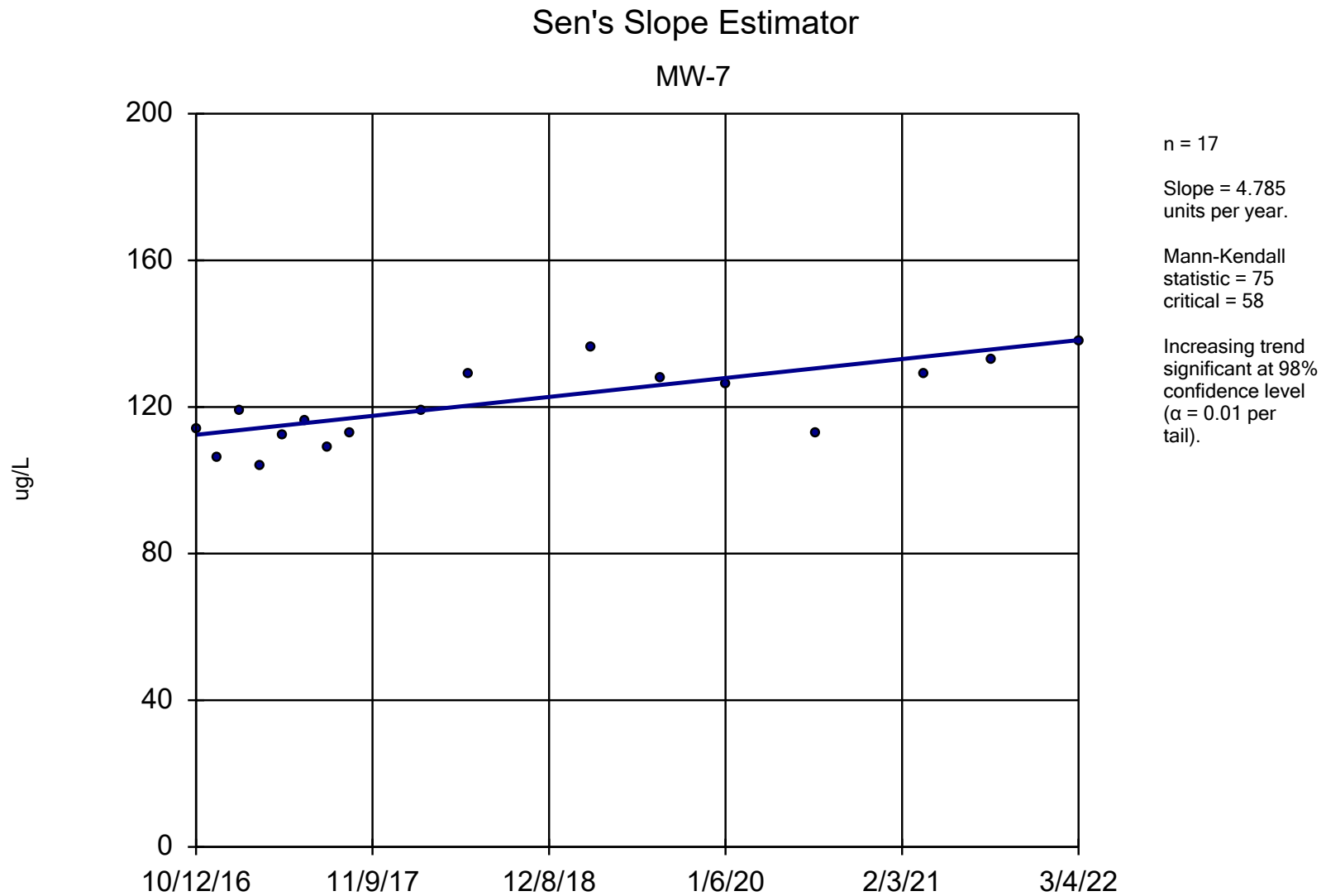
Constituent: Barium [total] Analysis Run 4/25/2022 4:22 PM View: FDU Combined

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



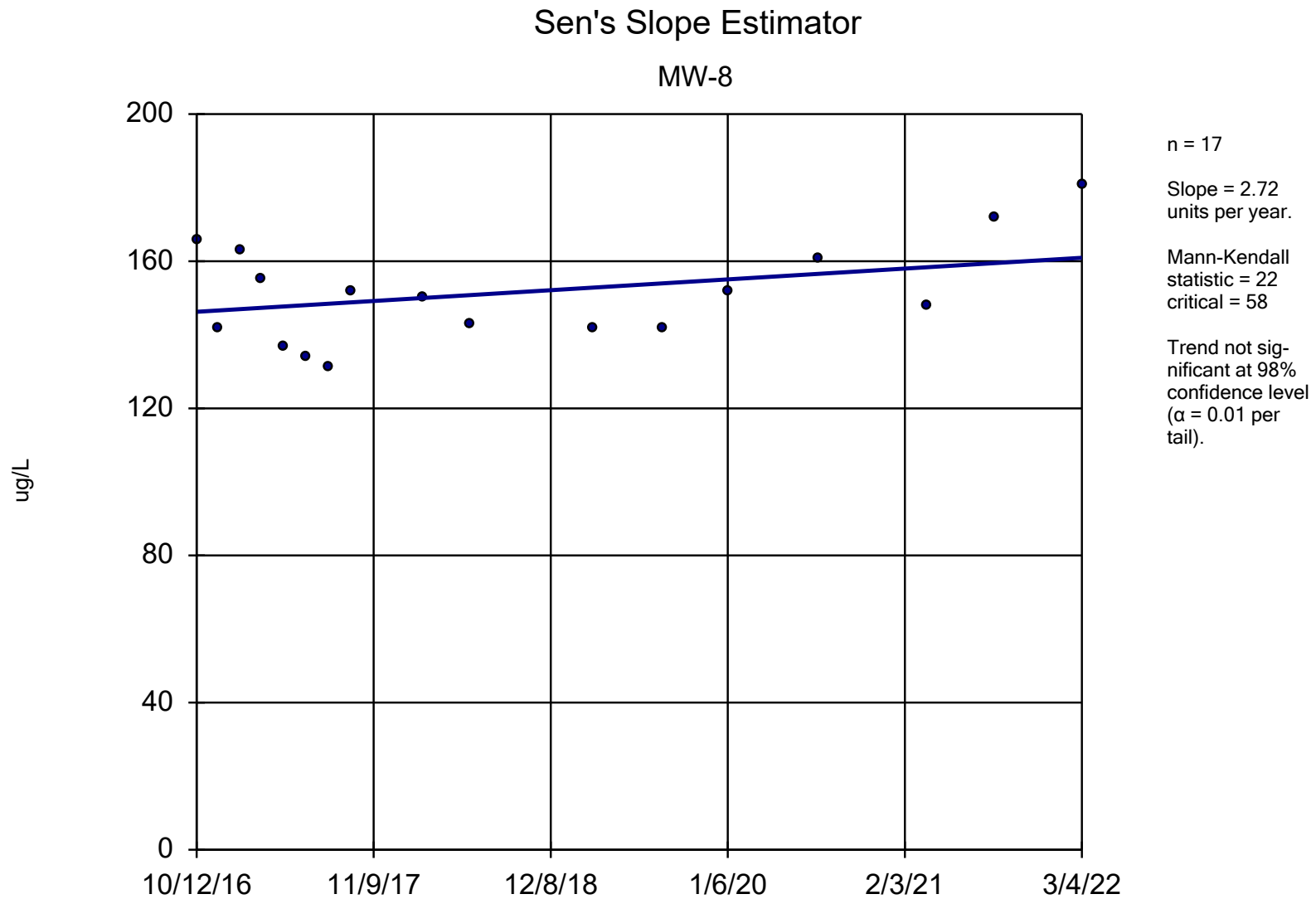
Constituent: Barium [total] Analysis Run 4/25/2022 4:22 PM View: FDU Combined

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



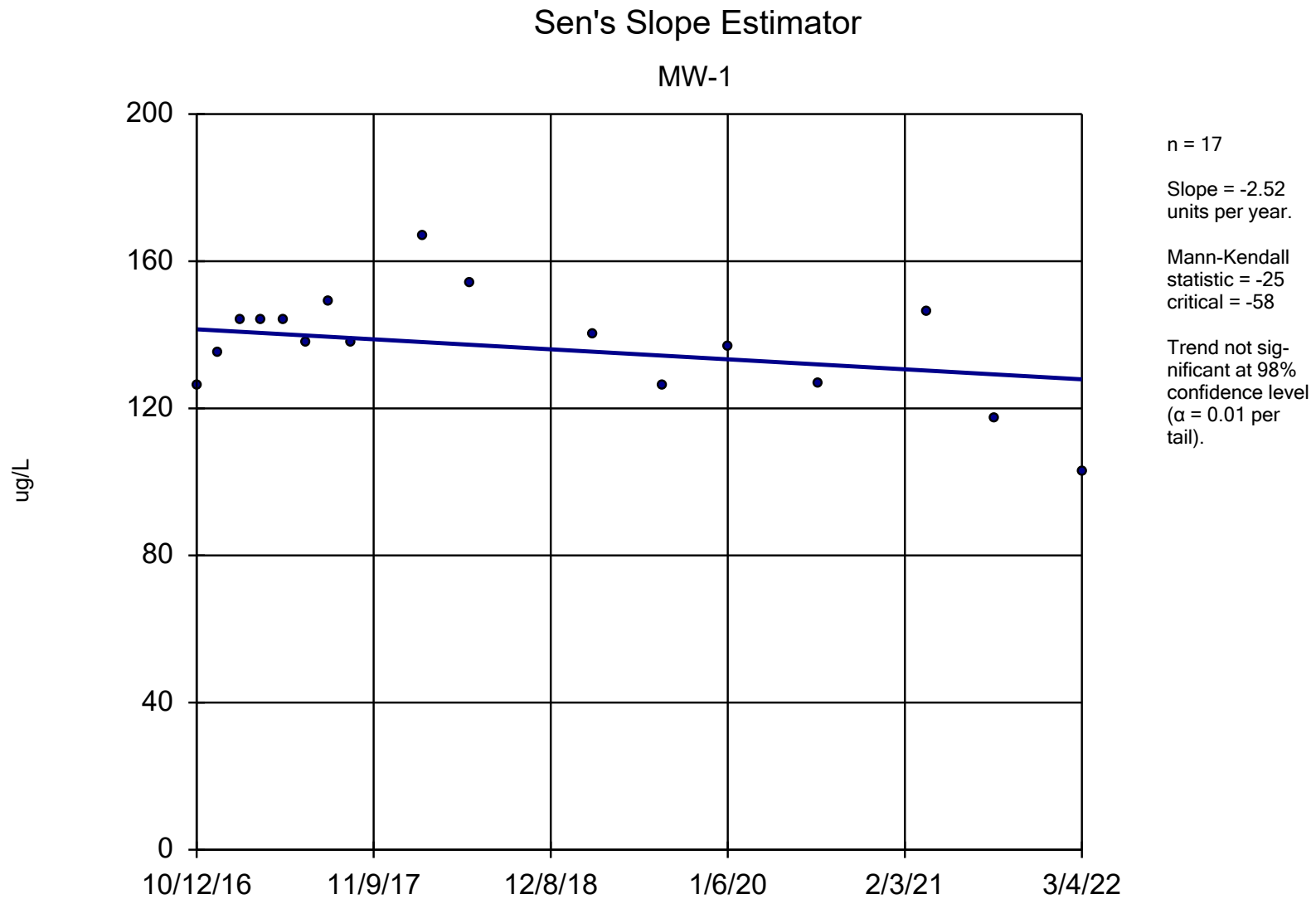
Constituent: Barium [total] Analysis Run 4/25/2022 4:22 PM View: FDU Combined

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

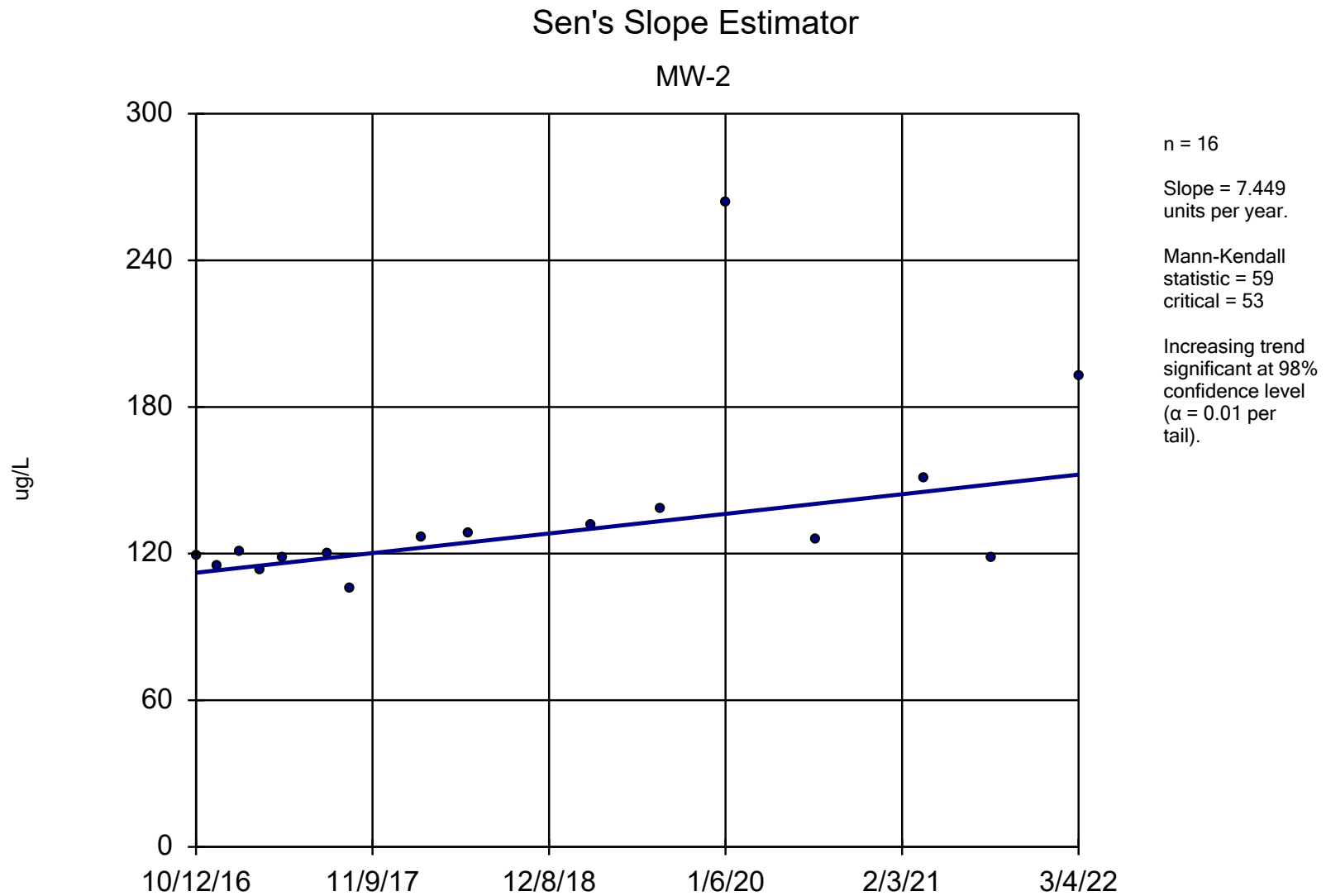


Constituent: Barium [total] Analysis Run 4/25/2022 4:22 PM View: FDU Combined

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



Constituent: Boron Analysis Run 4/25/2022 4:22 PM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

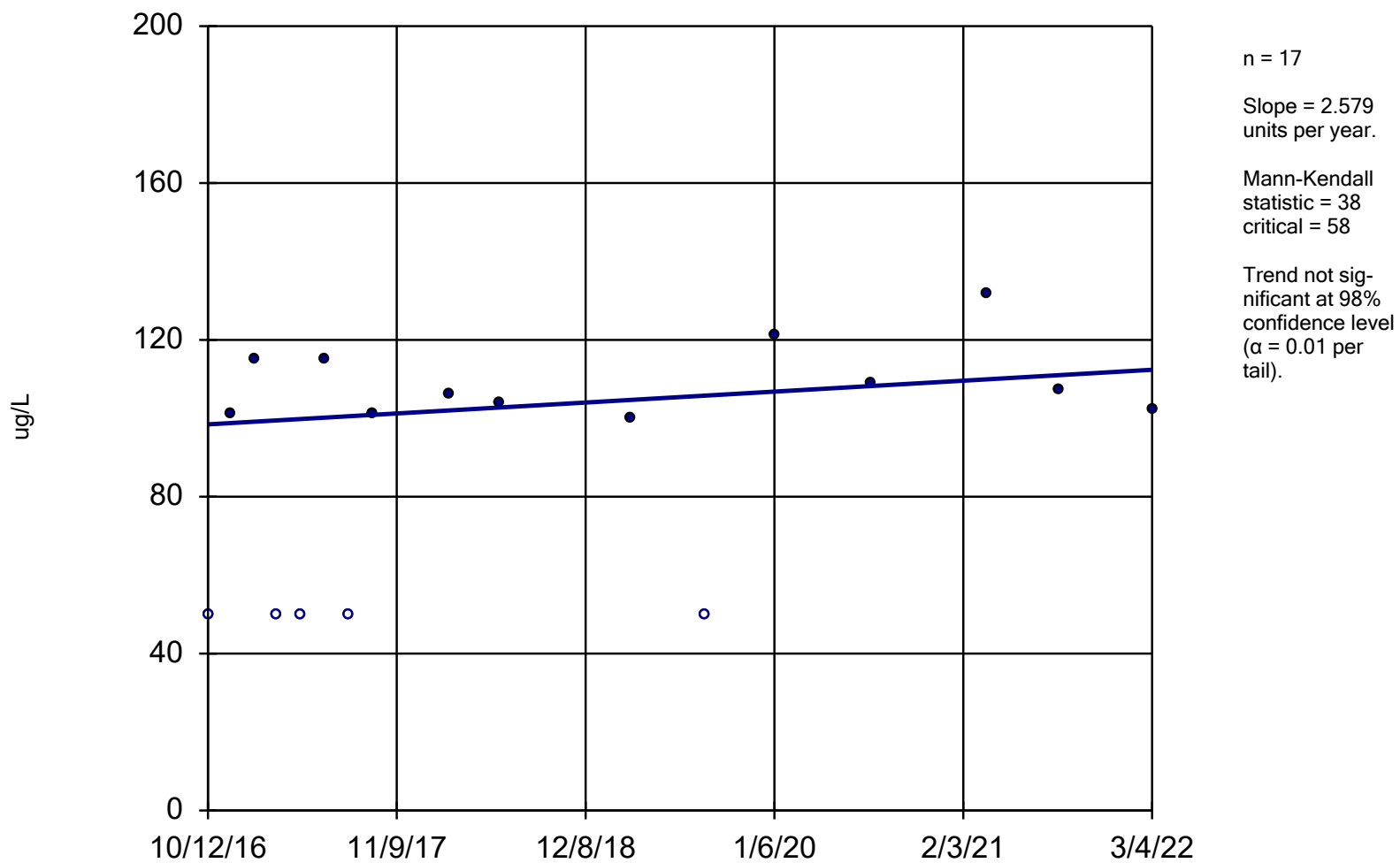


Constituent: Boron Analysis Run 4/25/2022 4:22 PM View: FDU Combined

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

Sen's Slope Estimator

MW-3

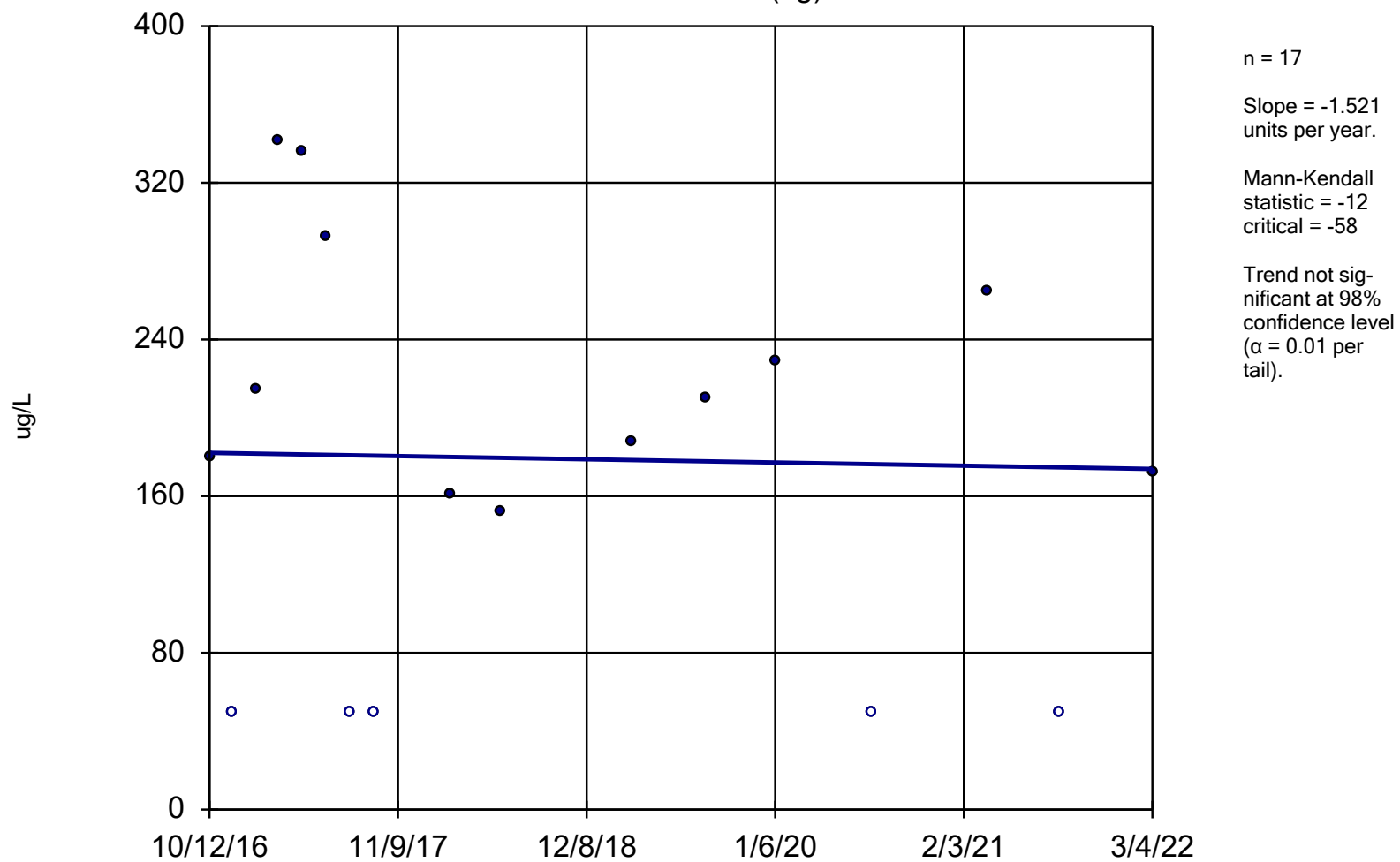


Constituent: Boron Analysis Run 4/25/2022 4:22 PM View: FDU Combined

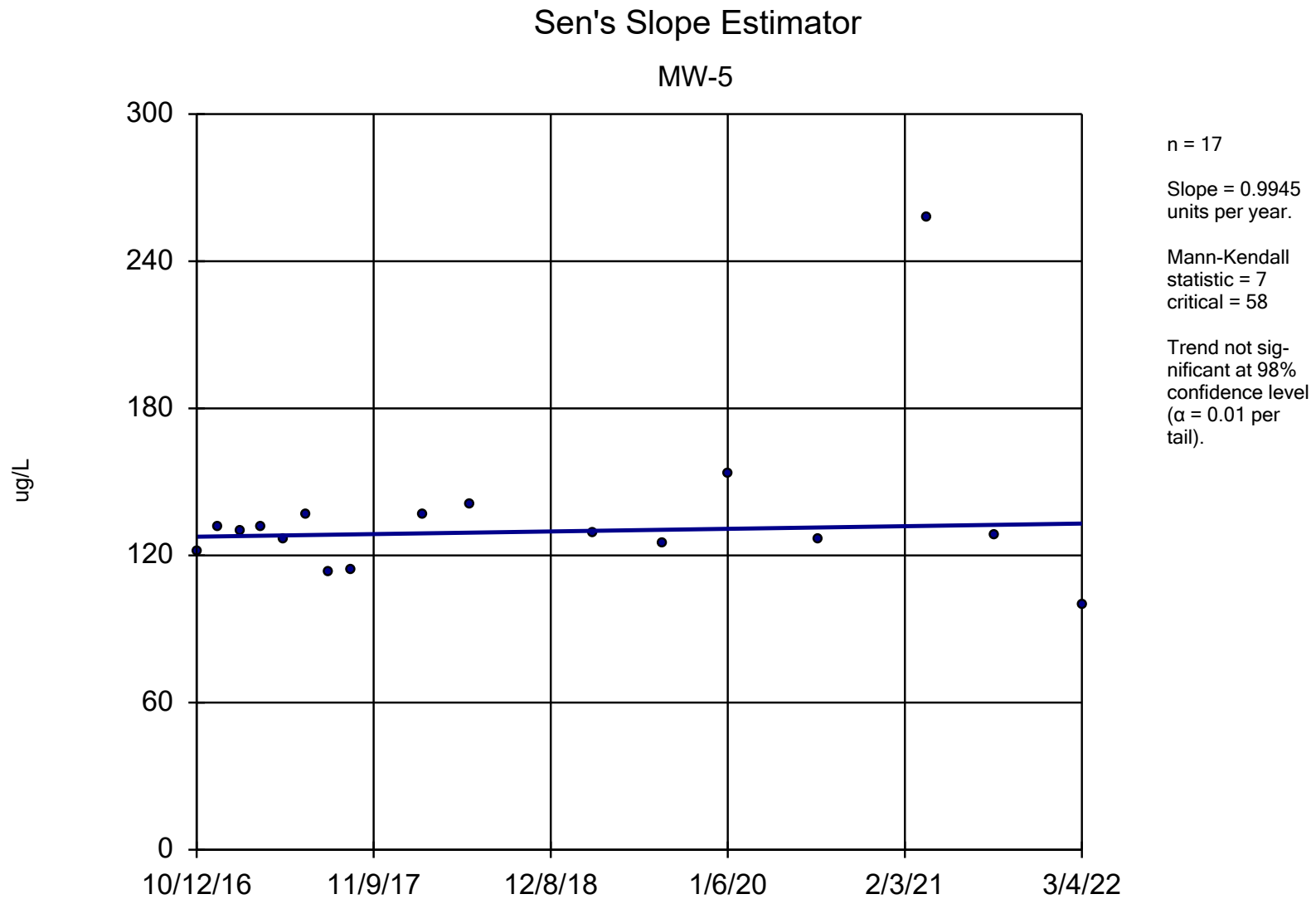
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

MW-4R (bg)



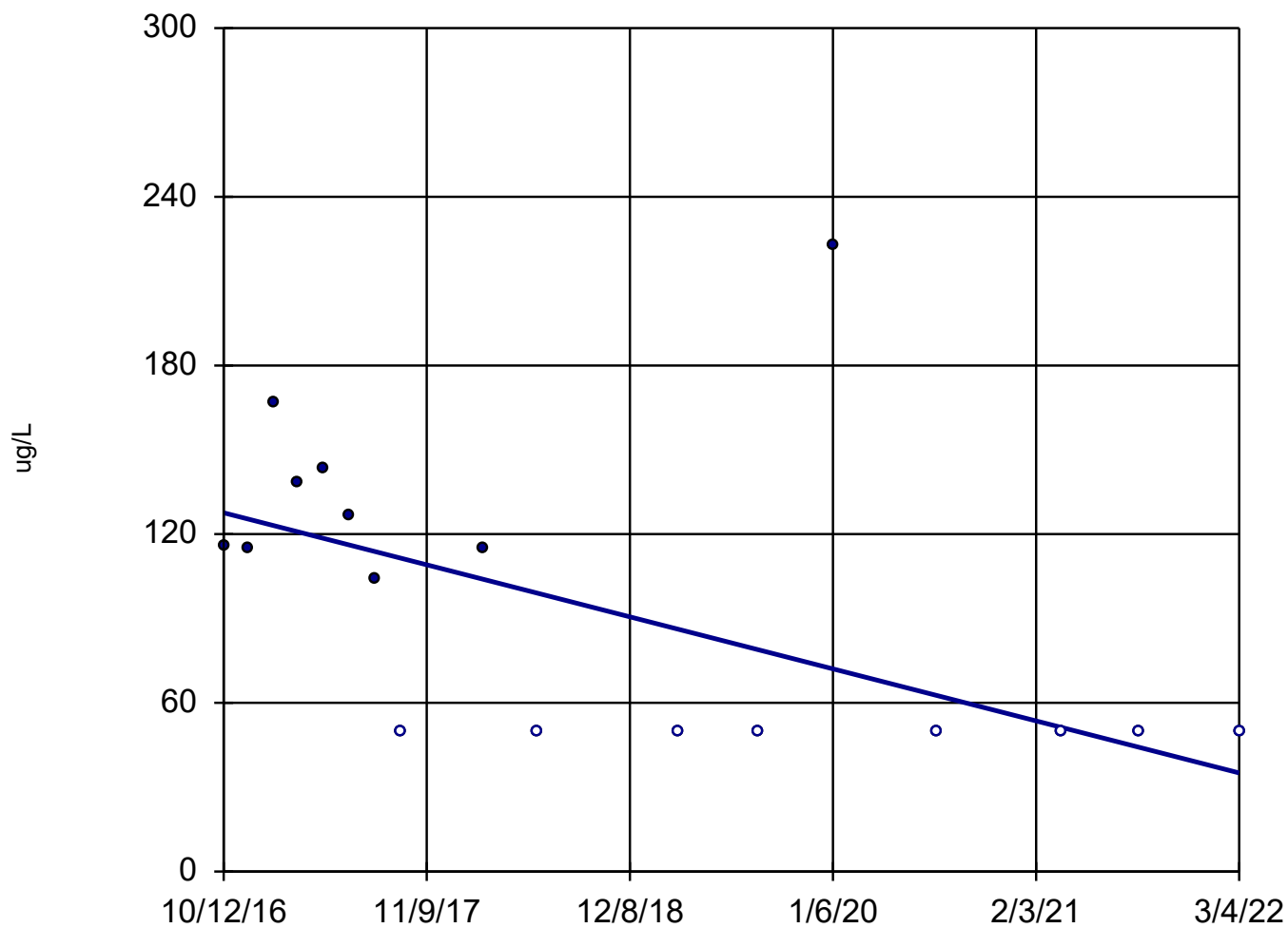
Constituent: Boron Analysis Run 4/25/2022 4:22 PM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater



Constituent: Boron Analysis Run 4/25/2022 4:22 PM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

MW-6



n = 17

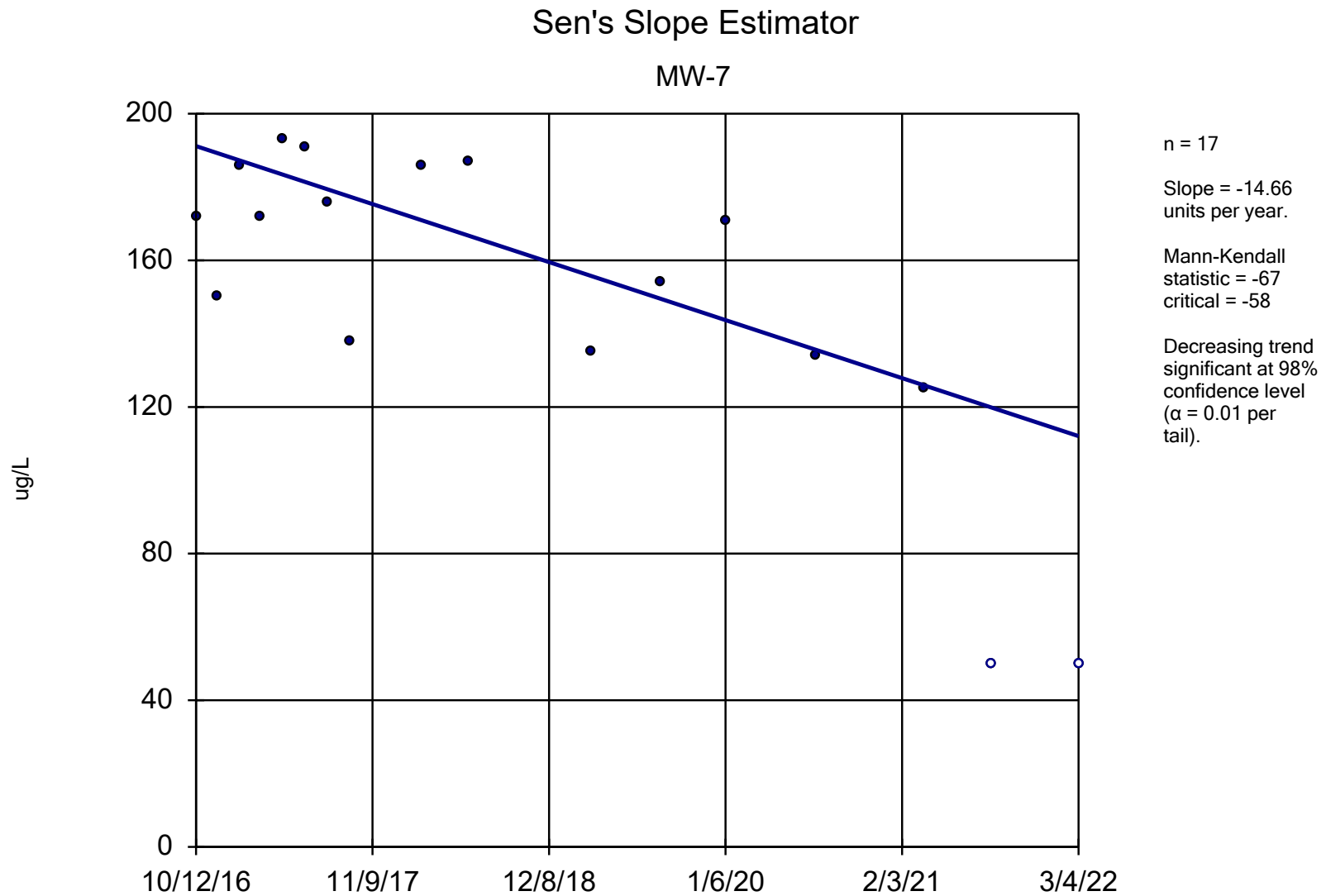
Slope = -17.15
units per year.

Mann-Kendall
statistic = -61
critical = -58

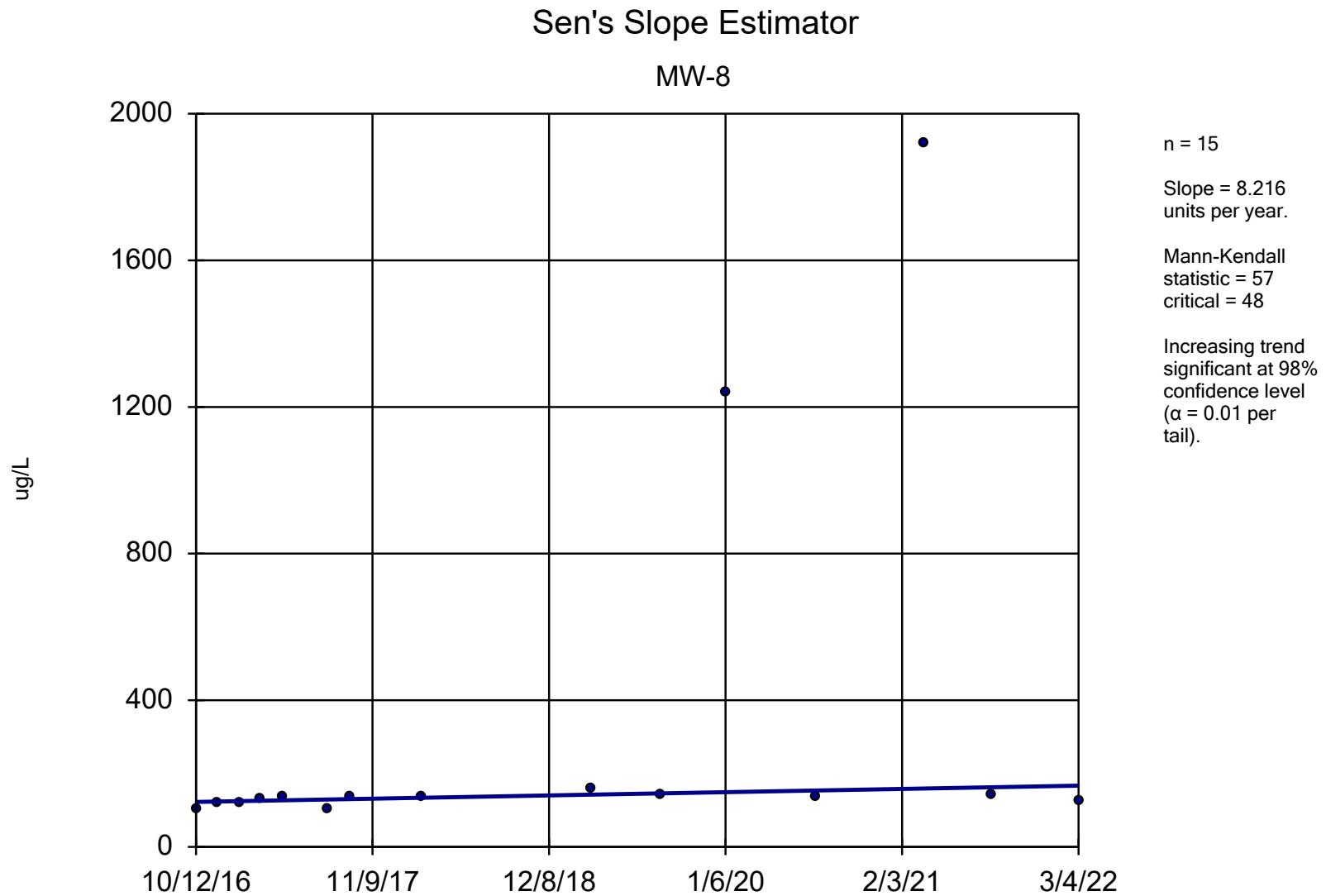
Decreasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Constituent: Boron Analysis Run 4/25/2022 4:22 PM View: FDU Combined

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

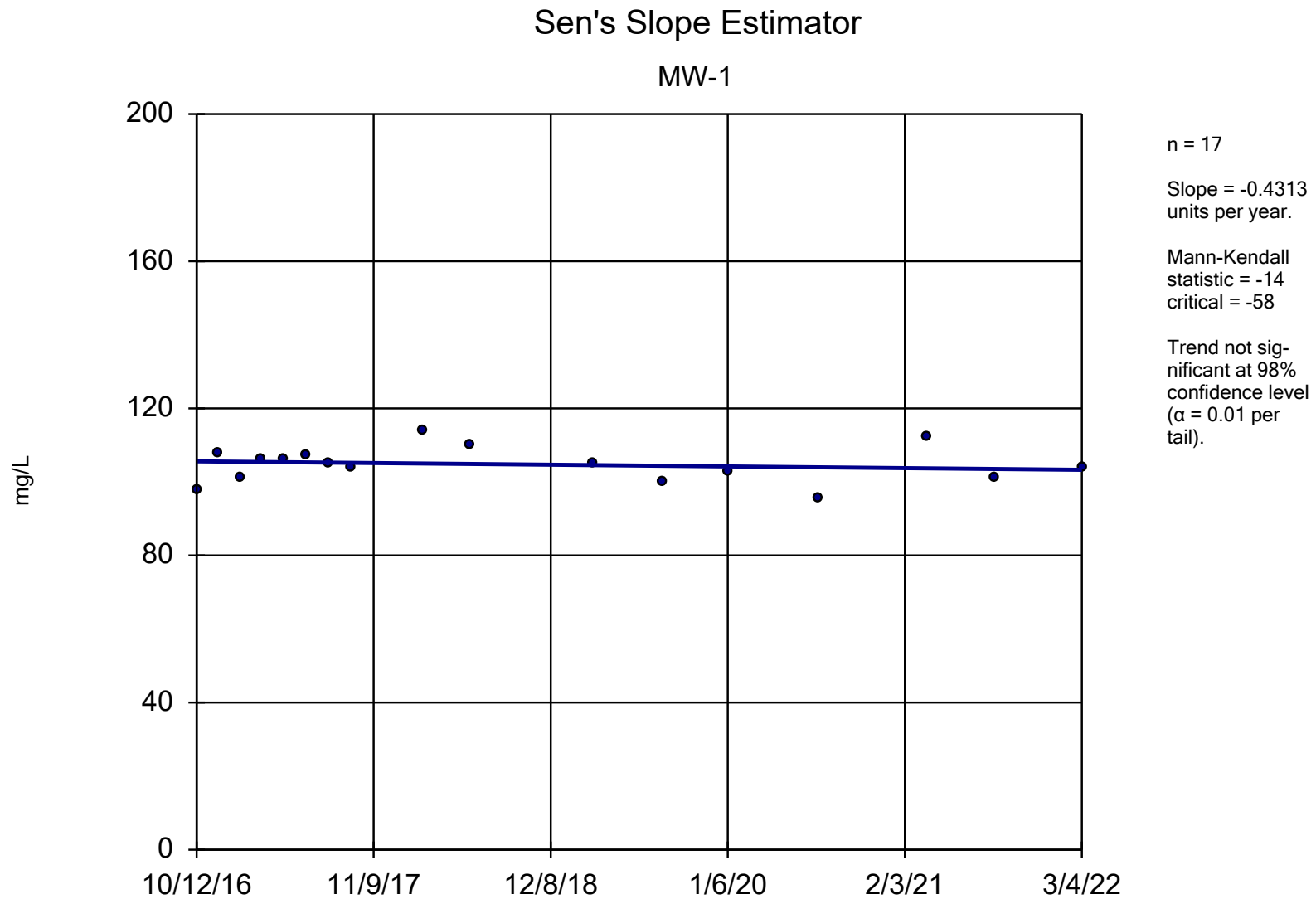


Constituent: Boron Analysis Run 4/25/2022 4:22 PM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

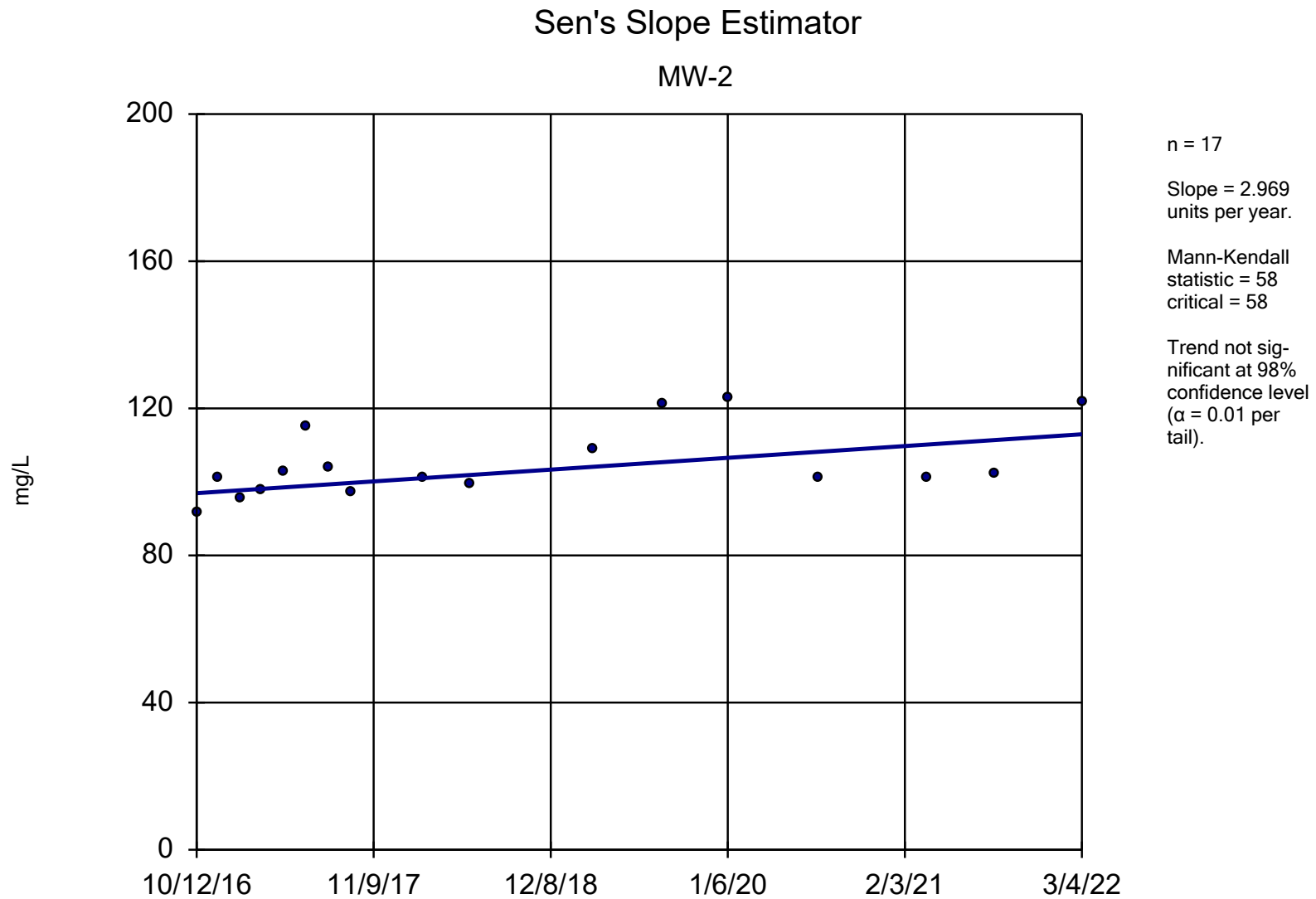


Constituent: Boron Analysis Run 4/25/2022 4:22 PM View: FDU Combined

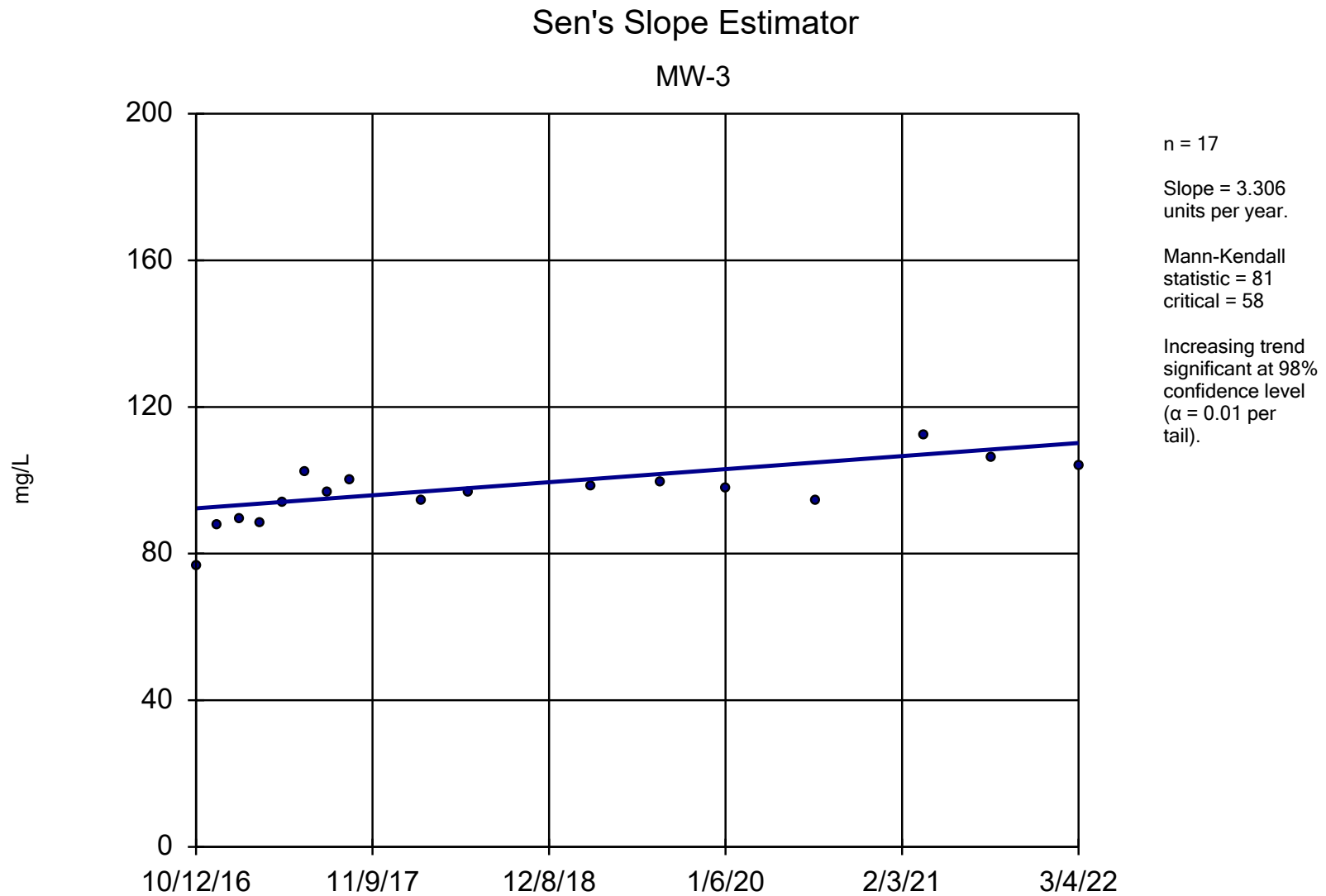
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater



Constituent: Calcium Analysis Run 4/25/2022 4:22 PM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater



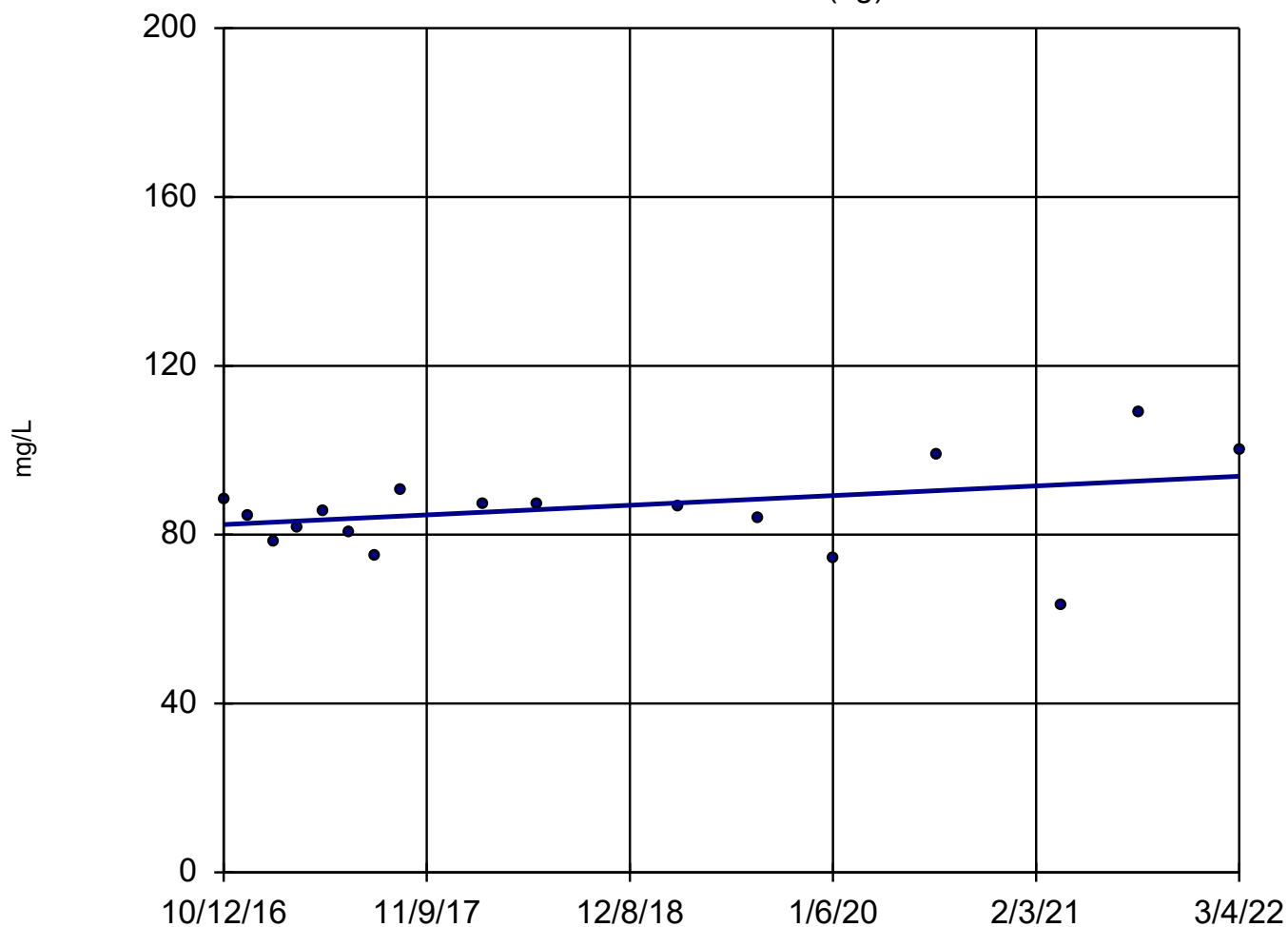
Constituent: Calcium Analysis Run 4/25/2022 4:22 PM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater



Constituent: Calcium Analysis Run 4/25/2022 4:22 PM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

MW-4R (bg)



n = 17

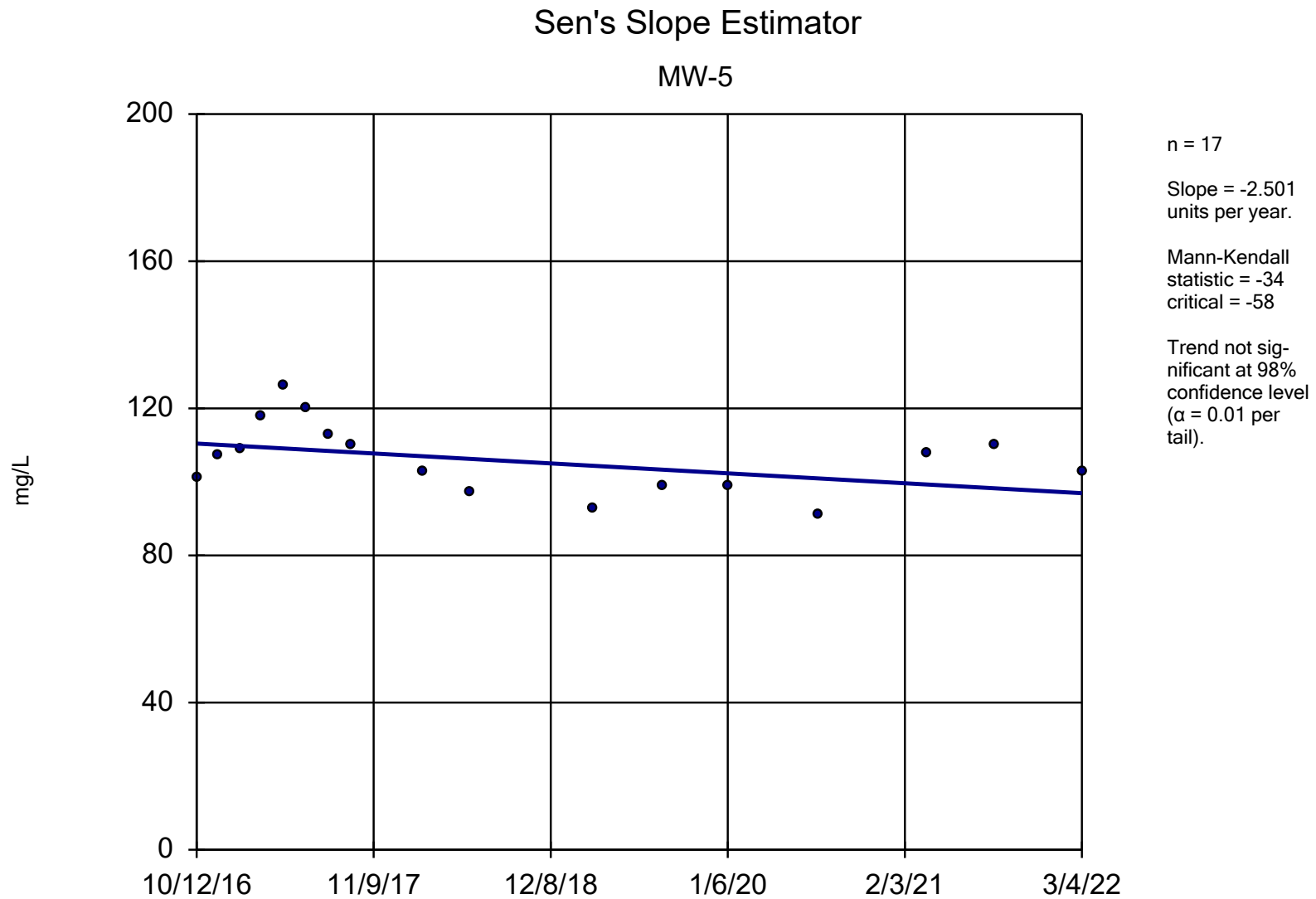
Slope = 2.121
units per year.

Mann-Kendall
statistic = 19
critical = 58

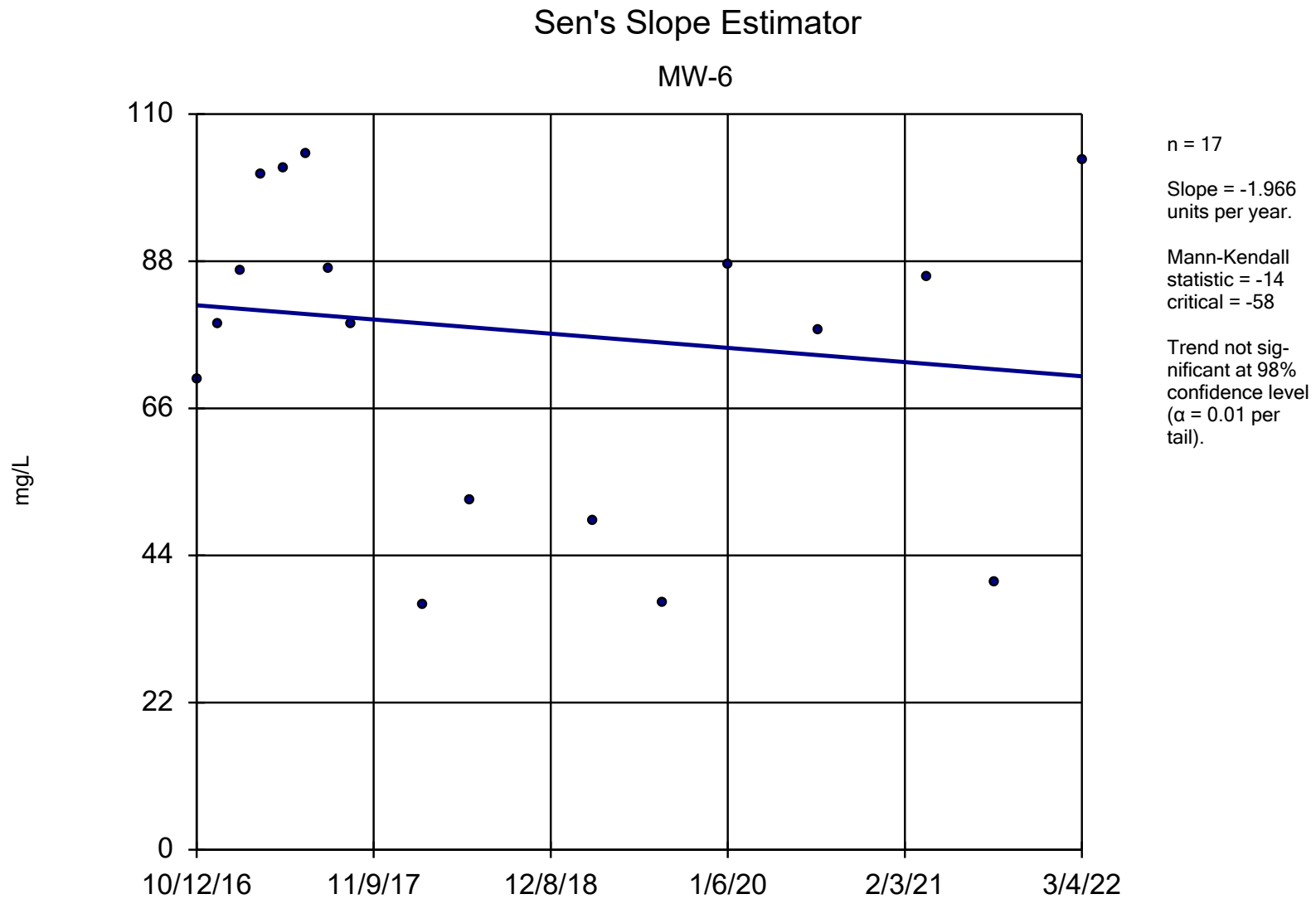
Trend not significant at 98% confidence level ($\alpha = 0.01$ per tail).

Constituent: Calcium Analysis Run 4/25/2022 4:22 PM View: FDU Combined

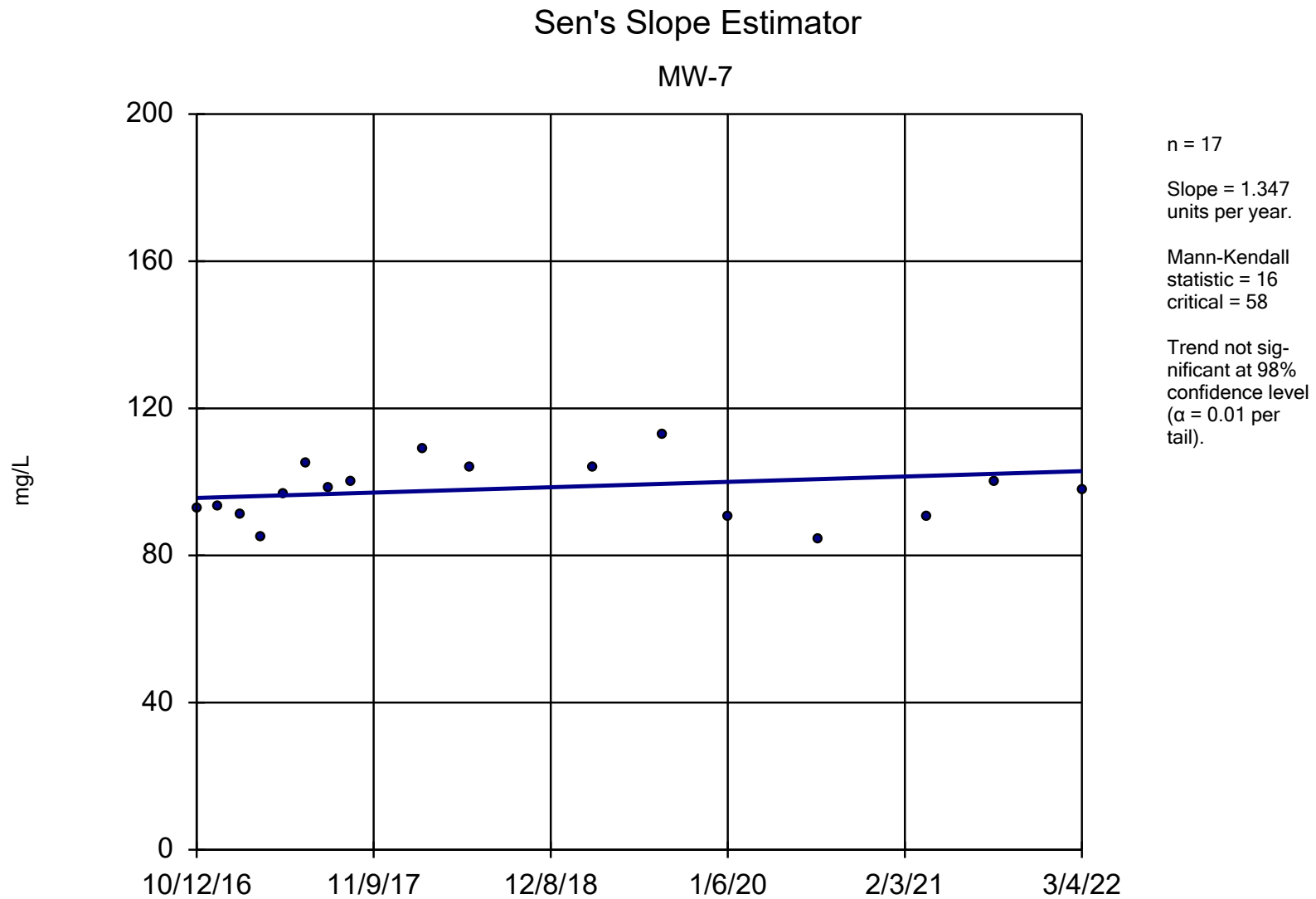
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater



Constituent: Calcium Analysis Run 4/25/2022 4:23 PM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater



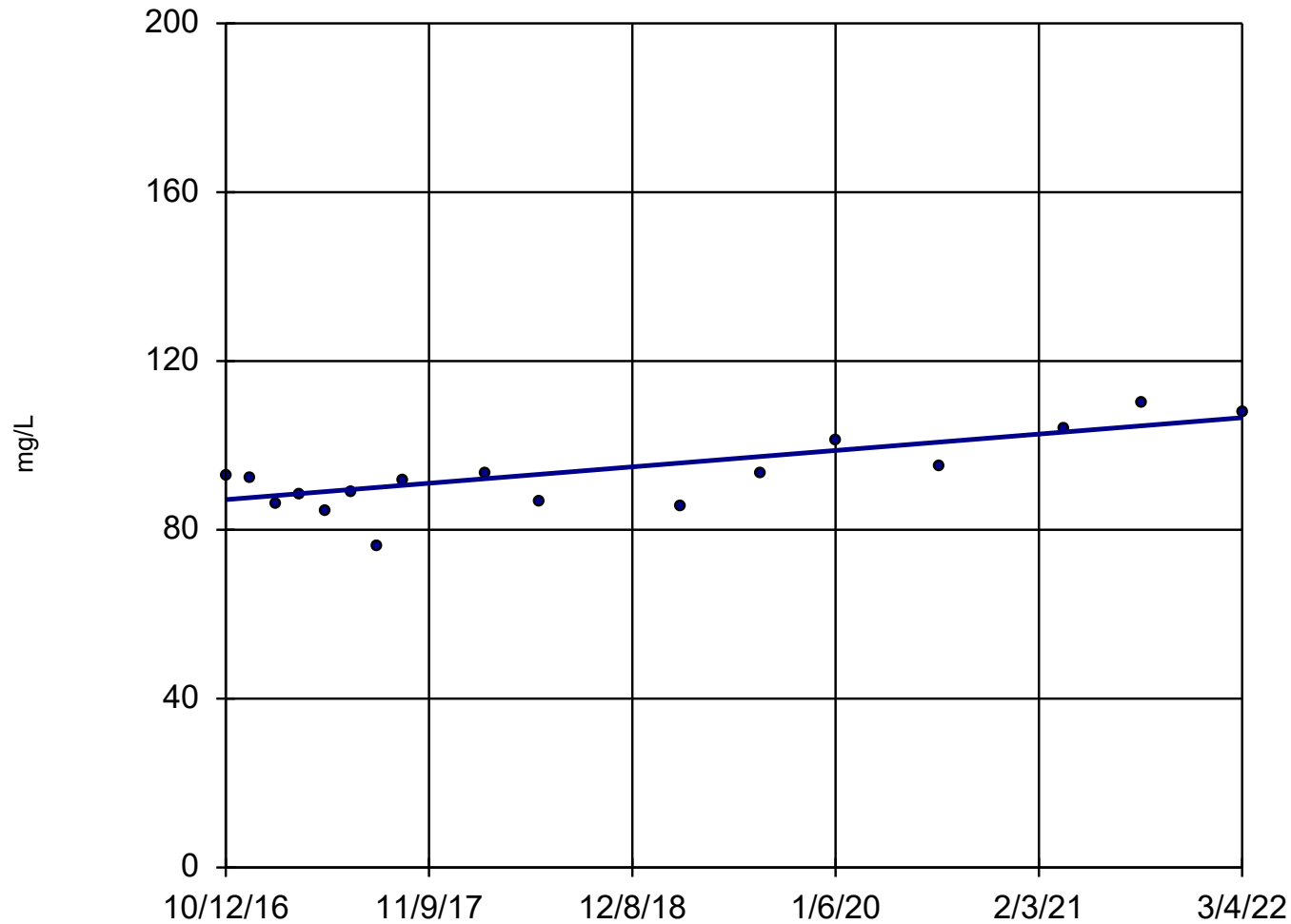
Constituent: Calcium Analysis Run 4/25/2022 4:23 PM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater



Constituent: Calcium Analysis Run 4/25/2022 4:23 PM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

MW-8



n = 17

Slope = 3.598
units per year.

Mann-Kendall
statistic = 64
critical = 58

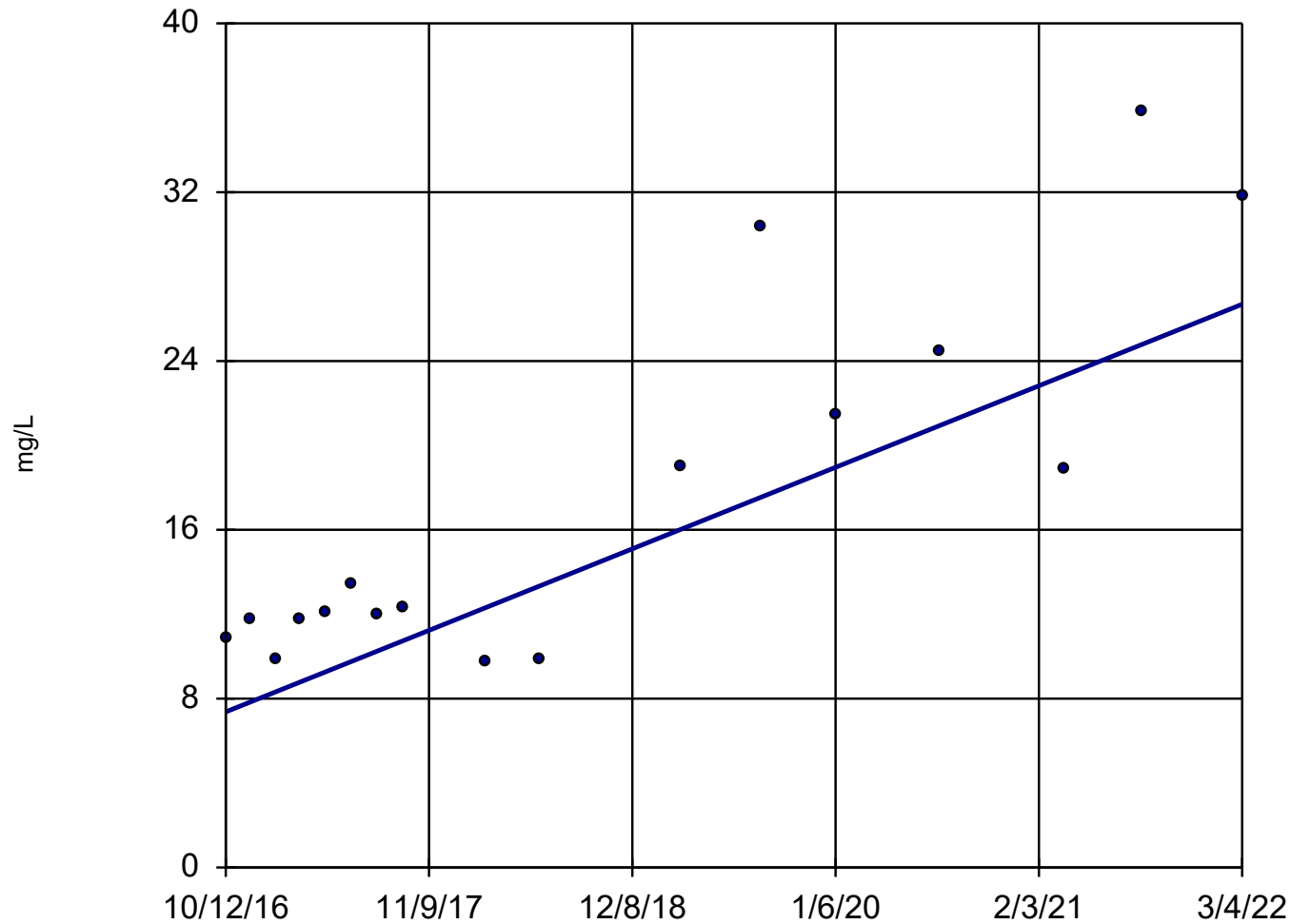
Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Constituent: Calcium Analysis Run 4/25/2022 4:23 PM View: FDU Combined

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

Sen's Slope Estimator

MW-1



n = 17

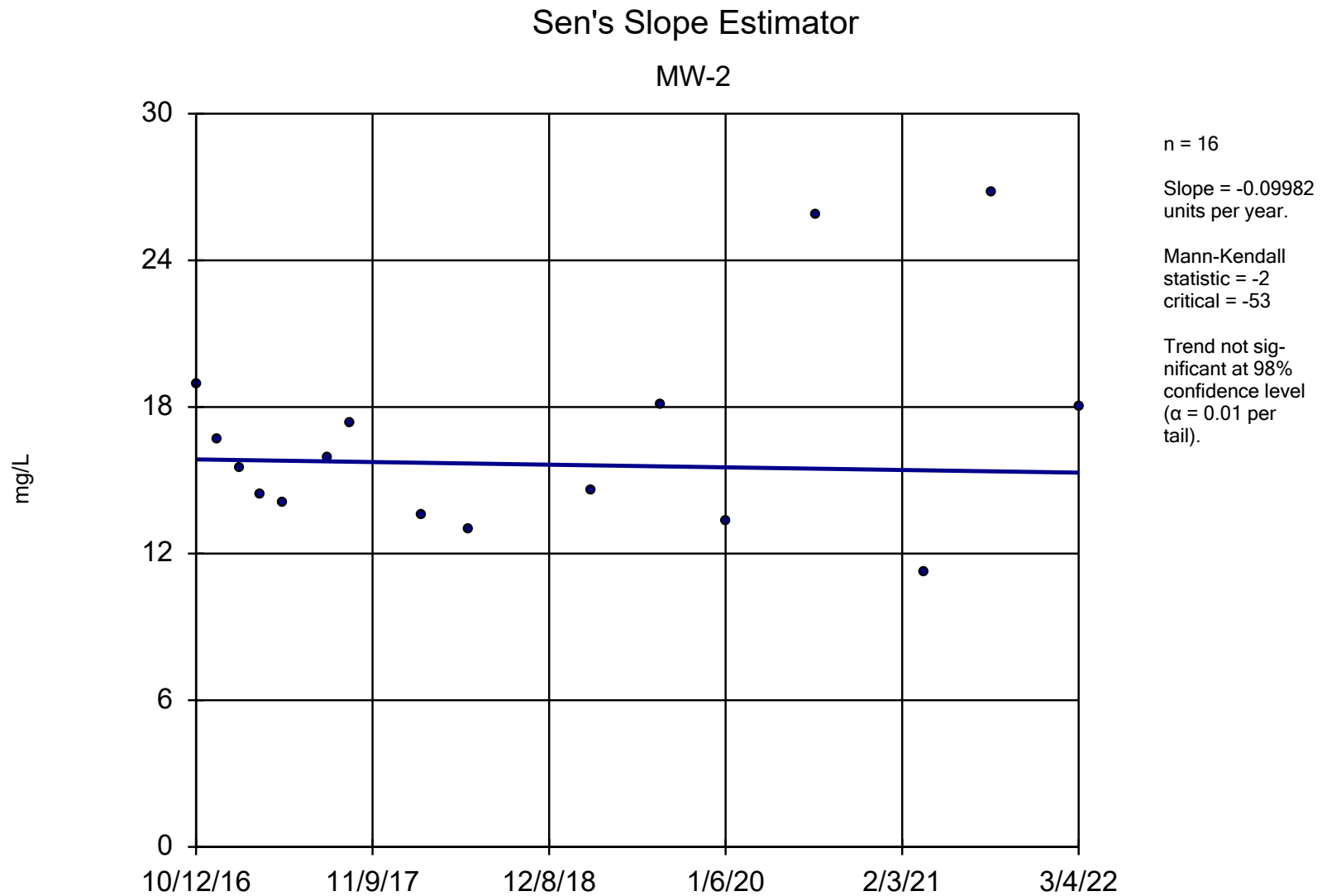
Slope = 3.58
units per year.

Mann-Kendall
statistic = 80
critical = 58

Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Constituent: Chloride Analysis Run 4/25/2022 4:23 PM View: FDU Combined

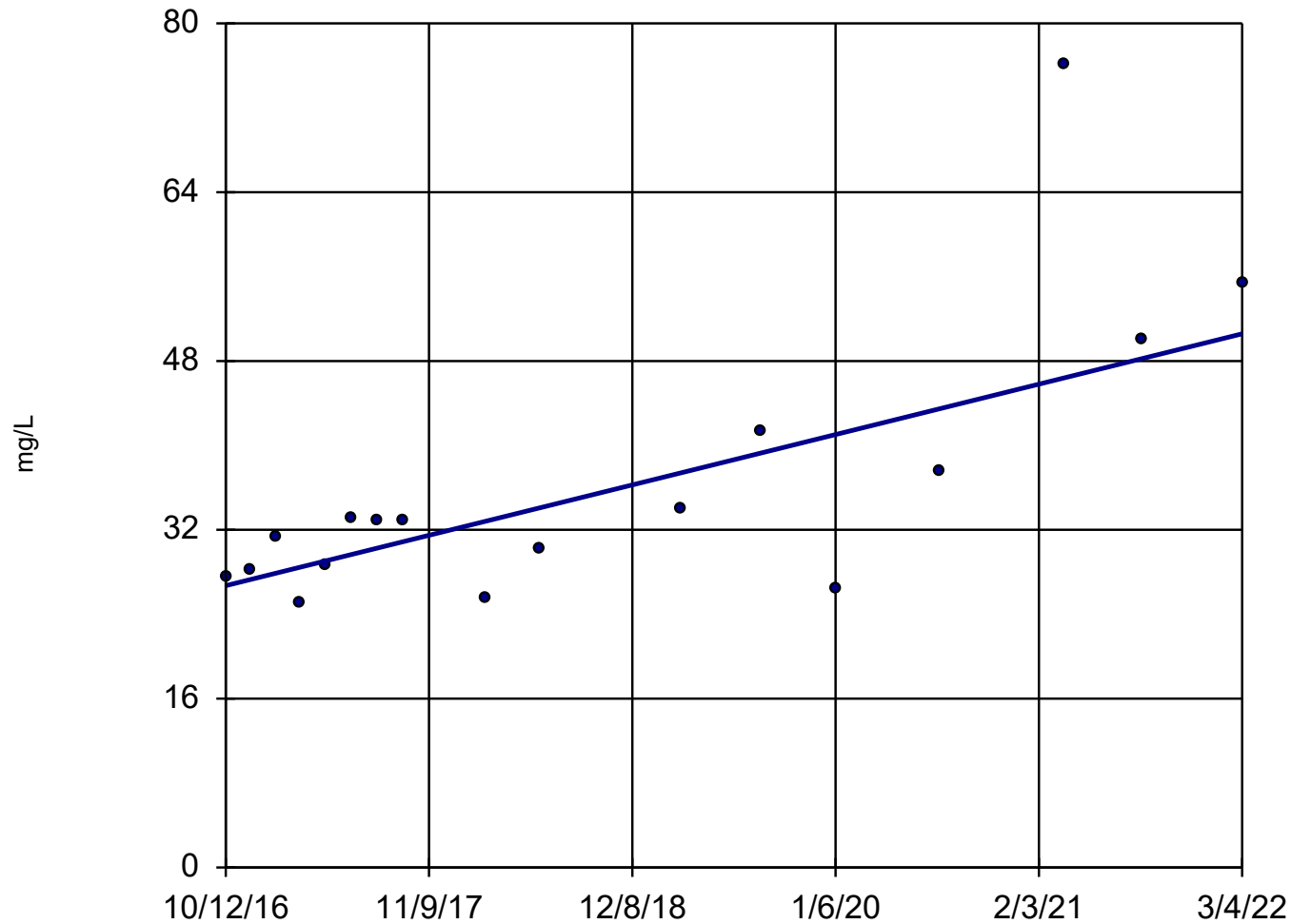
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater



Constituent: Chloride Analysis Run 4/25/2022 4:23 PM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

MW-3



n = 17

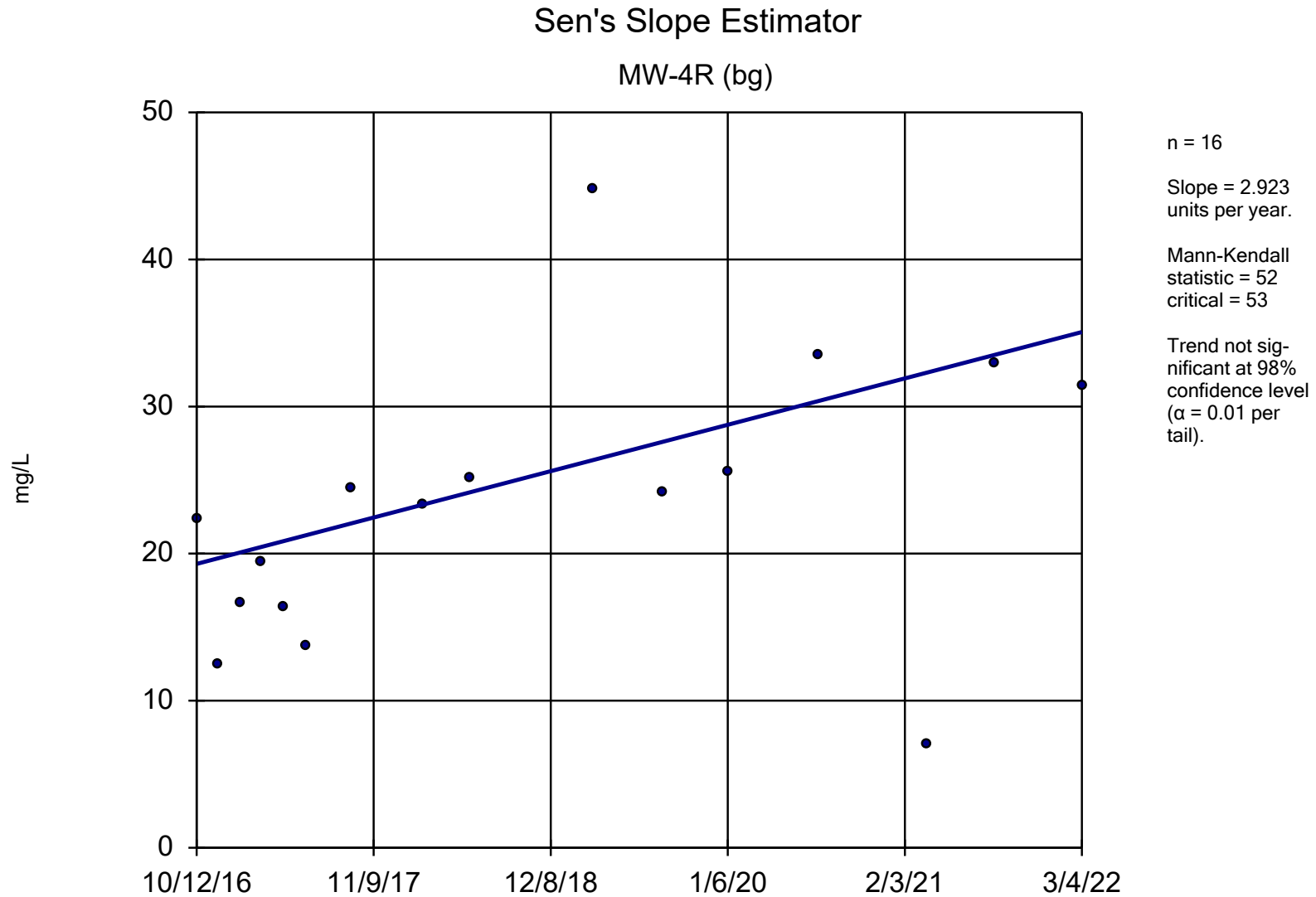
Slope = 4.424
units per year.

Mann-Kendall
statistic = 74
critical = 58

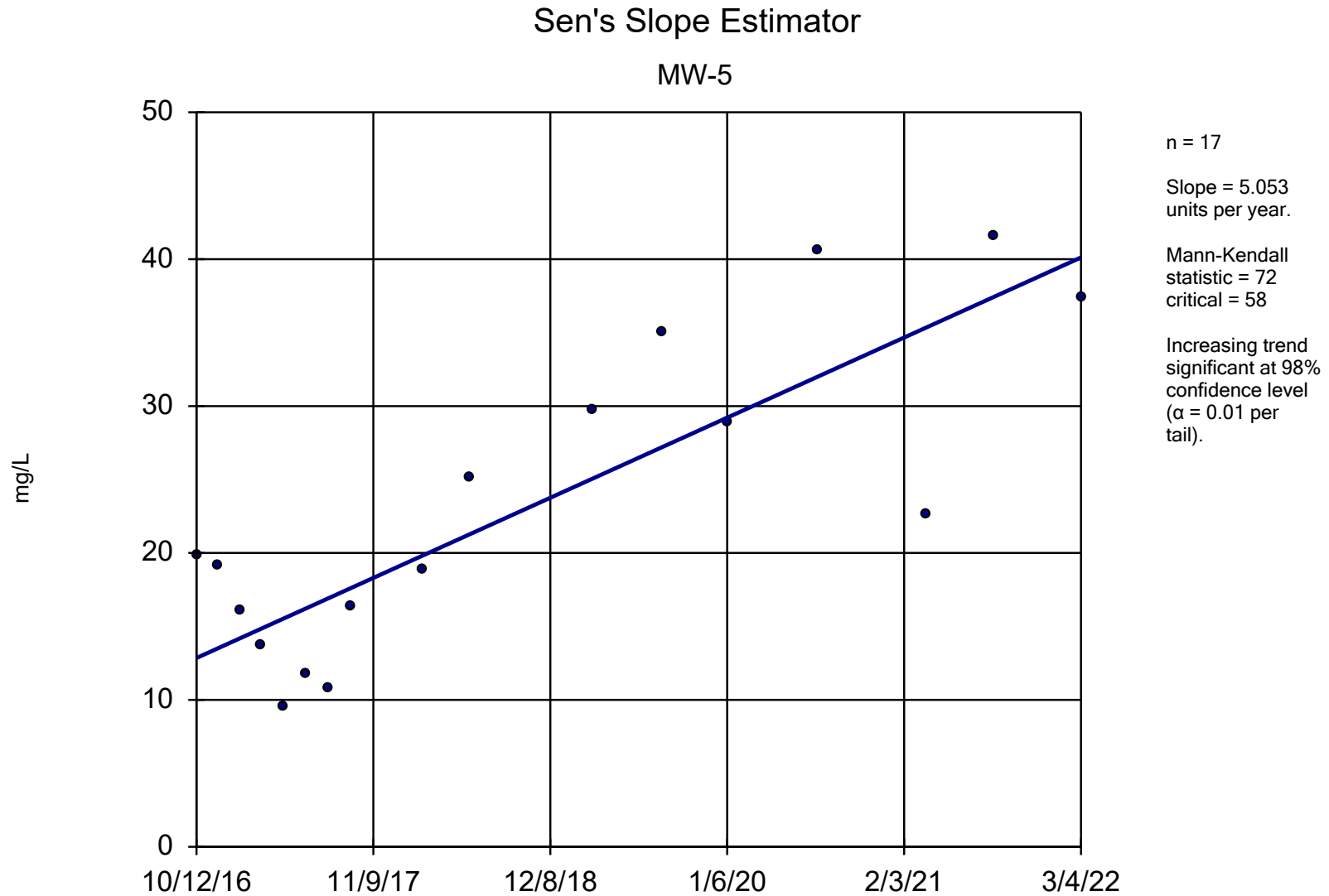
Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Constituent: Chloride Analysis Run 4/25/2022 4:23 PM View: FDU Combined

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



Constituent: Chloride Analysis Run 4/25/2022 4:23 PM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

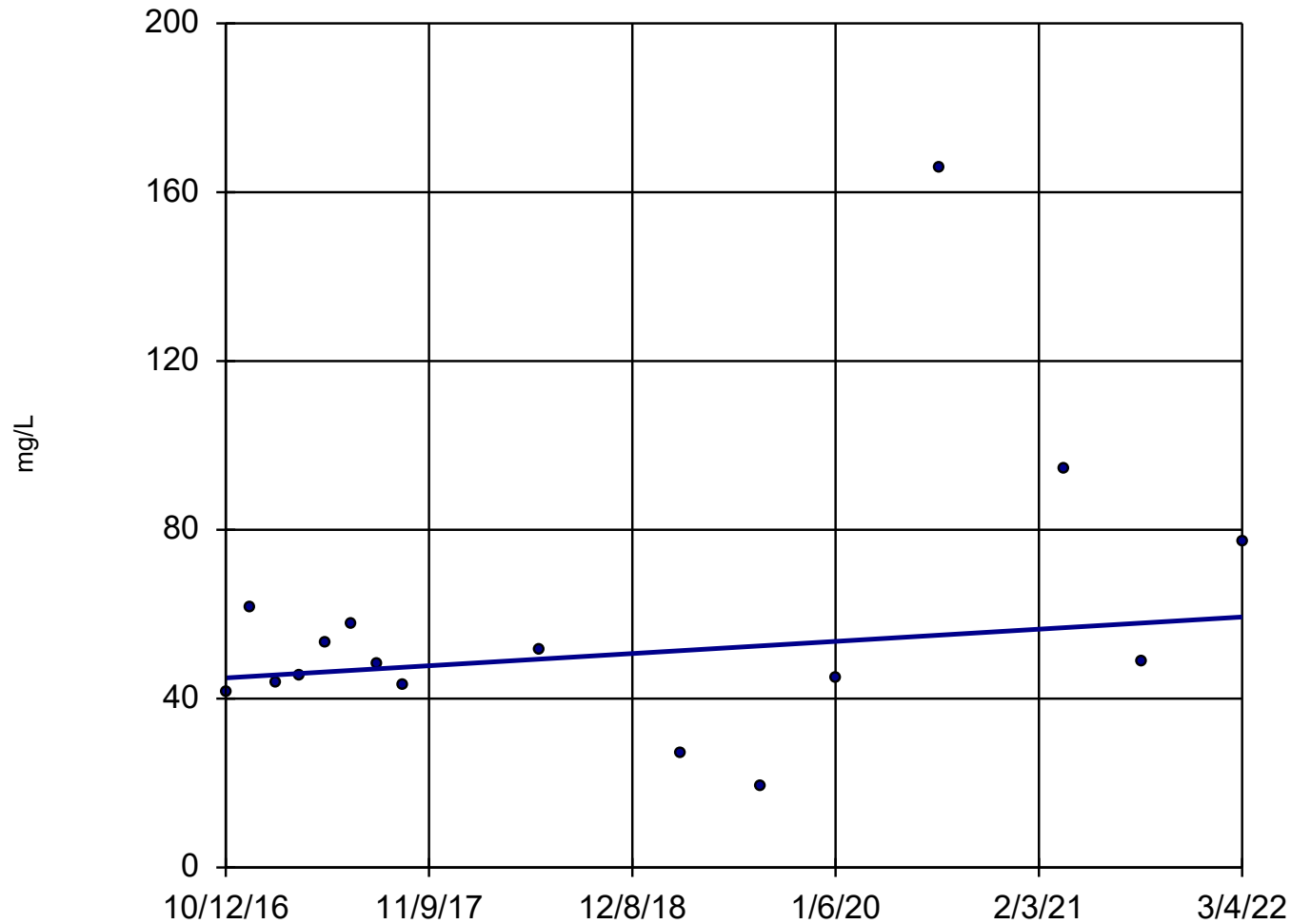


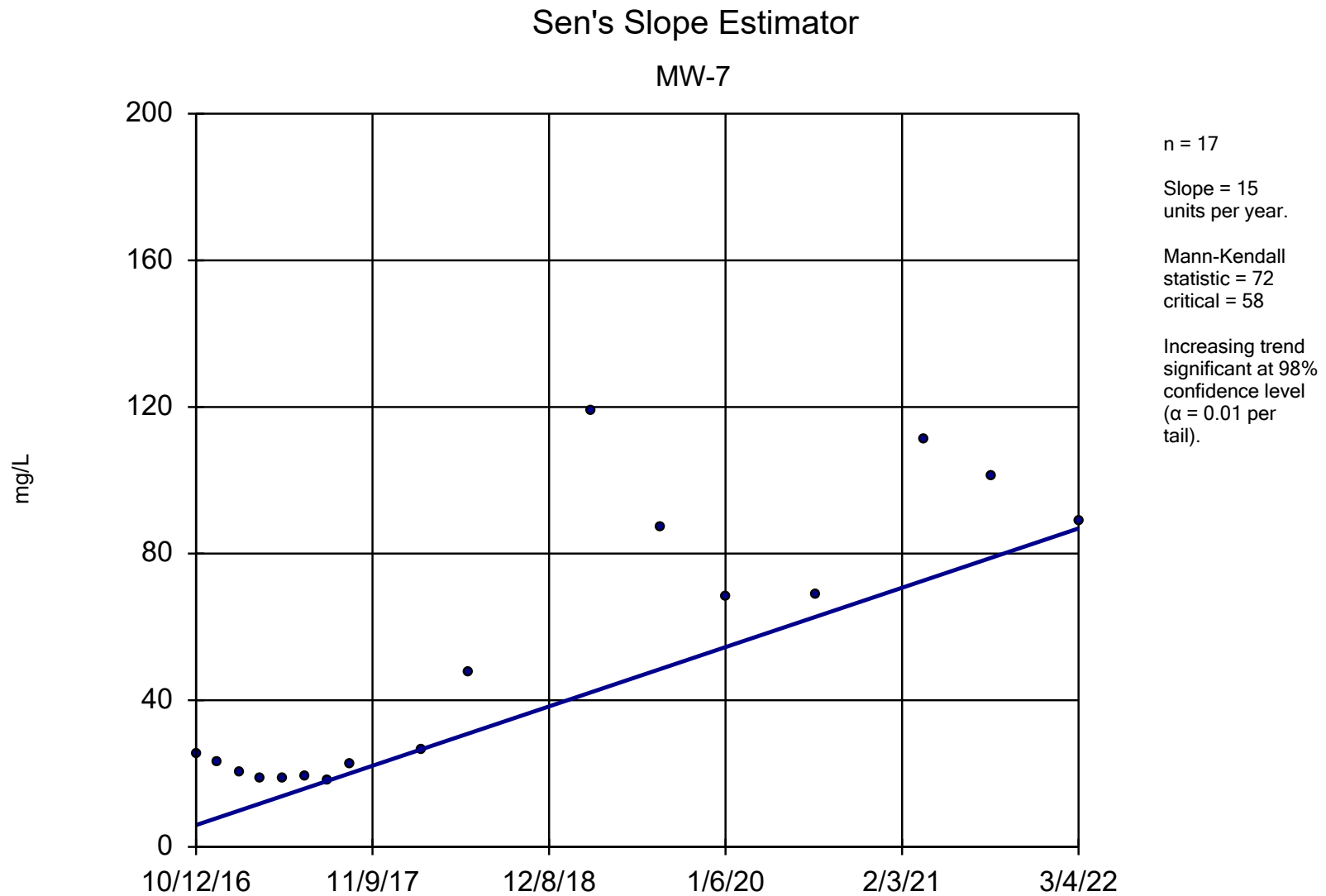
Constituent: Chloride Analysis Run 4/25/2022 4:23 PM View: FDU Combined

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

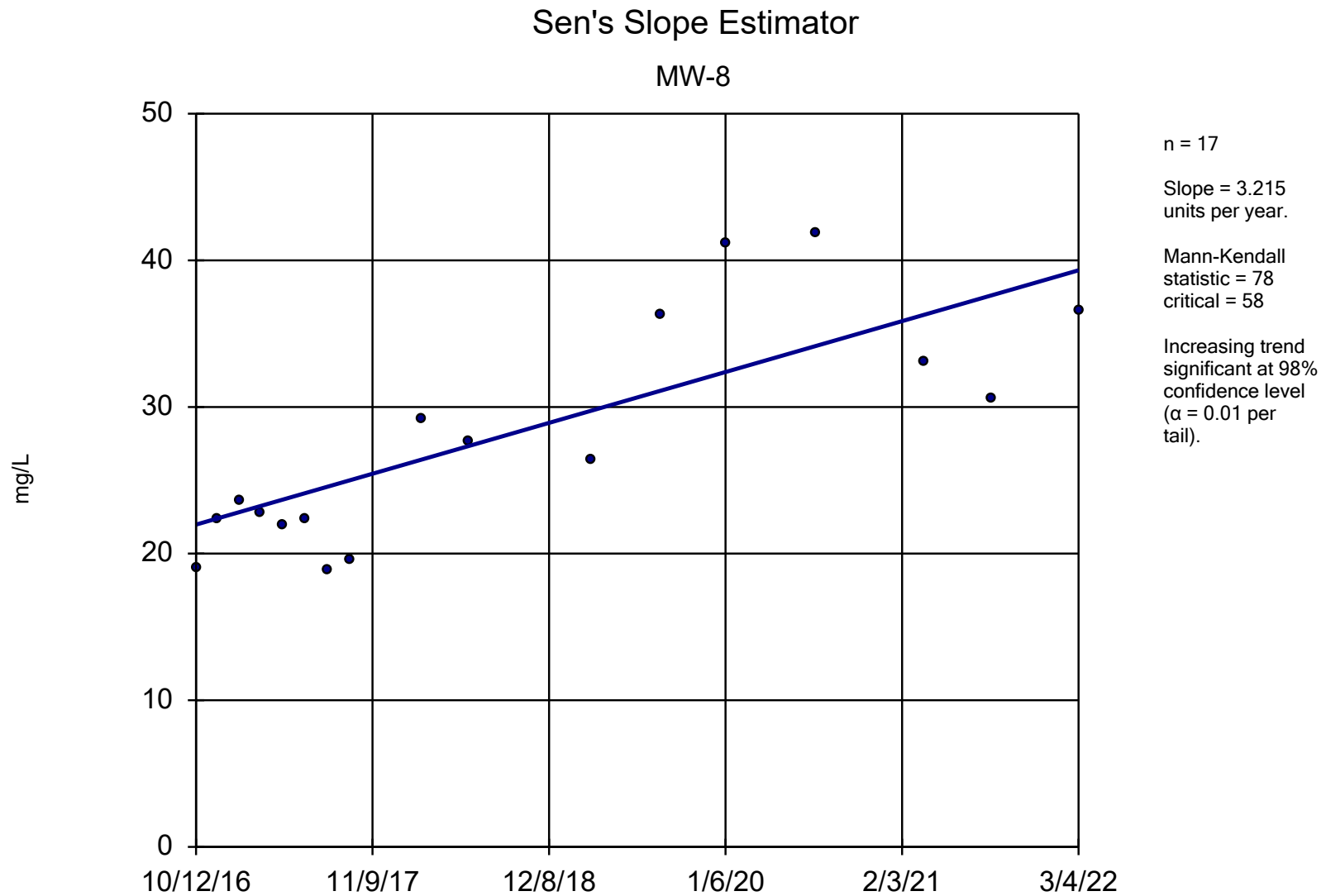
Sen's Slope Estimator

MW-6

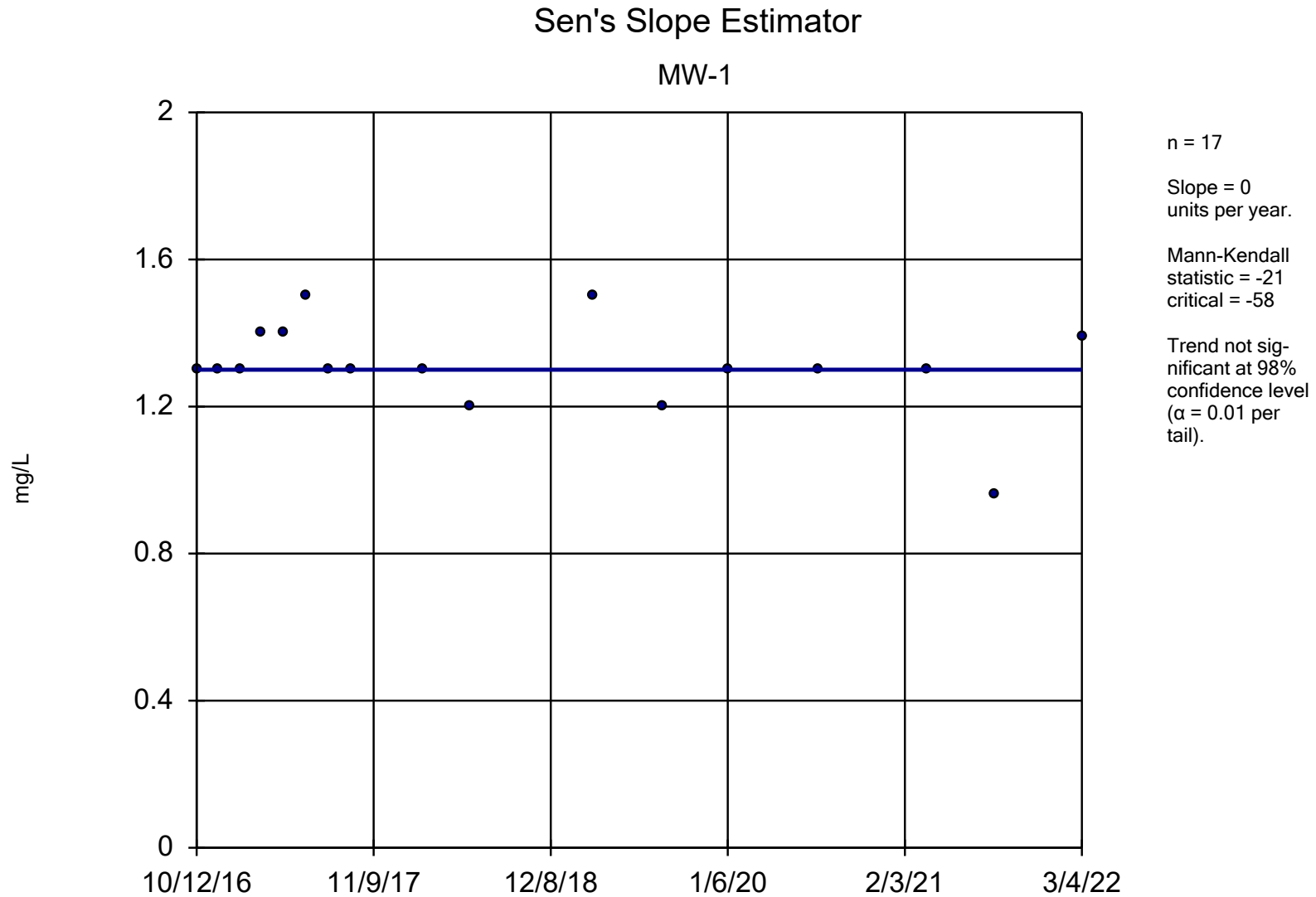




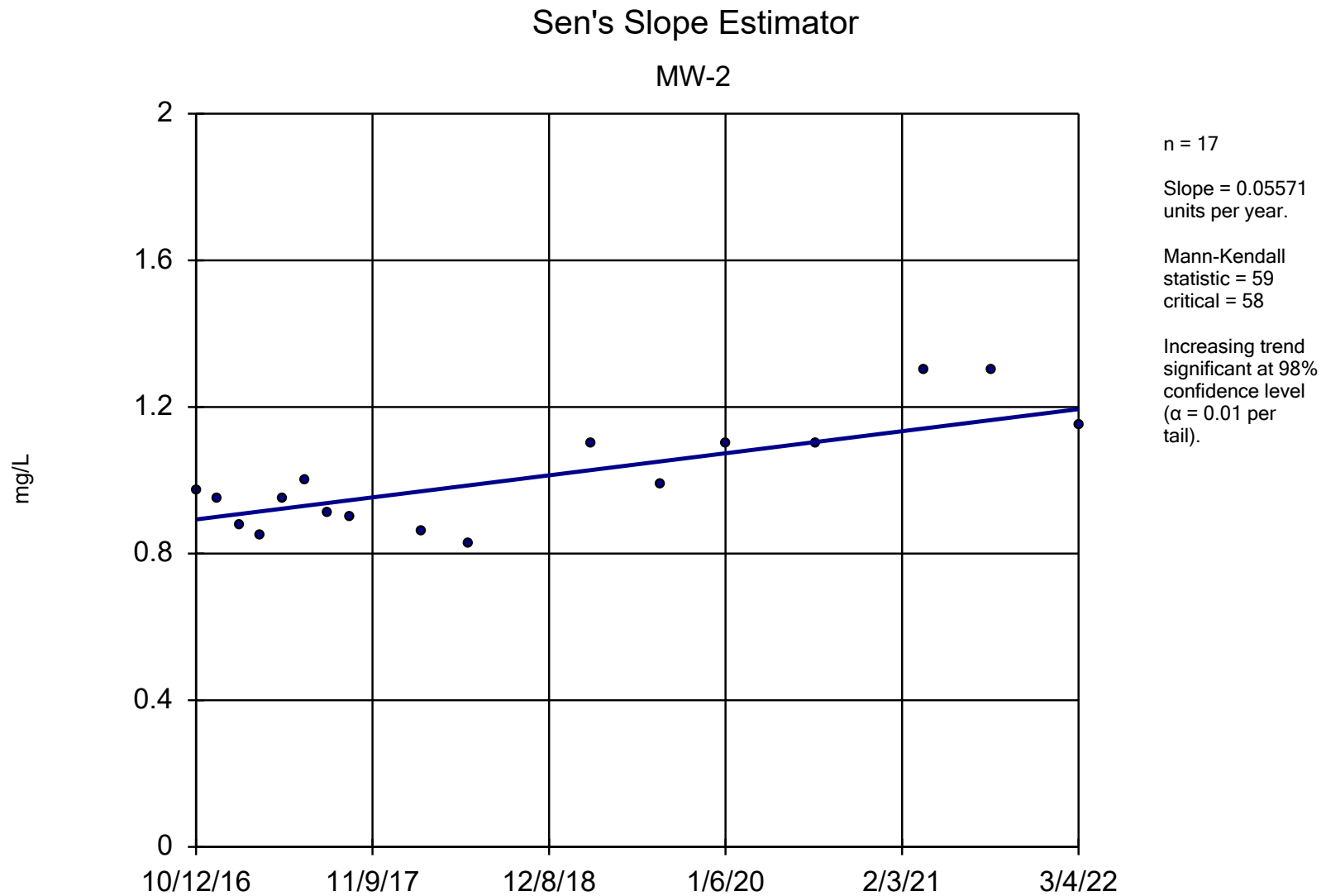
Constituent: Chloride Analysis Run 4/25/2022 4:23 PM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater



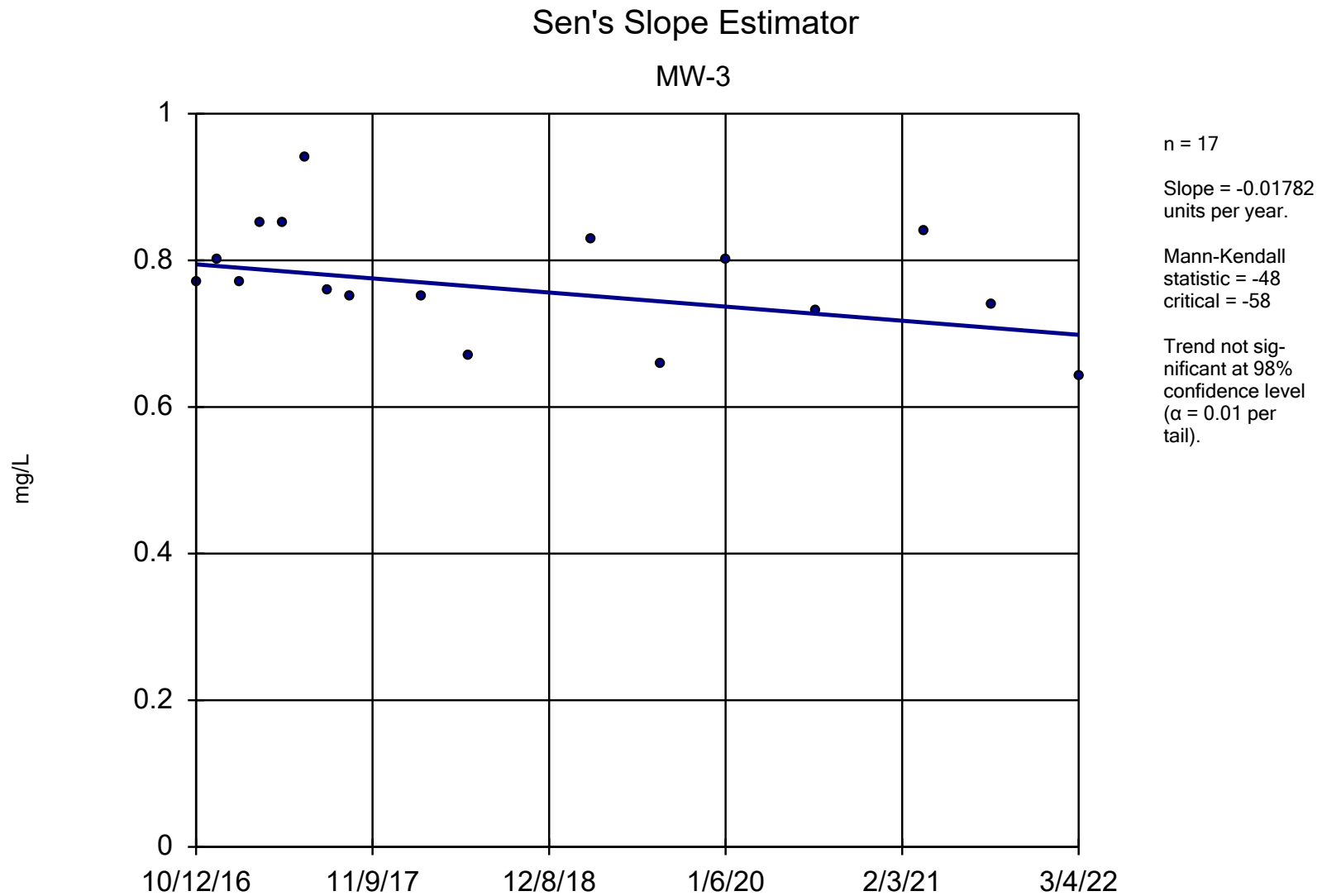
Constituent: Chloride Analysis Run 4/25/2022 4:23 PM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater



Constituent: Fluoride Analysis Run 4/25/2022 4:23 PM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater



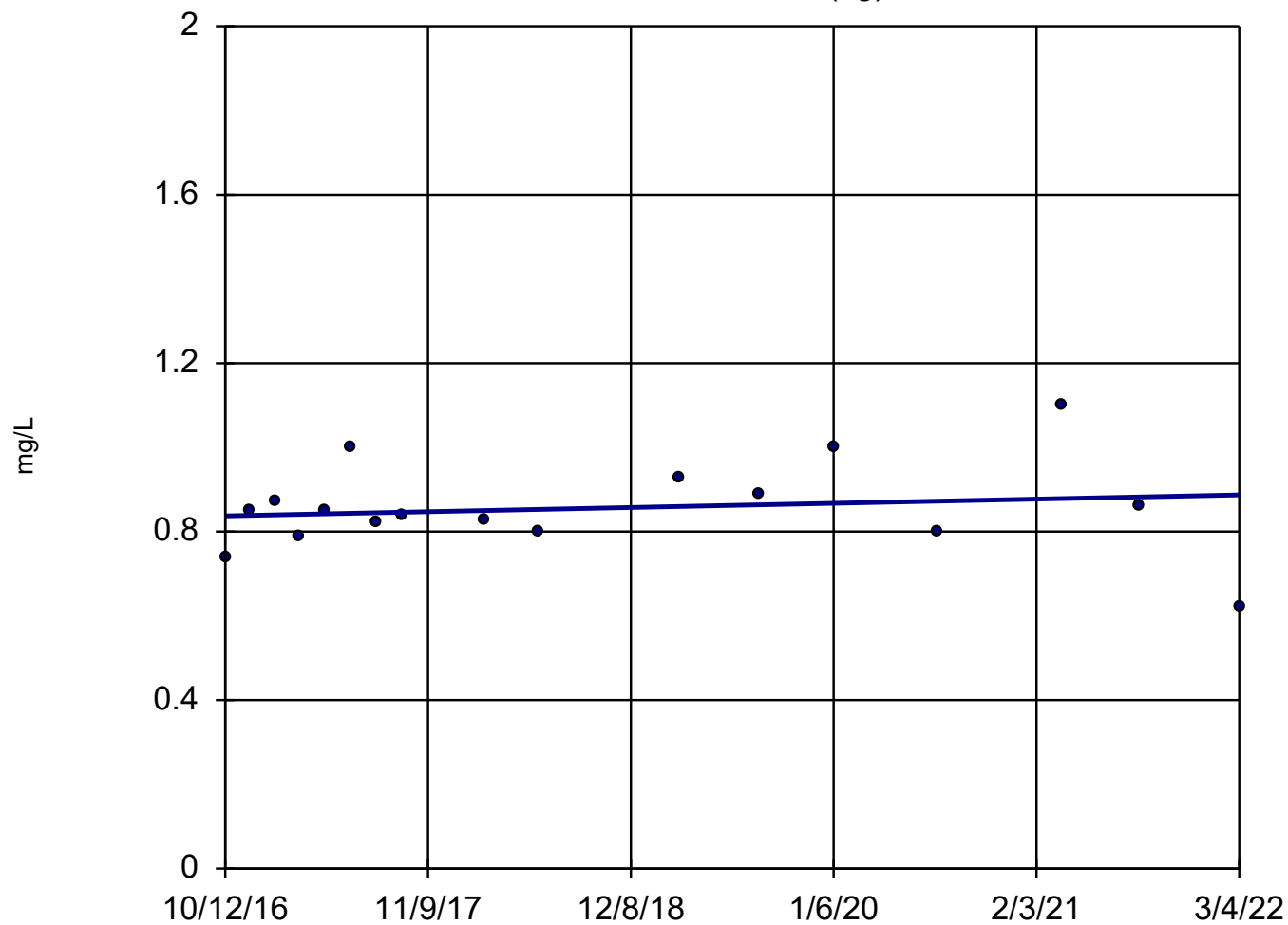
Constituent: Fluoride Analysis Run 4/25/2022 4:23 PM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater



Constituent: Fluoride Analysis Run 4/25/2022 4:23 PM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

MW-4R (bg)



n = 17

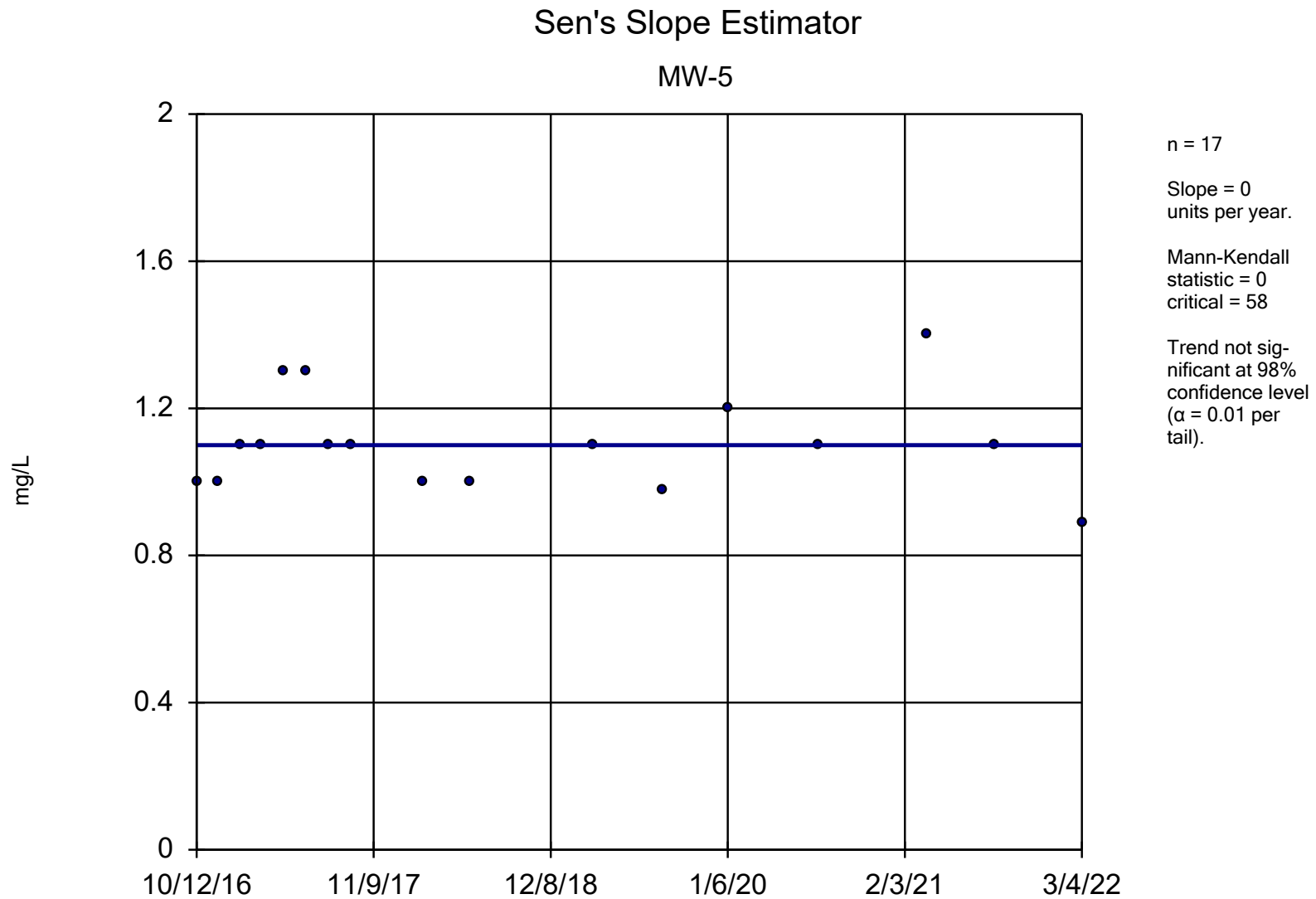
Slope = 0.00921
units per year.

Mann-Kendall
statistic = 17
critical = 58

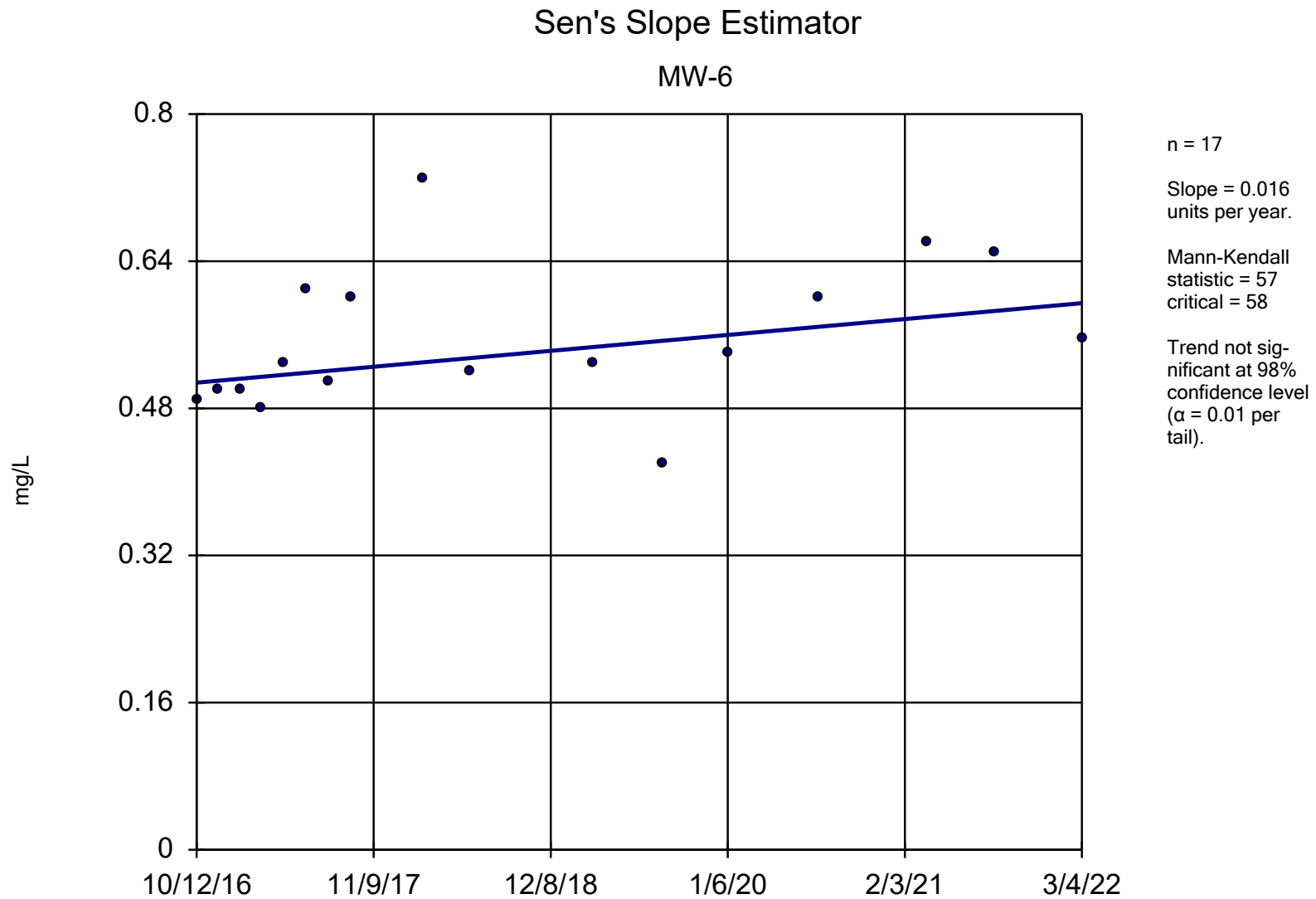
Trend not significant at 98% confidence level ($\alpha = 0.01$ per tail).

Constituent: Fluoride Analysis Run 4/25/2022 4:23 PM View: FDU Combined

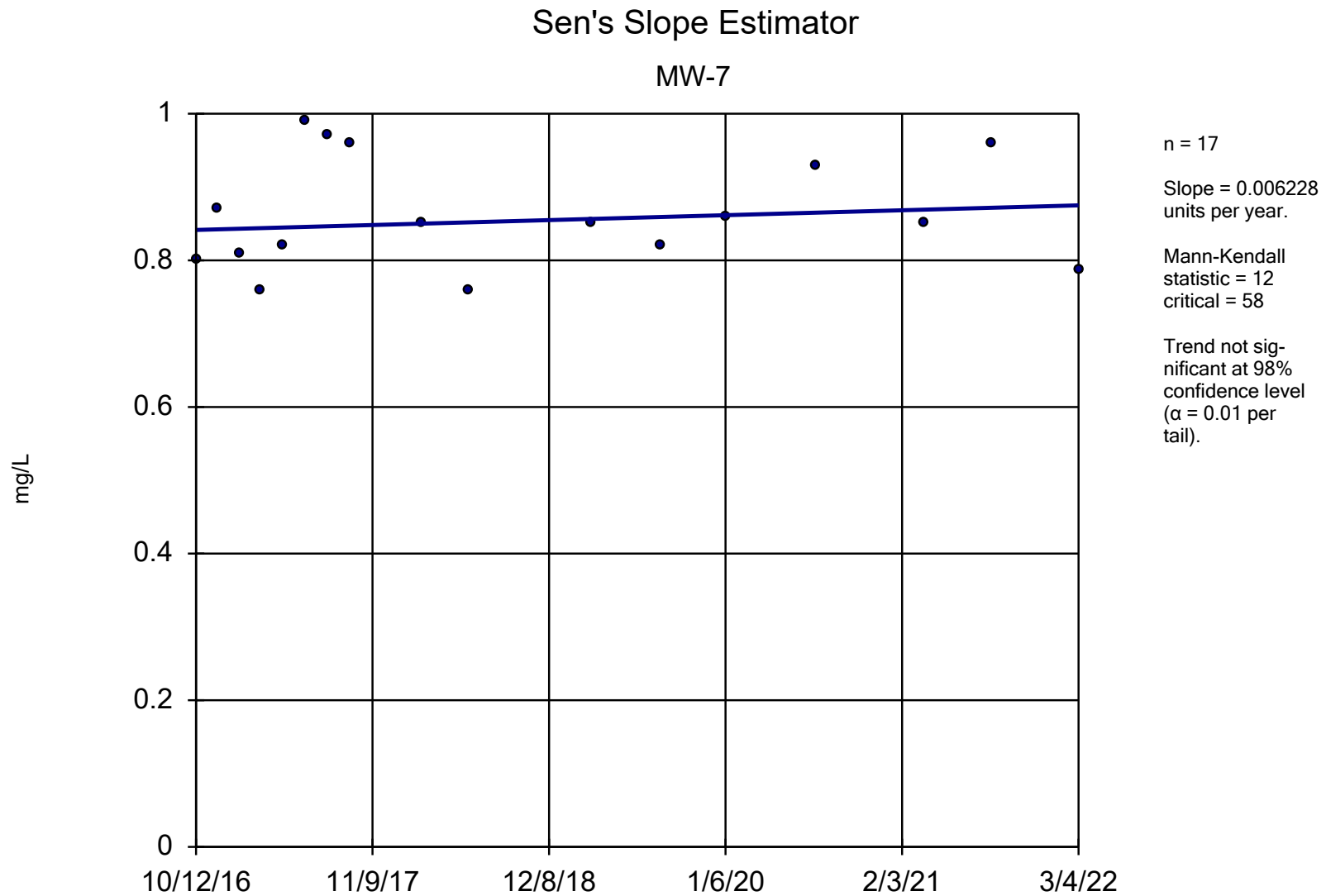
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater



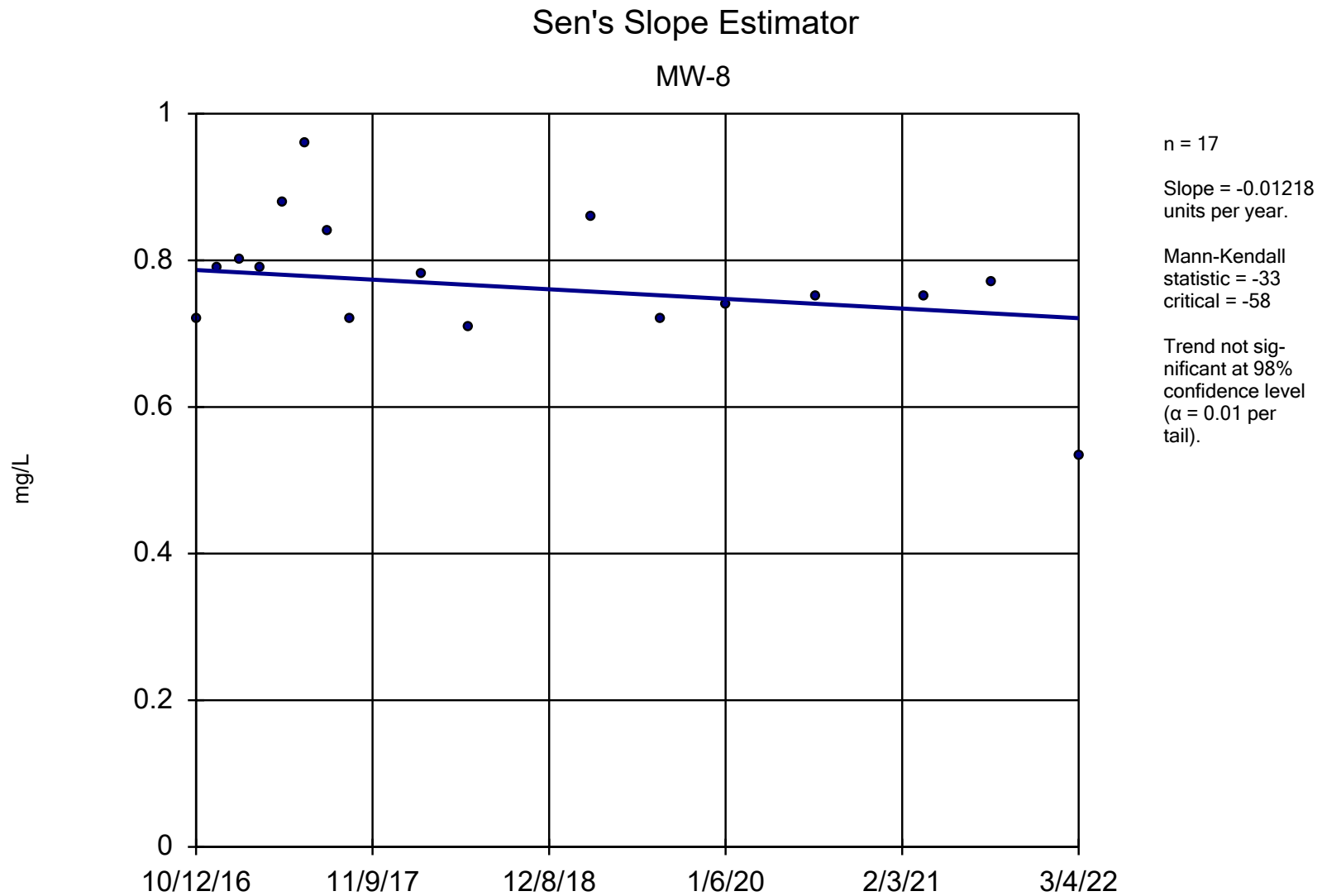
Constituent: Fluoride Analysis Run 4/25/2022 4:23 PM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater



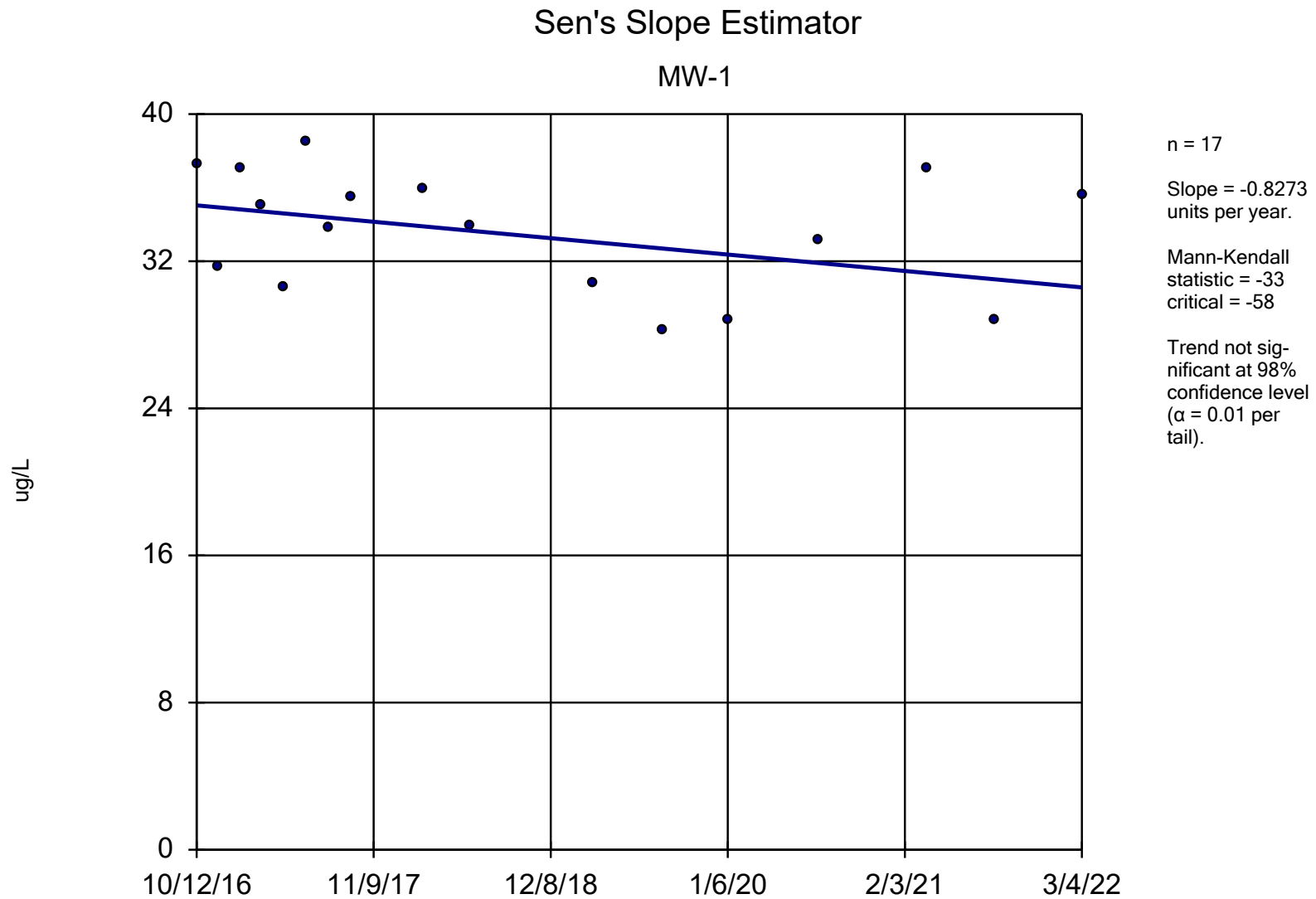
Constituent: Fluoride Analysis Run 4/25/2022 4:23 PM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater



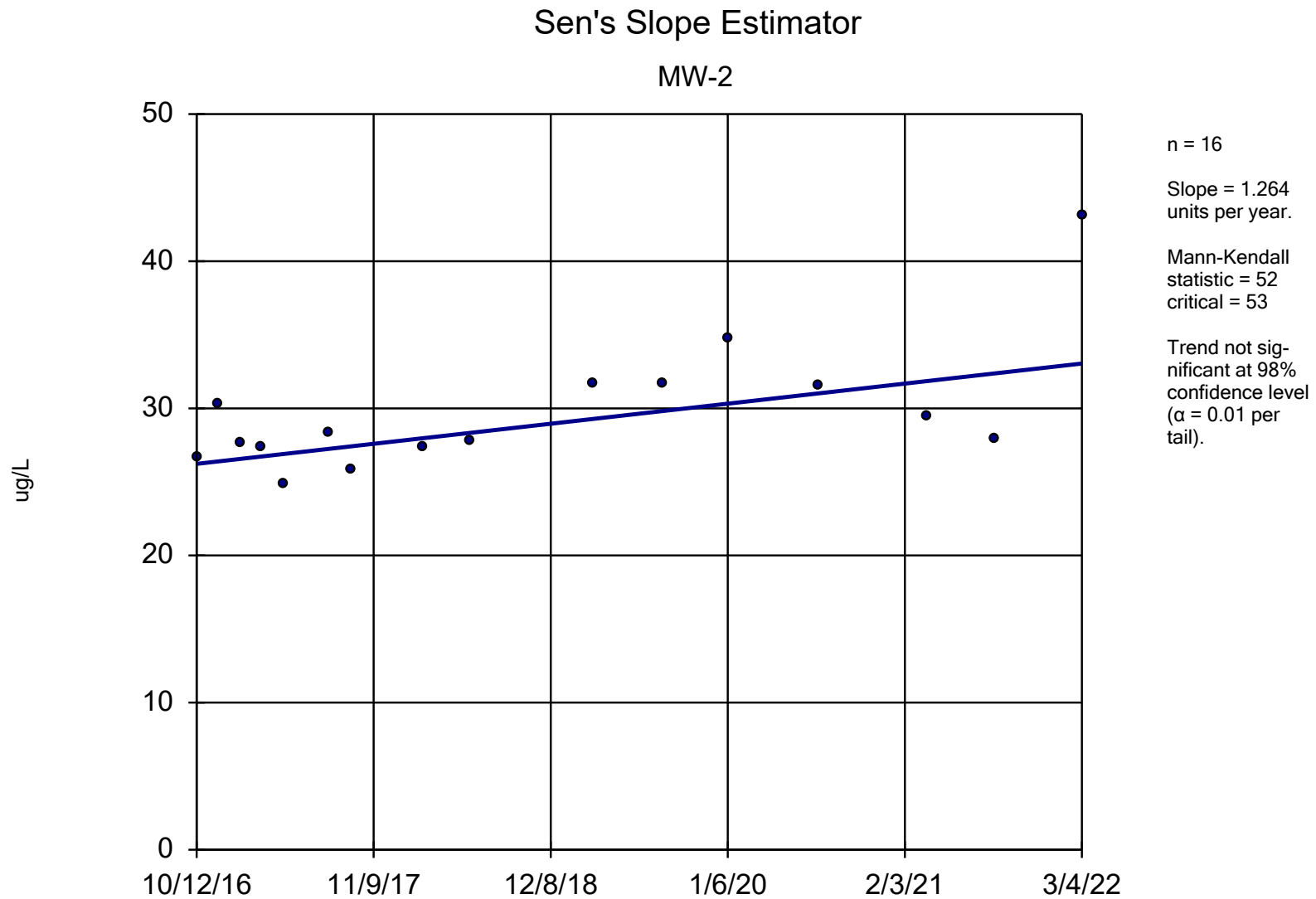
Constituent: Fluoride Analysis Run 4/25/2022 4:23 PM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater



Constituent: Fluoride Analysis Run 4/25/2022 4:23 PM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

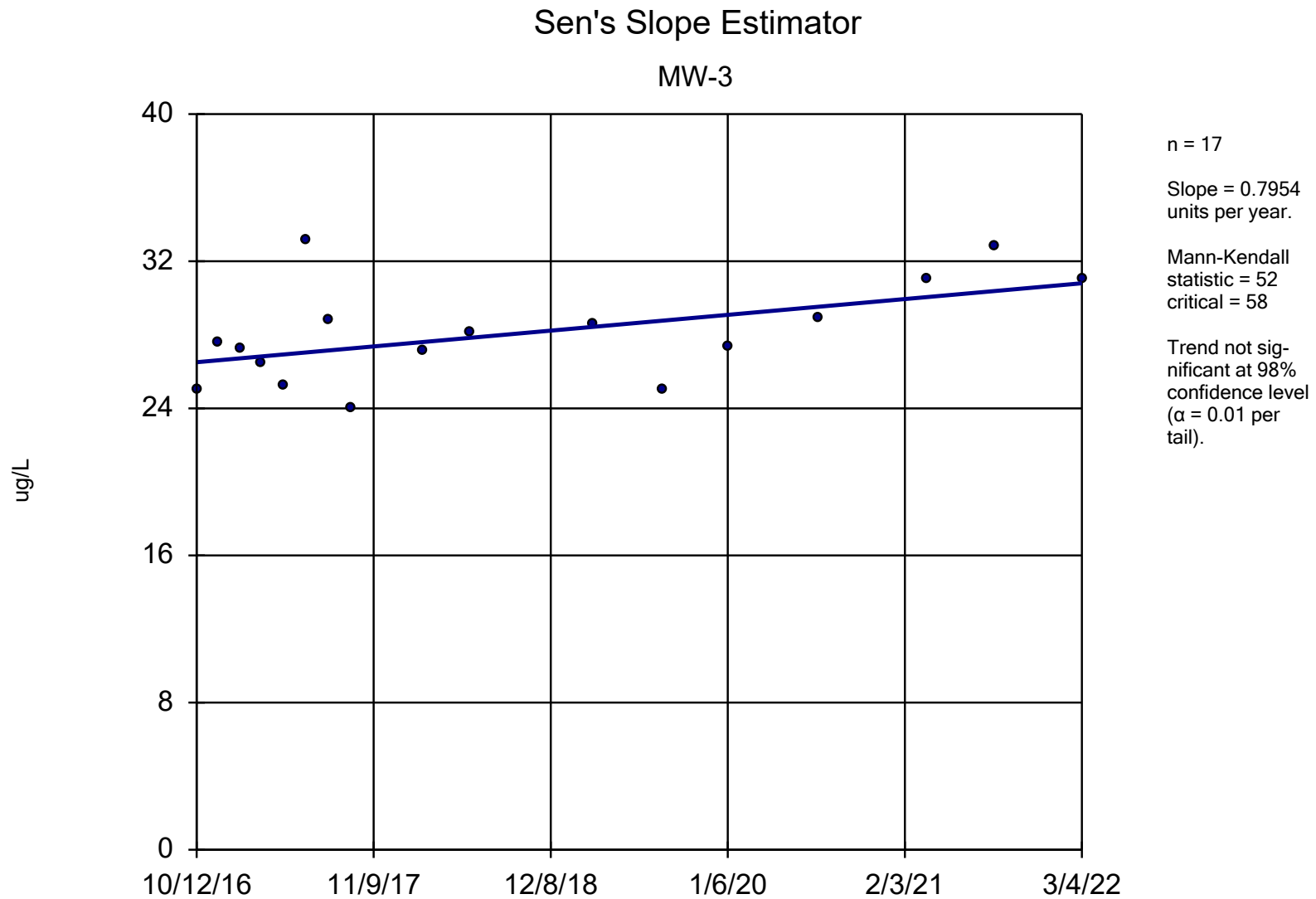


Constituent: Lithium Analysis Run 4/25/2022 4:23 PM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

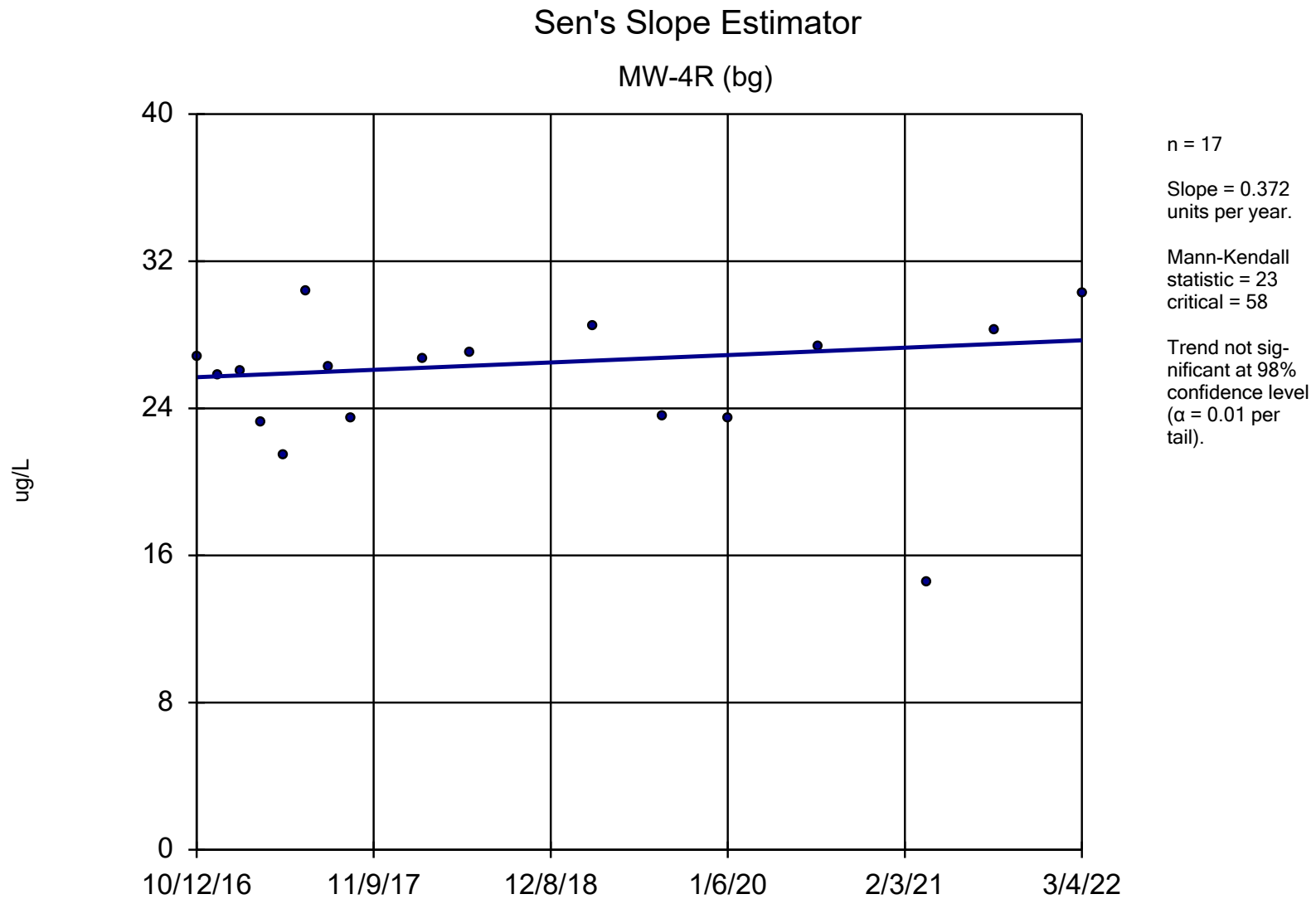


Constituent: Lithium Analysis Run 4/25/2022 4:23 PM View: FDU Combined

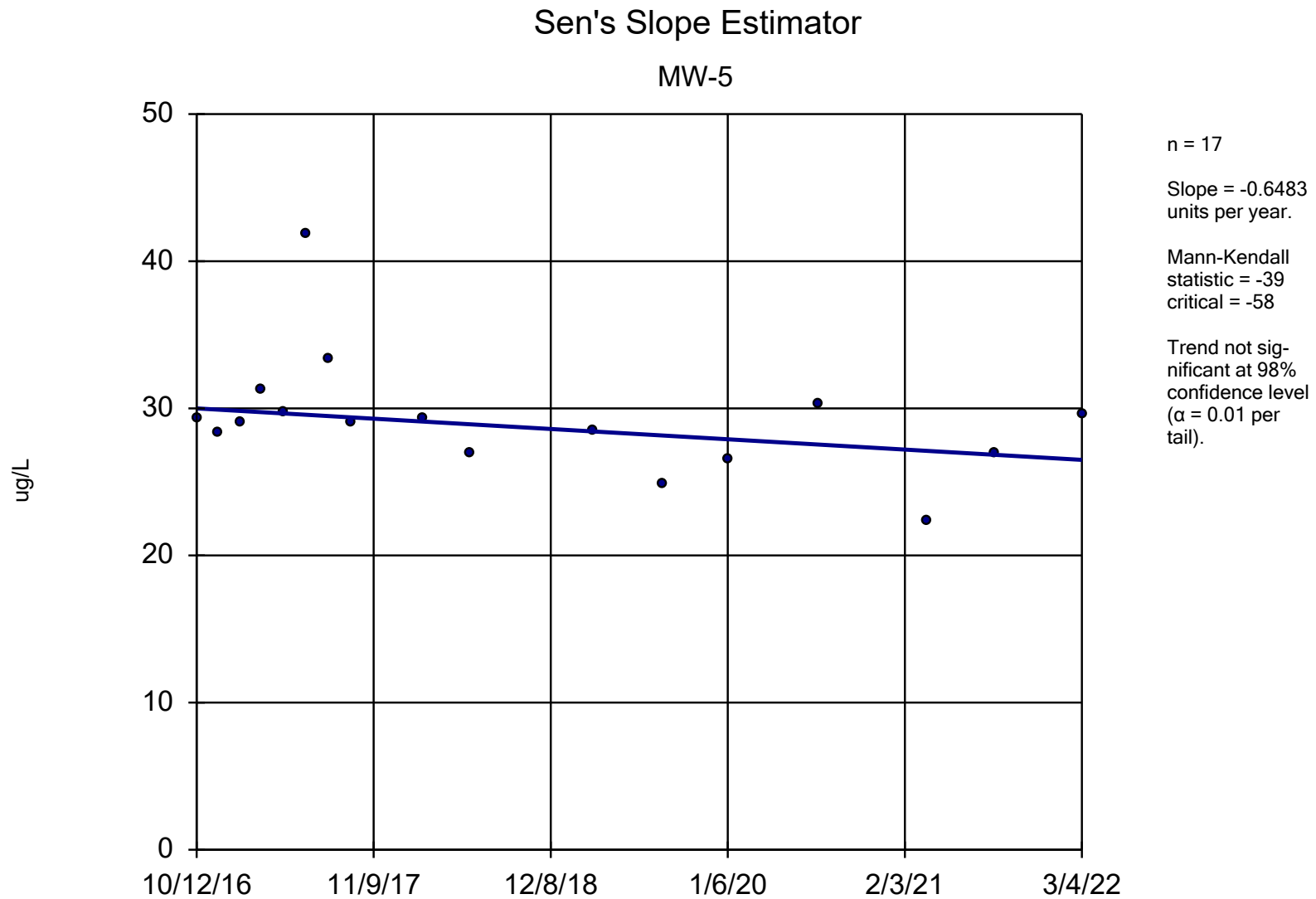
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater



Constituent: Lithium Analysis Run 4/25/2022 4:23 PM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

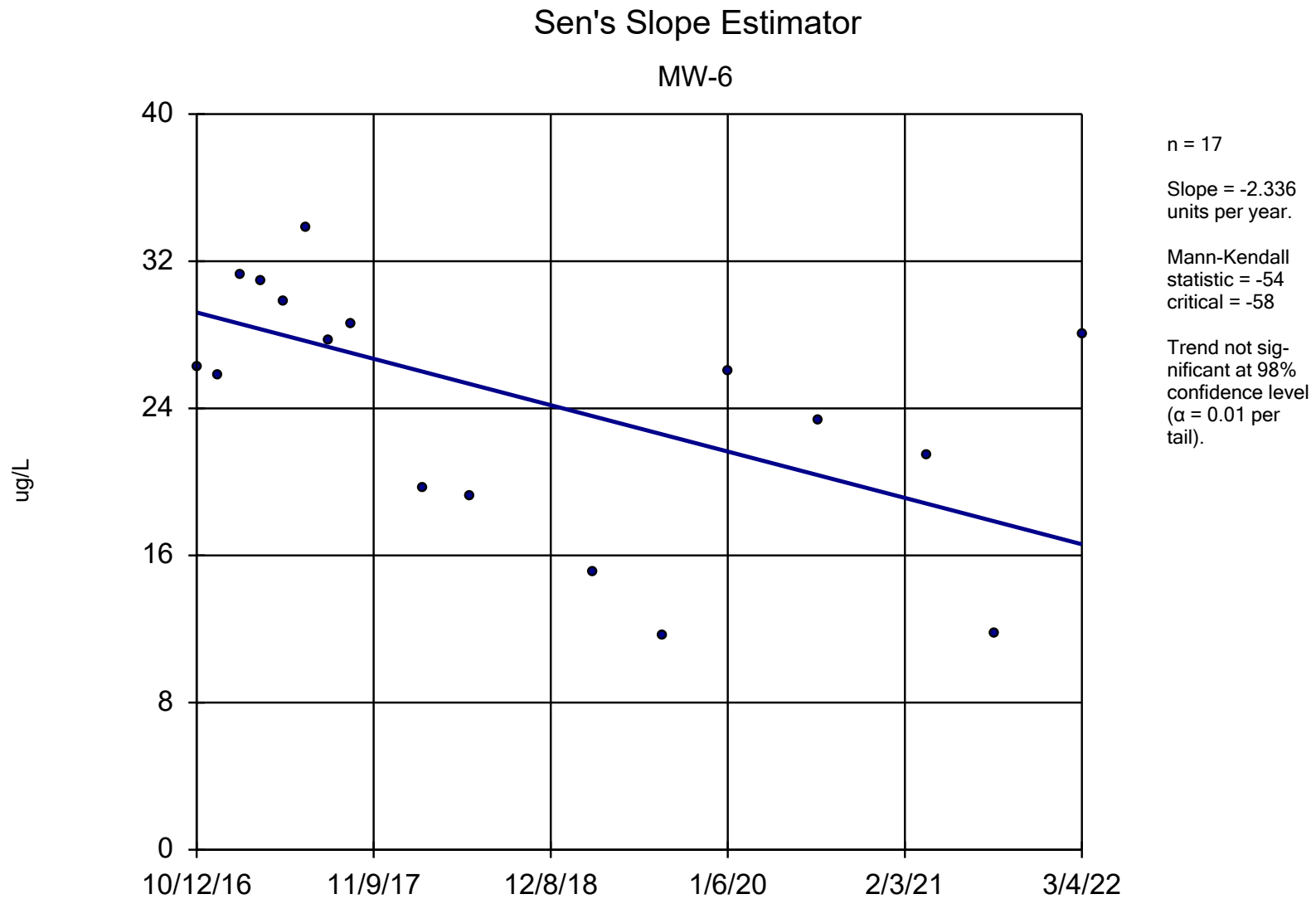


Constituent: Lithium Analysis Run 4/25/2022 4:23 PM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

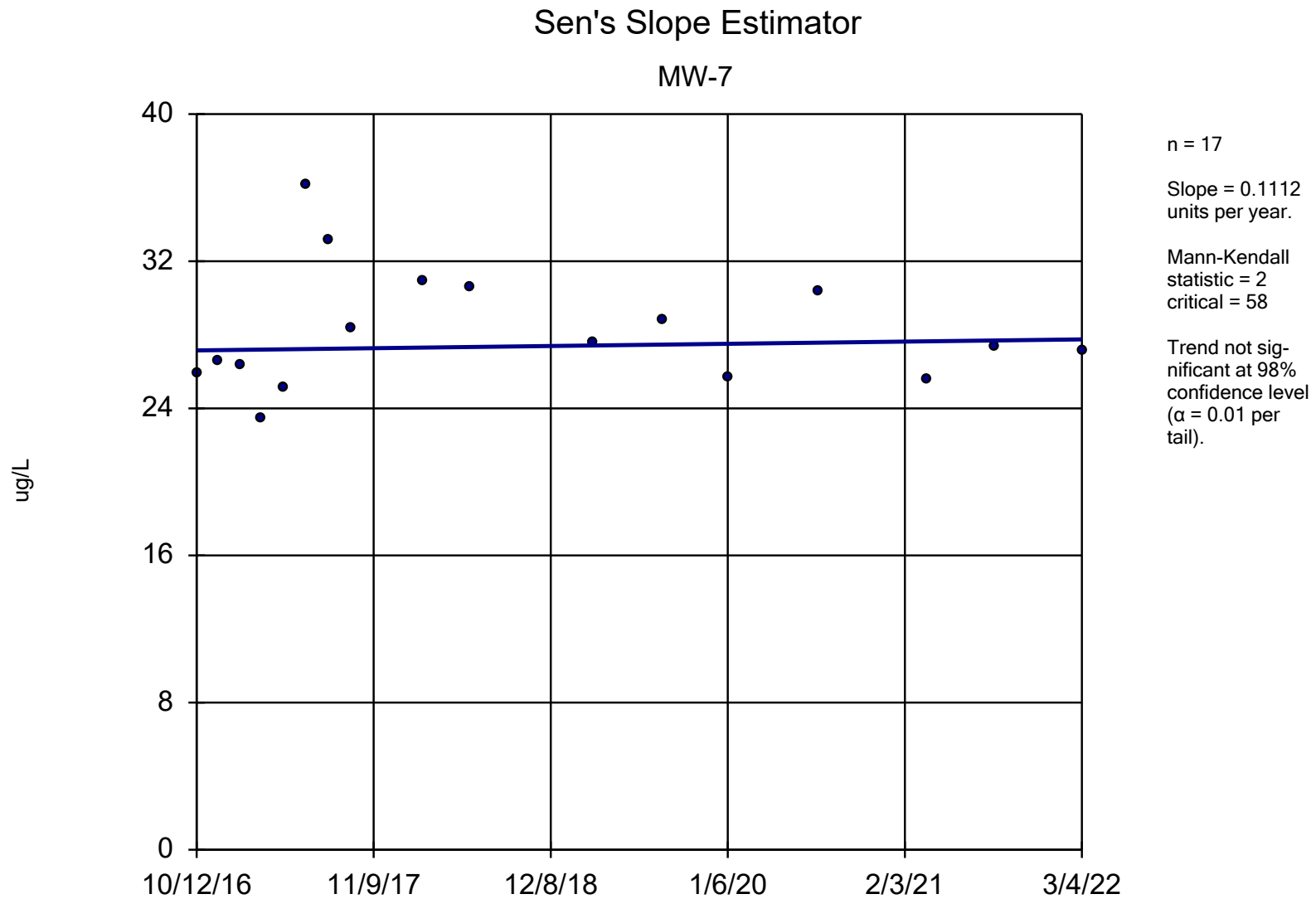


Constituent: Lithium Analysis Run 4/25/2022 4:23 PM View: FDU Combined

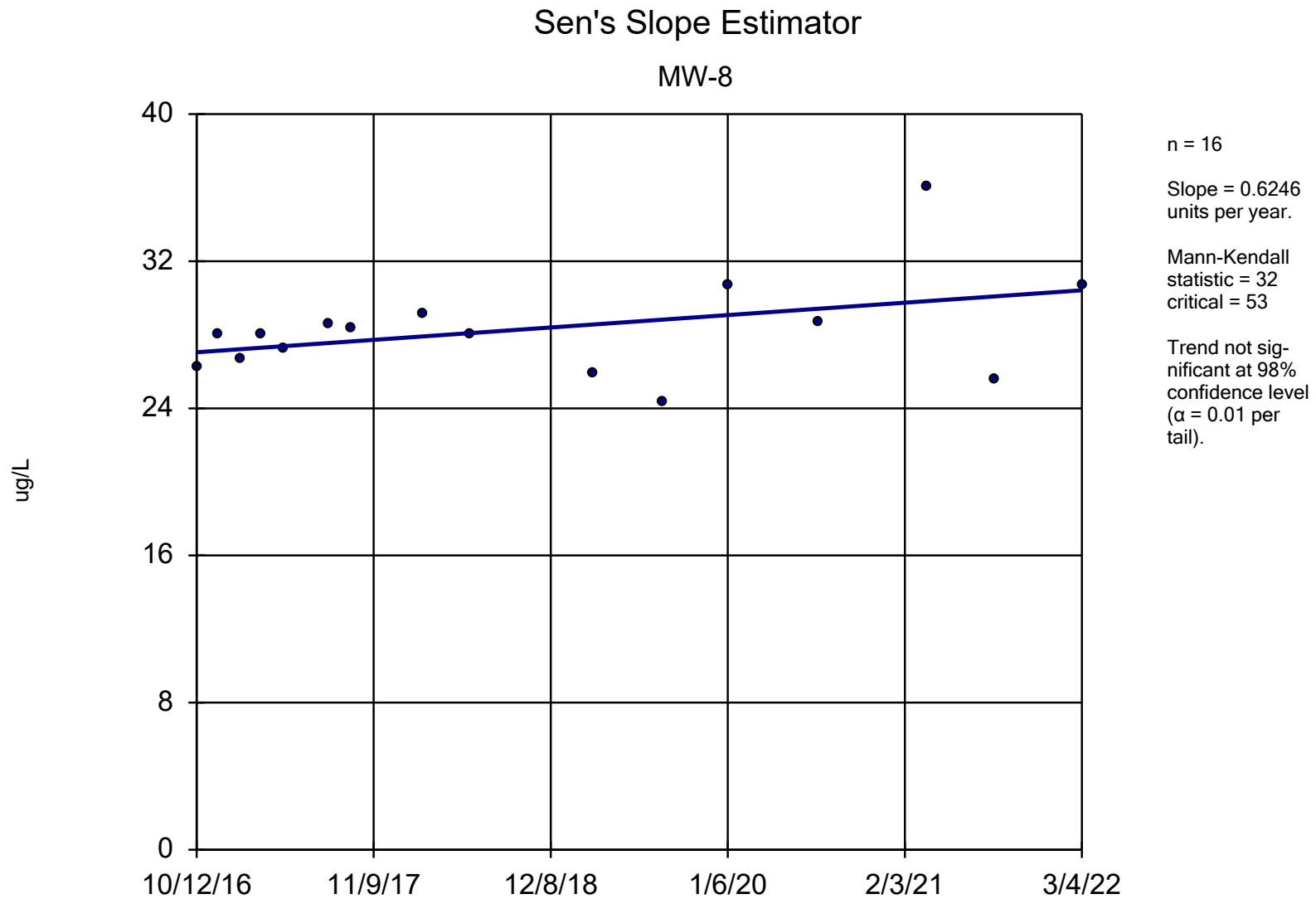
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater



Constituent: Lithium Analysis Run 4/25/2022 4:23 PM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

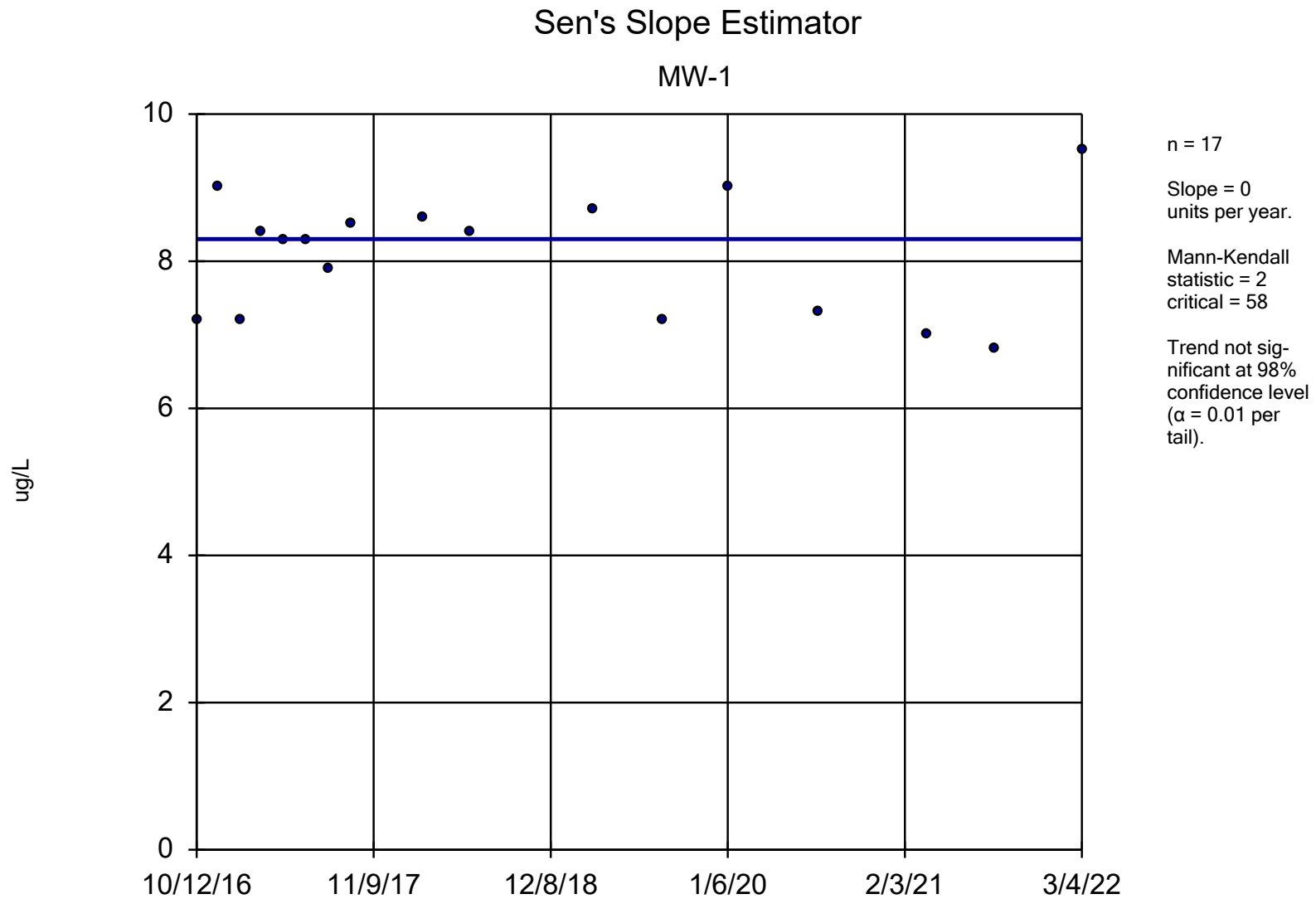


Constituent: Lithium Analysis Run 4/25/2022 4:23 PM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater



Constituent: Lithium Analysis Run 4/25/2022 4:23 PM View: FDU Combined

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

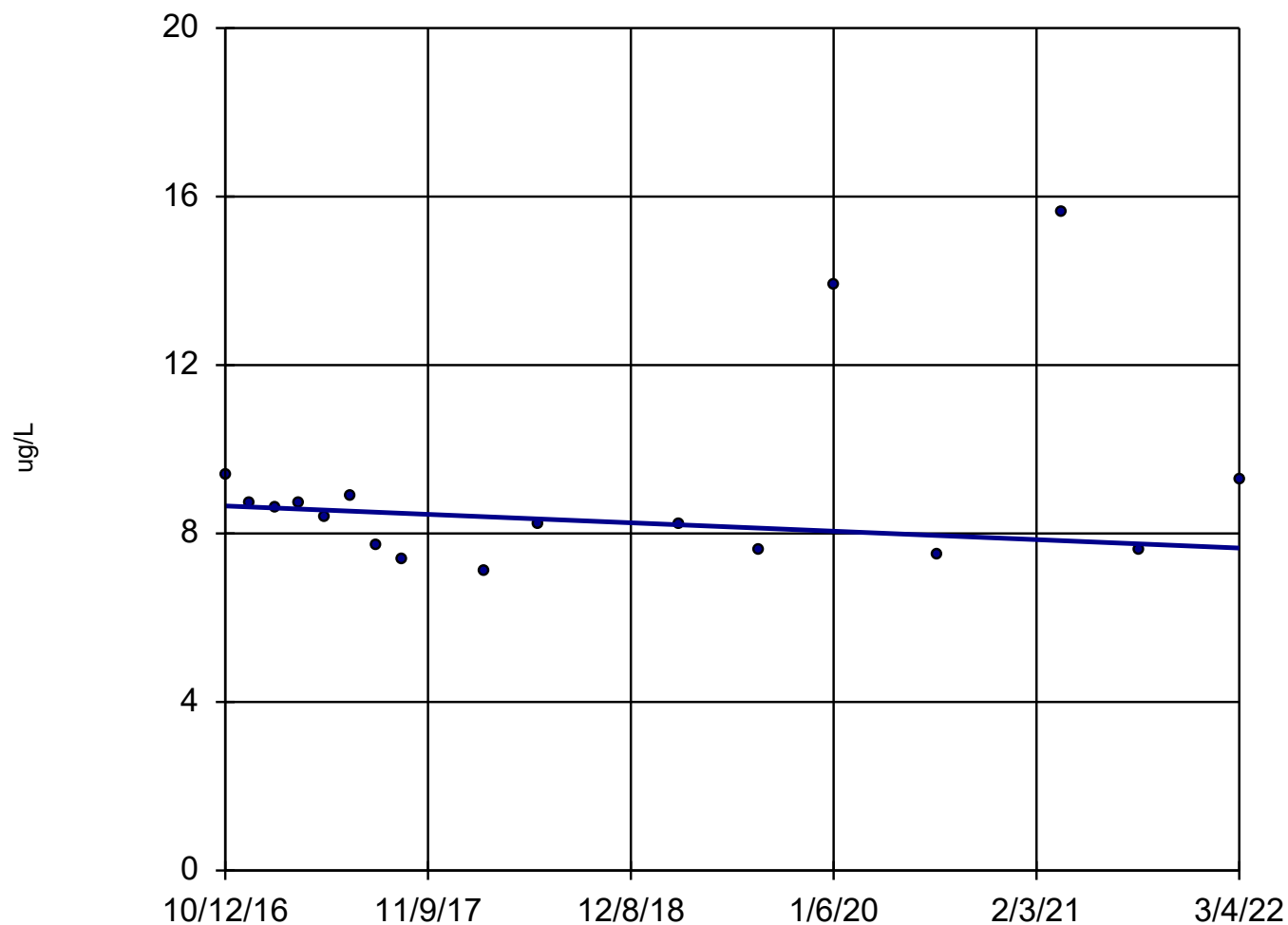


Constituent: Molybdenum Analysis Run 4/25/2022 4:23 PM View: FDU Combined

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

Sen's Slope Estimator

MW-2



n = 17

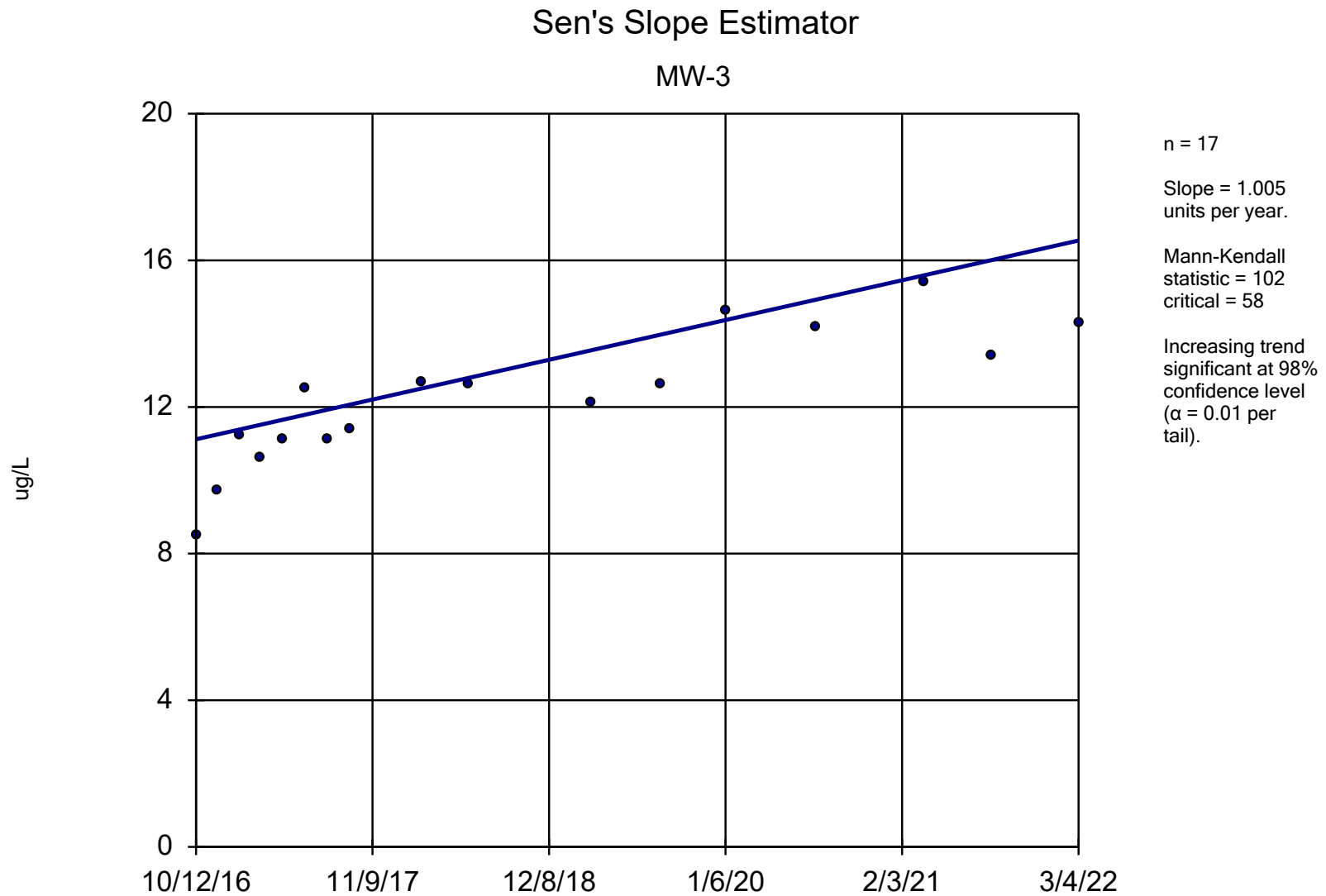
Slope = -0.1856
units per year.

Mann-Kendall
statistic = -19
critical = -58

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

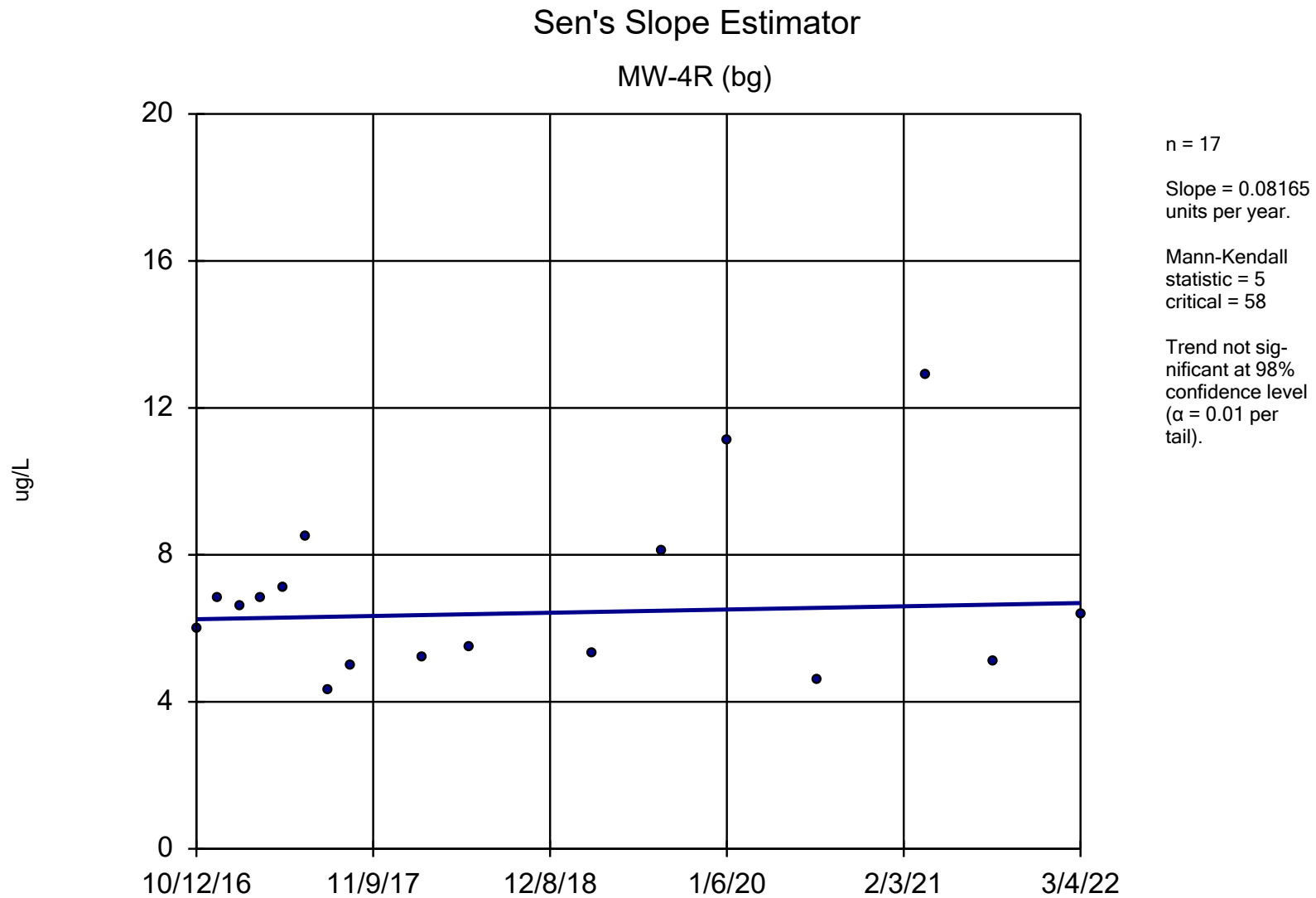
Constituent: Molybdenum Analysis Run 4/25/2022 4:23 PM View: FDU Combined

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



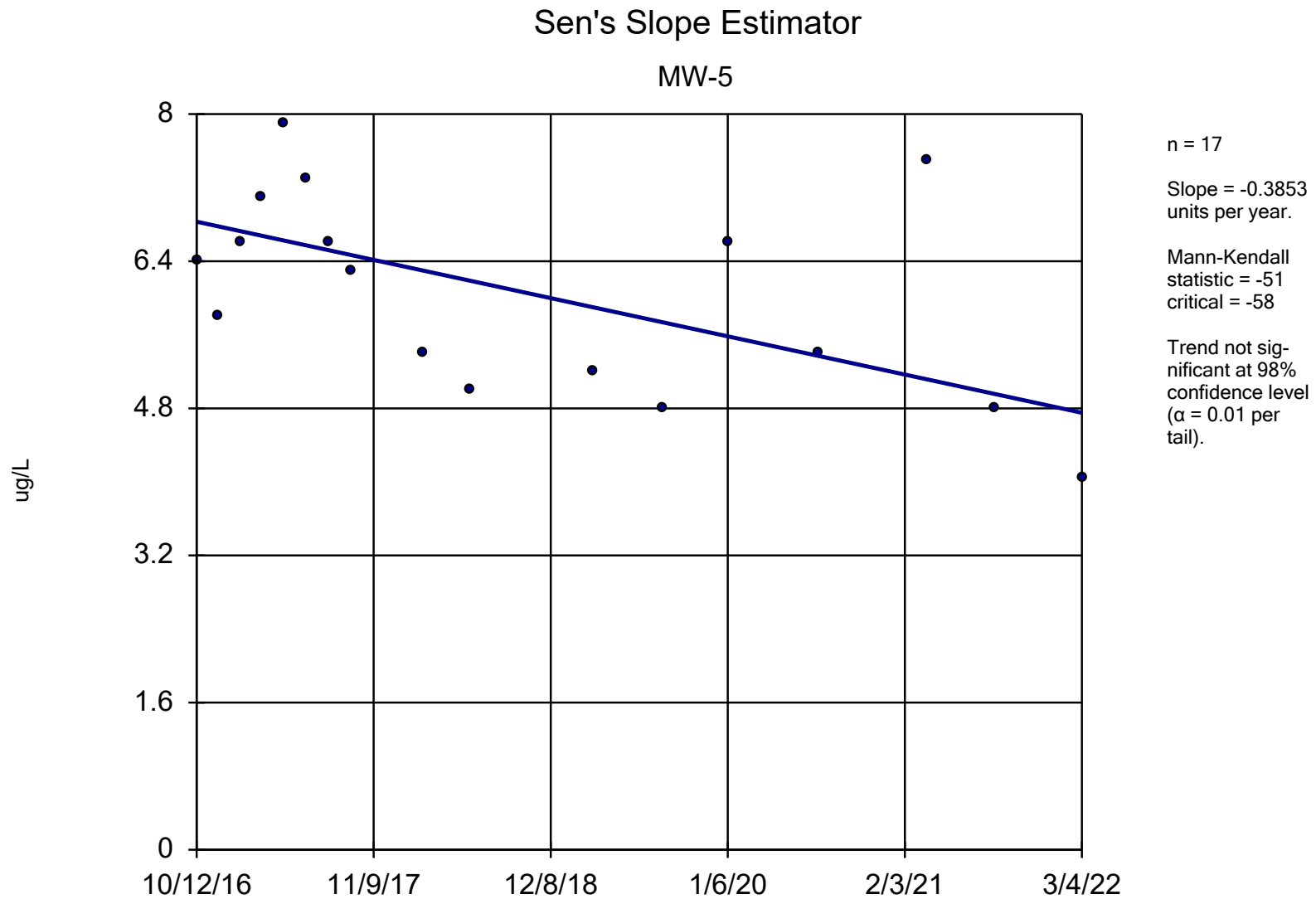
Constituent: Molybdenum Analysis Run 4/25/2022 4:23 PM View: FDU Combined

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



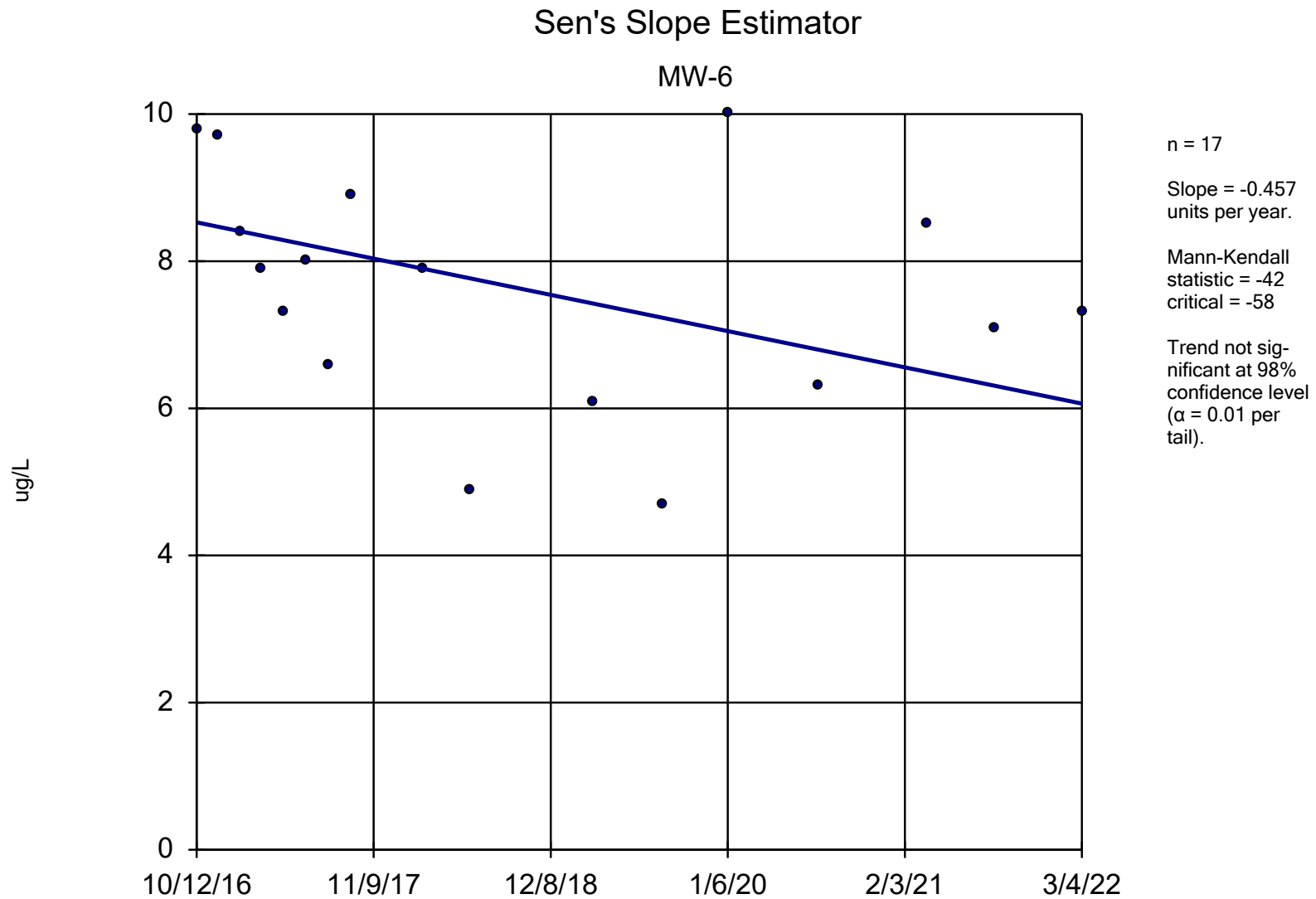
Constituent: Molybdenum Analysis Run 4/25/2022 4:23 PM View: FDU Combined

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



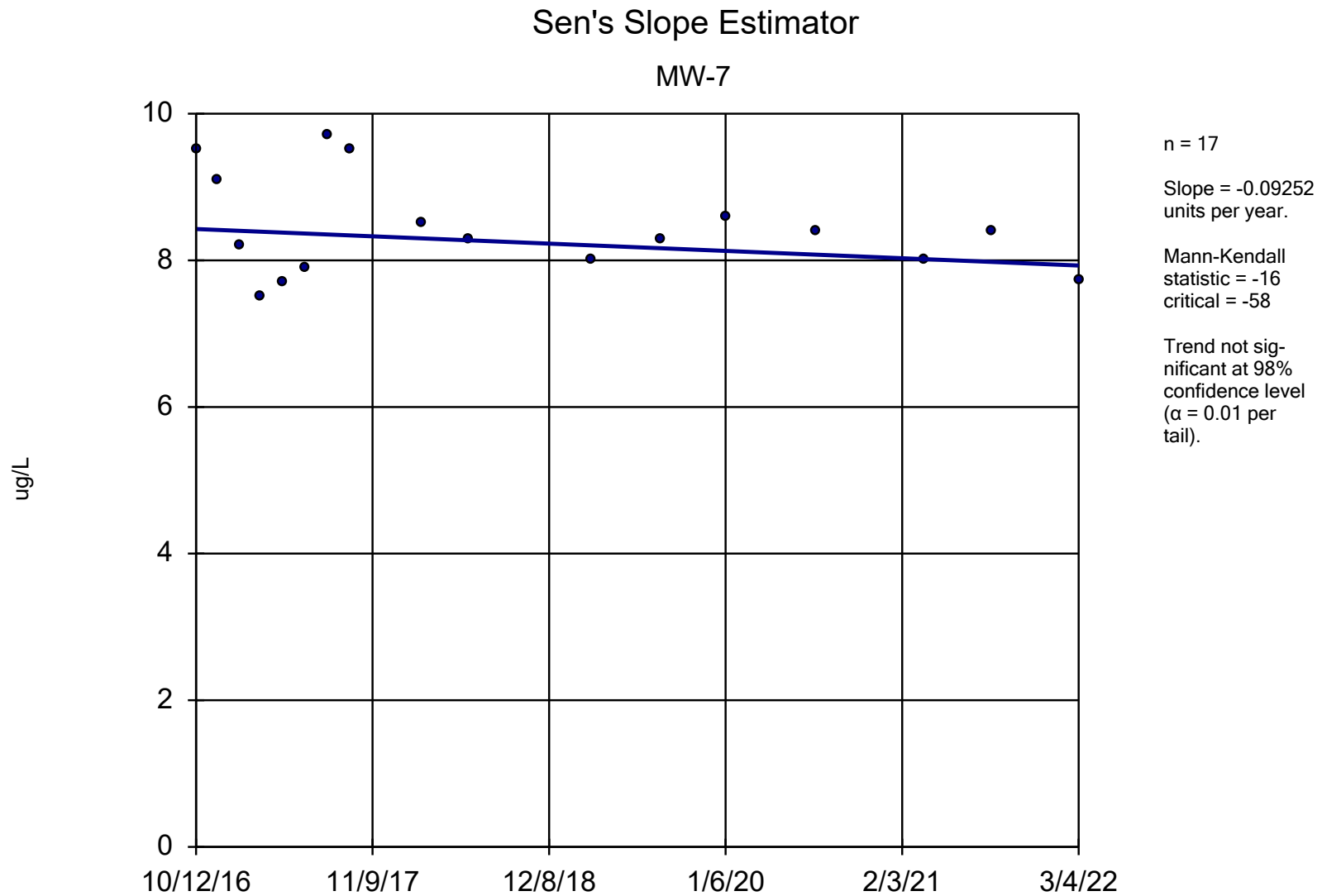
Constituent: Molybdenum Analysis Run 4/25/2022 4:23 PM View: FDU Combined

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



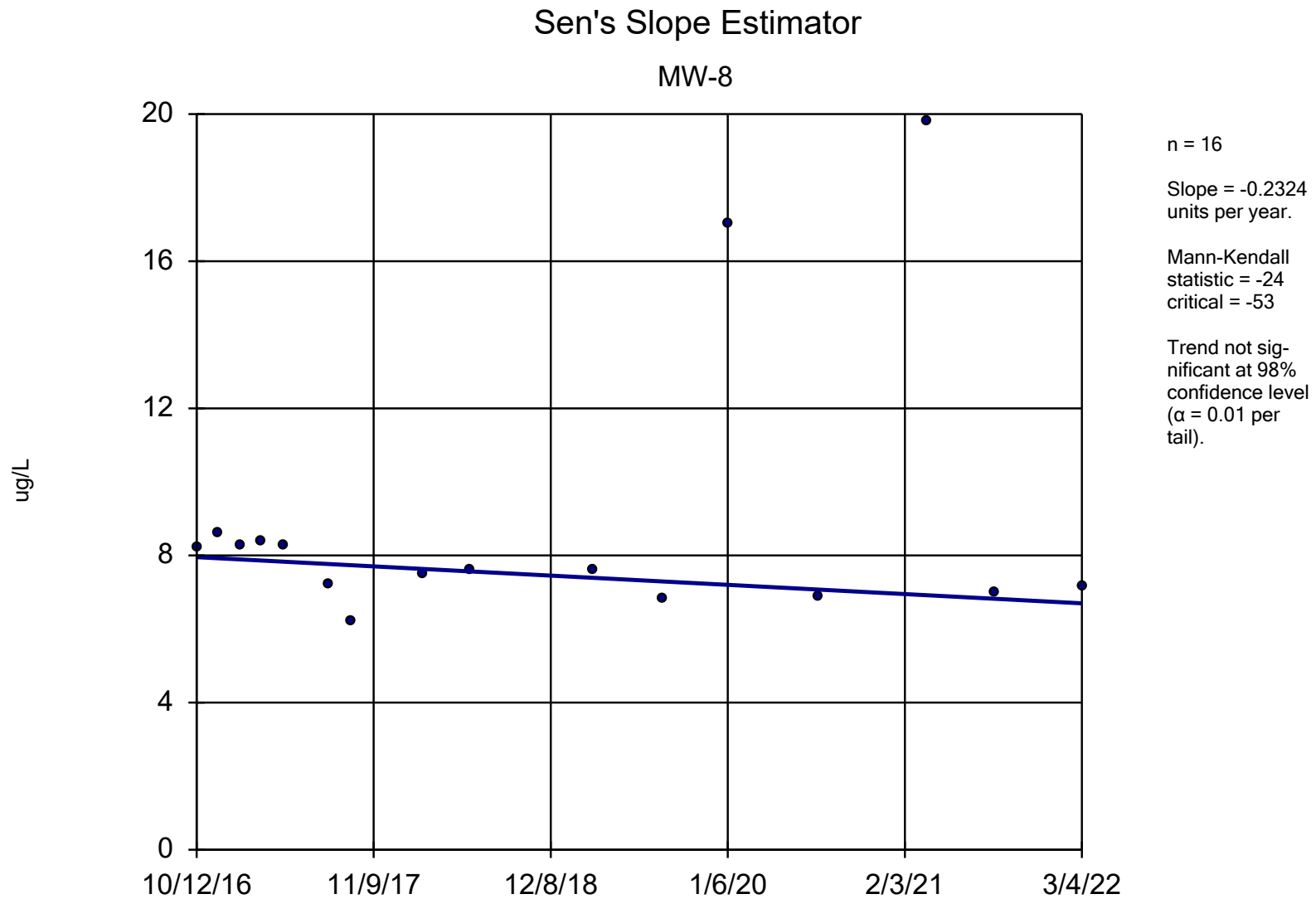
Constituent: Molybdenum Analysis Run 4/25/2022 4:23 PM View: FDU Combined

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



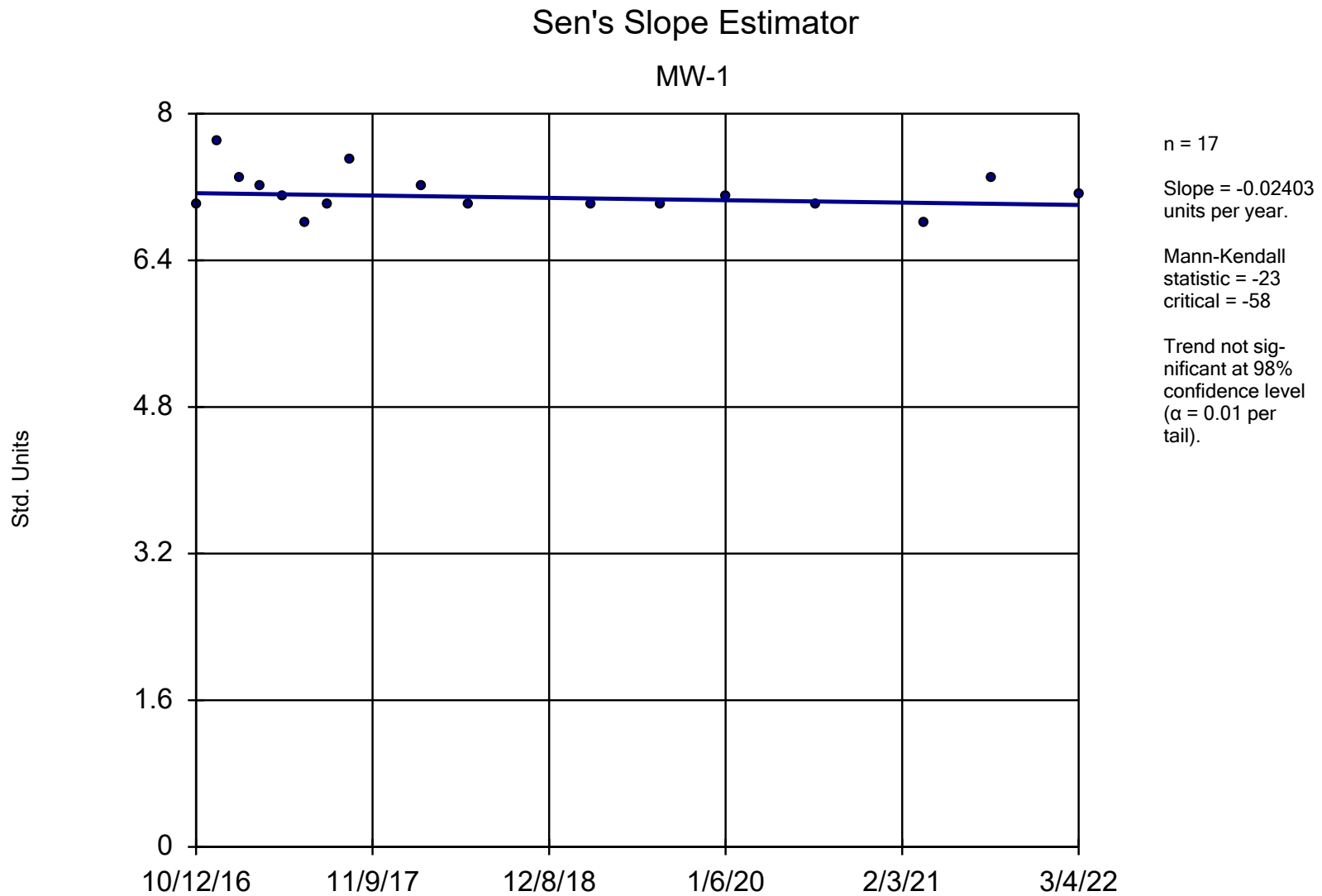
Constituent: Molybdenum Analysis Run 4/25/2022 4:23 PM View: FDU Combined

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

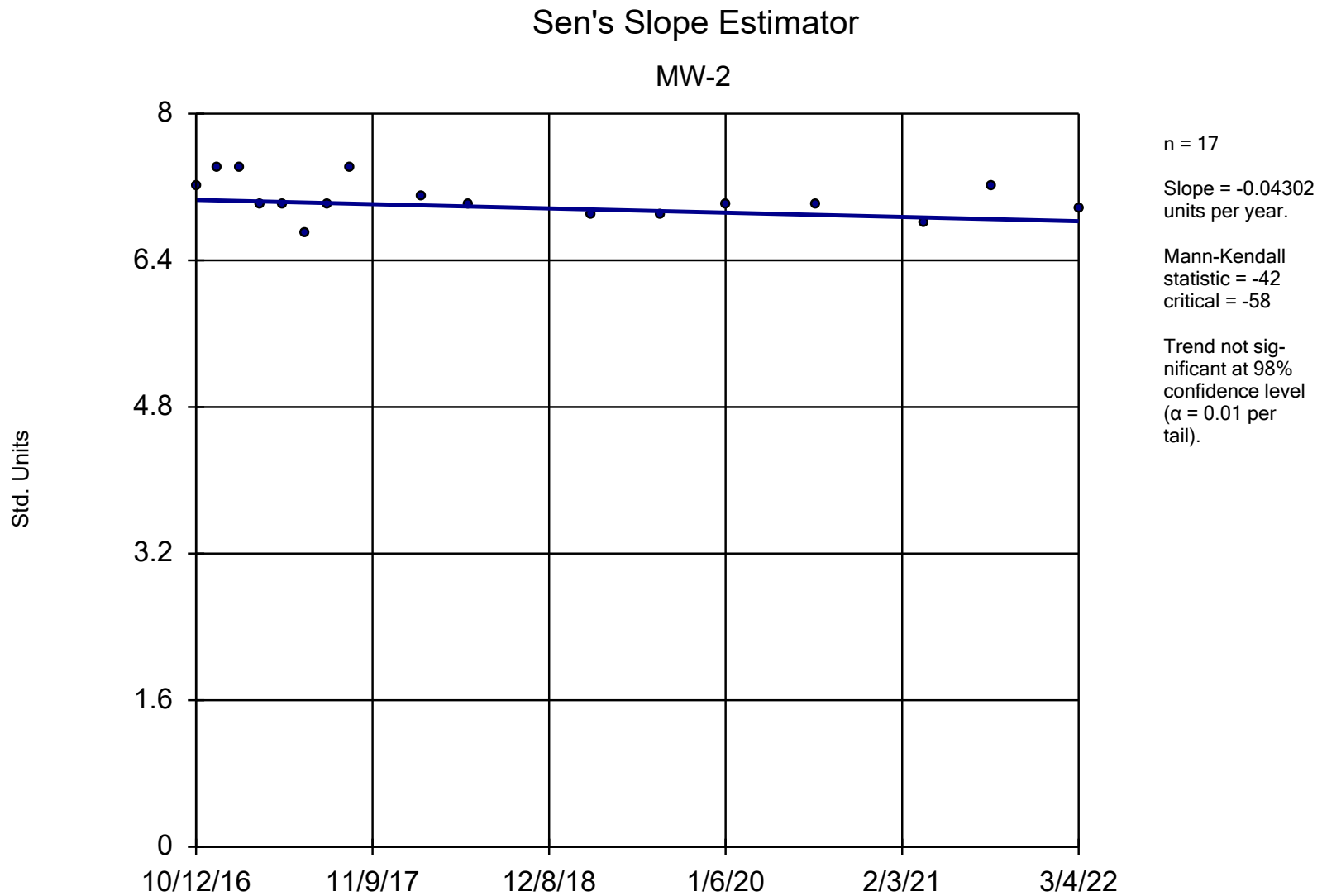


Constituent: Molybdenum Analysis Run 4/25/2022 4:23 PM View: FDU Combined

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

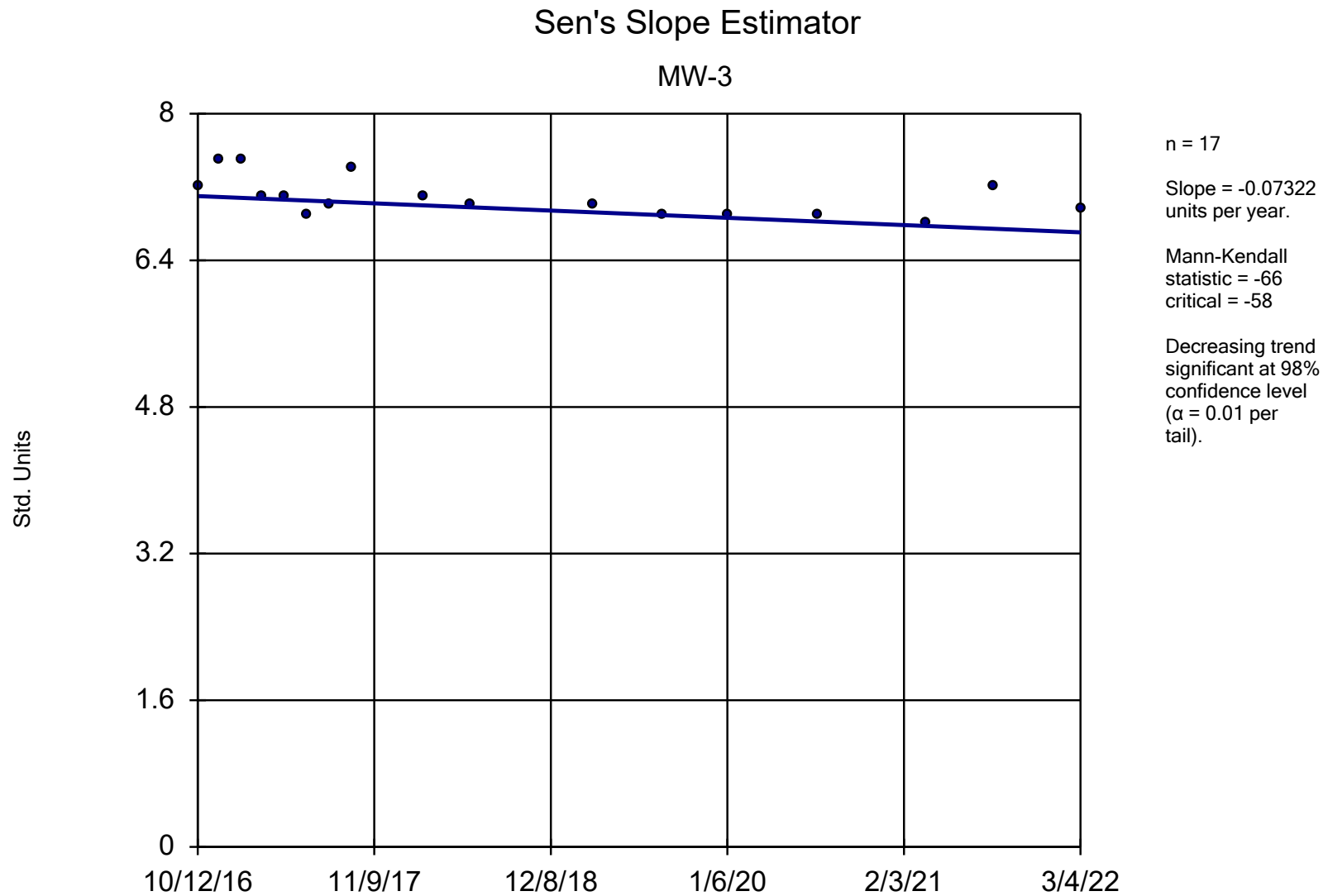


Constituent: pH Analysis Run 4/25/2022 4:23 PM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater



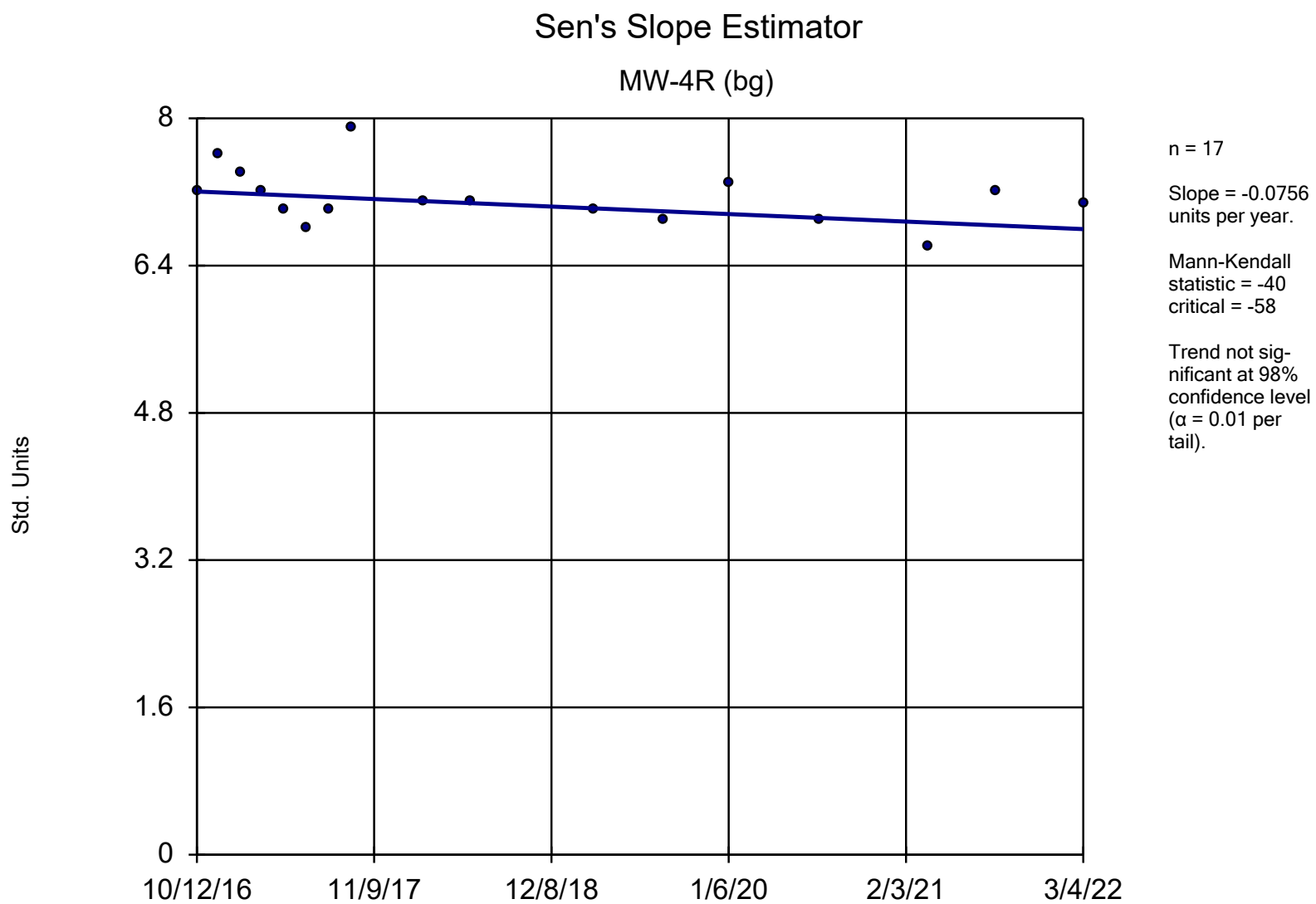
Constituent: pH Analysis Run 4/25/2022 4:24 PM View: FDU Combined

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

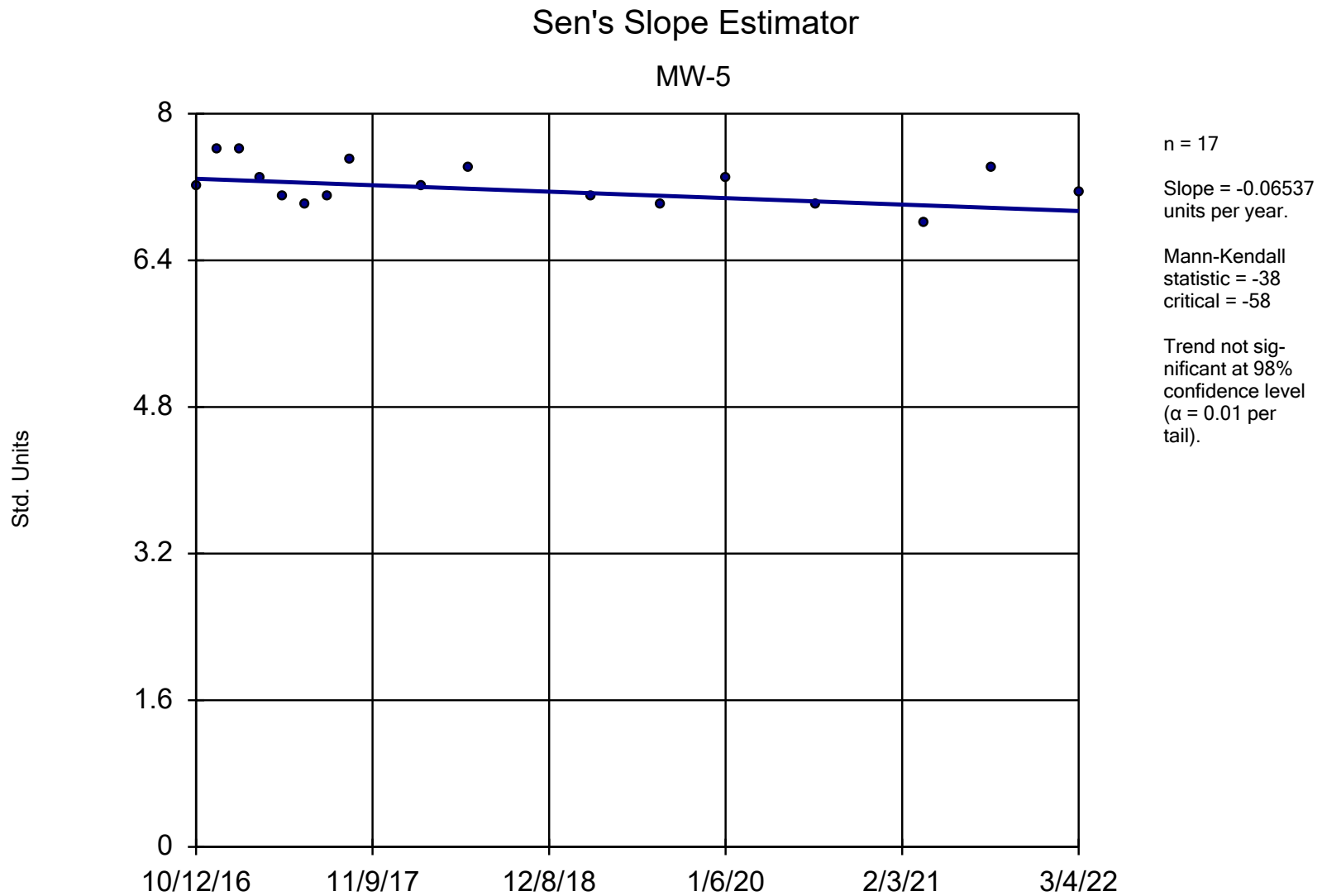


Constituent: pH Analysis Run 4/25/2022 4:24 PM View: FDU Combined

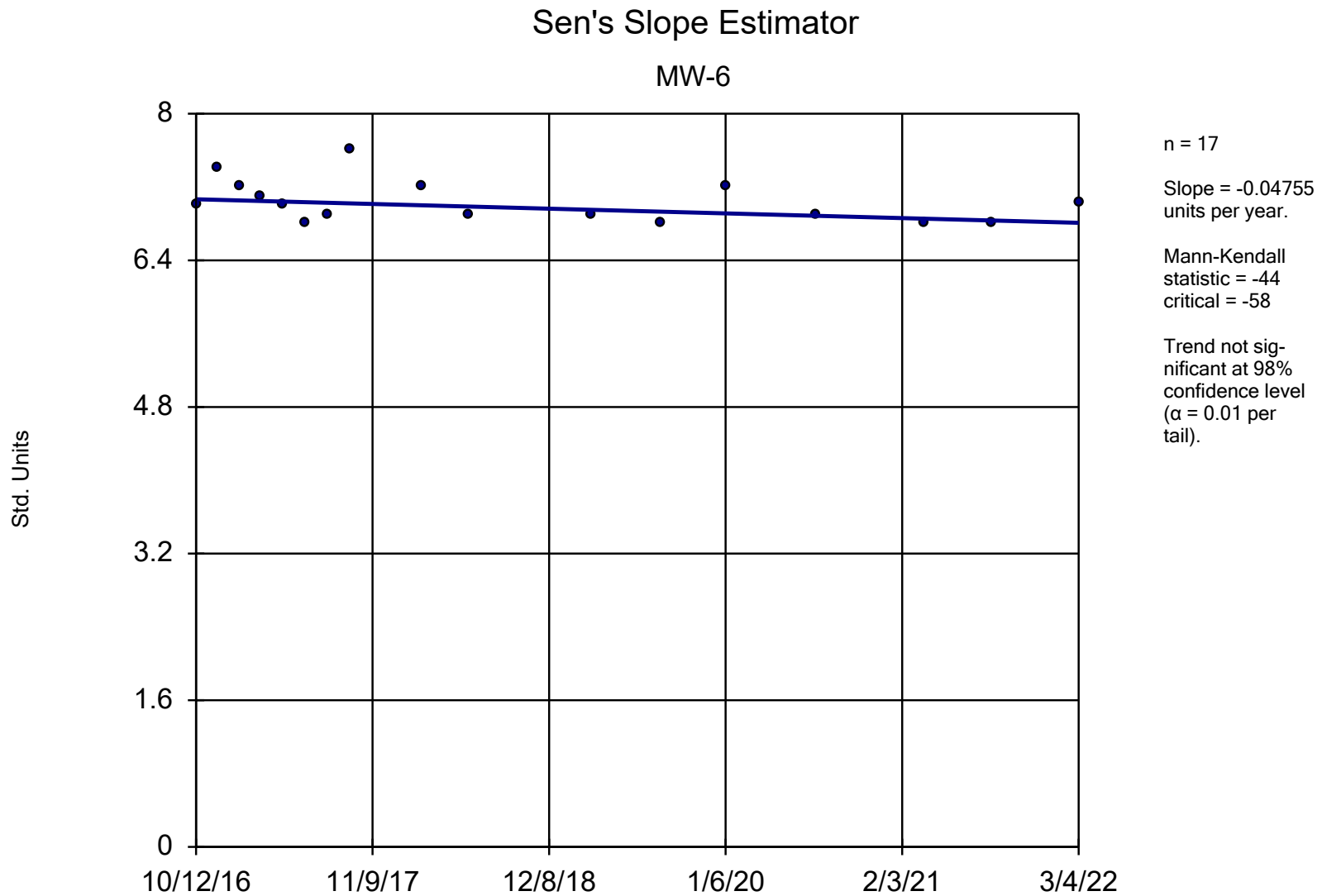
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater



Constituent: pH Analysis Run 4/25/2022 4:24 PM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater



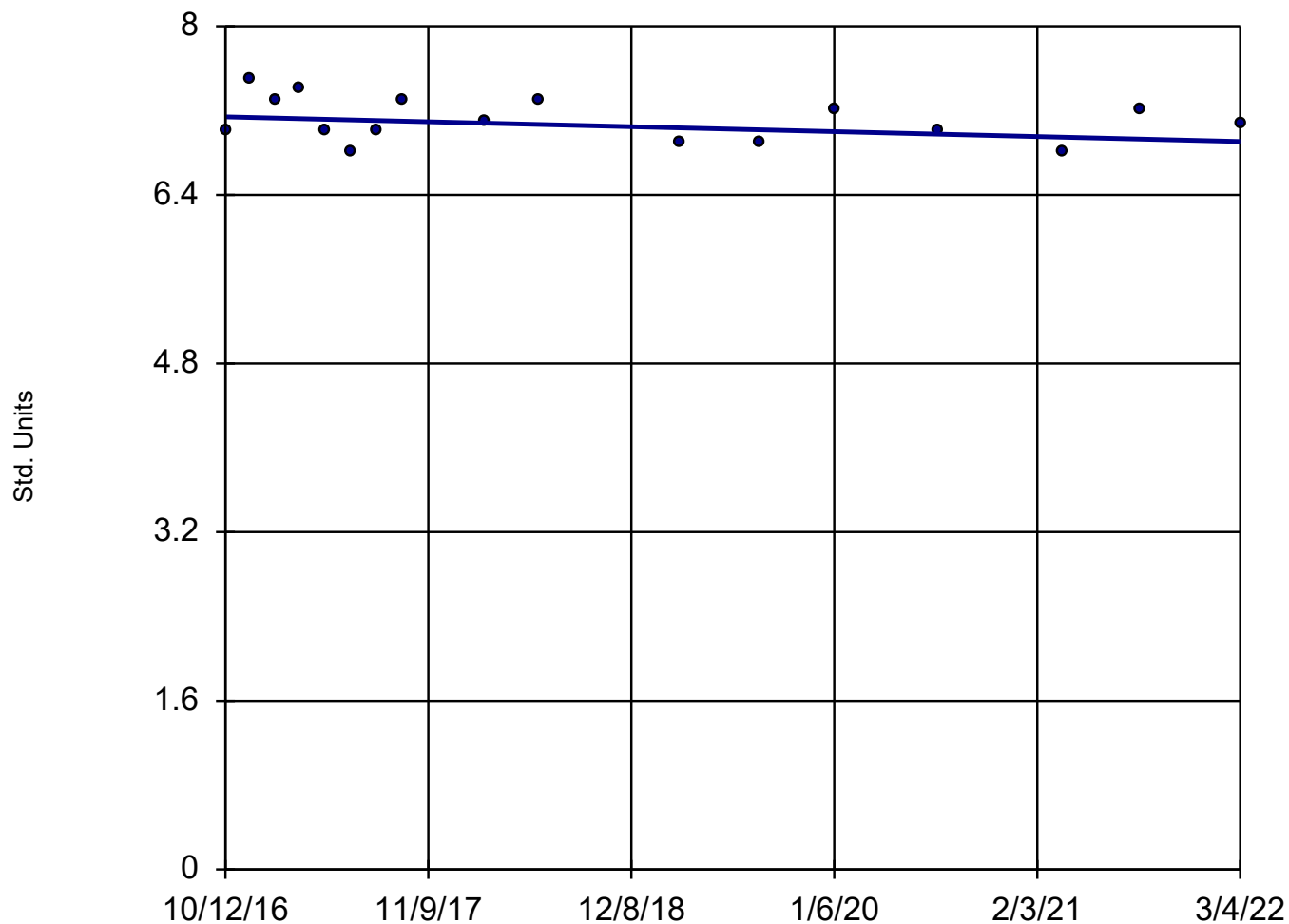
Constituent: pH Analysis Run 4/25/2022 4:24 PM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater



Constituent: pH Analysis Run 4/25/2022 4:24 PM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

MW-7



n = 17

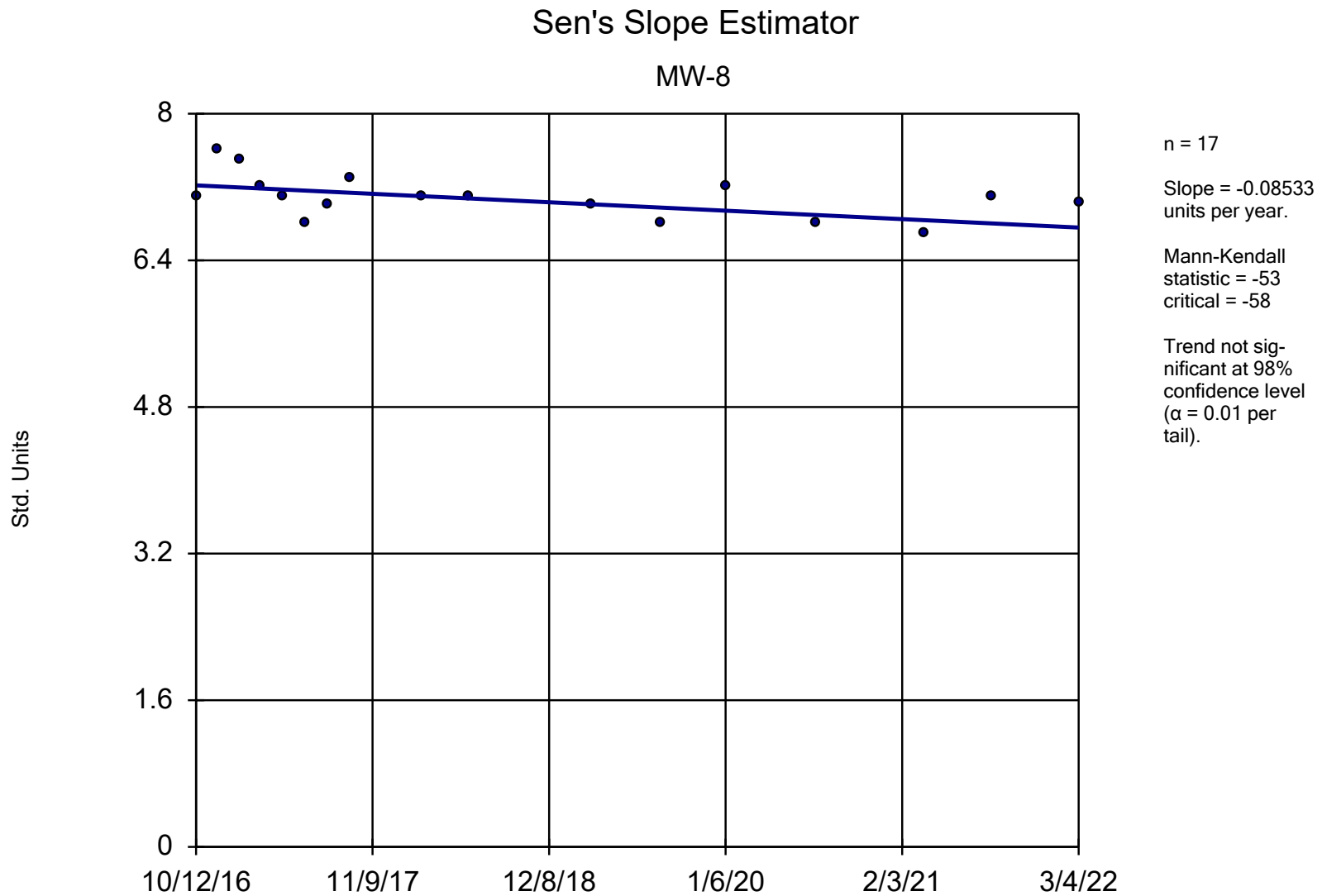
Slope = -0.04316
units per year.

Mann-Kendall
statistic = -30
critical = -58

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

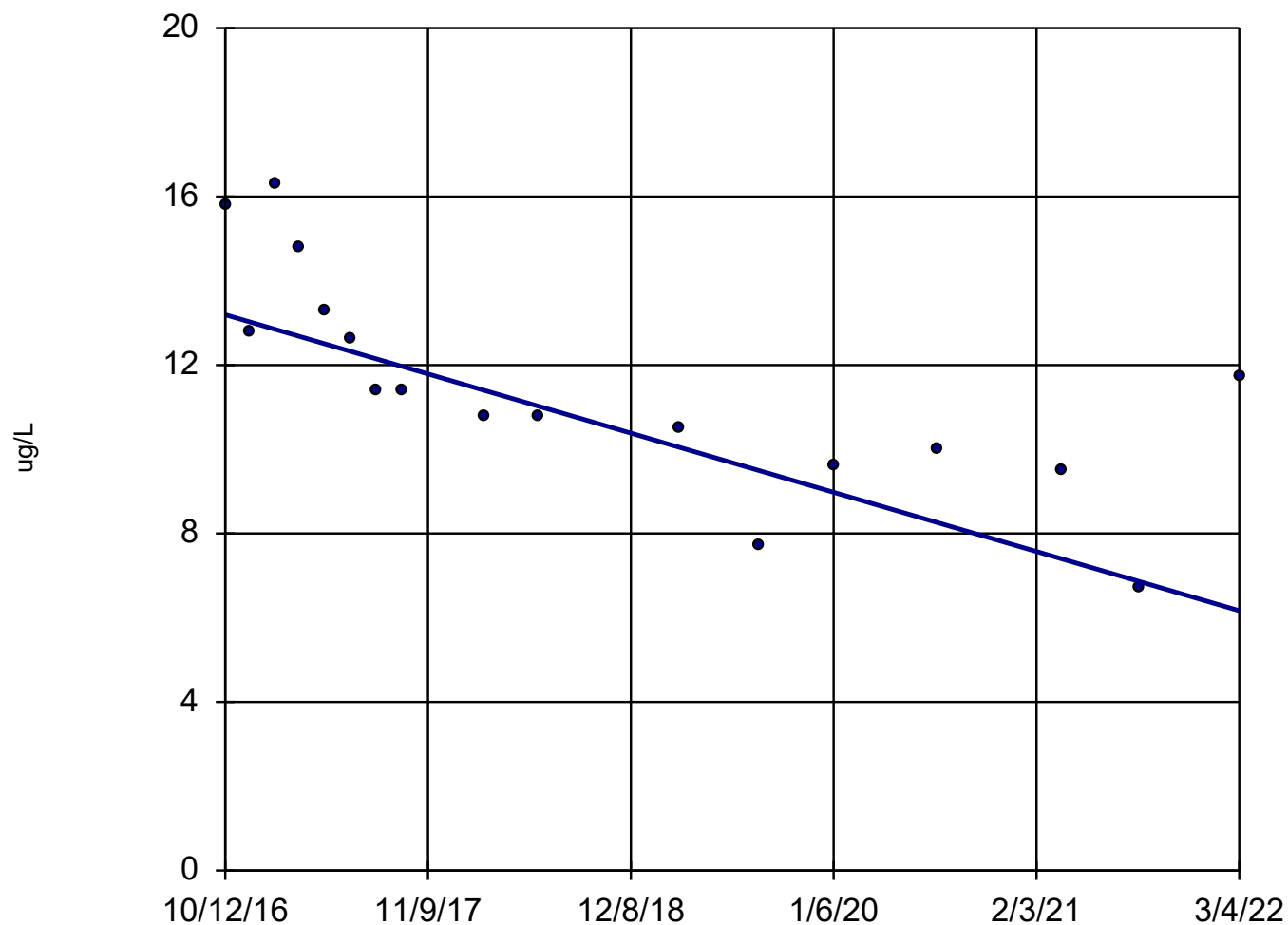
Constituent: pH Analysis Run 4/25/2022 4:24 PM View: FDU Combined

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



Sen's Slope Estimator

MW-1



n = 17

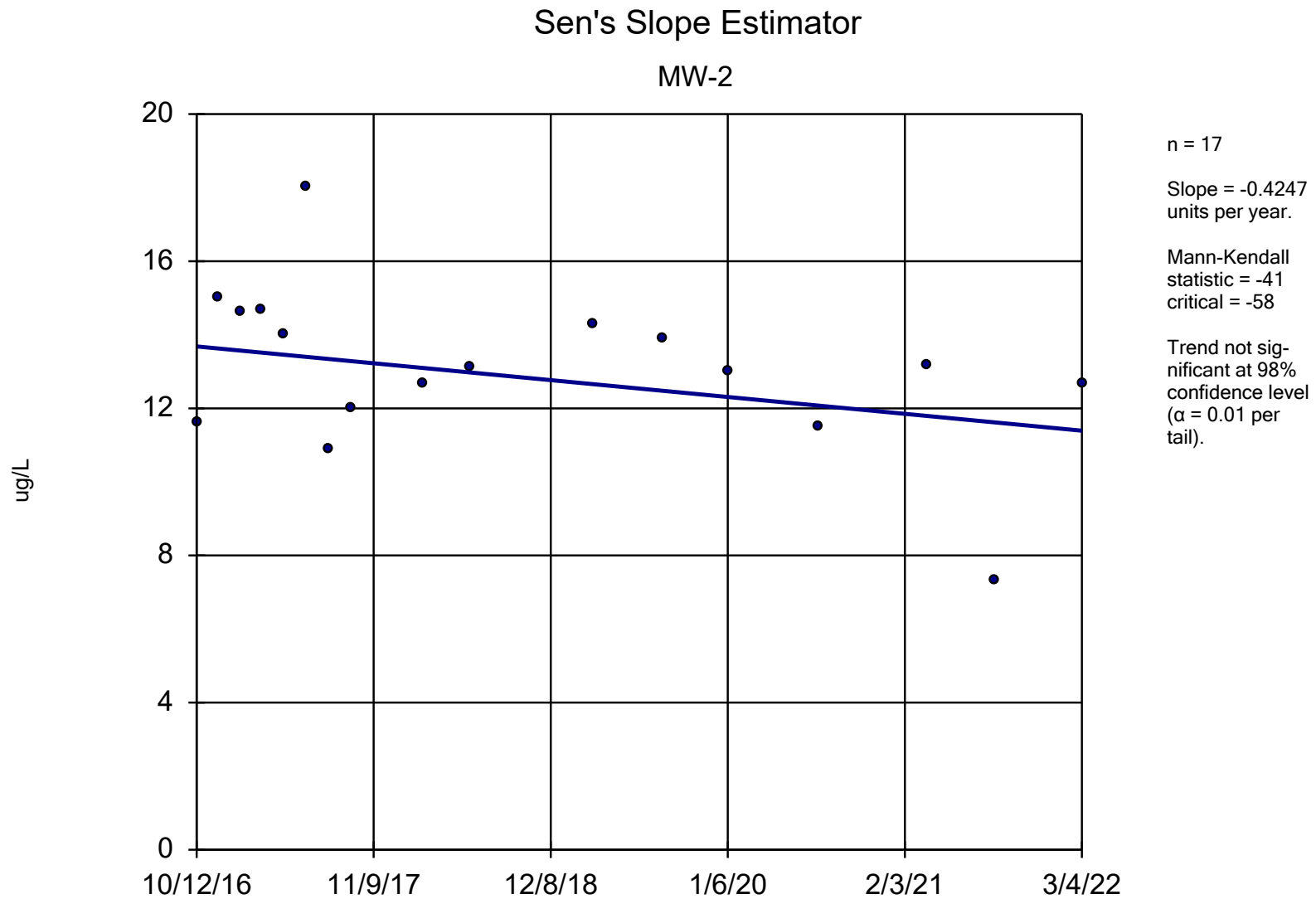
Slope = -1.302
units per year.

Mann-Kendall
statistic = -98
critical = -58

Decreasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

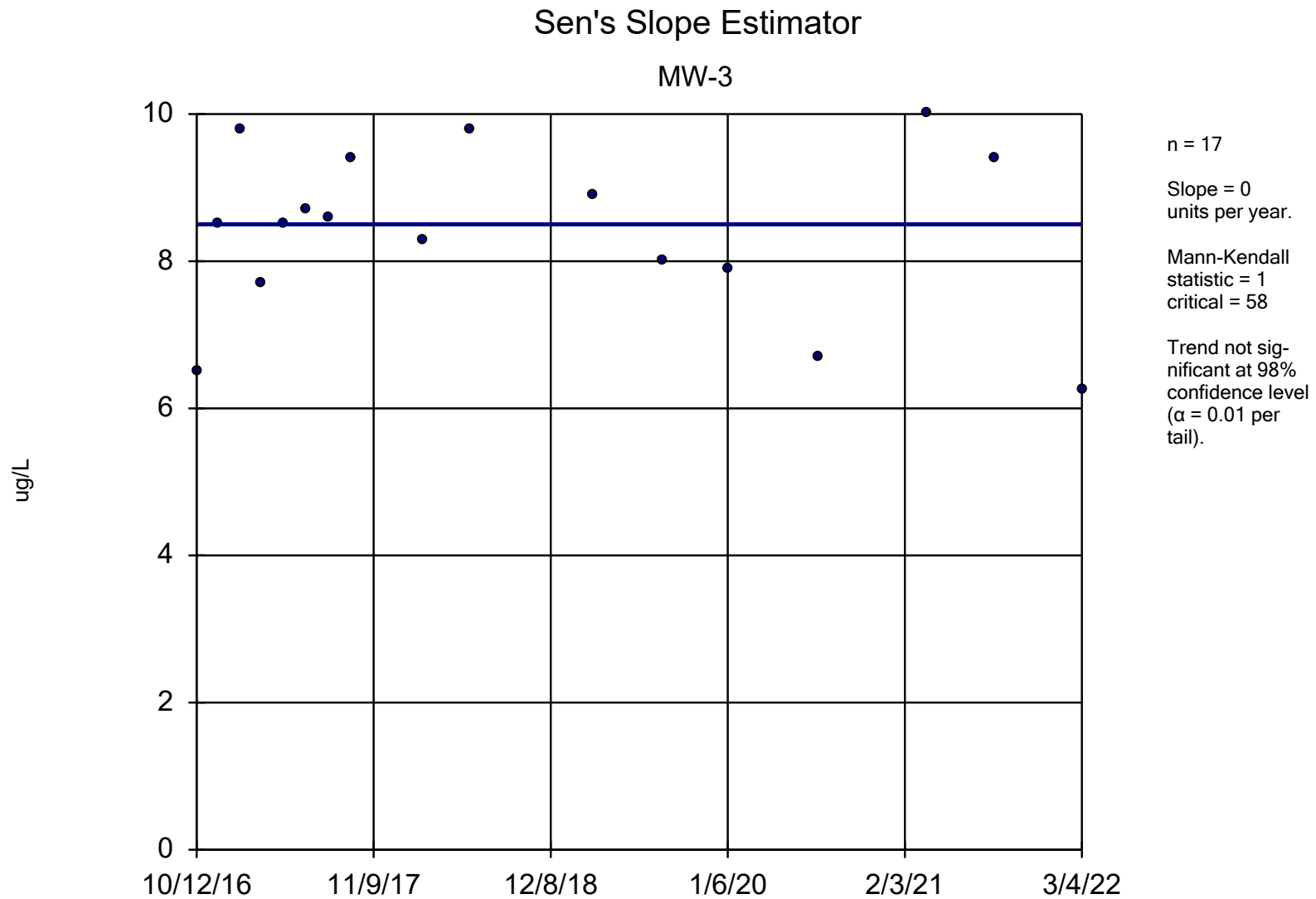
Constituent: Selenium [total] Analysis Run 4/25/2022 4:24 PM View: FDU Combined

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



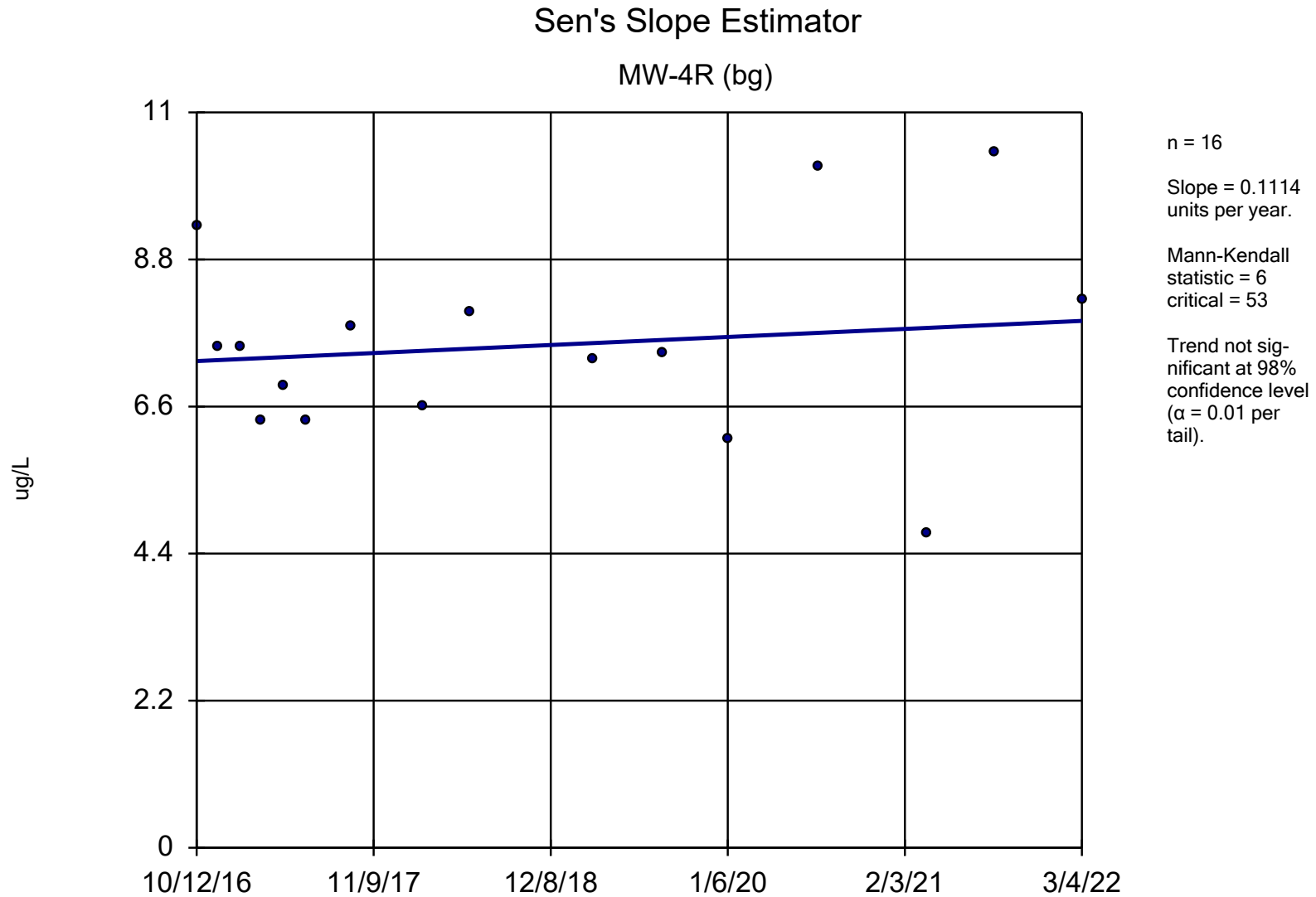
Constituent: Selenium [total] Analysis Run 4/25/2022 4:24 PM View: FDU Combined

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



Constituent: Selenium [total] Analysis Run 4/25/2022 4:24 PM View: FDU Combined

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

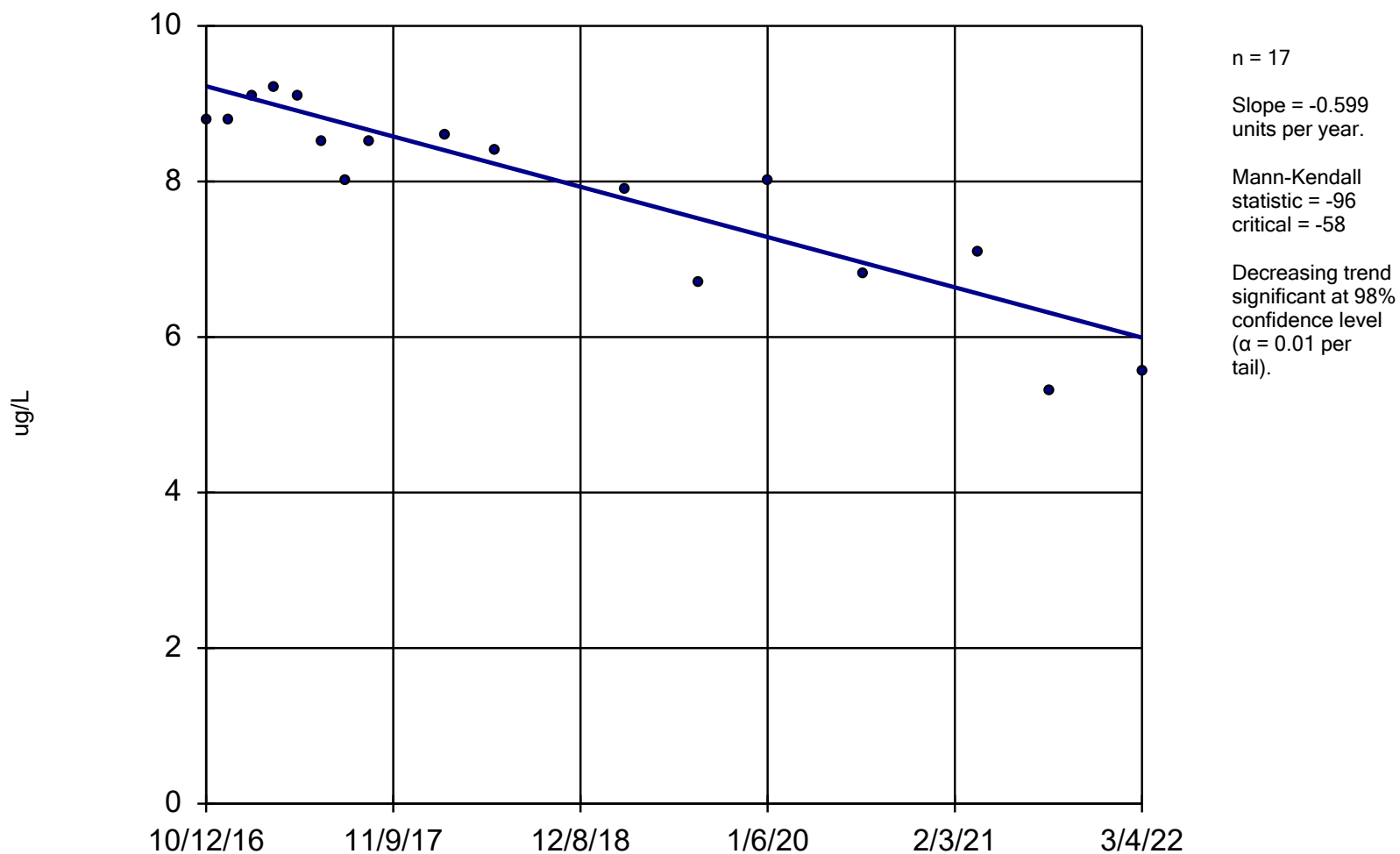


Constituent: Selenium [total] Analysis Run 4/25/2022 4:24 PM View: FDU Combined

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

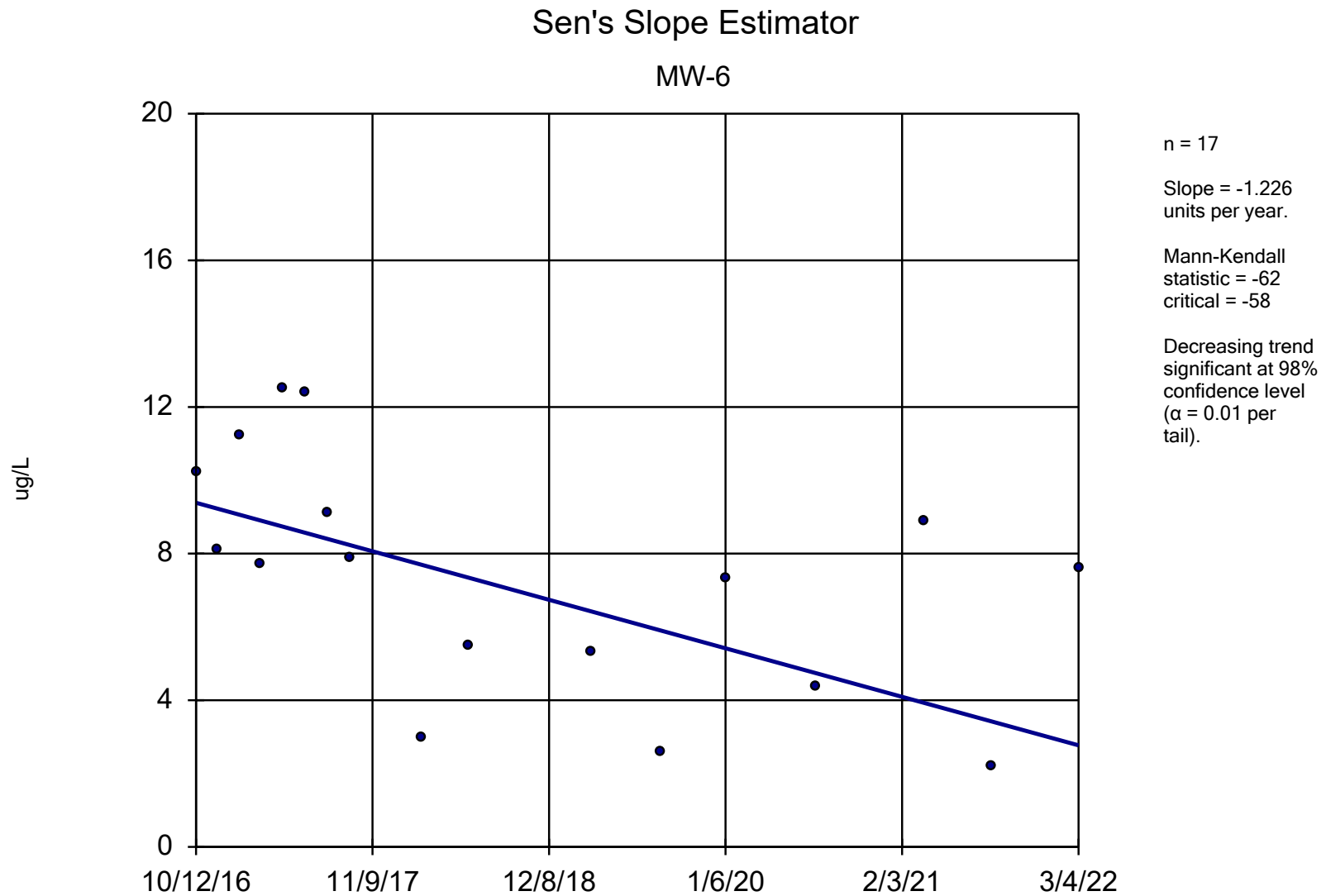
Sen's Slope Estimator

MW-5



Constituent: Selenium [total] Analysis Run 4/25/2022 4:24 PM View: FDU Combined

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

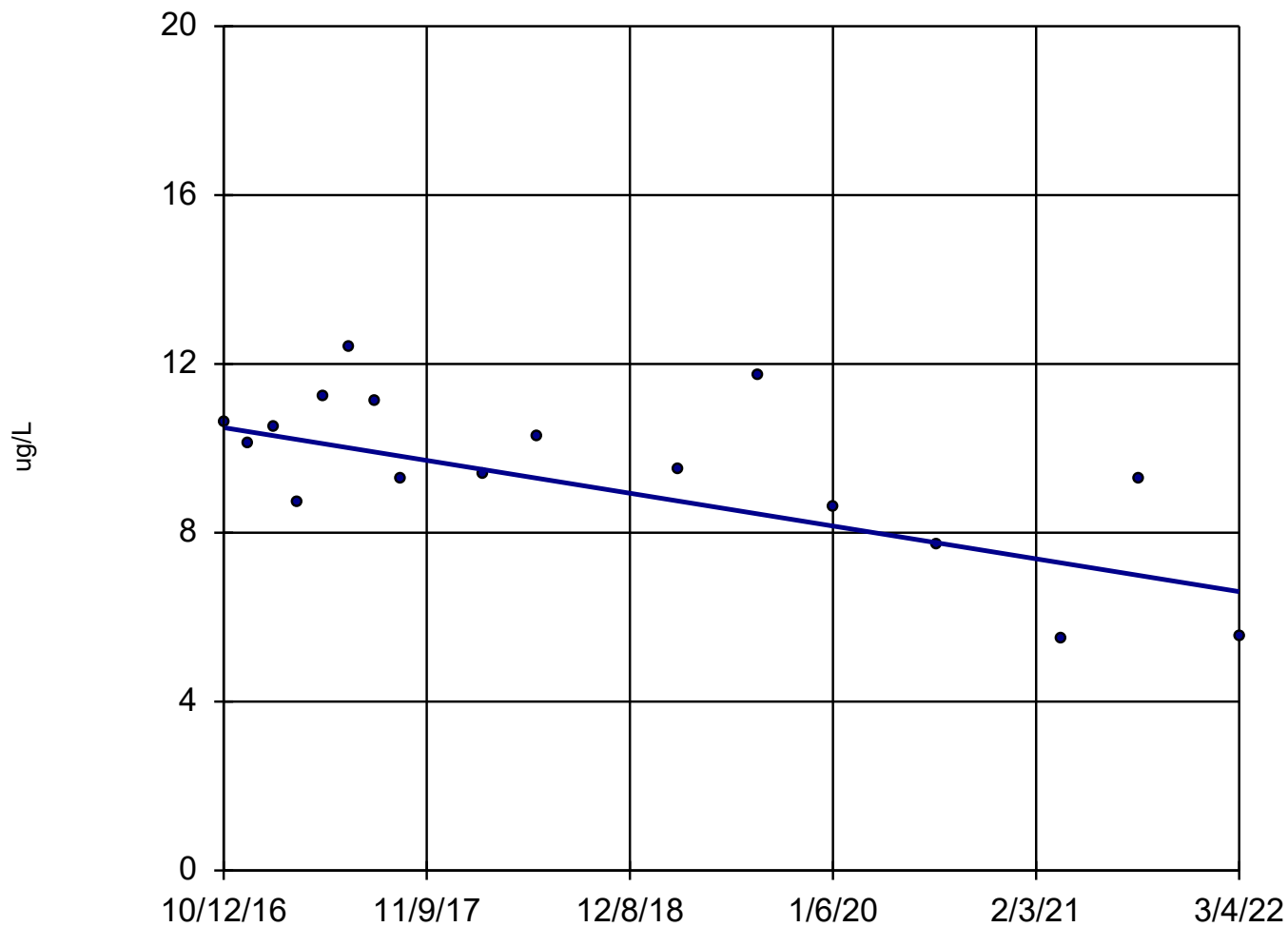


Constituent: Selenium [total] Analysis Run 4/25/2022 4:24 PM View: FDU Combined

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

Sen's Slope Estimator

MW-7



n = 17

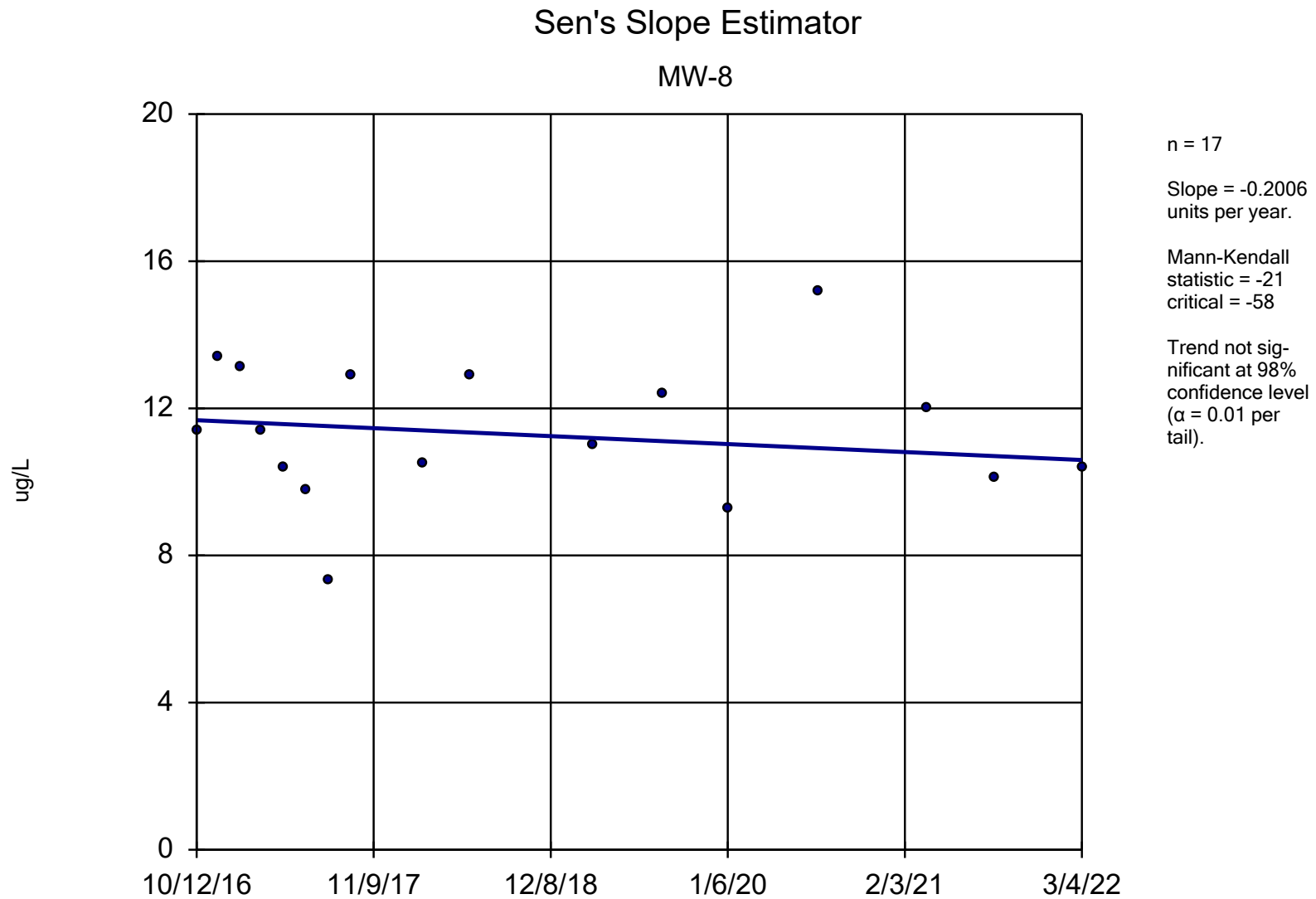
Slope = -0.7202
units per year.

Mann-Kendall
statistic = -57
critical = -58

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

Constituent: Selenium [total] Analysis Run 4/25/2022 4:24 PM View: FDU Combined

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

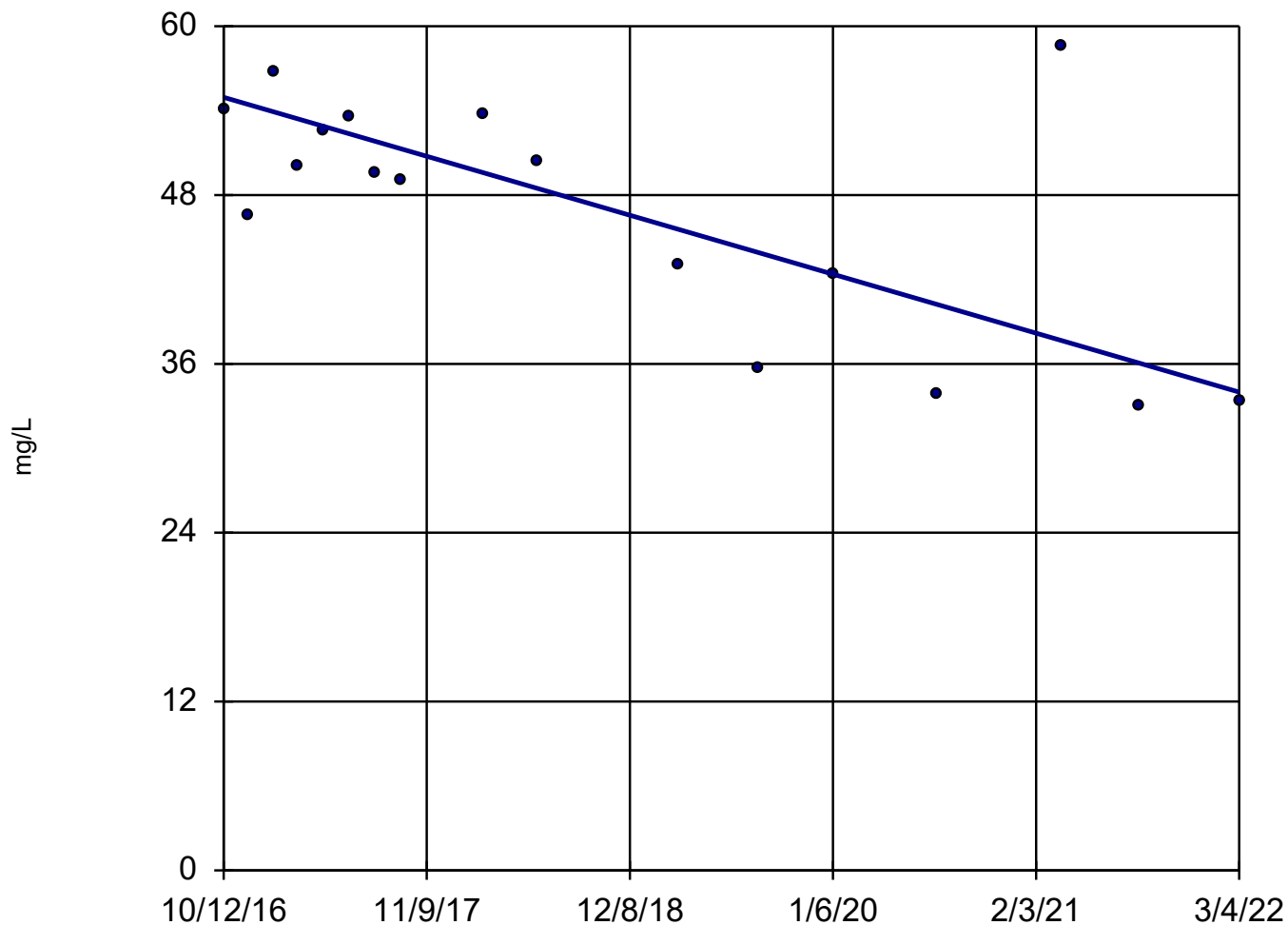


Constituent: Selenium [total] Analysis Run 4/25/2022 4:24 PM View: FDU Combined

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

Sen's Slope Estimator

MW-1



n = 17

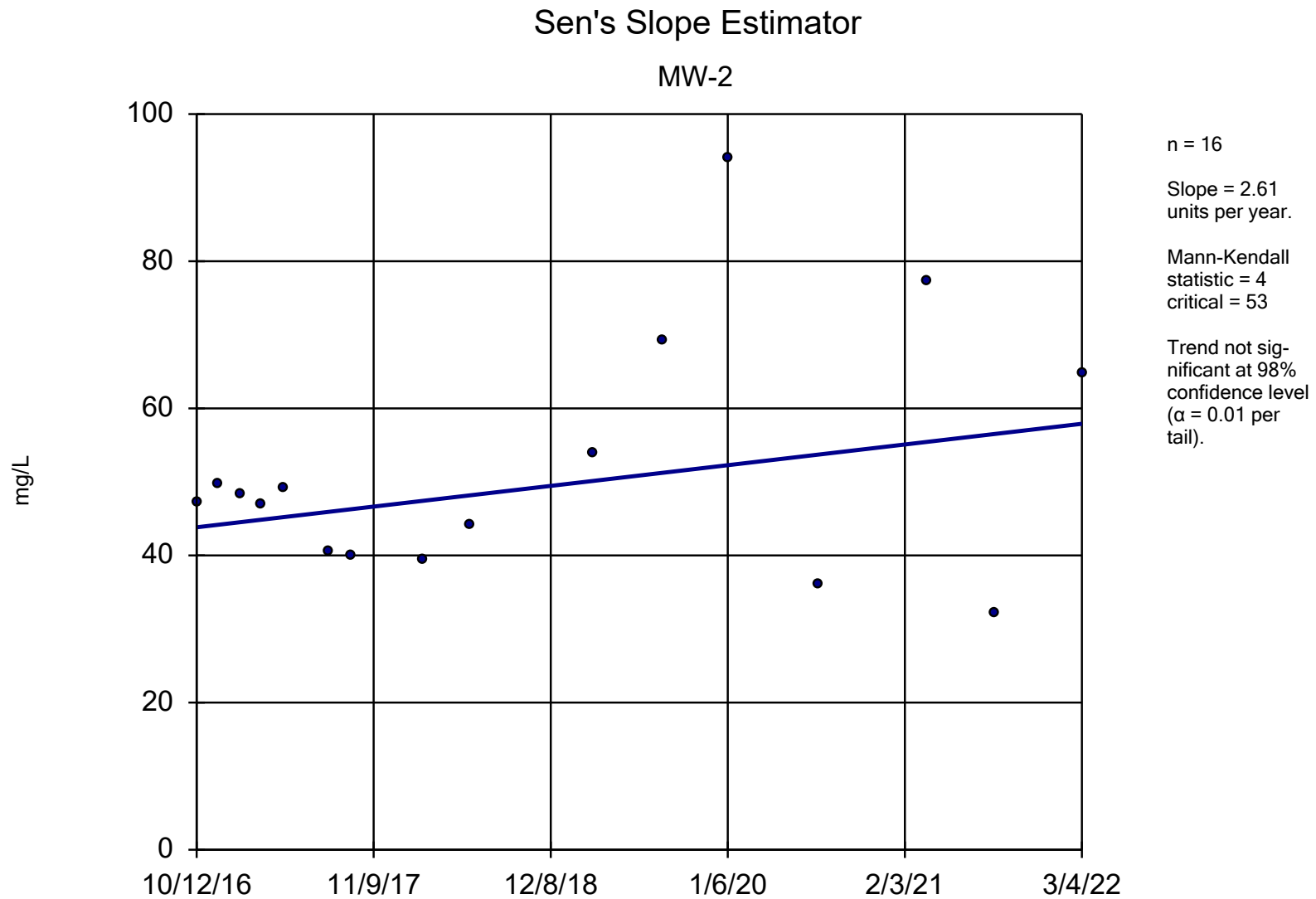
Slope = -3.882
units per year.

Mann-Kendall
statistic = -64
critical = -58

Decreasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

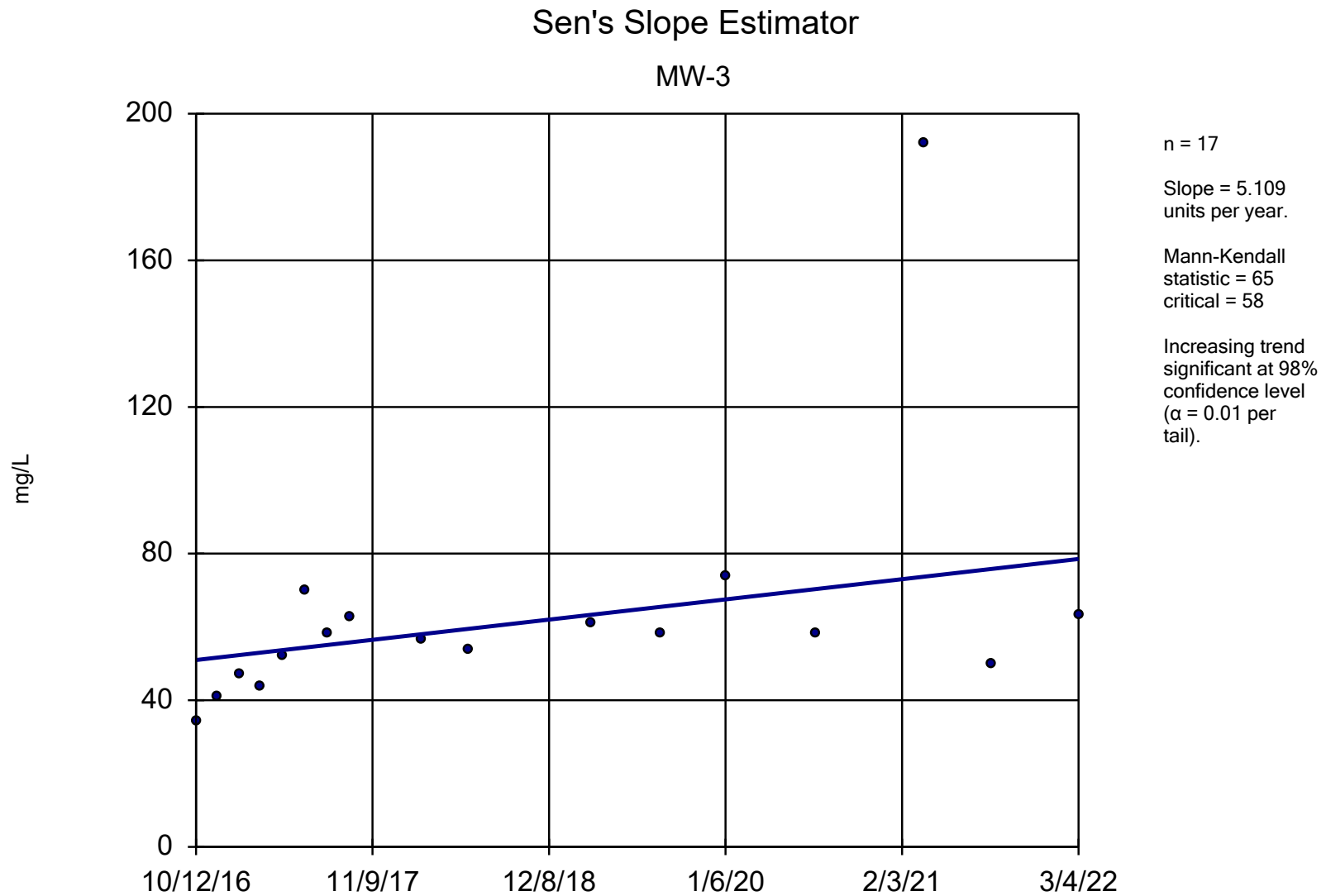
Constituent: Sulfate Analysis Run 4/25/2022 4:24 PM View: FDU Combined

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



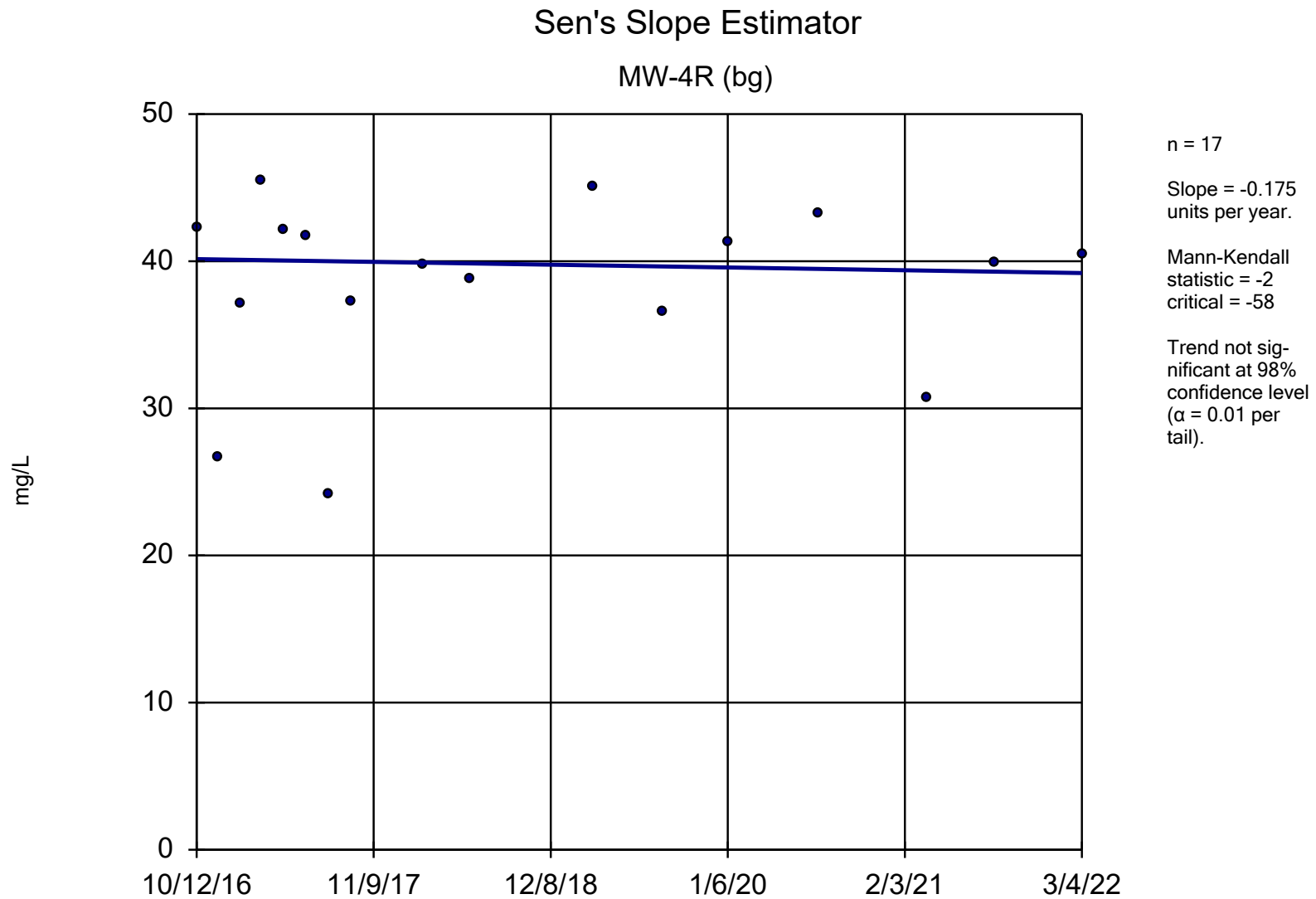
Constituent: Sulfate Analysis Run 4/25/2022 4:24 PM View: FDU Combined

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

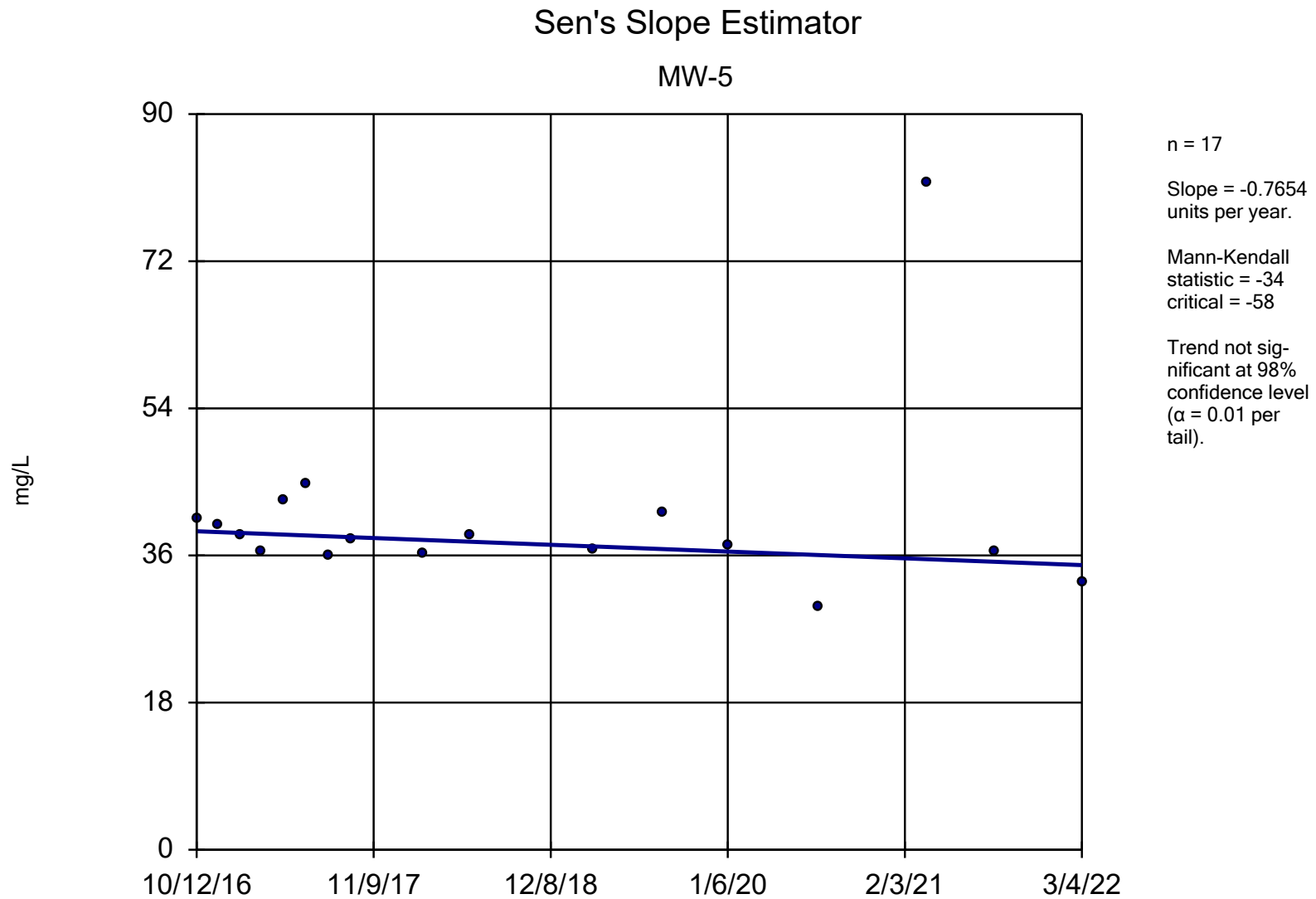


Constituent: Sulfate Analysis Run 4/25/2022 4:24 PM View: FDU Combined

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



Constituent: Sulfate Analysis Run 4/25/2022 4:24 PM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

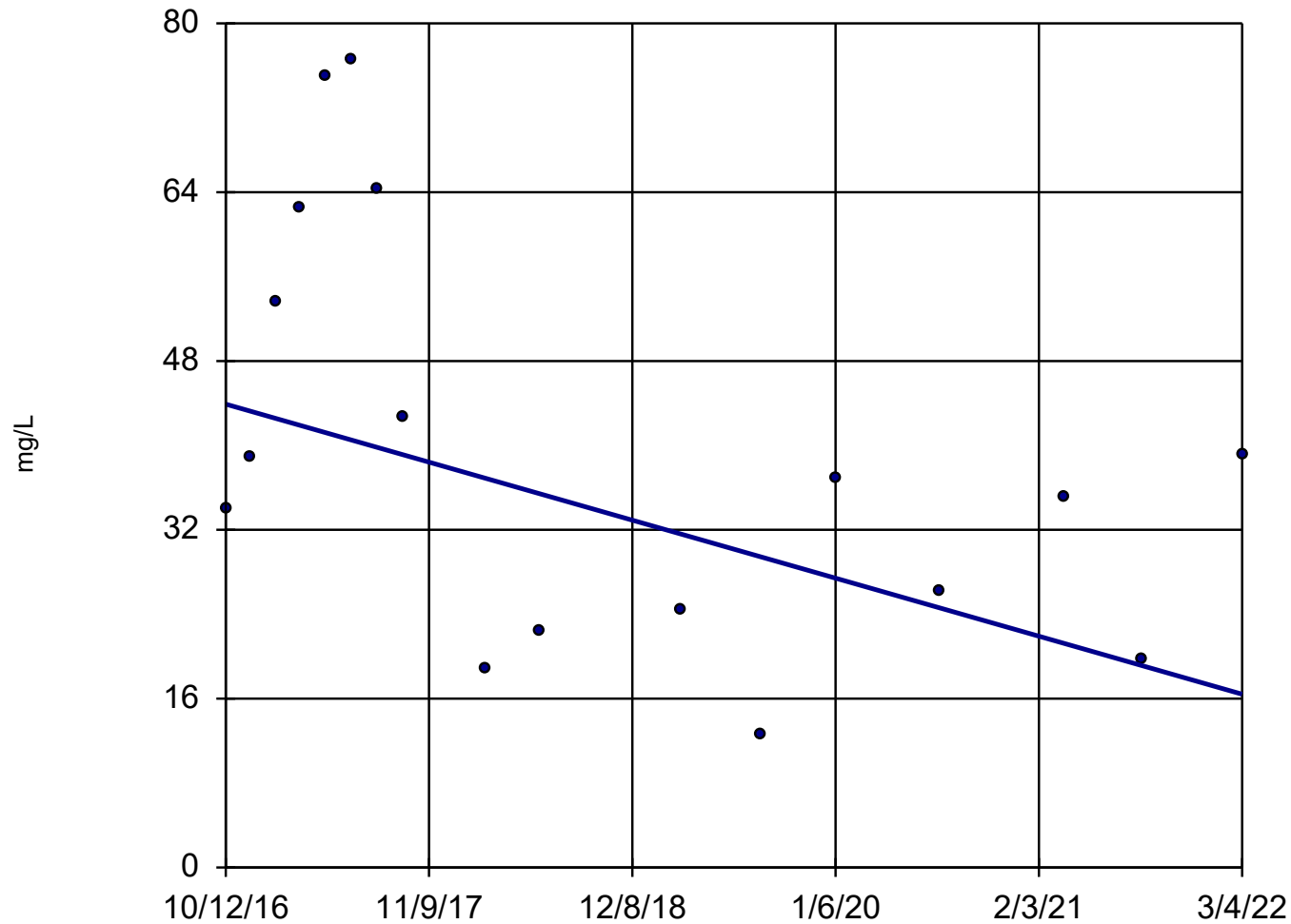


Constituent: Sulfate Analysis Run 4/25/2022 4:24 PM View: FDU Combined

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

Sen's Slope Estimator

MW-6



n = 17

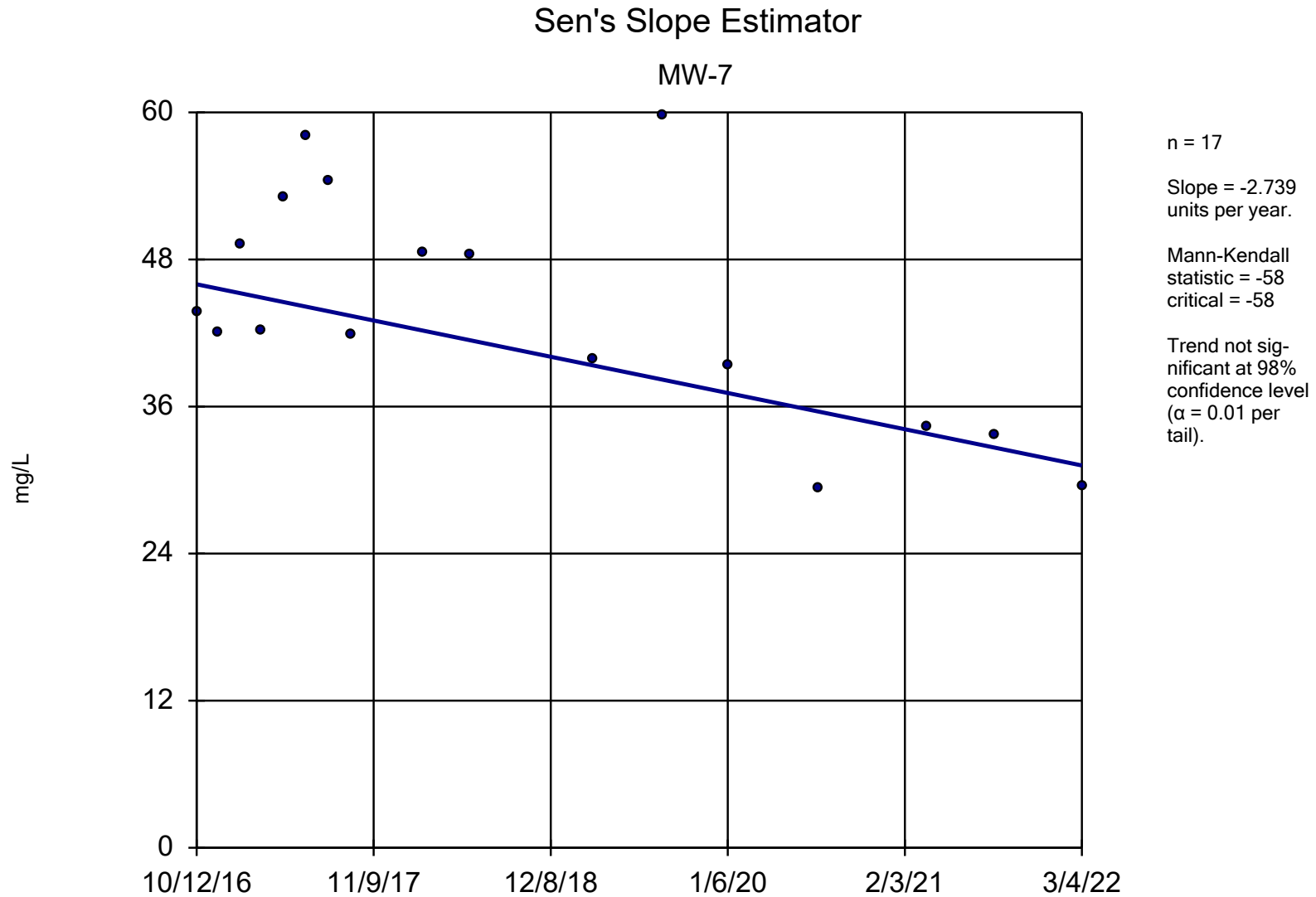
Slope = -5.095
units per year.

Mann-Kendall
statistic = -34
critical = -58

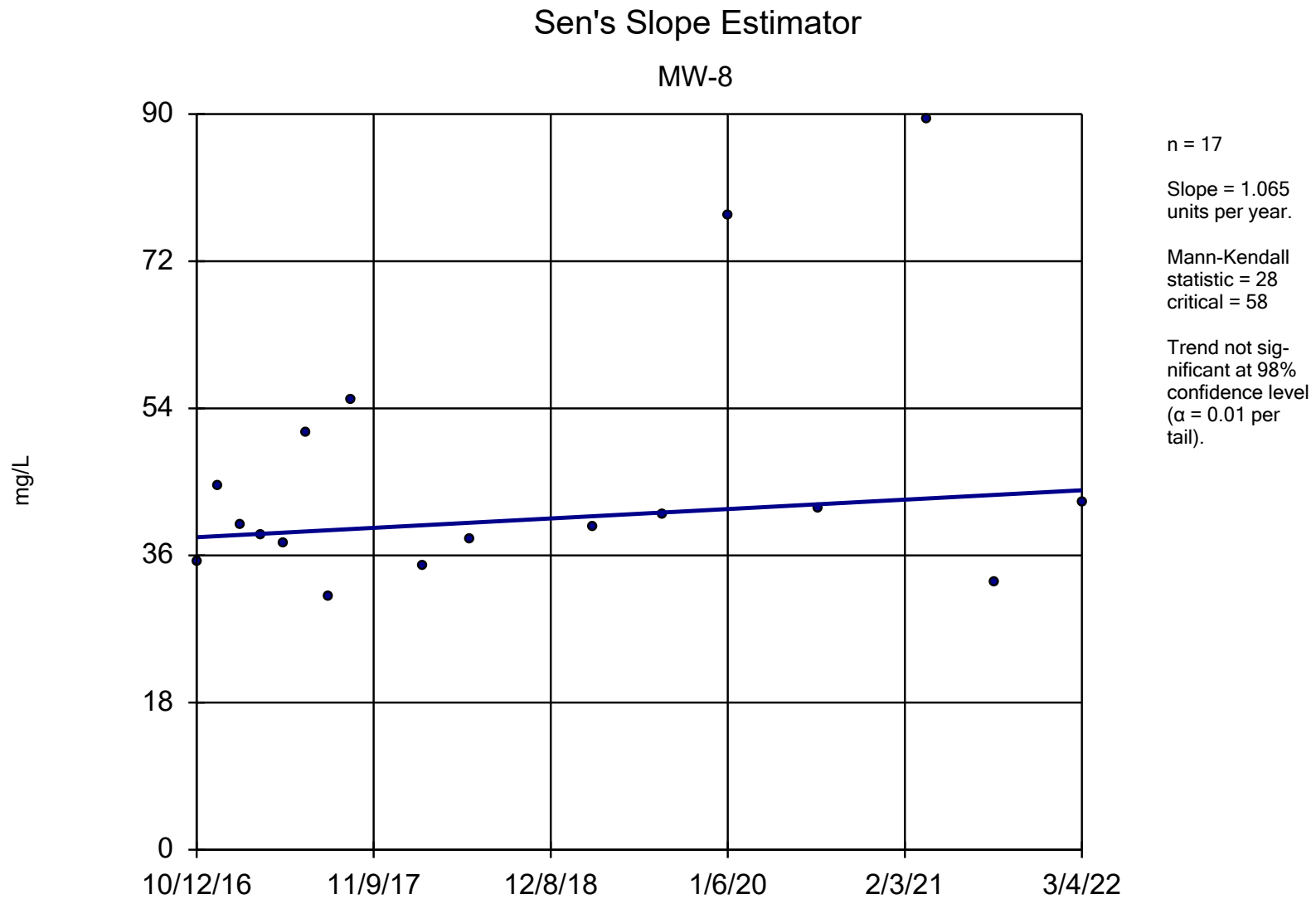
Trend not sig-
nificant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Constituent: Sulfate Analysis Run 4/25/2022 4:24 PM View: FDU Combined

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

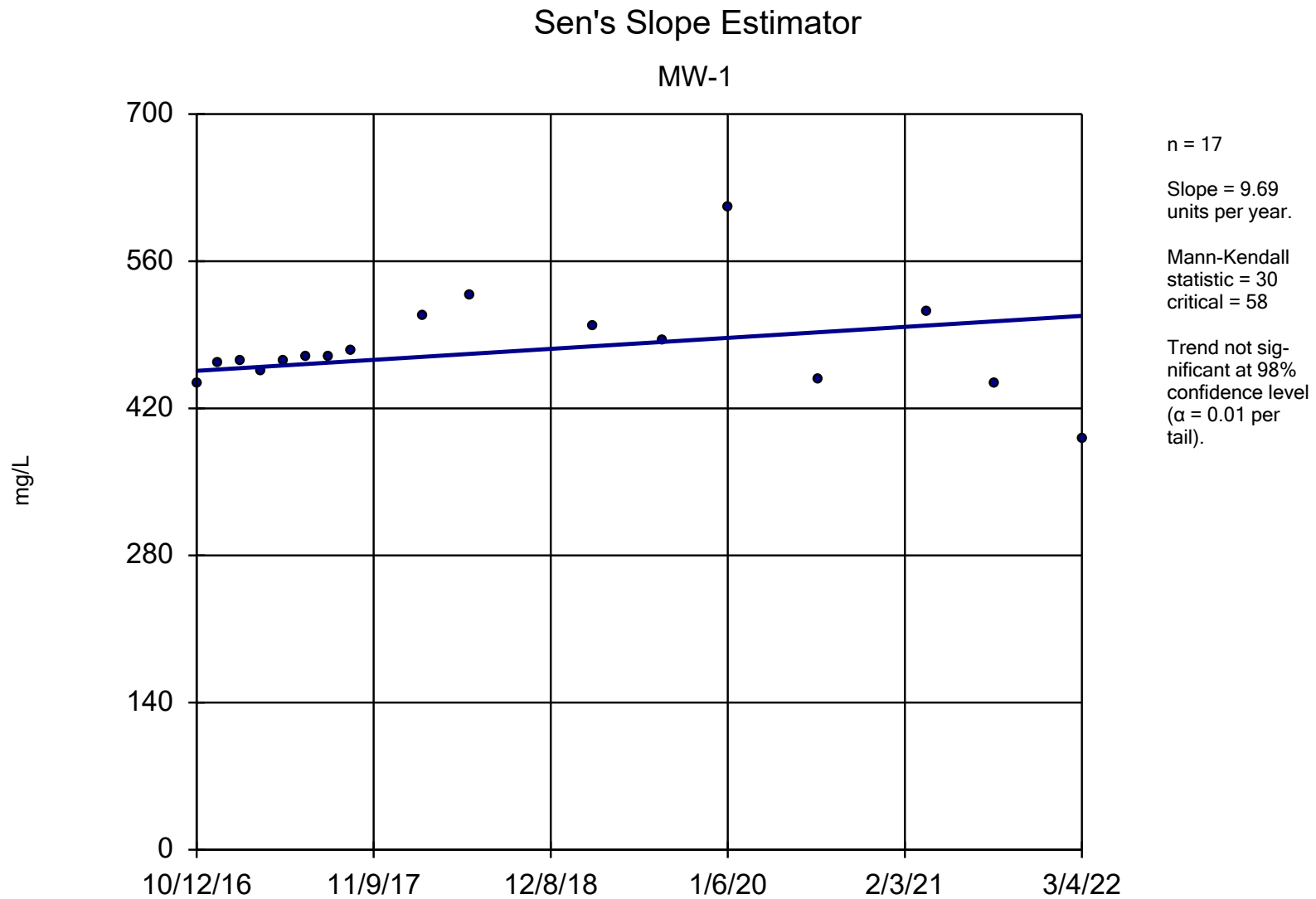


Constituent: Sulfate Analysis Run 4/25/2022 4:24 PM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater



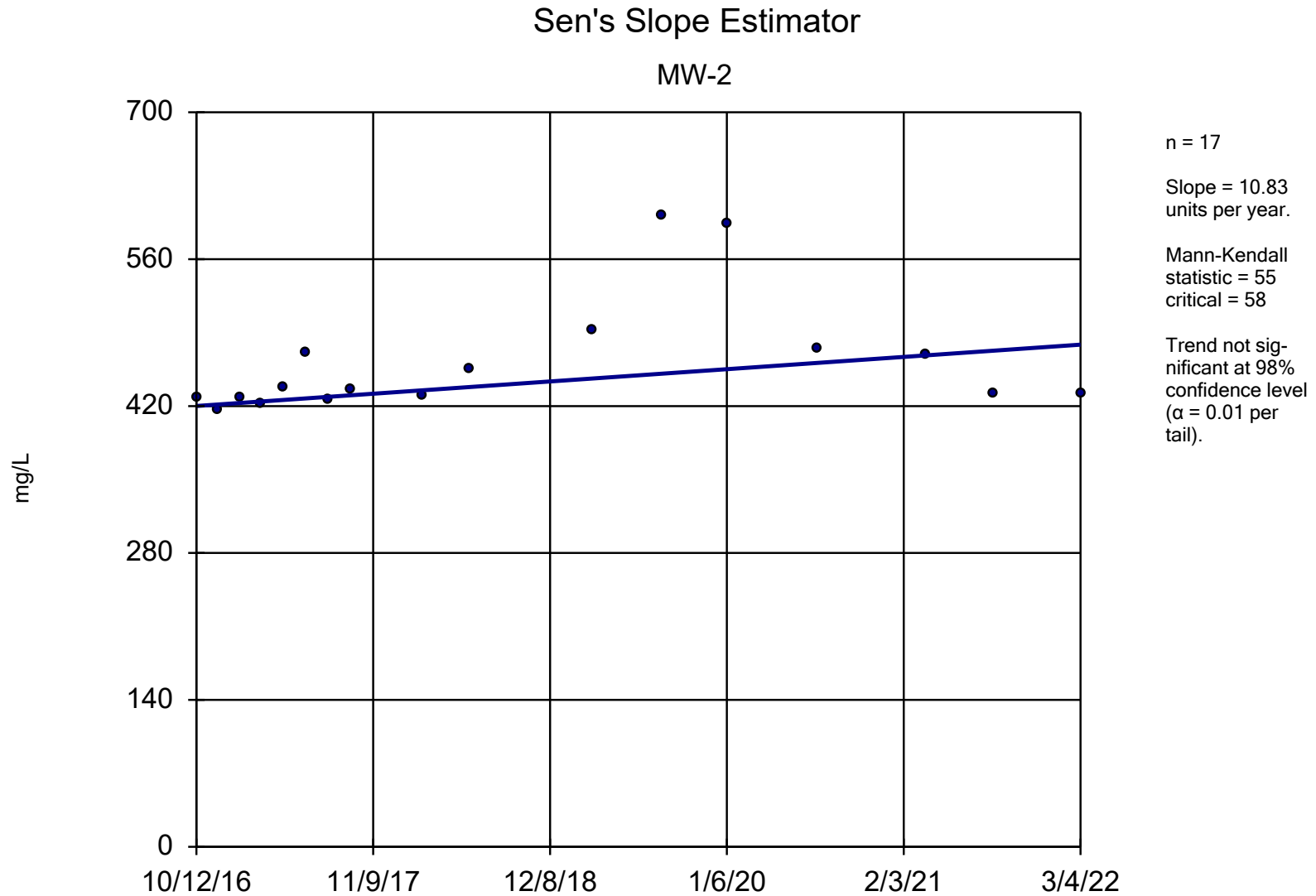
Constituent: Sulfate Analysis Run 4/25/2022 4:24 PM View: FDU Combined

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



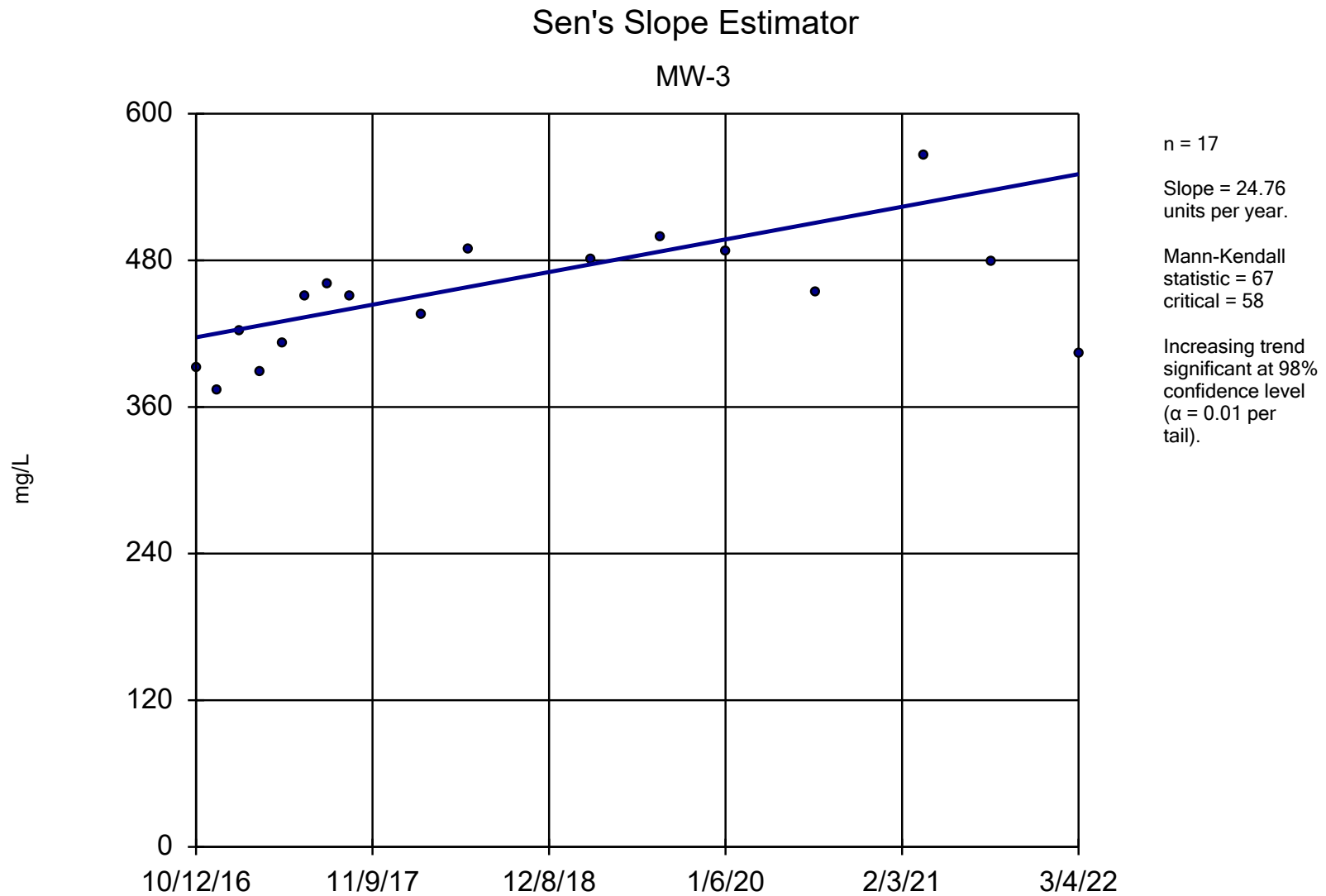
Constituent: Total Dissolved Solids Analysis Run 4/25/2022 4:24 PM View: FDU Combined

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



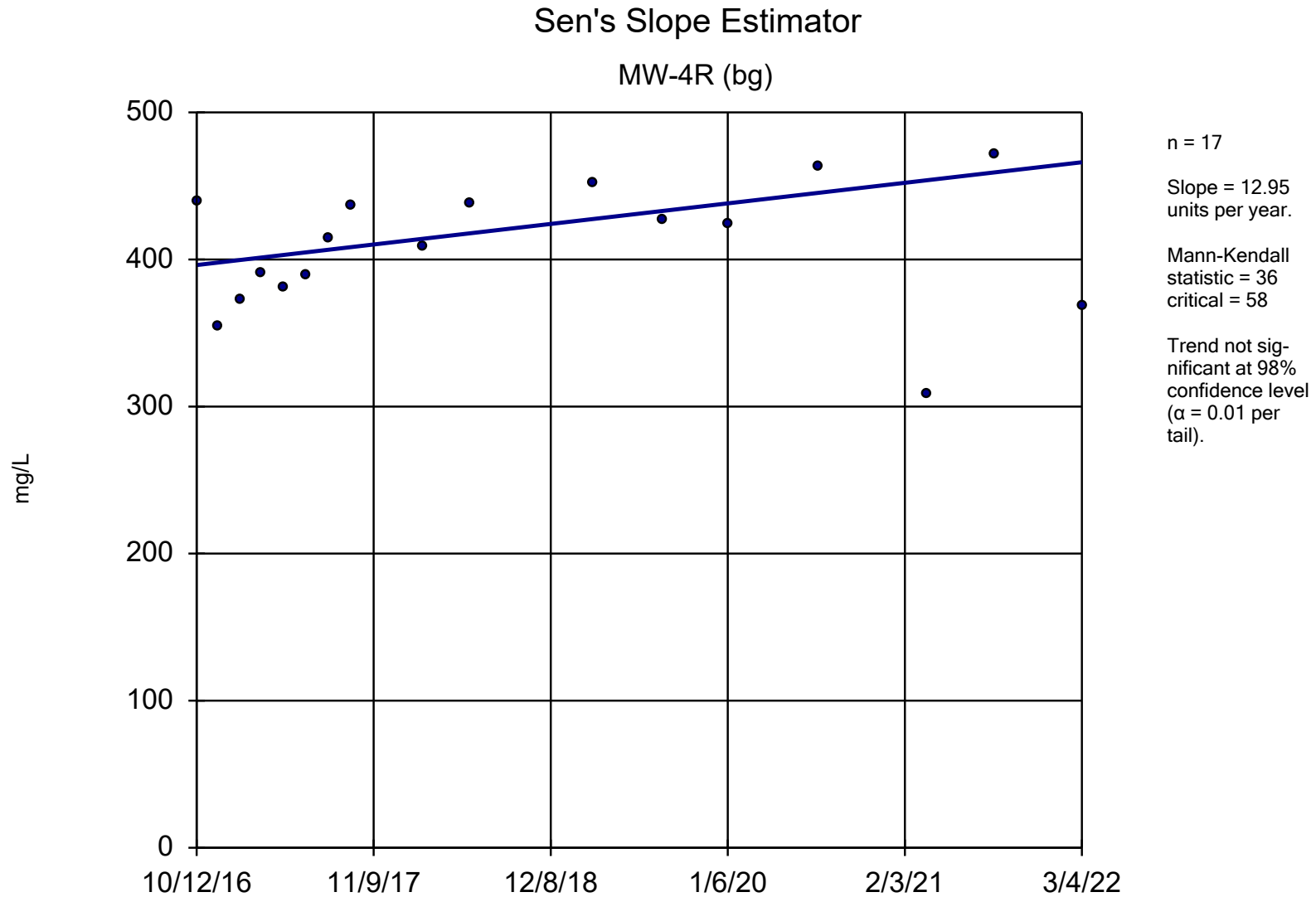
Constituent: Total Dissolved Solids Analysis Run 4/25/2022 4:24 PM View: FDU Combined

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



Constituent: Total Dissolved Solids Analysis Run 4/25/2022 4:24 PM View: FDU Combined

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

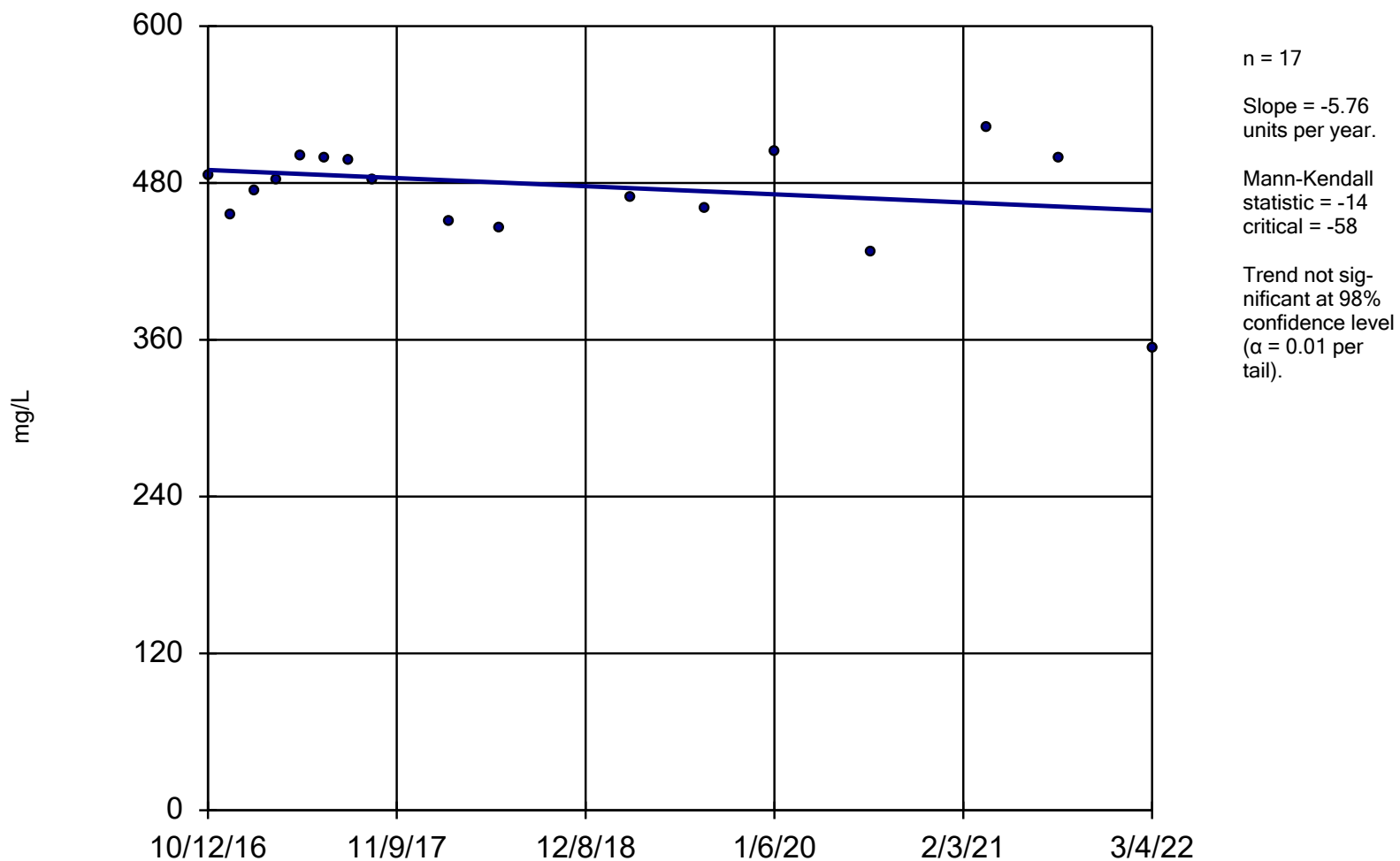


Constituent: Total Dissolved Solids Analysis Run 4/25/2022 4:24 PM View: FDU Combined

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

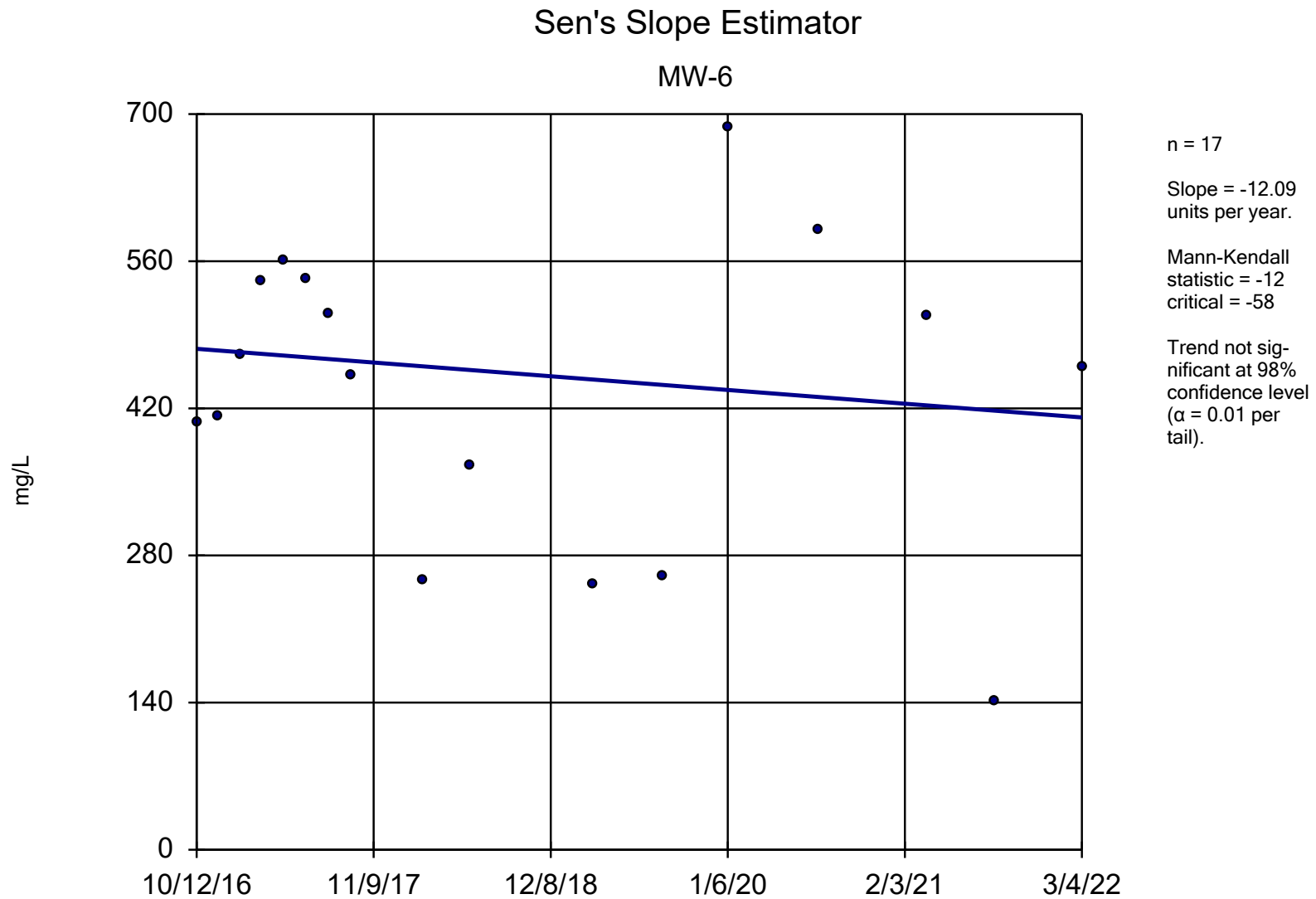
Sen's Slope Estimator

MW-5



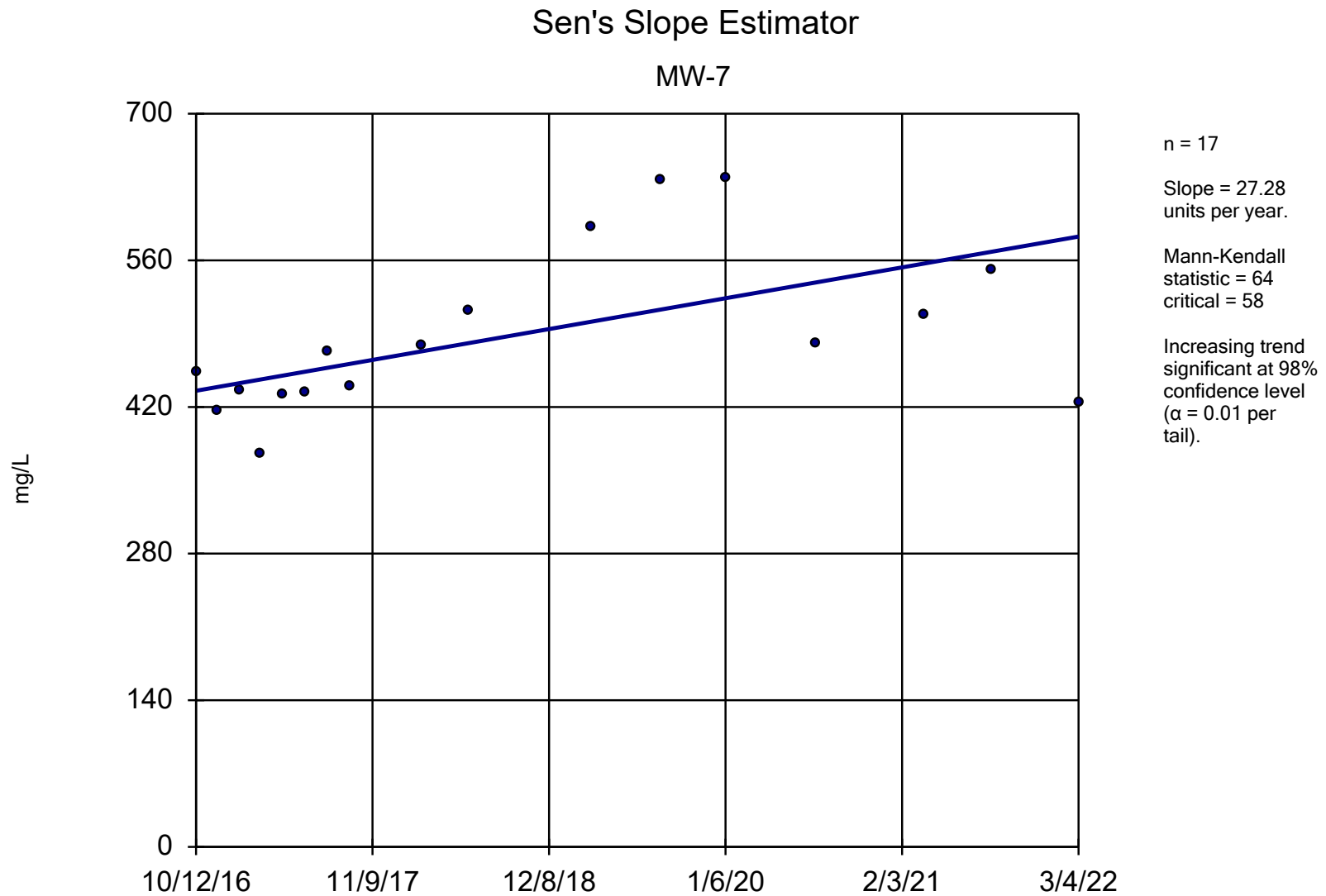
Constituent: Total Dissolved Solids Analysis Run 4/25/2022 4:24 PM View: FDU Combined

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



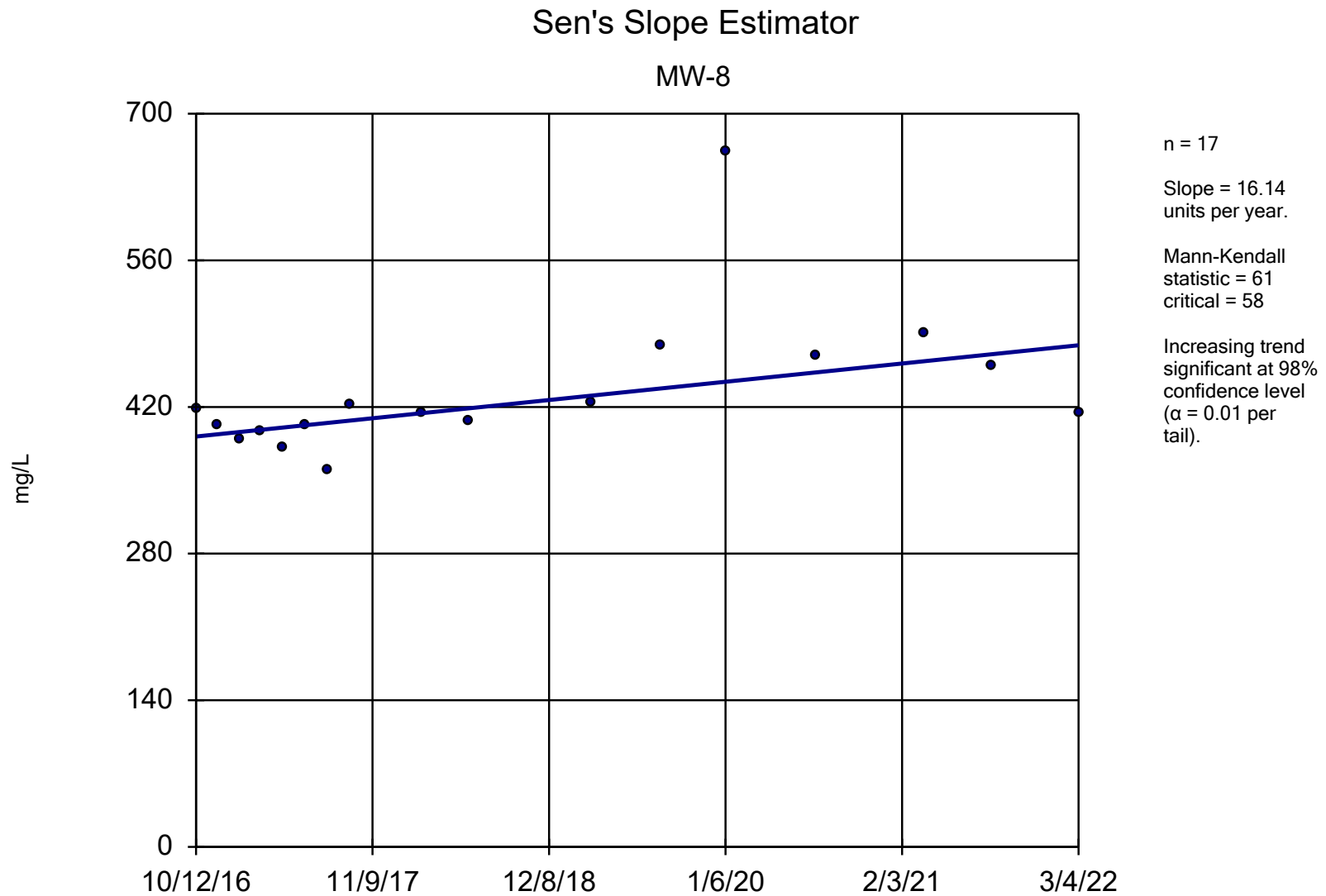
Constituent: Total Dissolved Solids Analysis Run 4/25/2022 4:24 PM View: FDU Combined

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



Constituent: Total Dissolved Solids Analysis Run 4/25/2022 4:24 PM View: FDU Combined

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

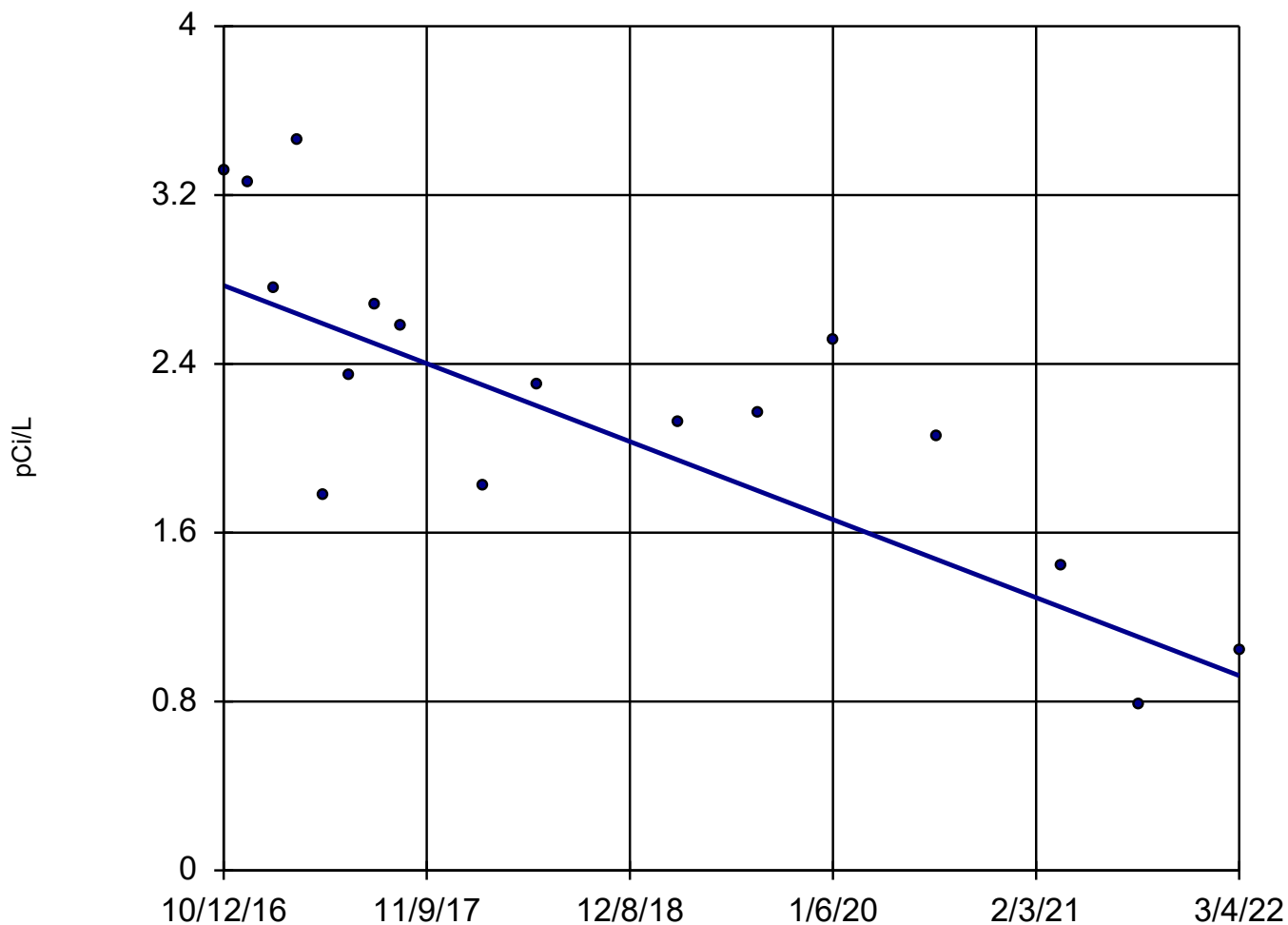


Constituent: Total Dissolved Solids Analysis Run 4/25/2022 4:24 PM View: FDU Combined

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

Sen's Slope Estimator

MW-1



n = 17

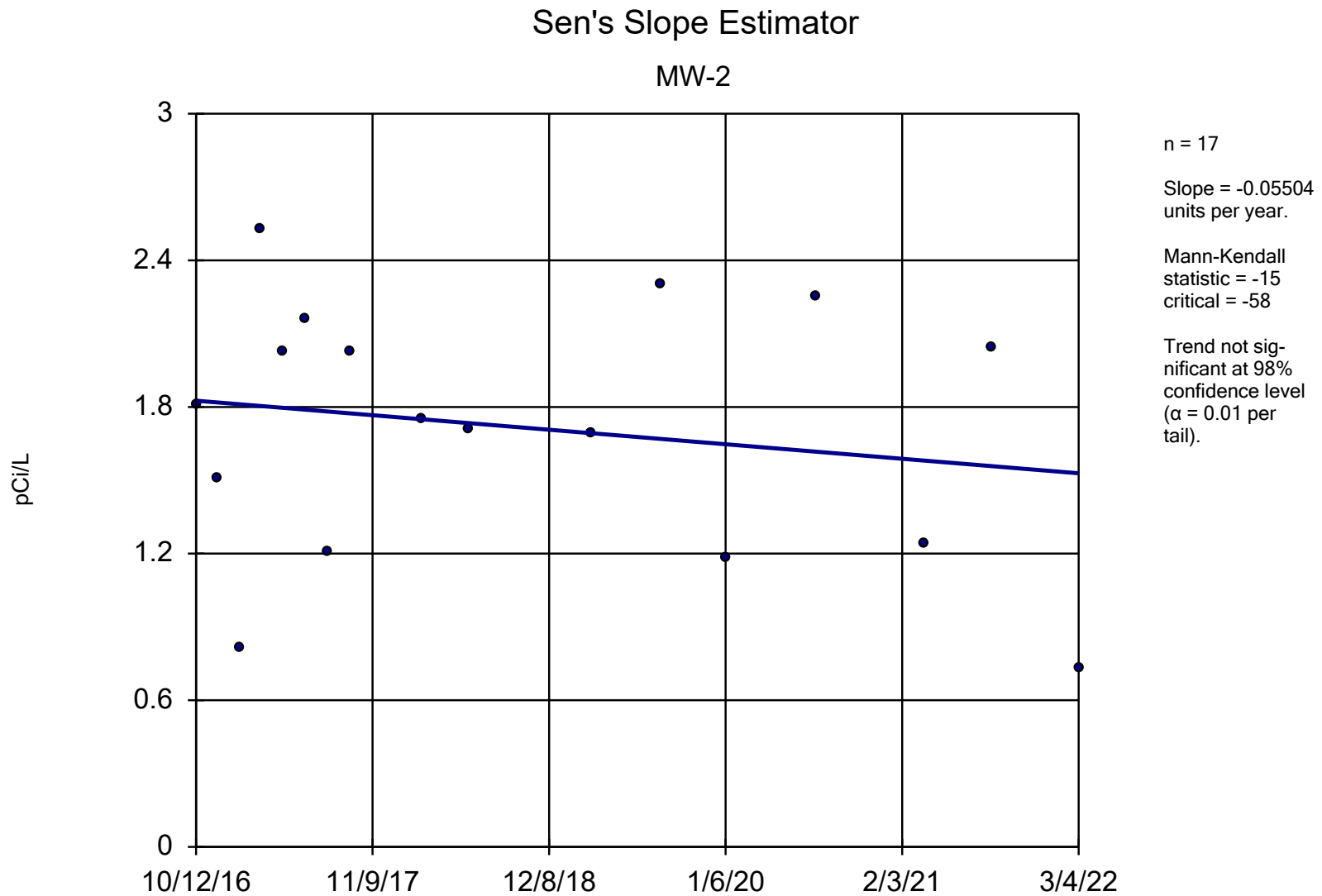
Slope = -0.3426
units per year.

Mann-Kendall
statistic = -86
critical = -58

Decreasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

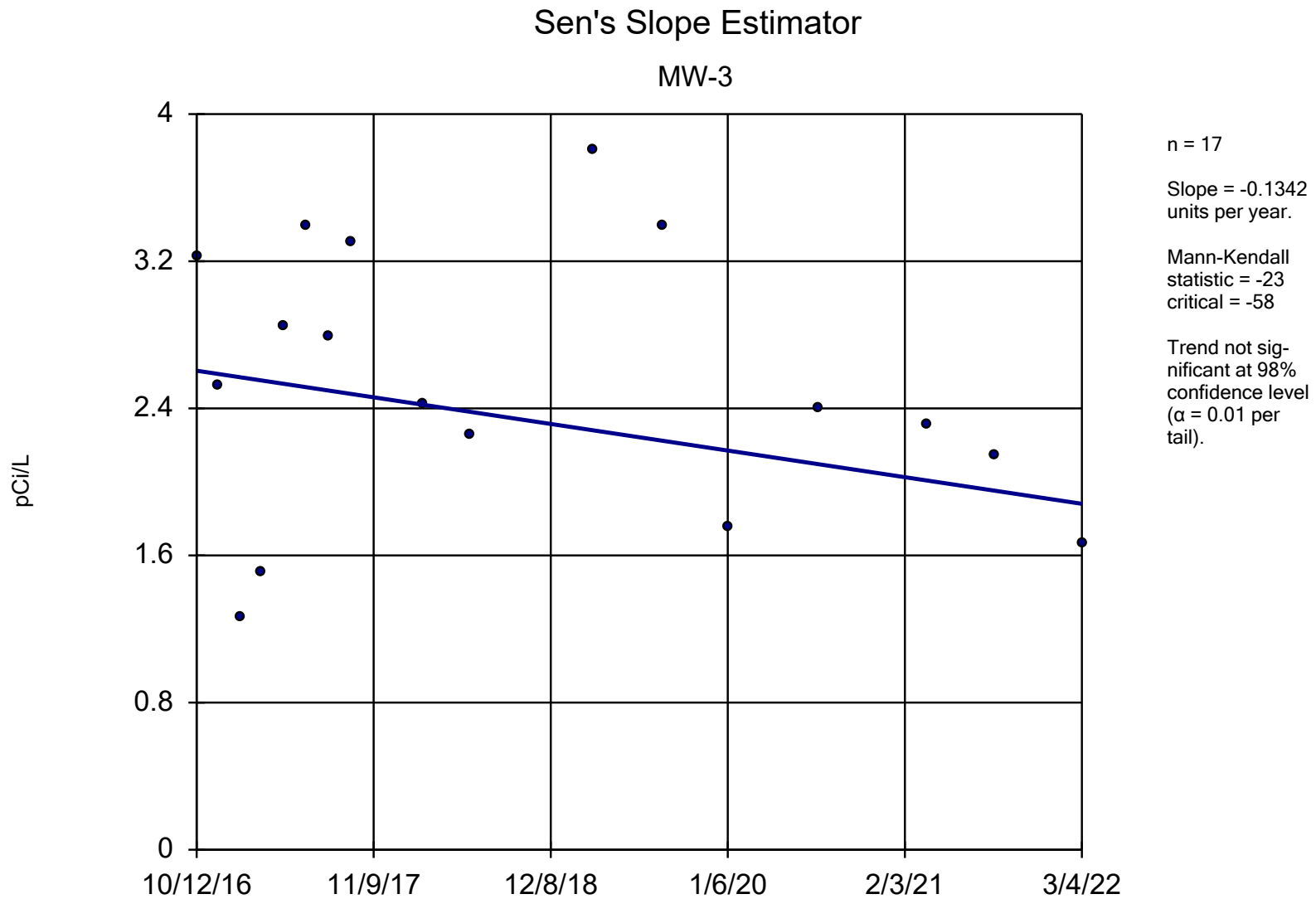
Constituent: Total Radium Analysis Run 4/25/2022 4:24 PM View: FDU Combined

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



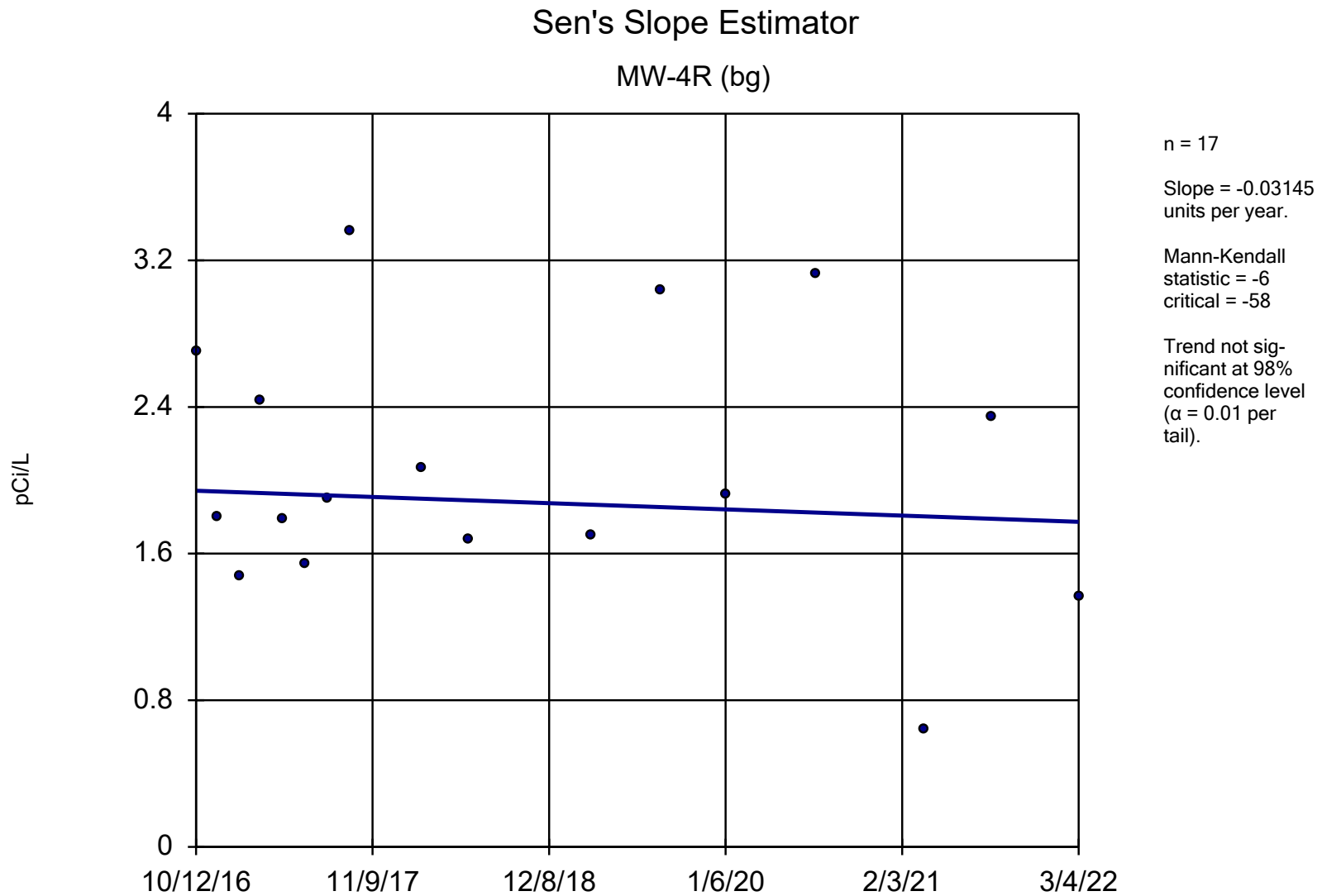
Constituent: Total Radium Analysis Run 4/25/2022 4:24 PM View: FDU Combined

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



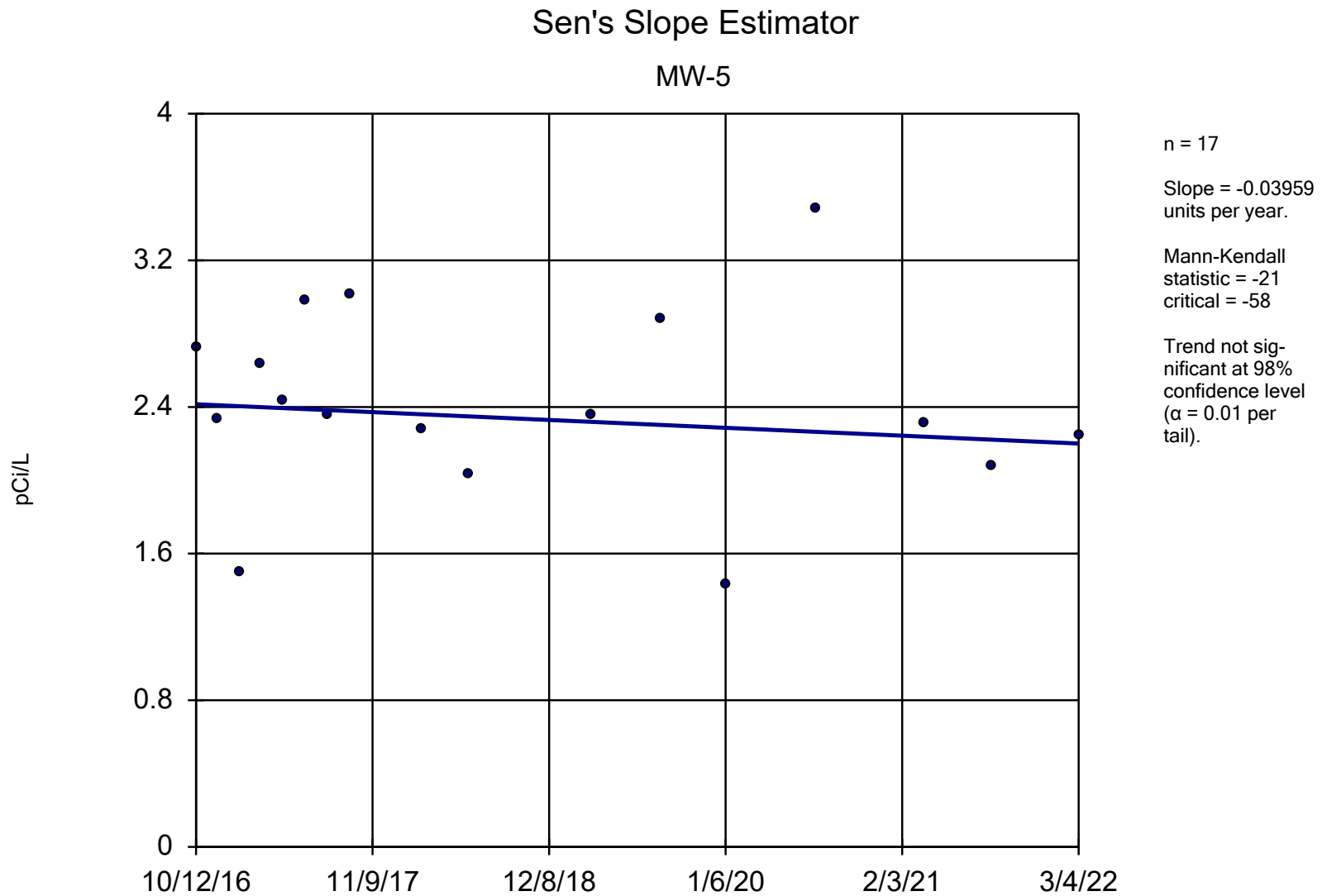
Constituent: Total Radium Analysis Run 4/25/2022 4:24 PM View: FDU Combined

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



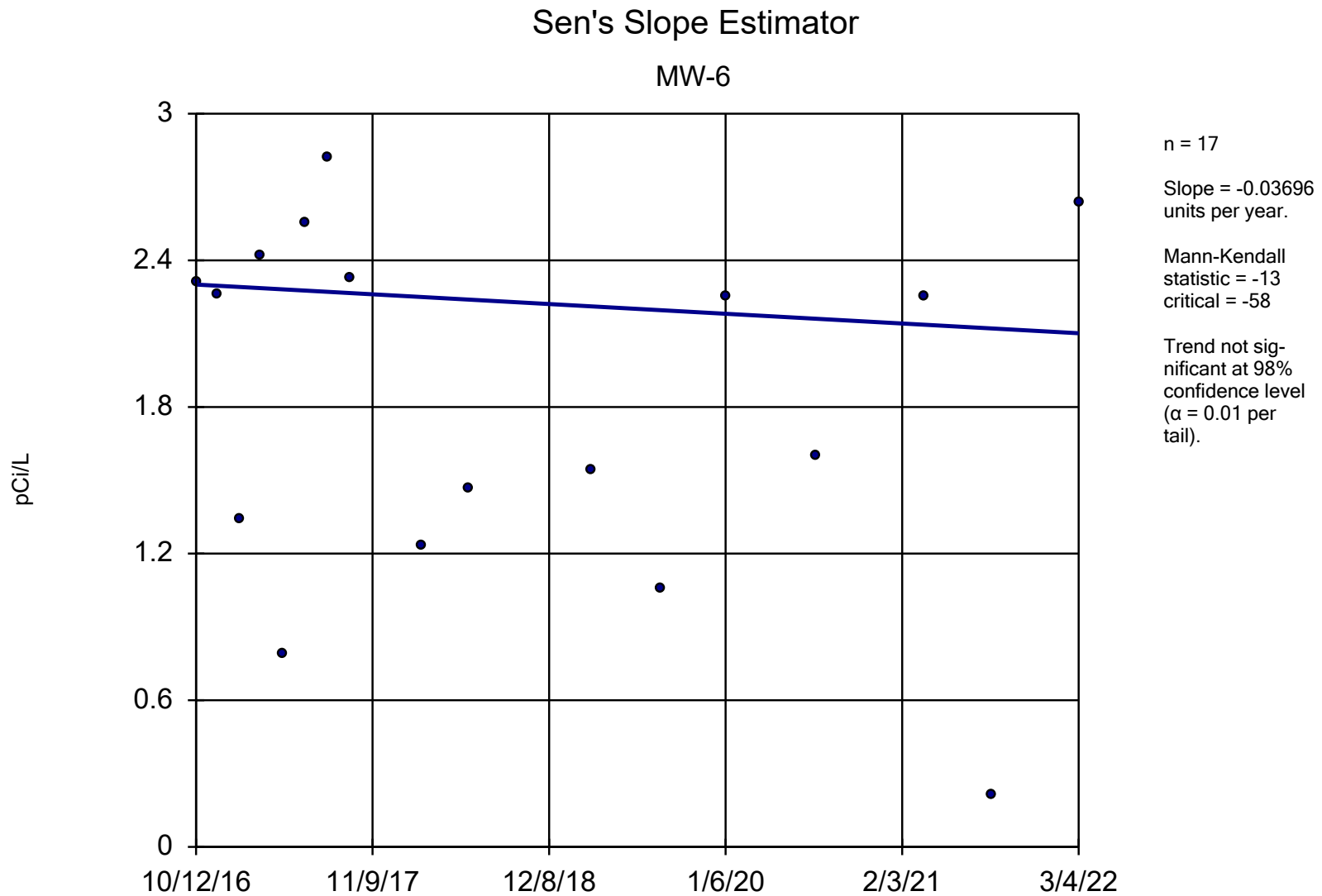
Constituent: Total Radium Analysis Run 4/25/2022 4:24 PM View: FDU Combined

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



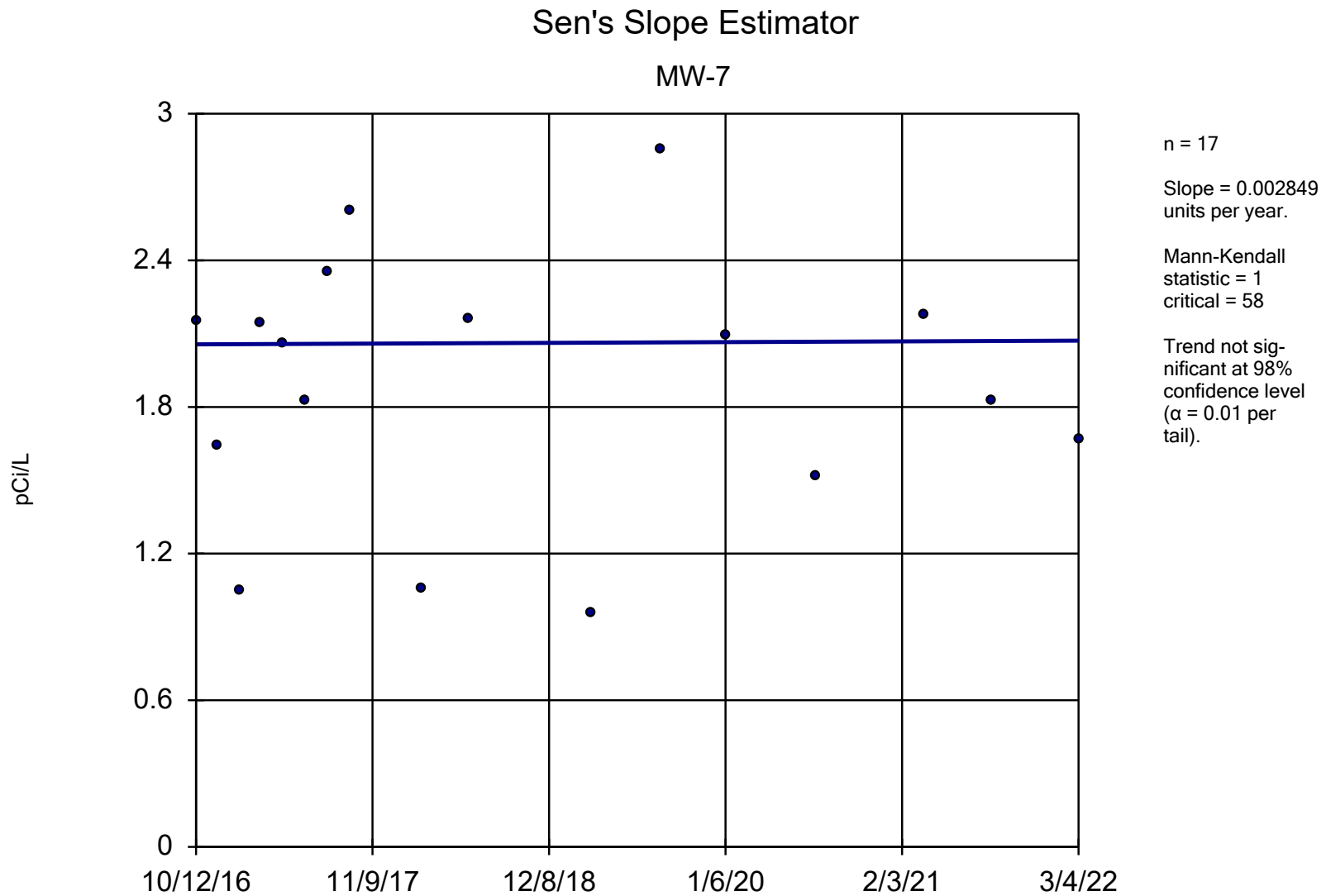
Constituent: Total Radium Analysis Run 4/25/2022 4:24 PM View: FDU Combined

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



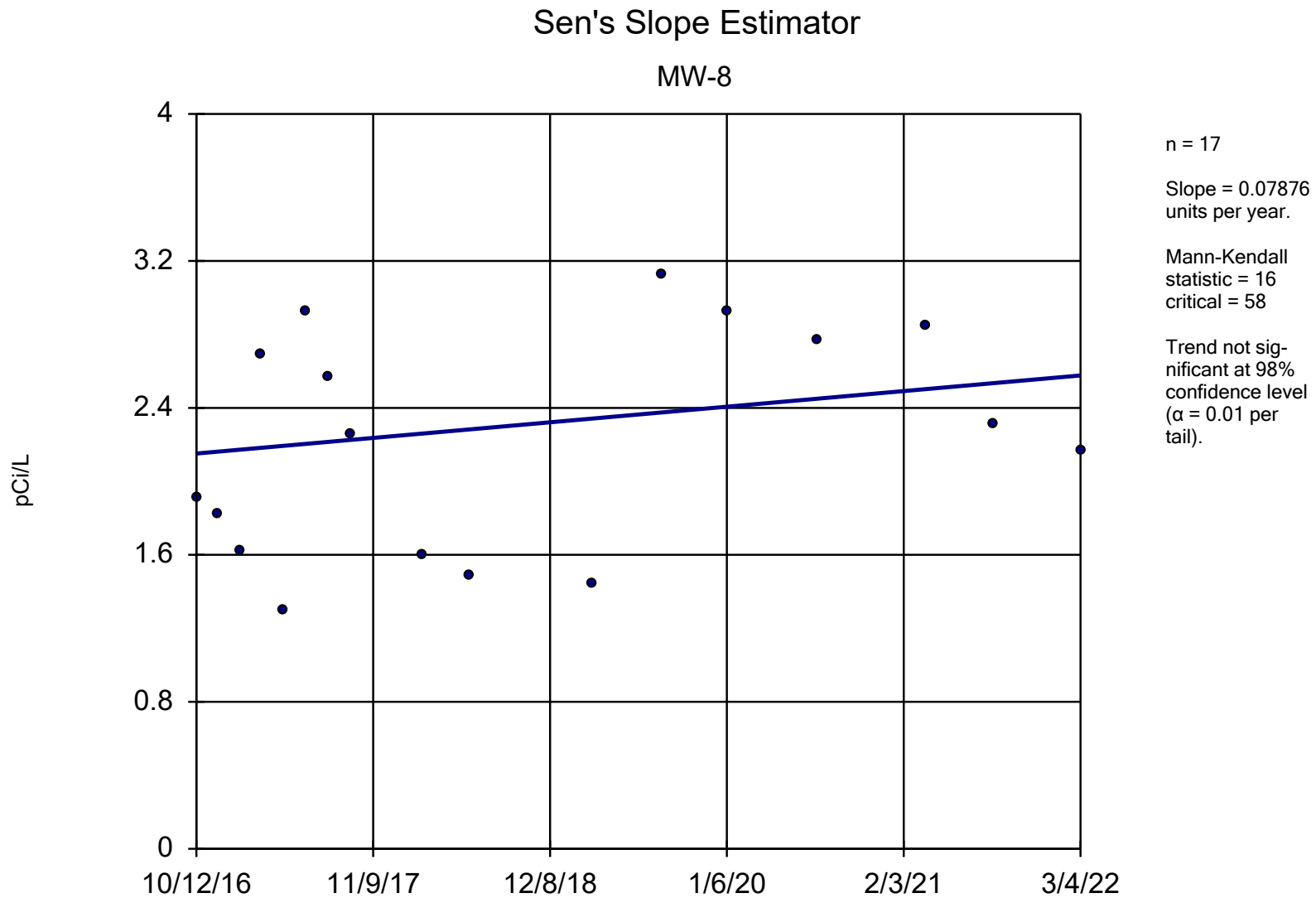
Constituent: Total Radium Analysis Run 4/25/2022 4:24 PM View: FDU Combined

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



Constituent: Total Radium Analysis Run 4/25/2022 4:25 PM View: FDU Combined

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



Constituent: Total Radium Analysis Run 4/25/2022 4:25 PM View: FDU Combined

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 4/25/2022, 4:30 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 [total] (ug/L)	MW-1	4.3	3.2	10	No	17	0	No	0.01	NP (normality)
Arsenic [total] (ug/L)	MW-2	4.122	3.684	10	No	17	0	No	0.01	Param.
Arsenic [total] (ug/L)	MW-3	3.303	2.943	10	No	17	0	sqrt(x)	0.01	Param.
Arsenic [total] (ug/L)	MW-4R (bg)	4.463	3.655	10	No	17	0	No	0.01	Param.
Arsenic [total] (ug/L)	MW-5	4.645	4.325	10	No	17	0	No	0.01	Param.
Arsenic [total] (ug/L)	MW-6	3.559	2.687	10	No	17	0	ln(x)	0.01	Param.
Arsenic [total] (ug/L)	MW-7	3.769	3.411	10	No	17	0	No	0.01	Param.
Arsenic [total] (ug/L)	MW-8	2.688	2.467	10	No	17	0	No	0.01	Param.
Barium [total] (ug/L)	MW-1	148.3	127.6	200	No	17	0	No	0.01	Param.
Barium [total] (ug/L)	MW-2	107.1	97.38	200	No	17	0	No	0.01	Param.
Barium [total] (ug/L)	MW-3	181	166.1	200	No	17	0	No	0.01	Param.
Barium [total] (ug/L)	MW-4R (bg)	133.3	119.5	200	No	17	0	No	0.01	Param.
Barium [total] (ug/L)	MW-5	145.7	129.8	200	No	17	0	No	0.01	Param.
Barium [total] (ug/L)	MW-6	156.6	104.4	200	No	17	0	No	0.01	Param.
Barium [total] (ug/L)	MW-7	126.9	113.6	200	No	17	0	No	0.01	Param.
Barium [total] (ug/L)	MW-8	159.9	142.6	200	No	17	0	No	0.01	Param.
Boron (ug/L)	MW-1	146.6	128.1	197.9	No	17	0	No	0.01	Param.
Boron (ug/L)	MW-2	151	115	197.9	No	16	0	No	0.01	NP (normality)
Boron (ug/L)	MW-3	115	50	197.9	No	17	29.41	No	0.01	NP (Cohens/xfrm)
Boron (ug/L)	MW-4R (bg)	239.1	104	197.9	No	17	29.41	No	0.01	Param.
Boron (ug/L)	MW-5	141	122	197.9	No	17	0	No	0.01	NP (normality)
Boron (ug/L)	MW-6	138	50	197.9	No	17	47.06	No	0.01	NP (normality)
Boron (ug/L)	MW-7	177.6	139.9	197.9	No	17	11.76	x^3	0.01	Param.
Boron (ug/L)	MW-8	161	120	197.9	No	15	0	No	0.01	NP (normality)
Calcium (mg/L)	MW-1	107.7	101.7	83.02	Yes	17	0	No	0.01	Param.
Calcium (mg/L)	MW-2	115	98	83.02	Yes	17	0	No	0.01	NP (normality)
Calcium (mg/L)	MW-3	101.4	91.26	83.02	Yes	17	0	No	0.01	Param.
Calcium (mg/L)	MW-4R (bg)	92.21	78.89	83.02	No	17	0	No	0.01	Param.
Calcium (mg/L)	MW-5	112.3	100.3	83.02	Yes	17	0	No	0.01	Param.
Calcium (mg/L)	MW-6	90.86	63.89	83.02	No	17	0	x^2	0.01	Param.
Calcium (mg/L)	MW-7	102.4	92.25	83.02	Yes	17	0	No	0.01	Param.
Calcium (mg/L)	MW-8	98.3	87.19	83.02	Yes	17	0	No	0.01	Param.
Chloride (mg/L)	MW-1	24.5	10.9	250	No	17	0	No	0.01	NP (normality)
Chloride (mg/L)	MW-2	19.21	13.94	250	No	16	0	sqrt(x)	0.01	Param.
Chloride (mg/L)	MW-3	41.3	27.5	250	No	17	0	No	0.01	NP (normality)
Chloride (mg/L)	MW-4R (bg)	29.43	17.24	250	No	16	0	No	0.01	Param.
Chloride (mg/L)	MW-5	29.95	16.78	250	No	17	0	No	0.01	Param.
Chloride (mg/L)	MW-6	70.13	37.4	250	No	16	0	ln(x)	0.01	Param.
Chloride (mg/L)	MW-7	89	19.1	250	No	17	0	No	0.01	NP (normality)
Chloride (mg/L)	MW-8	32.61	23.07	250	No	17	0	No	0.01	Param.
Fluoride (mg/L)	MW-1	1.4	1.2	4	No	17	0	No	0.01	NP (normality)
Fluoride (mg/L)	MW-2	1.1	0.9168	4	No	17	0	No	0.01	Param.
Fluoride (mg/L)	MW-3	0.8216	0.7256	4	No	17	0	No	0.01	Param.
Fluoride (mg/L)	MW-4R (bg)	0.9265	0.7901	4	No	17	0	No	0.01	Param.
Fluoride (mg/L)	MW-5	1.187	1.021	4	No	17	0	No	0.01	Param.
Fluoride (mg/L)	MW-6	0.6032	0.5058	4	No	17	0	No	0.01	Param.
Fluoride (mg/L)	MW-7	0.9083	0.8149	4	No	17	0	No	0.01	Param.
Fluoride (mg/L)	MW-8	0.8283	0.7145	4	No	17	0	No	0.01	Param.
Lithium (ug/L)	MW-1	35.68	31.57	40	No	17	0	No	0.01	Param.
Lithium (ug/L)	MW-2	31.7	26.7	40	No	16	0	No	0.01	NP (normality)

Confidence Interval

Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater Printed 4/25/2022, 4:30 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
Lithium (ug/L)	MW-3	29.77	26.4	40	No	17	0	No	0.01	Param.
Lithium (ug/L)	MW-4R (bg)	27.77	23.49	40	No	17	0	x^2	0.01	Param.
Lithium (ug/L)	MW-5	31.48	26.72	40	No	17	0	ln(x)	0.01	Param.
Lithium (ug/L)	MW-6	28.34	19.9	40	No	17	0	No	0.01	Param.
Lithium (ug/L)	MW-7	30.21	26.17	40	No	17	0	No	0.01	Param.
Lithium (ug/L)	MW-8	29.95	26.52	40	No	16	0	sqrt(x)	0.01	Param.
Molybdenum (ug/L)	MW-1	8.588	7.566	100	No	17	0	No	0.01	Param.
Molybdenum (ug/L)	MW-2	9.3	7.5	100	No	17	0	No	0.01	NP (normality)
Molybdenum (ug/L)	MW-3	13.38	11.09	100	No	17	0	No	0.01	Param.
Molybdenum (ug/L)	MW-4R (bg)	7.943	5.369	100	No	17	0	x^(1/3)	0.01	Param.
Molybdenum (ug/L)	MW-5	6.73	5.358	100	No	17	0	No	0.01	Param.
Molybdenum (ug/L)	MW-6	8.597	6.627	100	No	17	0	No	0.01	Param.
Molybdenum (ug/L)	MW-7	8.846	8.016	100	No	17	0	No	0.01	Param.
Molybdenum (ug/L)	MW-8	8.6	6.9	100	No	16	0	No	0.01	NP (normality)
pH (Std. Units)	MW-1	7.289	6.962	8.5	No	17	0	No	0.005	Param.
pH (Std. Units)	MW-2	7.202	6.913	8.5	No	17	0	No	0.005	Param.
pH (Std. Units)	MW-3	7.235	6.936	8.5	No	17	0	x^(1/3)	0.005	Param.
pH (Std. Units)	MW-4R (bg)	7.349	6.918	8.5	No	17	0	No	0.005	Param.
pH (Std. Units)	MW-5	7.38	7.061	8.5	No	17	0	No	0.005	Param.
pH (Std. Units)	MW-6	7.2	6.8	8.5	No	17	0	No	0.01	NP (normality)
pH (Std. Units)	MW-7	7.252	6.958	8.5	No	17	0	No	0.005	Param.
pH (Std. Units)	MW-8	7.254	6.913	8.5	No	17	0	No	0.005	Param.
Selenium [total] (ug/L)	MW-1	13.14	9.884	50	No	17	0	No	0.01	Param.
Selenium [total] (ug/L)	MW-2	14.49	11.69	50	No	17	0	No	0.01	Param.
Selenium [total] (ug/L)	MW-3	9.125	7.691	50	No	17	0	No	0.01	Param.
Selenium [total] (ug/L)	MW-4R (bg)	8.511	6.576	50	No	16	0	No	0.01	Param.
Selenium [total] (ug/L)	MW-5	8.657	7.26	50	No	17	0	x^2	0.01	Param.
Selenium [total] (ug/L)	MW-6	9.425	5.391	50	No	17	0	No	0.01	Param.
Selenium [total] (ug/L)	MW-7	10.69	8.3	50	No	17	0	No	0.01	Param.
Selenium [total] (ug/L)	MW-8	12.55	10.21	50	No	17	0	No	0.01	Param.
Sulfate (mg/L)	MW-1	52.14	41.54	250	No	17	0	No	0.01	Param.
Sulfate (mg/L)	MW-2	61.44	41.44	250	No	16	0	sqrt(x)	0.01	Param.
Sulfate (mg/L)	MW-3	63.1	46.9	250	No	17	0	No	0.01	NP (normality)
Sulfate (mg/L)	MW-4R (bg)	42.11	35.25	250	No	17	0	x^2	0.01	Param.
Sulfate (mg/L)	MW-5	41.2	36.3	250	No	17	0	No	0.01	NP (normality)
Sulfate (mg/L)	MW-6	52.54	27.74	250	No	17	0	No	0.01	Param.
Sulfate (mg/L)	MW-7	49.76	38.14	250	No	17	0	No	0.01	Param.
Sulfate (mg/L)	MW-8	50.9	35.1	250	No	17	0	No	0.01	NP (normality)
Total Dissolved Solids (mg/L)	MW-1	505.9	448.6	500	No	17	0	sqrt(x)	0.01	Param.
Total Dissolved Solids (mg/L)	MW-2	474	426	500	No	17	0	No	0.01	NP (normality)
Total Dissolved Solids (mg/L)	MW-3	480.1	419	500	No	17	0	No	0.01	Param.
Total Dissolved Solids (mg/L)	MW-4R (bg)	435.2	381.3	500	No	17	0	No	0.01	Param.
Total Dissolved Solids (mg/L)	MW-5	494.9	448.9	500	No	17	0	x^2	0.01	Param.
Total Dissolved Solids (mg/L)	MW-6	525.9	346.7	500	No	17	0	No	0.01	Param.
Total Dissolved Solids (mg/L)	MW-7	535.4	438.8	500	No	17	0	No	0.01	Param.
Total Dissolved Solids (mg/L)	MW-8	468	396	500	No	17	0	No	0.01	NP (normality)
Total Radium (pCi/L)	MW-1	2.73	1.791	5	No	17	0	No	0.01	Param.
Total Radium (pCi/L)	MW-2	2.033	1.377	5	No	17	0	No	0.01	Param.
Total Radium (pCi/L)	MW-3	2.991	2.071	5	No	17	0	No	0.01	Param.
Total Radium (pCi/L)	MW-4R (bg)	2.494	1.609	5	No	17	0	No	0.01	Param.

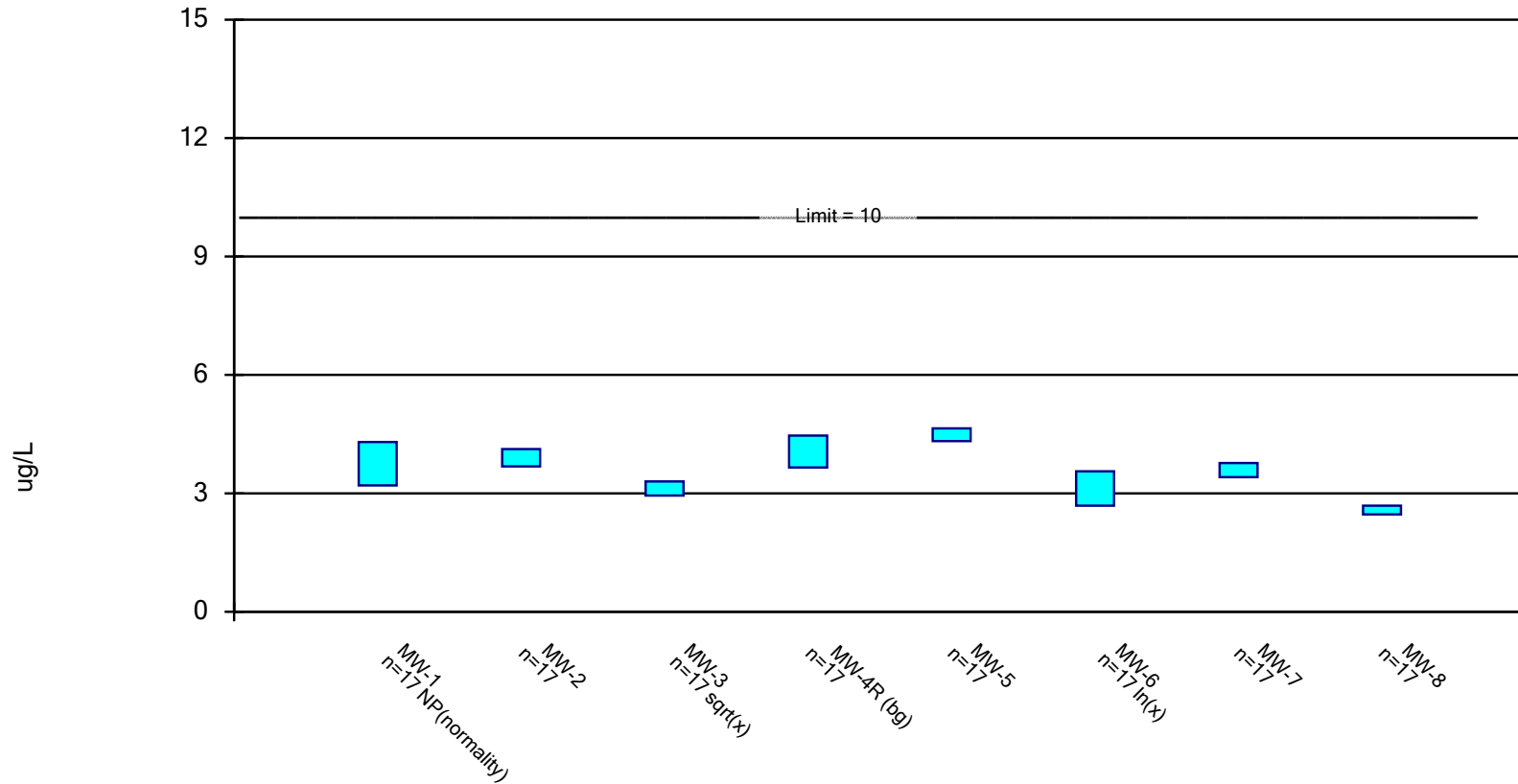
Confidence Interval

Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater Printed 4/25/2022, 4:30 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>
Total Radium (pCi/L)	MW-5	2.741	2.091	5	No	17	0	No	0.01	Param.
Total Radium (pCi/L)	MW-6	2.289	1.366	5	No	17	0	No	0.01	Param.
Total Radium (pCi/L)	MW-7	2.223	1.557	5	No	17	0	No	0.01	Param.
Total Radium (pCi/L)	MW-8	2.601	1.843	5	No	17	0	No	0.01	Param.

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.

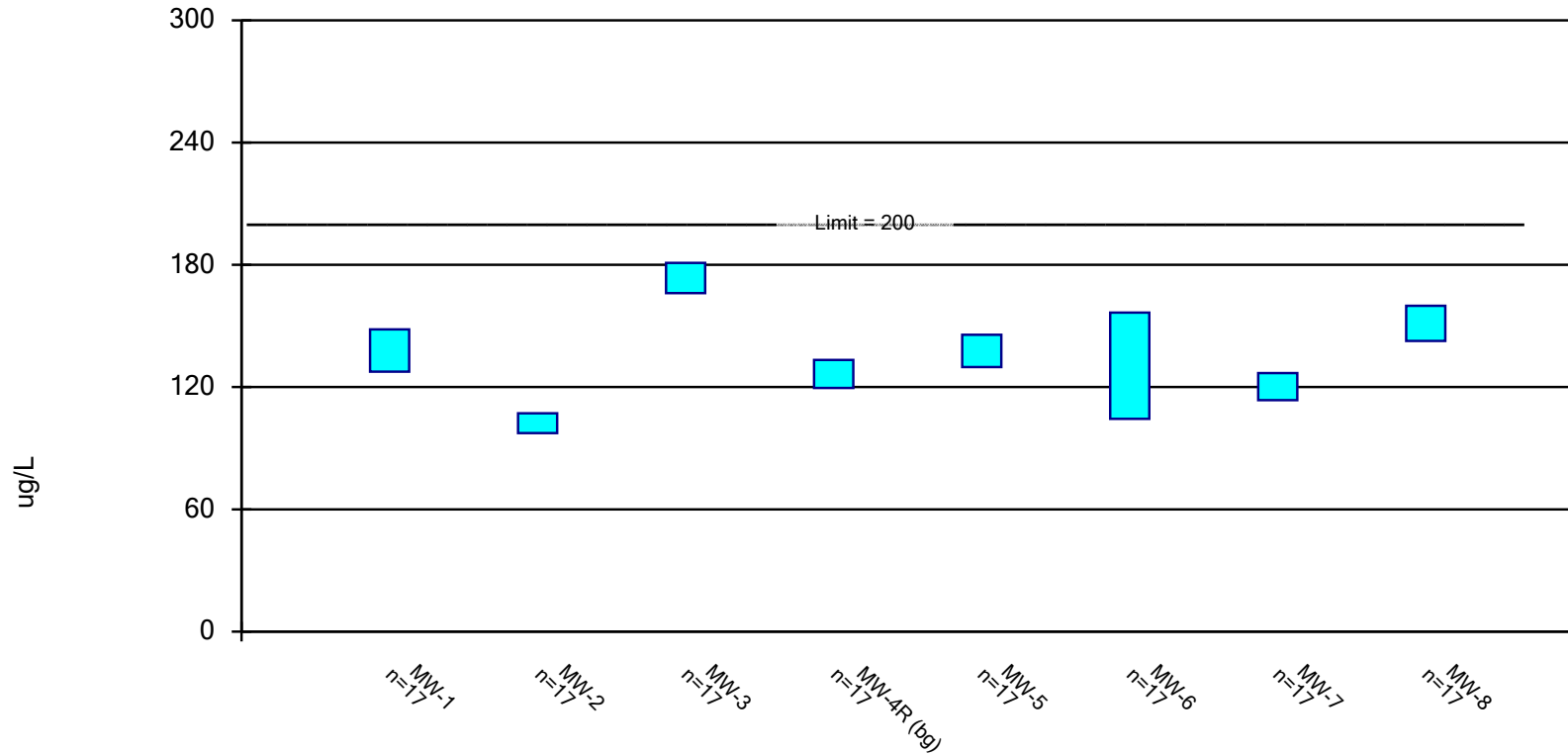


Constituent: Arsenic [total] Analysis Run 4/25/2022 4:28 PM View: FDU Combined

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.

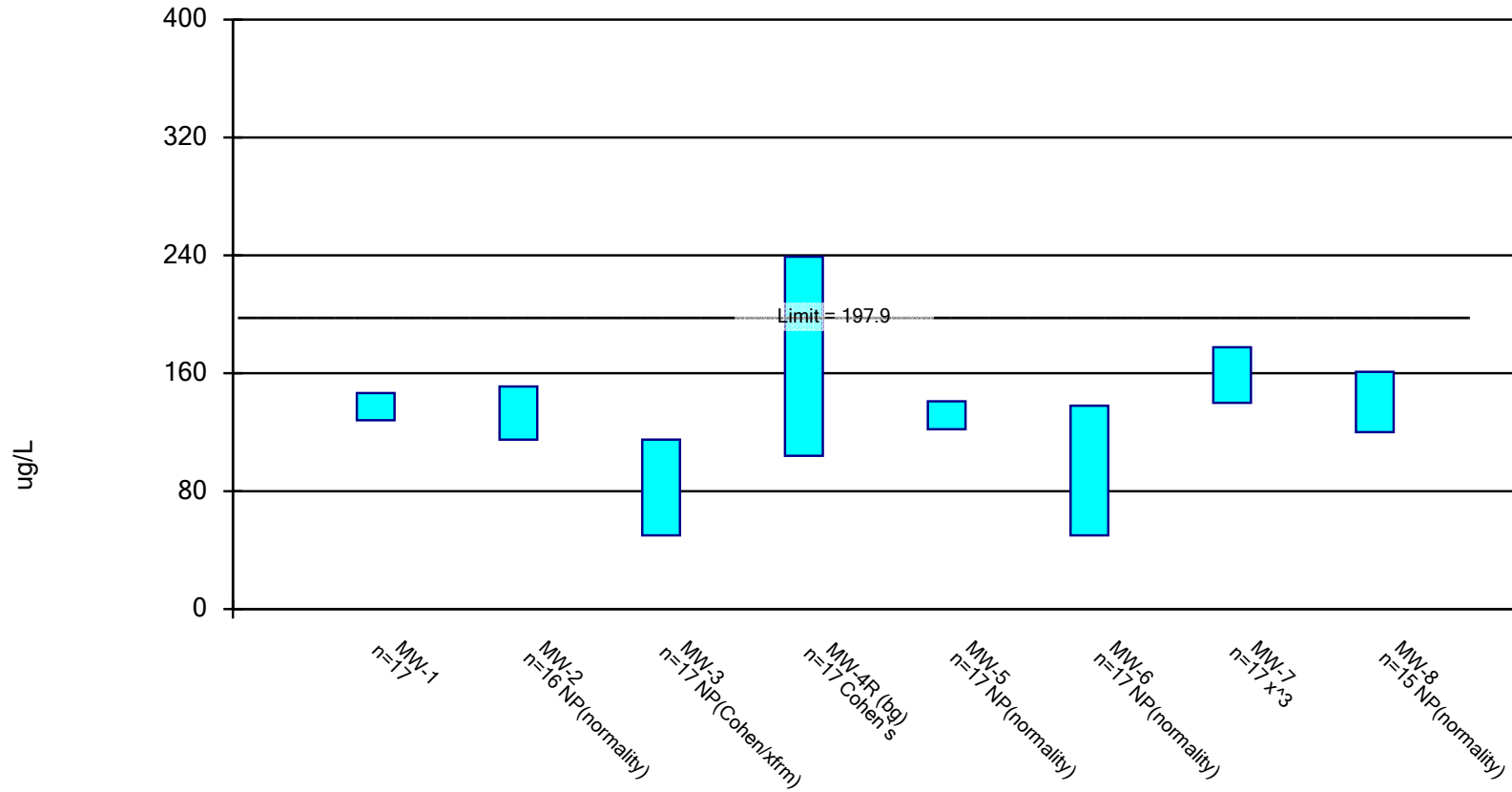


Constituent: Barium [total] Analysis Run 4/25/2022 4:28 PM View: FDU Combined

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.

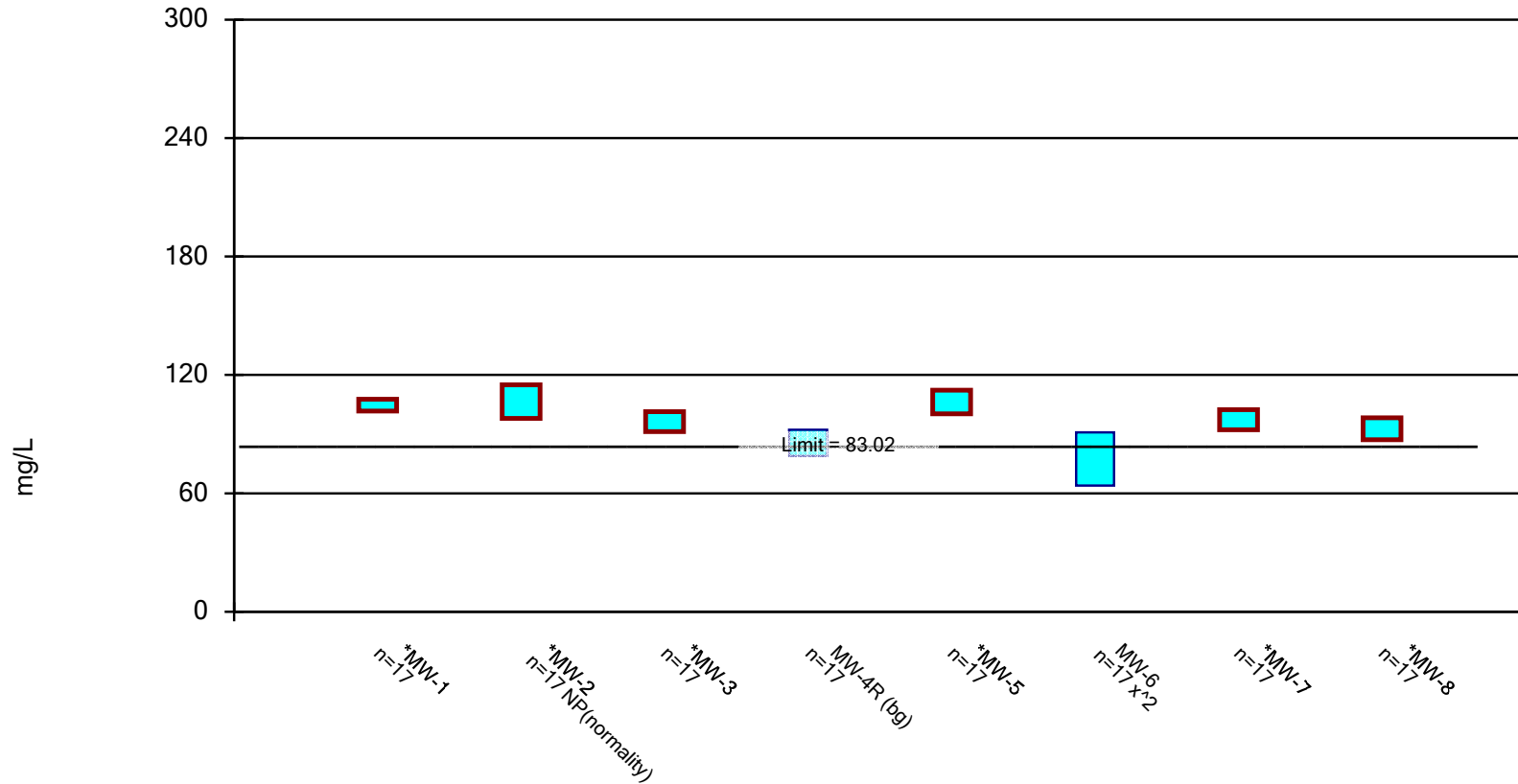


Constituent: Boron Analysis Run 4/25/2022 4:28 PM View: FDU Combined

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

Parametric and Non-Parametric (NP) Confidence Interval

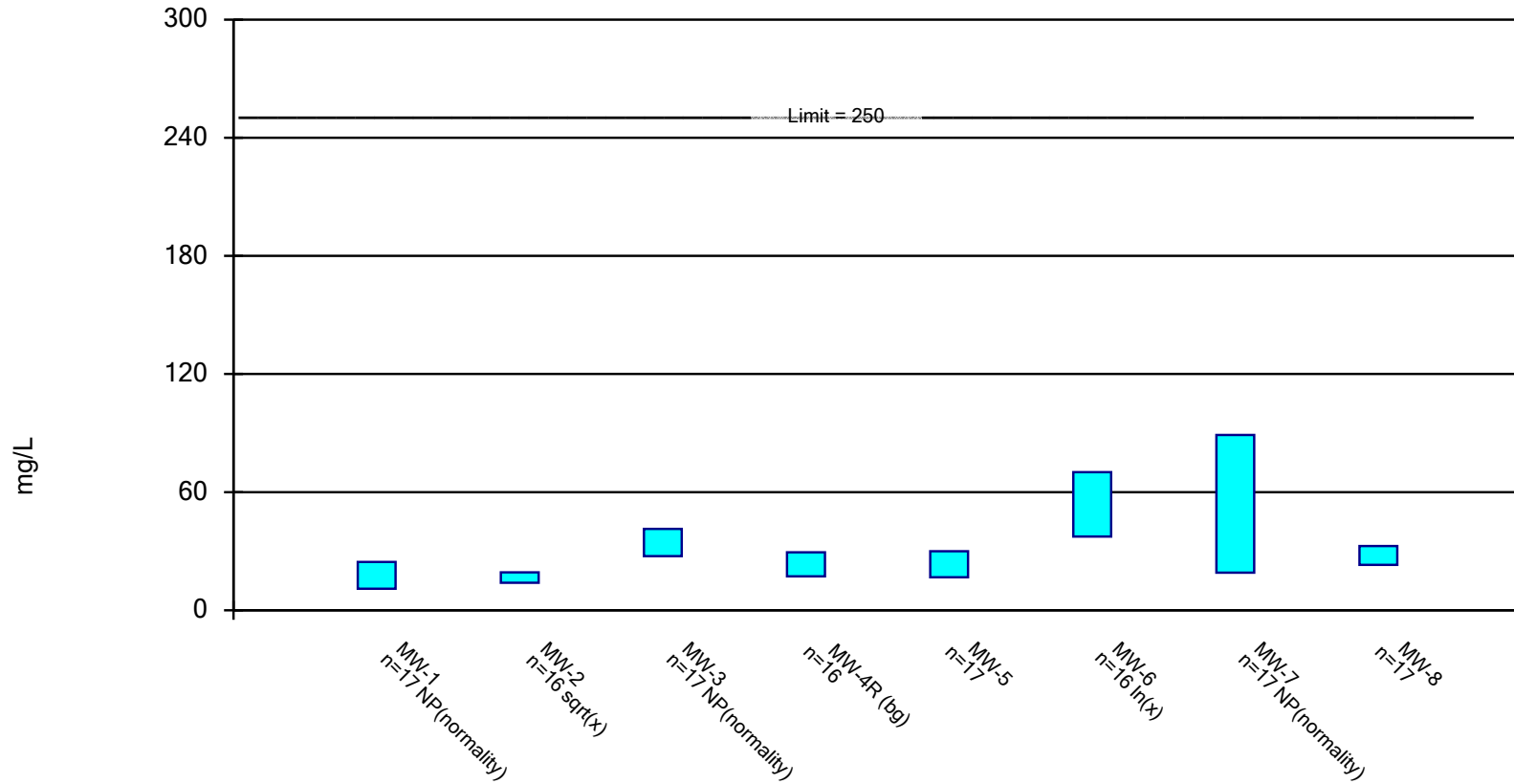
Compliance limit is exceeded.* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Calcium Analysis Run 4/25/2022 4:28 PM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Parametric and Non-Parametric (NP) Confidence Interval

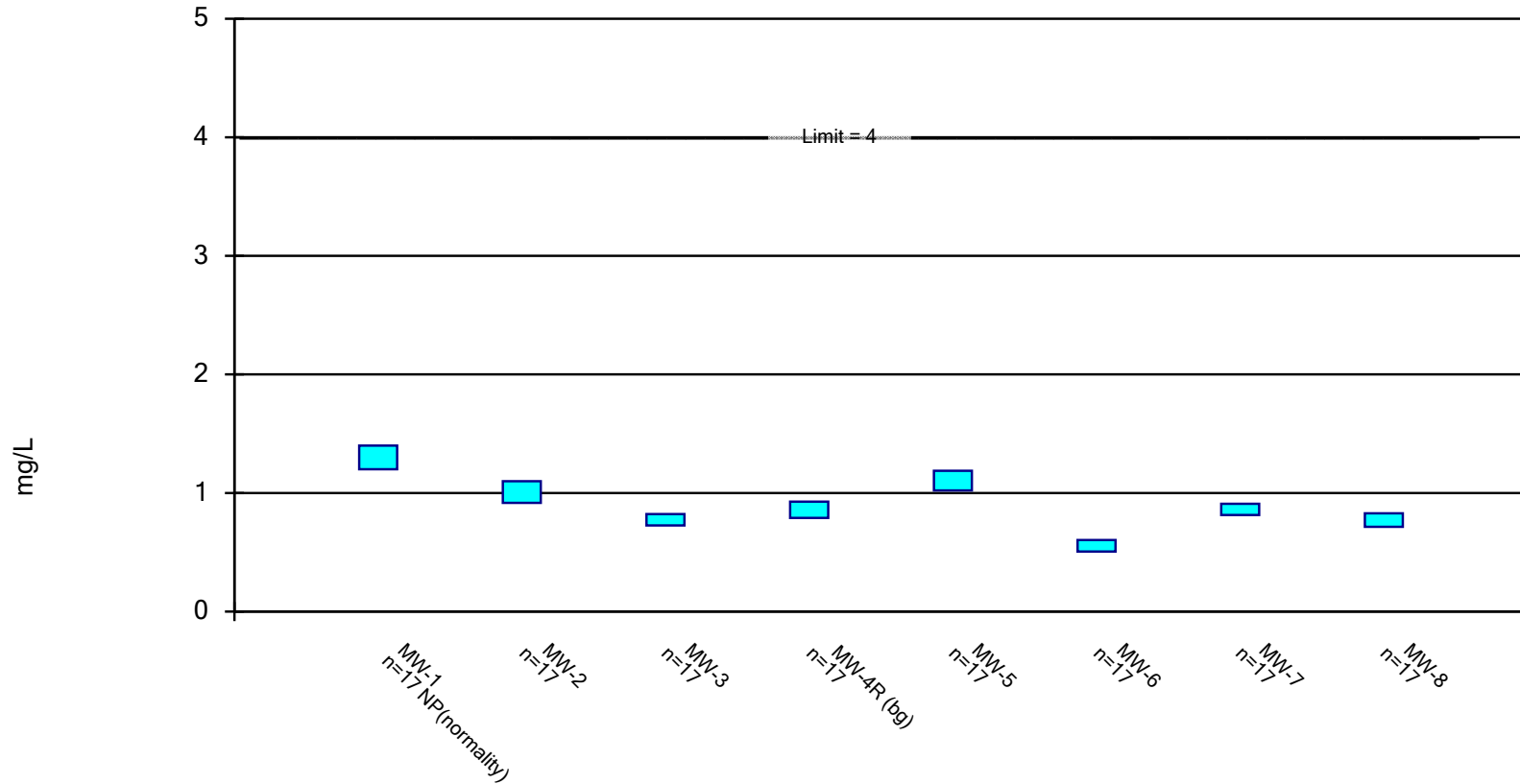
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Chloride Analysis Run 4/25/2022 4:28 PM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Parametric and Non-Parametric (NP) Confidence Interval

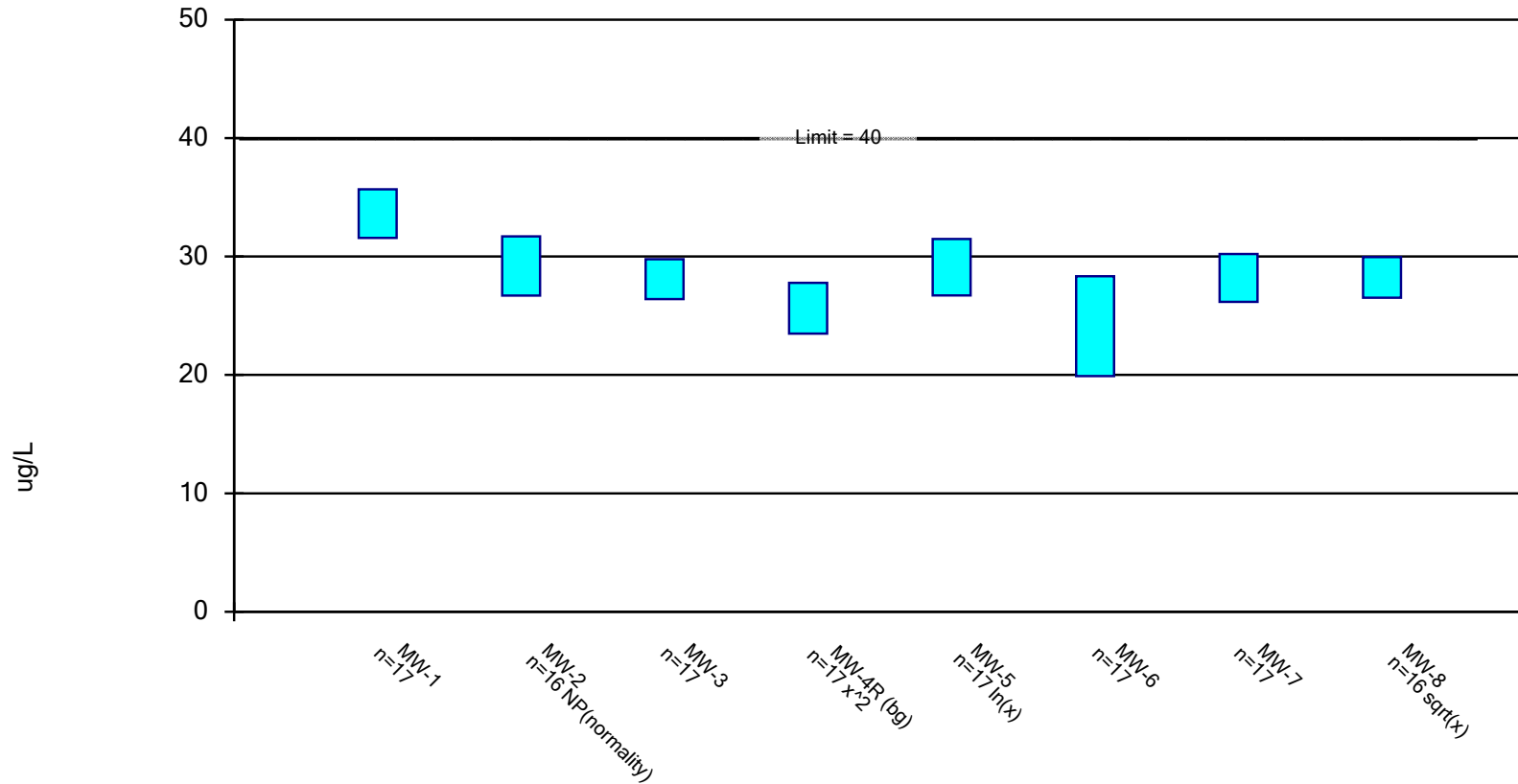
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Fluoride Analysis Run 4/25/2022 4:28 PM View: FDU Combined
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.

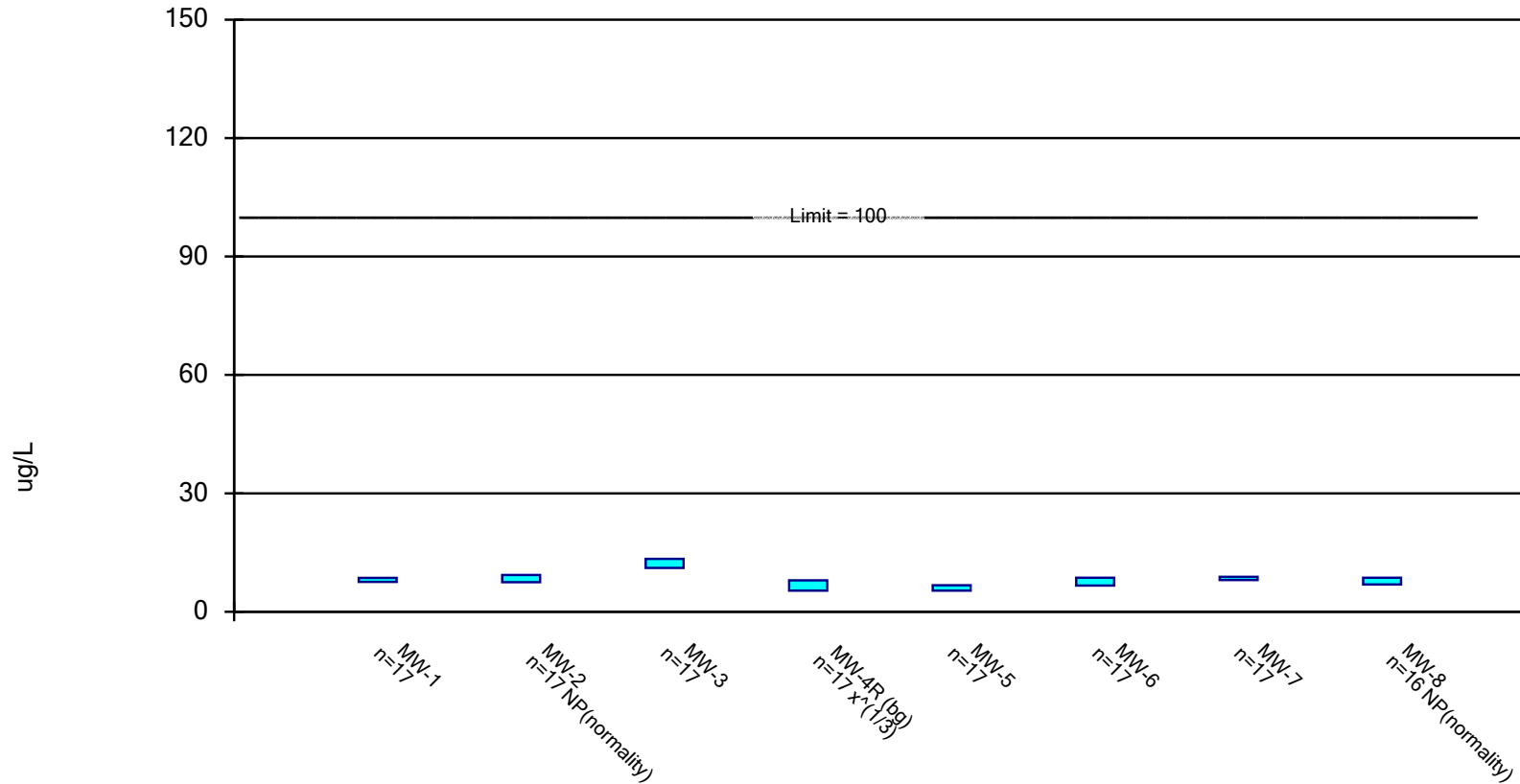


Constituent: Lithium Analysis Run 4/25/2022 4:28 PM View: FDU Combined

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.

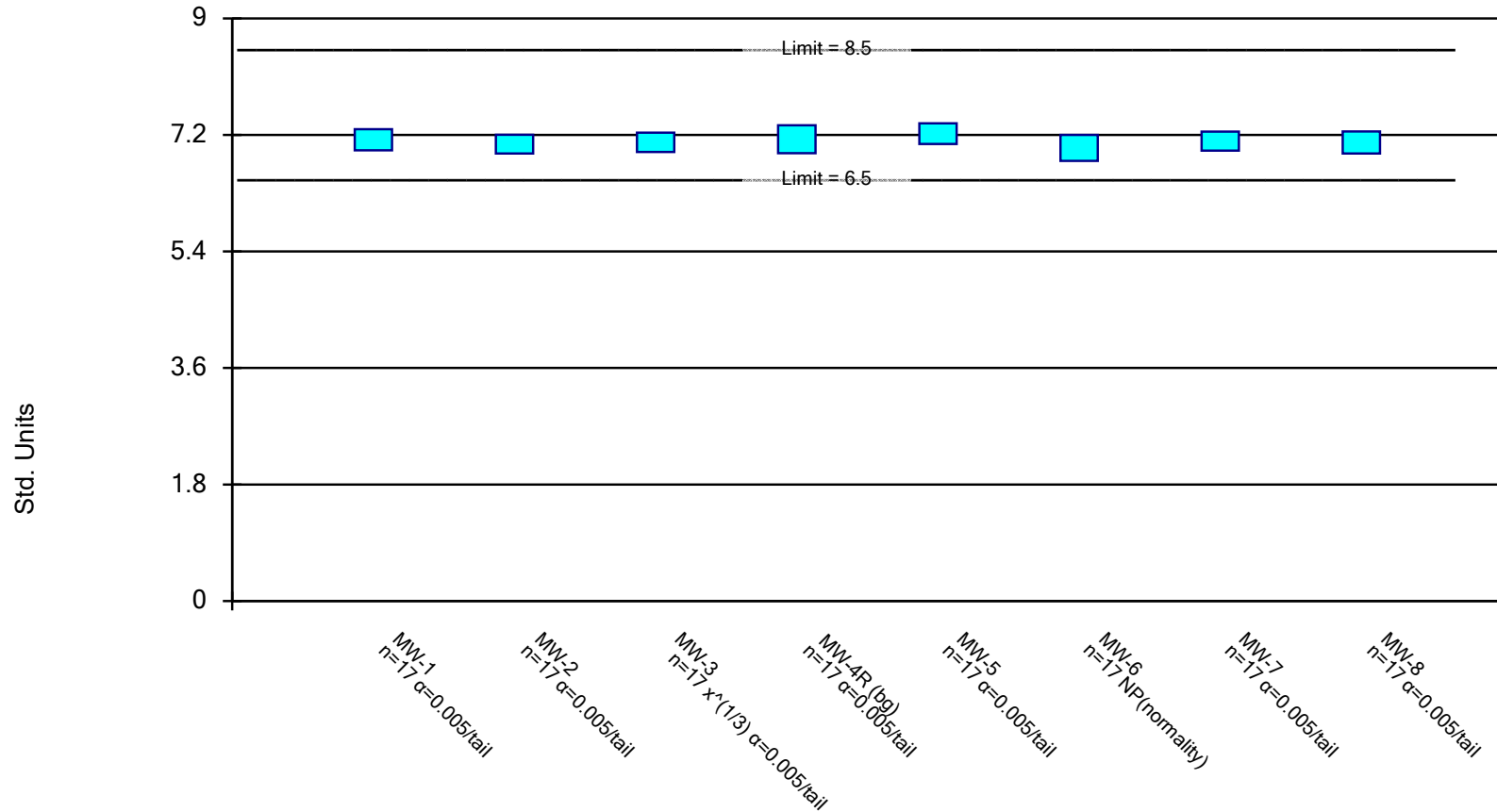


Constituent: Molybdenum Analysis Run 4/25/2022 4:28 PM View: FDU Combined

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 except as noted. Normality Test: Shapiro Wilk, alpha based on n.

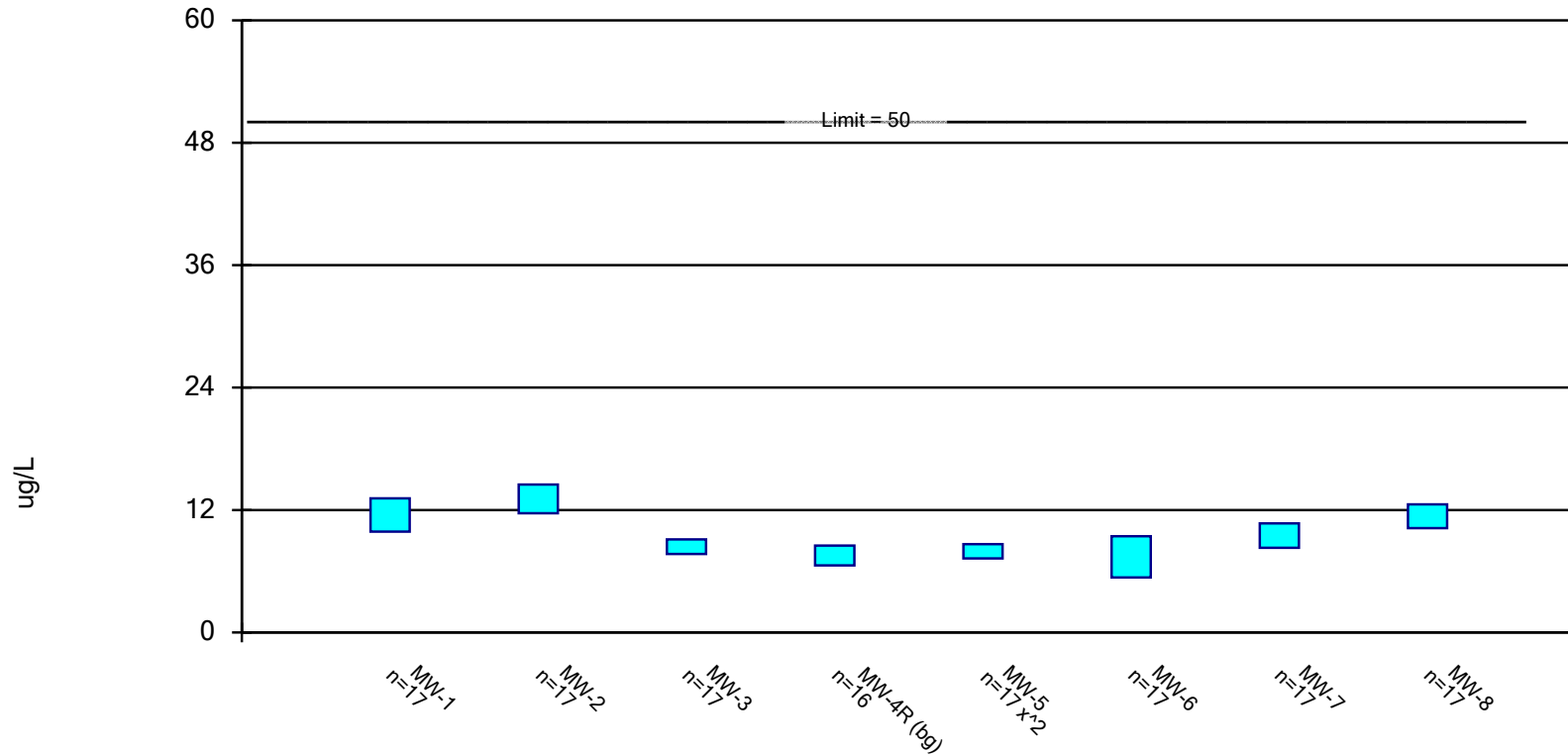


Constituent: pH Analysis Run 4/25/2022 4:28 PM View: FDU Combined

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.

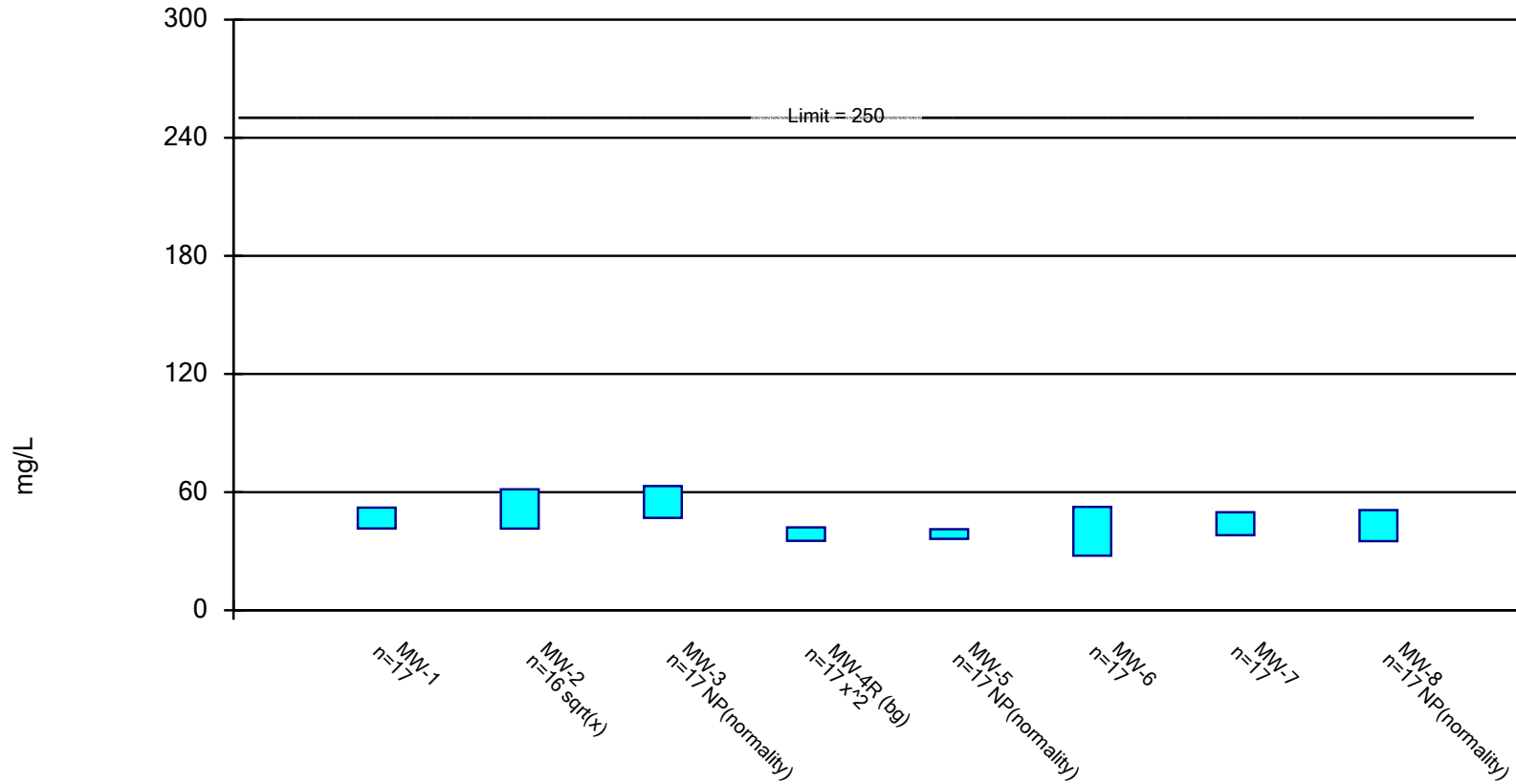


Constituent: Selenium [total] Analysis Run 4/25/2022 4:28 PM View: FDU Combined

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.

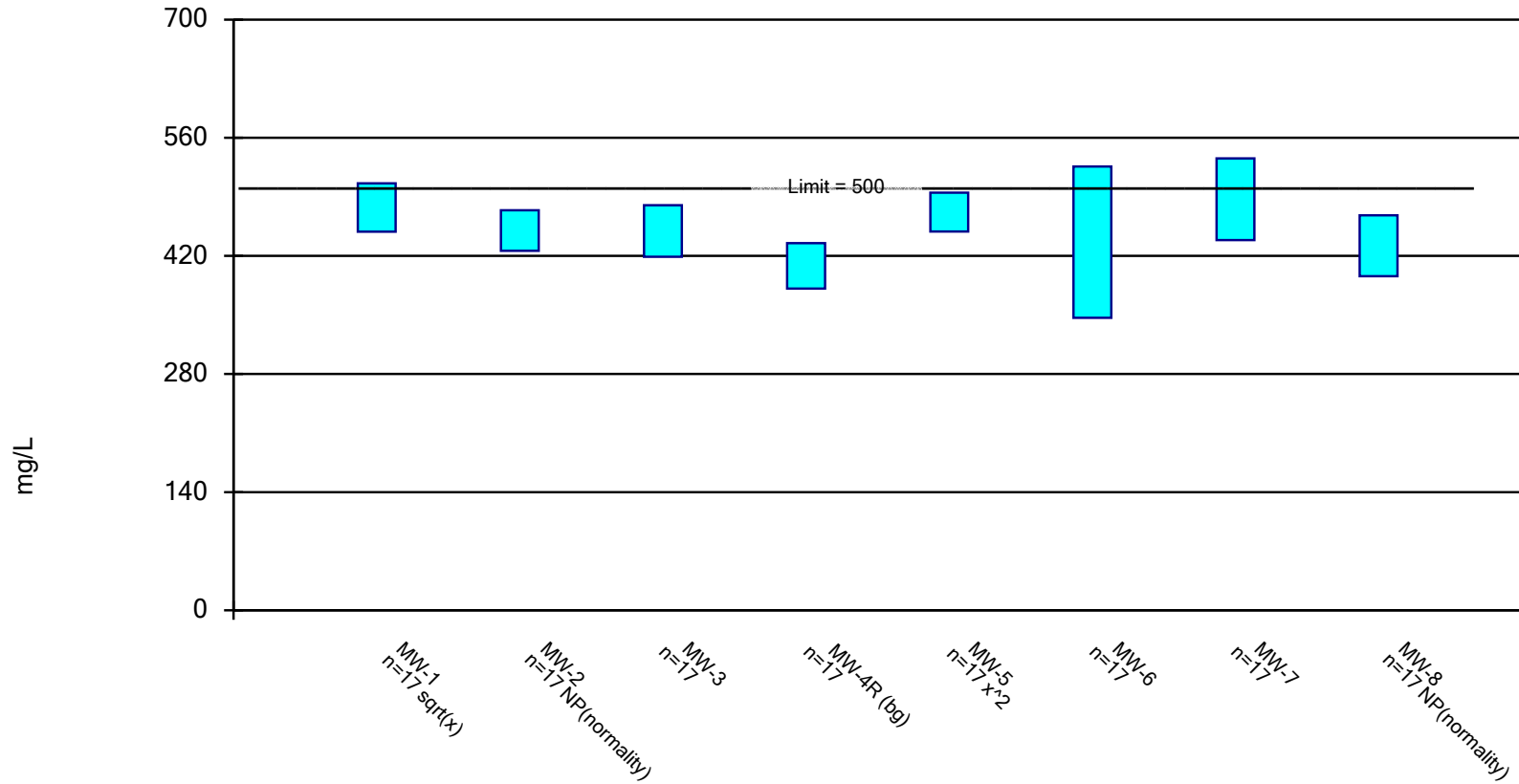


Constituent: Sulfate Analysis Run 4/25/2022 4:28 PM View: FDU Combined

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.

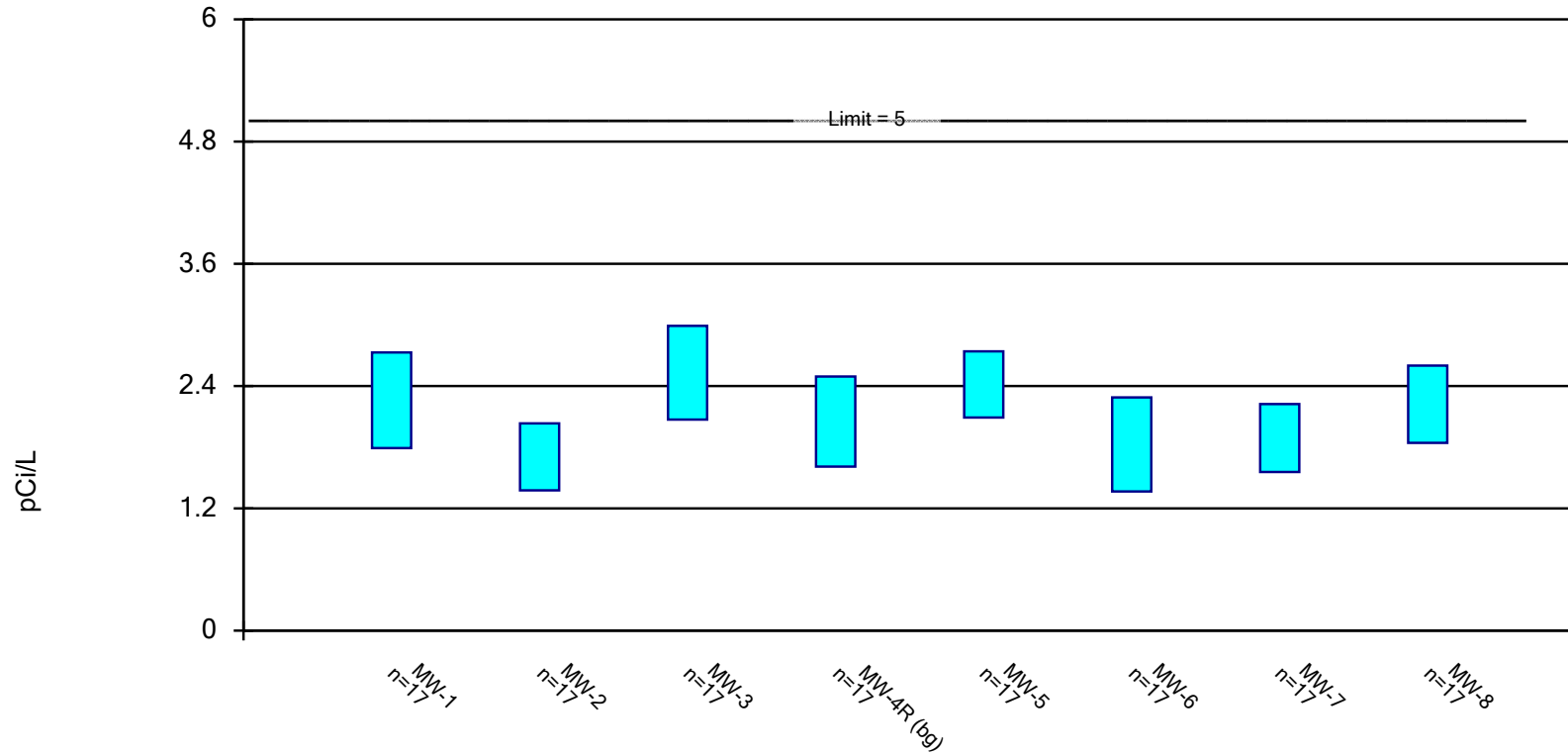


Constituent: Total Dissolved Solids Analysis Run 4/25/2022 4:29 PM View: FDU Combined

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 4/25/2022 4:29 PM View: FDU Combined

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

B Supporting information

B.1 Field Data Sheets

Field Data Sheet

Project Name: FDU GW Sampling
 Project Location: Fremont, NE
 Project Number: 27219045.02

Monitoring Point: MW-4R
 Date(s): 3/4/22

Field Team Members

Name: CJ Affiliation: SCS Engineers
 Name: EW Affiliation: SCS Engineers

Weather Conditions

Mean Temp: 37 °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 Locks

Yes	No
<u>X</u>	

 Casing ↓ Protective Casing

Yes	No
	<u>X</u>

 Protective Casing ↓ Well

Yes	No
	<u>X</u>

 Reference Mark/Identification ↓

Groundwater Level Measurements

Date/Time Measured: 3/4/22 0950 Total Depth: 28.00 feet below TOC
 Static Water Level: 12.69 feet below TOC
 TD - SWL: 15.31 water column (ft.)

Purging Activities

Purged By: C Joyce Purge Date: 3/4/22
 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: 15.31 x 10 = 153.1 Min Purge Volume: 200 mL
 Initial Parameter Readings: Temp (°C) 12.19 pH 8.90 ORP 185
 Sp. Cond. 0.759 Turbidity 0.0 DO 9.54
 Physical appearance of purge water: Clear

Purge Time	Cumulative Purge Vol. (mL)	Purge Rate (mL/m)	10%		0.2 SU		10%		Water Level (ft below TOC)
			Temp (°C)	pH	ORP (mV)	Specific Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	
<u>0959</u>	<u>1000</u>	<u>500</u>	<u>12.11</u>	<u>8.02</u>	<u>187</u>	<u>0.74</u>	<u>0.0</u>	<u>4.55</u>	<u>12.69</u>
<u>1002</u>	<u>2500</u>	<u>500</u>	<u>12.10</u>	<u>7.59</u>	<u>189</u>	<u>0.715</u>	<u>0.0</u>	<u>3.99</u>	<u>12.69</u>
<u>1005</u>	<u>4000</u>	<u>500</u>	<u>12.14</u>	<u>7.52</u>	<u>186</u>	<u>0.714</u>	<u>0.0</u>	<u>3.91</u>	<u>12.69</u>

Sampling Activities

Sampled By: C Joyce Sample Date/Time: 3/4/22 1005
 Sample Method: Bailer Dedicated Pump Non-Dedicated Pump Peristaltic Pump (circle one)
 Sample Parameters: Temp (°C) 12.19 pH 7.52 ORP 186
 Sp. Cond. 0.714 Turbidity 0.0 DO 3.91
 Water Level 12.69 (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): 3/4/22

Field Team Members

Name: CT Affiliation: SCS Engineers
 Name: EW Affiliation: SCS Engineers

Weather Conditions

Mean Temp: 37 °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: 3/4/22 1019
 Total Depth: 28.00 feet below TOC
 Static Water Level: 13.73 feet below TOC
 TD - SWL: 14.27 water column (ft.)

Purging Activities

Purged By: C JOICE Purge Date: 3/4/22
 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: 14.27 x 10 = 142.7 Min Purge Volume: 150 mL
 Initial Parameter Readings: Temp (°C) 12.65 pH 7.23 ORP 179
 Sp. Cond. 0.768 Turbidity 0.0 DO 5.10
 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)
10:27	800	400	12.51	7.08	182	0.760	28.0	2.12	13.70
10:30	2000	400	13.63	6.99	185	0.759	30.40	1.84	13.72
10:33	3200	400	13.64	6.99	185	0.759	39.5	1.81	13.74

Sampling Activities

Sampled By: C JOICE Sample Date/Time: 3/4/22 1033
 Sample Method: Bailer Dedicated Pump Non-Dedicated Pump Peristaltic Pump (circle one)
 Sample Parameters: Temp (°C) 13.64 pH 6.99 ORP 135
 Sp. Cond. 0.759 Turbidity 39.5 DO 1.81
 Water Level 13.74 (feet below TOC)

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

PUMP CAP NOT FITTING CORRECTLY. (CLOSE)

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): 3/4/22

Field Team Members

Name: C J Affiliation: SCS Engineers
 Name: CU Affiliation: SCS Engineers

Weather Conditions

Mean Temp: 39 °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 Locks

Yes	No
<u>X</u>	

 Casing ↓ Protective Casing Well

	<u>X</u>

 Protective Casing
 Reference Mark/Identification

Groundwater Level Measurements

Date/Time Measured: 3/4/22 1647 Total Depth: 28.50 feet below TOC
 Static Water Level: 12.81 feet below TOC
 TD - SWL: 15.11 water column (ft.)

Purging Activities

Purged By: C Joyce Purge Date: 3/4/22
 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: 15.11 x 10 = 151.1 Min Purge Volume: 200 mL
 Initial Parameter Readings: Temp (°C) 12.24 pH 7.15 ORP 172
 Sp. Cond. 0.706 Turbidity 3.41 DO 11.23
 Physical appearance of purge water: Black particulates in H₂O

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)
1052	1000	500	12.67	7.00	175	0.728	9.4	8.47	12.85
1053	2500	500	12.79	7.02	180	0.728	10.9	8.55	12.79
1053	4000	500	12.80	7.04	175	0.728	10.8	8.64	12.79

Sampling Activities

Sampled By: C Joyce Sample Date/Time: 3/4/22 1053
 Sample Method: Bailer Dedicated Pump Non-Dedicated Pump Peristaltic Pump (circle one)
 Sample Parameters: Temp (°C) 12.80 pH 7.04 ORP 175
 Sp. Cond. 0.728 Turbidity 10.8 DO 8.64
 Water Level 12.79 (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: AW-1

Date(s): 3/4/22

Field Team Members

Name: CJ Affiliation: SCS Engineers
 Name: EW Affiliation: SCS Engineers

Weather Conditions

Mean Temp: 39 °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 Locks

Yes	No
<u>X</u>	
	<u>X</u>

 Casing ↓ Protective Casing Well
 Reference Mark/Identification ↓

Groundwater Level Measurements

Date/Time Measured: 3/4/22 1110 Total Depth: 29.05 feet below TOC
 Static Water Level: 16.32 feet below TOC
 TD - SWL: 12.68 water column (ft.)

Purging Activities

Purged By: C JOYCE Purge Date: 3/4/22
 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: 12.68 - 10 = 12.68 Min Purge Volume: 150 mL
 Initial Parameter Readings: Temp (°C) 12.48 pH 7.07 ORP 167
 Sp. Cond. 0.732 Turbidity 8.5 DO 6.45
 Physical appearance of purge water: clear

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)
1113	<u>800</u>	<u>300</u>	<u>12.75</u>	<u>7.07</u>	<u>170</u>	<u>0.723</u>	<u>7.6</u>	<u>5.63</u>	<u>16.52</u>
1116	<u>1700</u>	<u>300</u>	<u>12.74</u>	<u>7.03</u>	<u>172</u>	<u>0.728</u>	<u>7.1</u>	<u>5.84</u>	<u>16.32</u>
1119	<u>2600</u>	<u>300</u>	<u>12.74</u>	<u>7.01</u>	<u>170</u>	<u>0.729</u>	<u>7.2</u>	<u>5.66</u>	<u>16.32</u>

Sampling Activities

Sampled By: C JOYCE Sample Date/Time: 3/4/22 1119
 Sample Method: Bailer Dedicated Pump Non-Dedicated Pump Peristaltic Pump (circle one)
 Sample Parameters: Temp (°C) 12.74 pH 7.01 ORP 170
 Sp. Cond. 0.729 Turbidity 7.2 DO 5.66
 Water Level 16.32 (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 1-N

Date(s): 3/4/22

Field Team Members

Name: CJ

Name: EW

Affiliation: SCS Engineers
Affiliation: SCS Engineers

Weather Conditions

Mean Temp: 39 °F (Mean)
Precipitation: None Light Heavy

Wind Direction: N S E W (circle two if needed)
Sky: Cloudy Sunny Partly

Well Observations

Well Pad

Casing

Protective Casing

Reference Mark/Identification

Locks
Protective Casing
Well

Yes	No
☒	☐
☐	☒

Groundwater Level Measurements

<u>Water Level Measurements</u>		Total Depth:		feet below TOC
		Static Water Level:	17.17	feet below TOC
Date/Time Measured:	3/4/22 11:14	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: _____

[illegible]

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)

WL 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-15

Date(s): 3/4/22

Field Team Members

Name: CS
Name: ON

Affiliation: SCS Engineers

Affiliation: SCS Engineers

Weather Conditions

Mean Temp: 39 °F (Mean)
Precipitation: None Light Heavy

Wind Direction: N S E W (circle two if needed)
Sky: Cloudy Sunny Partly

Well Observations

Well Pad	6050
Casing	
Protective Casing	
Reference Mark/Identification	

Locks	Yes	No
Protective Casing	X	
Well		✓

Groundwater Level Measurements

Water Level Measurements		Total Depth:	_____	feet below TOC
		Static Water Level:	17.05	feet below TOC
Date/Time Measured:	3/4/22 1116	TD - SWL:	_____	water column (ft.)

Static Water Level: 17.15 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: _____

[illegible]

Sampling Activities

Sampling Location: _____

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)

we 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): 3/4/22

Field Team Members

Name: CJ Affiliation: SCS Engineers
 Name: EW Affiliation: SCS Engineers

Weather Conditions

Mean Temp: 39 °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 Locks

Yes	No
☒	☐

 Casing ↓ Protective Casing Well

☒	☐

 Protective Casing ↓
 Reference Mark/Identification ↓

Groundwater Level Measurements

Date/Time Measured: 3/4/22 Total Depth: 28.00 feet below TOC
 Static Water Level: 12.64 feet below TOC
 TD - SWL: 15.36 water column (ft.)

Purging Activities

Purged By: C Joyce Purge Date: 3/4/22
 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: 15.36 x 10 = 153.6 Min Purge Volume: 200 mL
 Initial Parameter Readings: Temp (°C) 11.58 pH 7.05 ORP 165
 Sp. Cond. 6.774 Turbidity 4.6 DO 7.54
 Physical appearance of purge water: clear

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)
11:33	1500	500	11.60	7.07	163	0.781	3.9	6.58	12.64
11:36	3000	500	11.60	6.98	165	0.793	2.4	6.40	12.61
11:39	4500	500	11.60	6.89	164	0.781	2.6	5.98	12.62

Sampling Activities

Sampled By: C Joyce Sample Date/Time: 3/4/22 11:39
 Sample Method: Bailer Dedicated Pump Non-Dedicated Pump Peristaltic Pump (circle one)
 Sample Parameters: Temp (°C) 11.60 pH 6.89 ORP 164
 Sp. Cond. 6.751 Turbidity 2.6 DO 5.88
 Water Level 12.62 (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): 3/4/22

Field Team Members

Name: CJ Affiliation: SCS Engineers
 Name: EW Affiliation: SCS Engineers

Weather Conditions

Mean Temp: 39 °F (Mean) Wind Direction: N S E W (circle two if needed)
 Precipitation: None Light Heavy Sky: Cloudy Sunny Partly

Well Observations

Well Pad 6000 Locks

Yes	No
<u>X</u>	
	<u>X</u>

 Casing ↓ Protective Casing Well
 Reference Mark/Identification ↓

Groundwater Level Measurements

Date/Time Measured: 3/4/22 1150 Total Depth: 29.0 feet below TOC
 Static Water Level: 13.60 feet below TOC
 TD - SWL: 14.40 water column (ft.)

Purging Activities

Purged By: C Joyce Purge Date: 3/4/22
 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: 14.4 x 10 = 144 Min Purge Volume: 150 mL
 Initial Parameter Readings: Temp (°C) 12.75 pH 7.00 ORP 150
 Sp. Cond. 0.735 Turbidity 4.3 DO 7.05
 Physical appearance of purge water: Clear

Purge Time	Cumulative Purge Vol. (mL)	Purge Rate (mL/m)	Temp (°C)	10%		10%		Dissolved Oxygen (mg/L)	Water Level (ft below TOC)
				pH	ORP (mV)	Specific Conductivity (mS/cm)	Turbidity (NTU)		
1200	1400	600	12.35	6.89	153	0.750	20.5	5.25	12.72
1203	3200	600	12.53	6.84	159	0.754	23.7	4.49	12.74
1206	5000	600	13.55	6.82	160	0.755	23.0	4.32	12.83

Sampling Activities

Sampled By: C Joyce Sample Date/Time: 3/4/22 1200
 Sample Method: Bailer Dedicated Pump Non-Dedicated Pump Peristaltic Pump (circle one)
 Sample Parameters: Temp (°C) 13.55 pH 6.42 ORP 160
 Sp. Cond. 0.755 Turbidity 23.0 DO 4.32
 Water Level 12.83 (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: MND-7
 Date(s): 3/4/22

Field Team Members

Name: CT Affiliation: SCS Engineers
 Name: EW Affiliation: SCS Engineers

Weather Conditions

Mean Temp: 39 °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 Locks

Yes	No
<u>X</u>	

 Casing ↓ Protective Casing

<u>X</u>	<u>X</u>

 Protective Casing ↓ Well

 Reference Mark/Identification ↓

Groundwater Level Measurements

Date/Time Measured: 3/4/22 1220 Total Depth: 28.00 feet below TOC
 Static Water Level: 12.15 feet below TOC
 TD - SWL: 15.25 water column (ft.)

Purging Activities

Purged By: C Joyce Purge Date: 3/4/22
 Purge Method: 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: 15.25 - 10 = 152.5 Min Purge Volume: 200 mL
 Initial Parameter Readings: Temp (°C) 11.47 pH 6.82 ORP 157
 Sp. Cond. 0.890 Turbidity 7.90 DO 7.47
 Physical appearance of purge water: Clear

Purge Time	Cumulative Purge Vol. (mL)	Purge Rate (ml/m)	10%		0.2 SU		10%		Water Level (ft below TOC)
			Temp (°C)	pH	ORP (mV)	Specific Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	
<u>1222</u>	<u>800</u>	<u>700</u>	<u>12.38</u>	<u>6.89</u>	<u>156</u>	<u>0.859</u>	<u>4.8</u>	<u>5.77</u>	<u>12.90</u>
<u>1225</u>	<u>2900</u>	<u>700</u>	<u>12.61</u>	<u>6.88</u>	<u>156</u>	<u>0.830</u>	<u>3.1</u>	<u>4.83</u>	<u>12.90</u>
<u>1228</u>	<u>5100</u>	<u>700</u>	<u>12.68</u>	<u>6.93</u>	<u>153</u>	<u>0.826</u>	<u>3.0</u>	<u>4.61</u>	<u>12.90</u>

Sampling Activities

Sampled By: C Joyce Sample Date/Time: 3/4/22 1228
 Sample Method: Dedicated Pump Non-Dedicated Pump Peristaltic Pump (circle one)
 Sample Parameters: Temp (°C) 12.68 pH 6.93 ORP 153
 Sp. Cond. 0.826 Turbidity 3.0 DO 4.61
 Water Level 12.90 (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): 3/4/22

Field Team Members

Name: CS Affiliation: SCS Engineers
 Name: EW Affiliation: SCS Engineers

Weather Conditions

Mean Temp: 39 °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 Locks

Yes	No
☒	☐

 Casing ↓ Protective Casing

Yes	No
☒	☐

 Protective Casing ↓ Well

Yes	No
☒	☐

 Reference Mark/Identification ↓

Groundwater Level Measurements

Date/Time Measured: 3/4/22 1239 Total Depth: 28.00 feet below TOC
 Static Water Level: 13.32 feet below TOC
 TD - SWL: 14.68 water column (ft.)

Purging Activities

Purged By: C. J. PACE Purge Date: 3/4/22
 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: 14.68 x 1.5 = 14.68 Min Purge Volume: 150 mL
 Initial Parameter Readings: Temp (°C) 11.49 pH 7.1 ORP 141
 Sp. Cond. 0.535 Turbidity 3.9 DO 2.17
 Physical appearance of purge water: clear

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)
1212	1350	700	12.32	6.87	156	0.838	2.4	5.96	13.38
1215	2450	700	12.42	6.75	161	0.879	3.6	5.20	13.37
1248	5500	700	12.44	6.75	162	0.890	4.2	4.85	13.32

Sampling Activities

Sampled By: C. J. PACE Sample Date/Time: 3/4/22 1248
 Sample Method: Bailer Dedicated Pump Non-Dedicated Pump Peristaltic Pump (circle one)
 Sample Parameters: Temp (°C) 12.44 pH 6.75 ORP 162
 Sp. Cond. 0.890 Turbidity 4.2 DO 4.85
 Water Level 13.32 (feet below TOC)

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

DUPLICATE TAKEN HERE AT 2359

Electronic Form Completed By: _____ Date: _____

B.2 Chain of Custody

B.3 Testing Results

ANALYTICAL REPORT

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Tel: (319)277-2401

Laboratory Job ID: 310-226480-1
Client Project/Site: City of Fremont

For:
SCS Engineers
14755 Grover St
Omaha, Nebraska 68144

Attn: Morgan Sykes



Authorized for release by:
4/11/2022 2:26:28 PM

Shawn Hayes, Senior Project Manager
(319)229-8211
Shawn.Hayes@Eurofinset.com

LINKS

Review your project
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Results relate only to the items tested and the sample(s) as received by the laboratory.

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Case Narrative

Client: SCS Engineers
Project/Site: City of Fremont

Job ID: 310-226480-1

Job ID: 310-226480-1

Laboratory: Eurofins Cedar Falls

Narrative

Job Narrative 310-226480-1

Comments

No additional comments.

Receipt

The samples were received on 3/8/2022 5:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 0.6° C and 1.6° C.

HPLC/IC

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

Metals

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

General Chemistry

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

Job ID: 310-226480-2

Laboratory: Eurofins Cedar Falls

Narrative

Job Narrative 310-226480-2

RAD

Method PrecSep_0: Radium-228 Prep Batch 160-558700

The following samples were prepared at a reduced aliquot due to Matrix: MW-1 (310-226480-1), MW-5 (310-226480-5), MW-6 (310-226480-6), MW-7 (310-226480-7), MW-8 (310-226480-8) and Duplicate (310-226480-9).

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

Sample Summary

Client: SCS Engineers
Project/Site: City of Fremont

Job ID: 310-226480-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-226480-1	MW-1	Water	03/04/22 11:19	03/08/22 08:42
310-226480-2	MW-2	Water	03/04/22 11:39	03/08/22 08:42
310-226480-3	MW-3	Water	03/04/22 10:33	03/08/22 08:42
310-226480-4	MW-4R	Water	03/04/22 10:55	03/08/22 08:42
310-226480-5	MW-5	Water	03/04/22 10:58	03/08/22 08:42
310-226480-6	MW-6	Water	03/04/22 12:48	03/08/22 08:42
310-226480-7	MW-7	Water	03/04/22 12:28	03/08/22 08:42
310-226480-8	MW-8	Water	03/04/22 12:06	03/08/22 08:42
310-226480-9	Duplicate	Water	03/04/22 23:59	03/08/22 08:42

Client Sample Results

Client: SCS Engineers
Project/Site: City of Fremont

Job ID: 310-226480-1

Client Sample ID: MW-1

Lab Sample ID: 310-226480-1

Date Collected: 03/04/22 11:19

Matrix: Water

Date Received: 03/08/22 08:42

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	31.8		5.00		mg/L			03/15/22 10:38	5
Fluoride	1.39		0.500		mg/L			03/15/22 10:38	5
Sulfate	33.4		5.00		mg/L			03/15/22 10:38	5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00359		0.00200		mg/L		03/10/22 09:00	03/17/22 23:57	1
Arsenic	0.00643		0.00200		mg/L		03/10/22 09:00	03/17/22 23:57	1
Barium	0.148		0.00200		mg/L		03/10/22 09:00	03/17/22 23:57	1
Beryllium	0.00125		0.00100		mg/L		03/10/22 09:00	03/17/22 23:57	1
Boron	0.103		0.100		mg/L		03/10/22 09:00	03/17/22 23:57	1
Cadmium	<0.000100		0.000100		mg/L		03/10/22 09:00	03/18/22 15:46	1
Calcium	104		0.500		mg/L		03/10/22 09:00	03/17/22 23:57	1
Chromium	<0.00500		0.00500		mg/L		03/10/22 09:00	03/17/22 23:57	1
Cobalt	<0.000500		0.000500		mg/L		03/10/22 09:00	03/18/22 15:46	1
Lead	<0.000500		0.000500		mg/L		03/10/22 09:00	03/18/22 15:46	1
Lithium	0.0356		0.0100		mg/L		03/10/22 09:00	03/17/22 23:57	1
Molybdenum	0.00951		0.00200		mg/L		03/10/22 09:00	03/17/22 23:57	1
Selenium	0.0117		0.00500		mg/L		03/10/22 09:00	03/17/22 23:57	1
Thallium	0.00408		0.00100		mg/L		03/10/22 09:00	03/17/22 23:57	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		03/14/22 15:13	03/15/22 13:51	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	390		50.0		mg/L			03/09/22 15:52	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.13	HF	0.100		SU			03/08/22 21:49	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.256		0.137	0.139	1.00	0.185	pCi/L	03/14/22 09:06	04/05/22 07:56	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.1		40 - 110					03/14/22 09:06	04/05/22 07:56	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.782		0.349	0.356	1.00	0.504	pCi/L	04/05/22 14:57	04/08/22 11:52	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	98.8		40 - 110					04/05/22 14:57	04/08/22 11:52	1
Y Carrier	85.6		40 - 110					04/05/22 14:57	04/08/22 11:52	1

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Client Sample Results

Client: SCS Engineers
Project/Site: City of Fremont

Job ID: 310-226480-1

Client Sample ID: MW-1

Lab Sample ID: 310-226480-1

Date Collected: 03/04/22 11:19

Matrix: Water

Date Received: 03/08/22 08:42

Method: 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	1.04		0.375	0.382	5.00	0.504	pCi/L		04/08/22 18:07	1

Client Sample Results

Client: SCS Engineers
Project/Site: City of Fremont

Job ID: 310-226480-1

Client Sample ID: MW-2

Lab Sample ID: 310-226480-2

Date Collected: 03/04/22 11:39

Matrix: Water

Date Received: 03/08/22 08:42

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	18.0		5.00		mg/L			03/15/22 10:54	5
Fluoride	1.15		0.500		mg/L			03/15/22 10:54	5
Sulfate	64.7		5.00		mg/L			03/15/22 10:54	5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00296		0.00200		mg/L		03/10/22 09:00	03/18/22 00:22	1
Arsenic	0.00455		0.00200		mg/L		03/10/22 09:00	03/18/22 00:22	1
Barium	0.112		0.00200		mg/L		03/10/22 09:00	03/18/22 00:22	1
Beryllium	<0.00100		0.00100		mg/L		03/10/22 09:00	03/18/22 00:22	1
Boron	0.193		0.100		mg/L		03/10/22 09:00	03/18/22 00:22	1
Cadmium	0.000213		0.000100		mg/L		03/10/22 09:00	03/18/22 15:55	1
Calcium	122		0.500		mg/L		03/10/22 09:00	03/18/22 00:22	1
Chromium	<0.00500		0.00500		mg/L		03/10/22 09:00	03/18/22 00:22	1
Cobalt	<0.000500		0.000500		mg/L		03/10/22 09:00	03/18/22 15:55	1
Lead	<0.000500		0.000500		mg/L		03/10/22 09:00	03/18/22 15:55	1
Lithium	0.0431		0.0100		mg/L		03/10/22 09:00	03/18/22 00:22	1
Molybdenum	0.00930		0.00200		mg/L		03/10/22 09:00	03/18/22 00:22	1
Selenium	0.0127		0.00500		mg/L		03/10/22 09:00	03/18/22 00:22	1
Thallium	<0.00100		0.00100		mg/L		03/10/22 09:00	03/18/22 00:22	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		03/14/22 15:13	03/15/22 13:53	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	432		50.0		mg/L			03/09/22 15:52	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.97	HF	0.100		SU			03/08/22 21:50	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.246		0.117	0.119	1.00	0.136	pCi/L	03/14/22 09:06	04/05/22 07:56	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	89.7		40 - 110					03/14/22 09:06	04/05/22 07:56	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.489		0.224	0.228	1.00	0.315	pCi/L	04/05/22 14:57	04/08/22 11:52	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	100		40 - 110					04/05/22 14:57	04/08/22 11:52	1
Y Carrier	82.6		40 - 110					04/05/22 14:57	04/08/22 11:52	1

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Client Sample Results

Client: SCS Engineers
Project/Site: City of Fremont

Job ID: 310-226480-1

Client Sample ID: MW-2

Lab Sample ID: 310-226480-2

Date Collected: 03/04/22 11:39

Matrix: Water

Date Received: 03/08/22 08:42

Method: 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	0.735		0.253	0.257	5.00	0.315	pCi/L		04/08/22 18:07	1

Client Sample Results

Client: SCS Engineers
Project/Site: City of Fremont

Job ID: 310-226480-1

Client Sample ID: MW-3

Lab Sample ID: 310-226480-3

Date Collected: 03/04/22 10:33

Matrix: Water

Date Received: 03/08/22 08:42

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	55.3		5.00		mg/L			03/15/22 11:09	5
Fluoride	0.641		0.500		mg/L			03/15/22 11:09	5
Sulfate	63.1		5.00		mg/L			03/15/22 11:09	5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		03/10/22 09:00	03/18/22 00:26	1
Arsenic	0.00375		0.00200		mg/L		03/10/22 09:00	03/18/22 00:26	1
Barium	0.177		0.00200		mg/L		03/10/22 09:00	03/18/22 00:26	1
Beryllium	<0.00100		0.00100		mg/L		03/10/22 09:00	03/18/22 00:26	1
Boron	0.102		0.100		mg/L		03/10/22 09:00	03/18/22 00:26	1
Cadmium	<0.000100		0.000100		mg/L		03/10/22 09:00	03/18/22 00:26	1
Calcium	104		0.500		mg/L		03/10/22 09:00	03/18/22 00:26	1
Chromium	<0.00500		0.00500		mg/L		03/10/22 09:00	03/18/22 00:26	1
Cobalt	<0.000500		0.000500		mg/L		03/10/22 09:00	03/18/22 00:26	1
Lead	<0.000500		0.000500		mg/L		03/10/22 09:00	03/18/22 00:26	1
Lithium	0.0310		0.0100		mg/L		03/10/22 09:00	03/18/22 00:26	1
Molybdenum	0.0143		0.00200		mg/L		03/10/22 09:00	03/18/22 00:26	1
Selenium	0.00624		0.00500		mg/L		03/10/22 09:00	03/18/22 00:26	1
Thallium	<0.00100		0.00100		mg/L		03/10/22 09:00	03/18/22 00:26	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		03/14/22 15:13	03/15/22 13:55	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	404		50.0		mg/L			03/09/22 15:52	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	6.97	HF	0.100		SU			03/08/22 21:52	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.482		0.179	0.185	1.00	0.207	pCi/L	03/14/22 09:06	04/05/22 07:57	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	84.7		40 - 110					03/14/22 09:06	04/05/22 07:57	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.19		0.288	0.308	1.00	0.318	pCi/L	04/05/22 14:57	04/08/22 11:52	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.8		40 - 110					04/05/22 14:57	04/08/22 11:52	1
Y Carrier	83.4		40 - 110					04/05/22 14:57	04/08/22 11:52	1

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Client Sample Results

Client: SCS Engineers
Project/Site: City of Fremont

Job ID: 310-226480-1

Client Sample ID: MW-3

Lab Sample ID: 310-226480-3

Date Collected: 03/04/22 10:33

Matrix: Water

Date Received: 03/08/22 08:42

Method: 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	1.67		0.339	0.359	5.00	0.318	pCi/L		04/08/22 18:07	1

Client Sample Results

Client: SCS Engineers
Project/Site: City of Fremont

Job ID: 310-226480-1

Client Sample ID: MW-4R

Lab Sample ID: 310-226480-4

Date Collected: 03/04/22 10:55

Matrix: Water

Date Received: 03/08/22 08:42

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	31.4		5.00		mg/L			03/15/22 11:25	5
Fluoride	0.621		0.500		mg/L			03/15/22 11:25	5
Sulfate	40.4		5.00		mg/L			03/15/22 11:25	5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		03/10/22 09:00	03/18/22 00:29	1
Arsenic	0.00451		0.00200		mg/L		03/10/22 09:00	03/18/22 00:29	1
Barium	0.146		0.00200		mg/L		03/10/22 09:00	03/18/22 00:29	1
Beryllium	<0.00100		0.00100		mg/L		03/10/22 09:00	03/18/22 00:29	1
Boron	0.172		0.100		mg/L		03/10/22 09:00	03/18/22 00:29	1
Cadmium	<0.000100		0.000100		mg/L		03/10/22 09:00	03/18/22 00:29	1
Calcium	100		0.500		mg/L		03/10/22 09:00	03/18/22 00:29	1
Chromium	<0.00500		0.00500		mg/L		03/10/22 09:00	03/18/22 00:29	1
Cobalt	<0.000500		0.000500		mg/L		03/10/22 09:00	03/18/22 00:29	1
Lead	<0.000500		0.000500		mg/L		03/10/22 09:00	03/18/22 00:29	1
Lithium	0.0303		0.0100		mg/L		03/10/22 09:00	03/18/22 00:29	1
Molybdenum	0.00636		0.00200		mg/L		03/10/22 09:00	03/18/22 00:29	1
Selenium	0.00820		0.00500		mg/L		03/10/22 09:00	03/18/22 00:29	1
Thallium	<0.00100		0.00100		mg/L		03/10/22 09:00	03/18/22 00:29	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		03/14/22 15:13	03/15/22 13:57	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	368		50.0		mg/L			03/09/22 15:52	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.07	HF	0.100		SU			03/08/22 21:53	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.450		0.137	0.143	1.00	0.130	pCi/L	03/14/22 09:06	04/05/22 07:57	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	106		40 - 110					03/14/22 09:06	04/05/22 07:57	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.913		0.299	0.310	1.00	0.399	pCi/L	04/05/22 14:57	04/08/22 11:52	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					04/05/22 14:57	04/08/22 11:52	1
Y Carrier	81.5		40 - 110					04/05/22 14:57	04/08/22 11:52	1

Eurofins Cedar Falls

Client Sample Results

Client: SCS Engineers
Project/Site: City of Fremont

Job ID: 310-226480-1

Client Sample ID: MW-4R

Lab Sample ID: 310-226480-4

Date Collected: 03/04/22 10:55

Matrix: Water

Date Received: 03/08/22 08:42

Method: 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		0.329	0.341	5.00	0.399	pCi/L		04/08/22 18:07	1

Client Sample Results

Client: SCS Engineers
Project/Site: City of Fremont

Job ID: 310-226480-1

Client Sample ID: MW-5

Lab Sample ID: 310-226480-5

Date Collected: 03/04/22 10:58

Matrix: Water

Date Received: 03/08/22 08:42

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	37.4		5.00		mg/L			03/15/22 11:41	5
Fluoride	0.890		0.500		mg/L			03/15/22 11:41	5
Sulfate	32.7		5.00		mg/L			03/15/22 11:41	5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		03/10/22 09:00	03/18/22 00:32	1
Arsenic	0.00474		0.00200		mg/L		03/10/22 09:00	03/18/22 00:32	1
Barium	0.139		0.00200		mg/L		03/10/22 09:00	03/18/22 00:32	1
Beryllium	<0.00100		0.00100		mg/L		03/10/22 09:00	03/18/22 00:32	1
Boron	0.100		0.100		mg/L		03/10/22 09:00	03/18/22 00:32	1
Cadmium	<0.000100		0.000100		mg/L		03/10/22 09:00	03/18/22 00:32	1
Calcium	103		0.500		mg/L		03/10/22 09:00	03/18/22 00:32	1
Chromium	<0.00500		0.00500		mg/L		03/10/22 09:00	03/18/22 00:32	1
Cobalt	<0.000500		0.000500		mg/L		03/10/22 09:00	03/18/22 00:32	1
Lead	<0.000500		0.000500		mg/L		03/10/22 09:00	03/18/22 00:32	1
Lithium	0.0296		0.0100		mg/L		03/10/22 09:00	03/18/22 00:32	1
Molybdenum	0.00404		0.00200		mg/L		03/10/22 09:00	03/18/22 00:32	1
Selenium	0.00555		0.00500		mg/L		03/10/22 09:00	03/18/22 00:32	1
Thallium	<0.00100		0.00100		mg/L		03/10/22 09:00	03/18/22 00:32	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		03/14/22 15:13	03/15/22 13:59	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	354		50.0		mg/L			03/09/22 15:52	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.15	HF	0.100		SU			03/08/22 21:54	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.507		0.168	0.174	1.00	0.162	pCi/L	03/14/22 09:06	04/05/22 07:57	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	85.2		40 - 110					03/14/22 09:06	04/05/22 07:57	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.74		0.452	0.480	1.00	0.552	pCi/L	04/05/22 14:57	04/08/22 11:53	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	90.6		40 - 110					04/05/22 14:57	04/08/22 11:53	1
Y Carrier	80.7		40 - 110					04/05/22 14:57	04/08/22 11:53	1

Eurofins Cedar Falls

Client Sample Results

Client: SCS Engineers
Project/Site: City of Fremont

Job ID: 310-226480-1

Client Sample ID: MW-5

Lab Sample ID: 310-226480-5

Date Collected: 03/04/22 10:58

Matrix: Water

Date Received: 03/08/22 08:42

Method: 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	2.25		0.482	0.511	5.00	0.552	pCi/L		04/08/22 18:07	1

Client Sample Results

Client: SCS Engineers
Project/Site: City of Fremont

Job ID: 310-226480-1

Client Sample ID: MW-6

Lab Sample ID: 310-226480-6

Date Collected: 03/04/22 12:48

Matrix: Water

Date Received: 03/08/22 08:42

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	76.9		5.00		mg/L			03/15/22 12:28	5
Fluoride	0.557		0.500		mg/L			03/15/22 12:28	5
Sulfate	39.0		5.00		mg/L			03/15/22 12:28	5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		03/10/22 09:00	03/18/22 00:35	1
Arsenic	0.00355		0.00200		mg/L		03/10/22 09:00	03/18/22 00:35	1
Barium	0.166		0.00200		mg/L		03/10/22 09:00	03/18/22 00:35	1
Beryllium	<0.00100		0.00100		mg/L		03/10/22 09:00	03/18/22 00:35	1
Boron	<0.100		0.100		mg/L		03/10/22 09:00	03/18/22 00:35	1
Cadmium	<0.000100		0.000100		mg/L		03/10/22 09:00	03/18/22 00:35	1
Calcium	103		0.500		mg/L		03/10/22 09:00	03/18/22 00:35	1
Chromium	<0.00500		0.00500		mg/L		03/10/22 09:00	03/18/22 00:35	1
Cobalt	<0.000500		0.000500		mg/L		03/10/22 09:00	03/18/22 00:35	1
Lead	<0.000500		0.000500		mg/L		03/10/22 09:00	03/18/22 00:35	1
Lithium	0.0280		0.0100		mg/L		03/10/22 09:00	03/18/22 00:35	1
Molybdenum	0.00730		0.00200		mg/L		03/10/22 09:00	03/18/22 00:35	1
Selenium	0.00763		0.00500		mg/L		03/10/22 09:00	03/18/22 00:35	1
Thallium	<0.00100		0.00100		mg/L		03/10/22 09:00	03/18/22 00:35	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		03/14/22 15:13	03/15/22 14:01	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	460		50.0		mg/L			03/09/22 15:52	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.03	HF	0.100		SU			03/08/22 21:56	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.400		0.148	0.152	1.00	0.160	pCi/L	03/14/22 09:06	04/05/22 07:57	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	94.6		40 - 110					03/14/22 09:06	04/05/22 07:57	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	2.24		0.417	0.465	1.00	0.404	pCi/L	04/05/22 14:57	04/08/22 11:53	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	102		40 - 110					04/05/22 14:57	04/08/22 11:53	1
Y Carrier	82.6		40 - 110					04/05/22 14:57	04/08/22 11:53	1

Eurofins Cedar Falls

Client Sample Results

Client: SCS Engineers
Project/Site: City of Fremont

Job ID: 310-226480-1

Client Sample ID: MW-6

Lab Sample ID: 310-226480-6

Date Collected: 03/04/22 12:48

Matrix: Water

Date Received: 03/08/22 08:42

Method: 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	2.64		0.442	0.489	5.00	0.404	pCi/L		04/08/22 18:07	1

Client Sample Results

Client: SCS Engineers
Project/Site: City of Fremont

Job ID: 310-226480-1

Client Sample ID: MW-7

Lab Sample ID: 310-226480-7

Date Collected: 03/04/22 12:28

Matrix: Water

Date Received: 03/08/22 08:42

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	89.0		5.00		mg/L			03/15/22 12:43	5
Fluoride	0.787		0.500		mg/L			03/15/22 12:43	5
Sulfate	29.5		5.00		mg/L			03/15/22 12:43	5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		03/10/22 09:00	03/18/22 00:38	1
Arsenic	0.00403		0.00200		mg/L		03/10/22 09:00	03/18/22 00:38	1
Barium	0.138		0.00200		mg/L		03/10/22 09:00	03/18/22 00:38	1
Beryllium	<0.00100		0.00100		mg/L		03/10/22 09:00	03/18/22 00:38	1
Boron	<0.100		0.100		mg/L		03/10/22 09:00	03/18/22 00:38	1
Cadmium	0.000179		0.000100		mg/L		03/10/22 09:00	03/18/22 15:58	1
Calcium	97.5		0.500		mg/L		03/10/22 09:00	03/18/22 00:38	1
Chromium	<0.00500		0.00500		mg/L		03/10/22 09:00	03/18/22 00:38	1
Cobalt	<0.000500		0.000500		mg/L		03/10/22 09:00	03/18/22 00:38	1
Lead	<0.000500		0.000500		mg/L		03/10/22 09:00	03/18/22 00:38	1
Lithium	0.0271		0.0100		mg/L		03/10/22 09:00	03/18/22 00:38	1
Molybdenum	0.00773		0.00200		mg/L		03/10/22 09:00	03/18/22 00:38	1
Selenium	0.00554		0.00500		mg/L		03/10/22 09:00	03/18/22 00:38	1
Thallium	<0.00100		0.00100		mg/L		03/10/22 09:00	03/18/22 00:38	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		03/14/22 15:13	03/15/22 14:03	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	424		50.0		mg/L			03/09/22 15:52	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.08	HF	0.100		SU			03/08/22 21:57	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.291		0.133	0.136	1.00	0.155	pCi/L	03/14/22 09:06	04/05/22 07:57	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	81.0		40 - 110					03/14/22 09:06	04/05/22 07:57	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.38		0.448	0.465	1.00	0.580	pCi/L	04/05/22 14:57	04/08/22 11:53	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	85.9		40 - 110					04/05/22 14:57	04/08/22 11:53	1
Y Carrier	77.0		40 - 110					04/05/22 14:57	04/08/22 11:53	1

Eurofins Cedar Falls

Client Sample Results

Client: SCS Engineers
Project/Site: City of Fremont

Job ID: 310-226480-1

Client Sample ID: MW-7

Lab Sample ID: 310-226480-7

Date Collected: 03/04/22 12:28

Matrix: Water

Date Received: 03/08/22 08:42

Method: 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	1.67		0.467	0.484	5.00	0.580	pCi/L		04/08/22 18:07	1

Client Sample Results

Client: SCS Engineers
Project/Site: City of Fremont

Job ID: 310-226480-1

Client Sample ID: MW-8

Lab Sample ID: 310-226480-8

Date Collected: 03/04/22 12:06

Matrix: Water

Date Received: 03/08/22 08:42

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	36.6		5.00		mg/L			03/15/22 12:59	5
Fluoride	0.533		0.500		mg/L			03/15/22 12:59	5
Sulfate	42.6		5.00		mg/L			03/15/22 12:59	5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		03/10/22 09:00	03/18/22 00:41	1
Arsenic	0.00282		0.00200		mg/L		03/10/22 09:00	03/18/22 00:41	1
Barium	0.181		0.00200		mg/L		03/10/22 09:00	03/18/22 00:41	1
Beryllium	<0.00100		0.00100		mg/L		03/10/22 09:00	03/18/22 00:41	1
Boron	0.125		0.100		mg/L		03/10/22 09:00	03/18/22 00:41	1
Cadmium	<0.000100		0.000100		mg/L		03/10/22 09:00	03/18/22 00:41	1
Calcium	108		0.500		mg/L		03/10/22 09:00	03/18/22 00:41	1
Chromium	<0.00500		0.00500		mg/L		03/10/22 09:00	03/18/22 00:41	1
Cobalt	<0.000500		0.000500		mg/L		03/10/22 09:00	03/18/22 00:41	1
Lead	<0.000500		0.000500		mg/L		03/10/22 09:00	03/18/22 00:41	1
Lithium	0.0307		0.0100		mg/L		03/10/22 09:00	03/18/22 00:41	1
Molybdenum	0.00714		0.00200		mg/L		03/10/22 09:00	03/18/22 00:41	1
Selenium	0.0104		0.00500		mg/L		03/10/22 09:00	03/18/22 00:41	1
Thallium	<0.00100		0.00100		mg/L		03/10/22 09:00	03/18/22 00:41	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		03/14/22 15:13	03/15/22 14:06	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	414		50.0		mg/L			03/09/22 15:52	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.02	HF	0.100		SU			03/08/22 21:58	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.673		0.205	0.213	1.00	0.195	pCi/L	03/14/22 09:06	04/05/22 07:58	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	67.0		40 - 110					03/14/22 09:06	04/05/22 07:58	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.50		0.415	0.438	1.00	0.525	pCi/L	04/05/22 14:57	04/08/22 11:54	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	98.8		40 - 110					04/05/22 14:57	04/08/22 11:54	1
Y Carrier	80.7		40 - 110					04/05/22 14:57	04/08/22 11:54	1

Eurofins Cedar Falls

Client Sample Results

Client: SCS Engineers
Project/Site: City of Fremont

Job ID: 310-226480-1

Client Sample ID: MW-8

Lab Sample ID: 310-226480-8

Date Collected: 03/04/22 12:06

Matrix: Water

Date Received: 03/08/22 08:42

Method: 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	2.17		0.463	0.487	5.00	0.525	pCi/L		04/08/22 18:07	1

Client Sample Results

Client: SCS Engineers
Project/Site: City of Fremont

Job ID: 310-226480-1

Client Sample ID: Duplicate

Lab Sample ID: 310-226480-9

Date Collected: 03/04/22 23:59

Matrix: Water

Date Received: 03/08/22 08:42

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	77.2		5.00		mg/L			03/15/22 13:15	5
Fluoride	<0.500		0.500		mg/L			03/15/22 13:15	5
Sulfate	39.0		5.00		mg/L			03/15/22 13:15	5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		03/10/22 09:00	03/18/22 00:45	1
Arsenic	0.00354		0.00200		mg/L		03/10/22 09:00	03/18/22 00:45	1
Barium	0.169		0.00200		mg/L		03/10/22 09:00	03/18/22 00:45	1
Beryllium	<0.00100		0.00100		mg/L		03/10/22 09:00	03/18/22 00:45	1
Boron	<0.100		0.100		mg/L		03/10/22 09:00	03/18/22 00:45	1
Cadmium	<0.000100		0.000100		mg/L		03/10/22 09:00	03/18/22 00:45	1
Calcium	104		0.500		mg/L		03/10/22 09:00	03/18/22 00:45	1
Chromium	<0.00500		0.00500		mg/L		03/10/22 09:00	03/18/22 00:45	1
Cobalt	<0.000500		0.000500		mg/L		03/10/22 09:00	03/18/22 00:45	1
Lead	<0.000500		0.000500		mg/L		03/10/22 09:00	03/18/22 00:45	1
Lithium	0.0283		0.0100		mg/L		03/10/22 09:00	03/18/22 00:45	1
Molybdenum	0.00740		0.00200		mg/L		03/10/22 09:00	03/18/22 00:45	1
Selenium	0.00774		0.00500		mg/L		03/10/22 09:00	03/18/22 00:45	1
Thallium	<0.00100		0.00100		mg/L		03/10/22 09:00	03/18/22 00:45	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		03/14/22 15:13	03/15/22 14:12	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	426		50.0		mg/L			03/09/22 15:52	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.09	HF	0.100		SU			03/08/22 22:02	1

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.492		0.177	0.182	1.00	0.195	pCi/L	03/14/22 09:06	04/05/22 07:58	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	82.5		40 - 110					03/14/22 09:06	04/05/22 07:58	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.68		0.428	0.455	1.00	0.522	pCi/L	04/05/22 14:57	04/08/22 11:54	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					04/05/22 14:57	04/08/22 11:54	1
Y Carrier	79.3		40 - 110					04/05/22 14:57	04/08/22 11:54	1

Eurofins Cedar Falls

Client Sample Results

Client: SCS Engineers
Project/Site: City of Fremont

Job ID: 310-226480-1

Client Sample ID: Duplicate

Lab Sample ID: 310-226480-9

Date Collected: 03/04/22 23:59

Matrix: Water

Date Received: 03/08/22 08:42

Method: 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	2.17		0.463	0.490	5.00	0.522	pCi/L		04/08/22 18:07	1

Definitions/Glossary

Client: SCS Engineers
Project/Site: City of Fremont

Job ID: 310-226480-1

Qualifiers

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.

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: City of Fremont

Job ID: 310-226480-1

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 310-346780/20

Matrix: Water

Analysis Batch: 346780

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			03/15/22 09:21	1
Fluoride	<0.100		0.100		mg/L			03/15/22 09:21	1
Sulfate	<1.00		1.00		mg/L			03/15/22 09:21	1

Lab Sample ID: LCS 310-346780/21

Matrix: Water

Analysis Batch: 346780

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	10.0	9.841		mg/L		98	90 - 110
Fluoride	2.00	1.890		mg/L		94	90 - 110
Sulfate	10.0	10.02		mg/L		100	90 - 110

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 310-346087/1-A

Matrix: Water

Analysis Batch: 346978

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 346087

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		03/10/22 09:00	03/17/22 23:51	1
Arsenic	<0.00200		0.00200		mg/L		03/10/22 09:00	03/17/22 23:51	1
Barium	<0.00200		0.00200		mg/L		03/10/22 09:00	03/17/22 23:51	1
Beryllium	<0.00100		0.00100		mg/L		03/10/22 09:00	03/17/22 23:51	1
Boron	<0.100		0.100		mg/L		03/10/22 09:00	03/17/22 23:51	1
Cadmium	<0.000100		0.000100		mg/L		03/10/22 09:00	03/17/22 23:51	1
Calcium	<0.500		0.500		mg/L		03/10/22 09:00	03/17/22 23:51	1
Chromium	<0.00500		0.00500		mg/L		03/10/22 09:00	03/17/22 23:51	1
Cobalt	<0.000500		0.000500		mg/L		03/10/22 09:00	03/17/22 23:51	1
Lead	<0.000500		0.000500		mg/L		03/10/22 09:00	03/17/22 23:51	1
Lithium	<0.0100		0.0100		mg/L		03/10/22 09:00	03/17/22 23:51	1
Molybdenum	<0.00200		0.00200		mg/L		03/10/22 09:00	03/17/22 23:51	1
Selenium	<0.00500		0.00500		mg/L		03/10/22 09:00	03/17/22 23:51	1
Thallium	<0.00100		0.00100		mg/L		03/10/22 09:00	03/17/22 23:51	1

Lab Sample ID: LCS 310-346087/2-A

Matrix: Water

Analysis Batch: 346978

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 346087

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	0.200	0.2077		mg/L		104	80 - 120
Arsenic	0.200	0.1981		mg/L		99	80 - 120
Barium	0.100	0.1042		mg/L		104	80 - 120
Beryllium	0.100	0.1016		mg/L		102	80 - 120
Boron	0.200	0.1833		mg/L		92	80 - 120
Cadmium	0.100	0.1010		mg/L		101	80 - 120
Calcium	2.00	2.020		mg/L		101	80 - 120
Chromium	0.100	0.09871		mg/L		99	80 - 120
Cobalt	0.100	0.09988		mg/L		100	80 - 120

Eurofins Cedar Falls

QC Sample Results

Client: SCS Engineers
Project/Site: City of Fremont

Job ID: 310-226480-1

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

Lab Sample ID: LCS 310-346087/2-A
Matrix: Water
Analysis Batch: 346978

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 346087

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Lead	0.200	0.2019		mg/L		101	80 - 120
Lithium	0.200	0.2155		mg/L		108	80 - 120
Molybdenum	0.200	0.1994		mg/L		100	80 - 120
Selenium	0.400	0.3869		mg/L		97	80 - 120
Thallium	0.200	0.2033		mg/L		102	80 - 120

Lab Sample ID: 310-226480-1 MS
Matrix: Water
Analysis Batch: 346978

Client Sample ID: MW-1
Prep Type: Total/NA
Prep Batch: 346087

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	0.00359		0.200	0.2083		mg/L		102	75 - 125
Arsenic	0.00643		0.200	0.2075		mg/L		101	75 - 125
Barium	0.148		0.100	0.2510		mg/L		103	75 - 125
Beryllium	0.00125		0.100	0.1023		mg/L		101	75 - 125
Boron	0.103		0.200	0.2987		mg/L		98	75 - 125
Calcium	104		2.00	107.1	4	mg/L		165	75 - 125
Chromium	<0.00500		0.100	0.09752		mg/L		96	75 - 125
Lithium	0.0356		0.200	0.2476		mg/L		106	75 - 125
Molybdenum	0.00951		0.200	0.2097		mg/L		100	75 - 125
Selenium	0.0117		0.400	0.4144		mg/L		101	75 - 125
Thallium	0.00408		0.200	0.1966		mg/L		96	75 - 125

Lab Sample ID: 310-226480-1 MS
Matrix: Water
Analysis Batch: 347154

Client Sample ID: MW-1
Prep Type: Total/NA
Prep Batch: 346087

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	<0.000100		0.100	0.08972		mg/L		90	75 - 125
Cobalt	<0.000500		0.100	0.08754		mg/L		88	75 - 125
Lead	<0.000500		0.200	0.1804		mg/L		90	75 - 125

Lab Sample ID: 310-226480-1 MSD
Matrix: Water
Analysis Batch: 346978

Client Sample ID: MW-1
Prep Type: Total/NA
Prep Batch: 346087

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony	0.00359		0.200	0.2128		mg/L		105	75 - 125	2	20
Arsenic	0.00643		0.200	0.2083		mg/L		101	75 - 125	0	20
Barium	0.148		0.100	0.2505		mg/L		103	75 - 125	0	20
Beryllium	0.00125		0.100	0.1047		mg/L		103	75 - 125	2	20
Boron	0.103		0.200	0.3007		mg/L		99	75 - 125	1	20
Calcium	104		2.00	105.8	4	mg/L		101	75 - 125	1	20
Chromium	<0.00500		0.100	0.09813		mg/L		97	75 - 125	1	20
Lithium	0.0356		0.200	0.2471		mg/L		106	75 - 125	0	20
Molybdenum	0.00951		0.200	0.2101		mg/L		100	75 - 125	0	20
Selenium	0.0117		0.400	0.4183		mg/L		102	75 - 125	1	20
Thallium	0.00408		0.200	0.1982		mg/L		97	75 - 125	1	20

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QC Sample Results

Client: SCS Engineers
Project/Site: City of Fremont

Job ID: 310-226480-1

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

Lab Sample ID: 310-226480-1 MSD
Matrix: Water
Analysis Batch: 347154

Client Sample ID: MW-1
Prep Type: Total/NA
Prep Batch: 346087

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	<0.000100		0.100	0.09521		mg/L		95	75 - 125	6	20
Cobalt	<0.000500		0.100	0.09272		mg/L		93	75 - 125	6	20
Lead	<0.000500		0.200	0.1903		mg/L		95	75 - 125	5	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 310-346544/1-A
Matrix: Water
Analysis Batch: 346699

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 346544

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		03/14/22 15:13	03/15/22 13:34	1

Lab Sample ID: LCS 310-346544/2-A
Matrix: Water
Analysis Batch: 346699

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 346544

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00167	0.001644		mg/L		99	80 - 120

Method: 9040C - pH

Lab Sample ID: LCS 310-345955/1
Matrix: Water
Analysis Batch: 345955

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	7.040		SU		101	98 - 102

Lab Sample ID: 310-226480-9 DU
Matrix: Water
Analysis Batch: 345955

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.09	HF	7.050		SU		0.6	20

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

Lab Sample ID: MB 310-346089/1
Matrix: Water
Analysis Batch: 346089

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			03/09/22 15:52	1

Lab Sample ID: LCS 310-346089/2
Matrix: Water
Analysis Batch: 346089

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	936.0		mg/L		94	90 - 110

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QC Sample Results

Client: SCS Engineers
Project/Site: City of Fremont

Job ID: 310-226480-1

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

Lab Sample ID: 310-226480-4 DU
Matrix: Water
Analysis Batch: 346089

Client Sample ID: MW-4R
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	368		372.0		mg/L		1	20

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-555093/21-A
Matrix: Water
Analysis Batch: 558535

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 555093

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.02359	U	0.0731	0.0732	1.00	0.137	pCi/L	03/14/22 09:06	04/05/22 08:01	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	94.8		40 - 110					03/14/22 09:06	04/05/22 08:01	1

Lab Sample ID: LCS 160-555093/1-A
Matrix: Water
Analysis Batch: 558534

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 555093

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-226	11.3	9.438		1.04	1.00	0.152	pCi/L	83	75 - 125
Carrier	LCS %Yield	LCS Qualifier	Limits						
Ba Carrier	90.9		40 - 110						

Lab Sample ID: LCSD 160-555093/2-A
Matrix: Water
Analysis Batch: 558534

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 555093

Analyte	Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-226	11.3	9.372		1.04	1.00	0.160	pCi/L	83	75 - 125	0.03	1
Carrier	LCSD %Yield	LCSD Qualifier	Limits								
Ba Carrier	90.6		40 - 110								

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-558700/20-A
Matrix: Water
Analysis Batch: 559300

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 558700

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.3728		0.221	0.223	1.00	0.329	pCi/L	04/05/22 14:57	04/08/22 11:55	1

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QC Sample Results

Client: SCS Engineers
Project/Site: City of Fremont

Job ID: 310-226480-1

Method: 9320 - Radium-228 (GFPC) (Continued)

Lab Sample ID: MB 160-558700/20-A
Matrix: Water
Analysis Batch: 559300

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 558700

	MB	MB	
Carrier	%Yield	Qualifier	Limits
Ba Carrier	99.3		40 - 110
Y Carrier	80.7		40 - 110

Prepared	Analyzed	Dil Fac
04/05/22 14:57	04/08/22 11:55	1
04/05/22 14:57	04/08/22 11:55	1

Lab Sample ID: LCS 160-558700/1-A
Matrix: Water
Analysis Batch: 559297

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 558700

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-228	8.73	9.550		1.09	1.00	0.348	pCi/L	109	75 - 125

	LCS	LCS	
Carrier	%Yield	Qualifier	Limits
Ba Carrier	100		40 - 110
Y Carrier	84.5		40 - 110

Lab Sample ID: LCSD 160-558700/2-A
Matrix: Water
Analysis Batch: 559297

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 558700

Analyte	Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-228	8.73	9.140		1.06	1.00	0.349	pCi/L	105	75 - 125	0.19	1

	LCSD	LCSD	
Carrier	%Yield	Qualifier	Limits
Ba Carrier	98.0		40 - 110
Y Carrier	87.5		40 - 110

QC Association Summary

Client: SCS Engineers
Project/Site: City of Fremont

Job ID: 310-226480-1

HPLC/IC

Analysis Batch: 346780

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-226480-1	MW-1	Total/NA	Water	9056A	
310-226480-2	MW-2	Total/NA	Water	9056A	
310-226480-3	MW-3	Total/NA	Water	9056A	
310-226480-4	MW-4R	Total/NA	Water	9056A	
310-226480-5	MW-5	Total/NA	Water	9056A	
310-226480-6	MW-6	Total/NA	Water	9056A	
310-226480-7	MW-7	Total/NA	Water	9056A	
310-226480-8	MW-8	Total/NA	Water	9056A	
310-226480-9	Duplicate	Total/NA	Water	9056A	
MB 310-346780/20	Method Blank	Total/NA	Water	9056A	
LCS 310-346780/21	Lab Control Sample	Total/NA	Water	9056A	

Metals

Prep Batch: 346087

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-226480-1	MW-1	Total/NA	Water	3005A	
310-226480-2	MW-2	Total/NA	Water	3005A	
310-226480-3	MW-3	Total/NA	Water	3005A	
310-226480-4	MW-4R	Total/NA	Water	3005A	
310-226480-5	MW-5	Total/NA	Water	3005A	
310-226480-6	MW-6	Total/NA	Water	3005A	
310-226480-7	MW-7	Total/NA	Water	3005A	
310-226480-8	MW-8	Total/NA	Water	3005A	
310-226480-9	Duplicate	Total/NA	Water	3005A	
MB 310-346087/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-346087/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-226480-1 MS	MW-1	Total/NA	Water	3005A	
310-226480-1 MSD	MW-1	Total/NA	Water	3005A	

Prep Batch: 346544

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-226480-1	MW-1	Total/NA	Water	7470A	
310-226480-2	MW-2	Total/NA	Water	7470A	
310-226480-3	MW-3	Total/NA	Water	7470A	
310-226480-4	MW-4R	Total/NA	Water	7470A	
310-226480-5	MW-5	Total/NA	Water	7470A	
310-226480-6	MW-6	Total/NA	Water	7470A	
310-226480-7	MW-7	Total/NA	Water	7470A	
310-226480-8	MW-8	Total/NA	Water	7470A	
310-226480-9	Duplicate	Total/NA	Water	7470A	
MB 310-346544/1-A	Method Blank	Total/NA	Water	7470A	
LCS 310-346544/2-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 346699

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-226480-1	MW-1	Total/NA	Water	7470A	346544
310-226480-2	MW-2	Total/NA	Water	7470A	346544
310-226480-3	MW-3	Total/NA	Water	7470A	346544
310-226480-4	MW-4R	Total/NA	Water	7470A	346544
310-226480-5	MW-5	Total/NA	Water	7470A	346544

Eurofins Cedar Falls

QC Association Summary

Client: SCS Engineers
Project/Site: City of Fremont

Job ID: 310-226480-1

Metals (Continued)

Analysis Batch: 346699 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-226480-6	MW-6	Total/NA	Water	7470A	346544
310-226480-7	MW-7	Total/NA	Water	7470A	346544
310-226480-8	MW-8	Total/NA	Water	7470A	346544
310-226480-9	Duplicate	Total/NA	Water	7470A	346544
MB 310-346544/1-A	Method Blank	Total/NA	Water	7470A	346544
LCS 310-346544/2-A	Lab Control Sample	Total/NA	Water	7470A	346544

Analysis Batch: 346978

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-226480-1	MW-1	Total/NA	Water	6020A	346087
310-226480-2	MW-2	Total/NA	Water	6020A	346087
310-226480-3	MW-3	Total/NA	Water	6020A	346087
310-226480-4	MW-4R	Total/NA	Water	6020A	346087
310-226480-5	MW-5	Total/NA	Water	6020A	346087
310-226480-6	MW-6	Total/NA	Water	6020A	346087
310-226480-7	MW-7	Total/NA	Water	6020A	346087
310-226480-8	MW-8	Total/NA	Water	6020A	346087
310-226480-9	Duplicate	Total/NA	Water	6020A	346087
MB 310-346087/1-A	Method Blank	Total/NA	Water	6020A	346087
LCS 310-346087/2-A	Lab Control Sample	Total/NA	Water	6020A	346087
310-226480-1 MS	MW-1	Total/NA	Water	6020A	346087
310-226480-1 MSD	MW-1	Total/NA	Water	6020A	346087

Analysis Batch: 347154

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-226480-1	MW-1	Total/NA	Water	6020A	346087
310-226480-2	MW-2	Total/NA	Water	6020A	346087
310-226480-7	MW-7	Total/NA	Water	6020A	346087
310-226480-1 MS	MW-1	Total/NA	Water	6020A	346087
310-226480-1 MSD	MW-1	Total/NA	Water	6020A	346087

General Chemistry

Analysis Batch: 345955

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-226480-1	MW-1	Total/NA	Water	9040C	
310-226480-2	MW-2	Total/NA	Water	9040C	
310-226480-3	MW-3	Total/NA	Water	9040C	
310-226480-4	MW-4R	Total/NA	Water	9040C	
310-226480-5	MW-5	Total/NA	Water	9040C	
310-226480-6	MW-6	Total/NA	Water	9040C	
310-226480-7	MW-7	Total/NA	Water	9040C	
310-226480-8	MW-8	Total/NA	Water	9040C	
310-226480-9	Duplicate	Total/NA	Water	9040C	
LCS 310-345955/1	Lab Control Sample	Total/NA	Water	9040C	
310-226480-9 DU	Duplicate	Total/NA	Water	9040C	

Analysis Batch: 346089

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-226480-1	MW-1	Total/NA	Water	SM 2540C	
310-226480-2	MW-2	Total/NA	Water	SM 2540C	

Eurofins Cedar Falls

QC Association Summary

Client: SCS Engineers
Project/Site: City of Fremont

Job ID: 310-226480-1

General Chemistry (Continued)

Analysis Batch: 346089 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-226480-3	MW-3	Total/NA	Water	SM 2540C	
310-226480-4	MW-4R	Total/NA	Water	SM 2540C	
310-226480-5	MW-5	Total/NA	Water	SM 2540C	
310-226480-6	MW-6	Total/NA	Water	SM 2540C	
310-226480-7	MW-7	Total/NA	Water	SM 2540C	
310-226480-8	MW-8	Total/NA	Water	SM 2540C	
310-226480-9	Duplicate	Total/NA	Water	SM 2540C	
MB 310-346089/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-346089/2	Lab Control Sample	Total/NA	Water	SM 2540C	
310-226480-4 DU	MW-4R	Total/NA	Water	SM 2540C	

Rad

Prep Batch: 555093

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-226480-1	MW-1	Total/NA	Water	PrecSep-21	
310-226480-2	MW-2	Total/NA	Water	PrecSep-21	
310-226480-3	MW-3	Total/NA	Water	PrecSep-21	
310-226480-4	MW-4R	Total/NA	Water	PrecSep-21	
310-226480-5	MW-5	Total/NA	Water	PrecSep-21	
310-226480-6	MW-6	Total/NA	Water	PrecSep-21	
310-226480-7	MW-7	Total/NA	Water	PrecSep-21	
310-226480-8	MW-8	Total/NA	Water	PrecSep-21	
310-226480-9	Duplicate	Total/NA	Water	PrecSep-21	
MB 160-555093/21-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-555093/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-555093/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 558700

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-226480-1	MW-1	Total/NA	Water	PrecSep_0	
310-226480-2	MW-2	Total/NA	Water	PrecSep_0	
310-226480-3	MW-3	Total/NA	Water	PrecSep_0	
310-226480-4	MW-4R	Total/NA	Water	PrecSep_0	
310-226480-5	MW-5	Total/NA	Water	PrecSep_0	
310-226480-6	MW-6	Total/NA	Water	PrecSep_0	
310-226480-7	MW-7	Total/NA	Water	PrecSep_0	
310-226480-8	MW-8	Total/NA	Water	PrecSep_0	
310-226480-9	Duplicate	Total/NA	Water	PrecSep_0	
MB 160-558700/20-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-558700/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-558700/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: SCS Engineers
Project/Site: City of Fremont

Job ID: 310-226480-1

Client Sample ID: MW-1

Date Collected: 03/04/22 11:19

Date Received: 03/08/22 08:42

Lab Sample ID: 310-226480-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	346780	03/15/22 10:38	JNR	TAL CF
Total/NA	Prep	3005A			346087	03/10/22 09:00	ACM2	TAL CF
Total/NA	Analysis	6020A		1	346978	03/17/22 23:57	SAP	TAL CF
Total/NA	Prep	3005A			346087	03/10/22 09:00	ACM2	TAL CF
Total/NA	Analysis	6020A		1	347154	03/18/22 15:46	SAP	TAL CF
Total/NA	Prep	7470A			346544	03/14/22 15:13	EAM	TAL CF
Total/NA	Analysis	7470A		1	346699	03/15/22 13:51	EAM	TAL CF
Total/NA	Analysis	9040C		1	345955	03/08/22 21:49	JWH	TAL CF
Total/NA	Analysis	SM 2540C		1	346089	03/09/22 15:52	TGF	TAL CF
Total/NA	Prep	PrecSep-21			555093	03/14/22 09:06	LPS	TAL SL
Total/NA	Analysis	9315		1	558534	04/05/22 07:56	FLC	TAL SL
Total/NA	Prep	PrecSep_0			558700	04/05/22 14:57	HRT	TAL SL
Total/NA	Analysis	9320		1	559297	04/08/22 11:52	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	559337	04/08/22 18:07	FLC	TAL SL

Client Sample ID: MW-2

Date Collected: 03/04/22 11:39

Date Received: 03/08/22 08:42

Lab Sample ID: 310-226480-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	346780	03/15/22 10:54	JNR	TAL CF
Total/NA	Prep	3005A			346087	03/10/22 09:00	ACM2	TAL CF
Total/NA	Analysis	6020A		1	346978	03/18/22 00:22	SAP	TAL CF
Total/NA	Prep	3005A			346087	03/10/22 09:00	ACM2	TAL CF
Total/NA	Analysis	6020A		1	347154	03/18/22 15:55	SAP	TAL CF
Total/NA	Prep	7470A			346544	03/14/22 15:13	EAM	TAL CF
Total/NA	Analysis	7470A		1	346699	03/15/22 13:53	EAM	TAL CF
Total/NA	Analysis	9040C		1	345955	03/08/22 21:50	JWH	TAL CF
Total/NA	Analysis	SM 2540C		1	346089	03/09/22 15:52	TGF	TAL CF
Total/NA	Prep	PrecSep-21			555093	03/14/22 09:06	LPS	TAL SL
Total/NA	Analysis	9315		1	558534	04/05/22 07:56	FLC	TAL SL
Total/NA	Prep	PrecSep_0			558700	04/05/22 14:57	HRT	TAL SL
Total/NA	Analysis	9320		1	559297	04/08/22 11:52	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	559337	04/08/22 18:07	FLC	TAL SL

Client Sample ID: MW-3

Date Collected: 03/04/22 10:33

Date Received: 03/08/22 08:42

Lab Sample ID: 310-226480-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	346780	03/15/22 11:09	JNR	TAL CF
Total/NA	Prep	3005A			346087	03/10/22 09:00	ACM2	TAL CF
Total/NA	Analysis	6020A		1	346978	03/18/22 00:26	SAP	TAL CF

Eurofins Cedar Falls

Lab Chronicle

Client: SCS Engineers
Project/Site: City of Fremont

Job ID: 310-226480-1

Client Sample ID: MW-3

Date Collected: 03/04/22 10:33

Date Received: 03/08/22 08:42

Lab Sample ID: 310-226480-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	7470A			346544	03/14/22 15:13	EAM	TAL CF
Total/NA	Analysis	7470A		1	346699	03/15/22 13:55	EAM	TAL CF
Total/NA	Analysis	9040C		1	345955	03/08/22 21:52	JWH	TAL CF
Total/NA	Analysis	SM 2540C		1	346089	03/09/22 15:52	TGF	TAL CF
Total/NA	Prep	PrecSep-21			555093	03/14/22 09:06	LPS	TAL SL
Total/NA	Analysis	9315		1	558534	04/05/22 07:57	FLC	TAL SL
Total/NA	Prep	PrecSep_0			558700	04/05/22 14:57	HRT	TAL SL
Total/NA	Analysis	9320		1	559297	04/08/22 11:52	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	559337	04/08/22 18:07	FLC	TAL SL

Client Sample ID: MW-4R

Date Collected: 03/04/22 10:55

Date Received: 03/08/22 08:42

Lab Sample ID: 310-226480-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	346780	03/15/22 11:25	JNR	TAL CF
Total/NA	Prep	3005A			346087	03/10/22 09:00	ACM2	TAL CF
Total/NA	Analysis	6020A		1	346978	03/18/22 00:29	SAP	TAL CF
Total/NA	Prep	7470A			346544	03/14/22 15:13	EAM	TAL CF
Total/NA	Analysis	7470A		1	346699	03/15/22 13:57	EAM	TAL CF
Total/NA	Analysis	9040C		1	345955	03/08/22 21:53	JWH	TAL CF
Total/NA	Analysis	SM 2540C		1	346089	03/09/22 15:52	TGF	TAL CF
Total/NA	Prep	PrecSep-21			555093	03/14/22 09:06	LPS	TAL SL
Total/NA	Analysis	9315		1	558534	04/05/22 07:57	FLC	TAL SL
Total/NA	Prep	PrecSep_0			558700	04/05/22 14:57	HRT	TAL SL
Total/NA	Analysis	9320		1	559297	04/08/22 11:52	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	559337	04/08/22 18:07	FLC	TAL SL

Client Sample ID: MW-5

Date Collected: 03/04/22 10:58

Date Received: 03/08/22 08:42

Lab Sample ID: 310-226480-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	346780	03/15/22 11:41	JNR	TAL CF
Total/NA	Prep	3005A			346087	03/10/22 09:00	ACM2	TAL CF
Total/NA	Analysis	6020A		1	346978	03/18/22 00:32	SAP	TAL CF
Total/NA	Prep	7470A			346544	03/14/22 15:13	EAM	TAL CF
Total/NA	Analysis	7470A		1	346699	03/15/22 13:59	EAM	TAL CF
Total/NA	Analysis	9040C		1	345955	03/08/22 21:54	JWH	TAL CF
Total/NA	Analysis	SM 2540C		1	346089	03/09/22 15:52	TGF	TAL CF
Total/NA	Prep	PrecSep-21			555093	03/14/22 09:06	LPS	TAL SL
Total/NA	Analysis	9315		1	558534	04/05/22 07:57	FLC	TAL SL
Total/NA	Prep	PrecSep_0			558700	04/05/22 14:57	HRT	TAL SL
Total/NA	Analysis	9320		1	559300	04/08/22 11:53	FLC	TAL SL

Eurofins Cedar Falls

Lab Chronicle

Client: SCS Engineers
Project/Site: City of Fremont

Job ID: 310-226480-1

Client Sample ID: MW-5

Date Collected: 03/04/22 10:58

Date Received: 03/08/22 08:42

Lab Sample ID: 310-226480-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Ra226_Ra228		1	559337	04/08/22 18:07	FLC	TAL SL

Client Sample ID: MW-6

Date Collected: 03/04/22 12:48

Date Received: 03/08/22 08:42

Lab Sample ID: 310-226480-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	346780	03/15/22 12:28	JNR	TAL CF
Total/NA	Prep	3005A			346087	03/10/22 09:00	ACM2	TAL CF
Total/NA	Analysis	6020A		1	346978	03/18/22 00:35	SAP	TAL CF
Total/NA	Prep	7470A			346544	03/14/22 15:13	EAM	TAL CF
Total/NA	Analysis	7470A		1	346699	03/15/22 14:01	EAM	TAL CF
Total/NA	Analysis	9040C		1	345955	03/08/22 21:56	JWH	TAL CF
Total/NA	Analysis	SM 2540C		1	346089	03/09/22 15:52	TGF	TAL CF
Total/NA	Prep	PrecSep-21			555093	03/14/22 09:06	LPS	TAL SL
Total/NA	Analysis	9315		1	558534	04/05/22 07:57	FLC	TAL SL
Total/NA	Prep	PrecSep_0			558700	04/05/22 14:57	HRT	TAL SL
Total/NA	Analysis	9320		1	559300	04/08/22 11:53	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	559337	04/08/22 18:07	FLC	TAL SL

Client Sample ID: MW-7

Date Collected: 03/04/22 12:28

Date Received: 03/08/22 08:42

Lab Sample ID: 310-226480-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	346780	03/15/22 12:43	JNR	TAL CF
Total/NA	Prep	3005A			346087	03/10/22 09:00	ACM2	TAL CF
Total/NA	Analysis	6020A		1	346978	03/18/22 00:38	SAP	TAL CF
Total/NA	Prep	3005A			346087	03/10/22 09:00	ACM2	TAL CF
Total/NA	Analysis	6020A		1	347154	03/18/22 15:58	SAP	TAL CF
Total/NA	Prep	7470A			346544	03/14/22 15:13	EAM	TAL CF
Total/NA	Analysis	7470A		1	346699	03/15/22 14:03	EAM	TAL CF
Total/NA	Analysis	9040C		1	345955	03/08/22 21:57	JWH	TAL CF
Total/NA	Analysis	SM 2540C		1	346089	03/09/22 15:52	TGF	TAL CF
Total/NA	Prep	PrecSep-21			555093	03/14/22 09:06	LPS	TAL SL
Total/NA	Analysis	9315		1	558534	04/05/22 07:57	FLC	TAL SL
Total/NA	Prep	PrecSep_0			558700	04/05/22 14:57	HRT	TAL SL
Total/NA	Analysis	9320		1	559300	04/08/22 11:53	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	559337	04/08/22 18:07	FLC	TAL SL

Eurofins Cedar Falls

Lab Chronicle

Client: SCS Engineers
Project/Site: City of Fremont

Job ID: 310-226480-1

Client Sample ID: MW-8

Date Collected: 03/04/22 12:06

Date Received: 03/08/22 08:42

Lab Sample ID: 310-226480-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	346780	03/15/22 12:59	JNR	TAL CF
Total/NA	Prep	3005A			346087	03/10/22 09:00	ACM2	TAL CF
Total/NA	Analysis	6020A		1	346978	03/18/22 00:41	SAP	TAL CF
Total/NA	Prep	7470A			346544	03/14/22 15:13	EAM	TAL CF
Total/NA	Analysis	7470A		1	346699	03/15/22 14:06	EAM	TAL CF
Total/NA	Analysis	9040C		1	345955	03/08/22 21:58	JWH	TAL CF
Total/NA	Analysis	SM 2540C		1	346089	03/09/22 15:52	TGF	TAL CF
Total/NA	Prep	PrecSep-21			555093	03/14/22 09:06	LPS	TAL SL
Total/NA	Analysis	9315		1	558534	04/05/22 07:58	FLC	TAL SL
Total/NA	Prep	PrecSep_0			558700	04/05/22 14:57	HRT	TAL SL
Total/NA	Analysis	9320		1	559300	04/08/22 11:54	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	559337	04/08/22 18:07	FLC	TAL SL

Client Sample ID: Duplicate

Date Collected: 03/04/22 23:59

Date Received: 03/08/22 08:42

Lab Sample ID: 310-226480-9

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		5	346780	03/15/22 13:15	JNR	TAL CF
Total/NA	Prep	3005A			346087	03/10/22 09:00	ACM2	TAL CF
Total/NA	Analysis	6020A		1	346978	03/18/22 00:45	SAP	TAL CF
Total/NA	Prep	7470A			346544	03/14/22 15:13	EAM	TAL CF
Total/NA	Analysis	7470A		1	346699	03/15/22 14:12	EAM	TAL CF
Total/NA	Analysis	9040C		1	345955	03/08/22 22:02	JWH	TAL CF
Total/NA	Analysis	SM 2540C		1	346089	03/09/22 15:52	TGF	TAL CF
Total/NA	Prep	PrecSep-21			555093	03/14/22 09:06	LPS	TAL SL
Total/NA	Analysis	9315		1	558534	04/05/22 07:58	FLC	TAL SL
Total/NA	Prep	PrecSep_0			558700	04/05/22 14:57	HRT	TAL SL
Total/NA	Analysis	9320		1	559300	04/08/22 11:54	FLC	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	559337	04/08/22 18:07	FLC	TAL SL

Laboratory References:

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

TAL SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Eurofins Cedar Falls

Accreditation/Certification Summary

Client: SCS Engineers
Project/Site: City of Fremont

Job ID: 310-226480-1

Laboratory: Eurofins Cedar Falls

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-21 *

Laboratory: Eurofins St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-22
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-22
California	Los Angeles County Sanitation Districts	10259	06-30-22
California	State	2886	07-01-22
Connecticut	State	PH-0241	03-31-23
Florida	NELAP	E87689	06-30-22
HI - RadChem Recognition	State	n/a	06-30-22
Illinois	NELAP	200023	11-30-22
Iowa	State	373	12-01-22
Kansas	NELAP	E-10236	10-31-22
Kentucky (DW)	State	KY90125	12-31-22
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-22
Louisiana	NELAP	04080	06-30-22
Louisiana (DW)	State	LA011	12-31-22
Maryland	State	310	09-30-22
MI - RadChem Recognition	State	9005	06-30-22
Missouri	State	780	06-30-22
Nevada	State	MO000542020-1	07-31-22
New Jersey	NELAP	MO002	06-30-22
New York	NELAP	11616	04-01-23
North Dakota	State	R-207	06-30-22
NRC	NRC	24-24817-01	12-31-22
Oklahoma	NELAP	9997	08-31-22
Oregon	NELAP	4157	09-01-22
Pennsylvania	NELAP	68-00540	02-28-23
South Carolina	State	85002001	06-30-22
Texas	NELAP	T104704193	07-31-22
US Fish & Wildlife	US Federal Programs	058448	07-31-22
USDA	US Federal Programs	P330-17-00028	03-11-23
Utah	NELAP	MO000542021-14	08-01-22
Virginia	NELAP	10310	06-14-22
Washington	State	C592	08-30-22
West Virginia DEP	State	381	10-31-22

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Eurofins Cedar Falls

Method Summary

Client: SCS Engineers
Project/Site: City of Fremont

Job ID: 310-226480-1

Method	Method Description	Protocol	Laboratory
9056A	Anions, Ion Chromatography	SW846	TAL CF
6020A	Metals (ICP/MS)	SW846	TAL CF
7470A	Mercury (CVAA)	SW846	TAL CF
9040C	pH	SW846	TAL CF
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL CF
9315	Radium-226 (GFPC)	SW846	TAL SL
9320	Radium-228 (GFPC)	SW846	TAL SL
Ra226_Ra228	Combined Radium-226 and Radium-228	TAL-STL	TAL SL
3005A	Preparation, Total Metals	SW846	TAL CF
7470A	Preparation, Mercury	SW846	TAL CF
PrecSep_0	Preparation, Precipitate Separation	None	TAL SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	TAL SL

Protocol References:

None = None

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

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

TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

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

TAL SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566



Environment Testing
America



Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: <u>SCS engineers</u>			
City/State:	<u>Omaha</u>	<u>NE</u>	Project:
Receipt Information			
Date/Time Received:	<u>3/8/22</u>	<u>1700</u>	Received By: <u>TB</u>
Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☒ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other: _____			
Condition of Cooler/Containers			
Sample(s) received in Cooler? ☒ Yes ☐ No If yes: Cooler ID: _____			
Multiple Coolers? ☒ Yes ☐ No If yes: Cooler # <u>1</u> of <u>2</u>			
Cooler Custody Seals Present? ☐ Yes ☒ No If yes: Cooler custody seals intact? ☐ Yes ☐ No			
Sample Custody Seals Present? ☐ Yes ☒ No If yes: Sample custody seals intact? ☐ Yes ☐ No			
Trip Blank Present? ☐ Yes ☒ No If yes: Which VOA samples are in cooler? ↓			
Temperature Record			
Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other: _____ ☐ NONE			
Thermometer ID: <u>N</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>1.6</u>		Corrected Temp (°C): <u>1.6</u>	
• Sample Container Temperature			
Container(s) used:	<u>CONTAINER 1</u>	<u>CONTAINER 2</u>	
Uncorrected Temp (°C):			
Corrected Temp (°C):			
Exceptions Noted			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No a) If yes: Is there evidence that the chilling process began? ☐ Yes ☐ No			
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No			
NOTE: If yes, contact PM before proceeding. If no, proceed with login			
Additional Comments			



Environment Testing
America

Place COC scanning label
here

Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: <u>SCS engineers</u>			
City/State:	<u>Omaha</u>	<u>NE</u>	Project:
Receipt Information			
Date/Time Received:	<u>3/8/22</u>	<u>1700</u>	Received By: <u>TB</u>
Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☒ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other: _____			
Condition of Cooler/Containers			
Sample(s) received in Cooler?		☒ Yes ☐ No	If yes: Cooler ID: _____
Multiple Coolers?		☒ Yes ☐ No	If yes: Cooler # <u>2</u> of <u>2</u>
Cooler Custody Seals Present?		☐ Yes ☒ No	If yes: Cooler custody seals intact? ☐ Yes ☐ No
Sample Custody Seals Present?		☐ Yes ☒ No	If yes: Sample custody seals intact? ☐ Yes ☐ No
Trip Blank Present?		☐ Yes ☐ No	If yes: Which VOA samples are in cooler? ↓
Temperature Record			
Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other: _____ ☐ NONE			
Thermometer ID: <u>N</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>0.6</u>		Corrected Temp (°C): <u>0.6</u>	
• Sample Container Temperature			
Container(s) used:	<u>CONTAINER 1</u>		<u>CONTAINER 2</u>
Uncorrected Temp (°C):			
Corrected Temp (°C):			
Exceptions Noted			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No a) If yes: Is there evidence that the chilling process began? ☐ Yes ☐ No			
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No			
NOTE: If yes, contact PM before proceeding. If no, proceed with login			
Additional Comments			

Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-226480-1

SDG Number:

Login Number: 226480

List Number: 1

Creator: Homolar, Dana J

List Source: Eurofins Cedar Falls

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

Tracer/Carrier Summary

Client: SCS Engineers
Project/Site: City of Fremont

Job ID: 310-226480-1

Method: 9315 - Radium-226 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba (40-110)	
310-226480-1	MW-1	92.1	
310-226480-2	MW-2	89.7	
310-226480-3	MW-3	84.7	
310-226480-4	MW-4R	106	
310-226480-5	MW-5	85.2	
310-226480-6	MW-6	94.6	
310-226480-7	MW-7	81.0	
310-226480-8	MW-8	67.0	
310-226480-9	Duplicate	82.5	
LCS 160-555093/1-A	Lab Control Sample	90.9	
LCSD 160-555093/2-A	Lab Control Sample Dup	90.6	
MB 160-555093/21-A	Method Blank	94.8	
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 (40-110)	Y (40-110)
310-226480-1	MW-1	98.8	85.6
310-226480-2	MW-2	100	82.6
310-226480-3	MW-3	92.8	83.4
310-226480-4	MW-4R	101	81.5
310-226480-5	MW-5	90.6	80.7
310-226480-6	MW-6	102	82.6
310-226480-7	MW-7	85.9	77.0
310-226480-8	MW-8	98.8	80.7
310-226480-9	Duplicate	101	79.3
LCS 160-558700/1-A	Lab Control Sample	100	84.5
LCSD 160-558700/2-A	Lab Control Sample Dup	98.0	87.5
MB 160-558700/20-A	Method Blank	99.3	80.7
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 2022 Data

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

SCS ENGINEERS

27222120.00 | September 12, 2022

SCS Engineers
14755 Grover Street
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A.2	Intrawell Prediction Limits
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A.4	Sen's Slope/Mann-Kendall Analysis
A.5	Confidence Interval Analysis
B	Supporting information
B.1	Field Data Sheets
B.2	Chain of Custody
B.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 9.6.35. 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.

Since the site remains in assessment monitoring, each well at the site was sampled and analyzed following assessment monitoring procedures. During the August 2022 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 2022 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 statistically 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 2022 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 2022 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 2022 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 and calcium because no GWPS exists for either constituent. 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 those detected constituents both for the previous monitoring period, March 2022, and the current monitoring period, August 2022.

Table 1. Previously identified to Current identified exceedances

Well	Previously identified exceedances March 2022		Currently identified exceedances August 2022	
	Intrawell	Interwell	Intrawell	Interwell
MW-1	Arsenic	Arsenic		
	Chloride		Chloride	
		Fluoride		
		Lithium		
		Selenium		
				Sulfate
MW-2			Barium	
	Boron			
	Calcium	Calcium		
			Chloride	
	Fluoride	Fluoride		
	Lithium	Lithium		
		Selenium		
	Sulfate	Sulfate		
MW-3	Arsenic		Arsenic	
		Barium		Barium
	Chloride	Chloride	Chloride	
		Molybdenum		
		Sulfate		
MW-4R (upgradient)			Arsenic	
	Barium			
	Calcium		Calcium	
			Chloride	
MW-5	Chloride			
MW-6		Barium		
	Chloride	Chloride		
				Sulfate

MW-7	Barium		Barium	Barium
	Chloride	Chloride	Chloride	Chloride
				Selenium
			Radium	Radium
MW-8		Barium		Barium
	Calcium			
	Chloride			
			Radium	

Intrawell exceedances were noted for arsenic (MW-3 and MW-4R), barium (MW-2 and MW-7), calcium (MW-4R), chloride (MW-1, MW-2, MW-3, MW-4R, and MW-7), and radium (MW-7 and MW-8) without corresponding interwell exceedances except for barium, chloride, and radium at MW-7. No constituent/well pairs statistically exceeded the GWPS. Chloride 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 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 2022 sampling event are summarized in **Table 2** below.

Table 2. Summary of Statistical Analysis

Well	Detected Constituents	Result	Intrawell Exceedance?	Interwell Exceedance?	Significant Trend?	Confidence Interval Exceedance?	GWPS Exceedance ¹
MW-1	Arsenic (ug/L)	4.2			Yes, +		No
	Calcium (mg/L)	93				Yes	n/a
	Chloride (mg/L)	31.3	Yes		Yes, +		No
	Selenium (ug/L)	5.96			Yes, -		No
	Sulfate (mg/L)	59.5		Yes	Yes, -		No
	Total Radium (pCi/L)	2.42			Yes, -		No
MW-2	Arsenic (ug/L)	4.06			Yes, +	Yes	n/a
	Barium (ug/L)	129	Yes		Yes, +		No
	Boron (ug/L)	134			Yes, +	Yes	n/a
	Calcium (mg/L)	106			Yes, +	Yes	n/a
	Chloride (mg/L)	25.7	Yes				No
	Fluoride (mg/L)	0.857			Yes, +		No
	Total Dissolved Solids (mg/L)	376			Yes, +		No
MW-3	Arsenic (ug/L)	3.42	Yes		Yes		No
	Barium (ug/L)	183		Yes	Yes, +		No
	Calcium (mg/L)	107			Yes, +	Yes	n/a
	Chloride (mg/L)	41.8	Yes		Yes, +		No
	Fluoride (mg/L)	ND ²			Yes, -		No
	Molybdenum (ug/L)	12.0			Yes, +		No
	pH (S.U.)	7.06			Yes, -		No
	Sulfate (mg/L)	36.5			Yes, +		No
	Total Dissolved Solids (mg/L)	398			Yes, +		No
MW-4R (upgradient)	Arsenic (ug/L)	5.4	Yes	See Note 3	Yes, +		No
	Barium (ug/L)	129		See Note 3	Yes, +		No

	Calcium (mg/L)	103	Yes				n/a
	Chloride (mg/L)	42.6	Yes		Yes, +		No
MW-5	Calcium (mg/L)	91.3				Yes	n/a
	Chloride (mg/L)	26.1			Yes, +		No
	Molybdenum (ug/L)	4.62			Yes, -		n/a
	Selenium (ug/L)	ND ²			Yes, -		No
MW-6	Arsenic (ug/L)	3.11			Yes, +		No
	Boron (ug/L)	135			Yes, -		n/a
	Lithium (ug/L)	19.7			Yes, -		No
	Selenium (ug/L)	ND ²			Yes, -		No
	Sulfate (mg/L)	86.3		Yes			No
MW-7	Arsenic (ug/L)	3.65			Yes, +		No
	Barium (ug/L)	159	Yes	Yes	Yes, +		No
	Boron (ug/L)	118			Yes, -		n/a
	Calcium (mg/L)	106				Yes	n/a
	Chloride (mg/L)	101	Yes	Yes	Yes, +		No
	Selenium (ug/L)	11.4		Yes			No
	Total Dissolved Solids (mg/L)	502			Yes, +		Yes
	Total Radium (pCi/L)	4.23	Yes	Yes			No
MW-8	Barium (ug/L)	170		Yes	Yes, +		No
	Boron (ug/L)	109			Yes, +		n/a
	Calcium (mg/L)	101			Yes, +	Yes	n/a
	Chloride (mg/L)	28.5			Yes, +		No
	Total Dissolved Solids (mg/L)	350			Yes, +		No
	Total Radium (pCi/L)	3.89	Yes				No

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

²ND: Non-detect

³No interwell statistical comparison was performed on the upgradient well MW-4R.

n/a - No GWPS has been established.

2 GENERAL COMMENTS

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3 REFERENCES

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

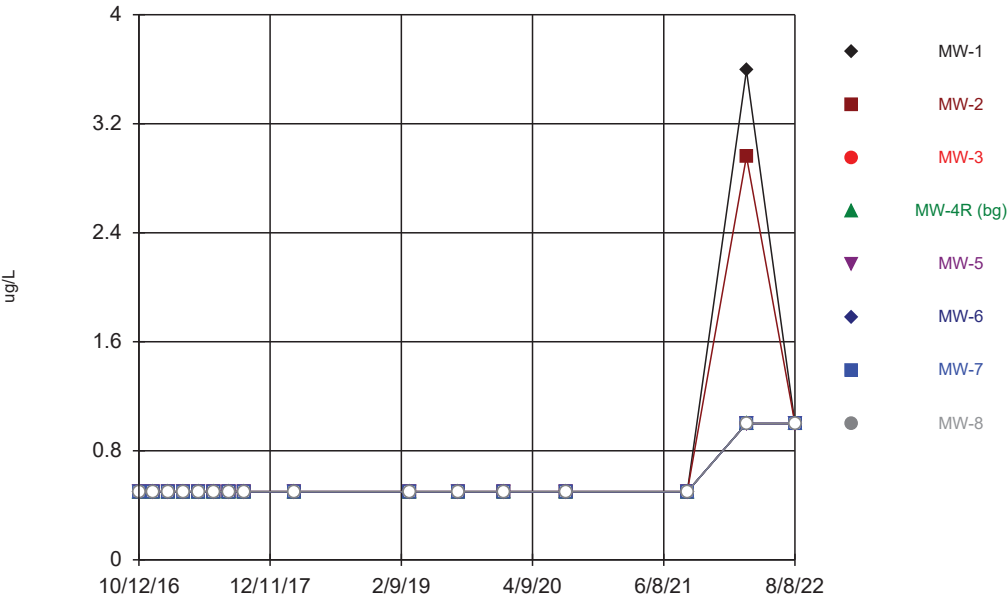
Layne GeoSciences, Inc. 1995. Hydrogeology of Proposed Fossil Fuel Combustion Ash Disposal Site. Prepared for Fremont Department of Utilities and HDR Engineering, Inc.

Sanitas Technologies, Sanitas Statistical Software v 9.6.31 and User Guide

Attachment A. Compliance Statistical Analysis

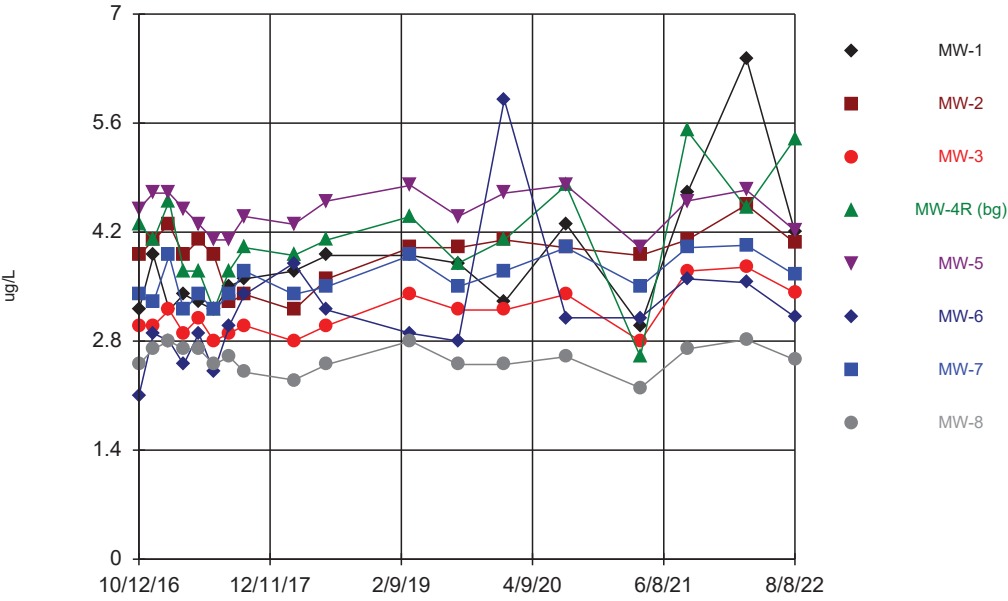
A.1 Time Series Plots

Time Series



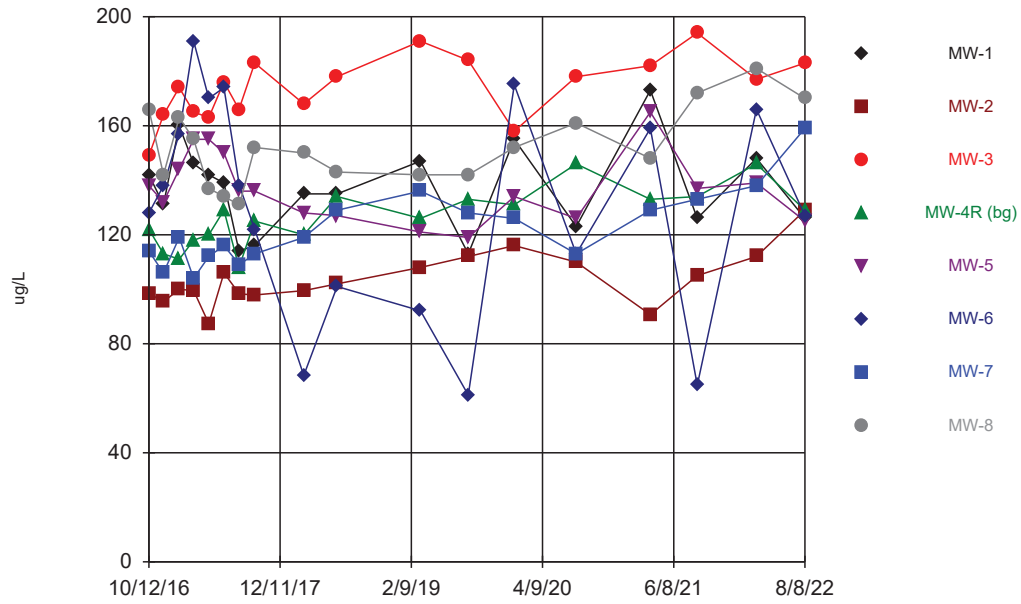
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Time Series



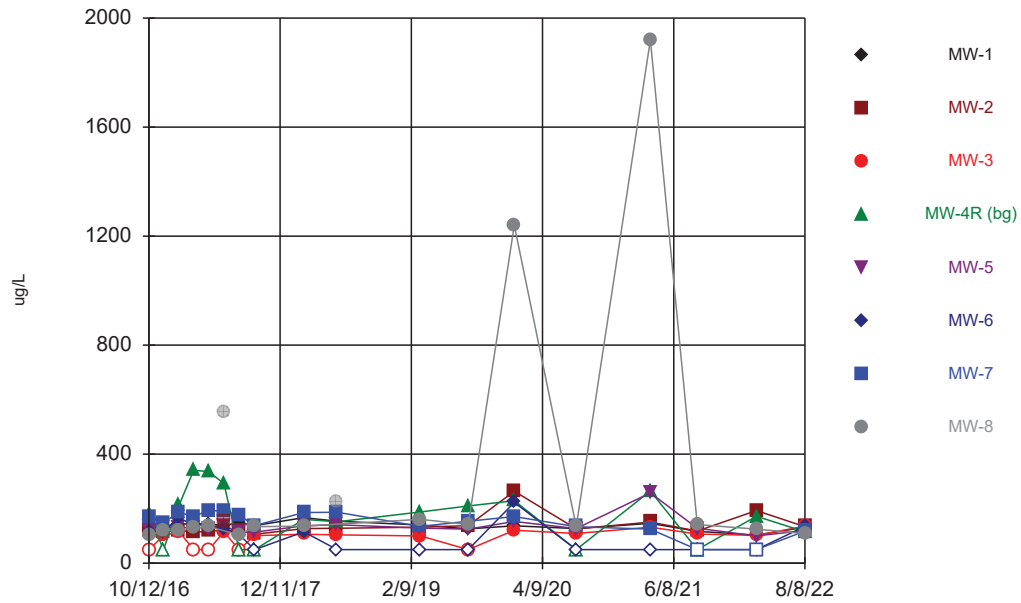
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Time Series



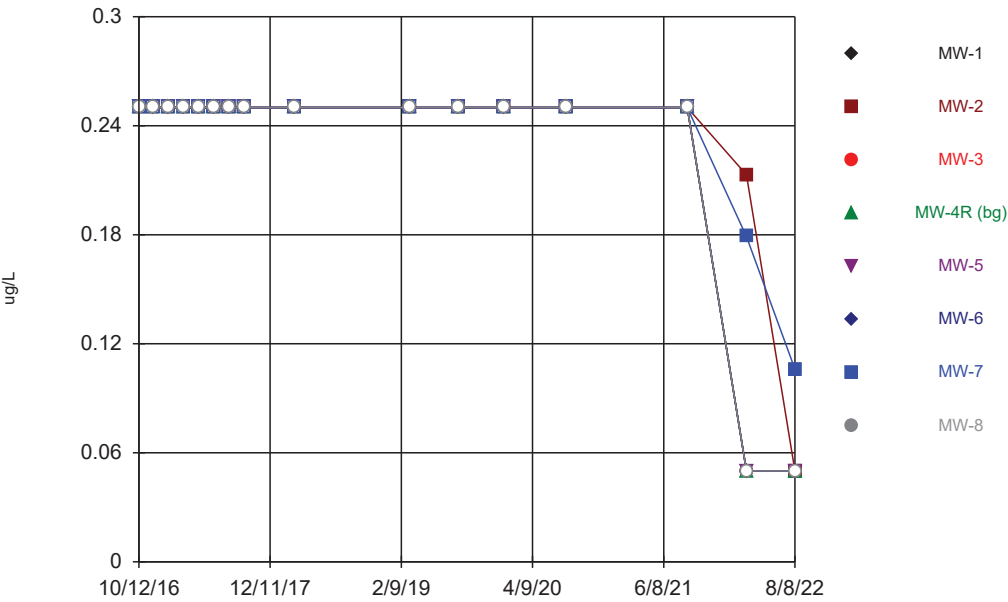
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Time Series



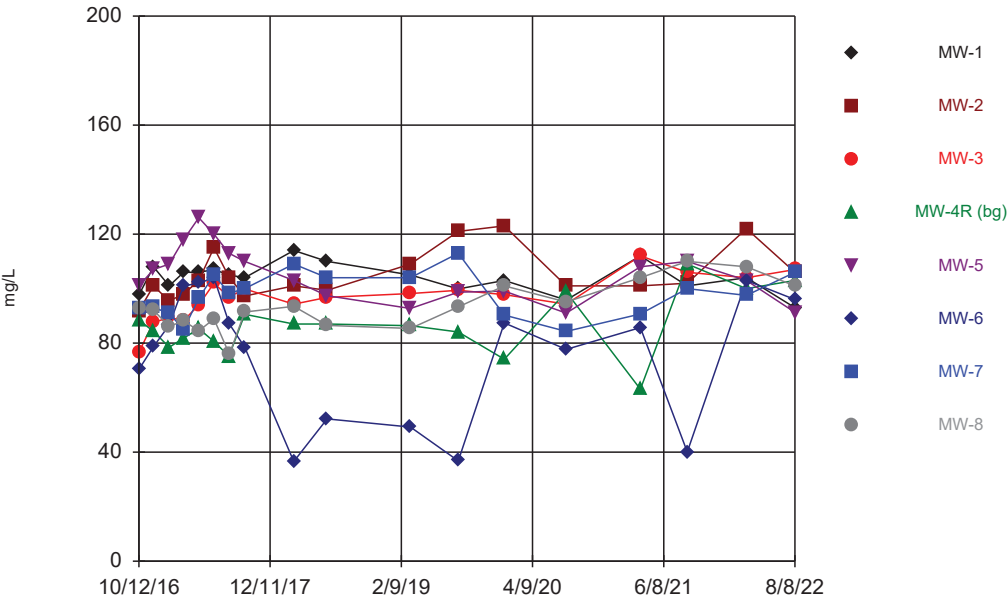
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Time Series



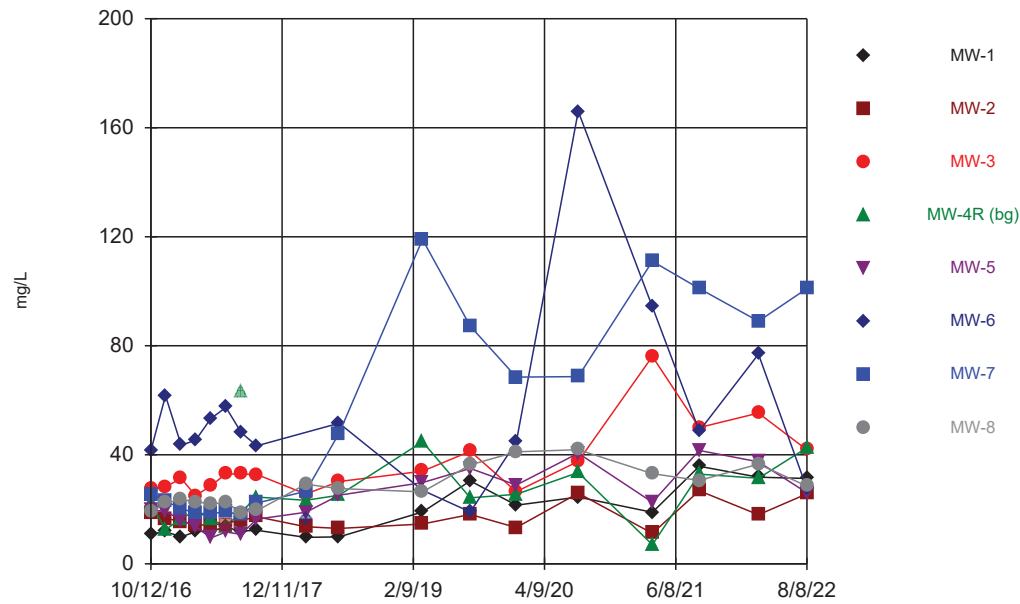
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Time Series



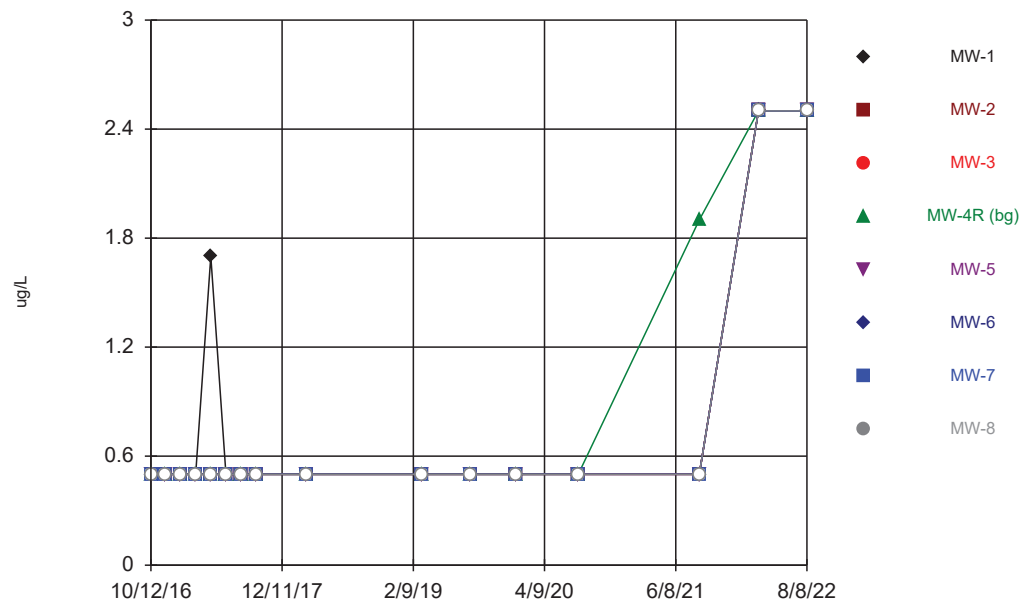
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Time Series



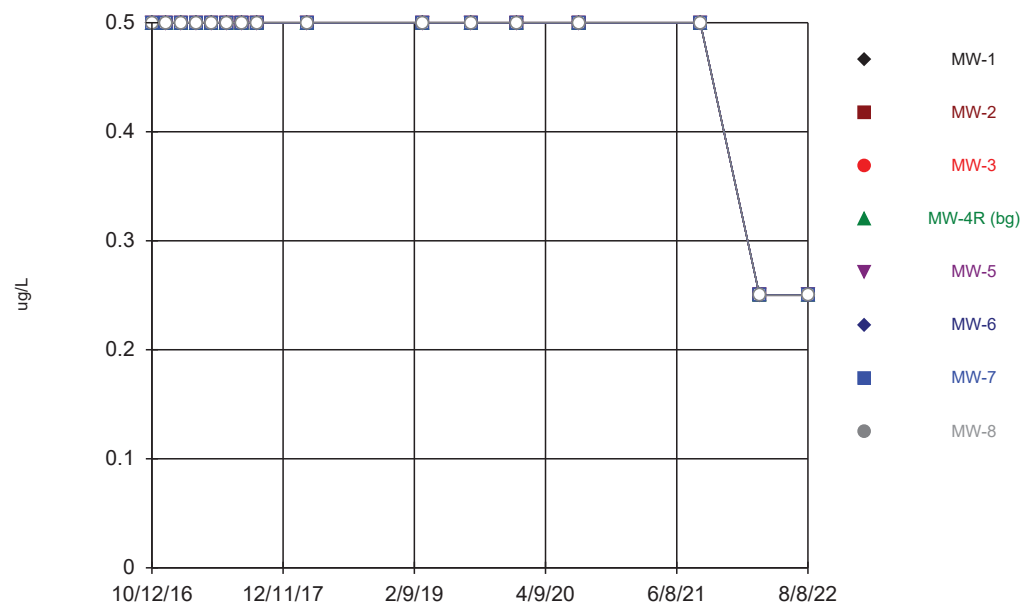
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Time Series



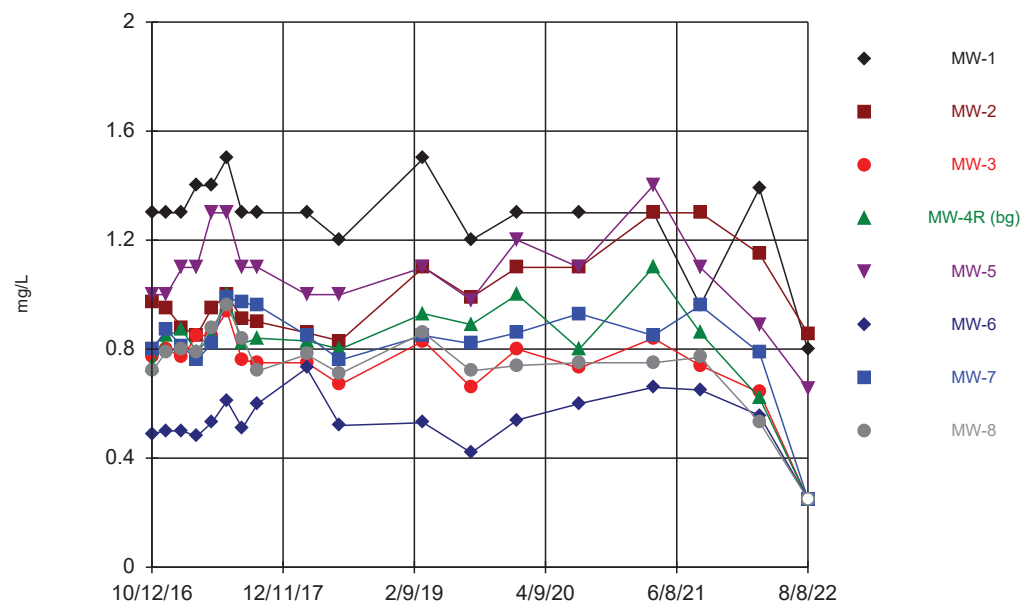
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Time Series



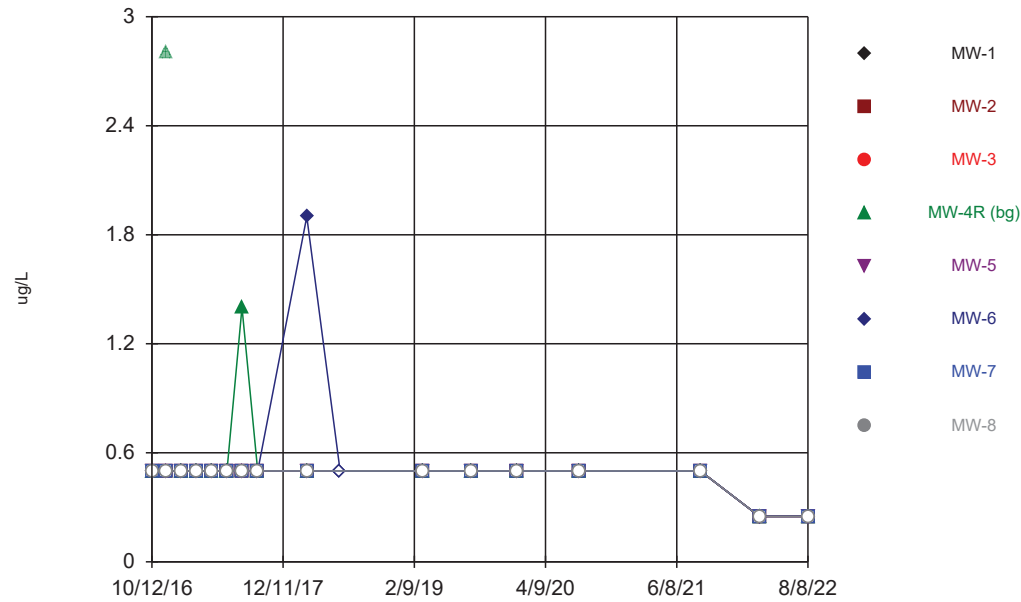
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Time Series



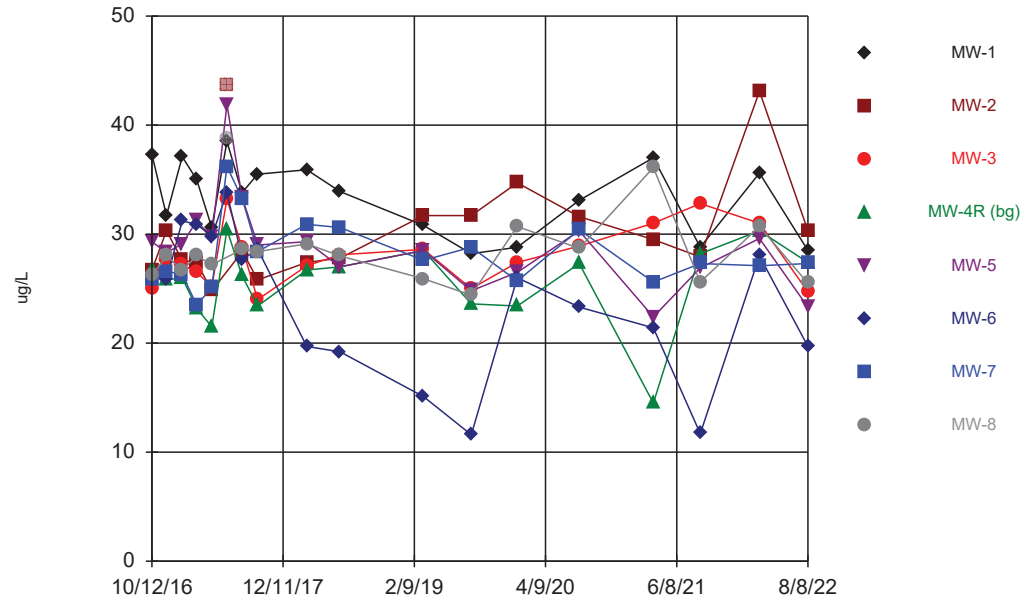
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Time Series



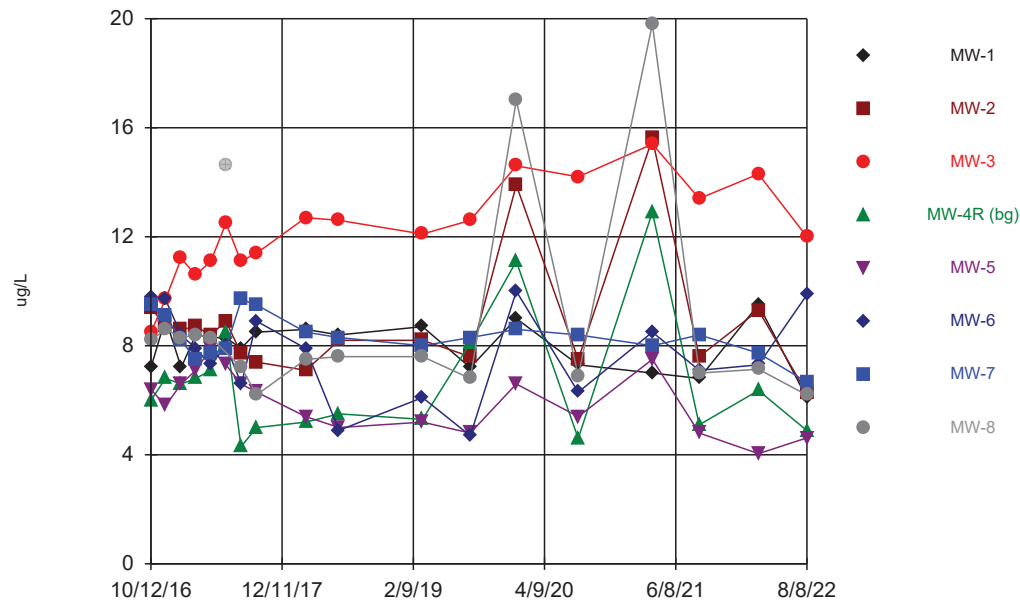
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Time Series



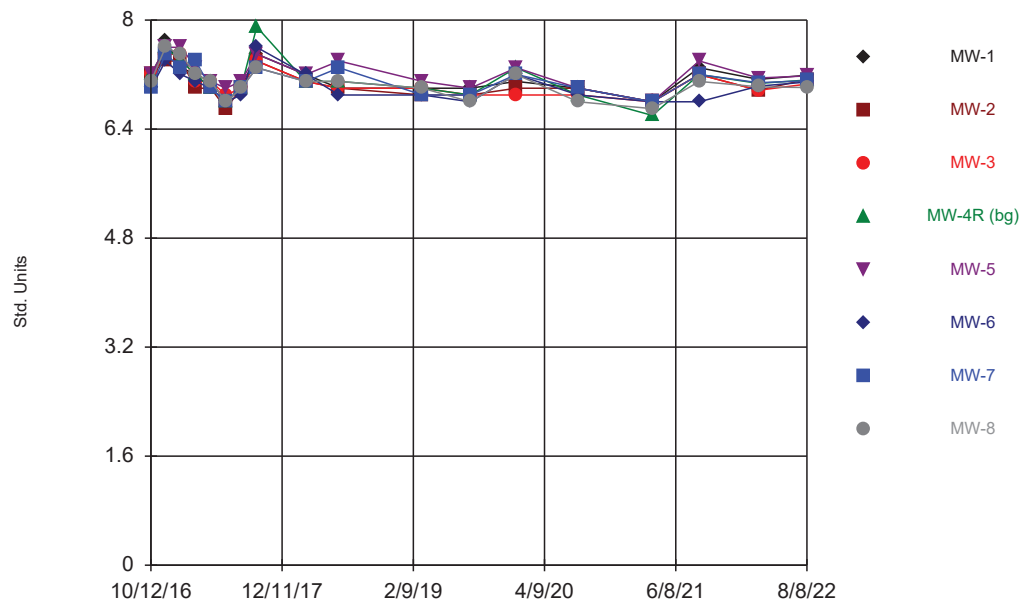
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Time Series



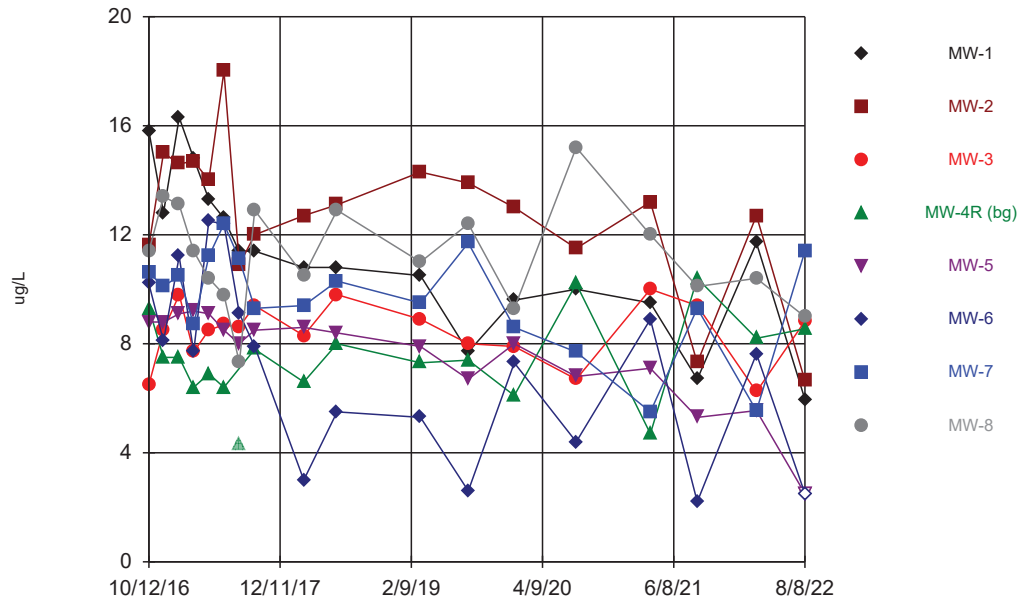
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Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Time Series



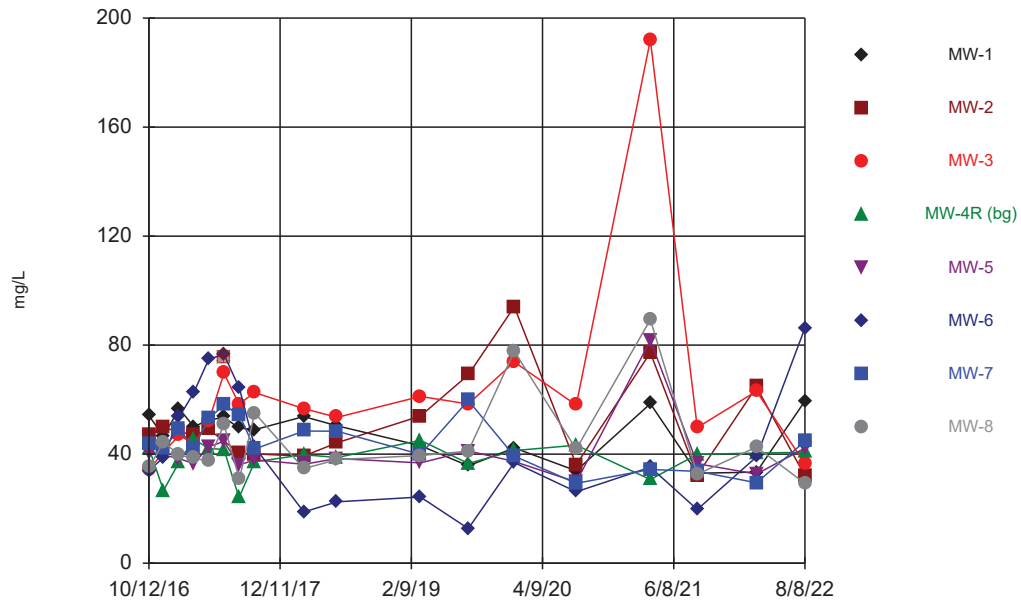
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Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Time Series



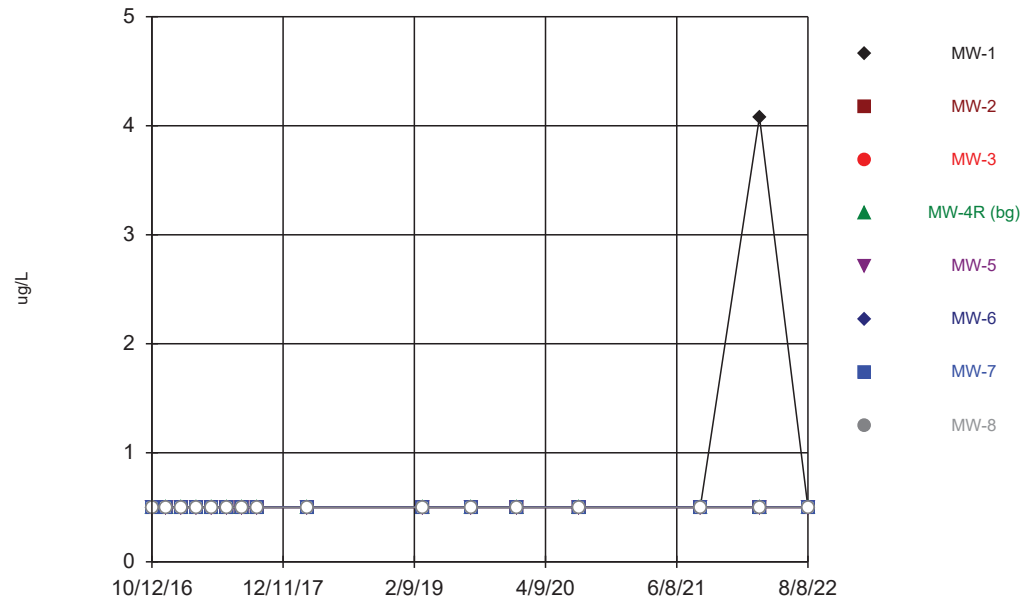
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Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Time Series



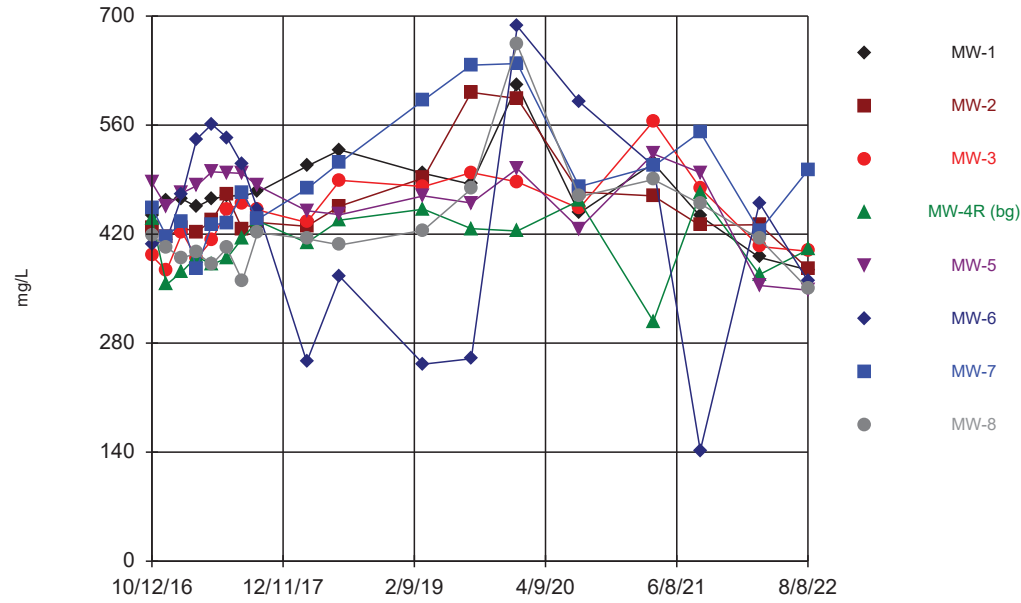
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Time Series



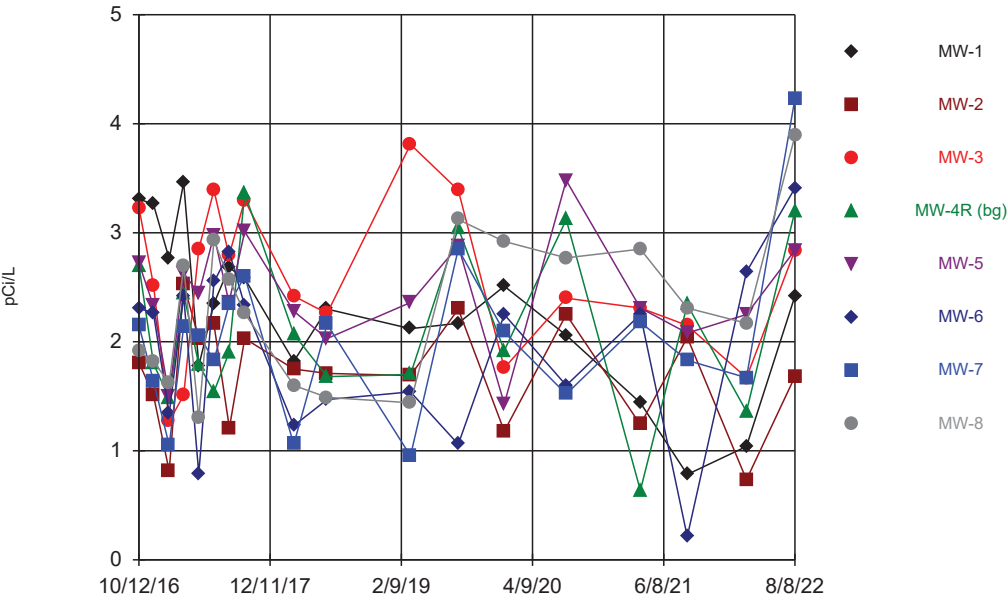
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Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Time Series



Constituent: Total Dissolved Solids Analysis Run 9/8/2022 9:10 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Time Series



Constituent: Total Radium Analysis Run 9/8/2022 9:10 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

A.2 Intrawell Prediction Limits

Prediction Limit

Fremont Dept. of Utilities

Client: SCS Engineers

Data: Fremont Department of Utilities Groundwater

Printed 9/8/2022, 10:24 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>
Antimony [total] (ug/L)	MW-1	1	n/a	8/8/2022	1ND	No	9	100	n/a	0.01809	NP Intra (NDs) 1 of 2
Antimony [total] (ug/L)	MW-2	1	n/a	8/8/2022	1ND	No	9	100	n/a	0.01809	NP Intra (NDs) 1 of 2
Antimony [total] (ug/L)	MW-3	1	n/a	8/8/2022	1ND	No	9	100	n/a	0.01809	NP Intra (NDs) 1 of 2
Antimony [total] (ug/L)	MW-4R	1	n/a	8/8/2022	1ND	No	9	100	n/a	0.01809	NP Intra (NDs) 1 of 2
Antimony [total] (ug/L)	MW-5	1	n/a	8/8/2022	1ND	No	9	100	n/a	0.01809	NP Intra (NDs) 1 of 2
Antimony [total] (ug/L)	MW-6	1	n/a	8/8/2022	1ND	No	9	100	n/a	0.01809	NP Intra (NDs) 1 of 2
Antimony [total] (ug/L)	MW-7	1	n/a	8/8/2022	1ND	No	9	100	n/a	0.01809	NP Intra (NDs) 1 of 2
Antimony [total] (ug/L)	MW-8	1	n/a	8/8/2022	1ND	No	9	100	n/a	0.01809	NP Intra (NDs) 1 of 2
Arsenic [total] (ug/L)	MW-1	4.325	n/a	8/8/2022	4.2	No	10	0	No	0.000...	Param Intra 1 of 2
Arsenic [total] (ug/L)	MW-2	4.899	n/a	8/8/2022	4.06	No	10	0	No	0.000...	Param Intra 1 of 2
Arsenic [total] (ug/L)	MW-3	3.348	n/a	8/8/2022	3.42	Yes	10	0	No	0.000...	Param Intra 1 of 2
Arsenic [total] (ug/L)	MW-4R	5.095	n/a	8/8/2022	5.4	Yes	10	0	No	0.000...	Param Intra 1 of 2
Arsenic [total] (ug/L)	MW-5	5.084	n/a	8/8/2022	4.22	No	10	0	No	0.000...	Param Intra 1 of 2
Arsenic [total] (ug/L)	MW-6	4.399	n/a	8/8/2022	3.11	No	10	0	No	0.000...	Param Intra 1 of 2
Arsenic [total] (ug/L)	MW-7	4.095	n/a	8/8/2022	3.65	No	10	0	No	0.000...	Param Intra 1 of 2
Arsenic [total] (ug/L)	MW-8	3.043	n/a	8/8/2022	2.56	No	10	0	No	0.000...	Param Intra 1 of 2
Barium [total] (ug/L)	MW-1	173.3	n/a	8/8/2022	138.7	No	10	0	No	0.000...	Param Intra 1 of 2 De...
Barium [total] (ug/L)	MW-2	112.9	n/a	8/8/2022	129	Yes	10	0	No	0.000...	Param Intra 1 of 2
Barium [total] (ug/L)	MW-3	197.7	n/a	8/8/2022	183	No	10	0	No	0.000...	Param Intra 1 of 2
Barium [total] (ug/L)	MW-4R	144.3	n/a	8/8/2022	129	No	10	0	No	0.000...	Param Intra 1 of 2
Barium [total] (ug/L)	MW-5	171.6	n/a	8/8/2022	125	No	10	0	No	0.000...	Param Intra 1 of 2
Barium [total] (ug/L)	MW-6	249.2	n/a	8/8/2022	127	No	10	0	No	0.000...	Param Intra 1 of 2
Barium [total] (ug/L)	MW-7	136	n/a	8/8/2022	159	Yes	10	0	No	0.000...	Param Intra 1 of 2
Barium [total] (ug/L)	MW-8	183.3	n/a	8/8/2022	170	No	10	0	No	0.000...	Param Intra 1 of 2
Boron (ug/L)	MW-1	177.7	n/a	8/8/2022	132	No	10	0	No	0.000...	Param Intra 1 of 2
Boron (ug/L)	MW-2	140.5	n/a	8/8/2022	134	No	9	0	No	0.000...	Param Intra 1 of 2
Boron (ug/L)	MW-3	139.9	n/a	8/8/2022	136	No	10	40	x^3	0.000...	Param Intra 1 of 2
Boron (ug/L)	MW-4R	570.9	n/a	8/8/2022	115	No	10	30	No	0.000...	Param Intra 1 of 2
Boron (ug/L)	MW-5	157.3	n/a	8/8/2022	120	No	10	0	No	0.000...	Param Intra 1 of 2
Boron (ug/L)	MW-6	274.3	n/a	8/8/2022	135	No	10	20	No	0.000...	Param Intra 1 of 2
Boron (ug/L)	MW-7	230	n/a	8/8/2022	118	No	10	0	No	0.000...	Param Intra 1 of 2
Cadmium [total] (ug/L)	MW-1	0.5	n/a	8/8/2022	0.05ND	No	9	100	n/a	0.01809	NP Intra (NDs) 1 of 2
Cadmium [total] (ug/L)	MW-2	0.5	n/a	8/8/2022	0.05ND	No	9	100	n/a	0.01809	NP Intra (NDs) 1 of 2
Cadmium [total] (ug/L)	MW-3	0.5	n/a	8/8/2022	0.05ND	No	9	100	n/a	0.01809	NP Intra (NDs) 1 of 2
Cadmium [total] (ug/L)	MW-4R	0.5	n/a	8/8/2022	0.05ND	No	9	100	n/a	0.01809	NP Intra (NDs) 1 of 2
Cadmium [total] (ug/L)	MW-5	0.5	n/a	8/8/2022	0.05ND	No	9	100	n/a	0.01809	NP Intra (NDs) 1 of 2
Cadmium [total] (ug/L)	MW-6	0.5	n/a	8/8/2022	0.05ND	No	9	100	n/a	0.01809	NP Intra (NDs) 1 of 2
Cadmium [total] (ug/L)	MW-7	0.5	n/a	8/8/2022	0.106	No	9	100	n/a	0.01809	NP Intra (NDs) 1 of 2
Cadmium [total] (ug/L)	MW-8	0.5	n/a	8/8/2022	0.05ND	No	9	100	n/a	0.01809	NP Intra (NDs) 1 of 2
Calcium (mg/L)	MW-1	119.5	n/a	8/8/2022	93	No	10	0	No	0.000...	Param Intra 1 of 2
Calcium (mg/L)	MW-2	119.4	n/a	8/8/2022	106	No	10	0	No	0.000...	Param Intra 1 of 2
Calcium (mg/L)	MW-3	114.8	n/a	8/8/2022	107	No	10	0	No	0.000...	Param Intra 1 of 2
Calcium (mg/L)	MW-4R	98.37	n/a	8/8/2022	103	Yes	10	0	No	0.000...	Param Intra 1 of 2
Calcium (mg/L)	MW-5	137.5	n/a	8/8/2022	91.3	No	10	0	No	0.000...	Param Intra 1 of 2
Calcium (mg/L)	MW-6	146	n/a	8/8/2022	96	No	10	0	No	0.000...	Param Intra 1 of 2
Calcium (mg/L)	MW-7	119.5	n/a	8/8/2022	106	No	10	0	No	0.000...	Param Intra 1 of 2
Calcium (mg/L)	MW-8	103.8	n/a	8/8/2022	101	No	10	0	No	0.000...	Param Intra 1 of 2
Chloride (mg/L)	MW-1	15.09	n/a	8/8/2022	31.3	Yes	10	0	No	0.000...	Param Intra 1 of 2
Chloride (mg/L)	MW-2	21.66	n/a	8/8/2022	25.7	Yes	9	0	No	0.000...	Param Intra 1 of 2
Chloride (mg/L)	MW-3	38.52	n/a	8/8/2022	41.8	Yes	10	0	No	0.000...	Param Intra 1 of 2

Prediction Limit

Fremont Dept. of Utilities

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Chloride (mg/L)	MW-5	30.73	n/a	8/8/2022	26.1	No	10	0	No	0.000...	Param Intra 1 of 2
Chloride (mg/L)	MW-7	47.9	n/a	8/8/2022	101	Yes	10	0	n/a	0.01476	NP Intra (normality) ...
Chloride (mg/L)	MW-8	33.09	n/a	8/8/2022	28.5	No	10	0	No	0.000...	Param Intra 1 of 2
Chromium [total] (ug/L)	MW-1	1.7	n/a	8/8/2022	2.5ND	No	9	88.89	n/a	0.01809	NP Intra (NDs) 1 of 2
Chromium [total] (ug/L)	MW-2	1	n/a	8/8/2022	2.5ND	No	9	100	n/a	0.01809	NP Intra (NDs) 1 of 2
Chromium [total] (ug/L)	MW-3	1	n/a	8/8/2022	2.5ND	No	9	100	n/a	0.01809	NP Intra (NDs) 1 of 2
Chromium [total] (ug/L)	MW-4R	1	n/a	8/8/2022	2.5ND	No	9	100	n/a	0.01809	NP Intra (NDs) 1 of 2
Chromium [total] (ug/L)	MW-5	1	n/a	8/8/2022	2.5ND	No	9	100	n/a	0.01809	NP Intra (NDs) 1 of 2
Chromium [total] (ug/L)	MW-6	1	n/a	8/8/2022	2.5ND	No	9	100	n/a	0.01809	NP Intra (NDs) 1 of 2
Chromium [total] (ug/L)	MW-7	1	n/a	8/8/2022	2.5ND	No	9	100	n/a	0.01809	NP Intra (NDs) 1 of 2
Chromium [total] (ug/L)	MW-8	1	n/a	8/8/2022	2.5ND	No	9	100	n/a	0.01809	NP Intra (NDs) 1 of 2
Cobalt [total] (ug/L)	MW-1	1	n/a	8/8/2022	0.25ND	No	9	100	n/a	0.01809	NP Intra (NDs) 1 of 2
Cobalt [total] (ug/L)	MW-2	1	n/a	8/8/2022	0.25ND	No	9	100	n/a	0.01809	NP Intra (NDs) 1 of 2
Cobalt [total] (ug/L)	MW-3	1	n/a	8/8/2022	0.25ND	No	9	100	n/a	0.01809	NP Intra (NDs) 1 of 2
Cobalt [total] (ug/L)	MW-4R	1	n/a	8/8/2022	0.25ND	No	9	100	n/a	0.01809	NP Intra (NDs) 1 of 2
Cobalt [total] (ug/L)	MW-5	1	n/a	8/8/2022	0.25ND	No	9	100	n/a	0.01809	NP Intra (NDs) 1 of 2
Cobalt [total] (ug/L)	MW-6	1	n/a	8/8/2022	0.25ND	No	9	100	n/a	0.01809	NP Intra (NDs) 1 of 2
Cobalt [total] (ug/L)	MW-7	1	n/a	8/8/2022	0.25ND	No	9	100	n/a	0.01809	NP Intra (NDs) 1 of 2
Cobalt [total] (ug/L)	MW-8	1	n/a	8/8/2022	0.25ND	No	9	100	n/a	0.01809	NP Intra (NDs) 1 of 2
Fluoride (mg/L)	MW-1	1.653	n/a	8/8/2022	0.9668	No	10	0	No	0.000...	Param Intra 1 of 2 De...
Fluoride (mg/L)	MW-2	1.08	n/a	8/8/2022	0.857	No	10	0	No	0.000...	Param Intra 1 of 2
Fluoride (mg/L)	MW-3	1.014	n/a	8/8/2022	0.25ND	No	10	0	No	0.000...	Param Intra 1 of 2
Fluoride (mg/L)	MW-4R	1.043	n/a	8/8/2022	0.25ND	No	10	0	No	0.000...	Param Intra 1 of 2
Fluoride (mg/L)	MW-5	1.471	n/a	8/8/2022	0.655	No	10	0	x^(1/3)	0.000...	Param Intra 1 of 2
Fluoride (mg/L)	MW-6	0.7825	n/a	8/8/2022	0.25ND	No	10	0	No	0.000...	Param Intra 1 of 2
Fluoride (mg/L)	MW-7	1.119	n/a	8/8/2022	0.25ND	No	10	0	No	0.000...	Param Intra 1 of 2
Fluoride (mg/L)	MW-8	1.035	n/a	8/8/2022	0.25ND	No	10	0	No	0.000...	Param Intra 1 of 2
Lead [total] (ug/L)	MW-1	1	n/a	8/8/2022	0.25ND	No	9	100	n/a	0.01809	NP Intra (NDs) 1 of 2
Lead [total] (ug/L)	MW-2	1	n/a	8/8/2022	0.25ND	No	9	100	n/a	0.01809	NP Intra (NDs) 1 of 2
Lead [total] (ug/L)	MW-3	1	n/a	8/8/2022	0.25ND	No	9	100	n/a	0.01809	NP Intra (NDs) 1 of 2
Lead [total] (ug/L)	MW-5	1	n/a	8/8/2022	0.25ND	No	9	100	n/a	0.01809	NP Intra (NDs) 1 of 2
Lead [total] (ug/L)	MW-6	1.9	n/a	8/8/2022	0.25ND	No	10	90	n/a	0.01476	NP Intra (NDs) 1 of 2
Lead [total] (ug/L)	MW-7	1	n/a	8/8/2022	0.25ND	No	9	100	n/a	0.01809	NP Intra (NDs) 1 of 2
Lead [total] (ug/L)	MW-8	1	n/a	8/8/2022	0.25ND	No	9	100	n/a	0.01809	NP Intra (NDs) 1 of 2
Lithium (ug/L)	MW-1	42.45	n/a	8/8/2022	28.5	No	10	0	No	0.000...	Param Intra 1 of 2
Lithium (ug/L)	MW-2	32.37	n/a	8/8/2022	30.3	No	9	0	No	0.000...	Param Intra 1 of 2
Lithium (ug/L)	MW-3	35	n/a	8/8/2022	24.7	No	10	0	No	0.000...	Param Intra 1 of 2
Lithium (ug/L)	MW-4R	33.19	n/a	8/8/2022	27.4	No	10	0	No	0.000...	Param Intra 1 of 2
Lithium (ug/L)	MW-5	41.9	n/a	8/8/2022	23.3	No	10	0	n/a	0.01476	NP Intra (normality) ...
Lithium (ug/L)	MW-6	41.7	n/a	8/8/2022	19.7	No	10	0	No	0.000...	Param Intra 1 of 2
Lithium (ug/L)	MW-7	40.7	n/a	8/8/2022	27.3	No	10	0	No	0.000...	Param Intra 1 of 2
Lithium (ug/L)	MW-8	30.8	n/a	8/8/2022	25.5	No	9	0	No	0.000...	Param Intra 1 of 2
Molybdenum (ug/L)	MW-1	9.944	n/a	8/8/2022	6.08	No	10	0	No	0.000...	Param Intra 1 of 2
Molybdenum (ug/L)	MW-2	10.47	n/a	8/8/2022	6.26	No	10	0	No	0.000...	Param Intra 1 of 2
Molybdenum (ug/L)	MW-3	15.14	n/a	8/8/2022	12	No	10	0	No	0.000...	Param Intra 1 of 2
Molybdenum (ug/L)	MW-4R	9.883	n/a	8/8/2022	4.89	No	10	0	No	0.000...	Param Intra 1 of 2
Molybdenum (ug/L)	MW-5	9.091	n/a	8/8/2022	4.62	No	10	0	No	0.000...	Param Intra 1 of 2
Molybdenum (ug/L)	MW-6	12.34	n/a	8/8/2022	9.87	No	10	0	No	0.000...	Param Intra 1 of 2
Molybdenum (ug/L)	MW-7	11.02	n/a	8/8/2022	6.67	No	10	0	No	0.000...	Param Intra 1 of 2
Molybdenum (ug/L)	MW-8	10.28	n/a	8/8/2022	6.19	No	9	0	No	0.000...	Param Intra 1 of 2

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pH (Std. Units)	MW-1	7.982	6.378	8/8/2022	7.19	No	10	0	No	0.000...	Param Intra 1 of 2
pH (Std. Units)	MW-2	7.814	6.426	8/8/2022	7.13	No	10	0	No	0.000...	Param Intra 1 of 2
pH (Std. Units)	MW-3	7.829	6.531	8/8/2022	7.06	No	10	0	No	0.000...	Param Intra 1 of 2
pH (Std. Units)	MW-4R	7.894	6.585	8/8/2022	6.989	No	10	0	No	0.000...	Param Intra 1 of 2 De...
pH (Std. Units)	MW-5	7.952	6.648	8/8/2022	7.18	No	10	0	No	0.000...	Param Intra 1 of 2
pH (Std. Units)	MW-6	7.855	6.365	8/8/2022	7.09	No	10	0	No	0.000...	Param Intra 1 of 2
pH (Std. Units)	MW-7	7.838	6.502	8/8/2022	7.11	No	10	0	No	0.000...	Param Intra 1 of 2
pH (Std. Units)	MW-8	7.888	6.472	8/8/2022	7.01	No	10	0	No	0.000...	Param Intra 1 of 2
Selenium [total] (ug/L)	MW-1	19.12	n/a	8/8/2022	5.96	No	10	0	No	0.000...	Param Intra 1 of 2
Selenium [total] (ug/L)	MW-2	19.91	n/a	8/8/2022	6.64	No	10	0	No	0.000...	Param Intra 1 of 2
Selenium [total] (ug/L)	MW-3	11.57	n/a	8/8/2022	8.83	No	10	0	No	0.000...	Param Intra 1 of 2
Selenium [total] (ug/L)	MW-5	9.829	n/a	8/8/2022	2.5ND	No	10	0	No	0.000...	Param Intra 1 of 2
Selenium [total] (ug/L)	MW-6	17.84	n/a	8/8/2022	2.5ND	No	10	0	No	0.000...	Param Intra 1 of 2
Selenium [total] (ug/L)	MW-7	13.6	n/a	8/8/2022	11.4	No	10	0	No	0.000...	Param Intra 1 of 2
Selenium [total] (ug/L)	MW-8	17.04	n/a	8/8/2022	8.99	No	10	0	No	0.000...	Param Intra 1 of 2
Sulfate (mg/L)	MW-1	60.68	n/a	8/8/2022	59.5	No	10	0	No	0.000...	Param Intra 1 of 2
Sulfate (mg/L)	MW-3	84.08	n/a	8/8/2022	36.5	No	10	0	No	0.000...	Param Intra 1 of 2
Sulfate (mg/L)	MW-4R	58.37	n/a	8/8/2022	40.7	No	10	0	No	0.000...	Param Intra 1 of 2
Sulfate (mg/L)	MW-5	47.75	n/a	8/8/2022	42.2	No	10	0	No	0.000...	Param Intra 1 of 2
Sulfate (mg/L)	MW-6	111.3	n/a	8/8/2022	86.3	No	10	0	No	0.000...	Param Intra 1 of 2
Sulfate (mg/L)	MW-7	65.39	n/a	8/8/2022	44.7	No	10	0	No	0.000...	Param Intra 1 of 2
Sulfate (mg/L)	MW-8	63.23	n/a	8/8/2022	29.3	No	10	0	No	0.000...	Param Intra 1 of 2
Thallium [total] (ug/L)	MW-1	1	n/a	8/8/2022	0.5ND	No	9	100	n/a	0.01809	NP Intra (NDs) 1 of 2
Thallium [total] (ug/L)	MW-2	1	n/a	8/8/2022	0.5ND	No	9	100	n/a	0.01809	NP Intra (NDs) 1 of 2
Thallium [total] (ug/L)	MW-3	1	n/a	8/8/2022	0.5ND	No	9	100	n/a	0.01809	NP Intra (NDs) 1 of 2
Thallium [total] (ug/L)	MW-4R	1	n/a	8/8/2022	0.5ND	No	9	100	n/a	0.01809	NP Intra (NDs) 1 of 2
Thallium [total] (ug/L)	MW-5	1	n/a	8/8/2022	0.5ND	No	9	100	n/a	0.01809	NP Intra (NDs) 1 of 2
Thallium [total] (ug/L)	MW-6	1	n/a	8/8/2022	0.5ND	No	9	100	n/a	0.01809	NP Intra (NDs) 1 of 2
Thallium [total] (ug/L)	MW-7	1	n/a	8/8/2022	0.5ND	No	9	100	n/a	0.01809	NP Intra (NDs) 1 of 2
Thallium [total] (ug/L)	MW-8	1	n/a	8/8/2022	0.5ND	No	9	100	n/a	0.01809	NP Intra (NDs) 1 of 2
Total Dissolved Solids (mg/L)	MW-1	549.1	n/a	8/8/2022	374	No	10	0	No	0.000...	Param Intra 1 of 2
Total Dissolved Solids (mg/L)	MW-2	484	n/a	8/8/2022	376	No	10	0	No	0.000...	Param Intra 1 of 2
Total Dissolved Solids (mg/L)	MW-3	537.5	n/a	8/8/2022	398	No	10	0	No	0.000...	Param Intra 1 of 2
Total Dissolved Solids (mg/L)	MW-4R	492.5	n/a	8/8/2022	400	No	10	0	No	0.000...	Param Intra 1 of 2
Total Dissolved Solids (mg/L)	MW-5	539.3	n/a	8/8/2022	348	No	10	0	No	0.000...	Param Intra 1 of 2
Total Dissolved Solids (mg/L)	MW-6	739.1	n/a	8/8/2022	360	No	10	0	No	0.000...	Param Intra 1 of 2
Total Dissolved Solids (mg/L)	MW-7	557.1	n/a	8/8/2022	502	No	10	0	No	0.000...	Param Intra 1 of 2
Total Dissolved Solids (mg/L)	MW-8	455.5	n/a	8/8/2022	350	No	10	0	No	0.000...	Param Intra 1 of 2
Total Radium (pCi/L)	MW-1	4.411	n/a	8/8/2022	2.42	No	10	0	No	0.000...	Param Intra 1 of 2
Total Radium (pCi/L)	MW-2	3.235	n/a	8/8/2022	1.68	No	10	0	No	0.000...	Param Intra 1 of 2
Total Radium (pCi/L)	MW-3	4.735	n/a	8/8/2022	2.84	No	10	0	No	0.000...	Param Intra 1 of 2
Total Radium (pCi/L)	MW-4R	3.381	n/a	8/8/2022	2.387	No	10	0	No	0.000...	Param Intra 1 of 2 De...
Total Radium (pCi/L)	MW-5	3.787	n/a	8/8/2022	2.84	No	10	0	No	0.000...	Param Intra 1 of 2
Total Radium (pCi/L)	MW-6	4.008	n/a	8/8/2022	3.41	No	10	0	No	0.000...	Param Intra 1 of 2
Total Radium (pCi/L)	MW-7	3.464	n/a	8/8/2022	4.23	Yes	10	0	No	0.000...	Param Intra 1 of 2
Total Radium (pCi/L)	MW-8	3.71	n/a	8/8/2022	3.89	Yes	10	0	No	0.000...	Param Intra 1 of 2
Sulfate (mg/L)	MW-2	58.28	n/a	8/8/2022	32	No	9	0	No	0.000...	Param Intra 1 of 2
Chloride (mg/L)	MW-4R	34.63	n/a	8/8/2022	42.6	Yes	9	0	No	0.000...	Param Intra 1 of 2
Chloride (mg/L)	MW-6	71.9	n/a	8/8/2022	27.6	No	9	0	No	0.000...	Param Intra 1 of 2
Lead [total] (ug/L)	MW-4R	1.4	n/a	8/8/2022	0.25ND	No	8	87.5	n/a	0.02144	NP Intra (NDs) 1 of 2

Prediction Limit

Fremont Dept. of Utilities

Client: SCS Engineers

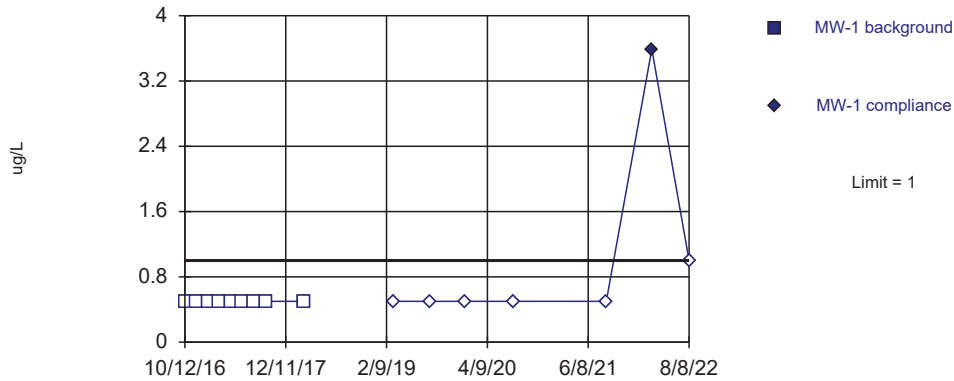
Data: Fremont Department of Utilities Groundwater

Printed 9/8/2022, 10:24 AM

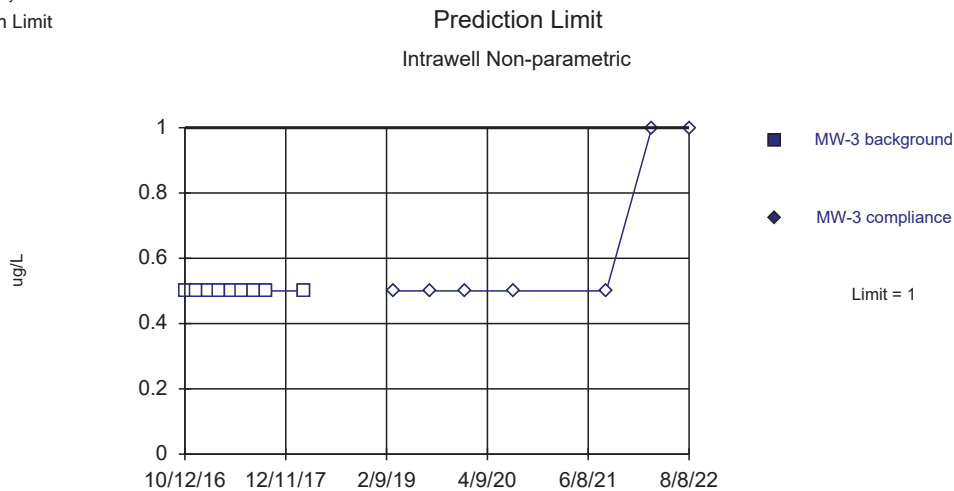
<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Date</u>	<u>Observ.</u>	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Selenium [total] (ug/L)	MW-4R	10.4	n/a	8/8/2022	8.55	No	9	0	No	0.000...	Param Intra 1 of 2
Boron (ug/L)	MW-8	168.8	n/a	8/8/2022	109	No	8	0	No	0.000...	Param Intra 1 of 2

Within Limit

Prediction Limit Intrawell Non-parametric



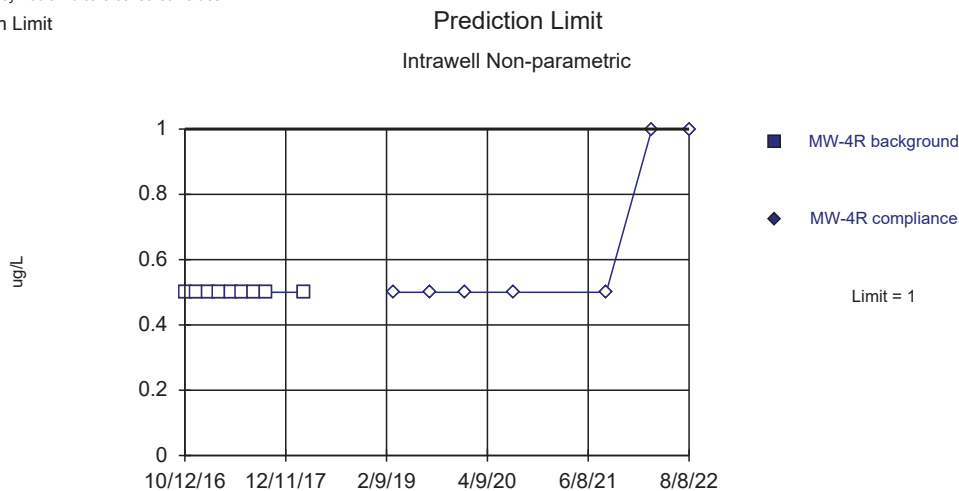
Within Limit



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 9) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.03586. Individual comparison alpha = 0.01809 (1 of 2). Seasonality was not detected with 95% confidence.

Constituent: Antimony [total] Analysis Run 9/8/2022 9:44 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

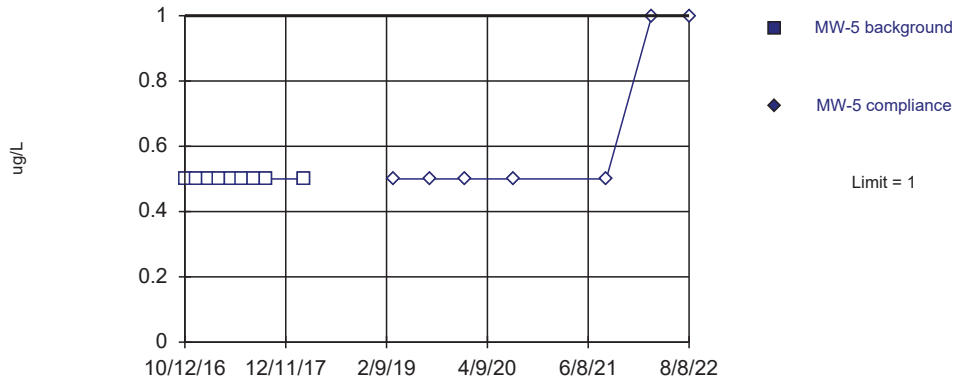


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 9) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.03586. Individual comparison alpha = 0.01809 (1 of 2). Seasonality was not detected with 95% confidence.

Constituent: Antimony [total] Analysis Run 9/8/2022 9:44 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Non-parametric

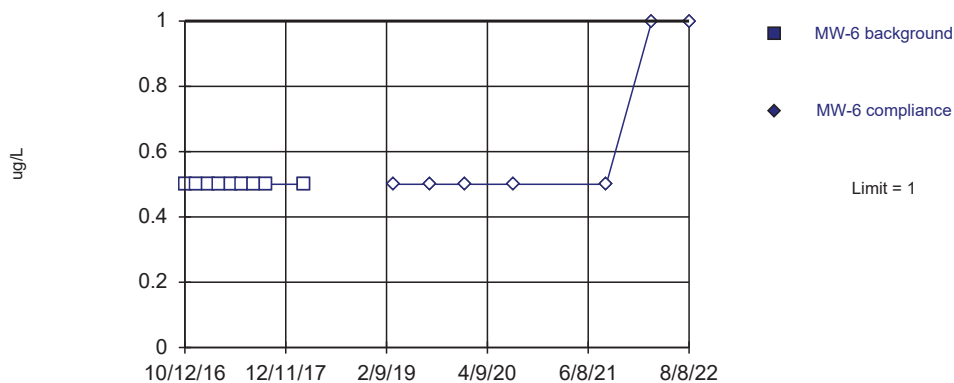


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 9) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.03586. Individual comparison alpha = 0.01809 (1 of 2). Seasonality was not detected with 95% confidence.

Constituent: Antimony [total] Analysis Run 9/8/2022 9:44 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Non-parametric

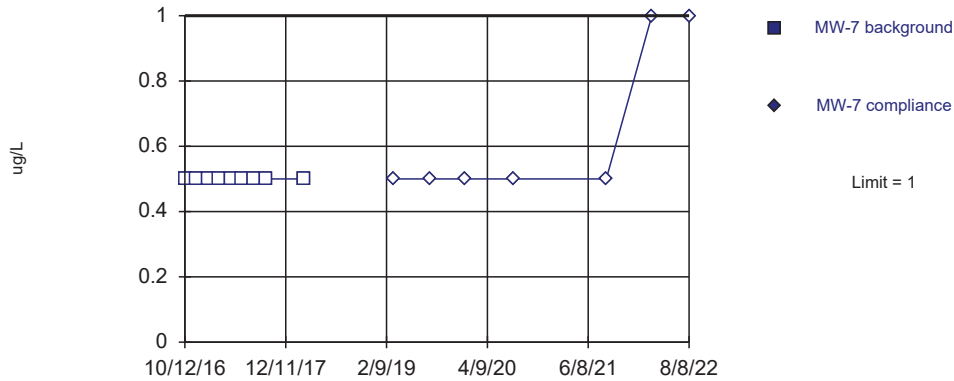


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 9) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.03586. Individual comparison alpha = 0.01809 (1 of 2). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Antimony [total] Analysis Run 9/8/2022 9:44 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit
Intrawell Non-parametric

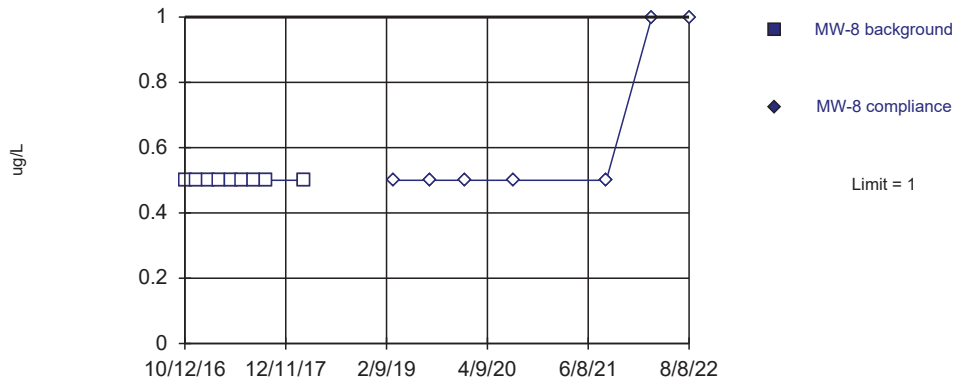


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 9) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.03586. Individual comparison alpha = 0.01809 (1 of 2). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Antimony [total] Analysis Run 9/8/2022 9:44 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit
Intrawell Non-parametric

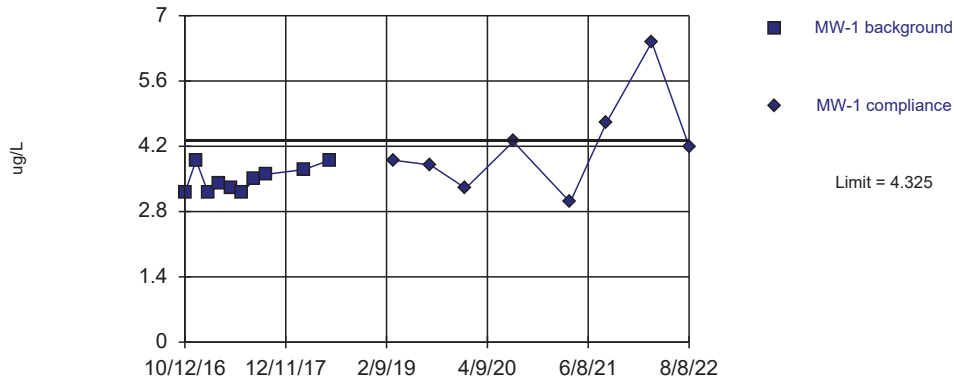


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 9) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.03586. Individual comparison alpha = 0.01809 (1 of 2). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Antimony [total] Analysis Run 9/8/2022 9:44 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

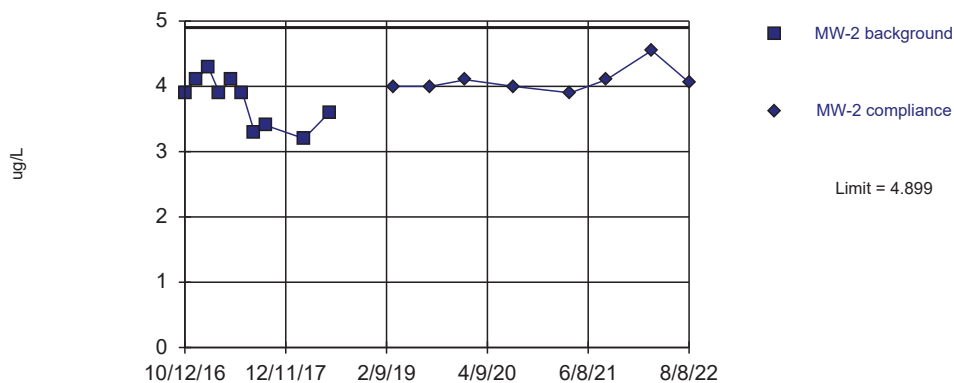


Background Data Summary: Mean=3.49, Std. Dev.=0.2767, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8827, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Arsenic [total] Analysis Run 9/8/2022 9:44 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

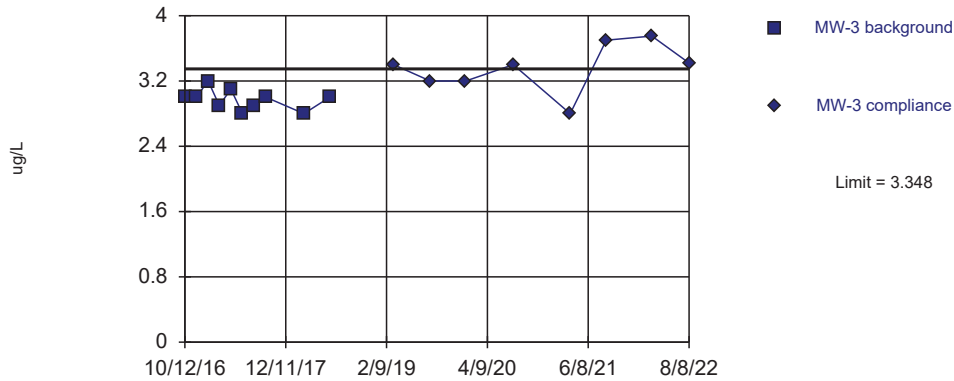


Background Data Summary: Mean=3.77, Std. Dev.=0.3743, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.927, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Arsenic [total] Analysis Run 9/8/2022 9:44 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Exceeds Limit

Prediction Limit Intrawell Parametric

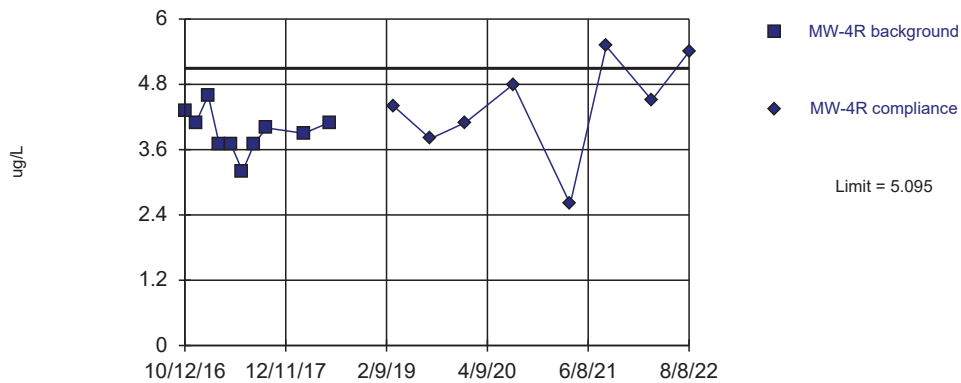


Background Data Summary: Mean=2.97, Std. Dev.=0.1252, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9291, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Arsenic [total] Analysis Run 9/8/2022 9:44 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Exceeds Limit

Prediction Limit Intrawell Parametric

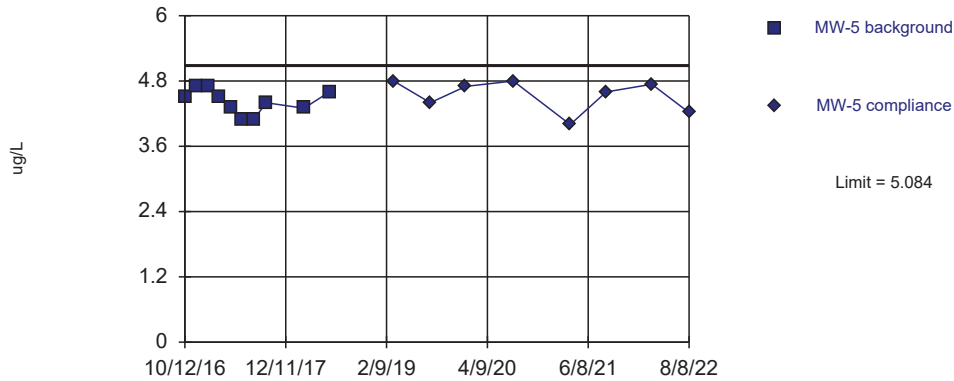


Background Data Summary: Mean=3.93, Std. Dev.=0.386, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9683, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Arsenic [total] Analysis Run 9/8/2022 9:44 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

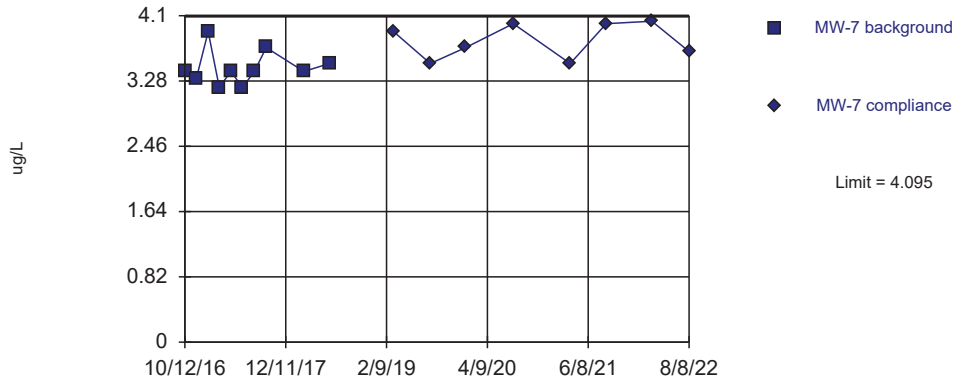
Within Limit

Prediction Limit Intrawell Parametric



Within Limit

Prediction Limit Intrawell Parametric

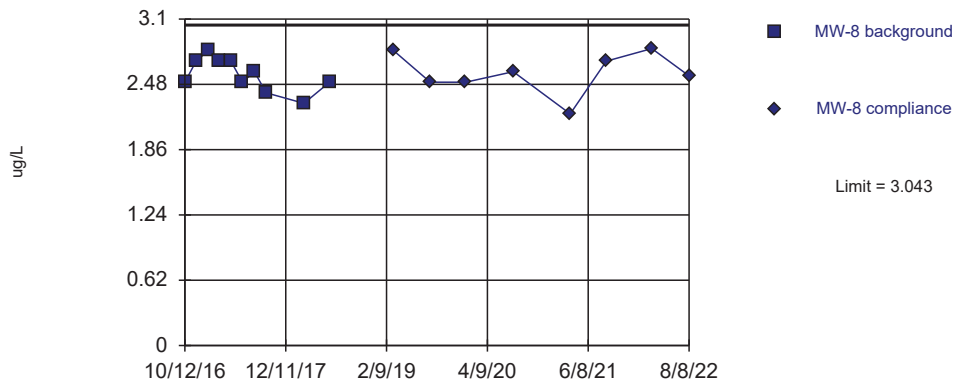


Background Data Summary: Mean=3.44, Std. Dev.=0.2171, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.875, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Arsenic [total] Analysis Run 9/8/2022 9:45 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

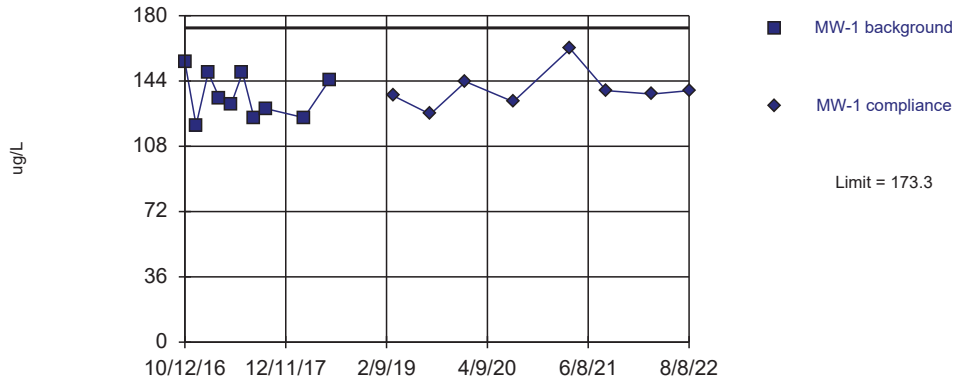


Background Data Summary: Mean=2.57, Std. Dev.=0.1567, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9449, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Arsenic [total] Analysis Run 9/8/2022 9:45 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

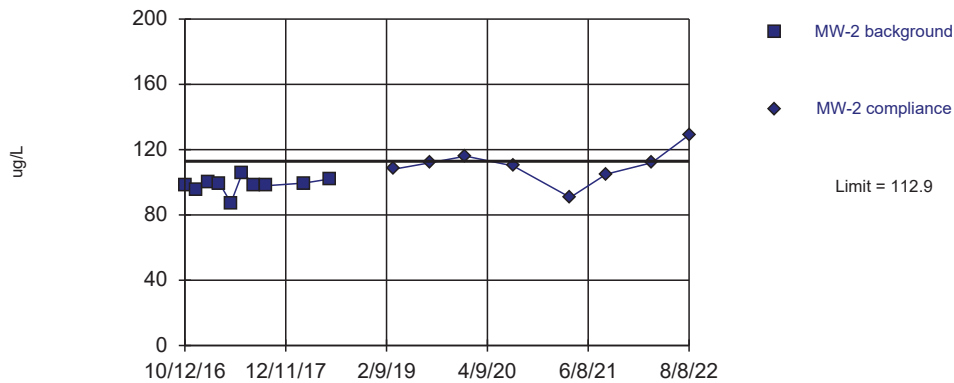


Background Data Summary: Mean=135.7, Std. Dev.=12.44, n=10. Seasonality was detected with 95% confidence and data were deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.919, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Barium [total] Analysis Run 9/8/2022 9:45 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Exceeds Limit

Prediction Limit Intrawell Parametric

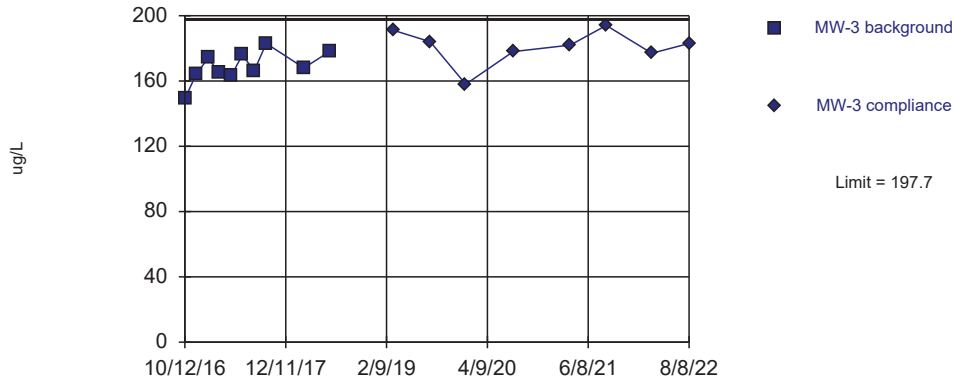


Background Data Summary: Mean=98.45, Std. Dev.=4.784, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8827, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Barium [total] Analysis Run 9/8/2022 9:45 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

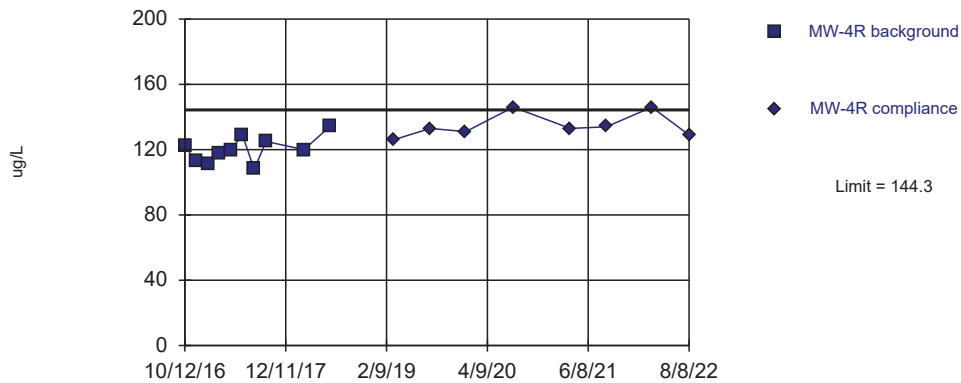


Background Data Summary: Mean=168.6, Std. Dev.=9.64, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9508, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Barium [total] Analysis Run 9/8/2022 9:45 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

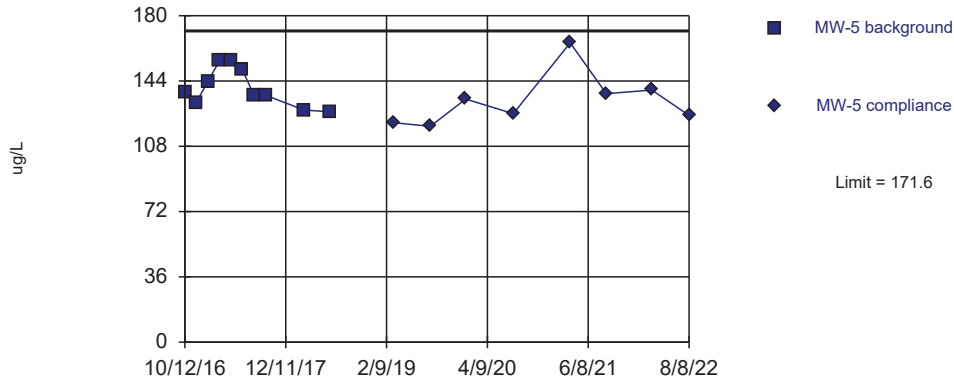


Background Data Summary: Mean=120, Std. Dev.=8.055, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9784, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Barium [total] Analysis Run 9/8/2022 9:45 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

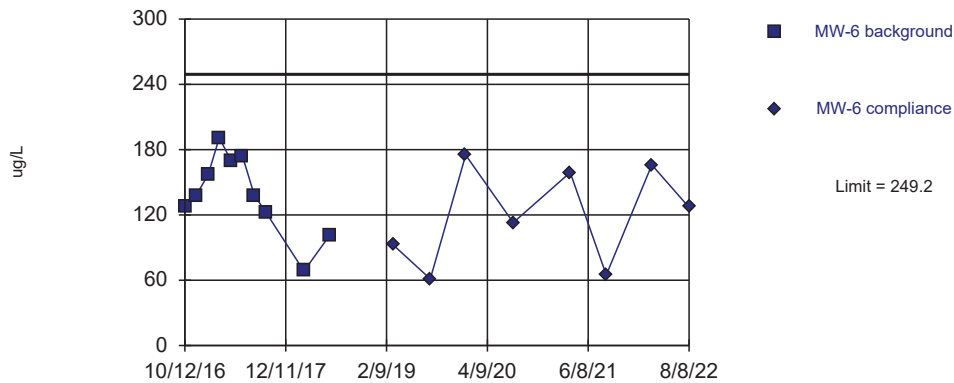


Background Data Summary: Mean=140.1, Std. Dev.=10.43, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9113, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Barium [total] Analysis Run 9/8/2022 9:45 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

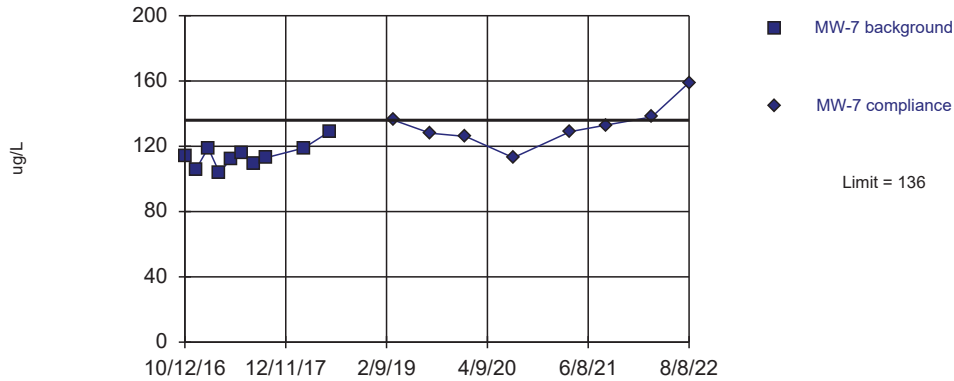


Background Data Summary: Mean=138.7, Std. Dev.=36.6, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9715, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Barium [total] Analysis Run 9/8/2022 9:45 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Exceeds Limit

Prediction Limit Intrawell Parametric

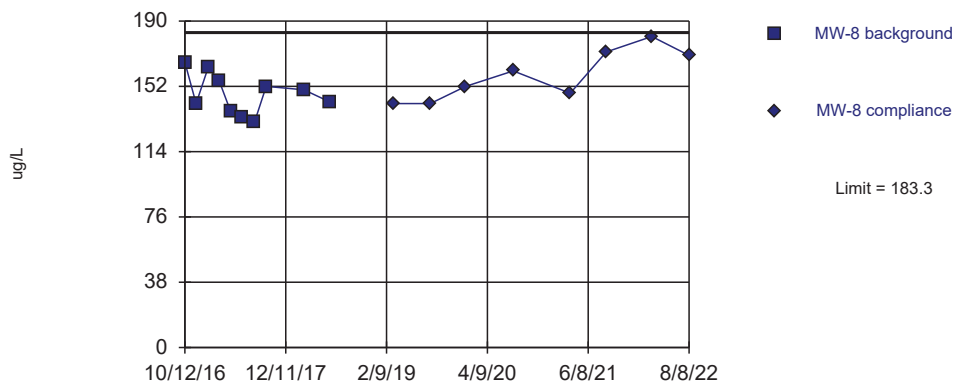


Background Data Summary: Mean=114.1, Std. Dev.=7.249, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.959, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Barium [total] Analysis Run 9/8/2022 9:45 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

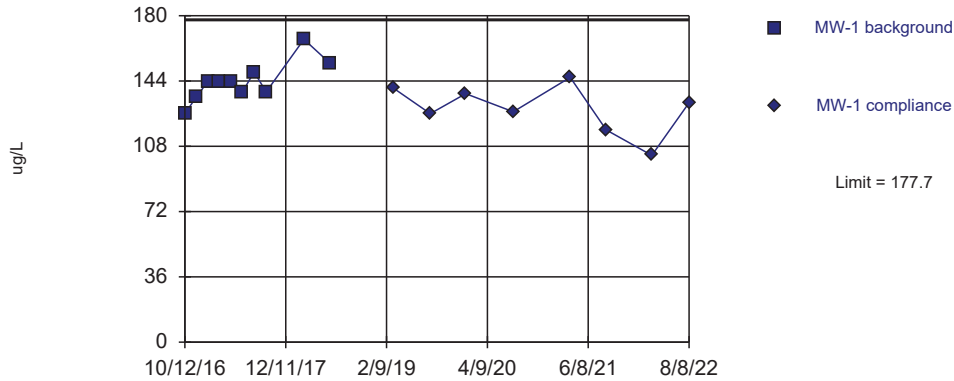


Background Data Summary: Mean=147.3, Std. Dev.=11.93, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9563, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Barium [total] Analysis Run 9/8/2022 9:45 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

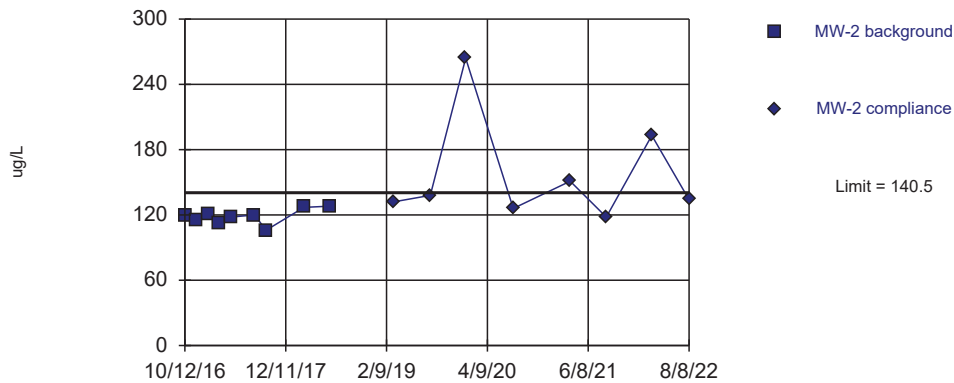


Background Data Summary: Mean=143.9, Std. Dev.=11.21, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9555, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Boron Analysis Run 9/8/2022 9:45 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

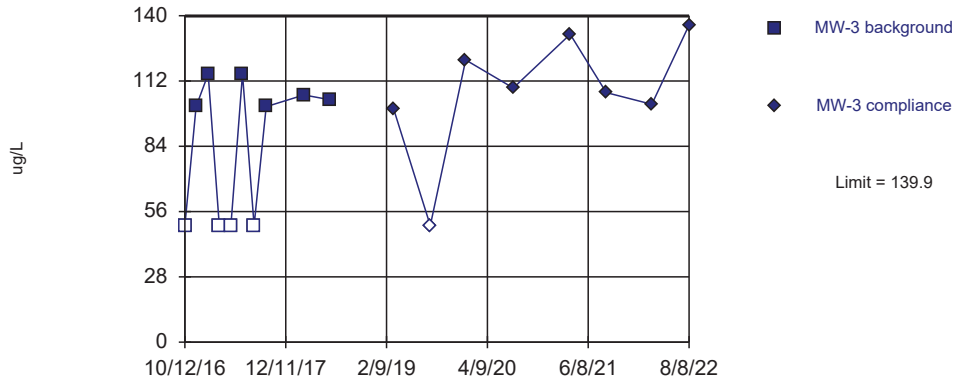


Background Data Summary: Mean=118.6, Std. Dev.=6.803, n=9. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9618, critical = 0.764. Kappa = 3.22 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Boron Analysis Run 9/8/2022 9:45 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

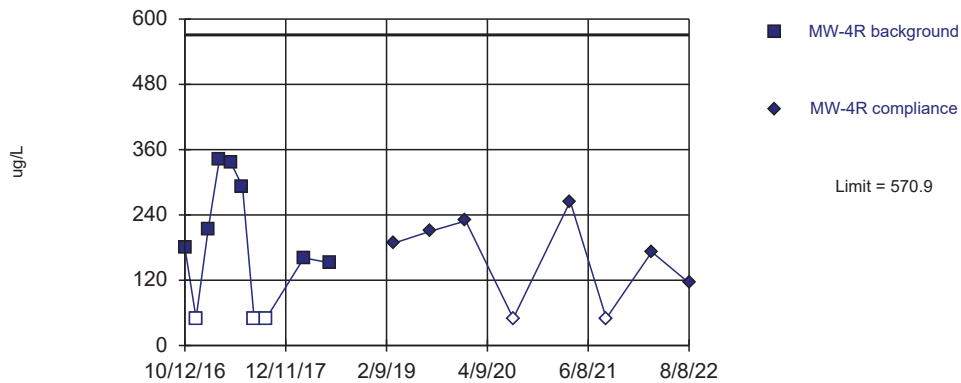


Background Data Summary (based on cube transformation) (after Aitchison's Adjustment): Mean=741823, Std. Dev.=660806, n=10, 40% NDs. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8047, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Boron Analysis Run 9/8/2022 9:45 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

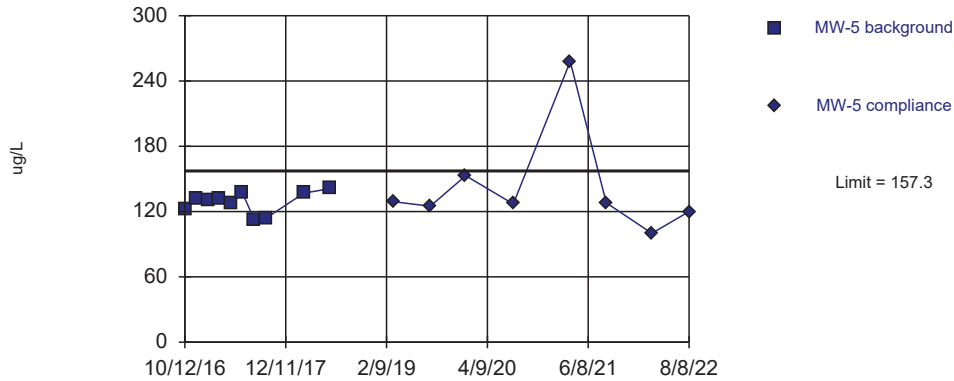


Background Data Summary (after Aitchison's Adjustment): Mean=167.6, Std. Dev.=133.7, n=10, 30% NDs. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8919, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Boron Analysis Run 9/8/2022 9:45 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

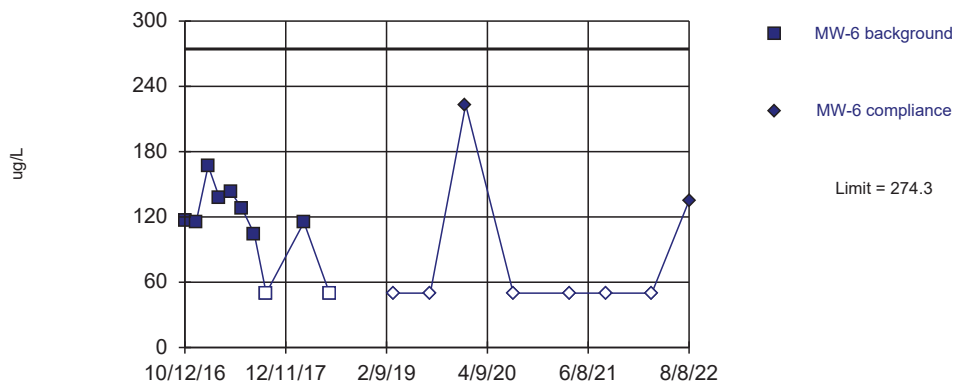


Background Data Summary: Mean=128.5, Std. Dev.=9.56, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9223, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Boron Analysis Run 9/8/2022 9:45 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

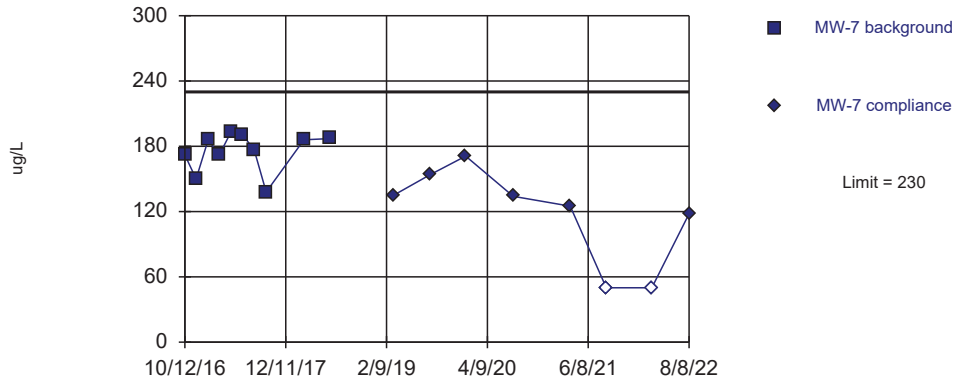


Background Data Summary (after Aitchison's Adjustment): Mean=102.5, Std. Dev.=56.93, n=10, 20% NDs. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8959, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Boron Analysis Run 9/8/2022 9:45 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

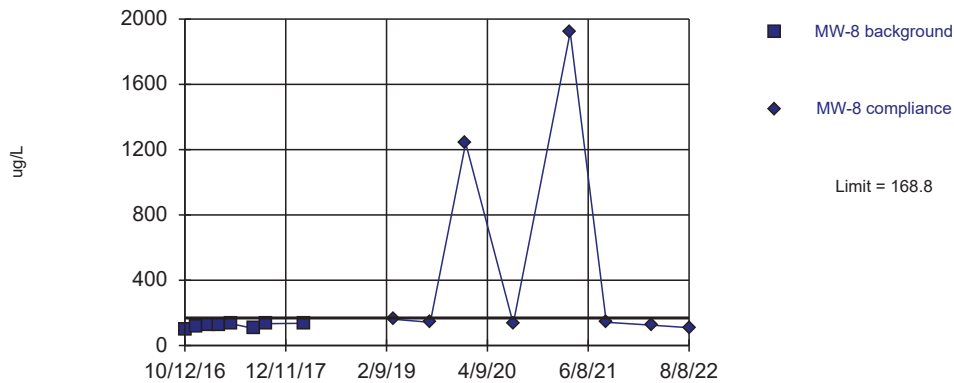


Background Data Summary: Mean=175.1, Std. Dev.=18.19, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8521, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Boron Analysis Run 9/8/2022 9:45 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

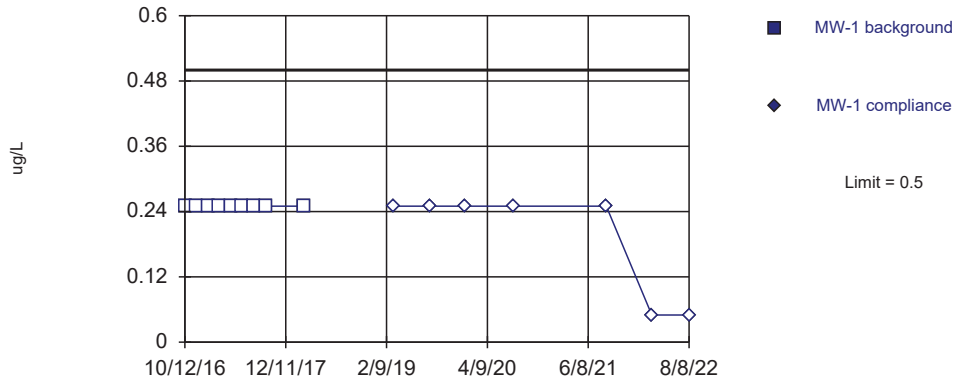


Background Data Summary: Mean=122.6, Std. Dev.=13.49, n=8. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8556, critical = 0.749. Kappa = 3.423 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Boron Analysis Run 9/8/2022 10:17 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Non-parametric

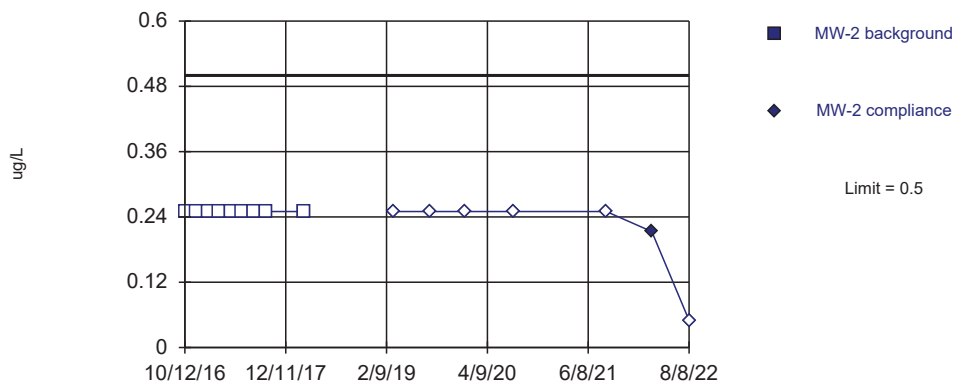


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 9) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.03586. Individual comparison alpha = 0.01809 (1 of 2). Seasonality was not detected with 95% confidence.

Constituent: Cadmium [total] Analysis Run 9/8/2022 9:45 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Non-parametric

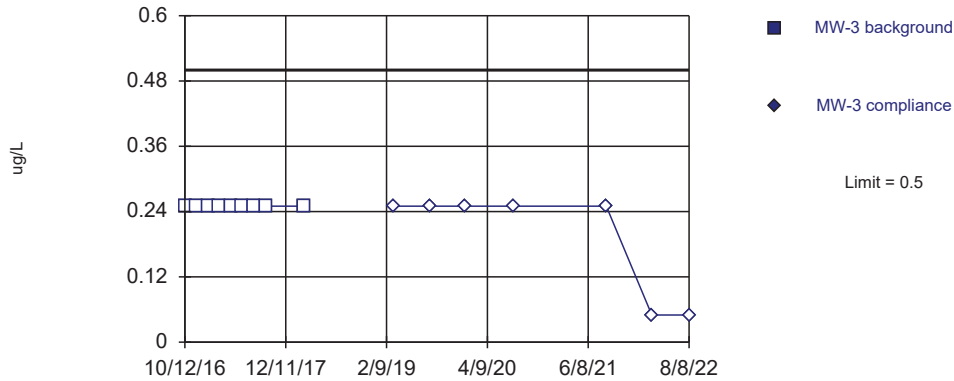


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 9) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.03586. Individual comparison alpha = 0.01809 (1 of 2). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Cadmium [total] Analysis Run 9/8/2022 9:45 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit
Intrawell Non-parametric

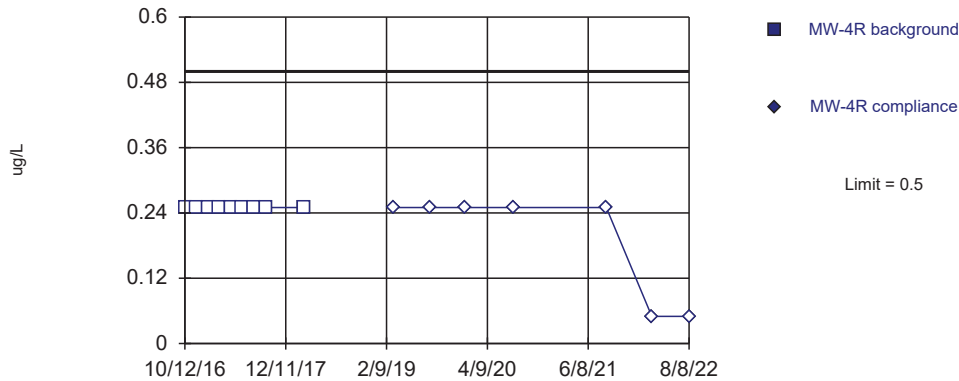


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 9) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.03586. Individual comparison alpha = 0.01809 (1 of 2). Seasonality was not detected with 95% confidence.

Constituent: Cadmium [total] Analysis Run 9/8/2022 9:45 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit
Intrawell Non-parametric

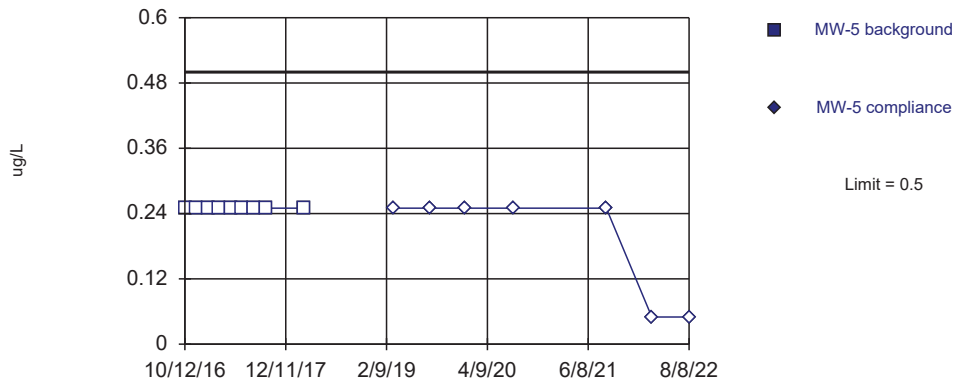


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 9) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.03586. Individual comparison alpha = 0.01809 (1 of 2). Seasonality was not detected with 95% confidence.

Constituent: Cadmium [total] Analysis Run 9/8/2022 9:45 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit
Intrawell Non-parametric

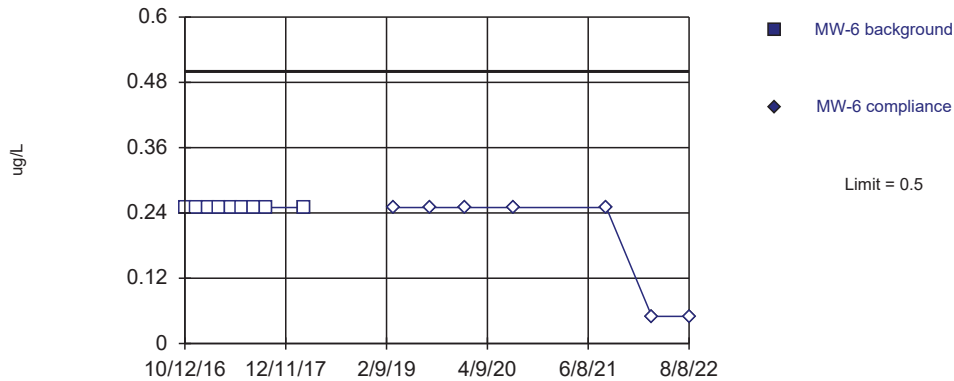


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 9) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.03586. Individual comparison alpha = 0.01809 (1 of 2). Seasonality was not detected with 95% confidence.

Constituent: Cadmium [total] Analysis Run 9/8/2022 9:45 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit
Intrawell Non-parametric

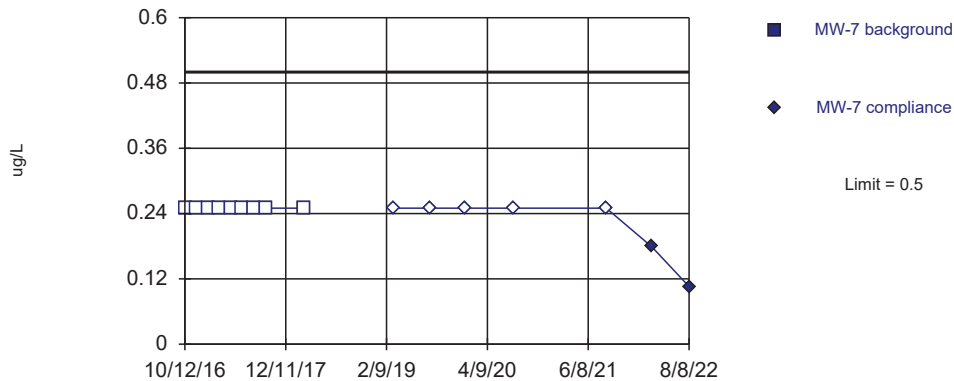


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 9) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.03586. Individual comparison alpha = 0.01809 (1 of 2). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Cadmium [total] Analysis Run 9/8/2022 9:45 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit
Intrawell Non-parametric

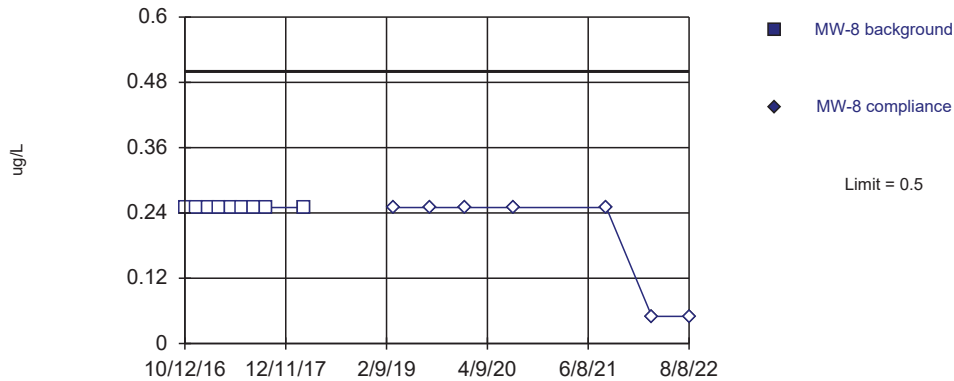


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 9) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.03586. Individual comparison alpha = 0.01809 (1 of 2). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Cadmium [total] Analysis Run 9/8/2022 9:45 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit
Intrawell Non-parametric

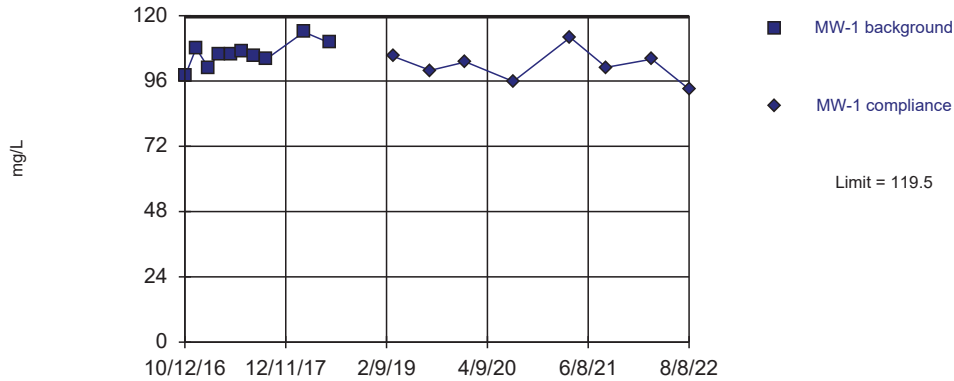


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 9) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.03586. Individual comparison alpha = 0.01809 (1 of 2). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Cadmium [total] Analysis Run 9/8/2022 9:45 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

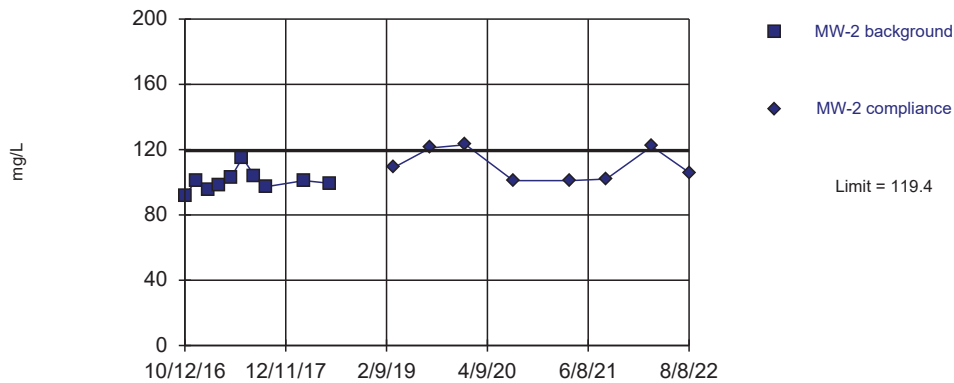


Background Data Summary: Mean=105.9, Std. Dev.=4.518, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9799, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Calcium Analysis Run 9/8/2022 9:45 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

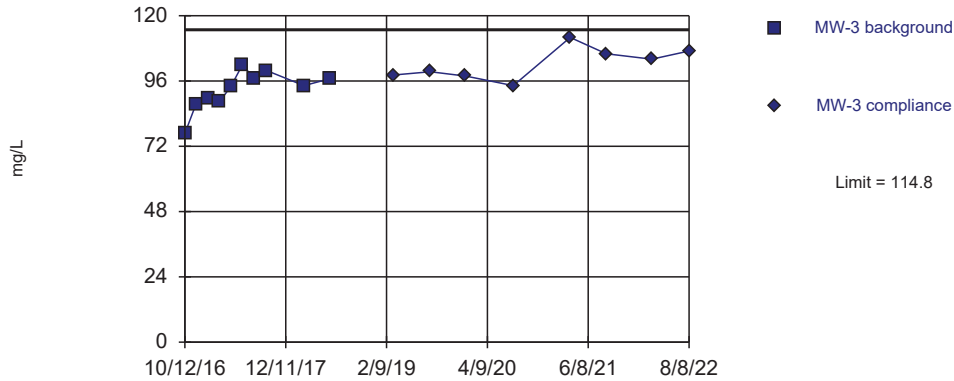


Background Data Summary: Mean=100.6, Std. Dev.=6.214, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9079, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Calcium Analysis Run 9/8/2022 9:45 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

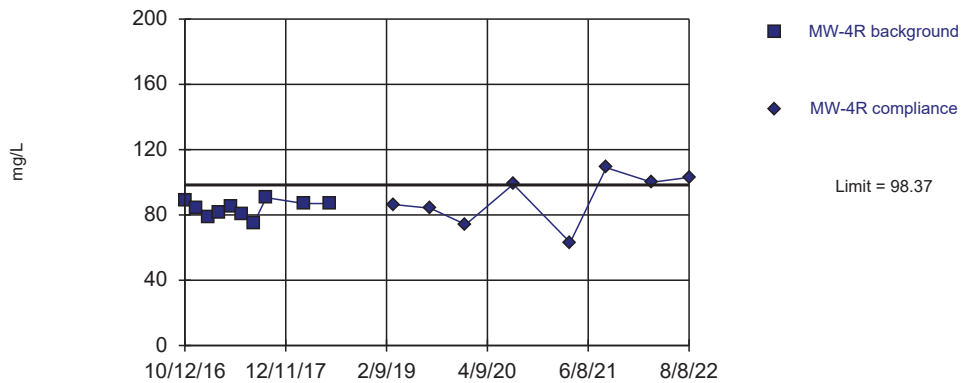


Background Data Summary: Mean=92.59, Std. Dev.=7.372, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9298, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Calcium Analysis Run 9/8/2022 9:46 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Exceeds Limit

Prediction Limit Intrawell Parametric

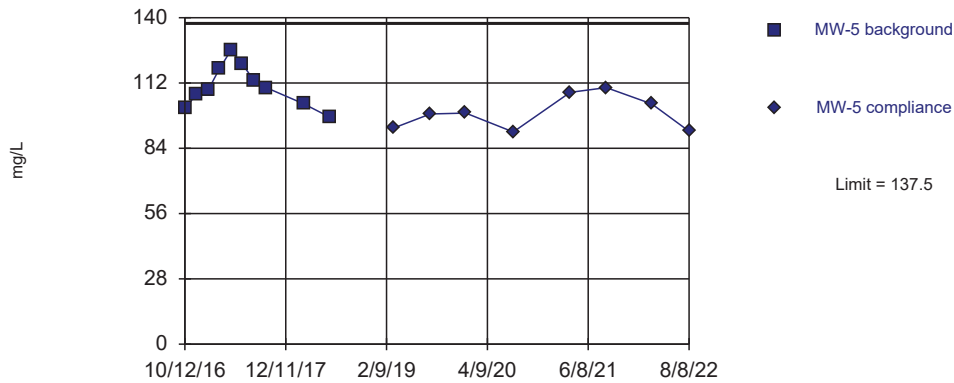


Background Data Summary: Mean=83.88, Std. Dev.=4.802, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9683, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Calcium Analysis Run 9/8/2022 9:46 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

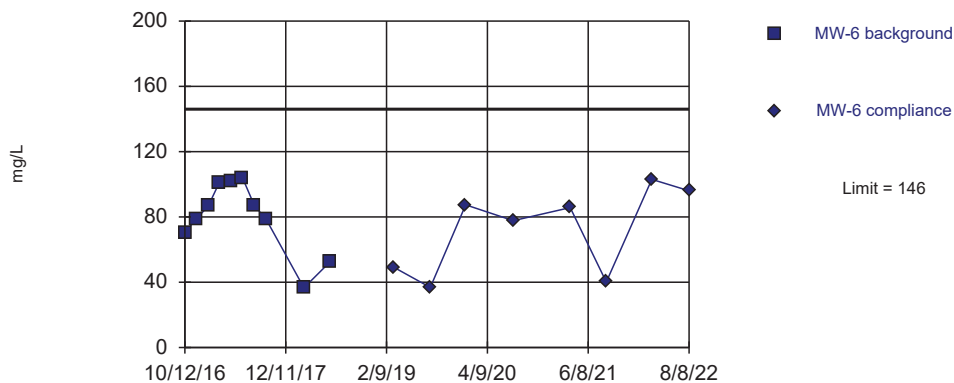


Background Data Summary: Mean=110.4, Std. Dev.=8.98, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9787, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Calcium Analysis Run 9/8/2022 9:46 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

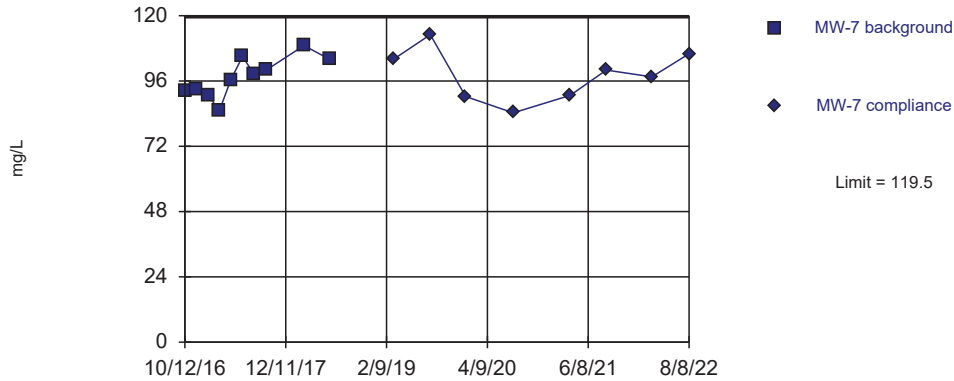


Background Data Summary: Mean=79.7, Std. Dev.=21.97, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9128, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Calcium Analysis Run 9/8/2022 9:46 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

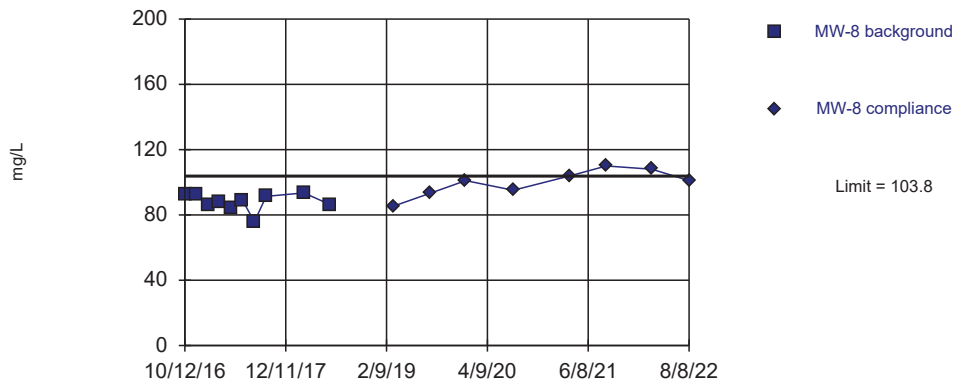


Background Data Summary: Mean=97.44, Std. Dev.=7.317, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9838, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Calcium Analysis Run 9/8/2022 9:46 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

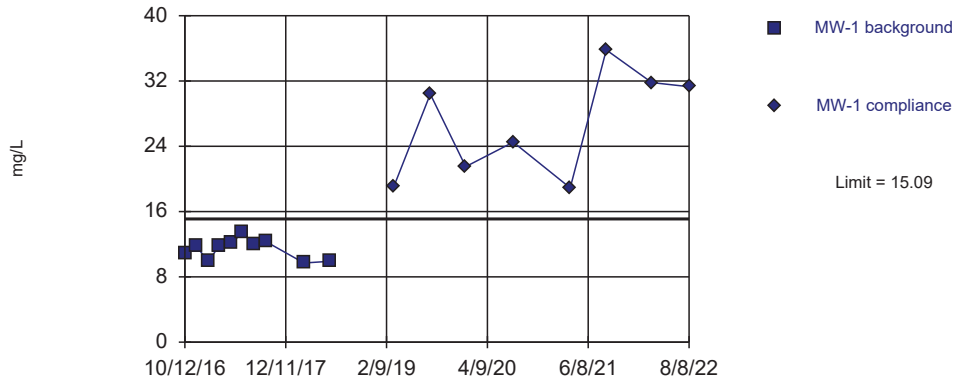


Background Data Summary: Mean=87.99, Std. Dev.=5.239, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8801, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Calcium Analysis Run 9/8/2022 9:46 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Exceeds Limit

Prediction Limit Intrawell Parametric

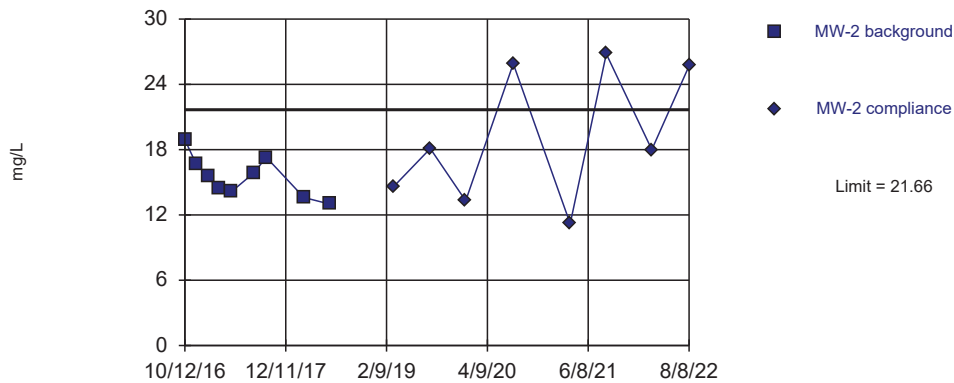


Background Data Summary: Mean=11.38, Std. Dev.=1.23, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9094, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Chloride Analysis Run 9/8/2022 9:46 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Exceeds Limit

Prediction Limit Intrawell Parametric

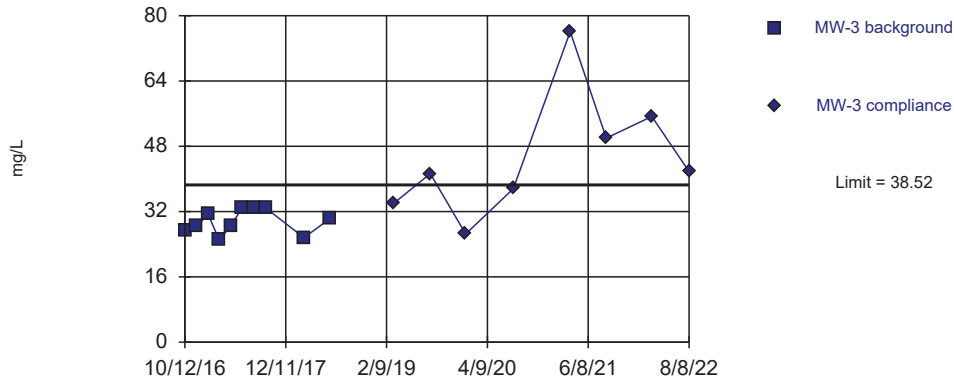


Background Data Summary: Mean=15.49, Std. Dev.=1.918, n=9. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9653, critical = 0.764. Kappa = 3.22 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Chloride Analysis Run 9/8/2022 9:46 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Exceeds Limit

Prediction Limit Intrawell Parametric

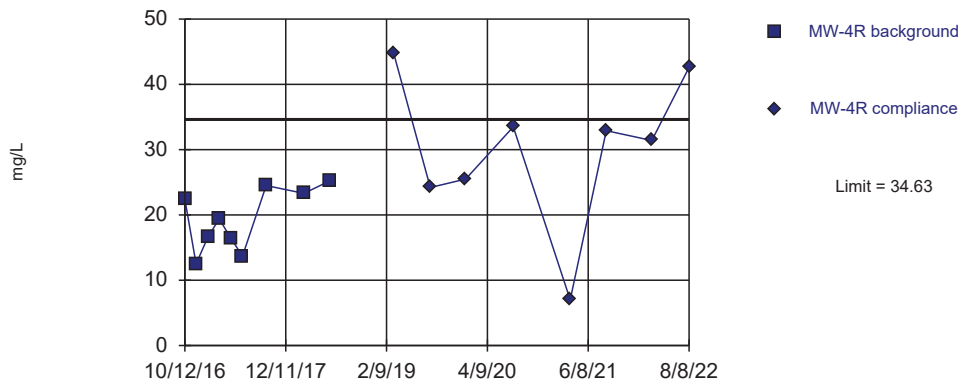


Background Data Summary: Mean=29.52, Std. Dev.=2.984, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9142, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Chloride Analysis Run 9/8/2022 9:46 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Exceeds Limit

Prediction Limit Intrawell Parametric

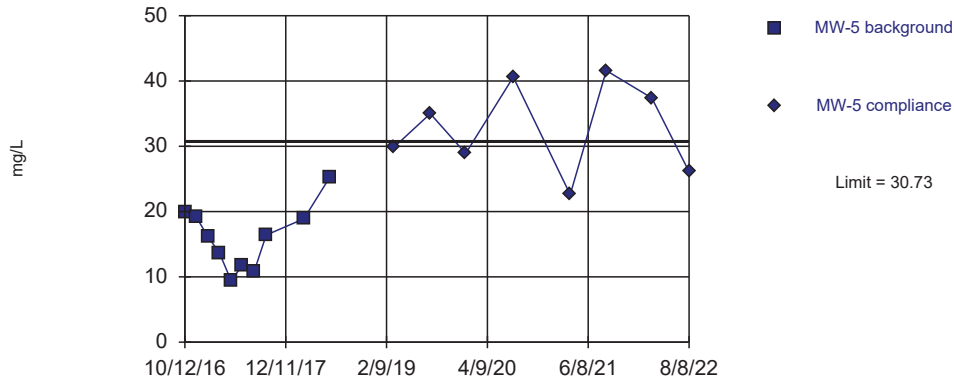


Background Data Summary: Mean=19.34, Std. Dev.=4.746, n=9. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9211, critical = 0.764. Kappa = 3.22 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Chloride Analysis Run 9/8/2022 10:00 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

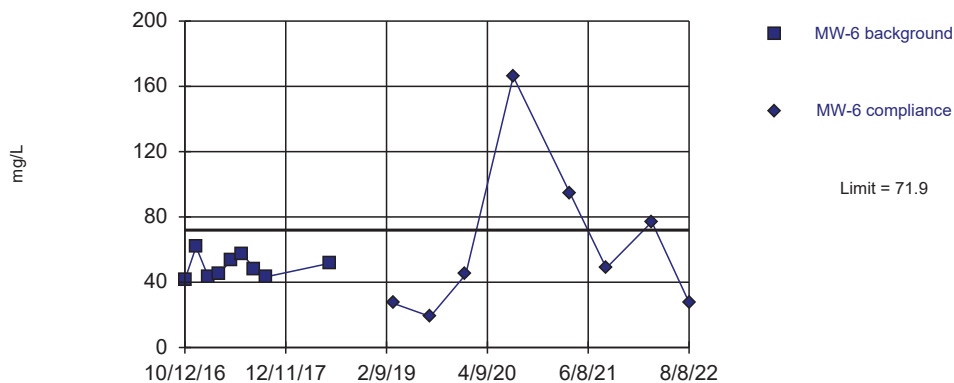


Background Data Summary: Mean=16.13, Std. Dev.=4.84, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9601, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Chloride Analysis Run 9/8/2022 9:46 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

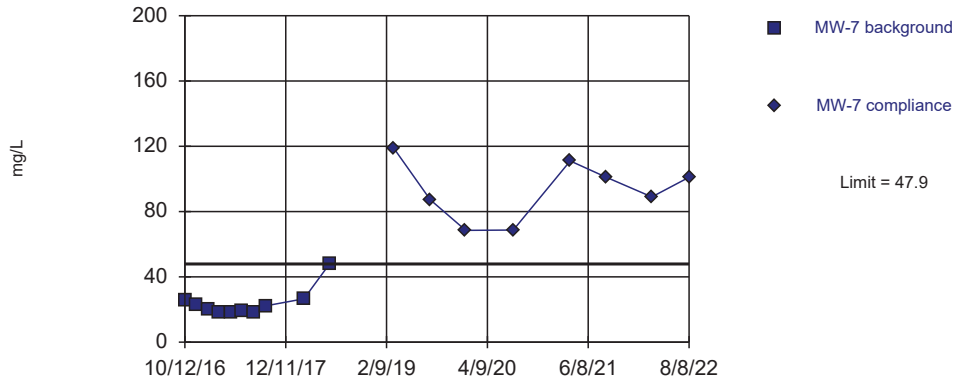


Background Data Summary: Mean=49.54, Std. Dev.=6.944, n=9. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9293, critical = 0.764. Kappa = 3.22 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Chloride Analysis Run 9/8/2022 10:00 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Exceeds Limit

Prediction Limit Intrawell Non-parametric

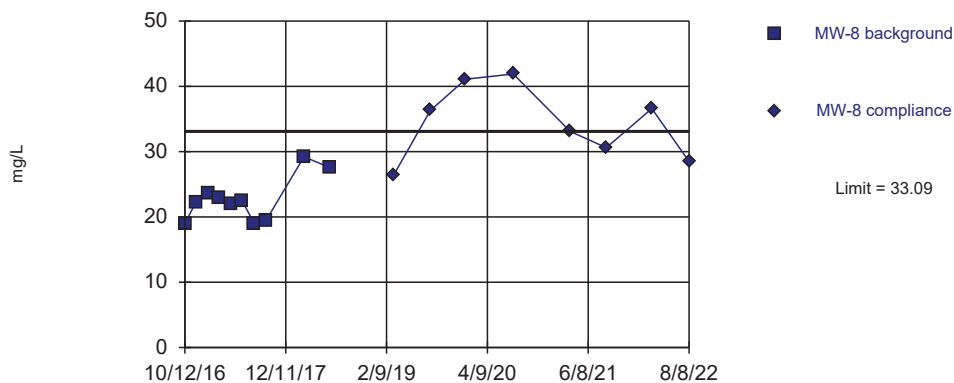


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 10 background values. Well-constituent pair annual alpha = 0.0293. Individual comparison alpha = 0.01476 (1 of 2). Seasonality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

Constituent: Chloride Analysis Run 9/8/2022 9:46 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

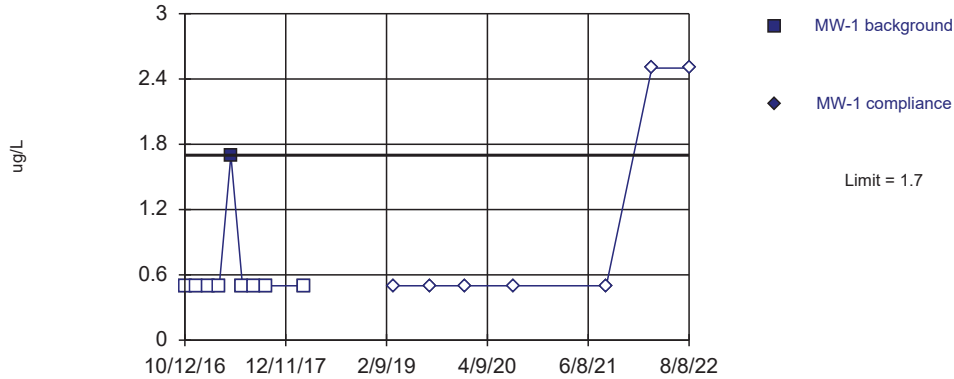


Background Data Summary: Mean=22.73, Std. Dev.=3.435, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.89, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Chloride Analysis Run 9/8/2022 9:46 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit
Intrawell Non-parametric

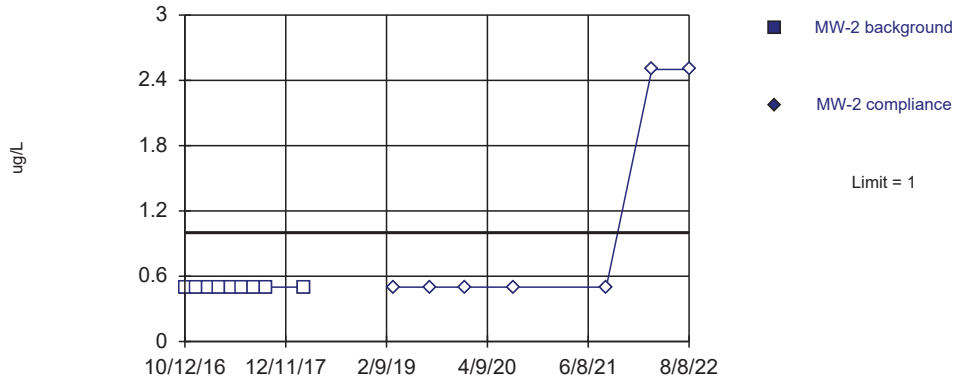


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 9 background values. 88.89% NDs. Well-constituent pair annual alpha = 0.03586. Individual comparison alpha = 0.01809 (1 of 2). Seasonality was not detected with 95% confidence.

Constituent: Chromium [total] Analysis Run 9/8/2022 9:46 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit
Intrawell Non-parametric

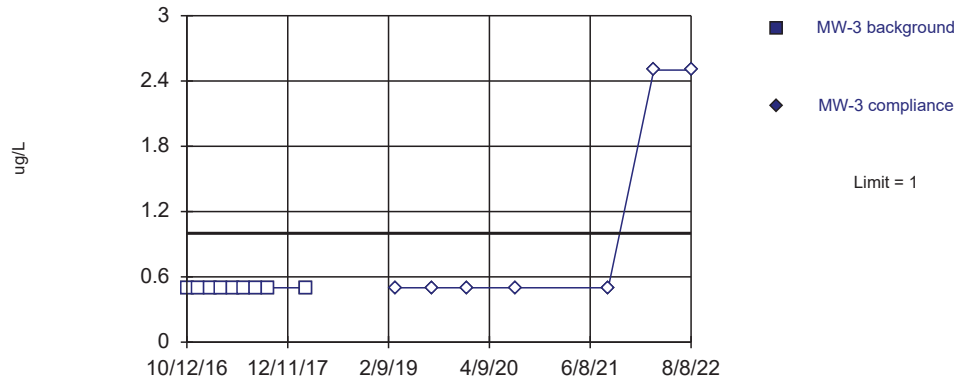


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 9) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.03586. Individual comparison alpha = 0.01809 (1 of 2). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Chromium [total] Analysis Run 9/8/2022 9:46 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit
Intrawell Non-parametric

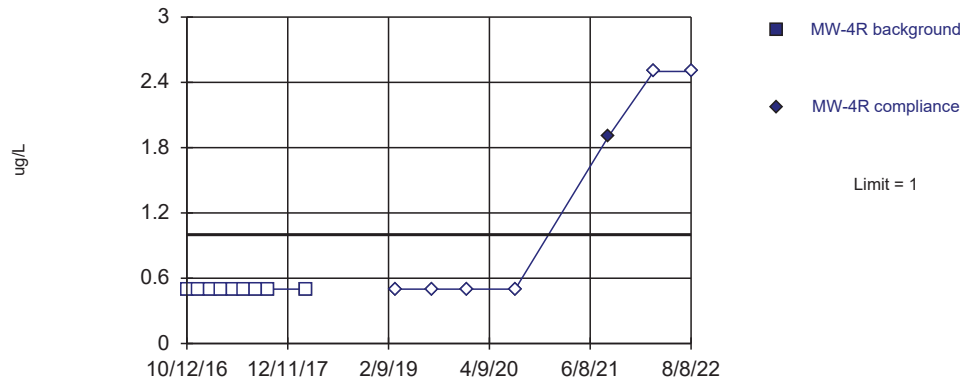


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 9) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.03586. Individual comparison alpha = 0.01809 (1 of 2). Seasonality was not detected with 95% confidence.

Constituent: Chromium [total] Analysis Run 9/8/2022 9:46 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit
Intrawell Non-parametric

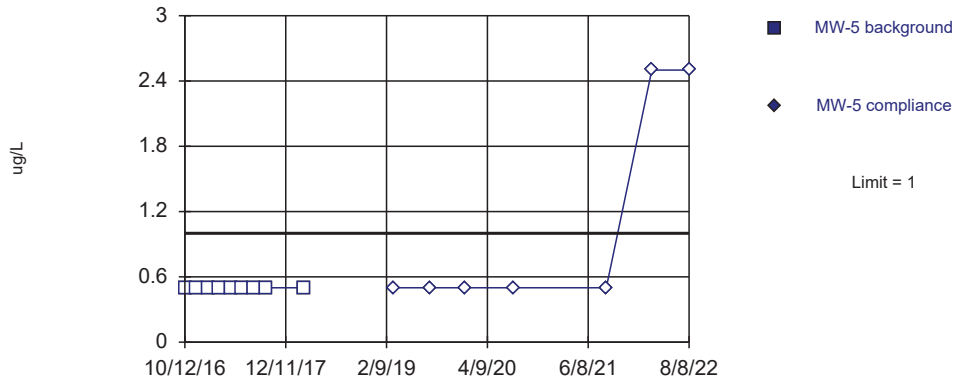


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 9) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.03586. Individual comparison alpha = 0.01809 (1 of 2). Seasonality was not detected with 95% confidence.

Constituent: Chromium [total] Analysis Run 9/8/2022 9:46 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Non-parametric

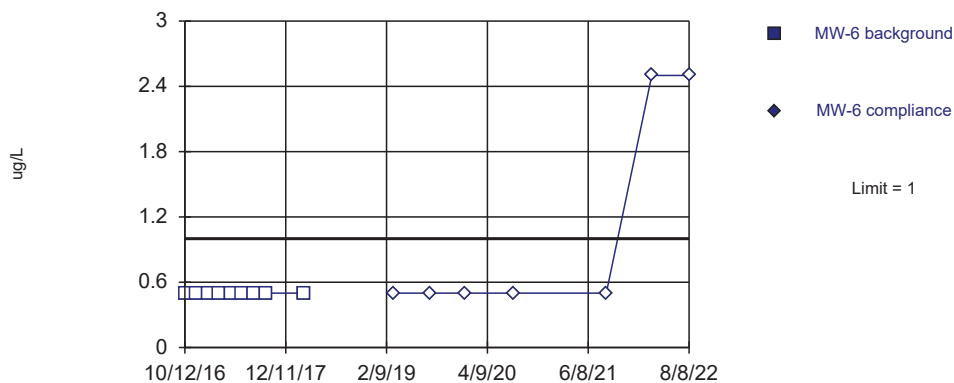


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 9) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.03586. Individual comparison alpha = 0.01809 (1 of 2). Seasonality was not detected with 95% confidence.

Constituent: Chromium [total] Analysis Run 9/8/2022 9:46 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Non-parametric

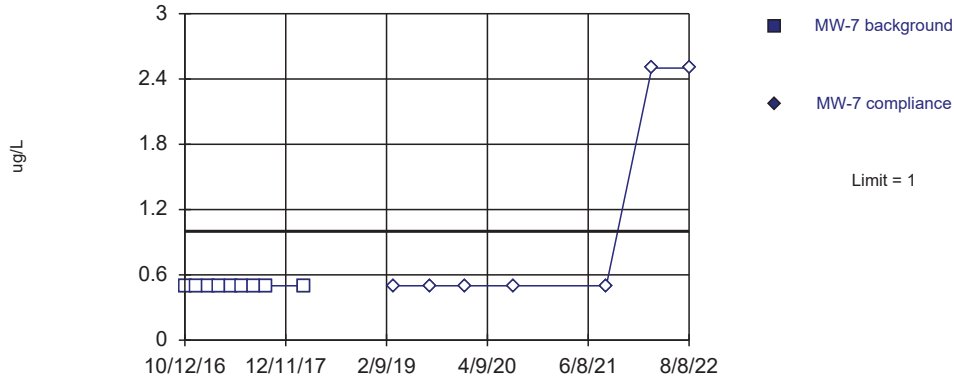


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 9) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.03586. Individual comparison alpha = 0.01809 (1 of 2). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Chromium [total] Analysis Run 9/8/2022 9:46 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit
Intrawell Non-parametric

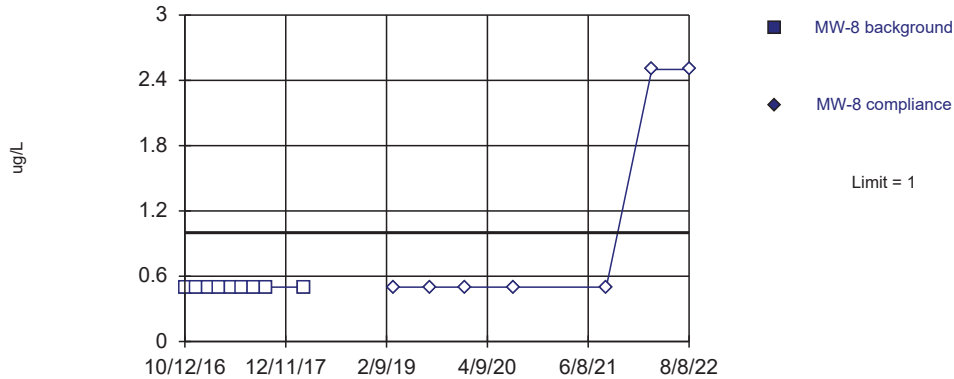


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 9) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.03586. Individual comparison alpha = 0.01809 (1 of 2). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Chromium [total] Analysis Run 9/8/2022 9:46 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit
Intrawell Non-parametric

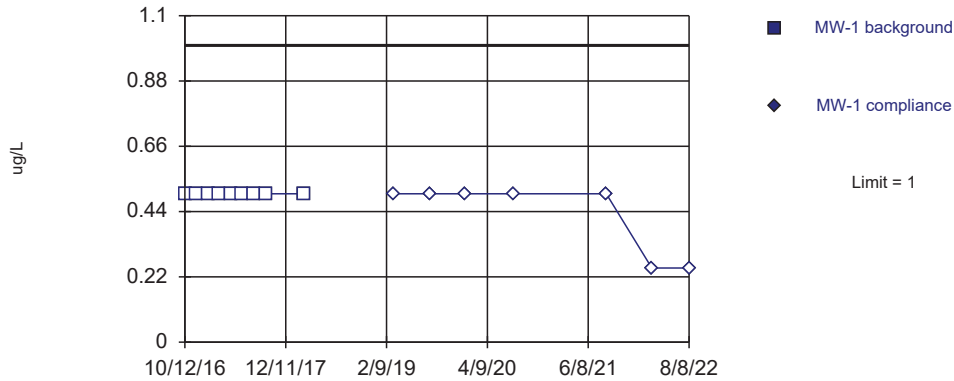


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 9) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.03586. Individual comparison alpha = 0.01809 (1 of 2). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Chromium [total] Analysis Run 9/8/2022 9:46 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Non-parametric

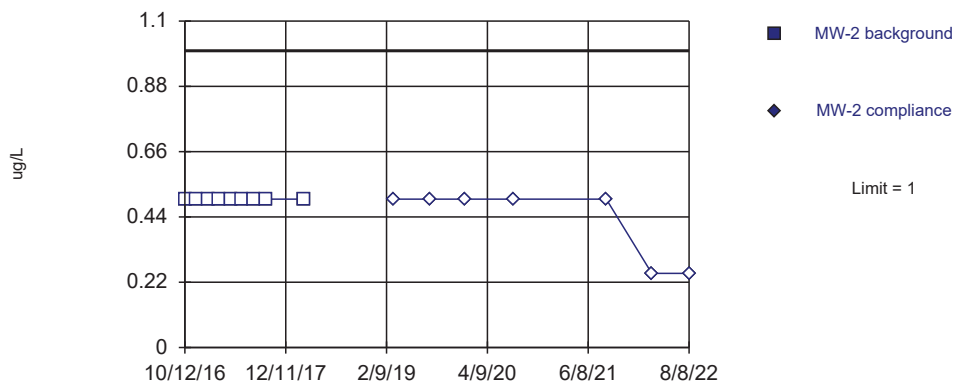


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 9) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.03586. Individual comparison alpha = 0.01809 (1 of 2). Seasonality was not detected with 95% confidence.

Constituent: Cobalt [total] Analysis Run 9/8/2022 9:46 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Non-parametric

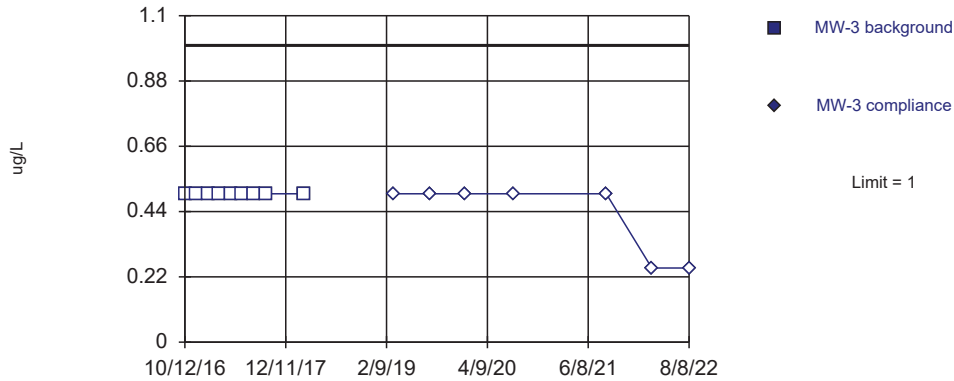


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 9) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.03586. Individual comparison alpha = 0.01809 (1 of 2). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Cobalt [total] Analysis Run 9/8/2022 9:46 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Non-parametric

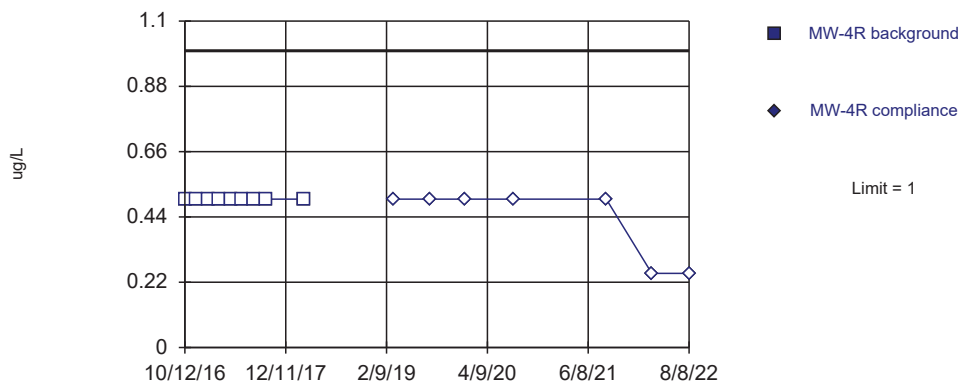


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 9) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.03586. Individual comparison alpha = 0.01809 (1 of 2). Seasonality was not detected with 95% confidence.

Constituent: Cobalt [total] Analysis Run 9/8/2022 9:46 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Non-parametric

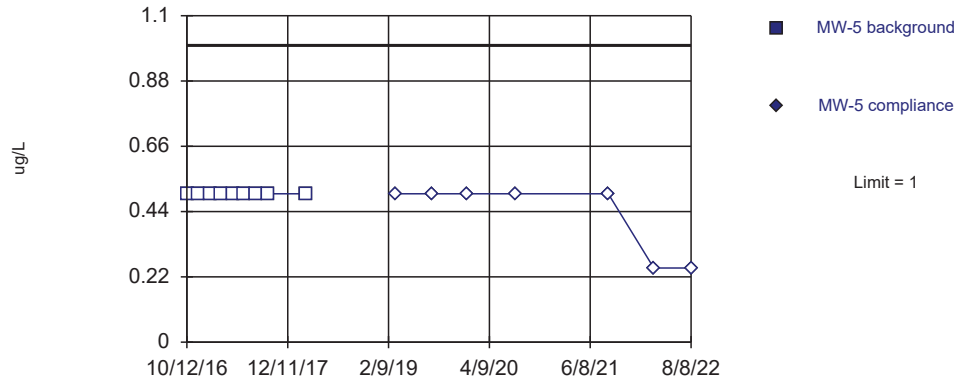


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 9) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.03586. Individual comparison alpha = 0.01809 (1 of 2). Seasonality was not detected with 95% confidence.

Constituent: Cobalt [total] Analysis Run 9/8/2022 9:46 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Non-parametric

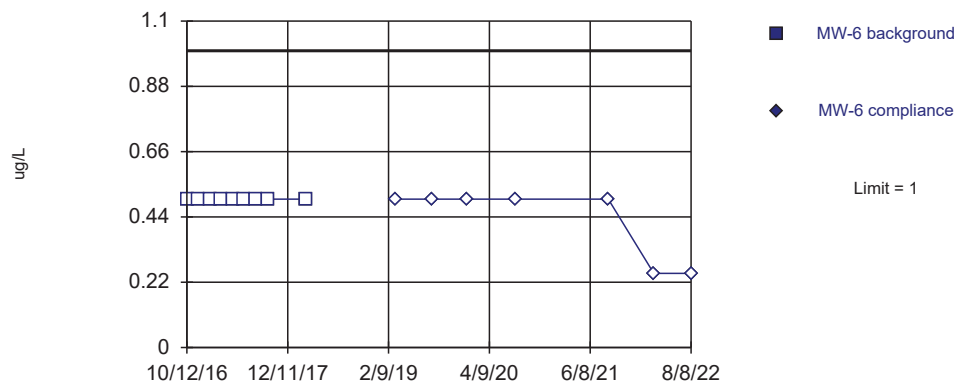


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 9) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.03586. Individual comparison alpha = 0.01809 (1 of 2). Seasonality was not detected with 95% confidence.

Constituent: Cobalt [total] Analysis Run 9/8/2022 9:46 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Non-parametric

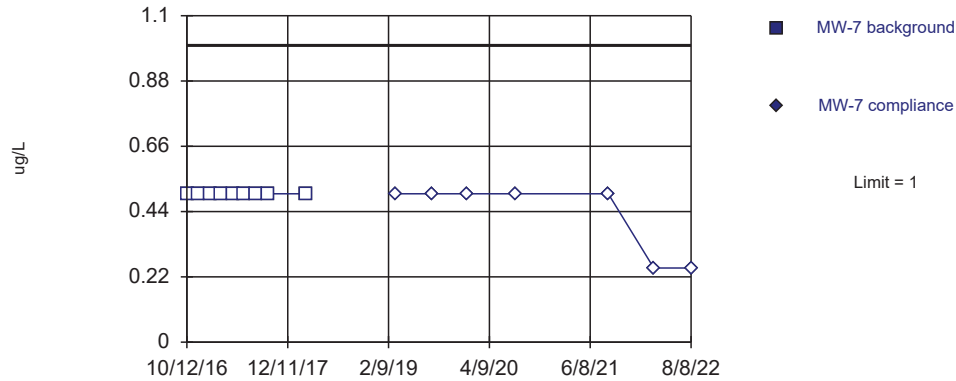


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 9) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.03586. Individual comparison alpha = 0.01809 (1 of 2). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Cobalt [total] Analysis Run 9/8/2022 9:46 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Non-parametric

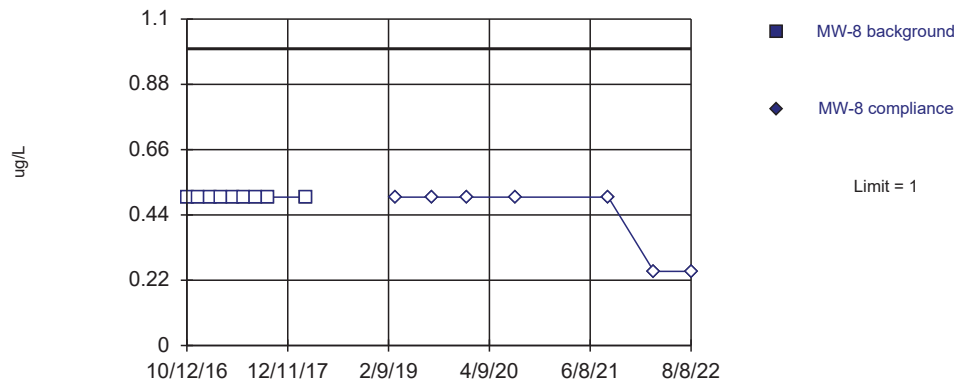


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 9) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.03586. Individual comparison alpha = 0.01809 (1 of 2). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Cobalt [total] Analysis Run 9/8/2022 9:47 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Non-parametric

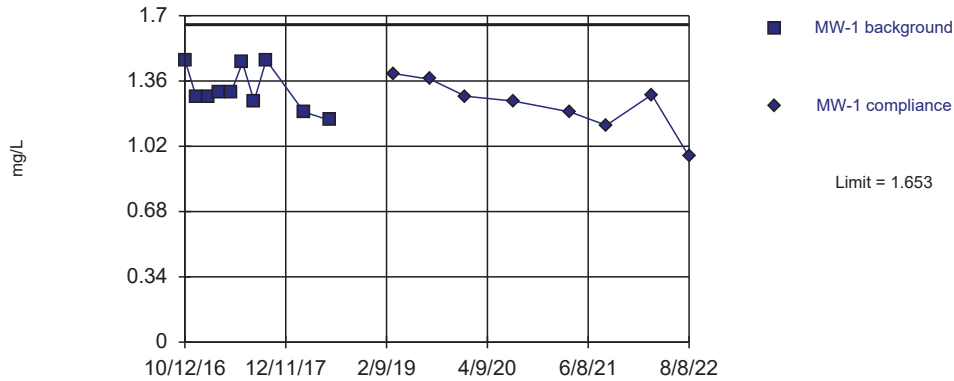


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 9) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.03586. Individual comparison alpha = 0.01809 (1 of 2). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Cobalt [total] Analysis Run 9/8/2022 9:47 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

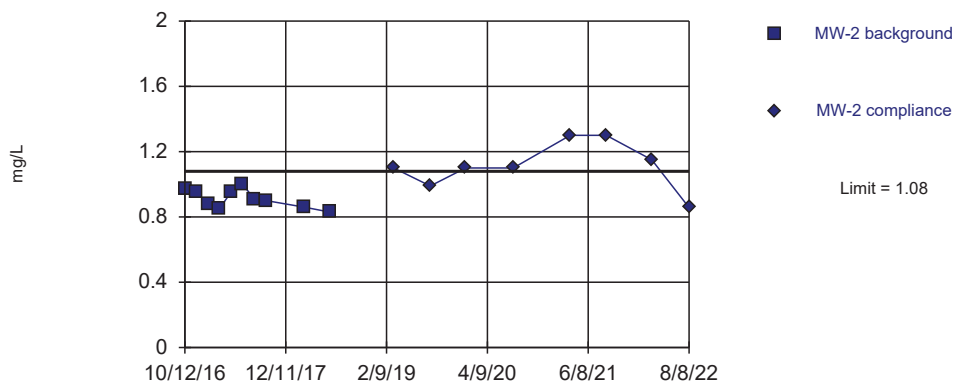


Background Data Summary: Mean=1.316, Std. Dev.=0.1118, n=10. Seasonality was detected with 95% confidence and data were deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8796, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Fluoride Analysis Run 9/8/2022 9:47 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

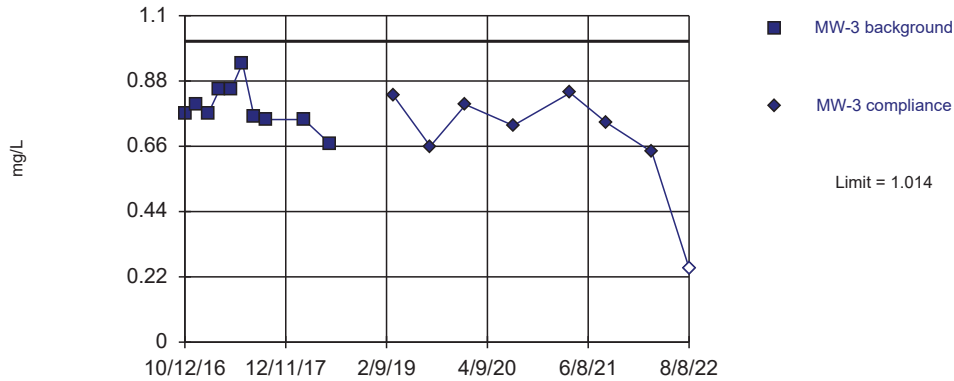
Within Limit

Prediction Limit Intrawell Parametric



Within Limit

Prediction Limit Intrawell Parametric

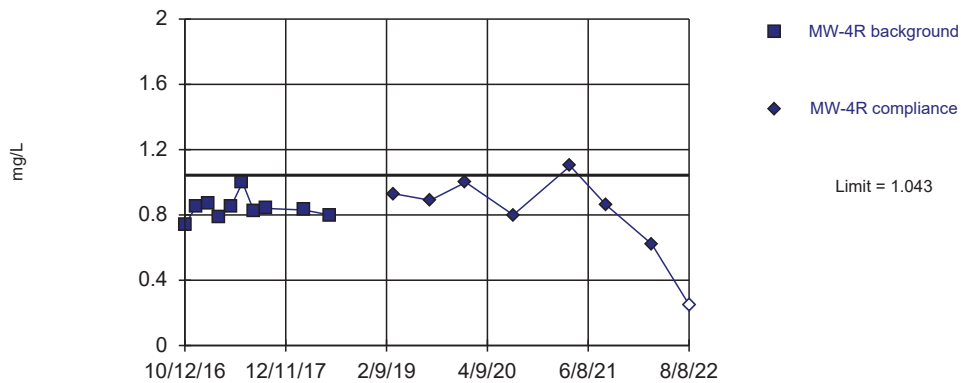


Background Data Summary: Mean=0.791, Std. Dev.=0.07385, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9344, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Fluoride Analysis Run 9/8/2022 9:47 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

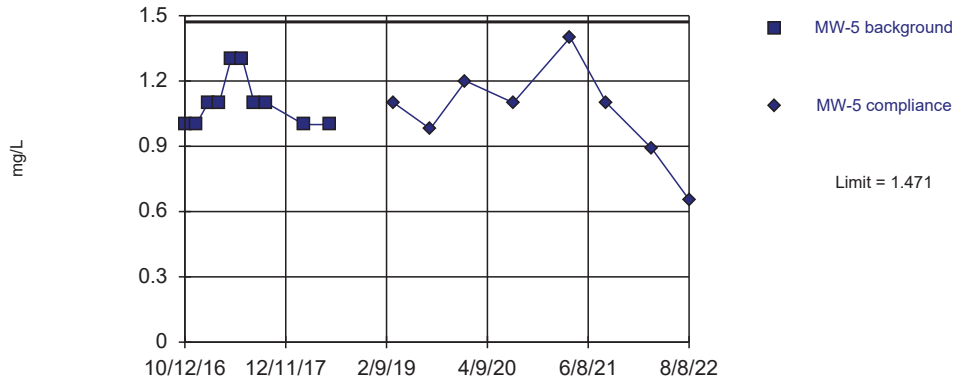


Background Data Summary: Mean=0.839, Std. Dev.=0.06773, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8772, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Fluoride Analysis Run 9/8/2022 9:47 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

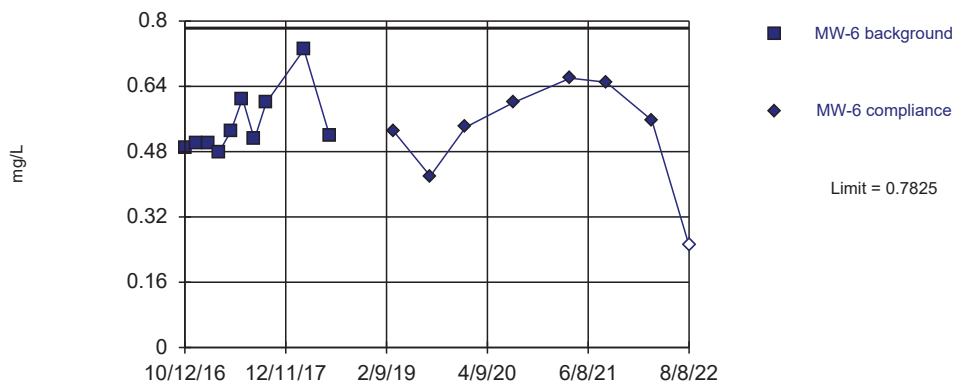


Background Data Summary (based on cube root transformation): Mean=1.031, Std. Dev.=0.03519, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.7826, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Fluoride Analysis Run 9/8/2022 9:47 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

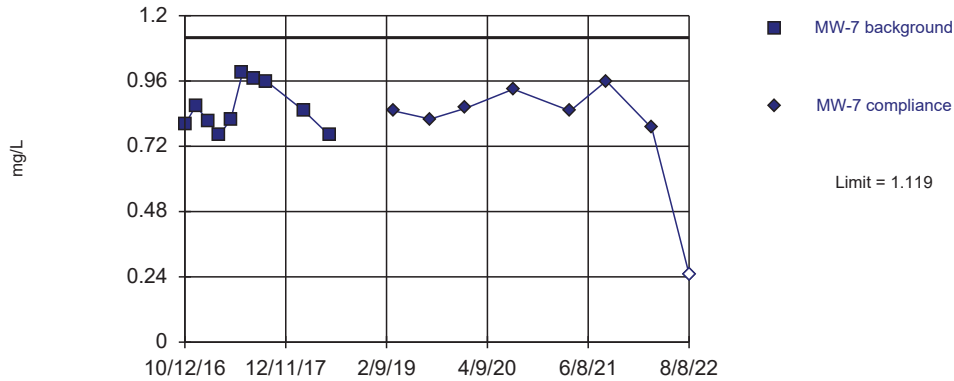


Background Data Summary: Mean=0.547, Std. Dev.=0.07804, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.7927, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Fluoride Analysis Run 9/8/2022 9:47 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

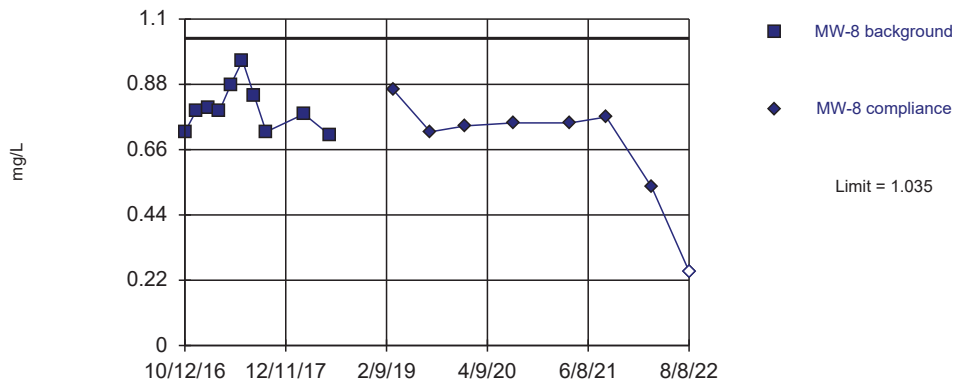


Background Data Summary: Mean=0.859, Std. Dev.=0.08621, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8894, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Fluoride Analysis Run 9/8/2022 9:47 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

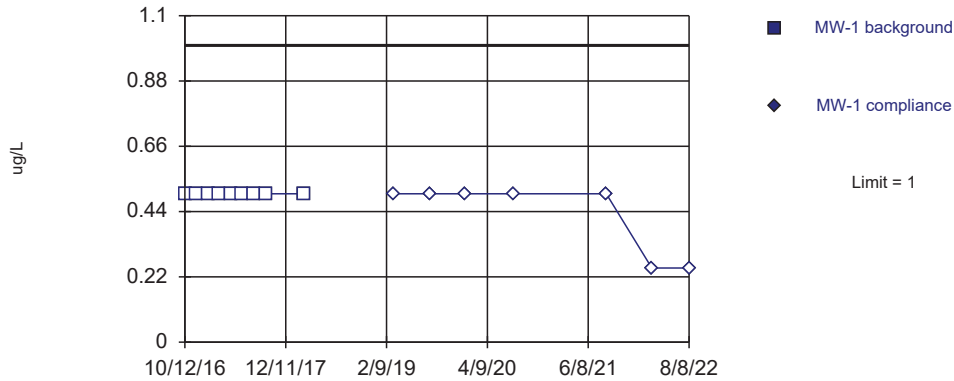


Background Data Summary: Mean=0.799, Std. Dev.=0.07824, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.913, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Fluoride Analysis Run 9/8/2022 9:47 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Non-parametric

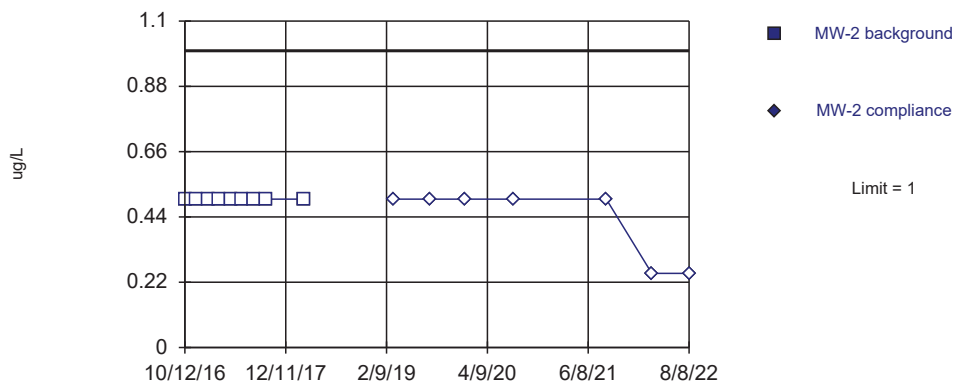


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 9) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.03586. Individual comparison alpha = 0.01809 (1 of 2). Seasonality was not detected with 95% confidence.

Constituent: Lead [total] Analysis Run 9/8/2022 9:47 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Non-parametric

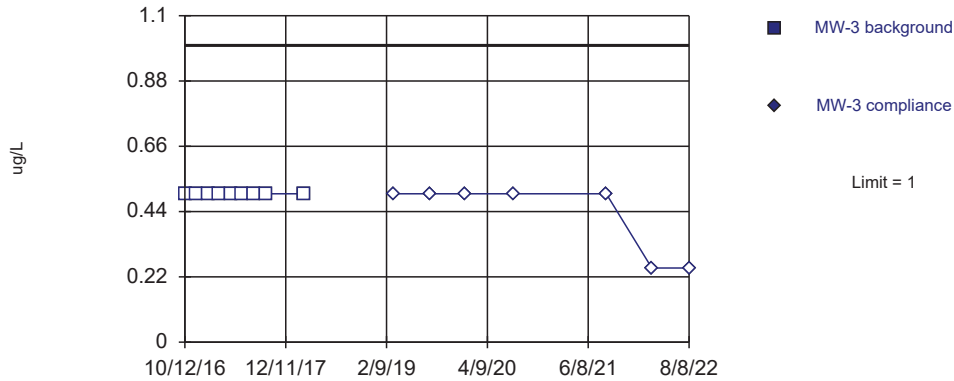


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 9) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.03586. Individual comparison alpha = 0.01809 (1 of 2). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Lead [total] Analysis Run 9/8/2022 9:47 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

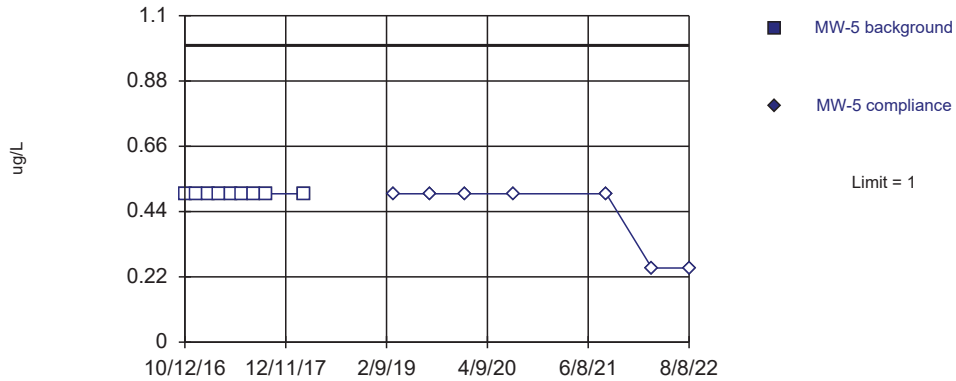
Within Limit

Prediction Limit Intrawell Non-parametric



Within Limit

Prediction Limit Intrawell Non-parametric

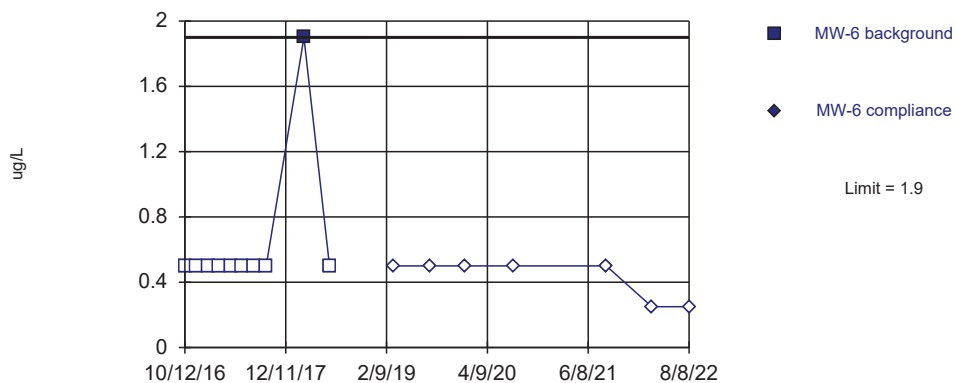


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 9) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.03586. Individual comparison alpha = 0.01809 (1 of 2). Seasonality was not detected with 95% confidence.

Constituent: Lead [total] Analysis Run 9/8/2022 9:47 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Non-parametric

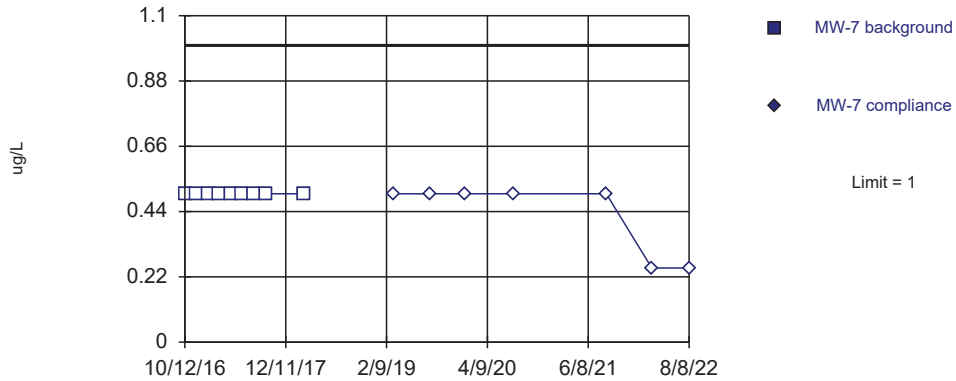


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 10 background values. 90% NDs. Well-constituent pair annual alpha = 0.0293. Individual comparison alpha = 0.01476 (1 of 2). Seasonality was not detected with 95% confidence.

Constituent: Lead [total] Analysis Run 9/8/2022 9:47 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Non-parametric

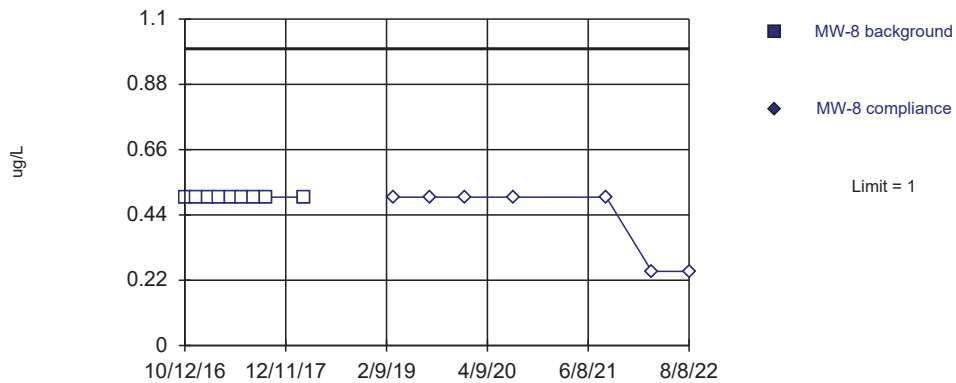


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 9) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.03586. Individual comparison alpha = 0.01809 (1 of 2). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Lead [total] Analysis Run 9/8/2022 9:47 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Non-parametric

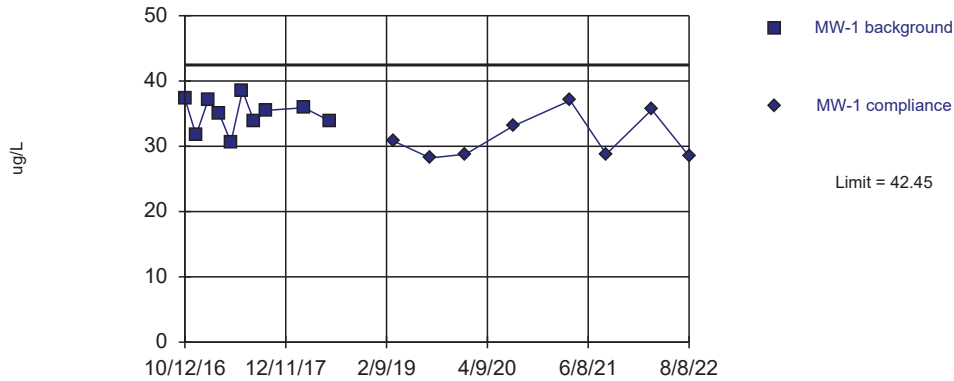


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 9) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.03586. Individual comparison alpha = 0.01809 (1 of 2). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Lead [total] Analysis Run 9/8/2022 9:47 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

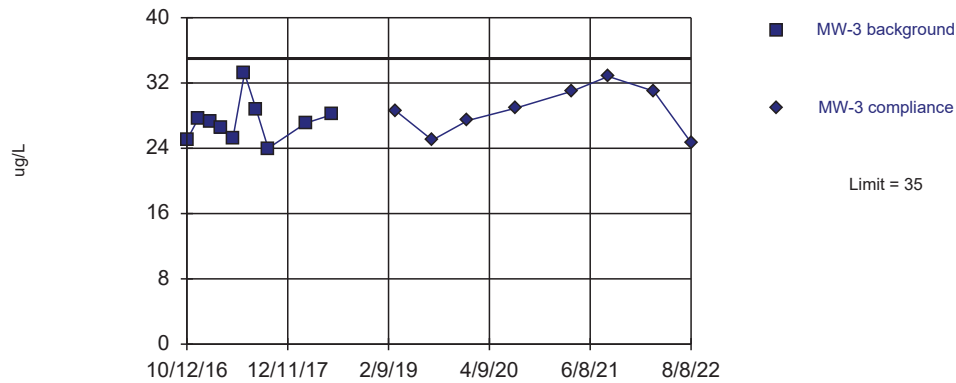
Within Limit

Prediction Limit Intrawell Parametric



Within Limit

Prediction Limit Intrawell Parametric

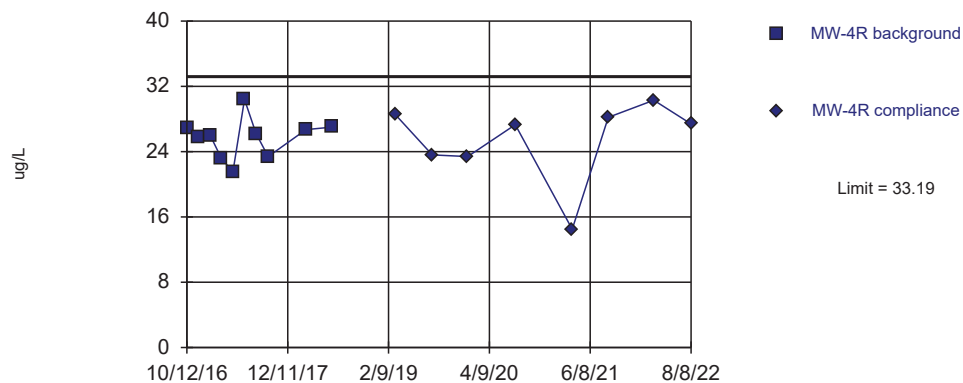


Background Data Summary: Mean=27.27, Std. Dev.=2.562, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8998, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Lithium Analysis Run 9/8/2022 9:47 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

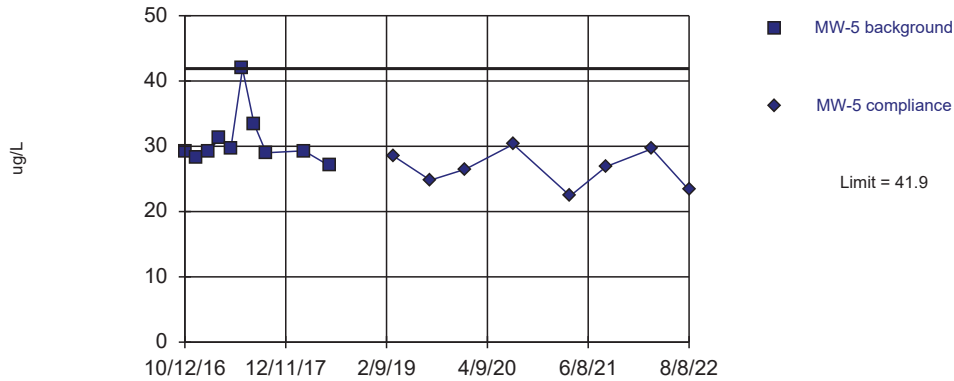


Background Data Summary: Mean=25.7, Std. Dev.=2.484, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9349, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Lithium Analysis Run 9/8/2022 9:47 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Non-parametric

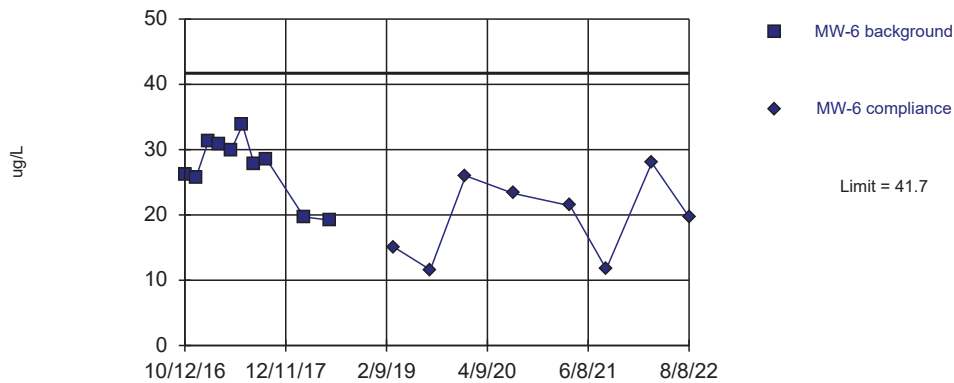


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 10 background values. Well-constituent pair annual alpha = 0.0293. Individual comparison alpha = 0.01476 (1 of 2). Seasonality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

Constituent: Lithium Analysis Run 9/8/2022 9:47 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

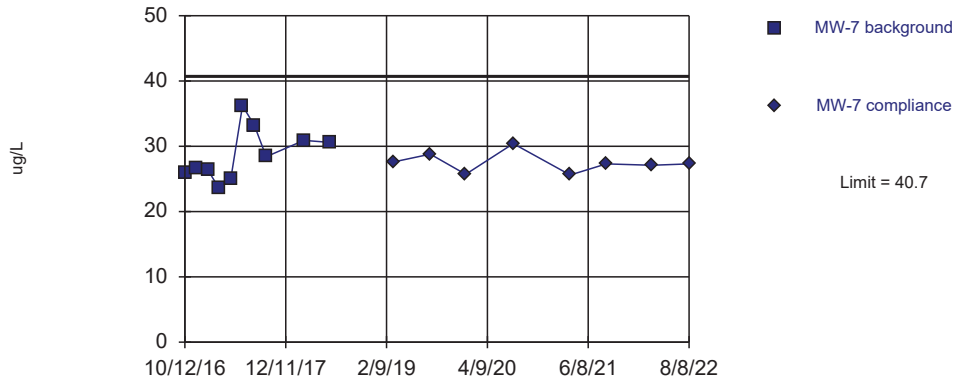


Background Data Summary: Mean=27.29, Std. Dev.=4.777, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9183, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Lithium Analysis Run 9/8/2022 9:47 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

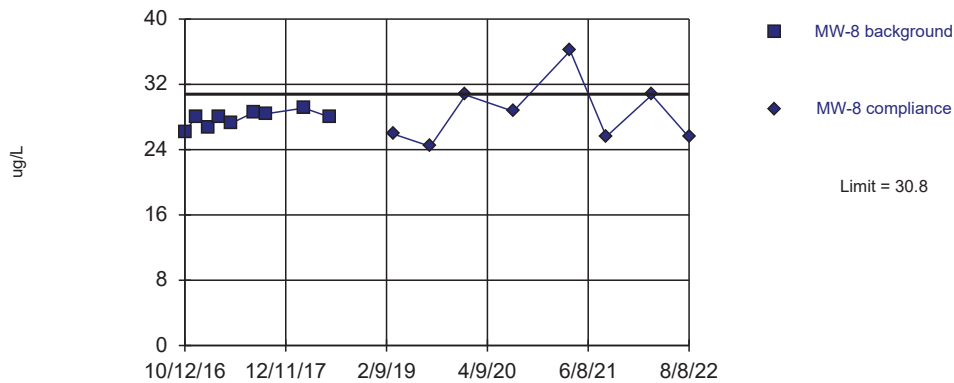


Background Data Summary: Mean=28.67, Std. Dev.=3.987, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9444, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Lithium Analysis Run 9/8/2022 9:47 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

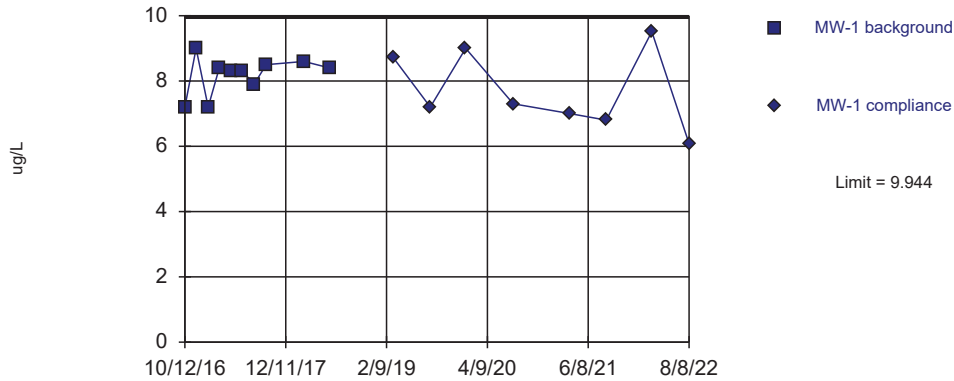


Background Data Summary: Mean=27.8, Std. Dev.=0.9314, n=9. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9451, critical = 0.764. Kappa = 3.22 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Lithium Analysis Run 9/8/2022 9:47 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

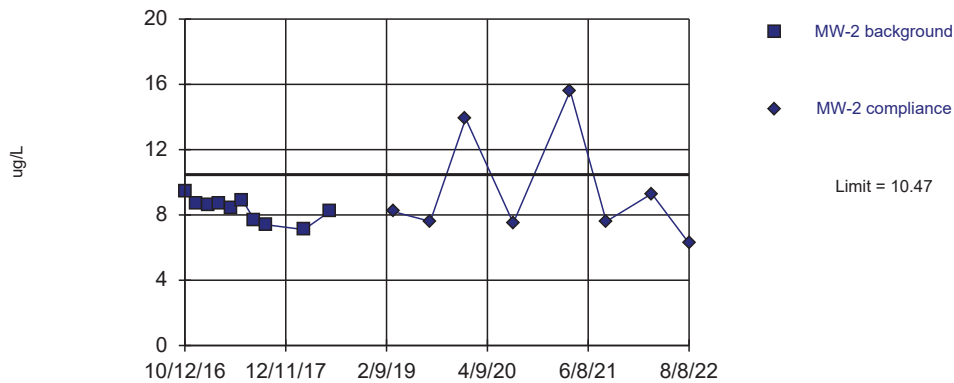


Background Data Summary: Mean=8.18, Std. Dev.=0.5846, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8727, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Molybdenum Analysis Run 9/8/2022 9:47 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

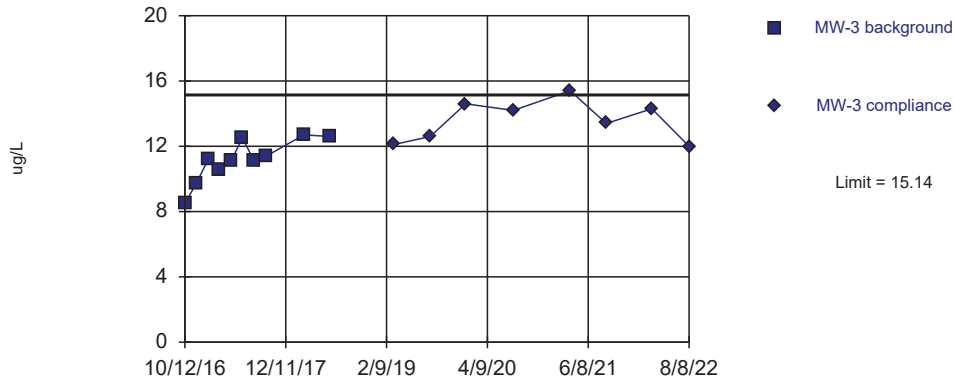


Background Data Summary: Mean=8.31, Std. Dev.=0.7156, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.954, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Molybdenum Analysis Run 9/8/2022 9:48 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

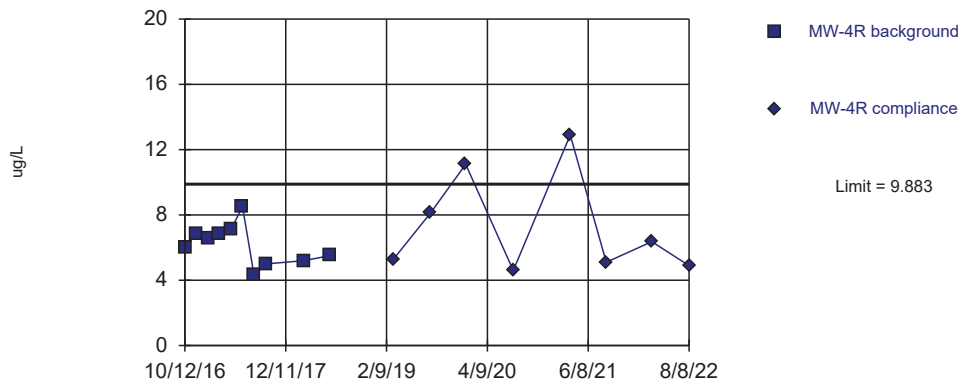


Background Data Summary: Mean=11.14, Std. Dev.=1.326, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9184, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Molybdenum Analysis Run 9/8/2022 9:48 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

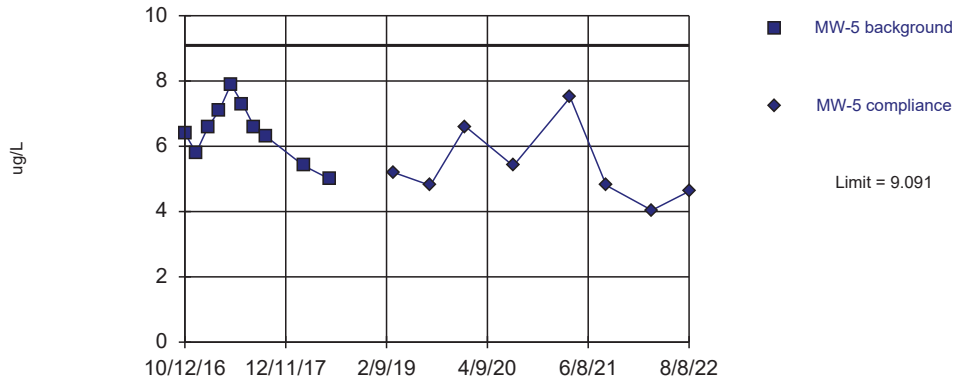


Background Data Summary: Mean=6.18, Std. Dev.=1.227, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9705, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Molybdenum Analysis Run 9/8/2022 9:48 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

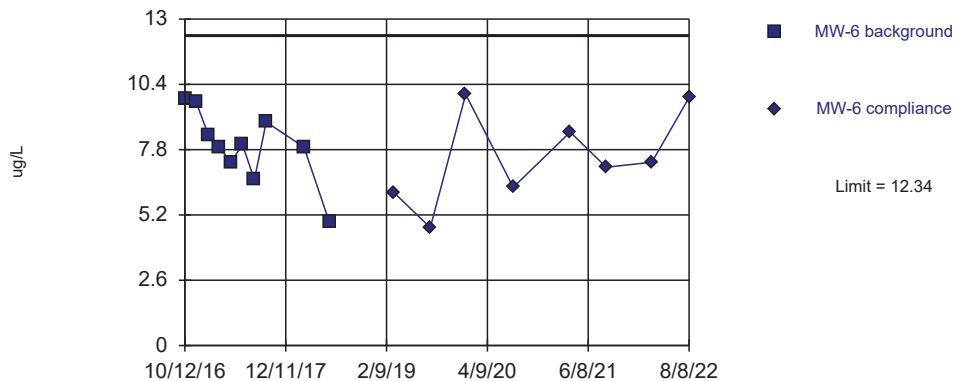


Background Data Summary: Mean=6.44, Std. Dev.=0.8784, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.983, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Molybdenum Analysis Run 9/8/2022 9:48 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

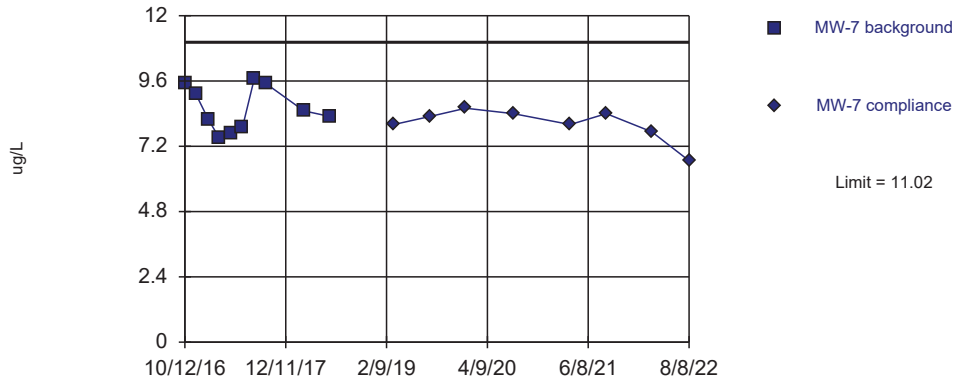


Background Data Summary: Mean=7.94, Std. Dev.=1.458, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9391, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Molybdenum Analysis Run 9/8/2022 9:48 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

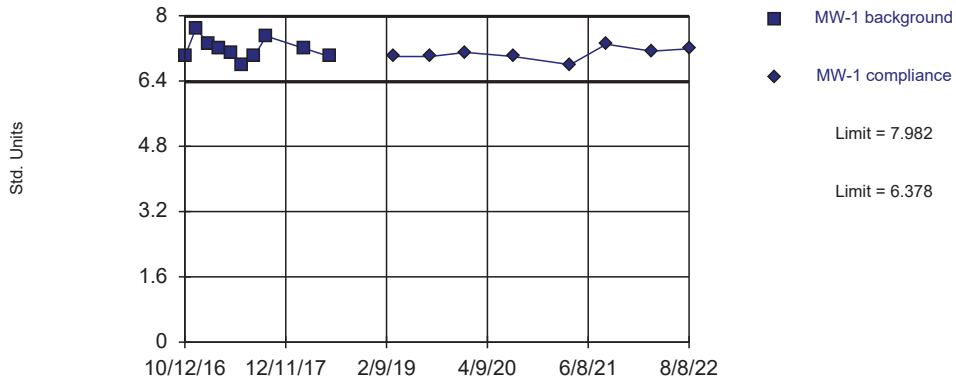
Within Limit

Prediction Limit Intrawell Parametric



Within Limits

Prediction Limit Intrawell Parametric

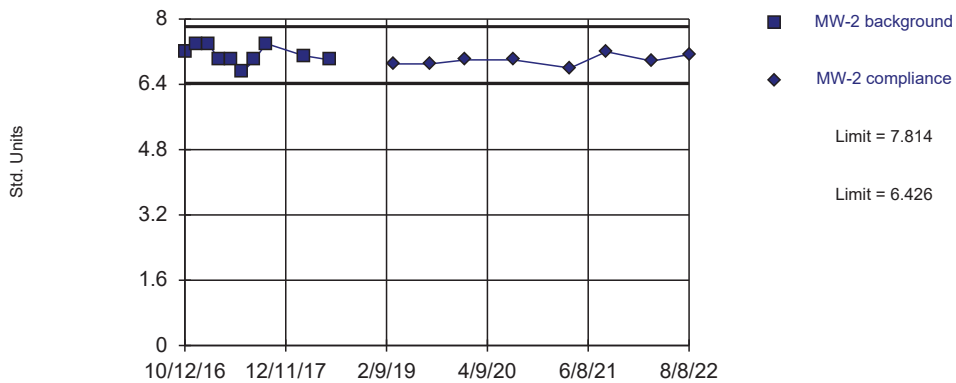


Background Data Summary: Mean=7.18, Std. Dev.=0.2658, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9414, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: pH Analysis Run 9/8/2022 9:48 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limits

Prediction Limit Intrawell Parametric

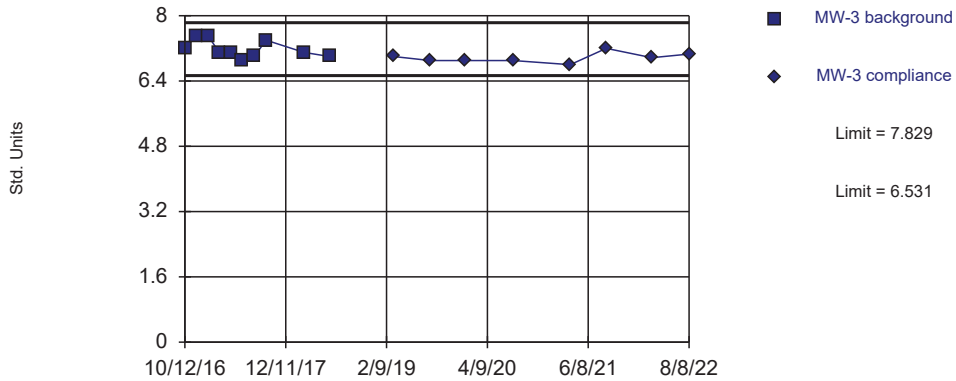


Background Data Summary: Mean=7.12, Std. Dev.=0.23, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8807, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: pH Analysis Run 9/8/2022 9:48 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limits

Prediction Limit Intrawell Parametric

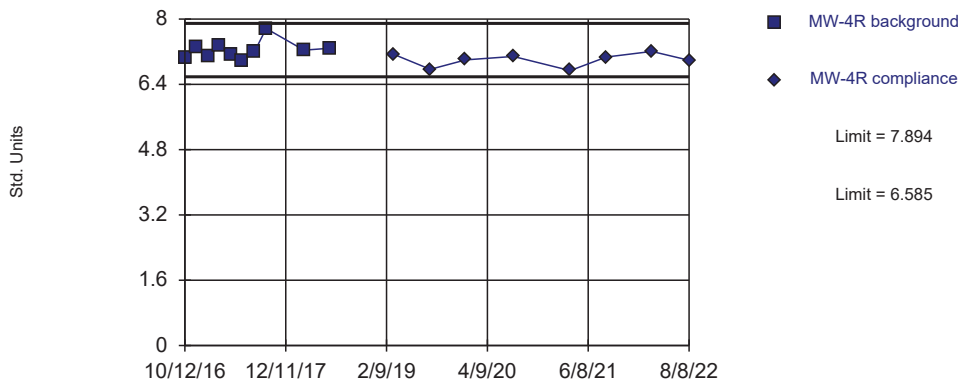


Background Data Summary: Mean=7.18, Std. Dev.=0.215, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.885, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: pH Analysis Run 9/8/2022 9:48 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limits

Prediction Limit Intrawell Parametric

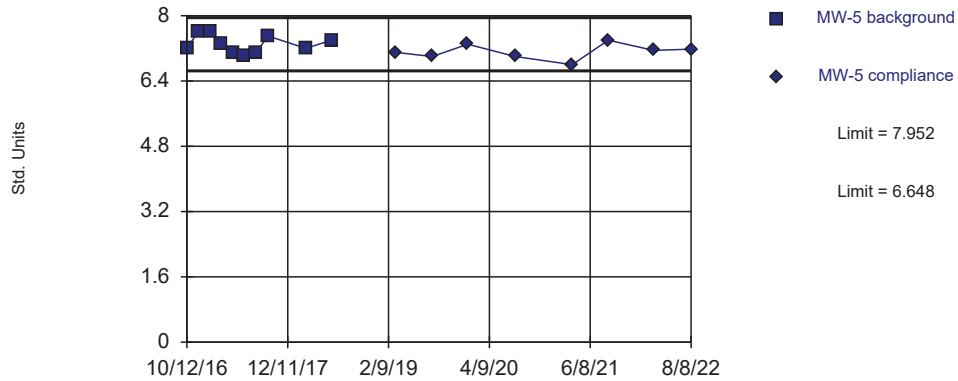


Background Data Summary: Mean=7.24, Std. Dev.=0.2169, n=10. Seasonality was detected with 95% confidence and data were deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8568, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: pH Analysis Run 9/8/2022 9:48 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limits

Prediction Limit Intrawell Parametric

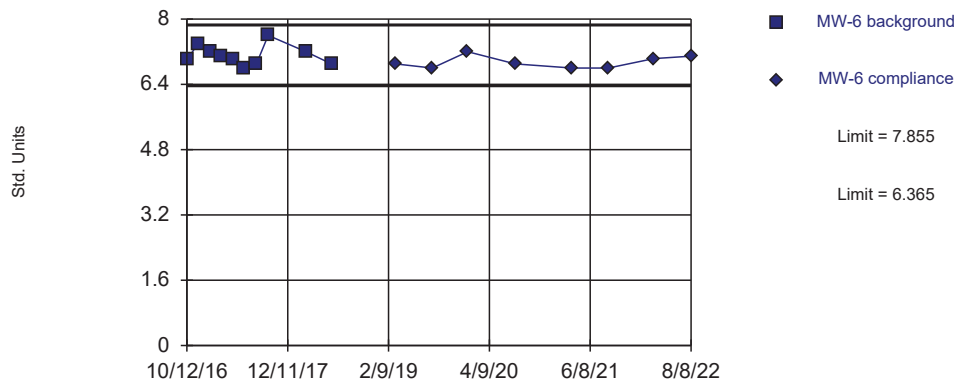


Background Data Summary: Mean=7.3, Std. Dev.=0.216, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9241, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: pH Analysis Run 9/8/2022 9:48 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limits

Prediction Limit Intrawell Parametric

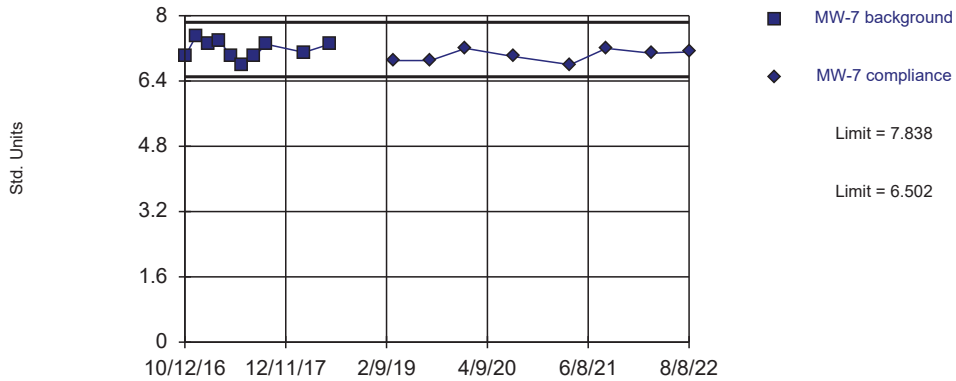


Background Data Summary: Mean=7.11, Std. Dev.=0.247, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9348, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: pH Analysis Run 9/8/2022 9:48 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limits

Prediction Limit Intrawell Parametric

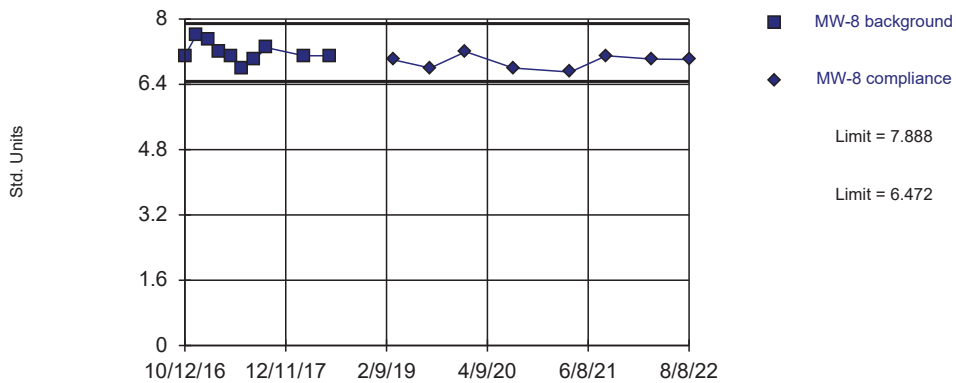


Background Data Summary: Mean=7.17, Std. Dev.=0.2214, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9355, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: pH Analysis Run 9/8/2022 9:48 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limits

Prediction Limit Intrawell Parametric

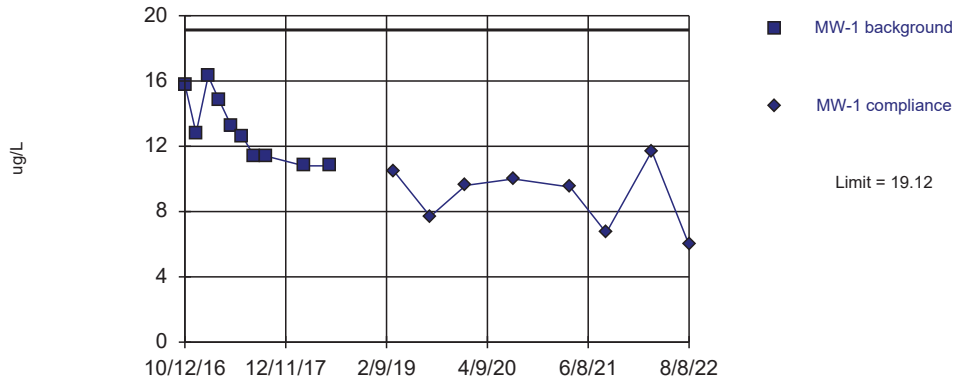


Background Data Summary: Mean=7.18, Std. Dev.=0.2348, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9288, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: pH Analysis Run 9/8/2022 9:48 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

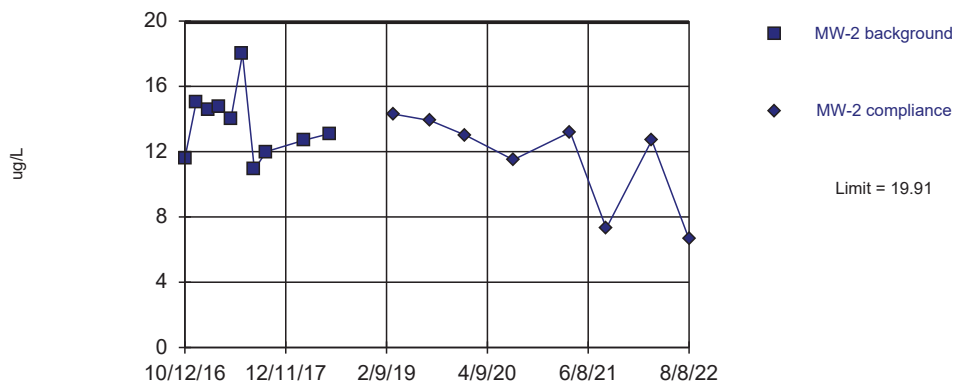


Background Data Summary: Mean=13, Std. Dev.=2.029, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8985, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Selenium [total] Analysis Run 9/8/2022 9:48 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

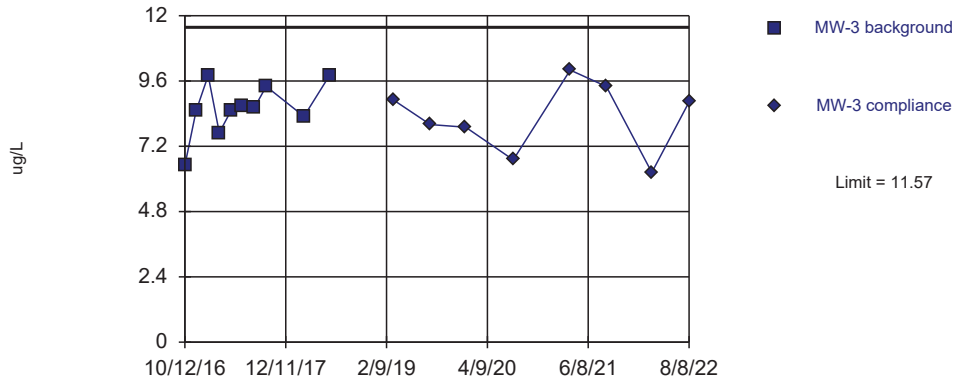


Background Data Summary: Mean=13.66, Std. Dev.=2.07, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9461, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Selenium [total] Analysis Run 9/8/2022 9:48 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

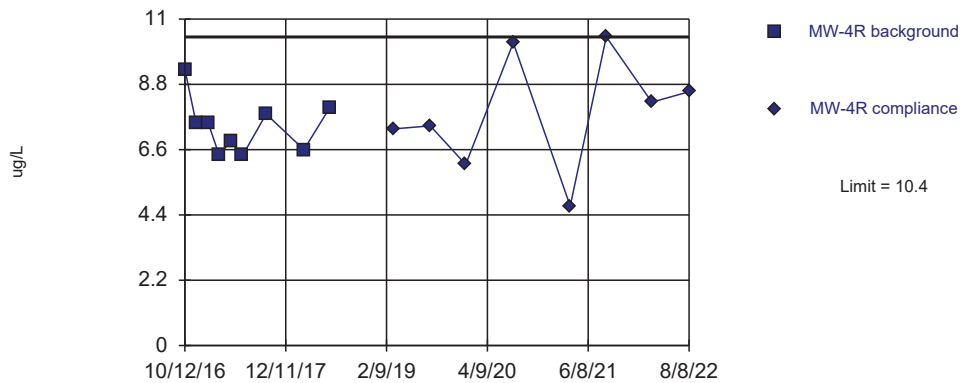


Background Data Summary: Mean=8.58, Std. Dev.=0.992, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9165, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Selenium [total] Analysis Run 9/8/2022 9:48 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

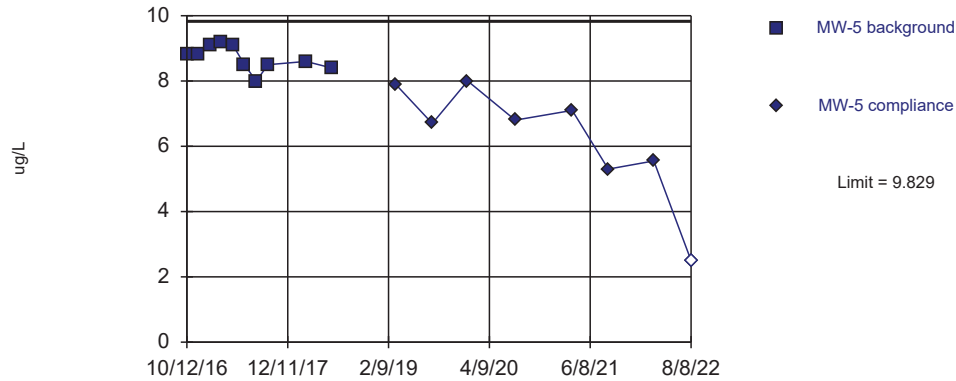


Background Data Summary: Mean=7.378, Std. Dev.=0.9378, n=9. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.903, critical = 0.764. Kappa = 3.22 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Selenium [total] Analysis Run 9/8/2022 10:15 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

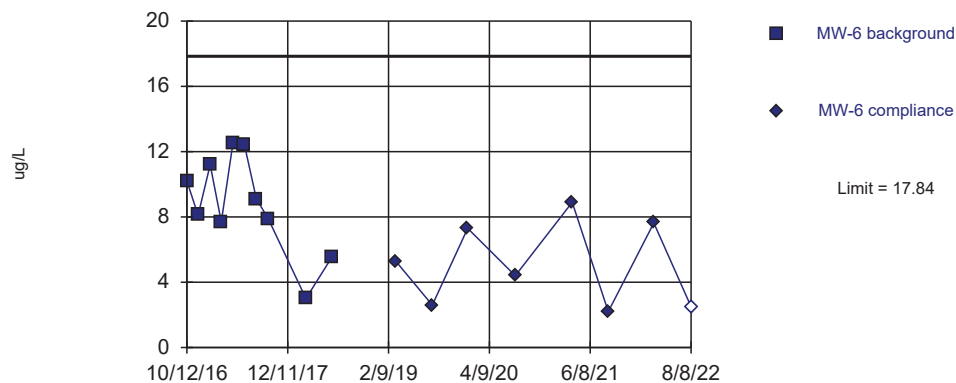


Background Data Summary: Mean=8.7, Std. Dev.=0.3742, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9468, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Selenium [total] Analysis Run 9/8/2022 9:48 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

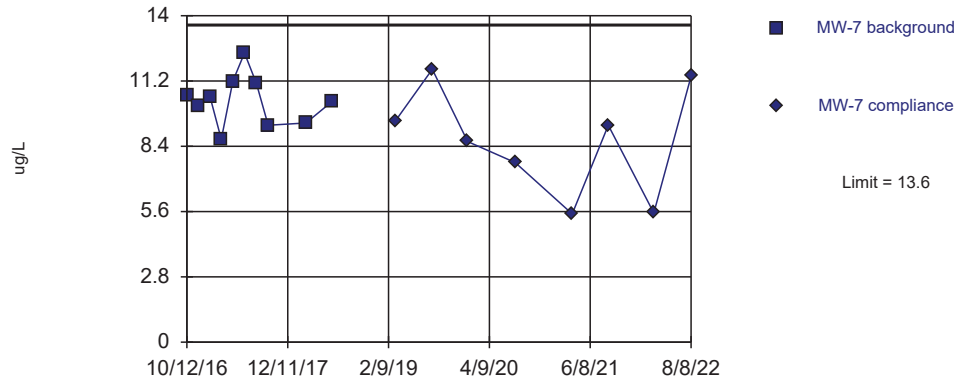


Background Data Summary: Mean=8.76, Std. Dev.=3.009, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.949, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Selenium [total] Analysis Run 9/8/2022 9:48 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

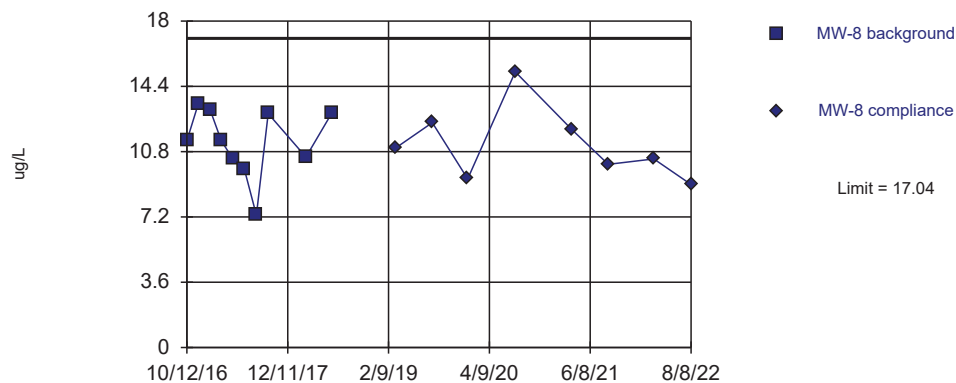


Background Data Summary: Mean=10.36, Std. Dev.=1.073, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9769, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Selenium [total] Analysis Run 9/8/2022 9:48 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

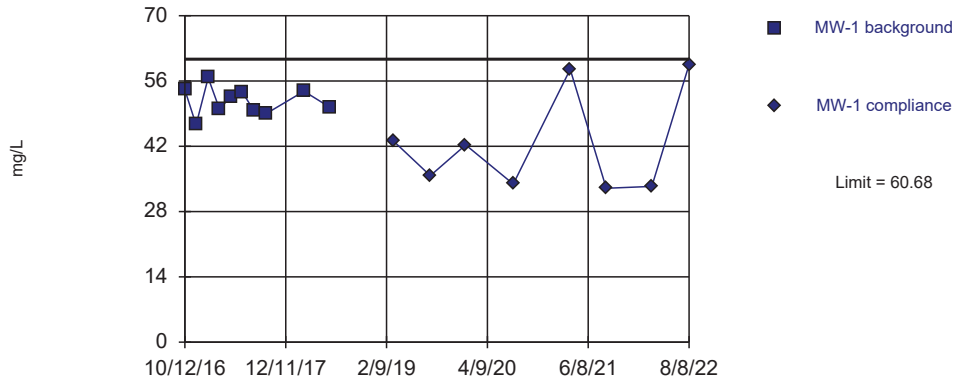


Background Data Summary: Mean=11.31, Std. Dev.=1.9, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9028, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Selenium [total] Analysis Run 9/8/2022 9:48 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

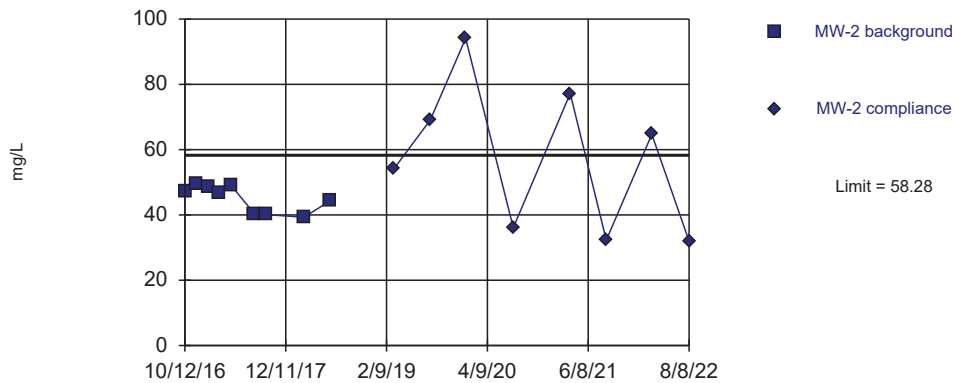


Background Data Summary: Mean=51.63, Std. Dev.=2.999, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9727, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Sulfate Analysis Run 9/8/2022 9:48 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

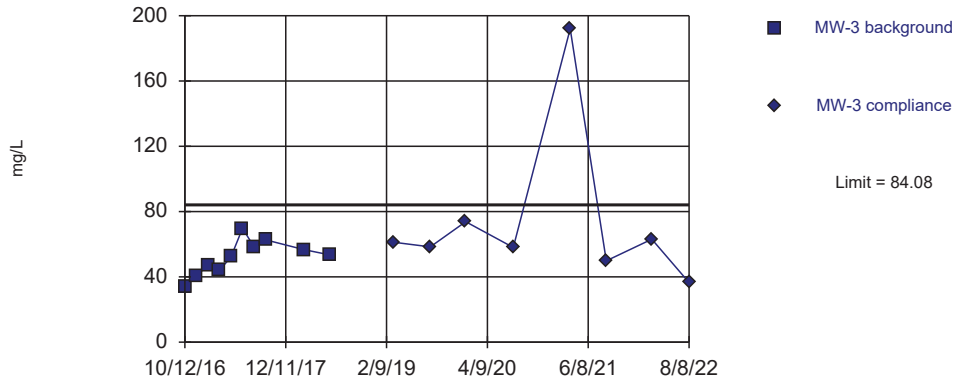


Background Data Summary: Mean=45.01, Std. Dev.=4.122, n=9. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.866, critical = 0.764. Kappa = 3.22 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Sulfate Analysis Run 9/8/2022 9:55 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

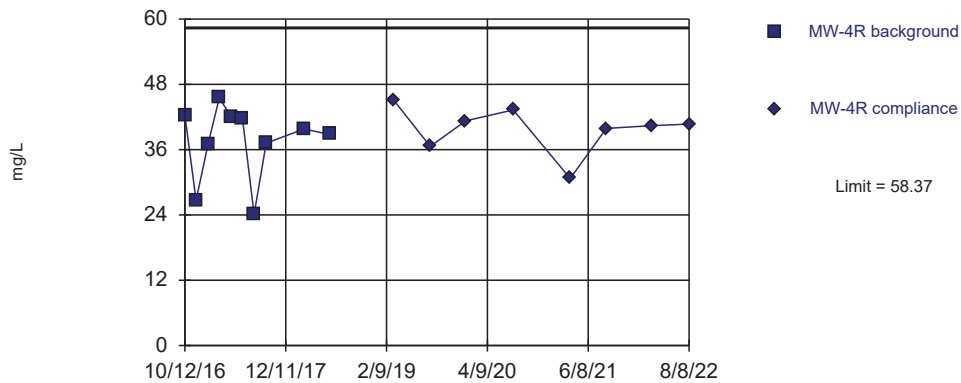


Background Data Summary: Mean=51.88, Std. Dev.=10.67, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9935, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Sulfate Analysis Run 9/8/2022 9:48 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

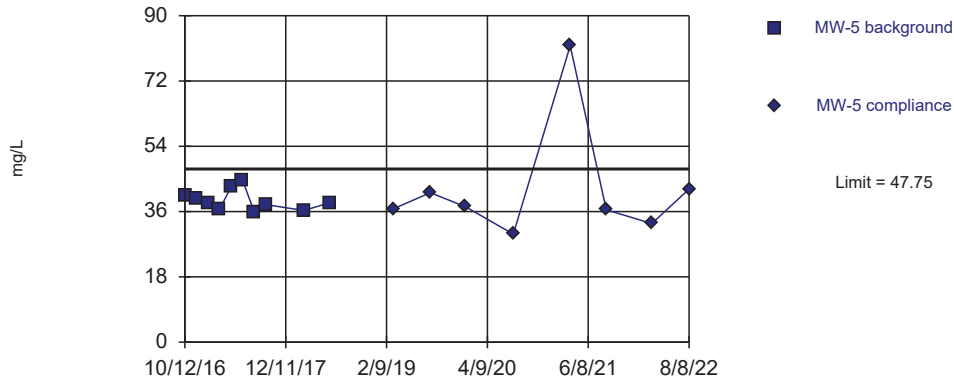


Background Data Summary: Mean=37.53, Std. Dev.=6.906, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8478, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Sulfate Analysis Run 9/8/2022 9:48 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

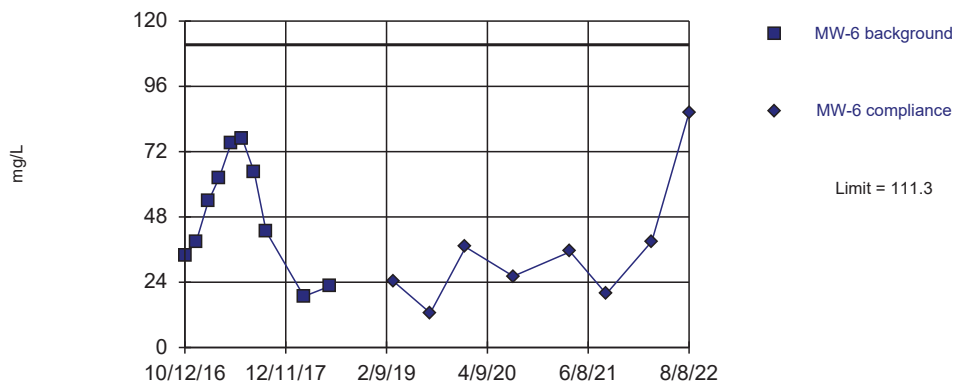


Background Data Summary: Mean=39.12, Std. Dev.=2.859, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9135, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Sulfate Analysis Run 9/8/2022 9:48 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

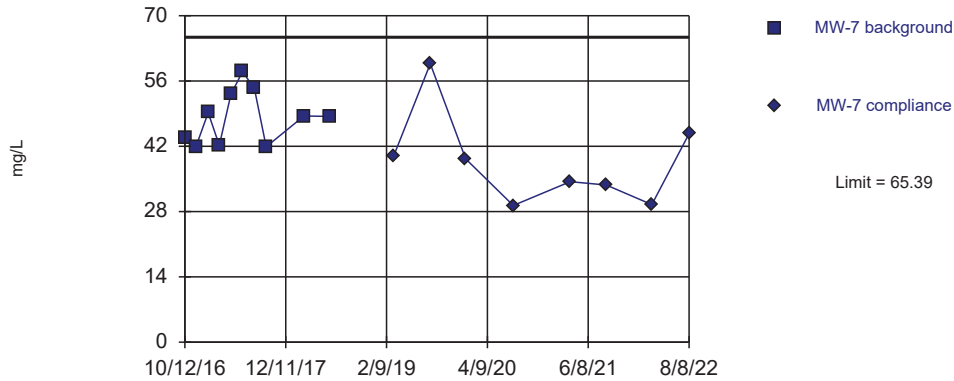


Background Data Summary: Mean=48.84, Std. Dev.=20.69, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9417, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Sulfate Analysis Run 9/8/2022 9:49 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

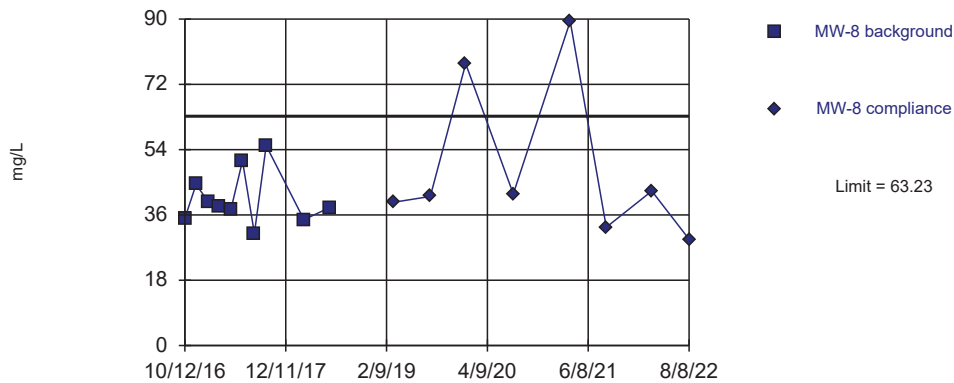


Background Data Summary: Mean=48.14, Std. Dev.=5.715, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9073, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Sulfate Analysis Run 9/8/2022 9:49 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

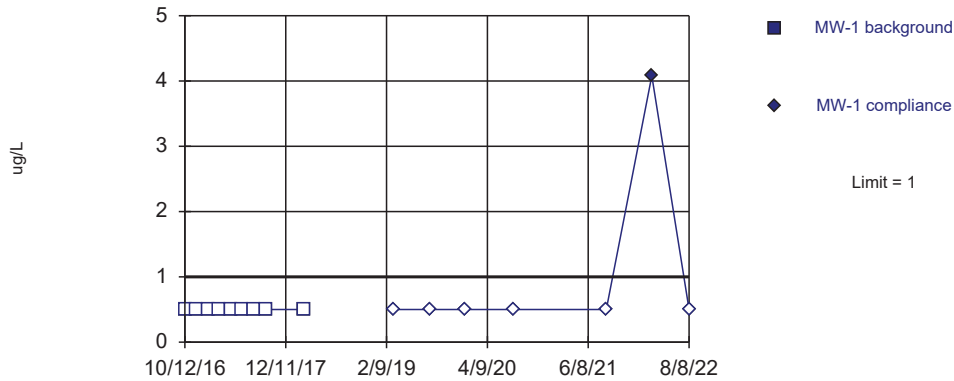


Background Data Summary: Mean=40.48, Std. Dev.=7.538, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9039, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Sulfate Analysis Run 9/8/2022 9:49 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

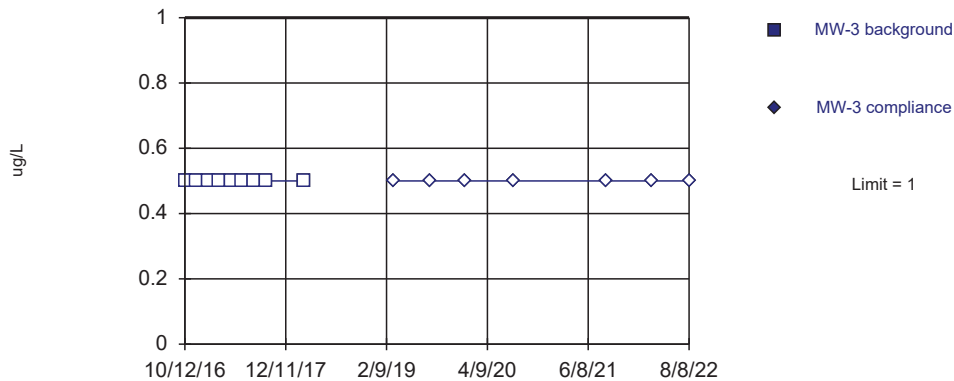
Within Limit

Prediction Limit Intrawell Non-parametric



Within Limit

Prediction Limit
Intrawell Non-parametric

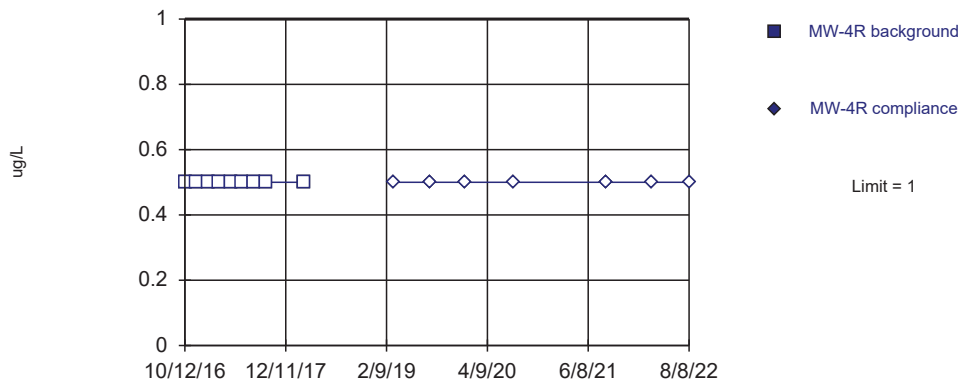


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 9) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.03586. Individual comparison alpha = 0.01809 (1 of 2). Seasonality was not detected with 95% confidence.

Constituent: Thallium [total] Analysis Run 9/8/2022 9:49 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit
Intrawell Non-parametric

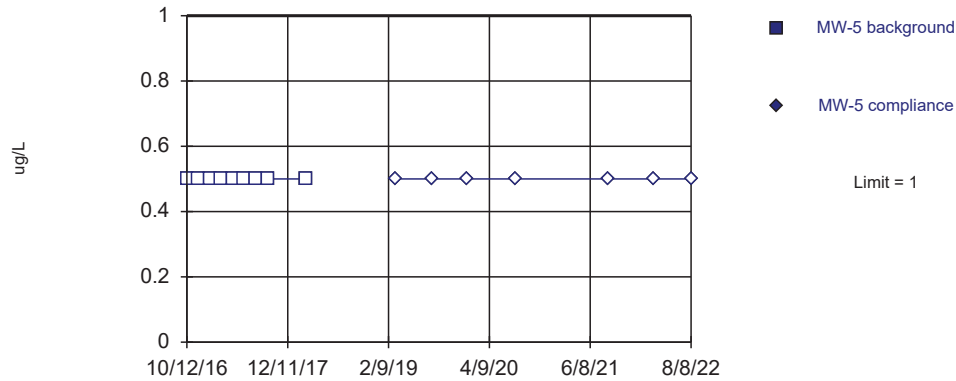


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 9) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.03586. Individual comparison alpha = 0.01809 (1 of 2). Seasonality was not detected with 95% confidence.

Constituent: Thallium [total] Analysis Run 9/8/2022 9:49 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit
Intrawell Non-parametric

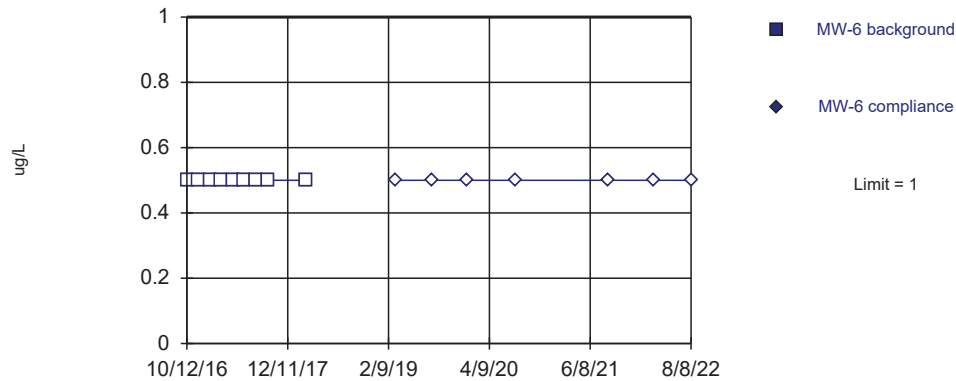


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 9) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.03586. Individual comparison alpha = 0.01809 (1 of 2). Seasonality was not detected with 95% confidence.

Constituent: Thallium [total] Analysis Run 9/8/2022 9:49 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit
Intrawell Non-parametric

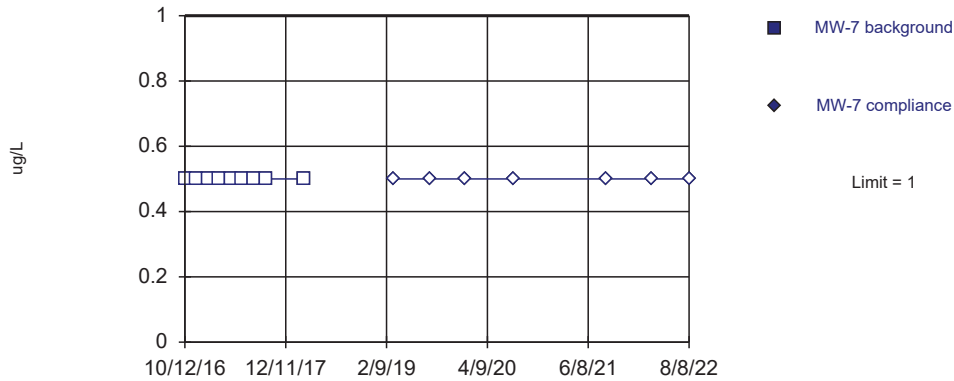


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 9) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.03586. Individual comparison alpha = 0.01809 (1 of 2). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Thallium [total] Analysis Run 9/8/2022 9:49 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit
Intrawell Non-parametric

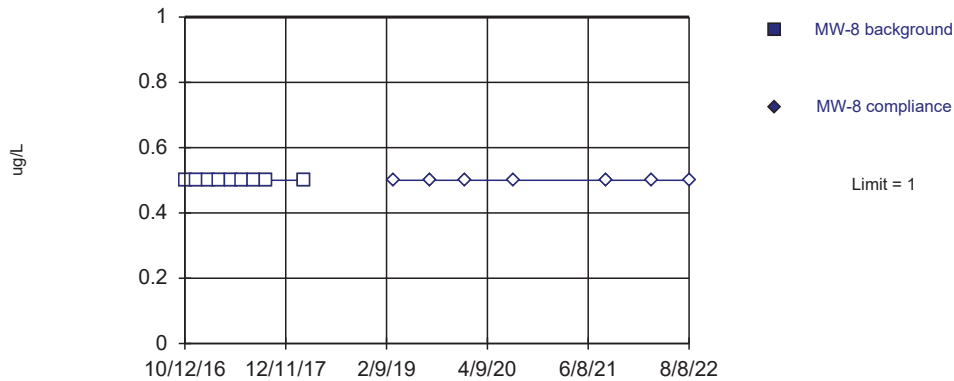


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 9) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.03586. Individual comparison alpha = 0.01809 (1 of 2). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Thallium [total] Analysis Run 9/8/2022 9:49 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit
Intrawell Non-parametric

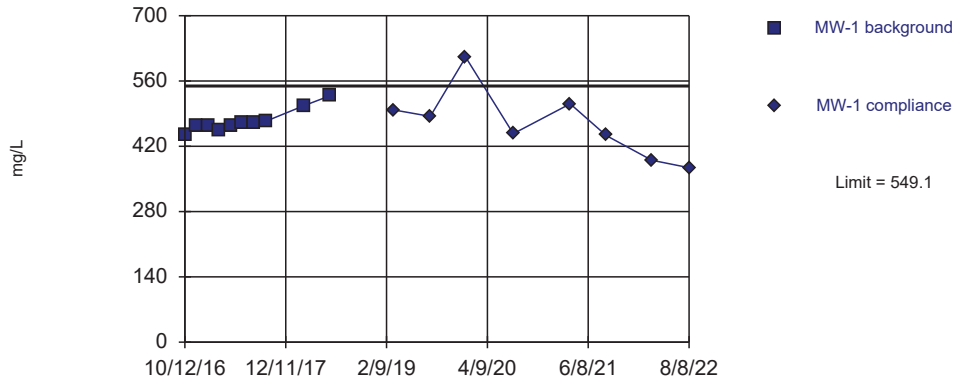


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 9) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.03586. Individual comparison alpha = 0.01809 (1 of 2). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Thallium [total] Analysis Run 9/8/2022 9:49 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

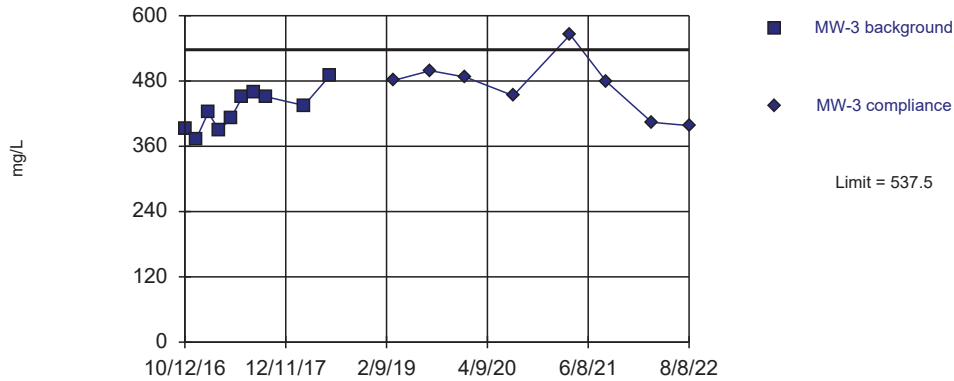
Within Limit

Prediction Limit Intrawell Parametric



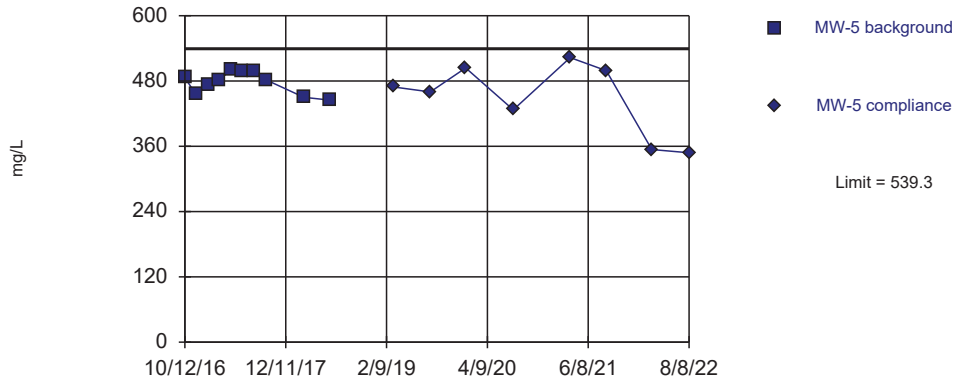
Within Limit

Prediction Limit Intrawell Parametric



Within Limit

Prediction Limit Intrawell Parametric

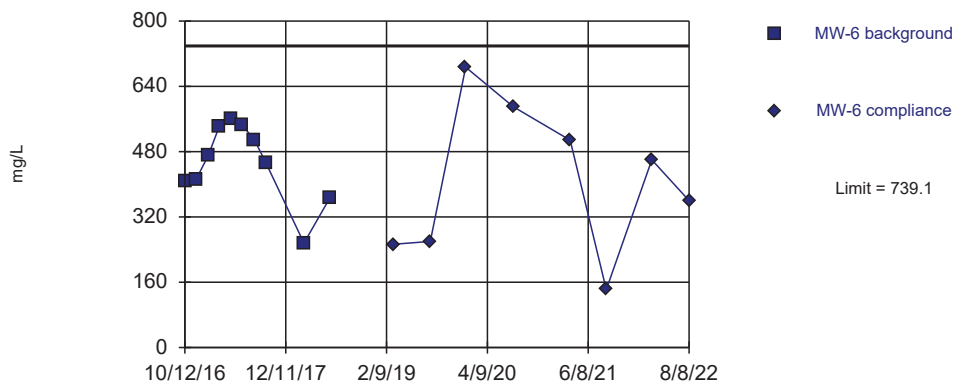


Background Data Summary: Mean=477, Std. Dev.=20.65, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8913, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Total Dissolved Solids Analysis Run 9/8/2022 9:49 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

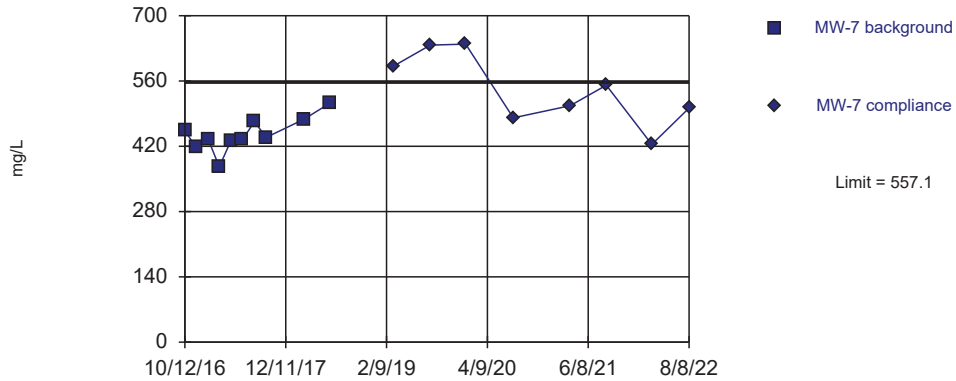


Background Data Summary: Mean=451.7, Std. Dev.=95.24, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9297, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Total Dissolved Solids Analysis Run 9/8/2022 9:49 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

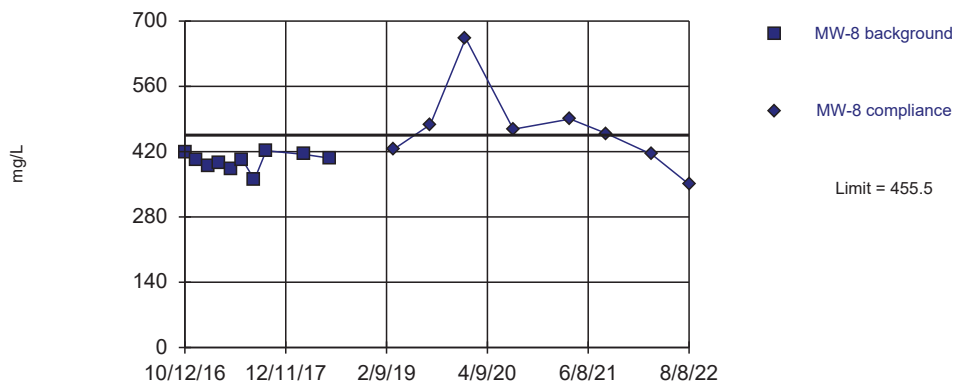


Background Data Summary: Mean=445, Std. Dev.=37.14, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9661, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Total Dissolved Solids Analysis Run 9/8/2022 9:49 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

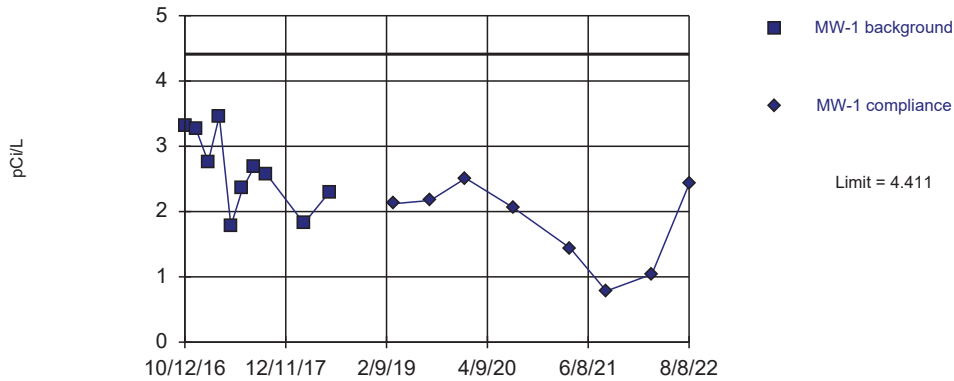


Background Data Summary: Mean=399.1, Std. Dev.=18.69, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9407, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Total Dissolved Solids Analysis Run 9/8/2022 9:49 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

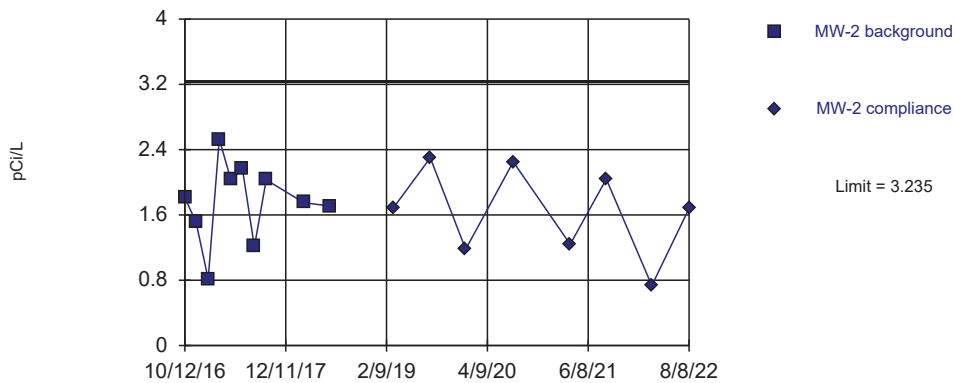


Background Data Summary: Mean=2.63, Std. Dev.=0.5903, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.937, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Total Radium Analysis Run 9/8/2022 9:49 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

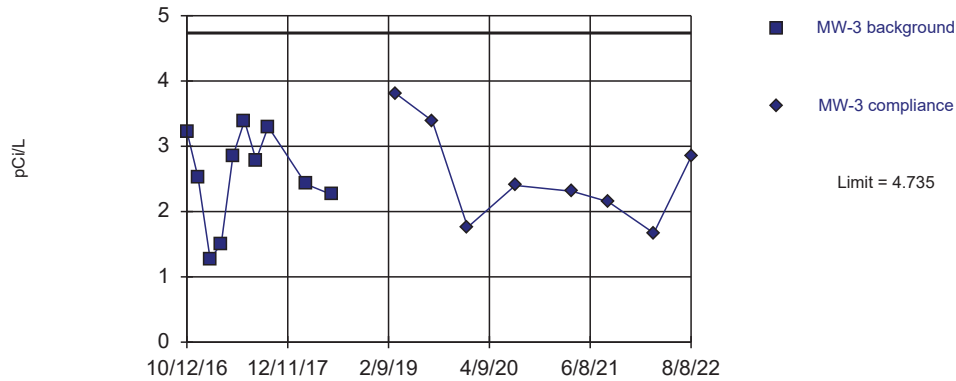


Background Data Summary: Mean=1.755, Std. Dev.=0.4903, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9723, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Total Radium Analysis Run 9/8/2022 9:49 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

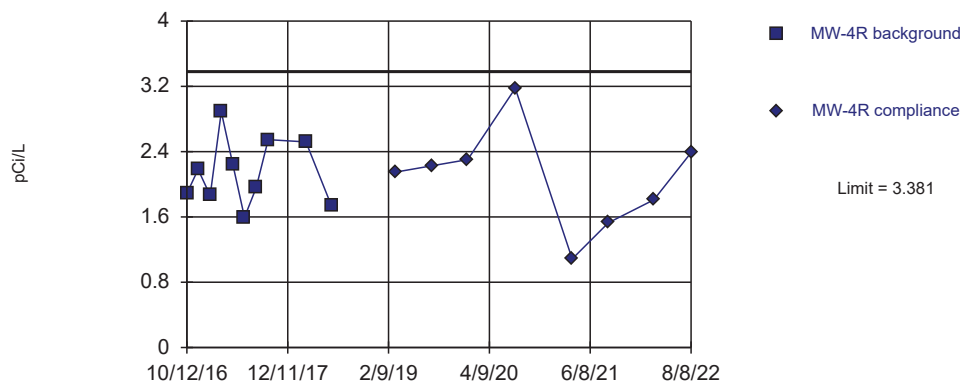


Background Data Summary: Mean=2.554, Std. Dev.=0.7226, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9177, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Total Radium Analysis Run 9/8/2022 9:49 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

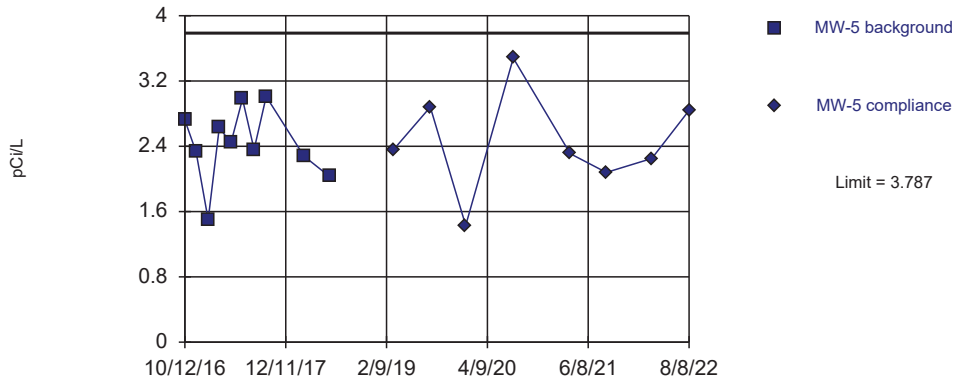


Background Data Summary: Mean=2.141, Std. Dev.=0.4107, n=10. Seasonality was detected with 95% confidence and data were deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9526, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Total Radium Analysis Run 9/8/2022 9:49 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

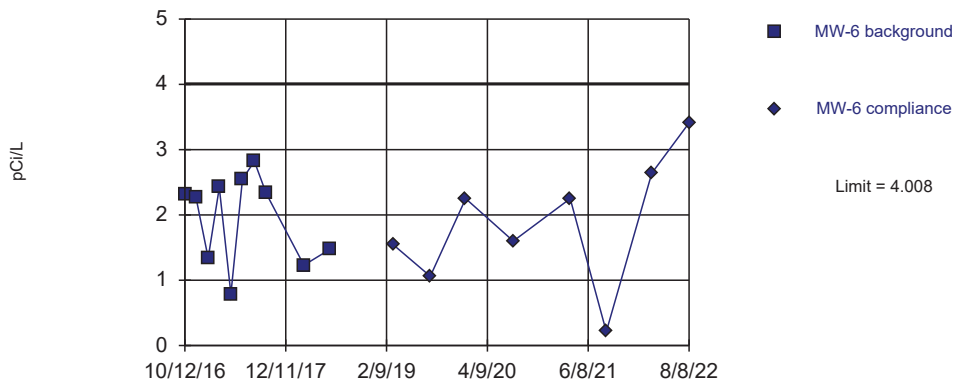


Background Data Summary: Mean=2.428, Std. Dev.=0.4504, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.945, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Total Radium Analysis Run 9/8/2022 9:49 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Intrawell Parametric

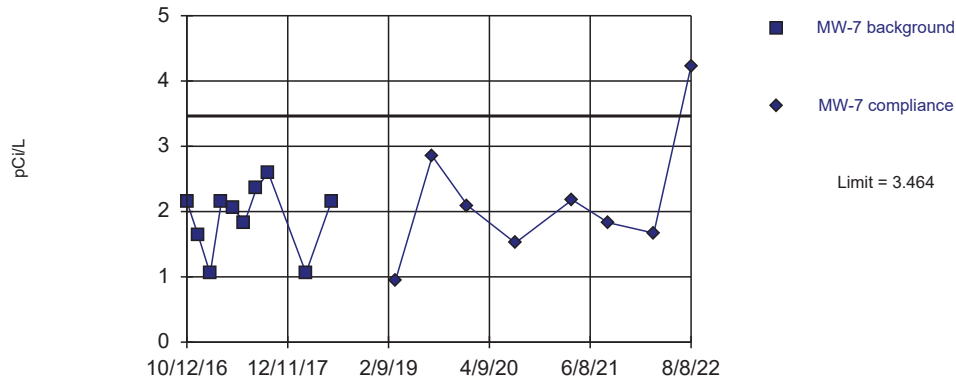


Background Data Summary: Mean=1.952, Std. Dev.=0.6812, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8997, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Total Radium Analysis Run 9/8/2022 9:49 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Exceeds Limit

Prediction Limit Intrawell Parametric

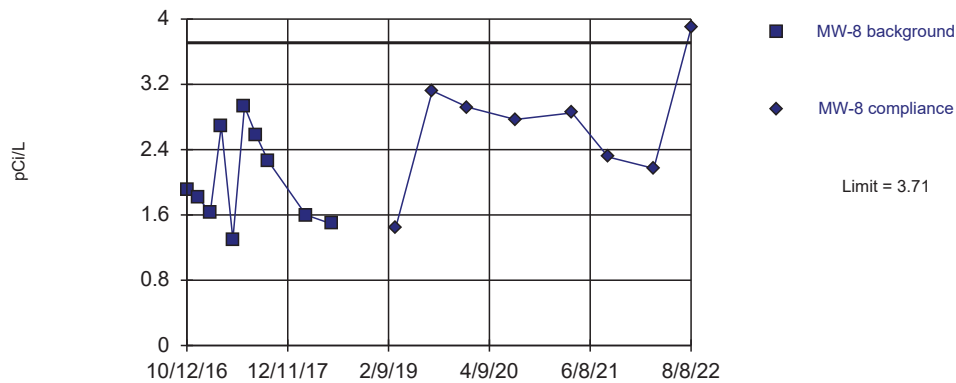


Background Data Summary: Mean=1.904, Std. Dev.=0.5171, n=10. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8953, critical = 0.781. Kappa = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Total Radium Analysis Run 9/8/2022 9:50 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Exceeds 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 = 3.018 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Total Radium Analysis Run 9/8/2022 9:50 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

A.3 Interwell Prediction Limits

Prediction Limit

Fremont Dept. of Utilities

Client: SCS Engineers

Data: Fremont Department of Utilities Groundwater

Printed 9/8/2022, 10:55 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>
Antimony [total] (ug/L)	MW-1	2	n/a	8/8/2022	1ND	No	16	100	n/a	0.005898	NP Inter (NDs) 1 of 2
Antimony [total] (ug/L)	MW-2	2	n/a	8/8/2022	1ND	No	16	100	n/a	0.005898	NP Inter (NDs) 1 of 2
Antimony [total] (ug/L)	MW-3	2	n/a	8/8/2022	1ND	No	16	100	n/a	0.005898	NP Inter (NDs) 1 of 2
Antimony [total] (ug/L)	MW-5	2	n/a	8/8/2022	1ND	No	16	100	n/a	0.005898	NP Inter (NDs) 1 of 2
Antimony [total] (ug/L)	MW-6	2	n/a	8/8/2022	1ND	No	16	100	n/a	0.005898	NP Inter (NDs) 1 of 2
Antimony [total] (ug/L)	MW-7	2	n/a	8/8/2022	1ND	No	16	100	n/a	0.005898	NP Inter (NDs) 1 of 2
Antimony [total] (ug/L)	MW-8	2	n/a	8/8/2022	1ND	No	16	100	n/a	0.005898	NP Inter (NDs) 1 of 2
Arsenic [total] (ug/L)	MW-1	5.866	n/a	8/8/2022	4.2	No	18	0	No	0.000...	Param Inter 1 of 2
Arsenic [total] (ug/L)	MW-2	5.866	n/a	8/8/2022	4.06	No	18	0	No	0.000...	Param Inter 1 of 2
Arsenic [total] (ug/L)	MW-3	5.866	n/a	8/8/2022	3.42	No	18	0	No	0.000...	Param Inter 1 of 2
Arsenic [total] (ug/L)	MW-5	5.866	n/a	8/8/2022	4.22	No	18	0	No	0.000...	Param Inter 1 of 2
Arsenic [total] (ug/L)	MW-6	5.866	n/a	8/8/2022	3.11	No	18	0	No	0.000...	Param Inter 1 of 2
Arsenic [total] (ug/L)	MW-7	5.866	n/a	8/8/2022	3.65	No	18	0	No	0.000...	Param Inter 1 of 2
Arsenic [total] (ug/L)	MW-8	5.866	n/a	8/8/2022	2.56	No	18	0	No	0.000...	Param Inter 1 of 2
Barium [total] (ug/L)	MW-1	152.9	n/a	8/8/2022	126	No	18	0	No	0.000...	Param Inter 1 of 2
Barium [total] (ug/L)	MW-2	152.9	n/a	8/8/2022	129	No	18	0	No	0.000...	Param Inter 1 of 2
Barium [total] (ug/L)	MW-3	152.9	n/a	8/8/2022	183	Yes	18	0	No	0.000...	Param Inter 1 of 2
Barium [total] (ug/L)	MW-5	152.9	n/a	8/8/2022	125	No	18	0	No	0.000...	Param Inter 1 of 2
Barium [total] (ug/L)	MW-6	152.9	n/a	8/8/2022	127	No	18	0	No	0.000...	Param Inter 1 of 2
Barium [total] (ug/L)	MW-7	152.9	n/a	8/8/2022	159	Yes	18	0	No	0.000...	Param Inter 1 of 2
Barium [total] (ug/L)	MW-8	152.9	n/a	8/8/2022	170	Yes	18	0	No	0.000...	Param Inter 1 of 2
Boron (ug/L)	MW-1	448.5	n/a	8/8/2022	132	No	18	27.78	No	0.000...	Param Inter 1 of 2
Boron (ug/L)	MW-2	448.5	n/a	8/8/2022	134	No	18	27.78	No	0.000...	Param Inter 1 of 2
Boron (ug/L)	MW-3	448.5	n/a	8/8/2022	136	No	18	27.78	No	0.000...	Param Inter 1 of 2
Boron (ug/L)	MW-5	448.5	n/a	8/8/2022	120	No	18	27.78	No	0.000...	Param Inter 1 of 2
Boron (ug/L)	MW-6	448.5	n/a	8/8/2022	135	No	18	27.78	No	0.000...	Param Inter 1 of 2
Boron (ug/L)	MW-7	448.5	n/a	8/8/2022	118	No	18	27.78	No	0.000...	Param Inter 1 of 2
Boron (ug/L)	MW-8	448.5	n/a	8/8/2022	109	No	18	27.78	No	0.000...	Param Inter 1 of 2
Calcium (mg/L)	MW-1	114	n/a	8/8/2022	93	No	18	0	No	0.000...	Param Inter 1 of 2
Calcium (mg/L)	MW-2	114	n/a	8/8/2022	106	No	18	0	No	0.000...	Param Inter 1 of 2
Calcium (mg/L)	MW-3	114	n/a	8/8/2022	107	No	18	0	No	0.000...	Param Inter 1 of 2
Calcium (mg/L)	MW-5	114	n/a	8/8/2022	91.3	No	18	0	No	0.000...	Param Inter 1 of 2
Calcium (mg/L)	MW-6	114	n/a	8/8/2022	96	No	18	0	No	0.000...	Param Inter 1 of 2
Calcium (mg/L)	MW-7	114	n/a	8/8/2022	106	No	18	0	No	0.000...	Param Inter 1 of 2
Calcium (mg/L)	MW-8	114	n/a	8/8/2022	101	No	18	0	No	0.000...	Param Inter 1 of 2
Chloride (mg/L)	MW-1	50	n/a	8/8/2022	31.3	No	17	0	No	0.000...	Param Inter 1 of 2
Chloride (mg/L)	MW-2	50	n/a	8/8/2022	25.7	No	17	0	No	0.000...	Param Inter 1 of 2
Chloride (mg/L)	MW-3	50	n/a	8/8/2022	41.8	No	17	0	No	0.000...	Param Inter 1 of 2
Chloride (mg/L)	MW-5	50	n/a	8/8/2022	26.1	No	17	0	No	0.000...	Param Inter 1 of 2
Chloride (mg/L)	MW-6	50	n/a	8/8/2022	27.6	No	17	0	No	0.000...	Param Inter 1 of 2
Chloride (mg/L)	MW-7	50	n/a	8/8/2022	101	Yes	17	0	No	0.000...	Param Inter 1 of 2
Chloride (mg/L)	MW-8	50	n/a	8/8/2022	28.5	No	17	0	No	0.000...	Param Inter 1 of 2
Chromium [total] (ug/L)	MW-1	2.5	n/a	8/8/2022	2.5ND	No	16	93.75	n/a	0.005898	NP Inter (NDs) 1 of 2
Chromium [total] (ug/L)	MW-2	2.5	n/a	8/8/2022	2.5ND	No	16	93.75	n/a	0.005898	NP Inter (NDs) 1 of 2
Chromium [total] (ug/L)	MW-3	2.5	n/a	8/8/2022	2.5ND	No	16	93.75	n/a	0.005898	NP Inter (NDs) 1 of 2
Chromium [total] (ug/L)	MW-5	2.5	n/a	8/8/2022	2.5ND	No	16	93.75	n/a	0.005898	NP Inter (NDs) 1 of 2
Chromium [total] (ug/L)	MW-6	2.5	n/a	8/8/2022	2.5ND	No	16	93.75	n/a	0.005898	NP Inter (NDs) 1 of 2
Chromium [total] (ug/L)	MW-7	2.5	n/a	8/8/2022	2.5ND	No	16	93.75	n/a	0.005898	NP Inter (NDs) 1 of 2
Chromium [total] (ug/L)	MW-8	2.5	n/a	8/8/2022	2.5ND	No	16	93.75	n/a	0.005898	NP Inter (NDs) 1 of 2
Cobalt [total] (ug/L)	MW-1	0.5	n/a	8/8/2022	0.25ND	No	16	100	n/a	0.005898	NP Inter (NDs) 1 of 2

Prediction Limit

Fremont Dept. of Utilities

Client: SCS Engineers

Data: Fremont Department of Utilities Groundwater

Printed 9/8/2022, 10:55 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
Cobalt [total] (ug/L)	MW-2	0.5	n/a	8/8/2022	0.25ND	No	16	100	n/a	0.005898	NP Inter (NDs) 1 of 2
Cobalt [total] (ug/L)	MW-3	0.5	n/a	8/8/2022	0.25ND	No	16	100	n/a	0.005898	NP Inter (NDs) 1 of 2
Cobalt [total] (ug/L)	MW-5	0.5	n/a	8/8/2022	0.25ND	No	16	100	n/a	0.005898	NP Inter (NDs) 1 of 2
Cobalt [total] (ug/L)	MW-6	0.5	n/a	8/8/2022	0.25ND	No	16	100	n/a	0.005898	NP Inter (NDs) 1 of 2
Cobalt [total] (ug/L)	MW-7	0.5	n/a	8/8/2022	0.25ND	No	16	100	n/a	0.005898	NP Inter (NDs) 1 of 2
Cobalt [total] (ug/L)	MW-8	0.5	n/a	8/8/2022	0.25ND	No	16	100	n/a	0.005898	NP Inter (NDs) 1 of 2
Fluoride (mg/L)	MW-1	1.147	n/a	8/8/2022	0.798	No	18	5.556	x^2	0.000...	Param Inter 1 of 2
Fluoride (mg/L)	MW-2	1.147	n/a	8/8/2022	0.857	No	18	5.556	x^2	0.000...	Param Inter 1 of 2
Fluoride (mg/L)	MW-3	1.147	n/a	8/8/2022	0.25ND	No	18	5.556	x^2	0.000...	Param Inter 1 of 2
Fluoride (mg/L)	MW-5	1.147	n/a	8/8/2022	0.655	No	18	5.556	x^2	0.000...	Param Inter 1 of 2
Fluoride (mg/L)	MW-6	1.147	n/a	8/8/2022	0.25ND	No	18	5.556	x^2	0.000...	Param Inter 1 of 2
Fluoride (mg/L)	MW-7	1.147	n/a	8/8/2022	0.25ND	No	18	5.556	x^2	0.000...	Param Inter 1 of 2
Fluoride (mg/L)	MW-8	1.147	n/a	8/8/2022	0.25ND	No	18	5.556	x^2	0.000...	Param Inter 1 of 2
Lead [total] (ug/L)	MW-1	1.4	n/a	8/8/2022	0.25ND	No	15	93.33	n/a	0.006767	NP Inter (NDs) 1 of 2
Lead [total] (ug/L)	MW-2	1.4	n/a	8/8/2022	0.25ND	No	15	93.33	n/a	0.006767	NP Inter (NDs) 1 of 2
Lead [total] (ug/L)	MW-3	1.4	n/a	8/8/2022	0.25ND	No	15	93.33	n/a	0.006767	NP Inter (NDs) 1 of 2
Lead [total] (ug/L)	MW-5	1.4	n/a	8/8/2022	0.25ND	No	15	93.33	n/a	0.006767	NP Inter (NDs) 1 of 2
Lead [total] (ug/L)	MW-6	1.4	n/a	8/8/2022	0.25ND	No	15	93.33	n/a	0.006767	NP Inter (NDs) 1 of 2
Lead [total] (ug/L)	MW-7	1.4	n/a	8/8/2022	0.25ND	No	15	93.33	n/a	0.006767	NP Inter (NDs) 1 of 2
Lead [total] (ug/L)	MW-8	1.4	n/a	8/8/2022	0.25ND	No	15	93.33	n/a	0.006767	NP Inter (NDs) 1 of 2
Lithium (ug/L)	MW-1	34.68	n/a	8/8/2022	28.5	No	18	0	No	0.000...	Param Inter 1 of 2
Lithium (ug/L)	MW-2	34.68	n/a	8/8/2022	30.3	No	18	0	No	0.000...	Param Inter 1 of 2
Lithium (ug/L)	MW-3	34.68	n/a	8/8/2022	24.7	No	18	0	No	0.000...	Param Inter 1 of 2
Lithium (ug/L)	MW-5	34.68	n/a	8/8/2022	23.3	No	18	0	No	0.000...	Param Inter 1 of 2
Lithium (ug/L)	MW-6	34.68	n/a	8/8/2022	19.7	No	18	0	No	0.000...	Param Inter 1 of 2
Lithium (ug/L)	MW-7	34.68	n/a	8/8/2022	27.3	No	18	0	No	0.000...	Param Inter 1 of 2
Lithium (ug/L)	MW-8	34.68	n/a	8/8/2022	25.5	No	18	0	No	0.000...	Param Inter 1 of 2
Mercury (ug/L)	MW-1	0.2	n/a	8/8/2022	0.1ND	No	16	100	n/a	0.005898	NP Inter (NDs) 1 of 2
Mercury (ug/L)	MW-2	0.2	n/a	8/8/2022	0.1ND	No	16	100	n/a	0.005898	NP Inter (NDs) 1 of 2
Mercury (ug/L)	MW-3	0.2	n/a	8/8/2022	0.1ND	No	16	100	n/a	0.005898	NP Inter (NDs) 1 of 2
Mercury (ug/L)	MW-5	0.2	n/a	8/8/2022	0.1ND	No	16	100	n/a	0.005898	NP Inter (NDs) 1 of 2
Mercury (ug/L)	MW-6	0.2	n/a	8/8/2022	0.1ND	No	16	100	n/a	0.005898	NP Inter (NDs) 1 of 2
Mercury (ug/L)	MW-7	0.2	n/a	8/8/2022	0.1ND	No	16	100	n/a	0.005898	NP Inter (NDs) 1 of 2
Mercury (ug/L)	MW-8	0.2	n/a	8/8/2022	0.1ND	No	16	100	n/a	0.005898	NP Inter (NDs) 1 of 2
Molybdenum (ug/L)	MW-1	12.67	n/a	8/8/2022	6.08	No	18	0	sqrt(x)	0.000...	Param Inter 1 of 2
Molybdenum (ug/L)	MW-2	12.67	n/a	8/8/2022	6.26	No	18	0	sqrt(x)	0.000...	Param Inter 1 of 2
Molybdenum (ug/L)	MW-3	12.67	n/a	8/8/2022	12	No	18	0	sqrt(x)	0.000...	Param Inter 1 of 2
Molybdenum (ug/L)	MW-5	12.67	n/a	8/8/2022	4.62	No	18	0	sqrt(x)	0.000...	Param Inter 1 of 2
Molybdenum (ug/L)	MW-6	12.67	n/a	8/8/2022	9.87	No	18	0	sqrt(x)	0.000...	Param Inter 1 of 2
Molybdenum (ug/L)	MW-7	12.67	n/a	8/8/2022	6.67	No	18	0	sqrt(x)	0.000...	Param Inter 1 of 2
Molybdenum (ug/L)	MW-8	12.67	n/a	8/8/2022	6.19	No	18	0	sqrt(x)	0.000...	Param Inter 1 of 2
Selenium [total] (ug/L)	MW-1	11.26	n/a	8/8/2022	5.96	No	17	0	No	0.000...	Param Inter 1 of 2
Selenium [total] (ug/L)	MW-2	11.26	n/a	8/8/2022	6.64	No	17	0	No	0.000...	Param Inter 1 of 2
Selenium [total] (ug/L)	MW-3	11.26	n/a	8/8/2022	8.83	No	17	0	No	0.000...	Param Inter 1 of 2
Selenium [total] (ug/L)	MW-5	11.26	n/a	8/8/2022	2.5ND	No	17	0	No	0.000...	Param Inter 1 of 2
Selenium [total] (ug/L)	MW-6	11.26	n/a	8/8/2022	2.5ND	No	17	0	No	0.000...	Param Inter 1 of 2
Selenium [total] (ug/L)	MW-7	11.26	n/a	8/8/2022	11.4	Yes	17	0	No	0.000...	Param Inter 1 of 2
Selenium [total] (ug/L)	MW-8	11.26	n/a	8/8/2022	8.99	No	17	0	No	0.000...	Param Inter 1 of 2
Sulfate (mg/L)	MW-1	50.35	n/a	8/8/2022	59.5	Yes	18	0	x^2	0.000...	Param Inter 1 of 2
Sulfate (mg/L)	MW-2	50.35	n/a	8/8/2022	32	No	18	0	x^2	0.000...	Param Inter 1 of 2

Prediction Limit

Fremont Dept. of Utilities

Client: SCS Engineers

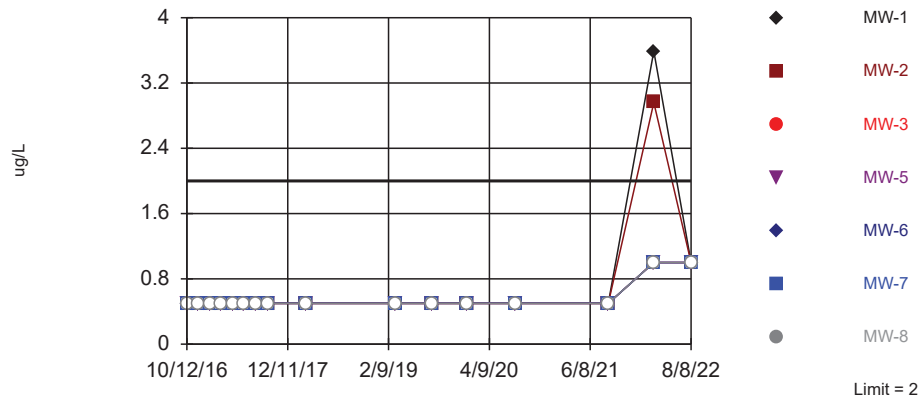
Data: Fremont Department of Utilities Groundwater

Printed 9/8/2022, 10:55 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>
Sulfate (mg/L)	MW-3	50.35	n/a	8/8/2022	36.5	No	18	0	x^2	0.000...	Param Inter 1 of 2
Sulfate (mg/L)	MW-5	50.35	n/a	8/8/2022	42.2	No	18	0	x^2	0.000...	Param Inter 1 of 2
Sulfate (mg/L)	MW-6	50.35	n/a	8/8/2022	86.3	Yes	18	0	x^2	0.000...	Param Inter 1 of 2
Sulfate (mg/L)	MW-7	50.35	n/a	8/8/2022	44.7	No	18	0	x^2	0.000...	Param Inter 1 of 2
Sulfate (mg/L)	MW-8	50.35	n/a	8/8/2022	29.3	No	18	0	x^2	0.000...	Param Inter 1 of 2
Thallium [total] (ug/L)	MW-1	1	n/a	8/8/2022	0.5ND	No	16	100	n/a	0.005898	NP Inter (NDs) 1 of 2
Thallium [total] (ug/L)	MW-2	1	n/a	8/8/2022	0.5ND	No	16	100	n/a	0.005898	NP Inter (NDs) 1 of 2
Thallium [total] (ug/L)	MW-3	1	n/a	8/8/2022	0.5ND	No	16	100	n/a	0.005898	NP Inter (NDs) 1 of 2
Thallium [total] (ug/L)	MW-5	1	n/a	8/8/2022	0.5ND	No	16	100	n/a	0.005898	NP Inter (NDs) 1 of 2
Thallium [total] (ug/L)	MW-6	1	n/a	8/8/2022	0.5ND	No	16	100	n/a	0.005898	NP Inter (NDs) 1 of 2
Thallium [total] (ug/L)	MW-7	1	n/a	8/8/2022	0.5ND	No	16	100	n/a	0.005898	NP Inter (NDs) 1 of 2
Thallium [total] (ug/L)	MW-8	1	n/a	8/8/2022	0.5ND	No	16	100	n/a	0.005898	NP Inter (NDs) 1 of 2
Total Dissolved Solids (mg/L)	MW-1	511	n/a	8/8/2022	374	No	18	0	No	0.000...	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	MW-2	511	n/a	8/8/2022	376	No	18	0	No	0.000...	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	MW-3	511	n/a	8/8/2022	398	No	18	0	No	0.000...	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	MW-5	511	n/a	8/8/2022	348	No	18	0	No	0.000...	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	MW-6	511	n/a	8/8/2022	360	No	18	0	No	0.000...	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	MW-7	511	n/a	8/8/2022	502	No	18	0	No	0.000...	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	MW-8	511	n/a	8/8/2022	350	No	18	0	No	0.000...	Param Inter 1 of 2
Total Radium (pCi/L)	MW-1	3.702	n/a	8/8/2022	2.217	No	18	0	No	0.000...	Param Inter 1 of 2 De...
Total Radium (pCi/L)	MW-2	3.702	n/a	8/8/2022	1.477	No	18	0	No	0.000...	Param Inter 1 of 2 De...
Total Radium (pCi/L)	MW-3	3.702	n/a	8/8/2022	2.637	No	18	0	No	0.000...	Param Inter 1 of 2 De...
Total Radium (pCi/L)	MW-5	3.702	n/a	8/8/2022	2.637	No	18	0	No	0.000...	Param Inter 1 of 2 De...
Total Radium (pCi/L)	MW-6	3.702	n/a	8/8/2022	3.207	No	18	0	No	0.000...	Param Inter 1 of 2 De...
Total Radium (pCi/L)	MW-7	3.702	n/a	8/8/2022	4.027	Yes	18	0	No	0.000...	Param Inter 1 of 2 De...
Total Radium (pCi/L)	MW-8	3.702	n/a	8/8/2022	3.687	No	18	0	No	0.000...	Param Inter 1 of 2 De...

Within Limit

Prediction Limit Interwell Non-parametric

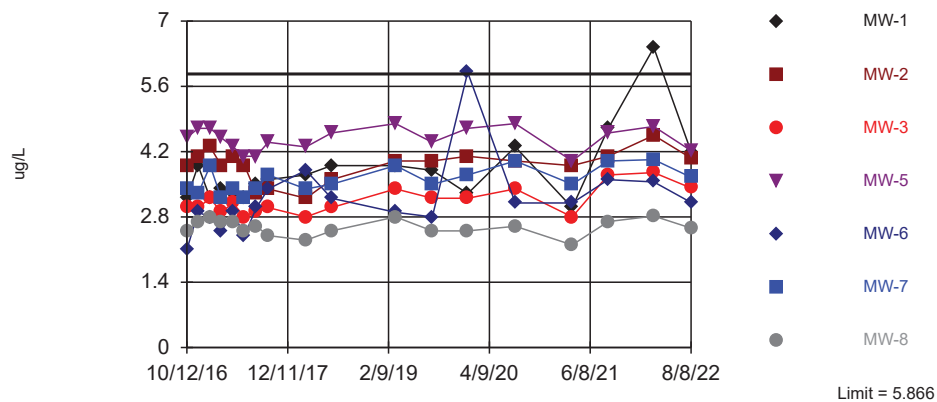


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values ($n = 16$) were censored; limit is most recent reporting limit. Annual per-constituent $\alpha = 0.05744$. Individual comparison $\alpha = 0.005898$ (1 of 2). Comparing 7 points to limit. Seasonality was not detected with 95% confidence.

Constituent: Antimony [total] Analysis Run 9/8/2022 10:45 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Interwell Parametric

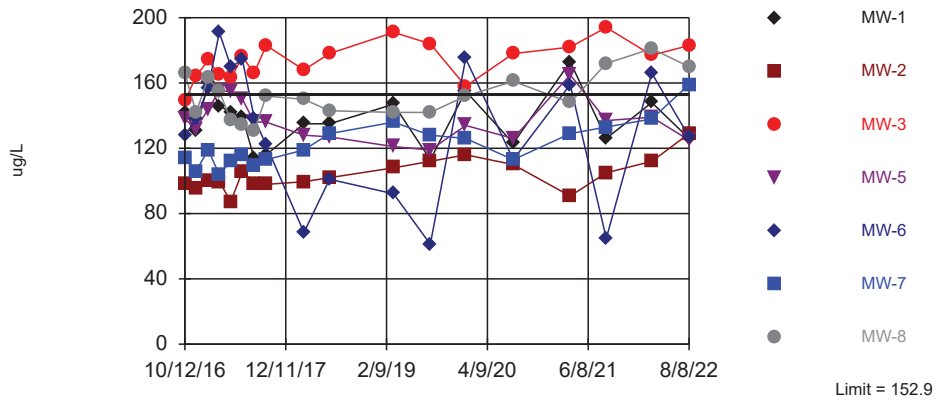


Background Data Summary: Mean=4.134, Std. Dev.=0.7007, $n=18$. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @ $\alpha = 0.01$, calculated = 0.9626, critical = 0.858. Kappa = 2.472 ($c=21$, $w=5$, 1 of 2, event $\alpha = 0.05132$). Report $\alpha = 0.002505$. Individual comparison $\alpha = 0.0005016$. Comparing 7 points to limit.

Constituent: Arsenic [total] Analysis Run 9/8/2022 10:45 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Exceeds Limit: MW-3, MW-7, MW-8

Prediction Limit Interwell Parametric

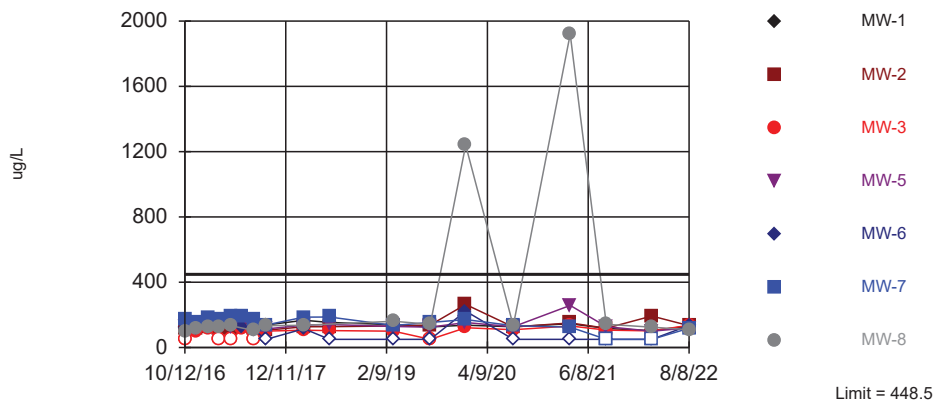


Background Data Summary: Mean=126.6, Std. Dev.=10.67, n=18. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9637, critical = 0.858. Kappa = 2.472 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Individual comparison alpha = 0.0005016. Comparing 7 points to limit.

Constituent: Barium [total] Analysis Run 9/8/2022 10:46 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Interwell Parametric

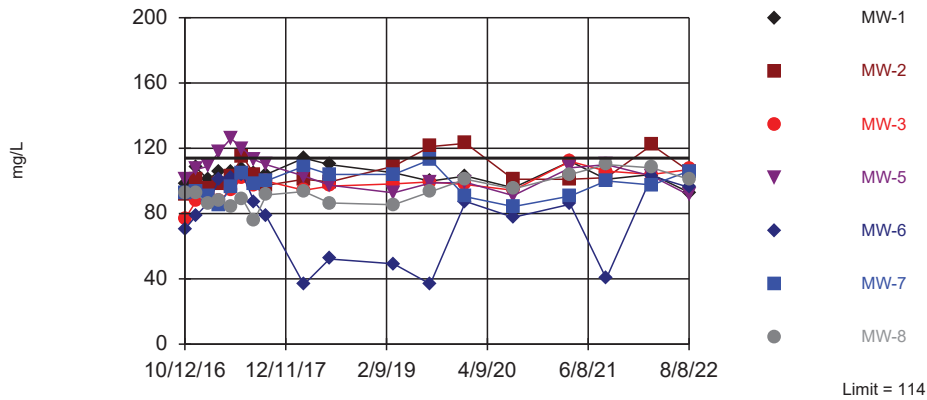


Background Data Summary (after Aitchison's Adjustment): Mean=158.6, Std. Dev.=117.3, n=18, 27.78% NDs. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.917, critical = 0.858. Kappa = 2.472 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Individual comparison alpha = 0.0005016. Comparing 7 points to limit.

Constituent: Boron Analysis Run 9/8/2022 10:46 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Interwell Parametric

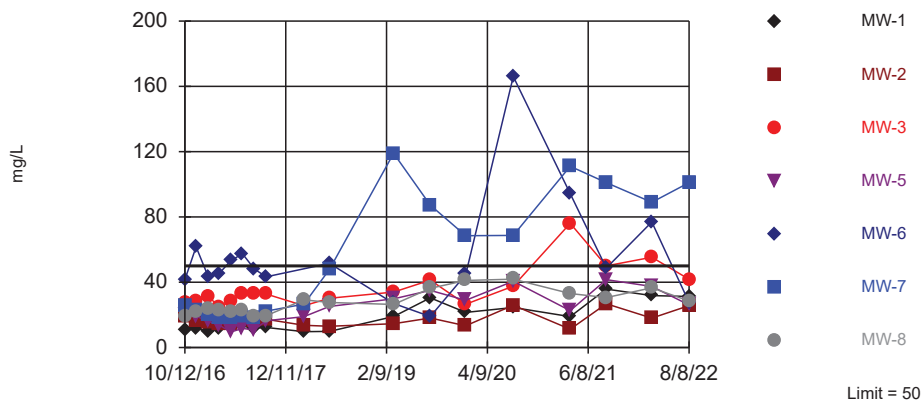


Background Data Summary: Mean=86.52, Std. Dev.=11.1, n=18. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9689, critical = 0.858. Kappa = 2.472 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Individual comparison alpha = 0.0005016. Comparing 7 points to limit.

Constituent: Calcium Analysis Run 9/8/2022 10:46 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Exceeds Limit: MW-7

Prediction Limit Interwell Parametric

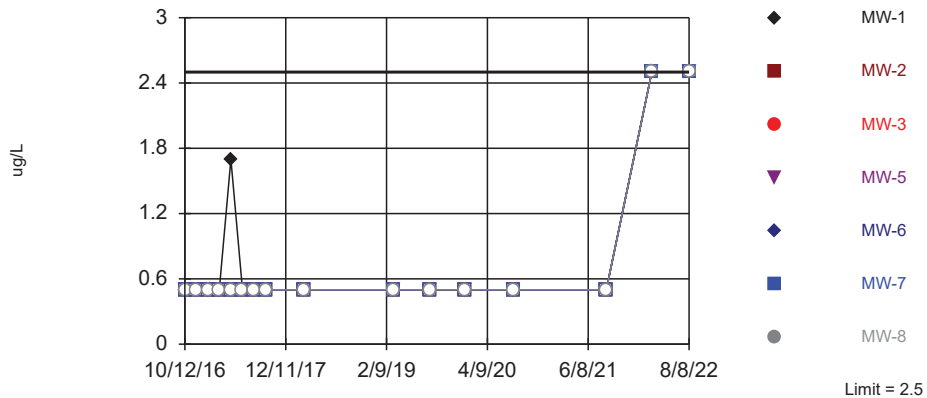


Background Data Summary: Mean=24.47, Std. Dev.=10.2, n=17. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9655, critical = 0.851. Kappa = 2.503 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Individual comparison alpha = 0.0005016. Comparing 7 points to limit.

Constituent: Chloride Analysis Run 9/8/2022 10:46 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit
Interwell Non-parametric

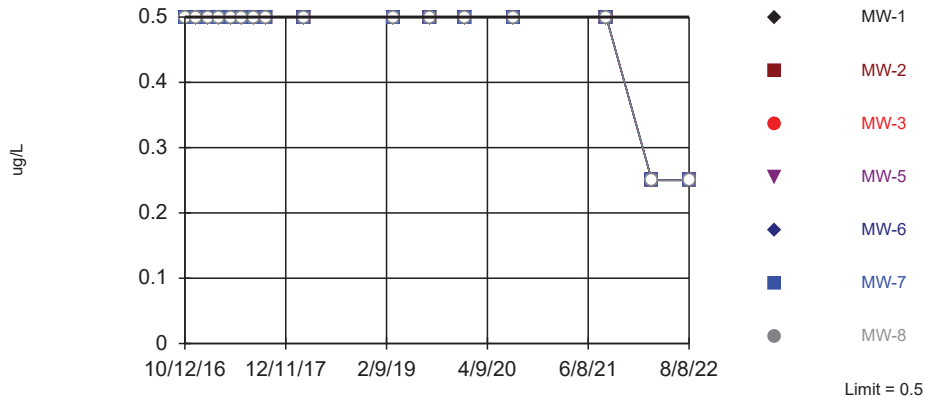


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 16 background values. 93.75% NDs. Annual per-constituent alpha = 0.05744. Individual comparison alpha = 0.005898 (1 of 2). Comparing 7 points to limit. Seasonality was not detected with 95% confidence.

Constituent: Chromium [total] Analysis Run 9/8/2022 10:46 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit
Interwell Non-parametric

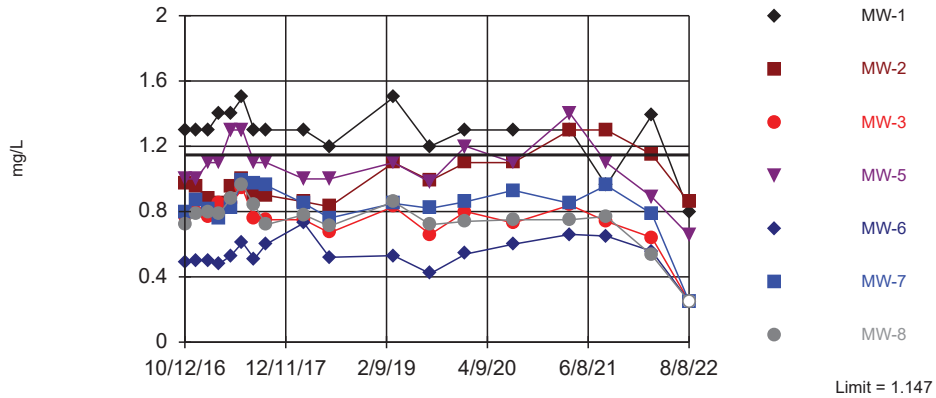


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 16) were censored; limit is most recent reporting limit. Annual per-constituent alpha = 0.05744. Individual comparison alpha = 0.005898 (1 of 2). Comparing 7 points to limit. Seasonality was not detected with 95% confidence.

Constituent: Cobalt [total] Analysis Run 9/8/2022 10:46 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Interwell Parametric

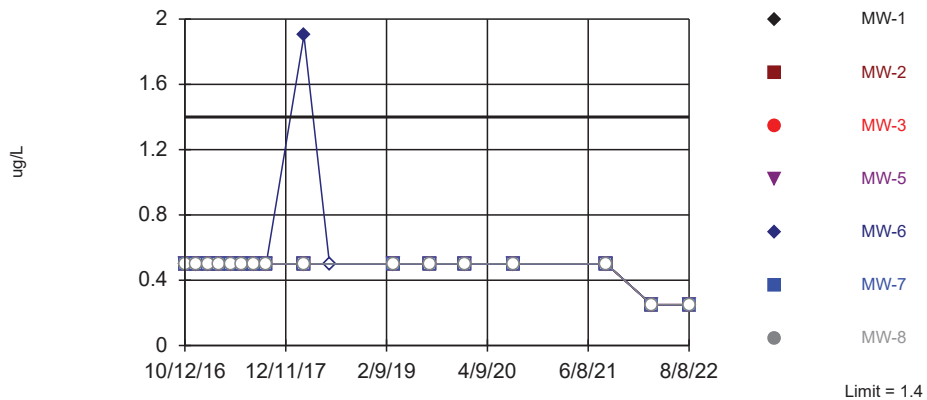


Background Data Summary (based on square transformation): Mean=0.7097, Std. Dev.=0.2452, n=18, 5.556% NDs. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9214, critical = 0.858. Kappa = 2.472 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Individual comparison alpha = 0.0005016. Comparing 7 points to limit.

Constituent: Fluoride Analysis Run 9/8/2022 10:46 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Interwell Non-parametric

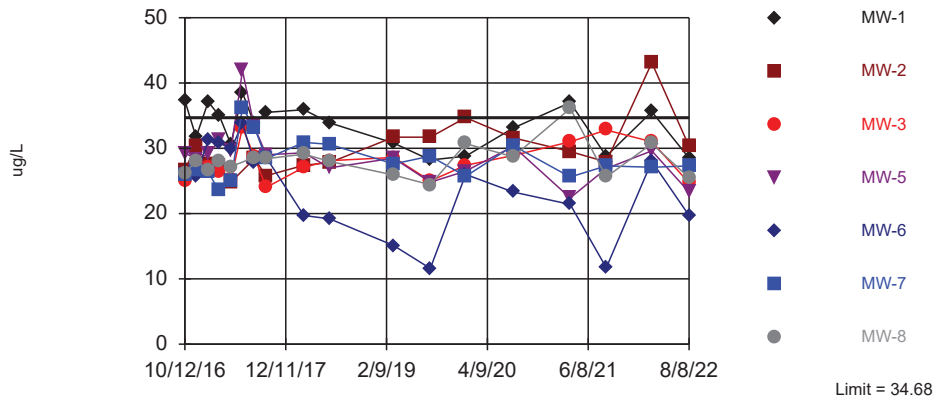


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 15 background values. 93.33% NDs. Annual per-constituent alpha = 0.06565. Individual comparison alpha = 0.006767 (1 of 2). Comparing 7 points to limit. Insufficient data to test for seasonality; data will not be deseasonalized.

Constituent: Lead [total] Analysis Run 9/8/2022 10:46 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Interwell Parametric

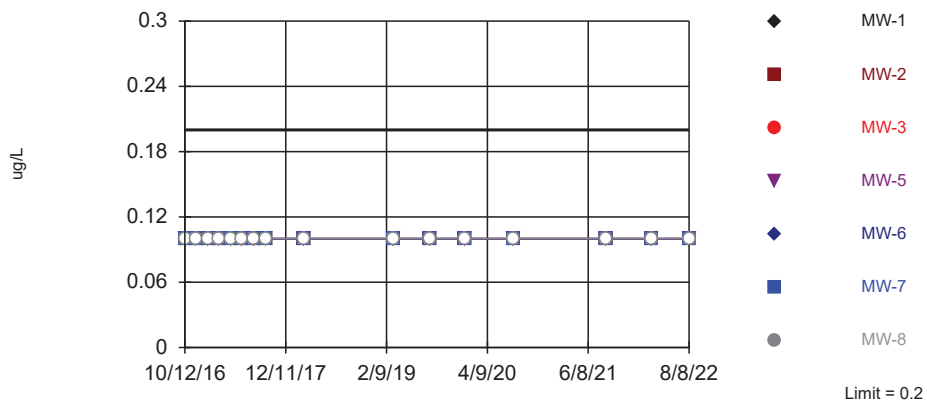


Background Data Summary: Mean=25.57, Std. Dev.=3.687, n=18. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8707, critical = 0.858. Kappa = 2.472 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Individual comparison alpha = 0.0005016. Comparing 7 points to limit.

Constituent: Lithium Analysis Run 9/8/2022 10:46 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Interwell Non-parametric

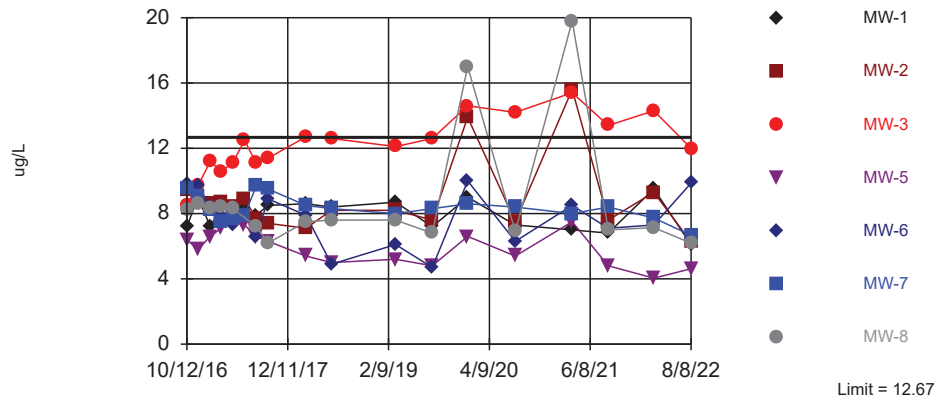


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 16) were censored; limit is most recent reporting limit. Annual per-constituent alpha = 0.05744. Individual comparison alpha = 0.005898 (1 of 2). Comparing 7 points to limit. Seasonality was not detected with 95% confidence.

Constituent: Mercury Analysis Run 9/8/2022 10:46 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Interwell Parametric

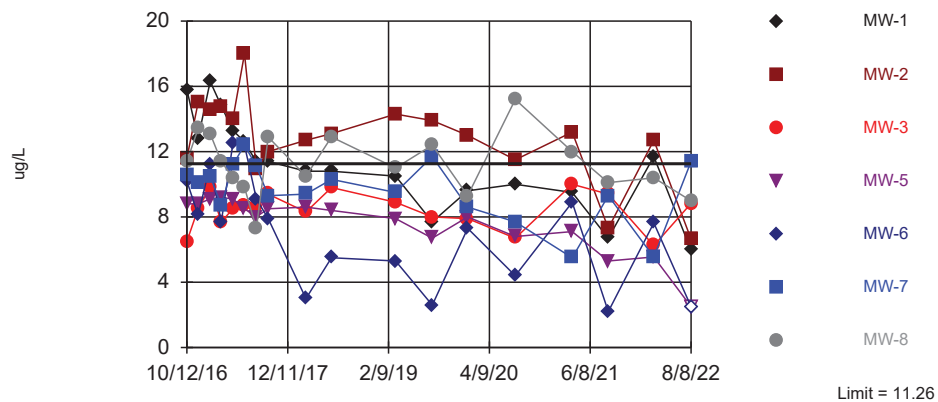


Background Data Summary (based on square root transformation): Mean=2.553, Std. Dev.=0.4068, n=18. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8791, critical = 0.858. Kappa = 2.472 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Individual comparison alpha = 0.0005016. Comparing 7 points to limit.

Constituent: Molybdenum Analysis Run 9/8/2022 10:46 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Exceeds Limit: MW-7

Prediction Limit Interwell Parametric

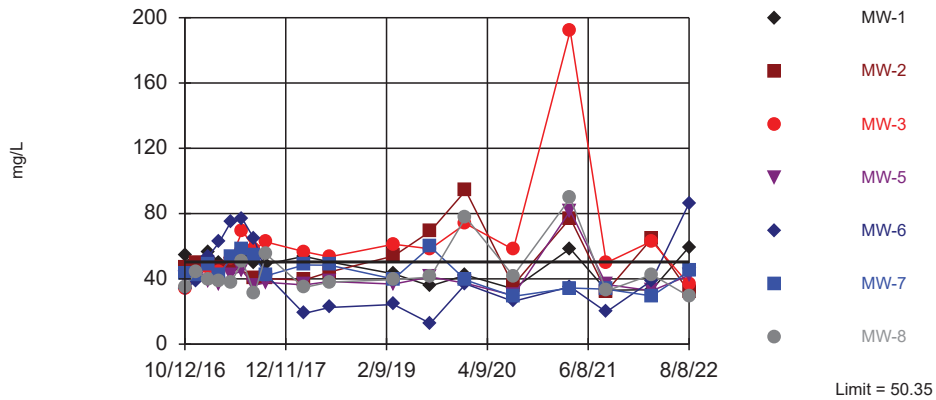


Background Data Summary: Mean=7.603, Std. Dev.=1.461, n=17. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9664, critical = 0.851. Kappa = 2.503 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Individual comparison alpha = 0.0005016. Comparing 7 points to limit.

Constituent: Selenium [total] Analysis Run 9/8/2022 10:46 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Exceeds Limit: MW-1, MW-6

Prediction Limit Interwell Parametric

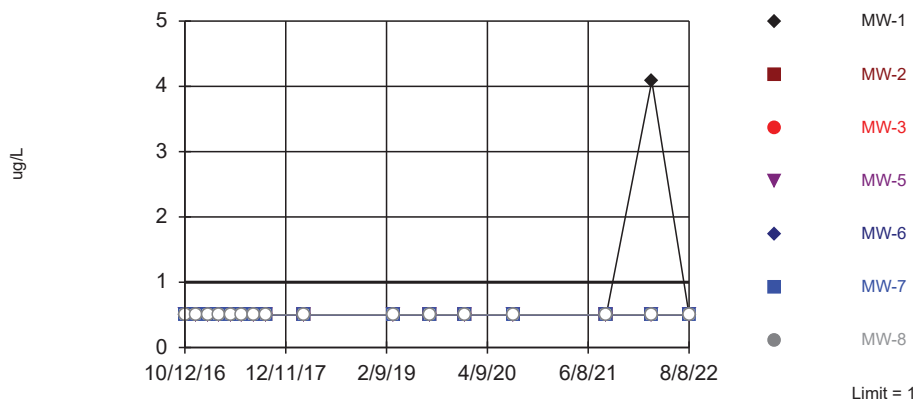


Background Data Summary (based on square transformation): Mean=1516, Std. Dev.=412.4, n=18. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9001, critical = 0.858. Kappa = 2.472 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Individual comparison alpha = 0.0005016. Comparing 7 points to limit.

Constituent: Sulfate Analysis Run 9/8/2022 10:46 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Interwell Non-parametric

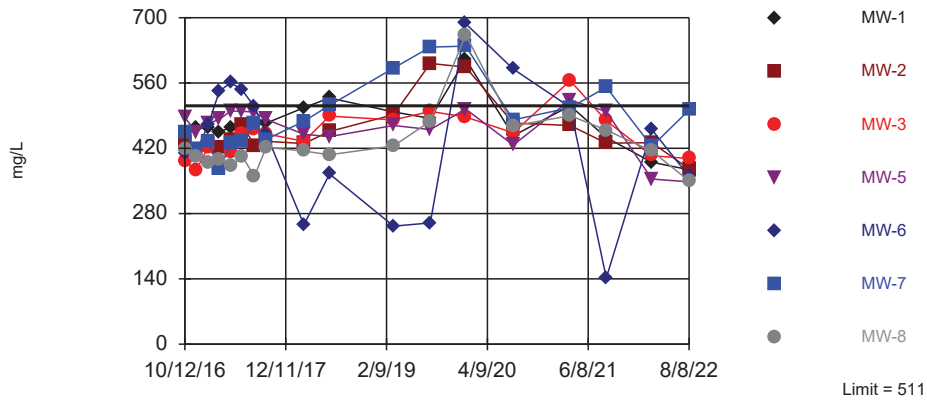


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 16) were censored; limit is most recent reporting limit. Annual per-constituent alpha = 0.05744. Individual comparison alpha = 0.005898 (1 of 2). Comparing 7 points to limit. Seasonality was not detected with 95% confidence.

Constituent: Thallium [total] Analysis Run 9/8/2022 10:46 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Within Limit

Prediction Limit Interwell Parametric



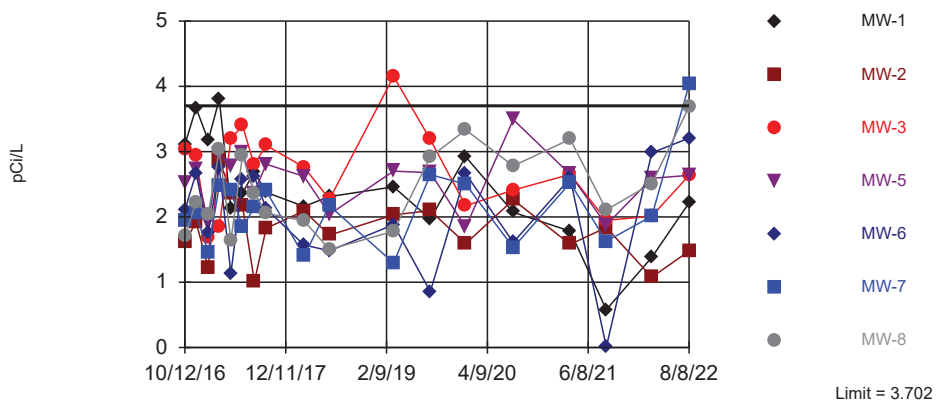
Background Data Summary: Mean=407.8, Std. Dev.=41.74, n=18. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9706, critical = 0.858. Kappa = 2.472 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Individual comparison alpha = 0.0005016. Comparing 7 points to limit.

Constituent: Total Dissolved Solids Analysis Run 9/8/2022 10:46 AM View: FDU Combined

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=2.244, Std. Dev.=0.5896, n=18. Seasonality was detected with 95% confidence and data were deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9708, critical = 0.858. Kappa = 2.472 (c=21, w=5, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505. Individual comparison alpha = 0.0005016. Comparing 7 points to limit.

Constituent: Total Radium Analysis Run 9/8/2022 10:46 AM View: FDU Combined

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 9/8/2022, 11:16 AM

<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>
Antimony [total] (ug/L)	MW-1	0	27	53	No	16	93.75	n/a	n/a	0.02	NP
Antimony [total] (ug/L)	MW-2	0	27	53	No	16	93.75	n/a	n/a	0.02	NP
Antimony [total] (ug/L)	MW-3	0	28	53	No	16	100	n/a	n/a	0.02	NP
Antimony [total] (ug/L)	MW-4R (bg)	0	28	53	No	16	100	n/a	n/a	0.02	NP
Antimony [total] (ug/L)	MW-5	0	28	53	No	16	100	n/a	n/a	0.02	NP
Antimony [total] (ug/L)	MW-6	0	28	53	No	16	100	n/a	n/a	0.02	NP
Antimony [total] (ug/L)	MW-7	0	28	53	No	16	100	n/a	n/a	0.02	NP
Antimony [total] (ug/L)	MW-8	0	28	53	No	16	100	n/a	n/a	0.02	NP
Arsenic [total] (ug/L)	MW-1	0.2483	70	63	Yes	18	0	n/a	n/a	0.02	NP
Arsenic [total] (ug/L)	MW-2	0.02944	24	63	No	18	0	n/a	n/a	0.02	NP
Arsenic [total] (ug/L)	MW-3	0.1011	59	63	No	18	0	n/a	n/a	0.02	NP
Arsenic [total] (ug/L)	MW-4R (bg)	0.1475	41	63	No	18	0	n/a	n/a	0.02	NP
Arsenic [total] (ug/L)	MW-5	0	6	63	No	18	0	n/a	n/a	0.02	NP
Arsenic [total] (ug/L)	MW-6	0.148	70	63	Yes	18	0	n/a	n/a	0.02	NP
Arsenic [total] (ug/L)	MW-7	0.08291	76	63	Yes	18	0	n/a	n/a	0.02	NP
Arsenic [total] (ug/L)	MW-8	0	-9	-63	No	18	0	n/a	n/a	0.02	NP
Barium [total] (ug/L)	MW-1	-1.055	-8	-63	No	18	0	n/a	n/a	0.02	NP
Barium [total] (ug/L)	MW-2	3.673	73	63	Yes	18	0	n/a	n/a	0.02	NP
Barium [total] (ug/L)	MW-3	3.827	75	63	Yes	18	0	n/a	n/a	0.02	NP
Barium [total] (ug/L)	MW-4R (bg)	4.225	88	63	Yes	18	0	n/a	n/a	0.02	NP
Barium [total] (ug/L)	MW-5	-2.5	-39	-63	No	18	0	n/a	n/a	0.02	NP
Barium [total] (ug/L)	MW-6	-5.621	-30	-63	No	18	0	n/a	n/a	0.02	NP
Barium [total] (ug/L)	MW-7	5.58	92	63	Yes	18	0	n/a	n/a	0.02	NP
Barium [total] (ug/L)	MW-8	3.153	35	63	No	18	0	n/a	n/a	0.02	NP
Boron (ug/L)	MW-1	-2.211	-32	-63	No	18	0	n/a	n/a	0.02	NP
Boron (ug/L)	MW-2	7.088	67	58	Yes	17	0	n/a	n/a	0.02	NP
Boron (ug/L)	MW-3	4.49	55	63	No	18	27.78	n/a	n/a	0.02	NP
Boron (ug/L)	MW-4R (bg)	-8.193	-19	-63	No	18	27.78	n/a	n/a	0.02	NP
Boron (ug/L)	MW-5	-0.3434	-4	-63	No	18	0	n/a	n/a	0.02	NP
Boron (ug/L)	MW-6	-14.8	-52	-63	No	18	44.44	n/a	n/a	0.02	NP
Boron (ug/L)	MW-7	-13.69	-80	-63	Yes	18	11.11	n/a	n/a	0.02	NP
Boron (ug/L)	MW-8	4.781	46	53	No	16	0	n/a	n/a	0.02	NP
Calcium (mg/L)	MW-1	-0.8069	-31	-63	No	18	0	n/a	n/a	0.02	NP
Calcium (mg/L)	MW-2	2.425	65	63	Yes	18	0	n/a	n/a	0.02	NP
Calcium (mg/L)	MW-3	3.174	96	63	Yes	18	0	n/a	n/a	0.02	NP
Calcium (mg/L)	MW-4R (bg)	2.489	34	63	No	18	0	n/a	n/a	0.02	NP
Calcium (mg/L)	MW-5	-2.756	-49	-63	No	18	0	n/a	n/a	0.02	NP
Calcium (mg/L)	MW-6	-0.2466	-5	-63	No	18	0	n/a	n/a	0.02	NP
Calcium (mg/L)	MW-7	1.52	29	63	No	18	0	n/a	n/a	0.02	NP
Calcium (mg/L)	MW-8	3.117	74	63	Yes	18	0	n/a	n/a	0.02	NP
Chloride (mg/L)	MW-1	3.593	93	63	Yes	18	0	n/a	n/a	0.02	NP
Chloride (mg/L)	MW-2	0.344	10	58	No	17	0	n/a	n/a	0.02	NP
Chloride (mg/L)	MW-3	4.045	85	63	Yes	18	0	n/a	n/a	0.02	NP
Chloride (mg/L)	MW-4R (bg)	3.37	66	58	Yes	17	0	n/a	n/a	0.02	NP
Chloride (mg/L)	MW-5	4.478	77	63	Yes	18	0	n/a	n/a	0.02	NP
Chloride (mg/L)	MW-6	0.6728	8	58	No	17	0	n/a	n/a	0.02	NP
Chloride (mg/L)	MW-7	14.97	84	63	Yes	18	0	n/a	n/a	0.02	NP
Chloride (mg/L)	MW-8	2.826	81	63	Yes	18	0	n/a	n/a	0.02	NP
Chromium [total] (ug/L)	MW-1	0	23	53	No	16	93.75	n/a	n/a	0.02	NP
Chromium [total] (ug/L)	MW-2	0	28	53	No	16	100	n/a	n/a	0.02	NP

Trend Test

Fremont Dept. of Utilities

Client: SCS Engineers

Data: Fremont Department of Utilities Groundwater

Printed 9/8/2022, 11:16 AM

<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>
Chromium [total] (ug/L)	MW-3	0	28	53	No	16	100	n/a	n/a	0.02	NP
Chromium [total] (ug/L)	MW-4R (bg)	0	41	53	No	16	93.75	n/a	n/a	0.02	NP
Chromium [total] (ug/L)	MW-5	0	28	53	No	16	100	n/a	n/a	0.02	NP
Chromium [total] (ug/L)	MW-6	0	28	53	No	16	100	n/a	n/a	0.02	NP
Chromium [total] (ug/L)	MW-7	0	28	53	No	16	100	n/a	n/a	0.02	NP
Chromium [total] (ug/L)	MW-8	0	28	53	No	16	100	n/a	n/a	0.02	NP
Cobalt [total] (ug/L)	MW-1	0	-28	-53	No	16	100	n/a	n/a	0.02	NP
Cobalt [total] (ug/L)	MW-2	0	-28	-53	No	16	100	n/a	n/a	0.02	NP
Cobalt [total] (ug/L)	MW-3	0	-28	-53	No	16	100	n/a	n/a	0.02	NP
Cobalt [total] (ug/L)	MW-4R (bg)	0	-28	-53	No	16	100	n/a	n/a	0.02	NP
Cobalt [total] (ug/L)	MW-5	0	-28	-53	No	16	100	n/a	n/a	0.02	NP
Cobalt [total] (ug/L)	MW-6	0	-28	-53	No	16	100	n/a	n/a	0.02	NP
Cobalt [total] (ug/L)	MW-7	0	-28	-53	No	16	100	n/a	n/a	0.02	NP
Cobalt [total] (ug/L)	MW-8	0	-28	-53	No	16	100	n/a	n/a	0.02	NP
Fluoride (mg/L)	MW-1	0	-38	-63	No	18	0	n/a	n/a	0.02	NP
Fluoride (mg/L)	MW-2	0.04285	46	63	No	18	0	n/a	n/a	0.02	NP
Fluoride (mg/L)	MW-3	-0.02517	-65	-63	Yes	18	5.556	n/a	n/a	0.02	NP
Fluoride (mg/L)	MW-4R (bg)	0	0	63	No	18	5.556	n/a	n/a	0.02	NP
Fluoride (mg/L)	MW-5	0	-17	-63	No	18	0	n/a	n/a	0.02	NP
Fluoride (mg/L)	MW-6	0.01315	40	63	No	18	5.556	n/a	n/a	0.02	NP
Fluoride (mg/L)	MW-7	0	-5	-63	No	18	5.556	n/a	n/a	0.02	NP
Fluoride (mg/L)	MW-8	-0.02141	-50	-63	No	18	5.556	n/a	n/a	0.02	NP
Lead [total] (ug/L)	MW-1	0	-28	-53	No	16	100	n/a	n/a	0.02	NP
Lead [total] (ug/L)	MW-2	0	-28	-53	No	16	100	n/a	n/a	0.02	NP
Lead [total] (ug/L)	MW-3	0	-28	-53	No	16	100	n/a	n/a	0.02	NP
Lead [total] (ug/L)	MW-4R (bg)	0	-28	-48	No	15	93.33	n/a	n/a	0.02	NP
Lead [total] (ug/L)	MW-5	0	-28	-53	No	16	100	n/a	n/a	0.02	NP
Lead [total] (ug/L)	MW-6	0	-28	-58	No	17	94.12	n/a	n/a	0.02	NP
Lead [total] (ug/L)	MW-7	0	-28	-53	No	16	100	n/a	n/a	0.02	NP
Lead [total] (ug/L)	MW-8	0	-28	-53	No	16	100	n/a	n/a	0.02	NP
Lithium (ug/L)	MW-1	-0.931	-48	-63	No	18	0	n/a	n/a	0.02	NP
Lithium (ug/L)	MW-2	0.818	57	58	No	17	0	n/a	n/a	0.02	NP
Lithium (ug/L)	MW-3	0.6457	37	63	No	18	0	n/a	n/a	0.02	NP
Lithium (ug/L)	MW-4R (bg)	0.3673	32	63	No	18	0	n/a	n/a	0.02	NP
Lithium (ug/L)	MW-5	-0.8632	-54	-63	No	18	0	n/a	n/a	0.02	NP
Lithium (ug/L)	MW-6	-2.07	-62	-63	No	18	0	n/a	n/a	0.02	NP
Lithium (ug/L)	MW-7	0.09495	2	63	No	18	0	n/a	n/a	0.02	NP
Lithium (ug/L)	MW-8	0.4277	18	58	No	17	0	n/a	n/a	0.02	NP
Mercury (ug/L)	MW-1	0	0	53	No	16	100	n/a	n/a	0.02	NP
Mercury (ug/L)	MW-2	0	0	53	No	16	100	n/a	n/a	0.02	NP
Mercury (ug/L)	MW-3	0	0	53	No	16	100	n/a	n/a	0.02	NP
Mercury (ug/L)	MW-4R (bg)	0	0	53	No	16	100	n/a	n/a	0.02	NP
Mercury (ug/L)	MW-5	0	0	53	No	16	100	n/a	n/a	0.02	NP
Mercury (ug/L)	MW-6	0	0	53	No	16	100	n/a	n/a	0.02	NP
Mercury (ug/L)	MW-7	0	0	53	No	16	100	n/a	n/a	0.02	NP
Mercury (ug/L)	MW-8	0	0	53	No	16	100	n/a	n/a	0.02	NP
Molybdenum (ug/L)	MW-1	-0.1237	-15	-63	No	18	0	n/a	n/a	0.02	NP
Molybdenum (ug/L)	MW-2	-0.246	-36	-63	No	18	0	n/a	n/a	0.02	NP
Molybdenum (ug/L)	MW-3	0.8146	99	63	Yes	18	0	n/a	n/a	0.02	NP
Molybdenum (ug/L)	MW-4R (bg)	-0.06967	-8	-63	No	18	0	n/a	n/a	0.02	NP

Trend Test

Fremont Dept. of Utilities

Client: SCS Engineers

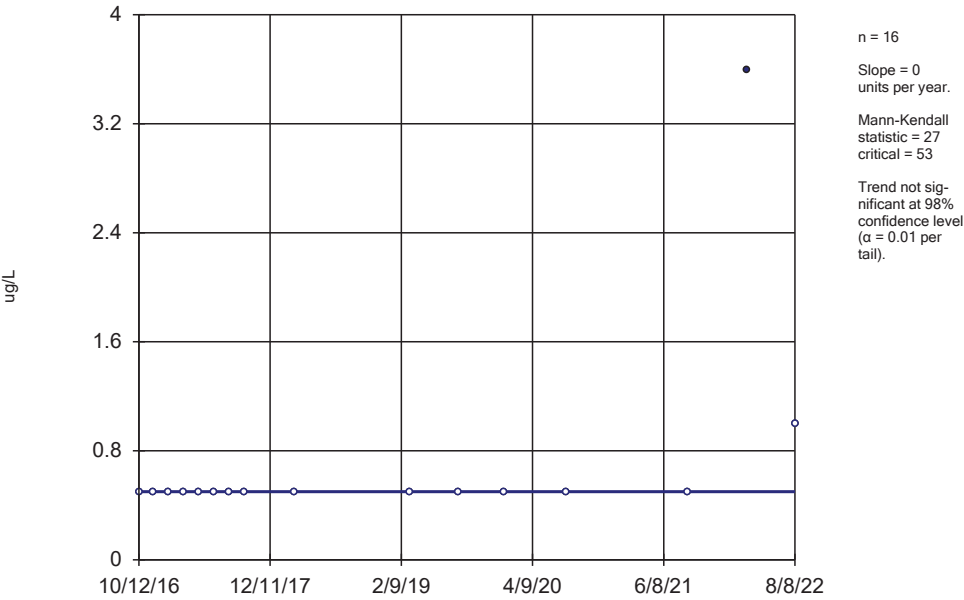
Data: Fremont Department of Utilities Groundwater

Printed 9/8/2022, 11:16 AM

<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-5	-0.3694	-66	-63	Yes	18	0	n/a	n/a	0.02	NP
Molybdenum (ug/L)	MW-6	-0.229	-27	-63	No	18	0	n/a	n/a	0.02	NP
Molybdenum (ug/L)	MW-7	-0.1625	-33	-63	No	18	0	n/a	n/a	0.02	NP
Molybdenum (ug/L)	MW-8	-0.2505	-40	-58	No	17	0	n/a	n/a	0.02	NP
Selenium [total] (ug/L)	MW-1	-1.307	-115	-63	Yes	18	0	n/a	n/a	0.02	NP
Selenium [total] (ug/L)	MW-2	-0.5972	-58	-63	No	18	0	n/a	n/a	0.02	NP
Selenium [total] (ug/L)	MW-3	0.04577	6	63	No	18	0	n/a	n/a	0.02	NP
Selenium [total] (ug/L)	MW-4R (bg)	0.1853	16	58	No	17	0	n/a	n/a	0.02	NP
Selenium [total] (ug/L)	MW-5	-0.6456	-113	-63	Yes	18	5.556	n/a	n/a	0.02	NP
Selenium [total] (ug/L)	MW-6	-1.226	-77	-63	Yes	18	5.556	n/a	n/a	0.02	NP
Selenium [total] (ug/L)	MW-7	-0.4668	-44	-63	No	18	0	n/a	n/a	0.02	NP
Selenium [total] (ug/L)	MW-8	-0.2664	-36	-63	No	18	0	n/a	n/a	0.02	NP
Sulfate (mg/L)	MW-1	-3.342	-47	-63	No	18	0	n/a	n/a	0.02	NP
Sulfate (mg/L)	MW-2	-1.539	-12	-58	No	17	0	n/a	n/a	0.02	NP
Sulfate (mg/L)	MW-3	4.15	50	63	No	18	0	n/a	n/a	0.02	NP
Sulfate (mg/L)	MW-4R (bg)	0.02863	1	63	No	18	0	n/a	n/a	0.02	NP
Sulfate (mg/L)	MW-5	-0.651	-23	-63	No	18	0	n/a	n/a	0.02	NP
Sulfate (mg/L)	MW-6	-2.474	-17	-63	No	18	0	n/a	n/a	0.02	NP
Sulfate (mg/L)	MW-7	-2.089	-55	-63	No	18	0	n/a	n/a	0.02	NP
Sulfate (mg/L)	MW-8	0.5657	11	63	No	18	0	n/a	n/a	0.02	NP
Thallium [total] (ug/L)	MW-1	0	13	53	No	16	93.75	n/a	n/a	0.02	NP
Thallium [total] (ug/L)	MW-2	0	0	53	No	16	100	n/a	n/a	0.02	NP
Thallium [total] (ug/L)	MW-3	0	0	53	No	16	100	n/a	n/a	0.02	NP
Thallium [total] (ug/L)	MW-4R (bg)	0	0	53	No	16	100	n/a	n/a	0.02	NP
Thallium [total] (ug/L)	MW-5	0	0	53	No	16	100	n/a	n/a	0.02	NP
Thallium [total] (ug/L)	MW-6	0	0	53	No	16	100	n/a	n/a	0.02	NP
Thallium [total] (ug/L)	MW-7	0	0	53	No	16	100	n/a	n/a	0.02	NP
Thallium [total] (ug/L)	MW-8	0	0	53	No	16	100	n/a	n/a	0.02	NP
Total Dissolved Solids (mg/L)	MW-1	6.913	13	63	No	18	0	n/a	n/a	0.02	NP
Total Dissolved Solids (mg/L)	MW-2	7.157	38	63	No	18	0	n/a	n/a	0.02	NP
Total Dissolved Solids (mg/L)	MW-3	18.84	56	63	No	18	0	n/a	n/a	0.02	NP
Total Dissolved Solids (mg/L)	MW-4R (bg)	8.909	33	63	No	18	0	n/a	n/a	0.02	NP
Total Dissolved Solids (mg/L)	MW-5	-8.836	-31	-63	No	18	0	n/a	n/a	0.02	NP
Total Dissolved Solids (mg/L)	MW-6	-16.41	-21	-63	No	18	0	n/a	n/a	0.02	NP
Total Dissolved Solids (mg/L)	MW-7	19.36	69	63	Yes	18	0	n/a	n/a	0.02	NP
Total Dissolved Solids (mg/L)	MW-8	12.88	44	63	No	18	0	n/a	n/a	0.02	NP
Total Radium (pCi/L)	MW-1	-0.3246	-83	-63	Yes	18	0	n/a	n/a	0.02	NP
Total Radium (pCi/L)	MW-2	-0.04977	-20	-63	No	18	0	n/a	n/a	0.02	NP
Total Radium (pCi/L)	MW-3	-0.07729	-18	-63	No	18	0	n/a	n/a	0.02	NP
Total Radium (pCi/L)	MW-4R (bg)	0.04793	9	63	No	18	0	n/a	n/a	0.02	NP
Total Radium (pCi/L)	MW-5	-0.02353	-12	-63	No	18	0	n/a	n/a	0.02	NP
Total Radium (pCi/L)	MW-6	0.02128	4	63	No	18	0	n/a	n/a	0.02	NP
Total Radium (pCi/L)	MW-7	0.03061	18	63	No	18	0	n/a	n/a	0.02	NP
Total Radium (pCi/L)	MW-8	0.15	33	63	No	18	0	n/a	n/a	0.02	NP

Sen's Slope Estimator

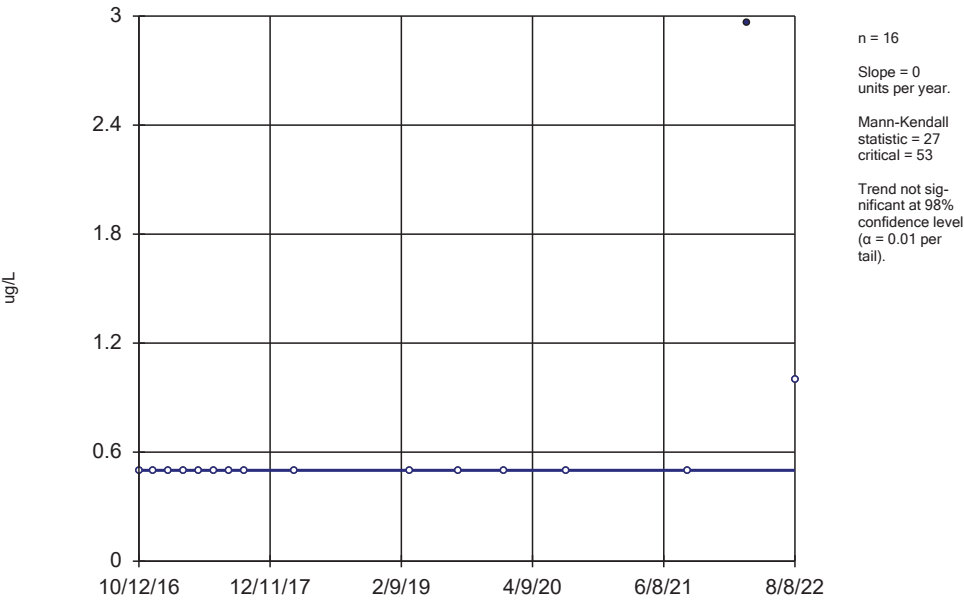
MW-1



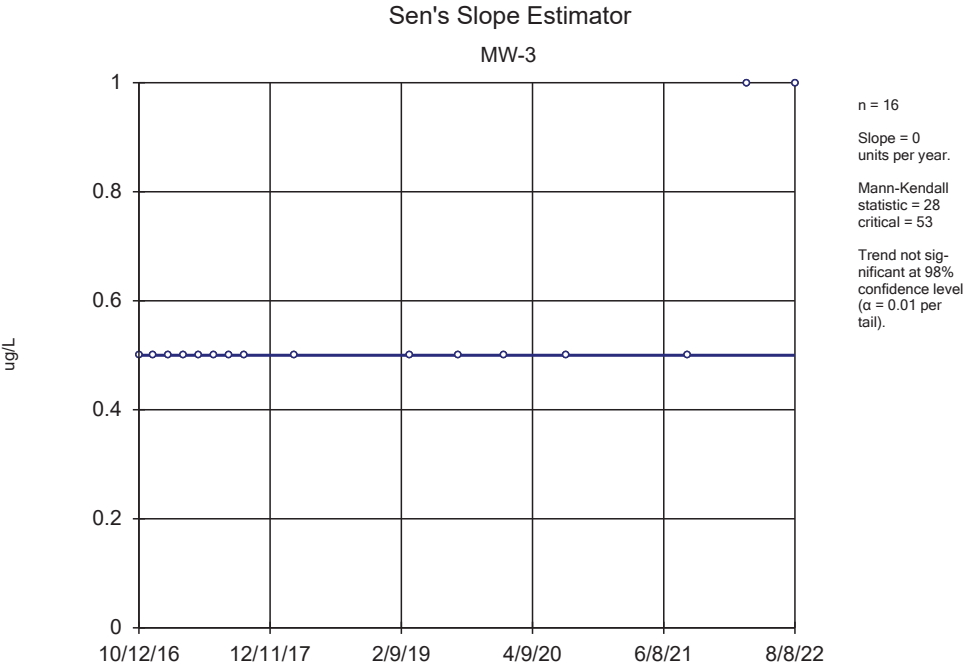
Constituent: Antimony [total] Analysis Run 9/8/2022 10:59 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

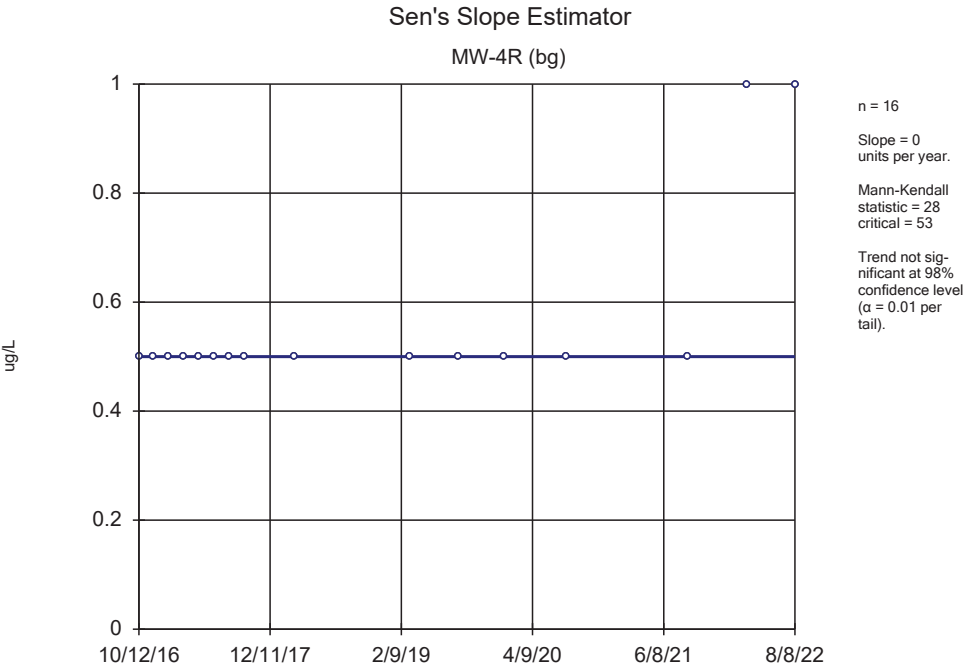
MW-2



Constituent: Antimony [total] Analysis Run 9/8/2022 10:59 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater



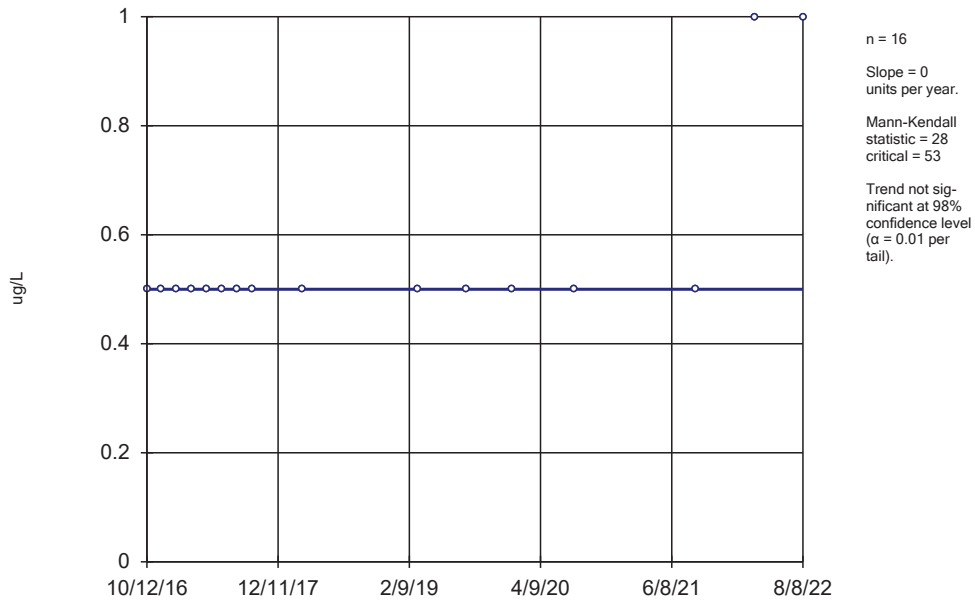
Constituent: Antimony [total] Analysis Run 9/8/2022 10:59 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater



Constituent: Antimony [total] Analysis Run 9/8/2022 10:59 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

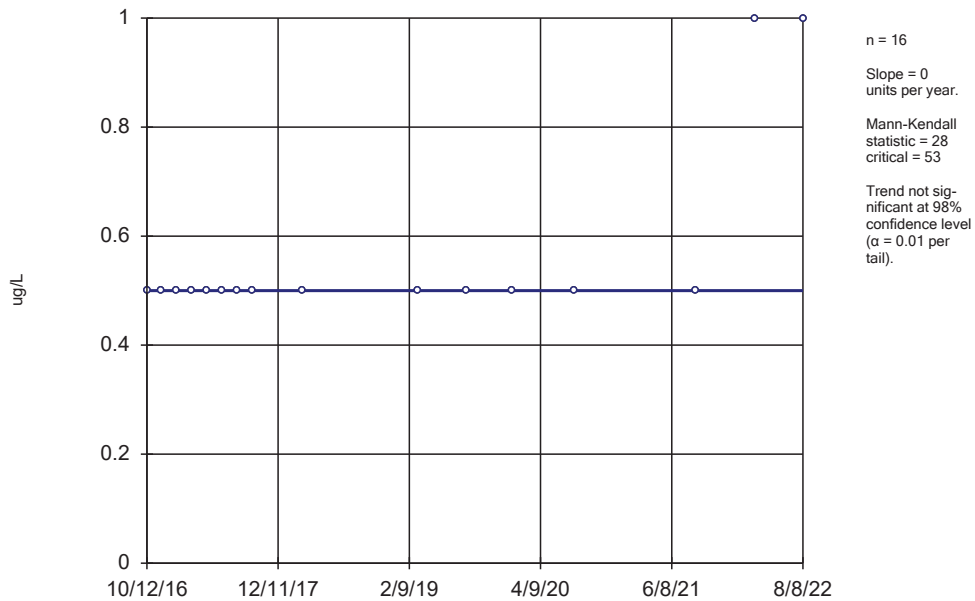
MW-5



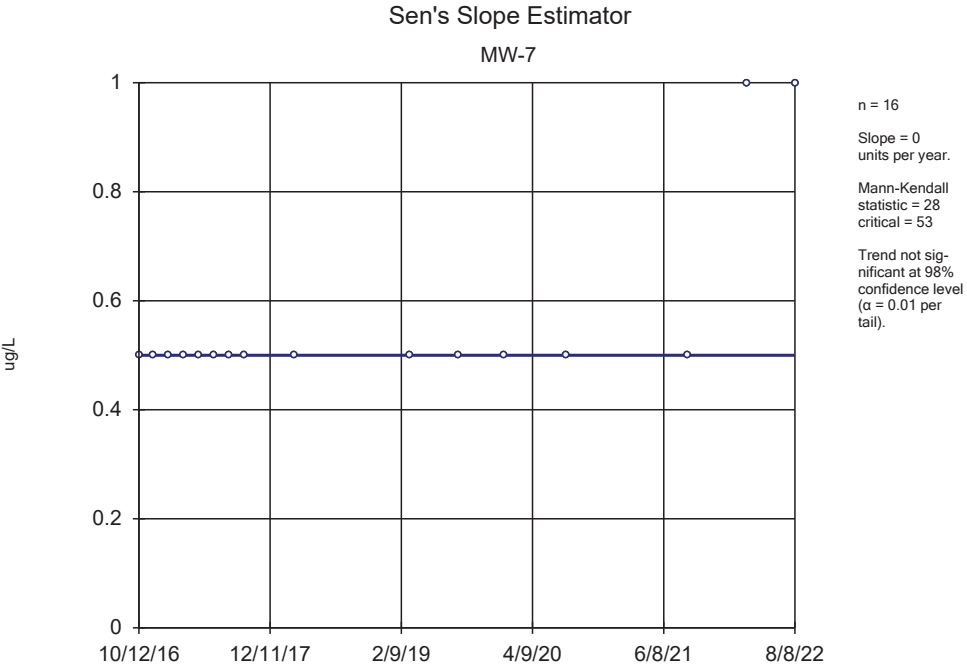
Constituent: Antimony [total] Analysis Run 9/8/2022 10:59 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

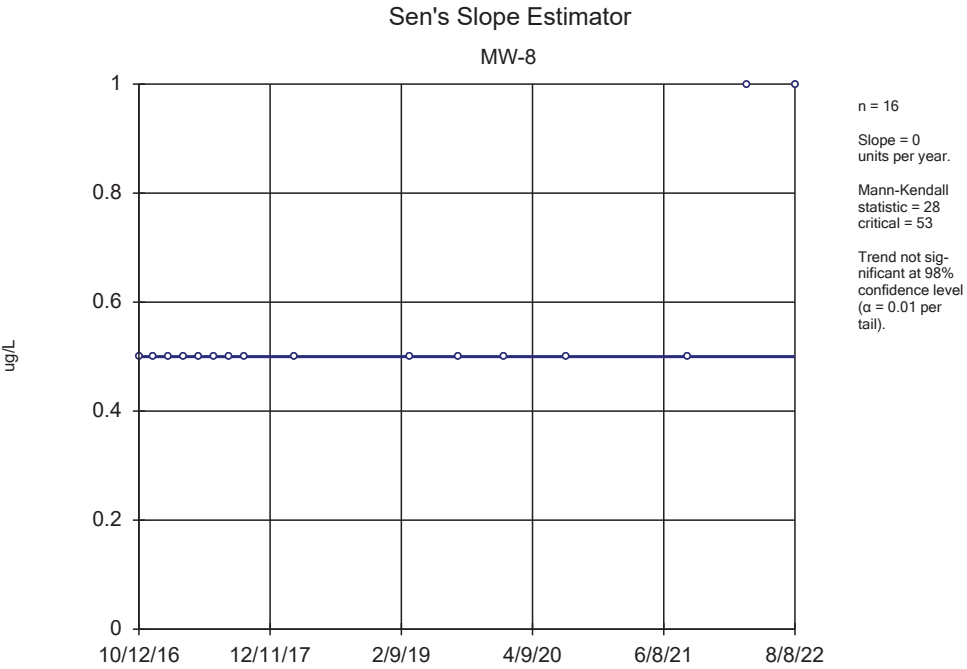
MW-6



Constituent: Antimony [total] Analysis Run 9/8/2022 10:59 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater



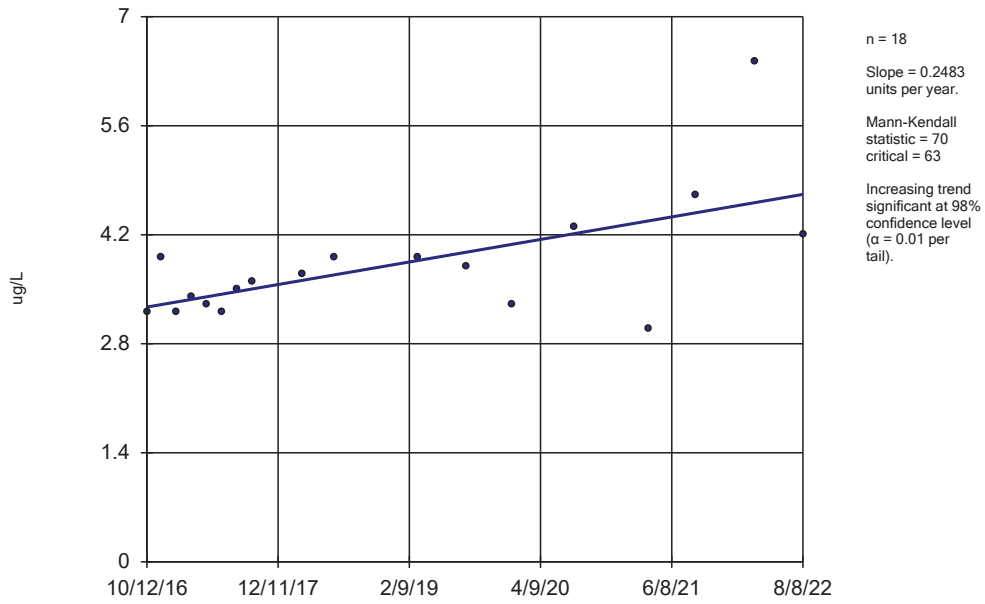
Constituent: Antimony [total] Analysis Run 9/8/2022 10:59 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater



Constituent: Antimony [total] Analysis Run 9/8/2022 10:59 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

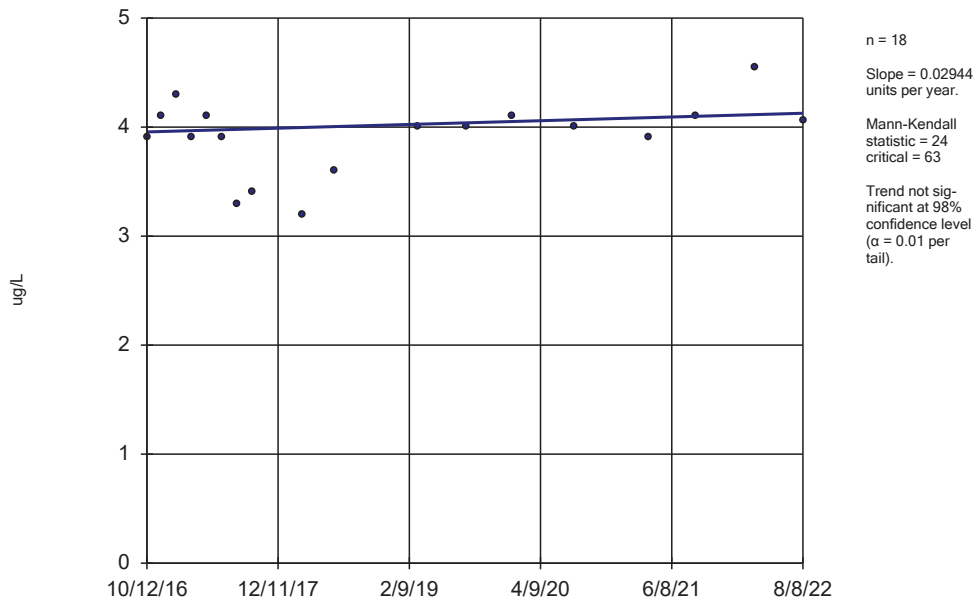
MW-1



Constituent: Arsenic [total] Analysis Run 9/8/2022 10:59 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

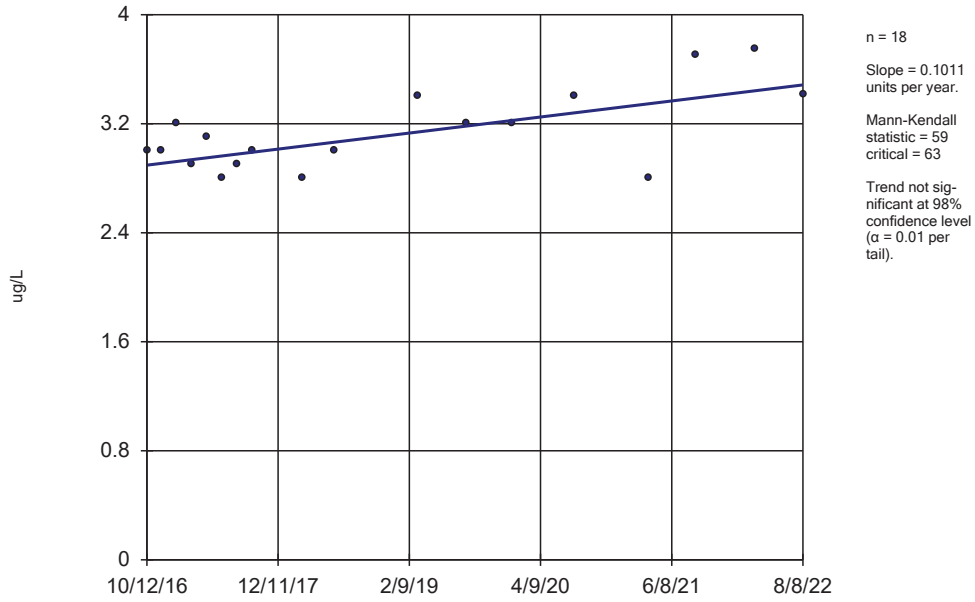
MW-2



Constituent: Arsenic [total] Analysis Run 9/8/2022 10:59 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

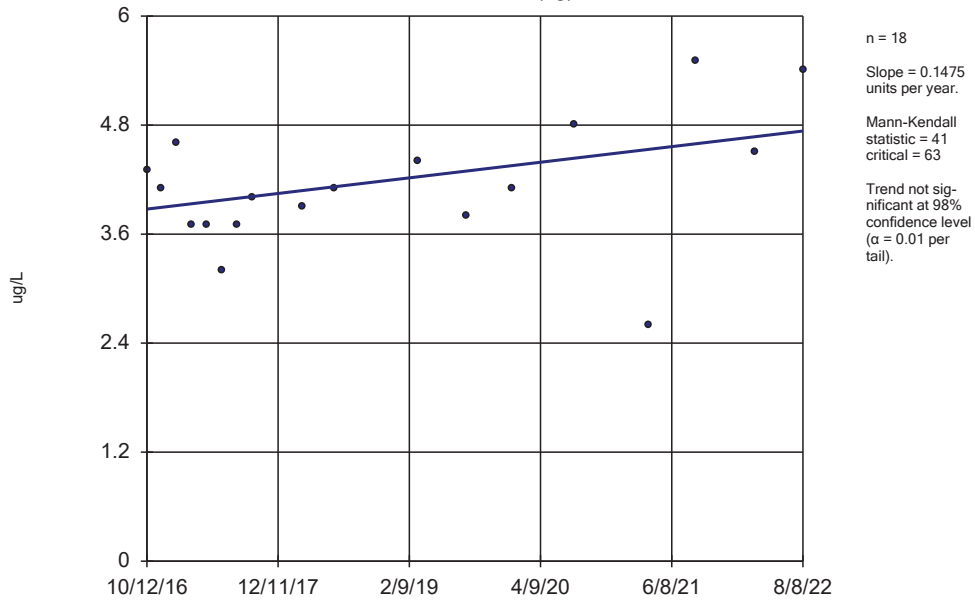
MW-3



Constituent: Arsenic [total] Analysis Run 9/8/2022 10:59 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

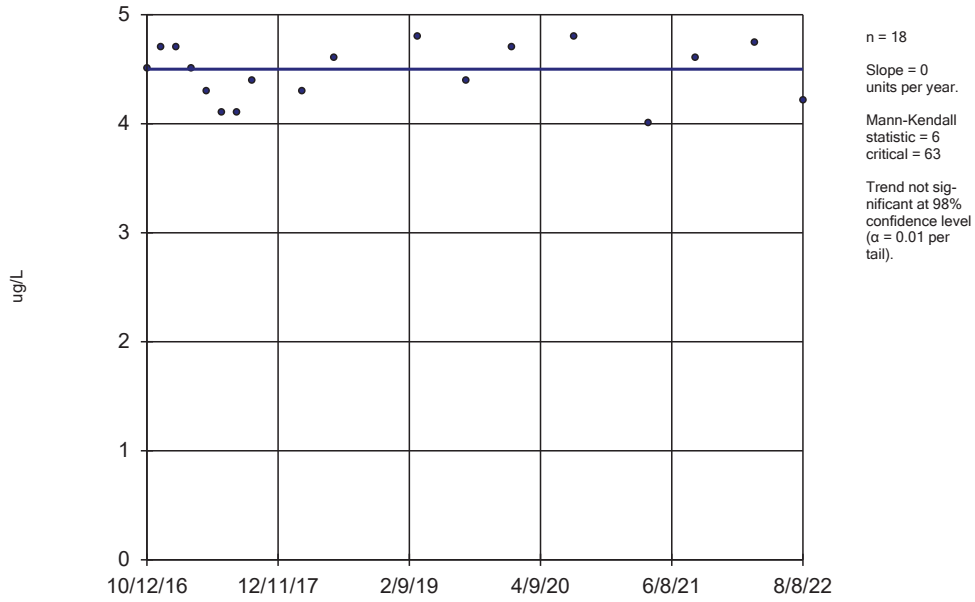
MW-4R (bg)



Constituent: Arsenic [total] Analysis Run 9/8/2022 10:59 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

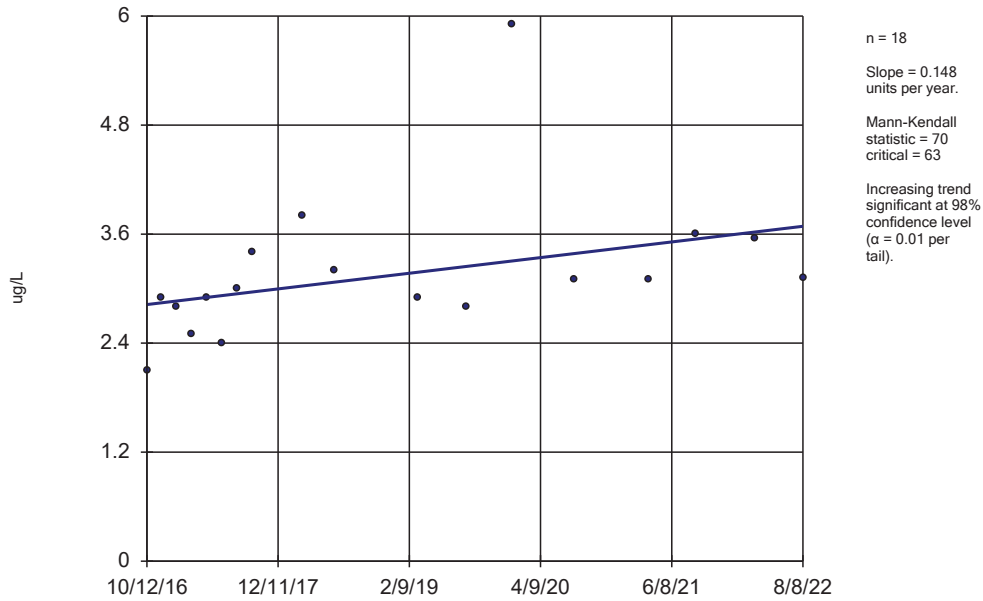
MW-5



Constituent: Arsenic [total] Analysis Run 9/8/2022 10:59 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

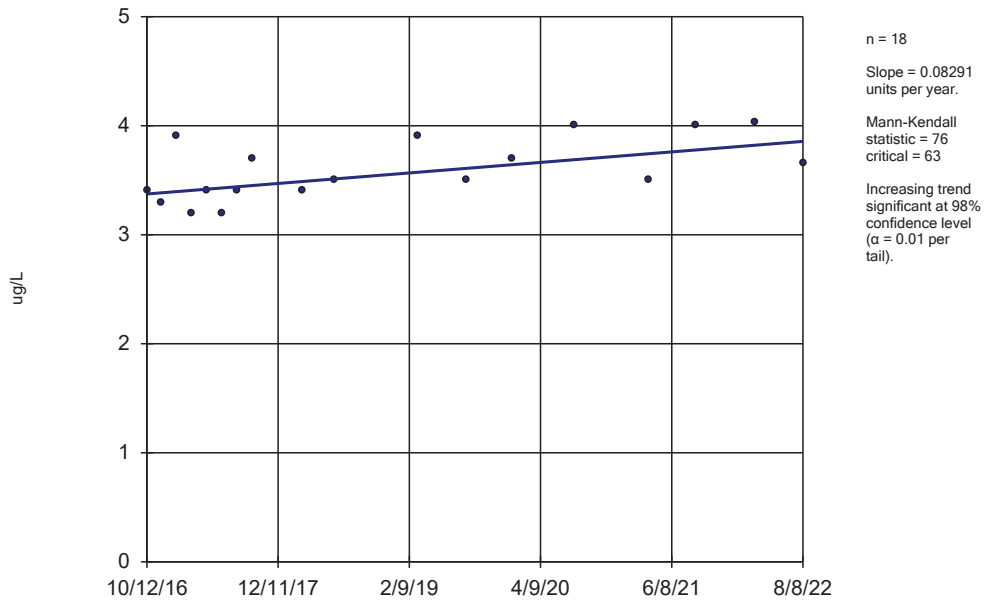
MW-6



Constituent: Arsenic [total] Analysis Run 9/8/2022 10:59 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

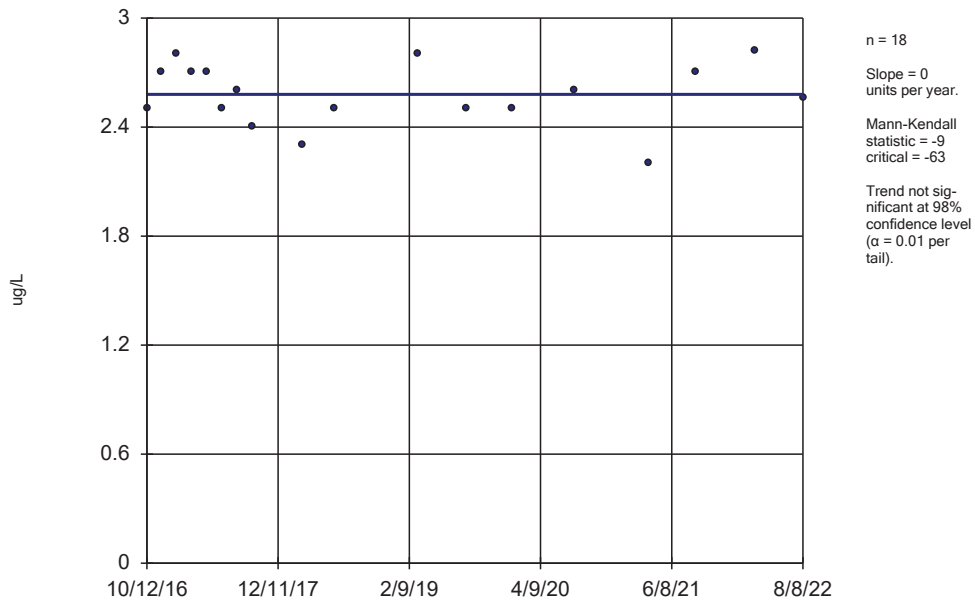
MW-7



Constituent: Arsenic [total] Analysis Run 9/8/2022 10:59 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

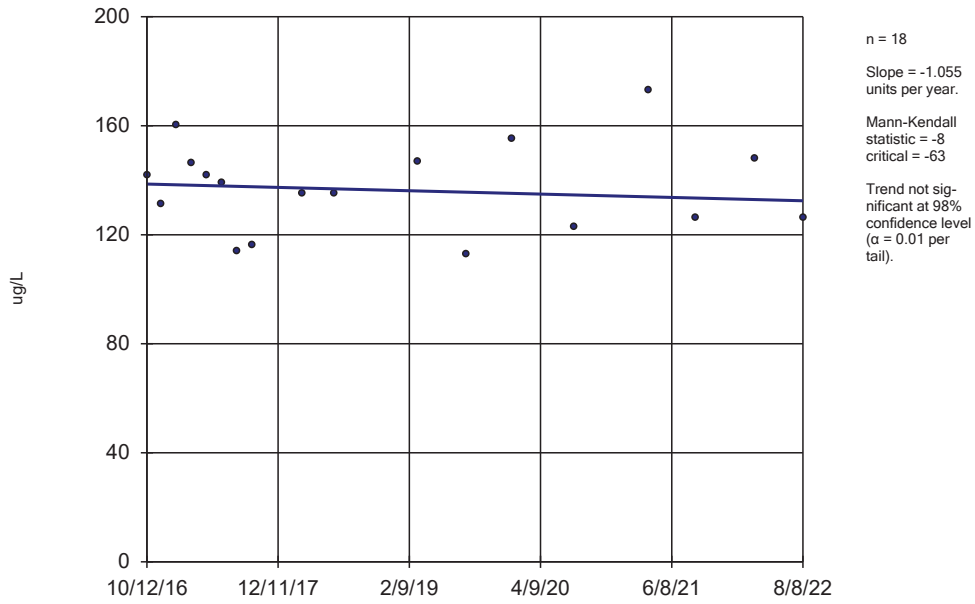
MW-8



Constituent: Arsenic [total] Analysis Run 9/8/2022 10:59 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

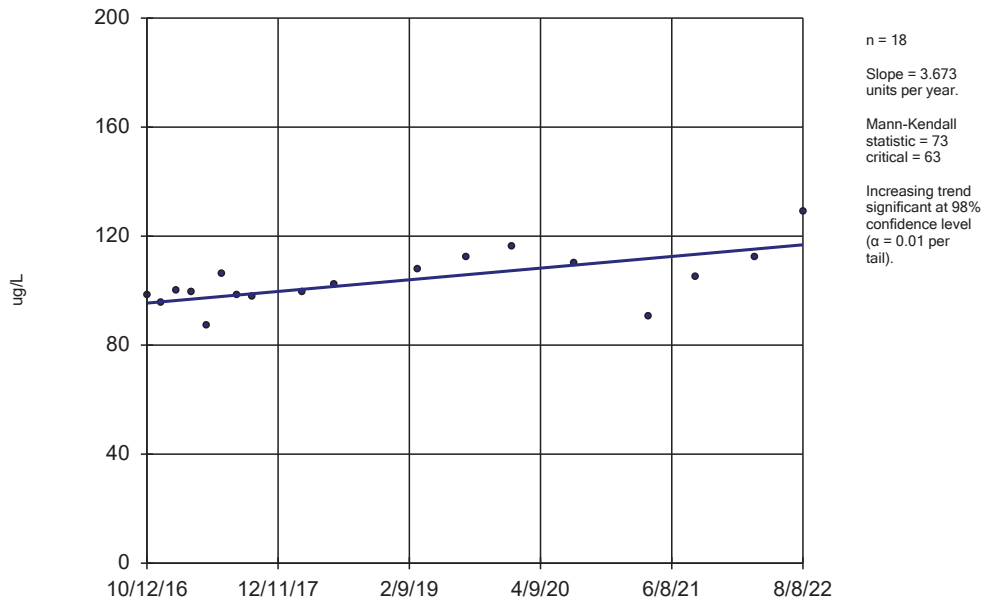
MW-1



Constituent: Barium [total] Analysis Run 9/8/2022 10:59 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

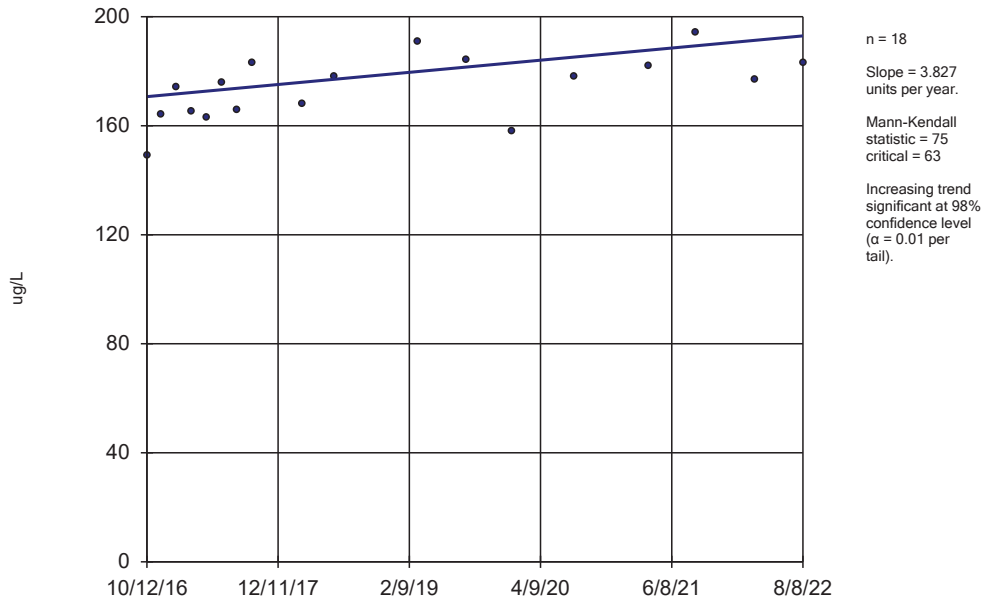
MW-2



Constituent: Barium [total] Analysis Run 9/8/2022 10:59 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

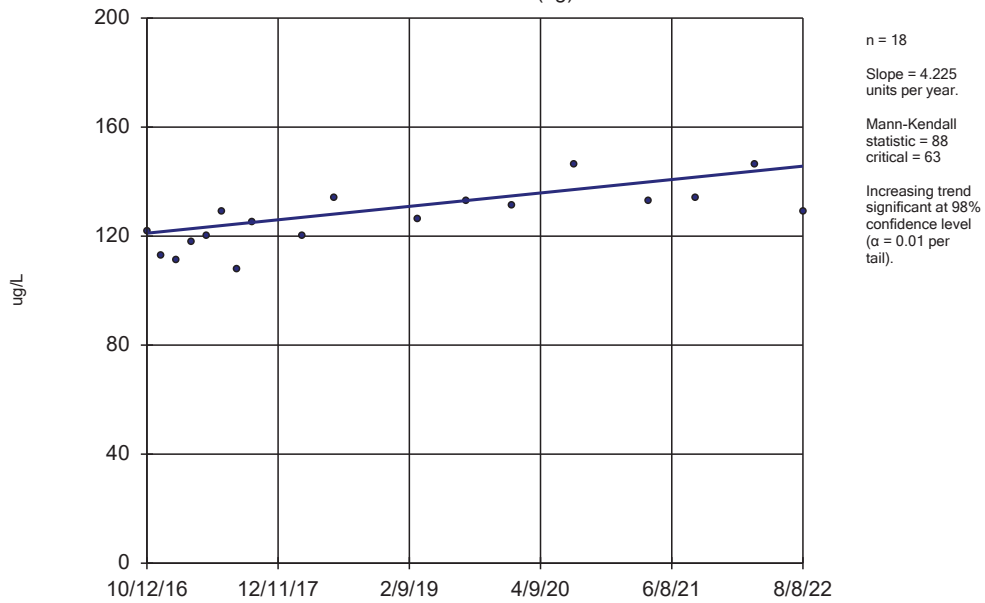
MW-3



Constituent: Barium [total] Analysis Run 9/8/2022 10:59 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

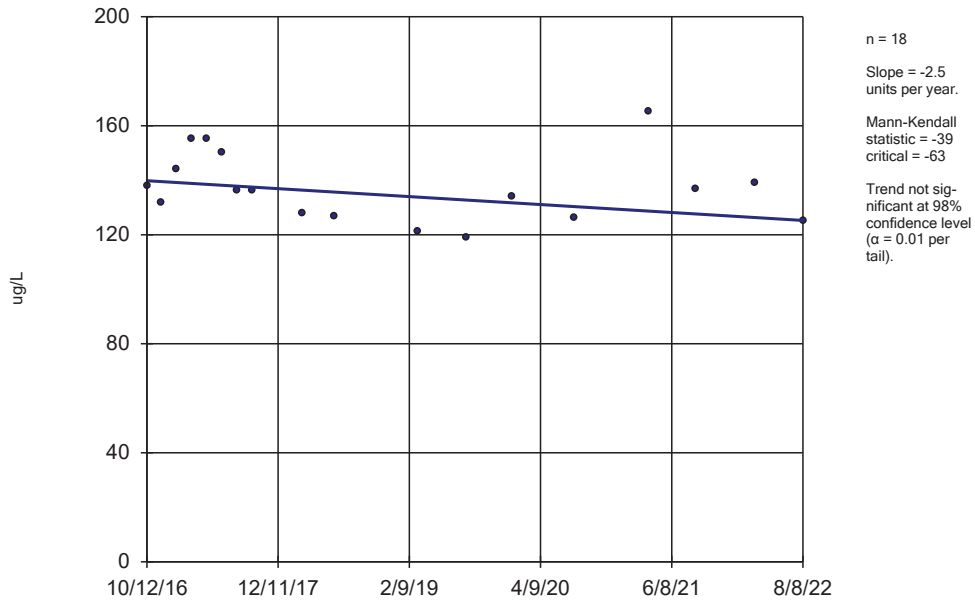
MW-4R (bg)



Constituent: Barium [total] Analysis Run 9/8/2022 10:59 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

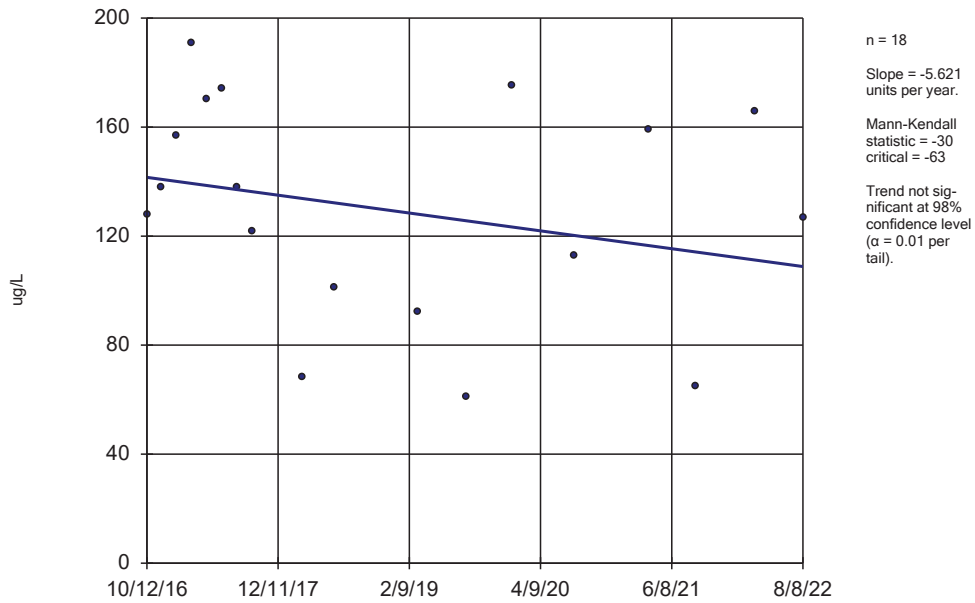
MW-5



Constituent: Barium [total] Analysis Run 9/8/2022 10:59 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

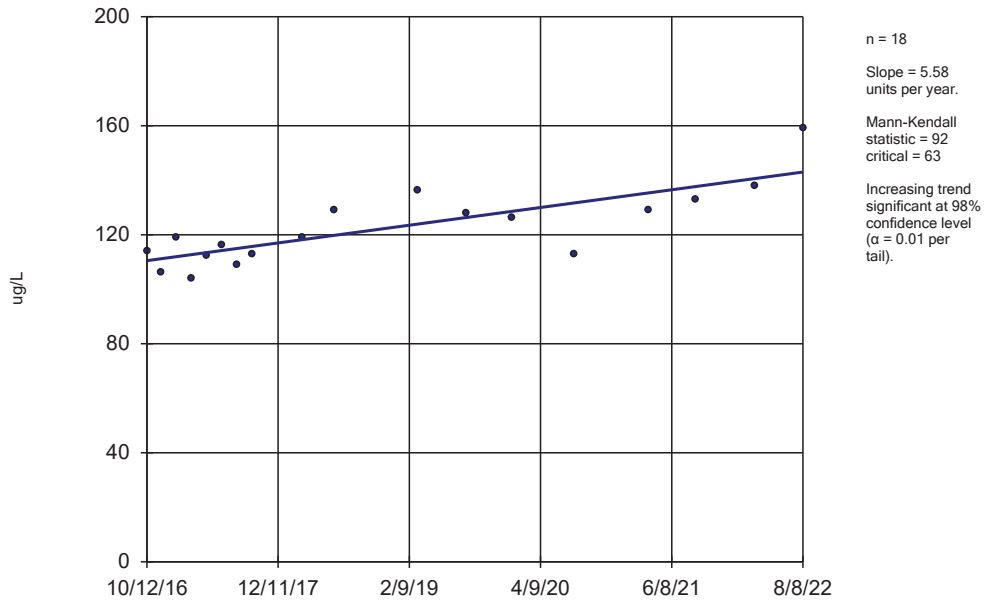
MW-6



Constituent: Barium [total] Analysis Run 9/8/2022 11:00 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

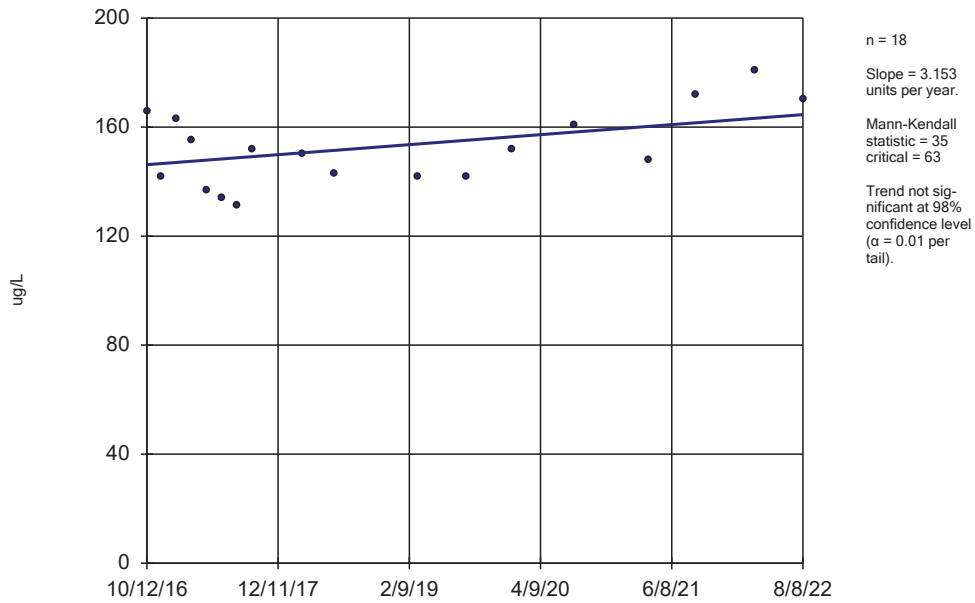
MW-7



Constituent: Barium [total] Analysis Run 9/8/2022 11:00 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

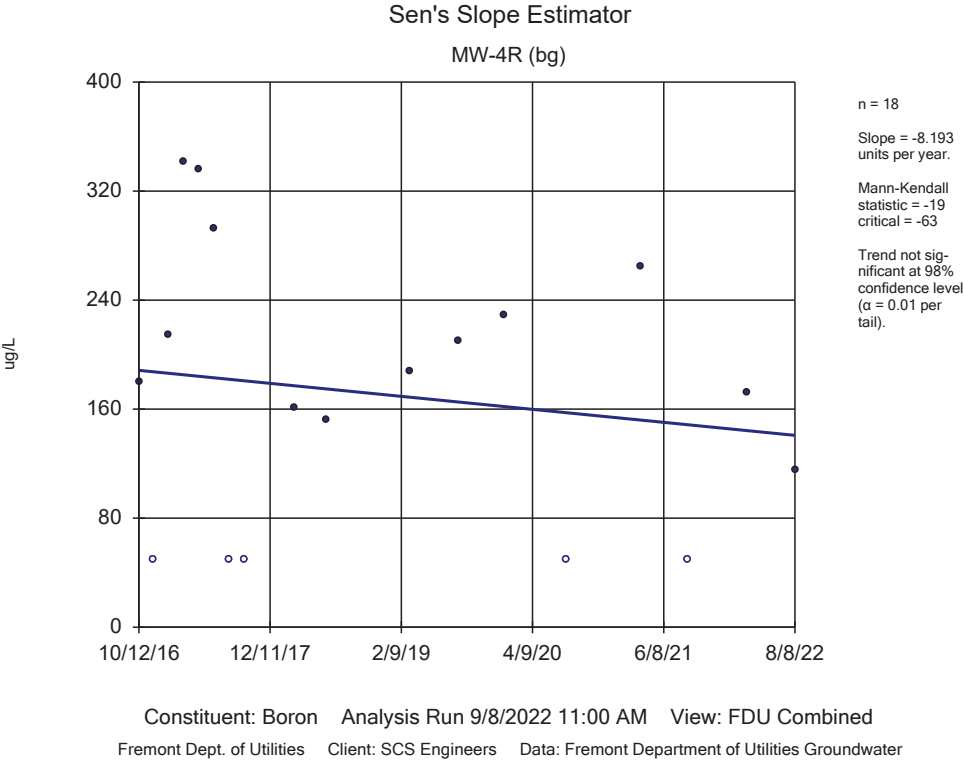
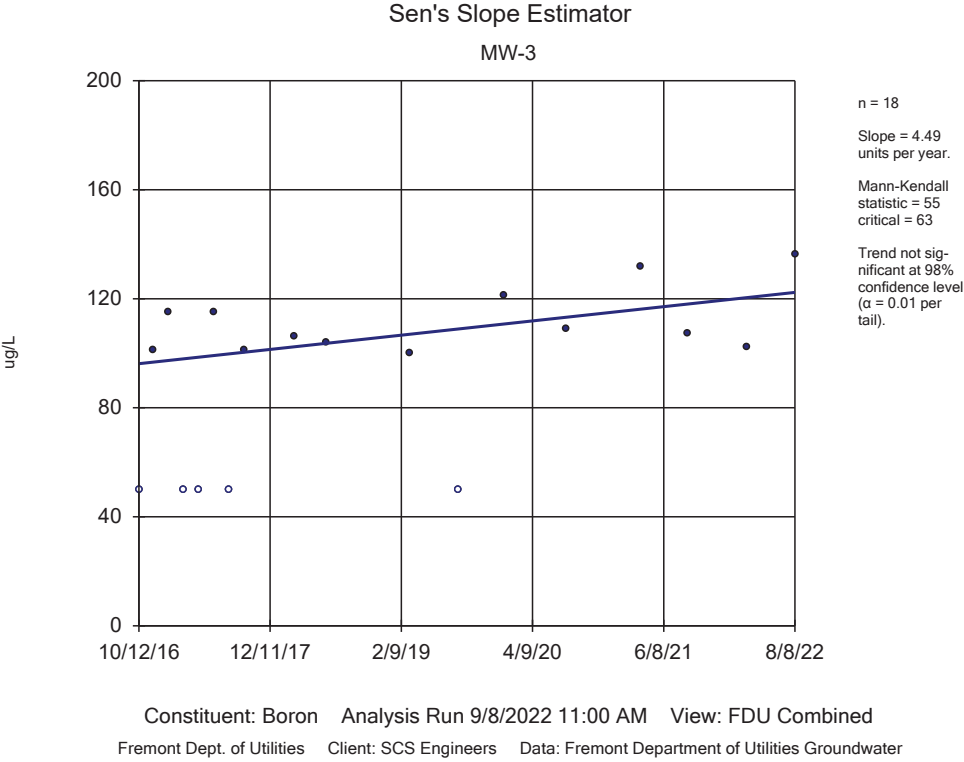
Sen's Slope Estimator

MW-8



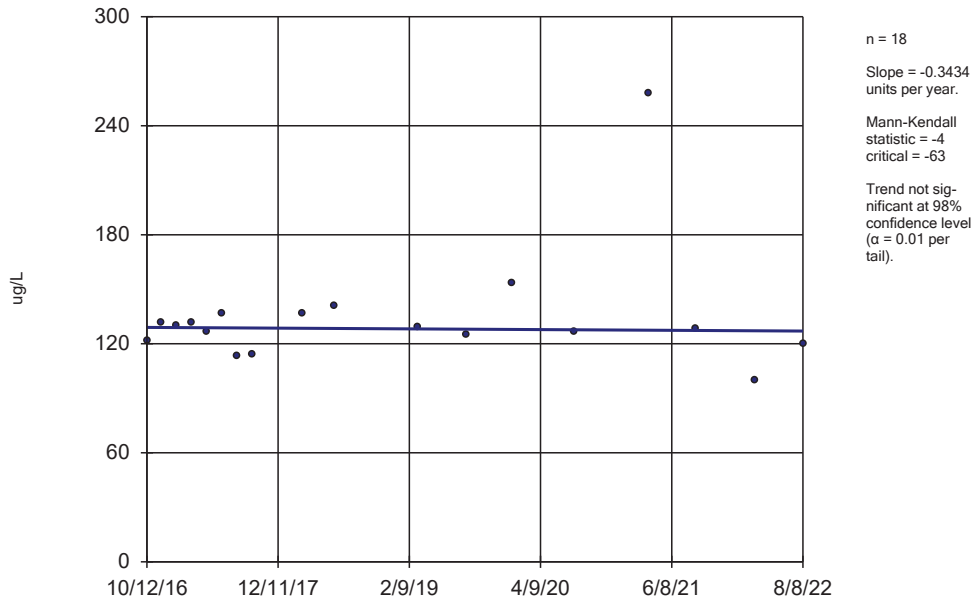
Constituent: Barium [total] Analysis Run 9/8/2022 11:00 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Constituent: Boron Analysis Run 9/8/2022 11:00 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater



Sen's Slope Estimator

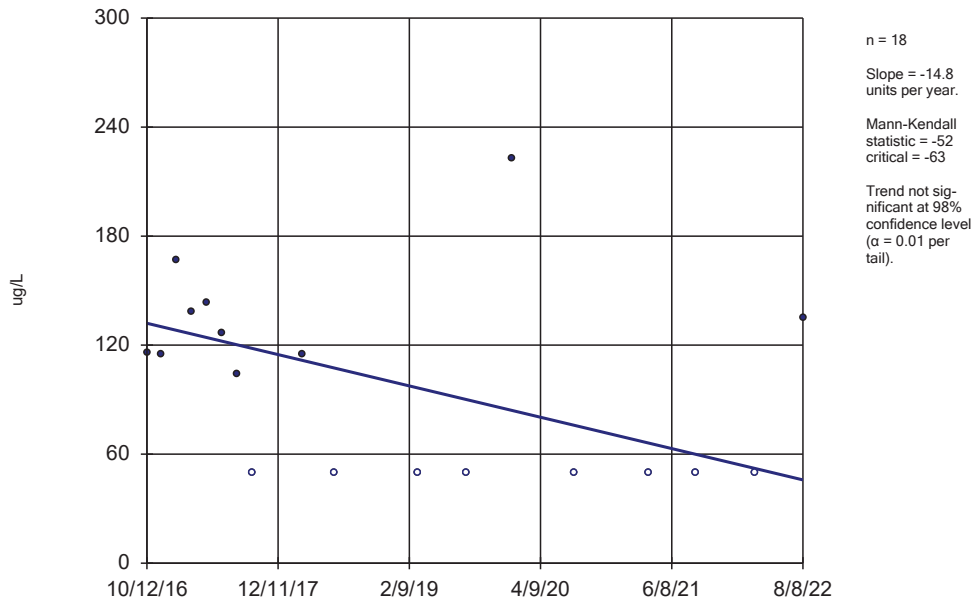
MW-5



Constituent: Boron Analysis Run 9/8/2022 11:00 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

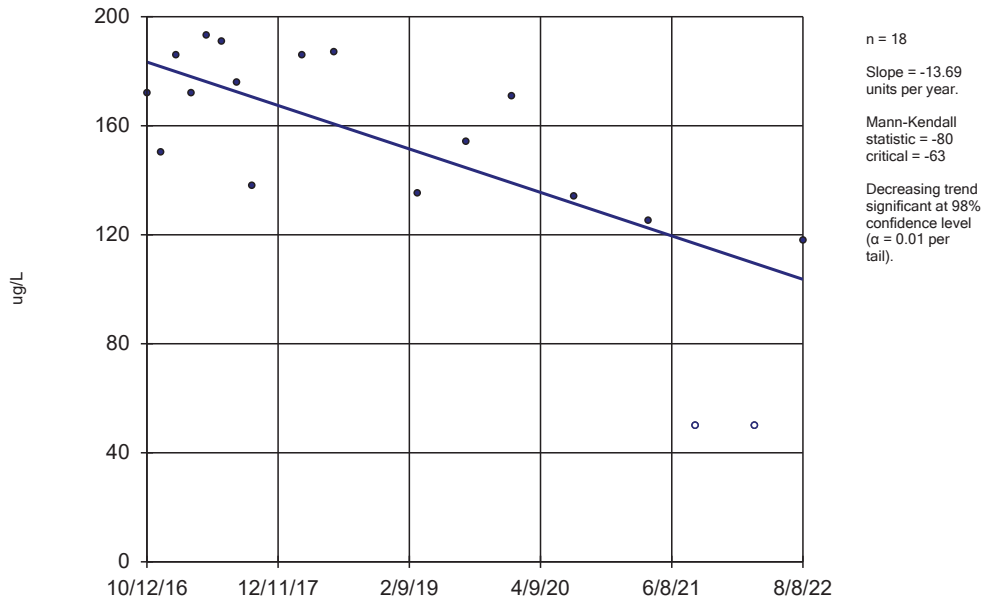
MW-6



Constituent: Boron Analysis Run 9/8/2022 11:00 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

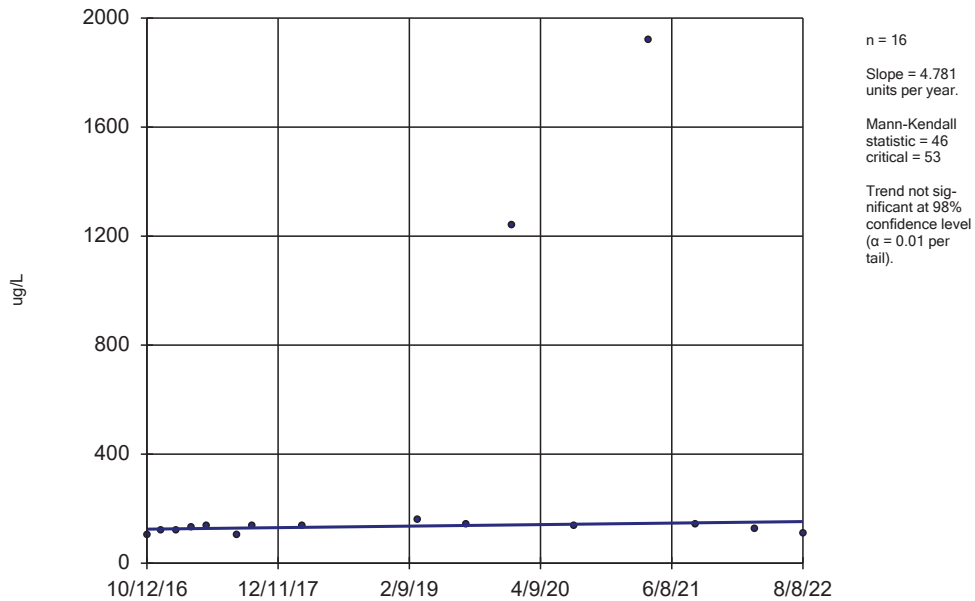
MW-7



Constituent: Boron Analysis Run 9/8/2022 11:00 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

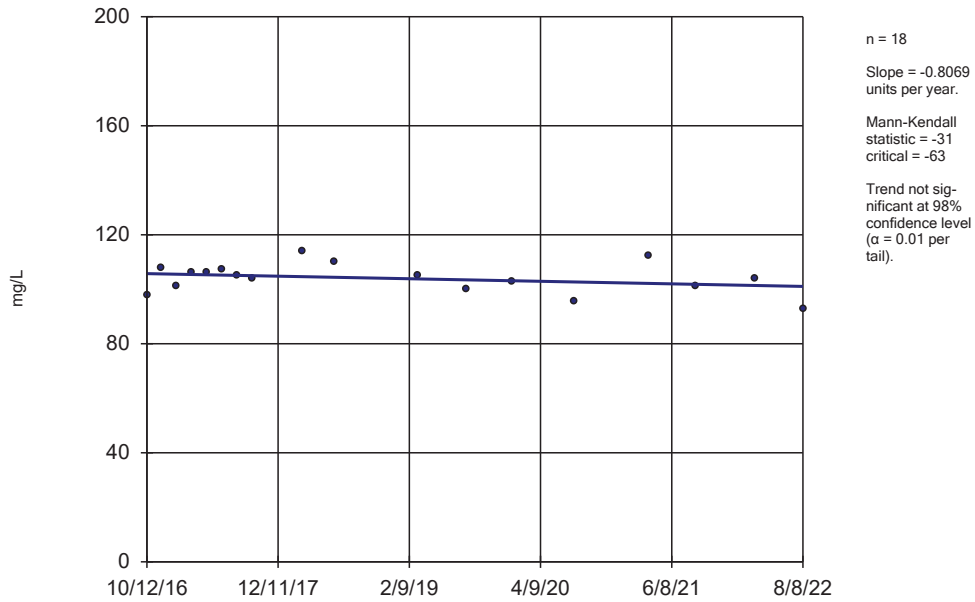
MW-8



Constituent: Boron Analysis Run 9/8/2022 11:00 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

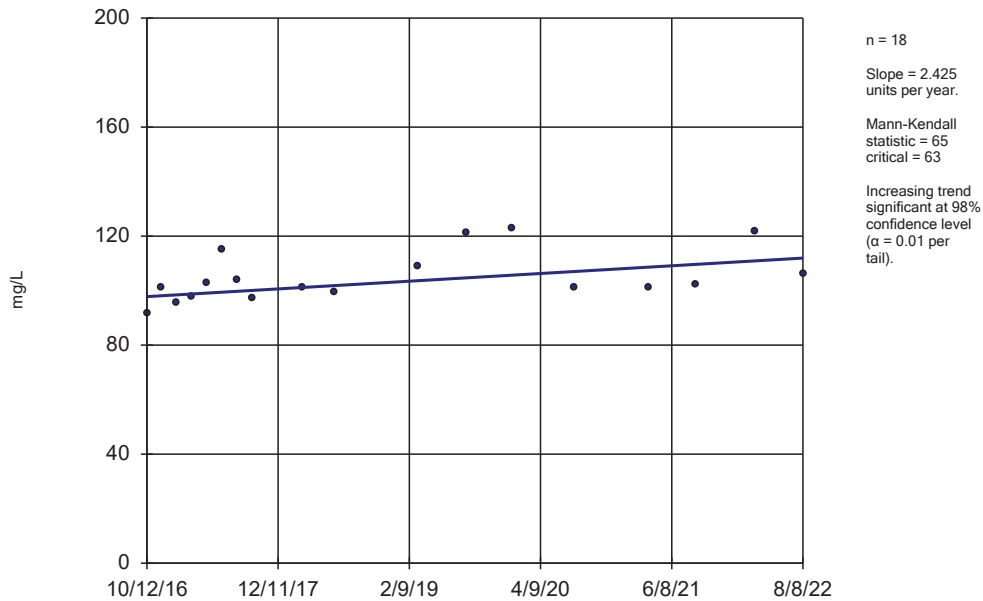
MW-1



Constituent: Calcium Analysis Run 9/8/2022 11:00 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

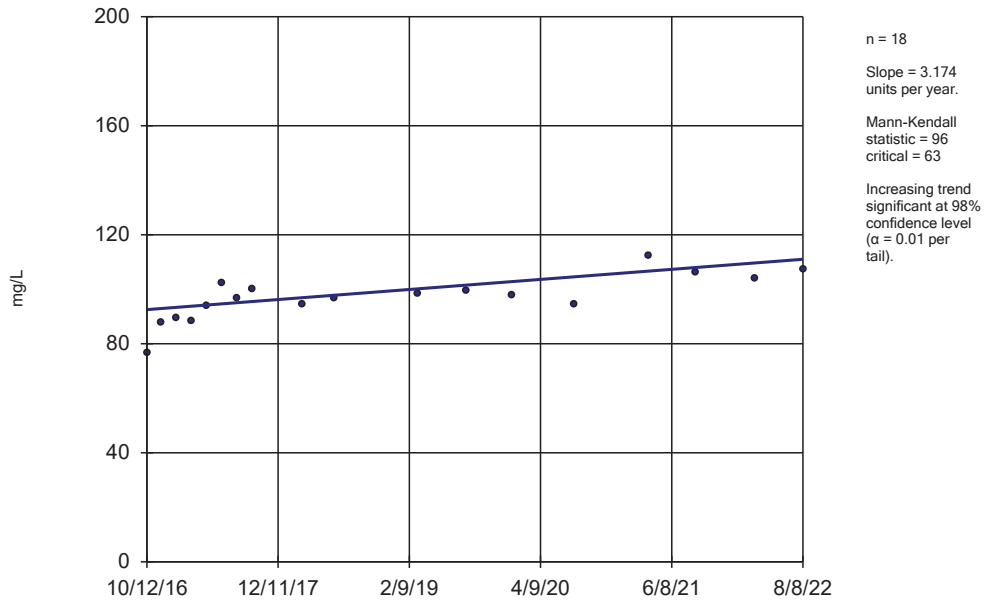
MW-2



Constituent: Calcium Analysis Run 9/8/2022 11:00 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

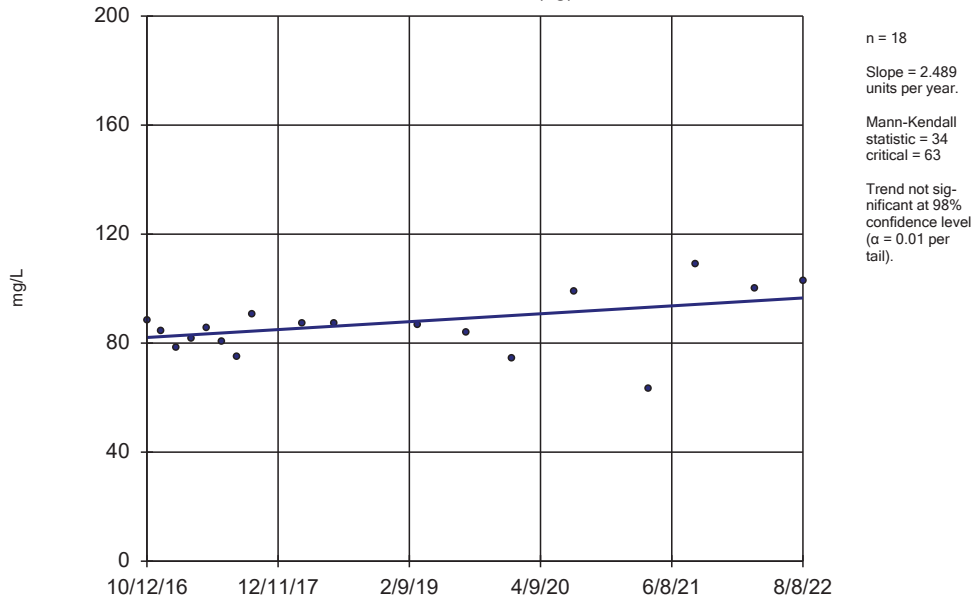
MW-3



Constituent: Calcium Analysis Run 9/8/2022 11:00 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

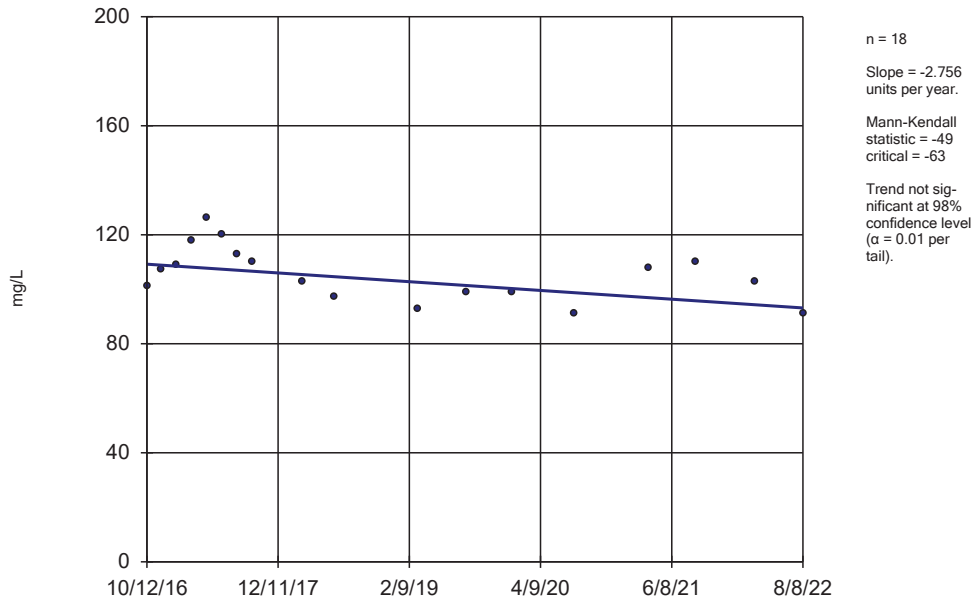
MW-4R (bg)



Constituent: Calcium Analysis Run 9/8/2022 11:00 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

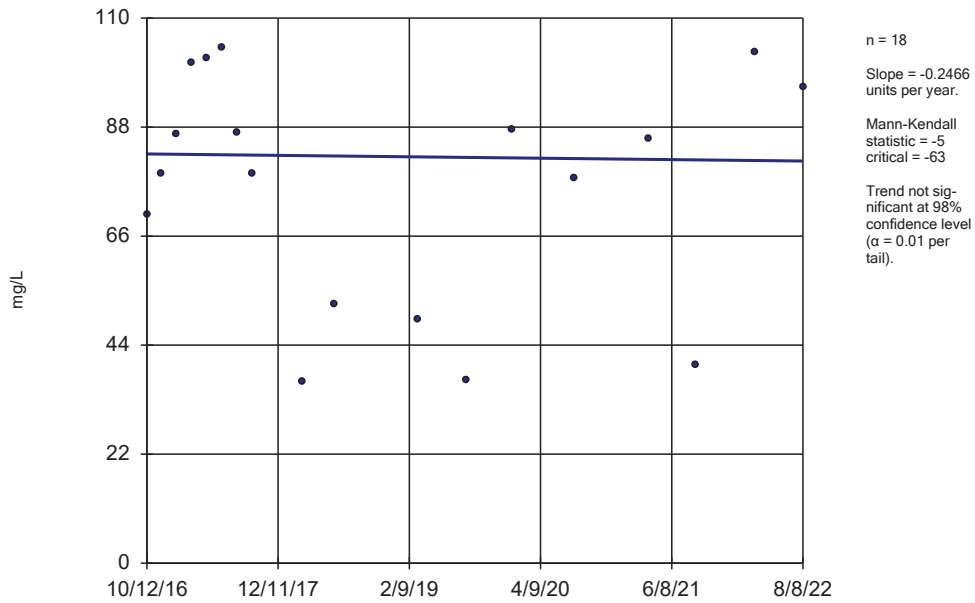
MW-5



Constituent: Calcium Analysis Run 9/8/2022 11:00 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

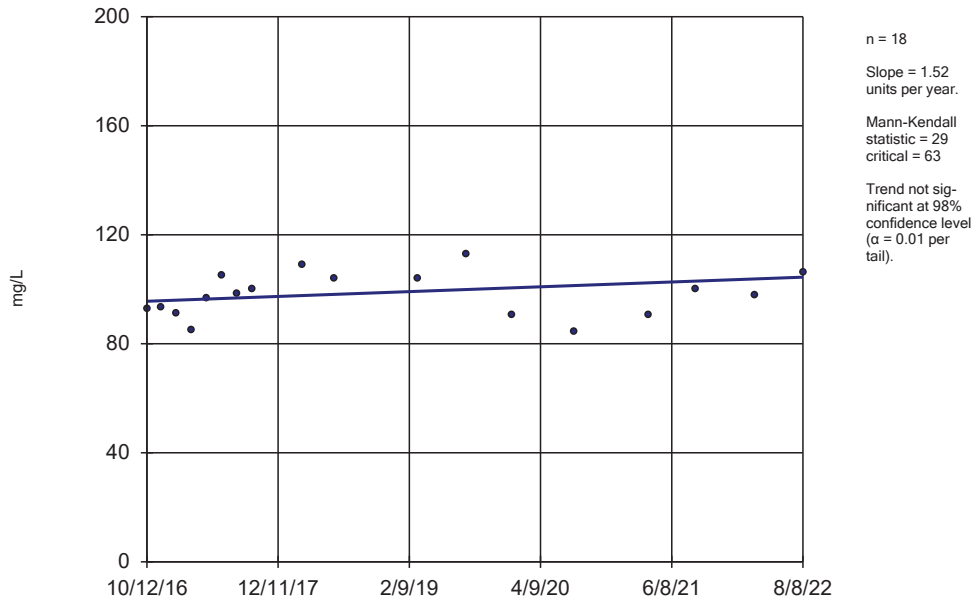
MW-6



Constituent: Calcium Analysis Run 9/8/2022 11:00 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

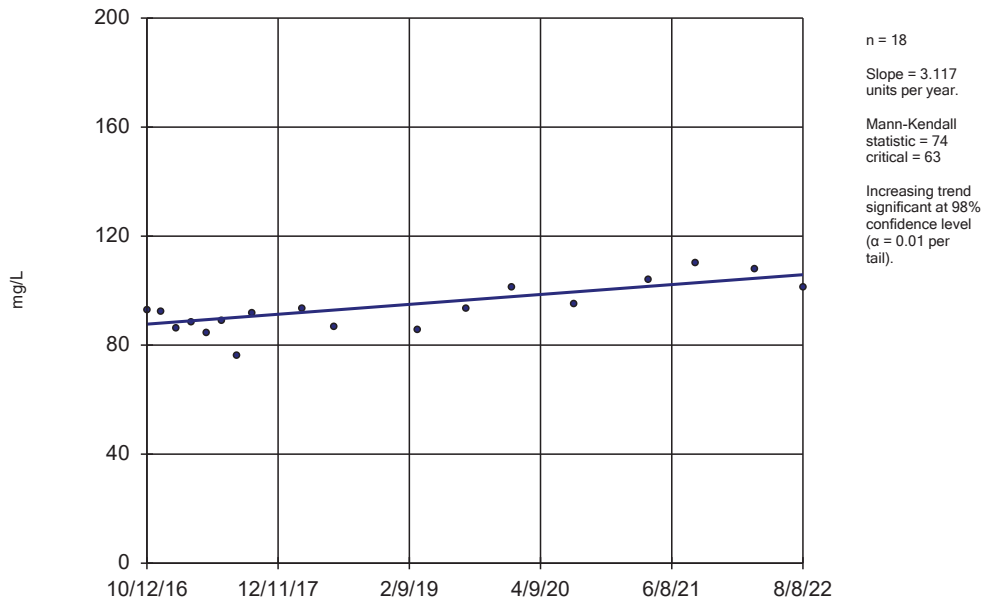
MW-7



Constituent: Calcium Analysis Run 9/8/2022 11:00 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

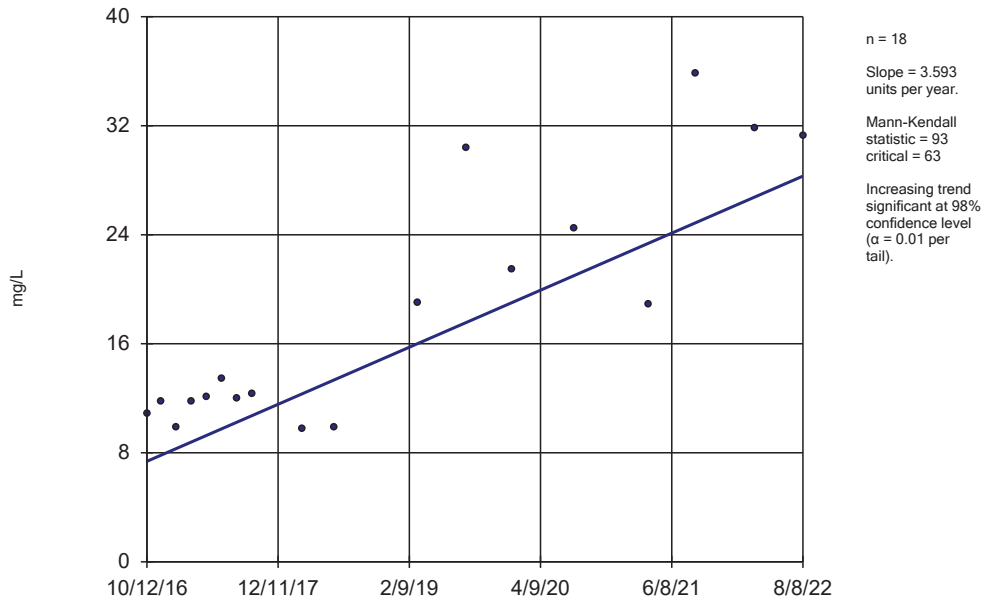
MW-8



Constituent: Calcium Analysis Run 9/8/2022 11:00 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

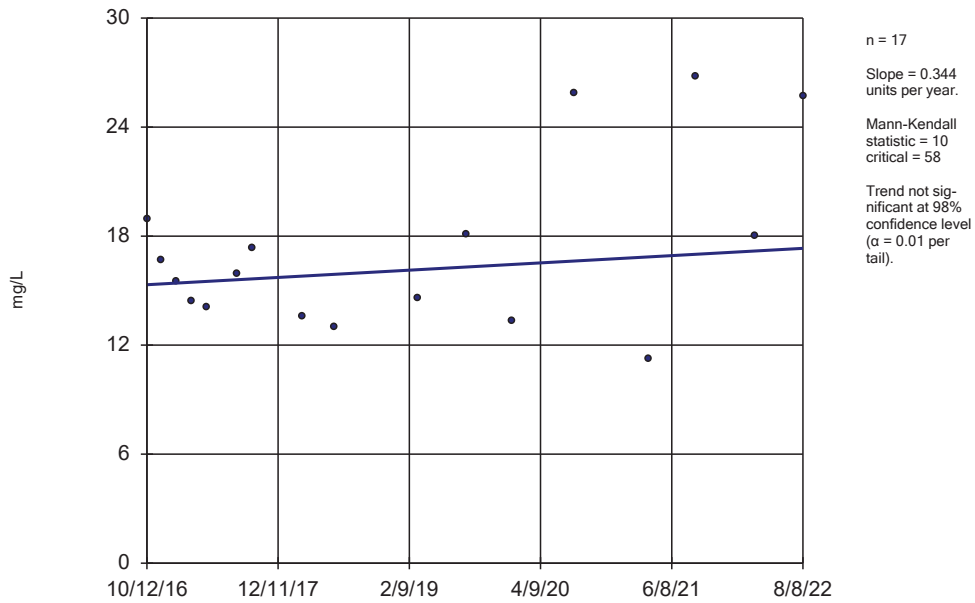
MW-1



Constituent: Chloride Analysis Run 9/8/2022 11:00 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

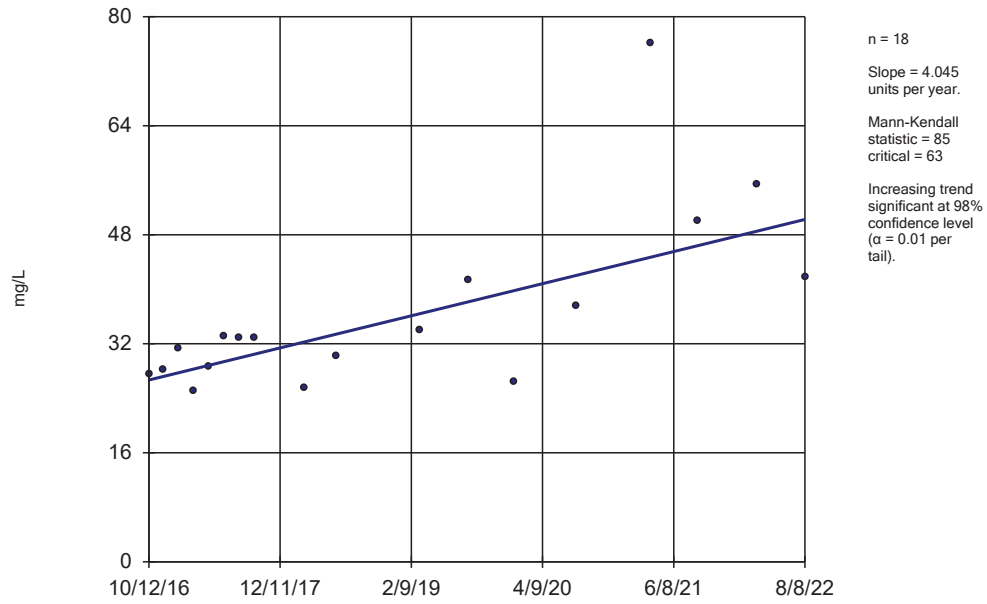
MW-2



Constituent: Chloride Analysis Run 9/8/2022 11:00 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

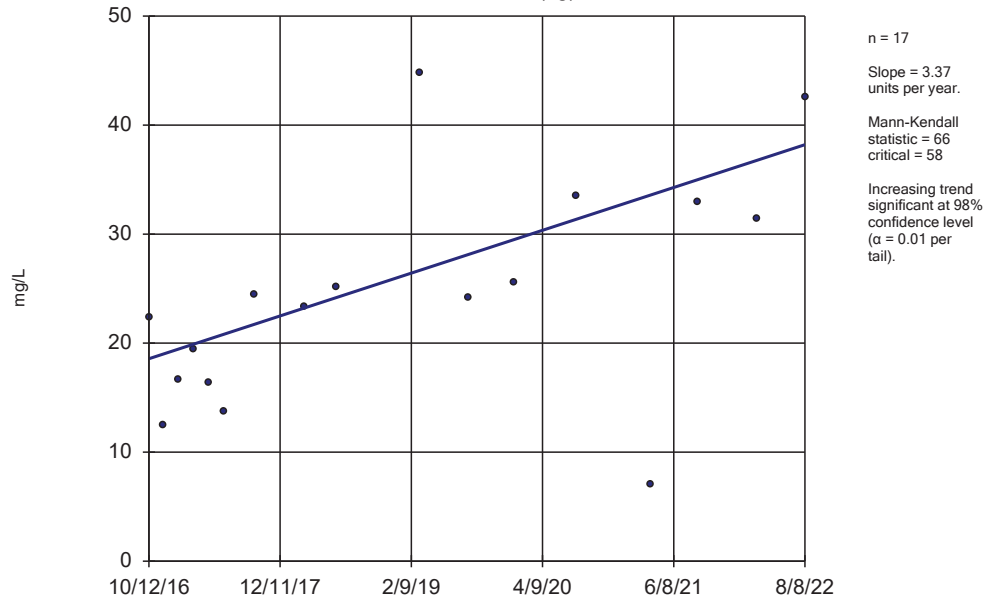
MW-3



Constituent: Chloride Analysis Run 9/8/2022 11:00 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

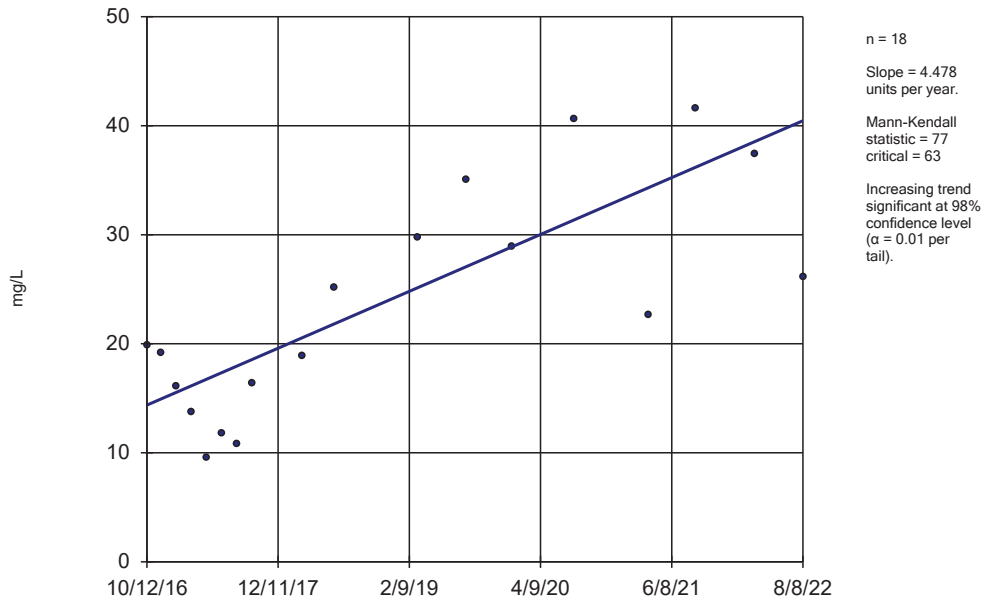
MW-4R (bg)



Constituent: Chloride Analysis Run 9/8/2022 11:00 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

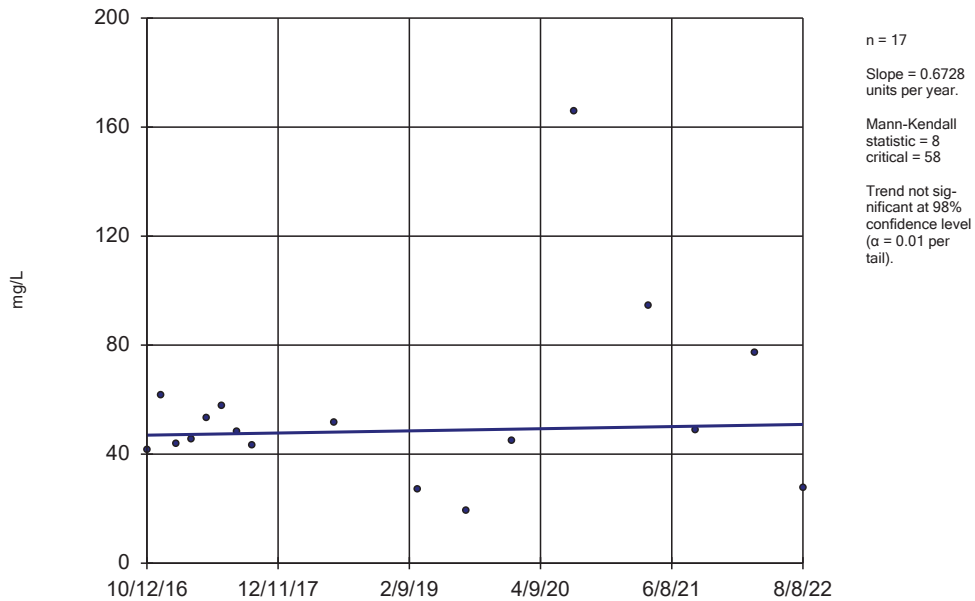
MW-5



Constituent: Chloride Analysis Run 9/8/2022 11:00 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

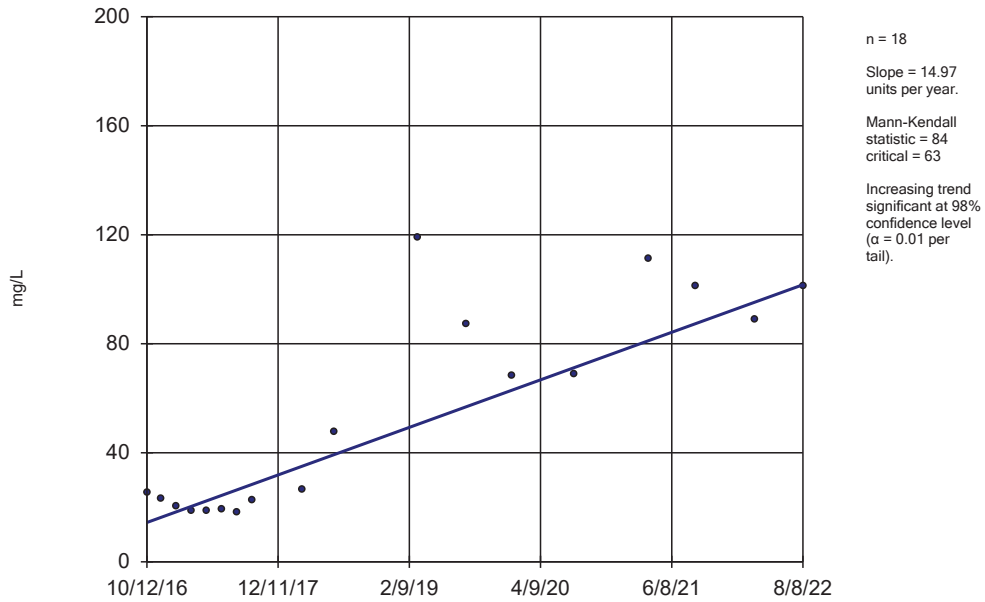
MW-6



Constituent: Chloride Analysis Run 9/8/2022 11:00 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

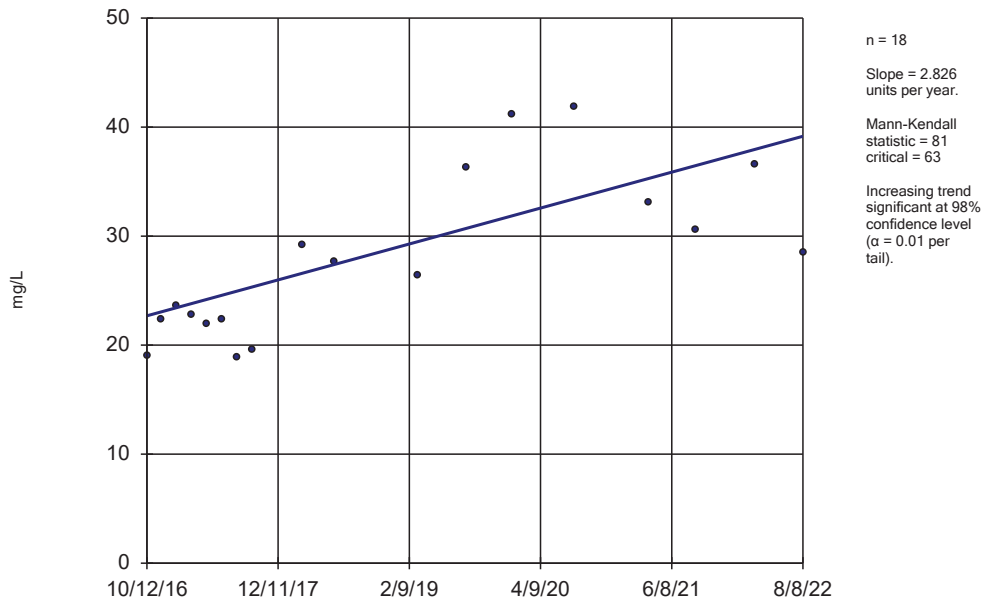
MW-7



Constituent: Chloride Analysis Run 9/8/2022 11:00 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

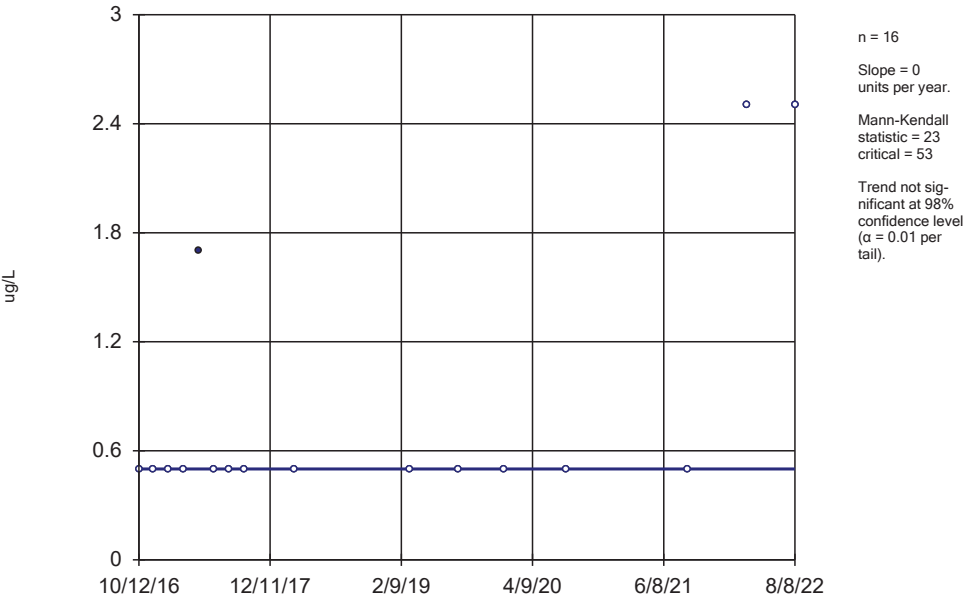
MW-8



Constituent: Chloride Analysis Run 9/8/2022 11:00 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

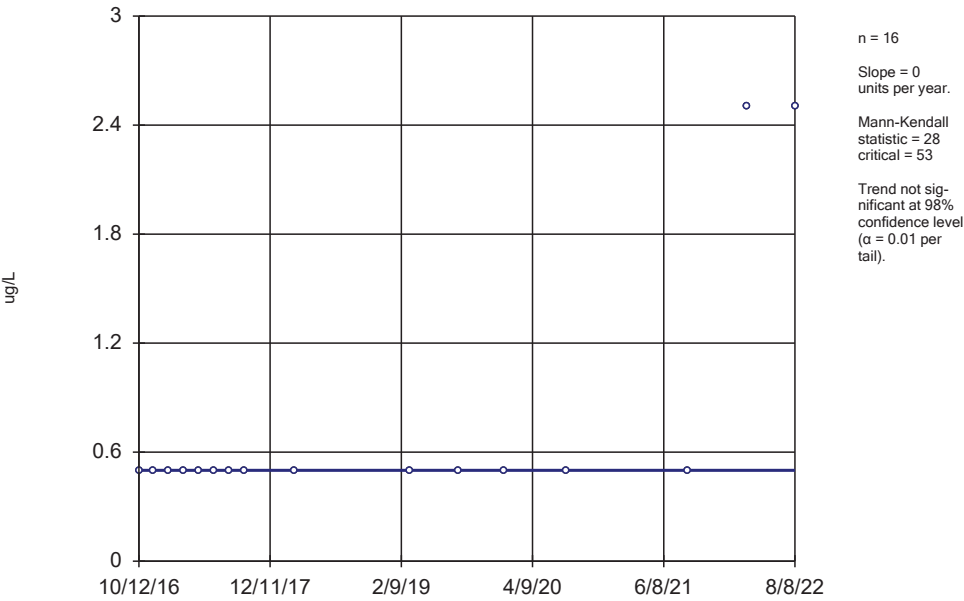
MW-1



Constituent: Chromium [total] Analysis Run 9/8/2022 11:01 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

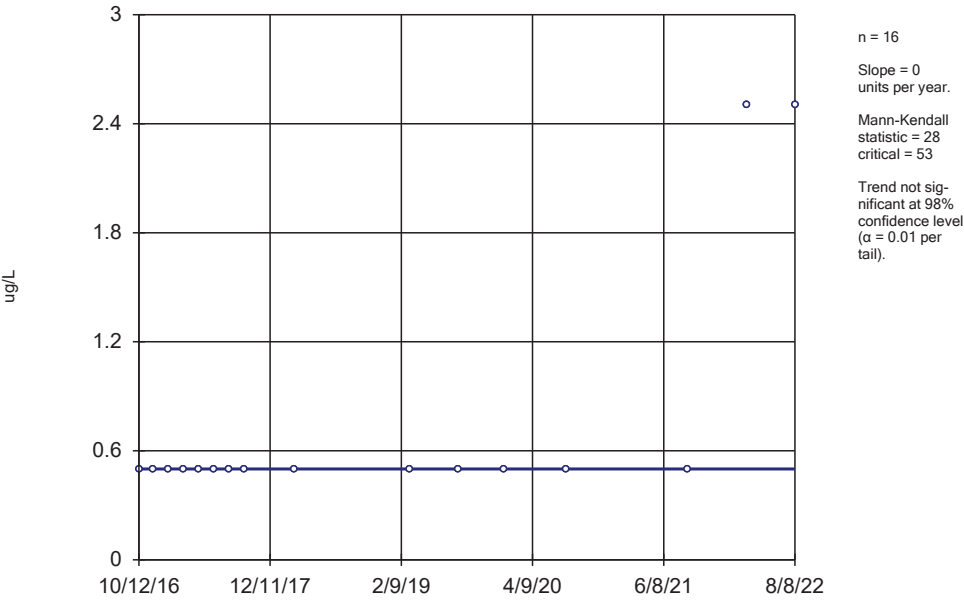
MW-2



Constituent: Chromium [total] Analysis Run 9/8/2022 11:01 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

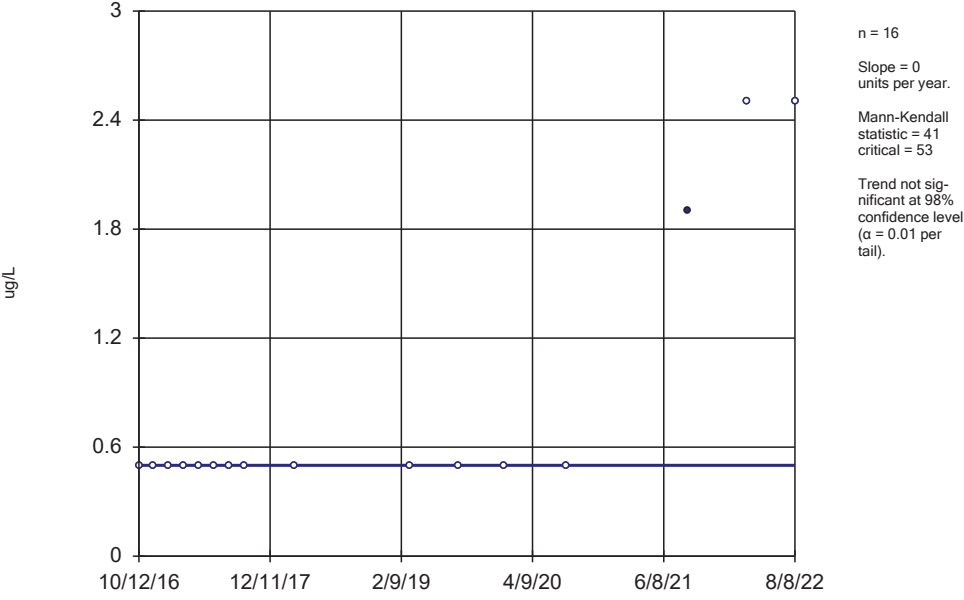
MW-3



Constituent: Chromium [total] Analysis Run 9/8/2022 11:01 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

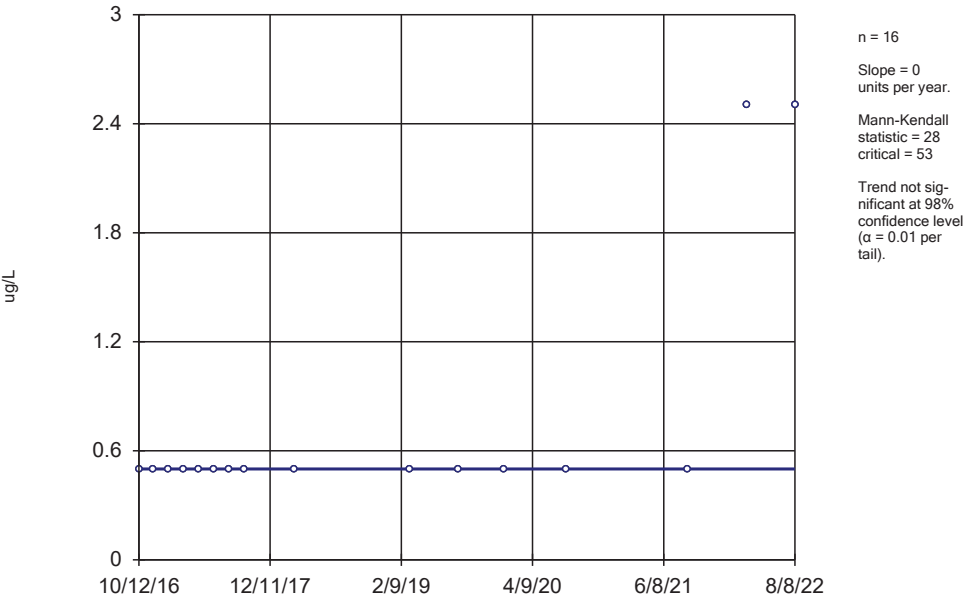
MW-4R (bg)



Constituent: Chromium [total] Analysis Run 9/8/2022 11:01 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

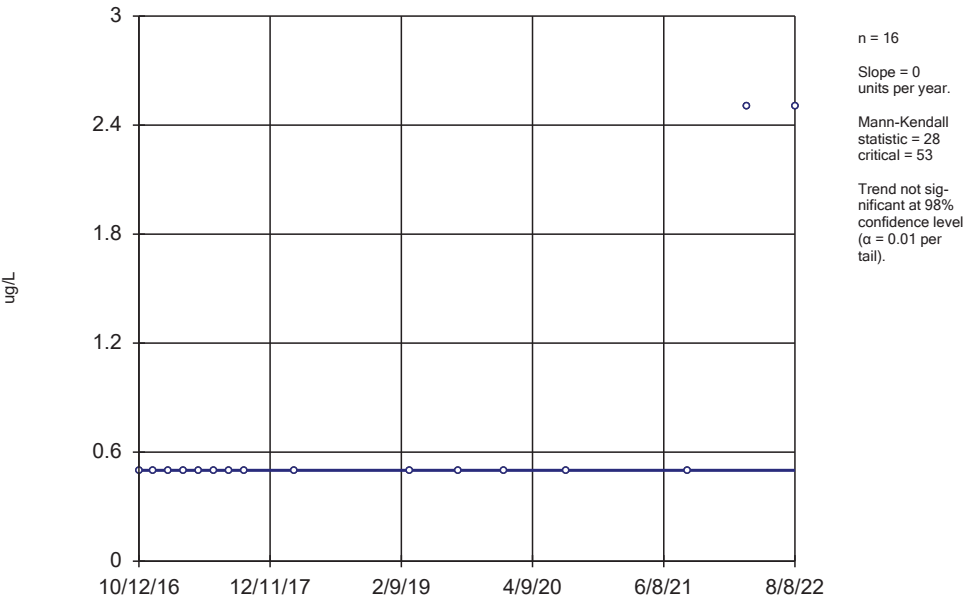
MW-5



Constituent: Chromium [total] Analysis Run 9/8/2022 11:01 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

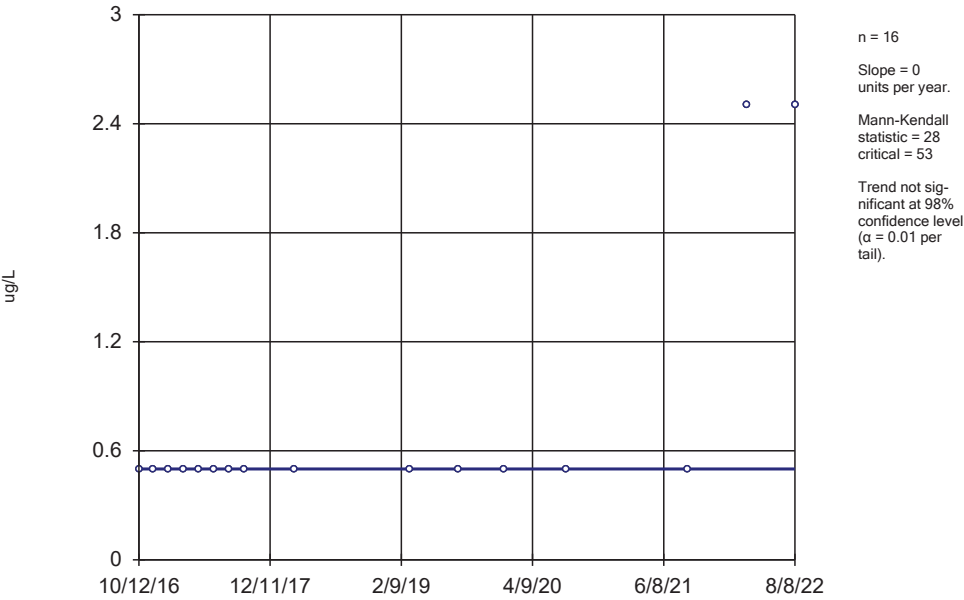
MW-6



Constituent: Chromium [total] Analysis Run 9/8/2022 11:01 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

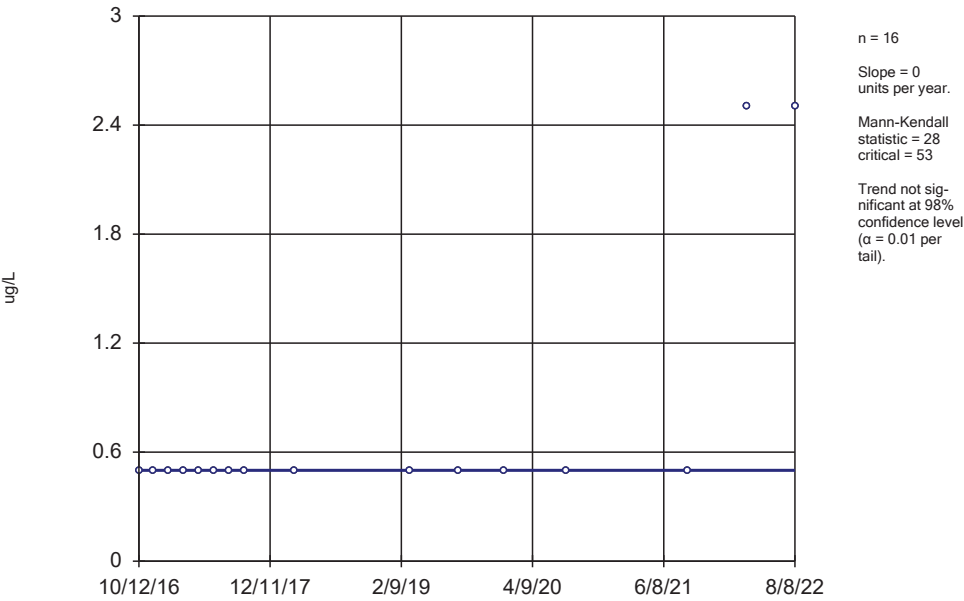
MW-7



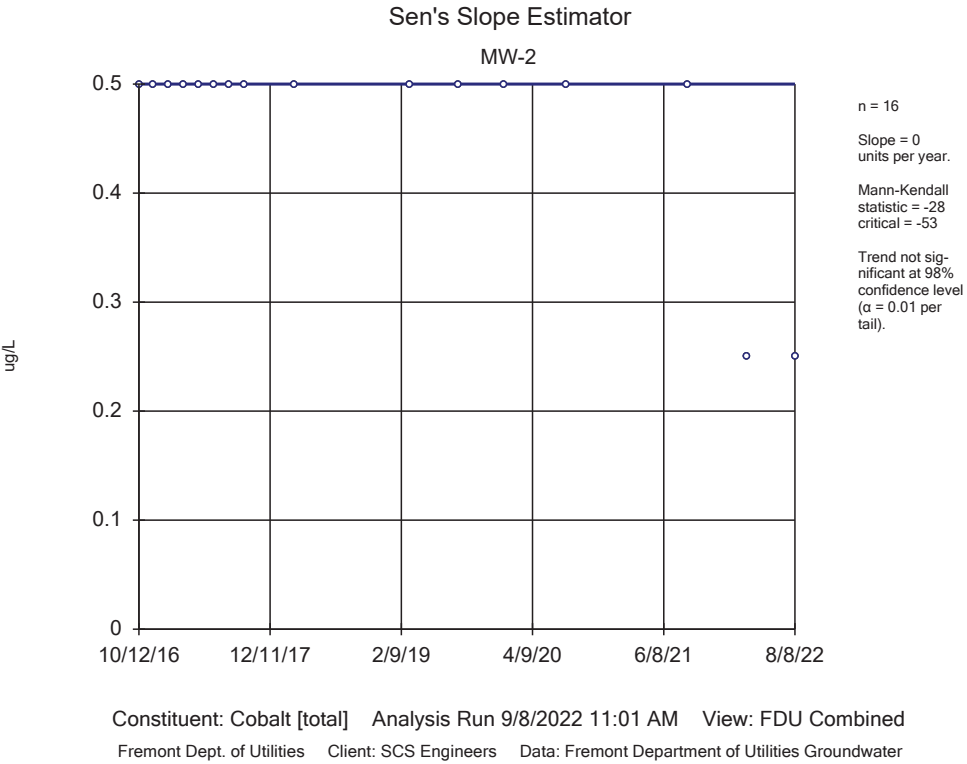
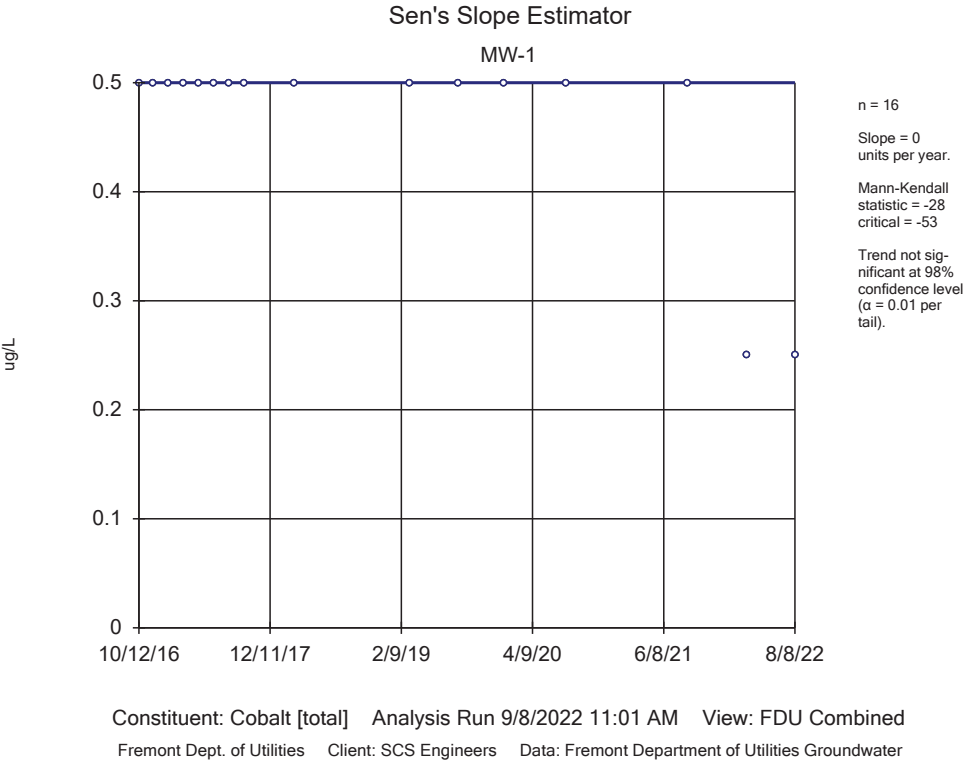
Constituent: Chromium [total] Analysis Run 9/8/2022 11:01 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

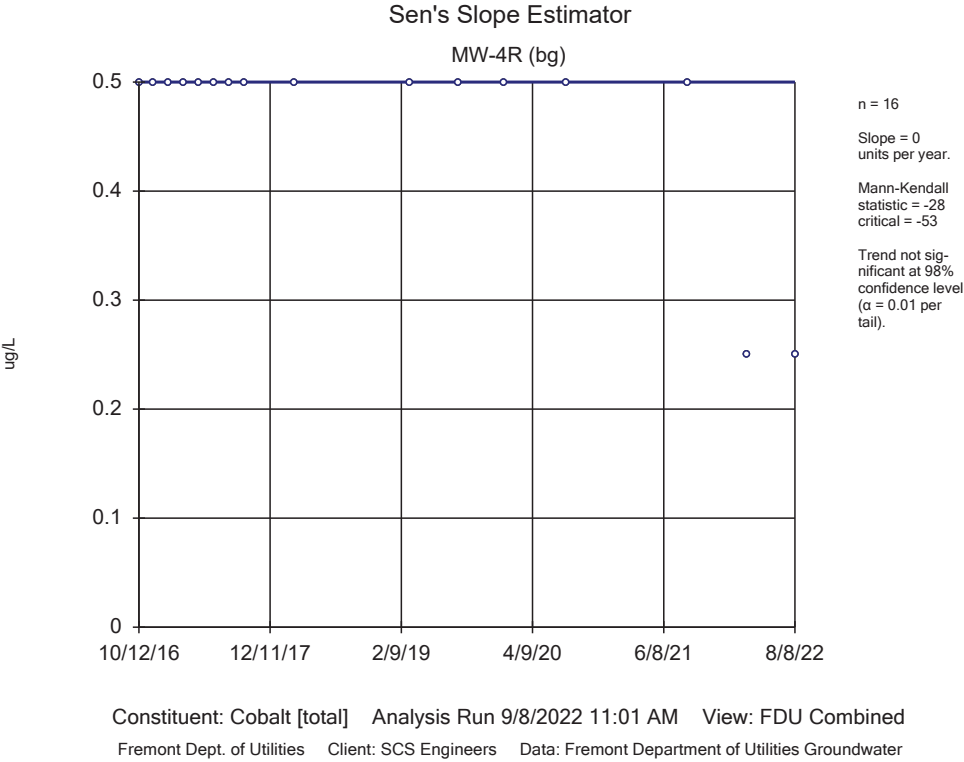
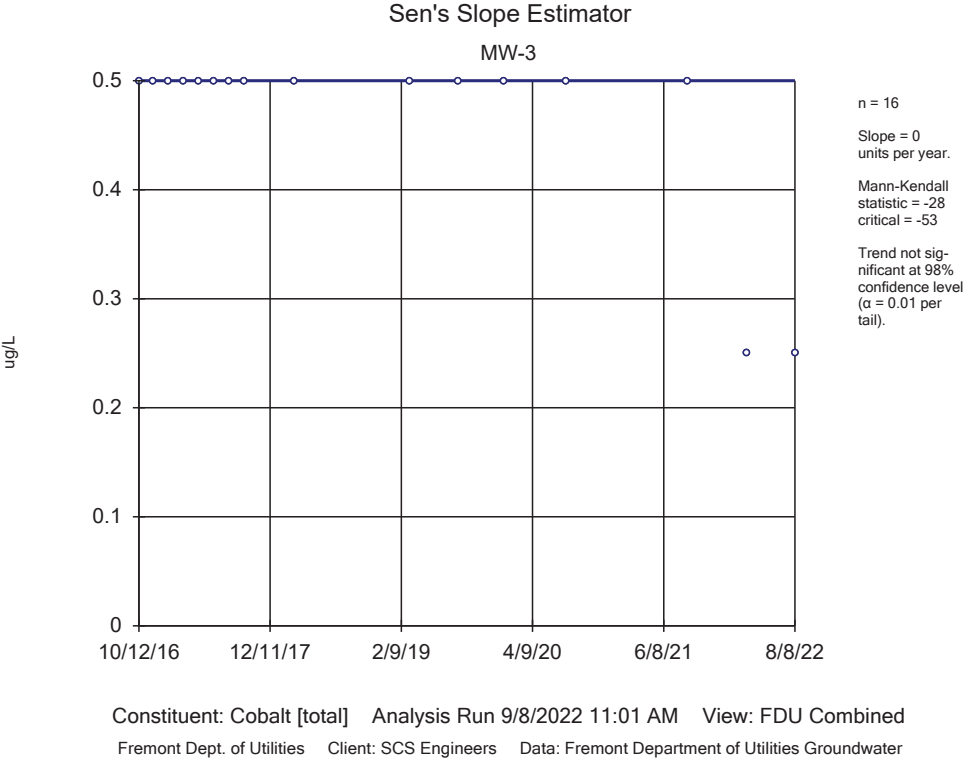
Sen's Slope Estimator

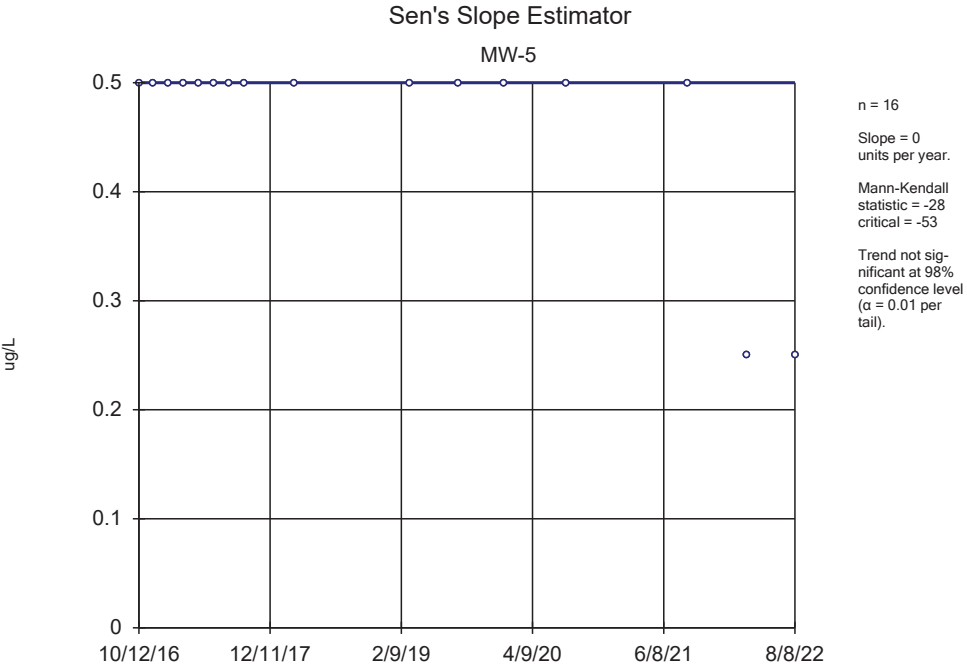
MW-8



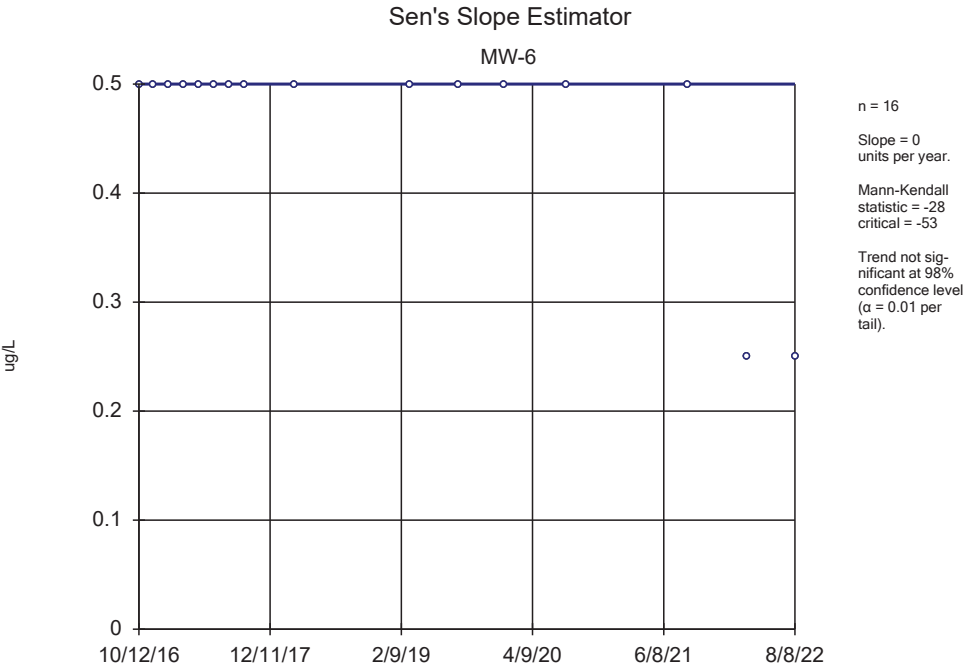
Constituent: Chromium [total] Analysis Run 9/8/2022 11:01 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater



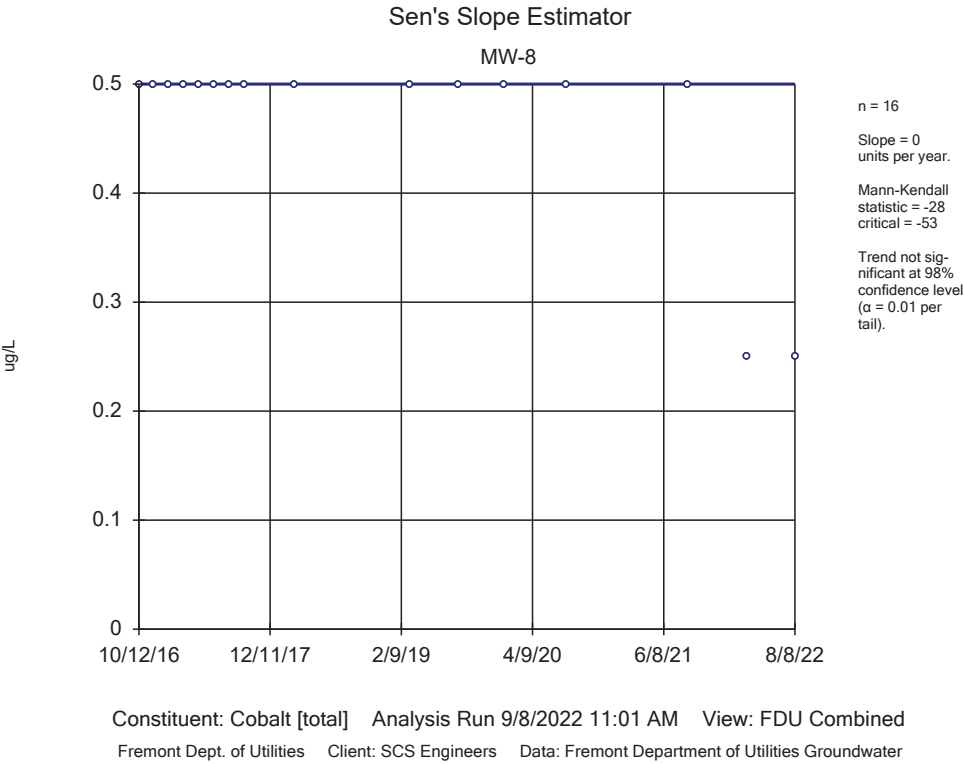
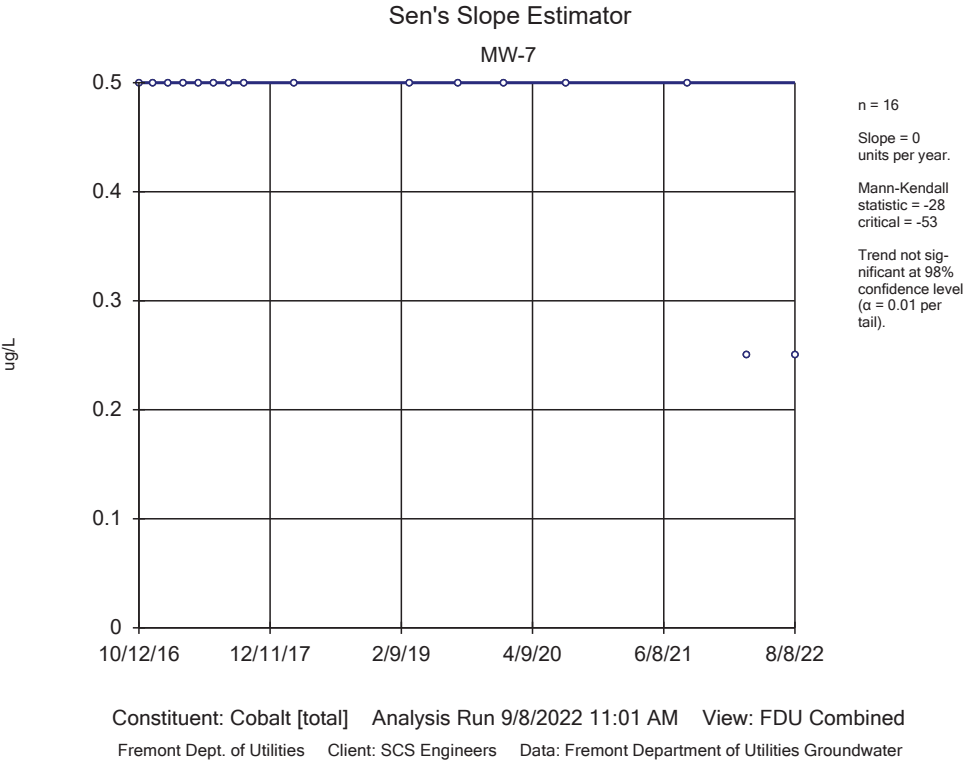




Constituent: Cobalt [total] Analysis Run 9/8/2022 11:01 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

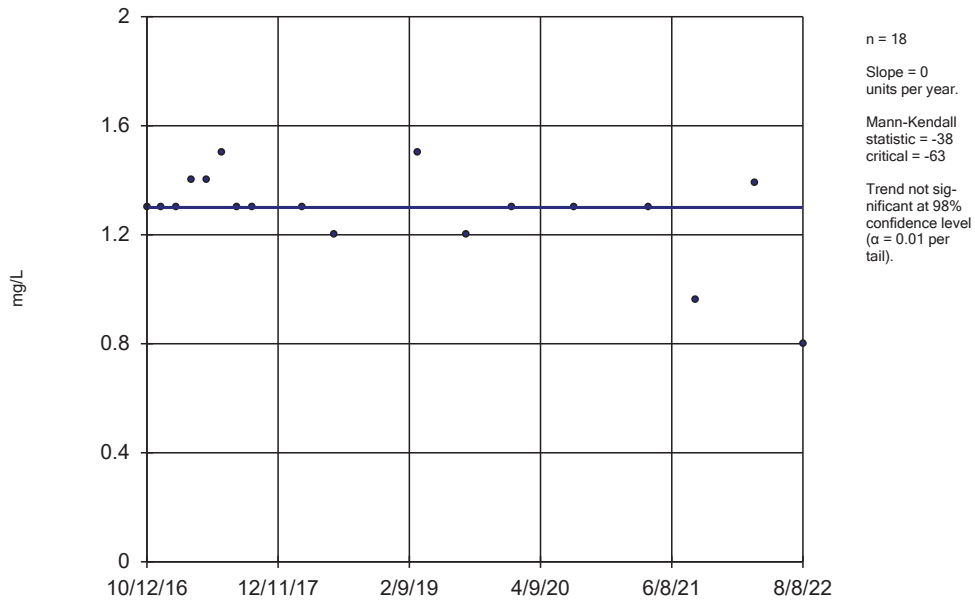


Constituent: Cobalt [total] Analysis Run 9/8/2022 11:01 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater



Sen's Slope Estimator

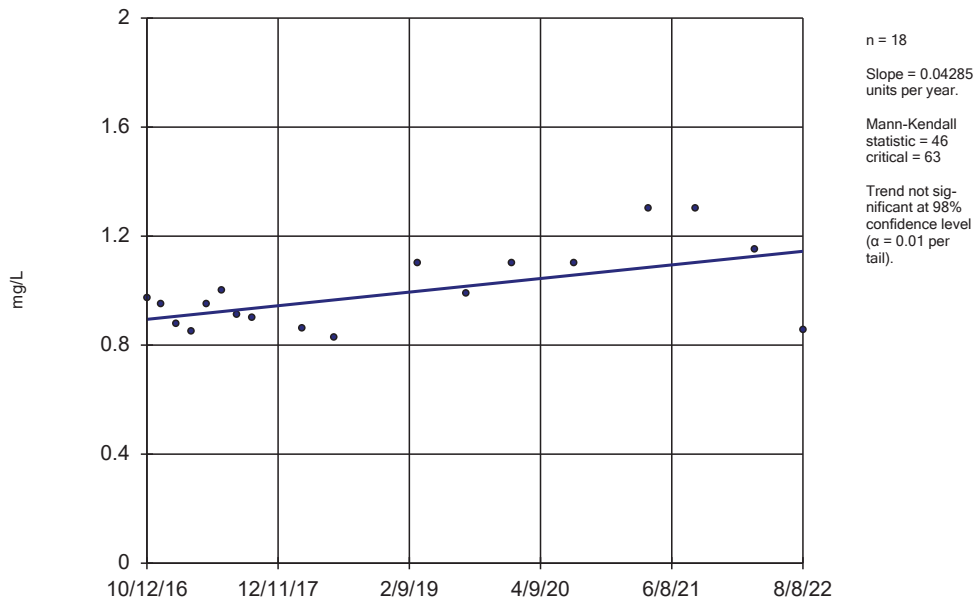
MW-1



Constituent: Fluoride Analysis Run 9/8/2022 11:01 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

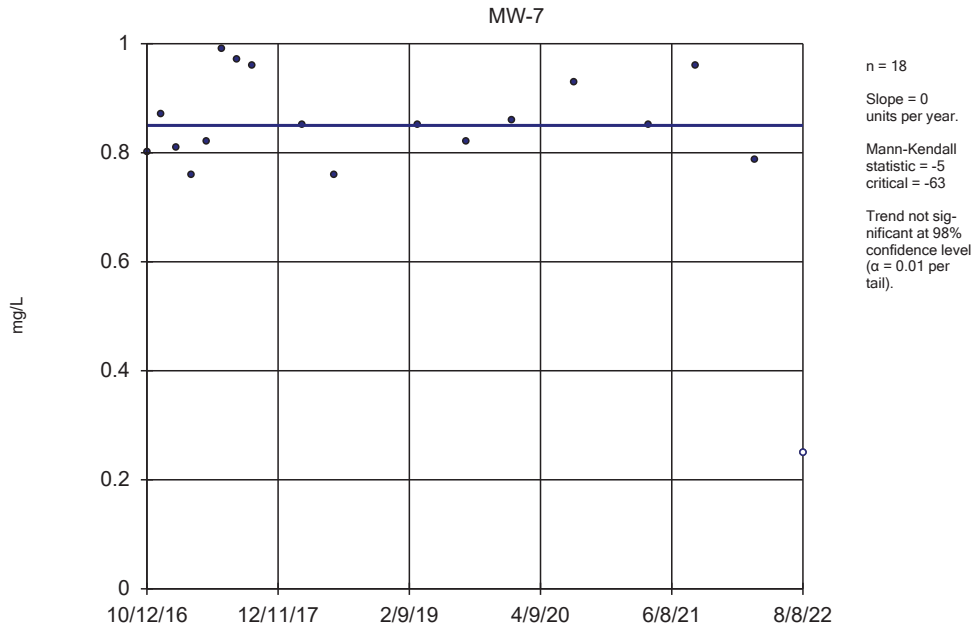
Sen's Slope Estimator

MW-2



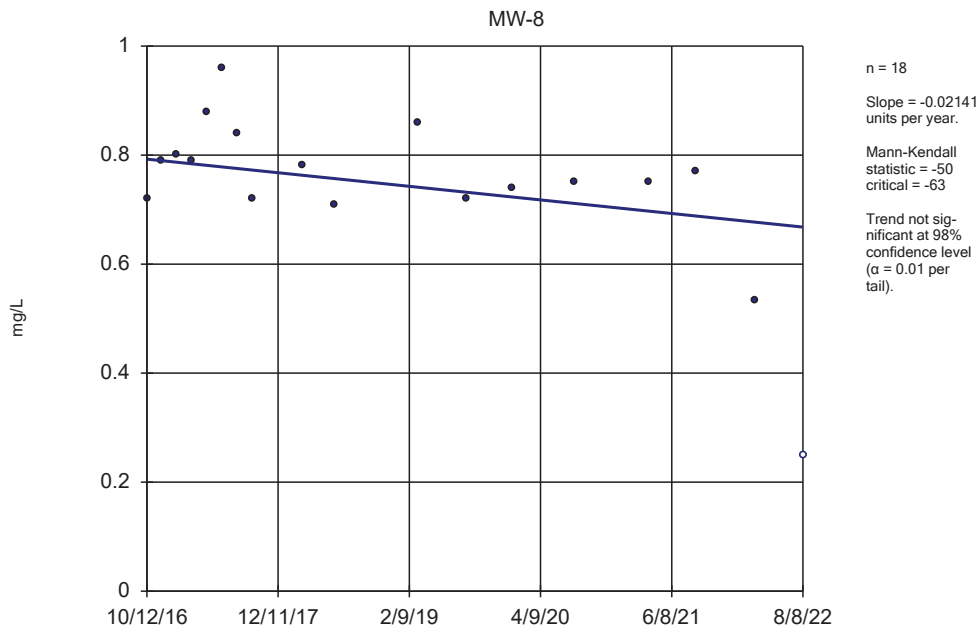
Constituent: Fluoride Analysis Run 9/8/2022 11:01 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator



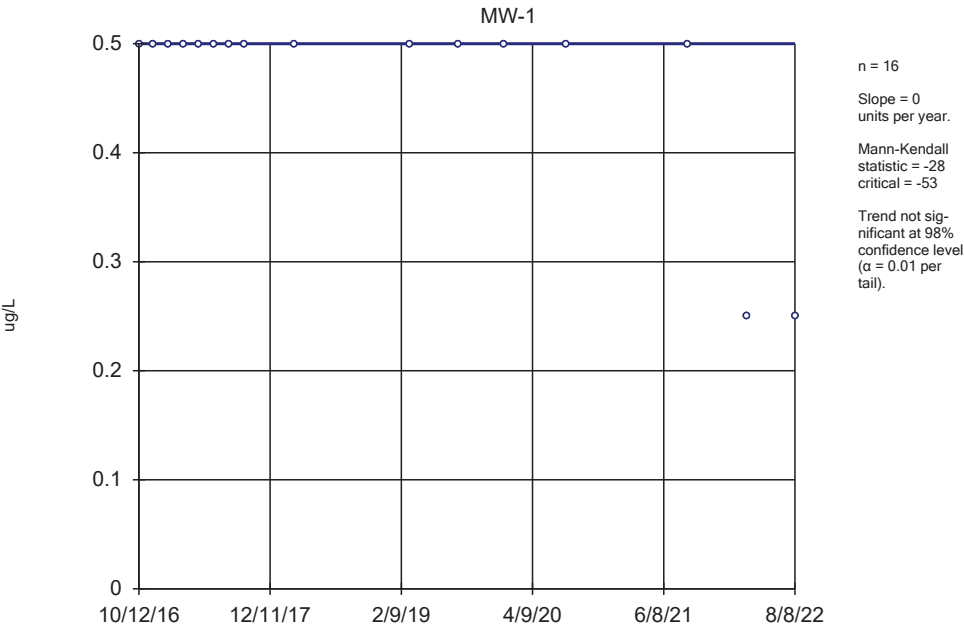
Constituent: Fluoride Analysis Run 9/8/2022 11:01 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator



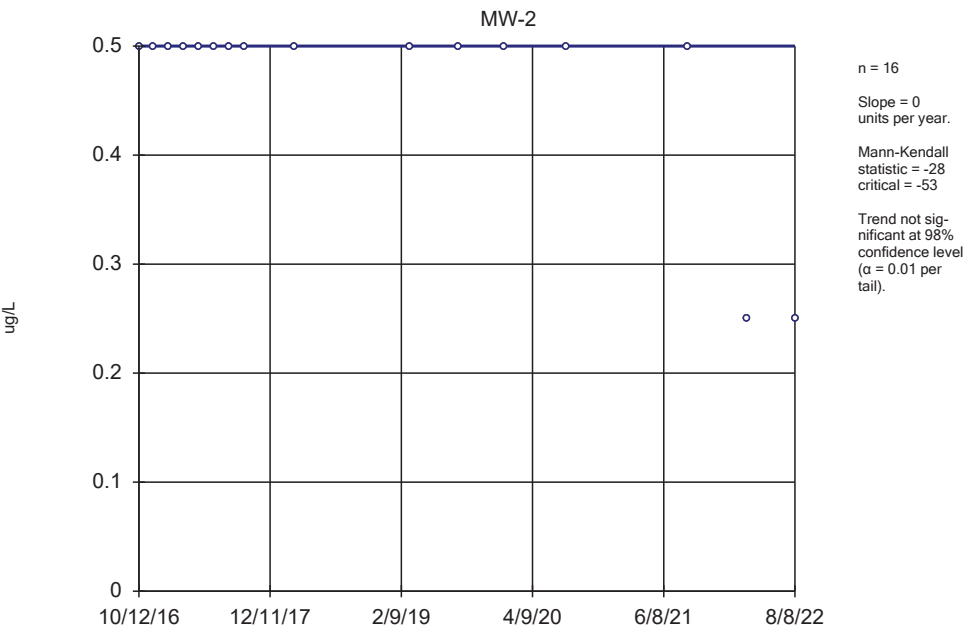
Constituent: Fluoride Analysis Run 9/8/2022 11:01 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

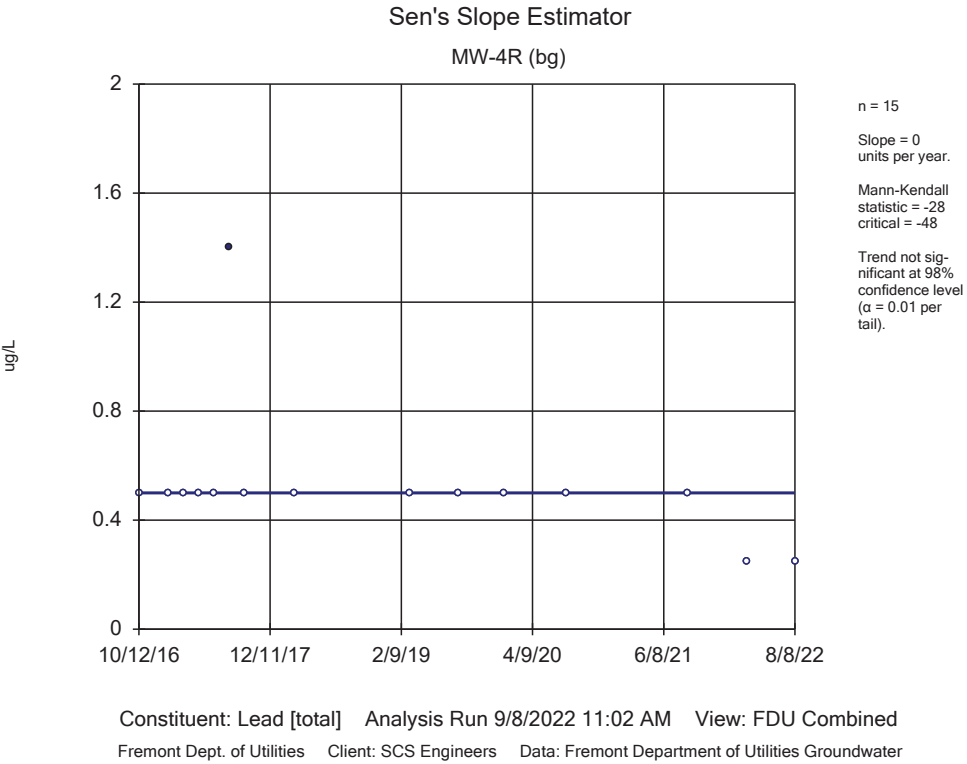
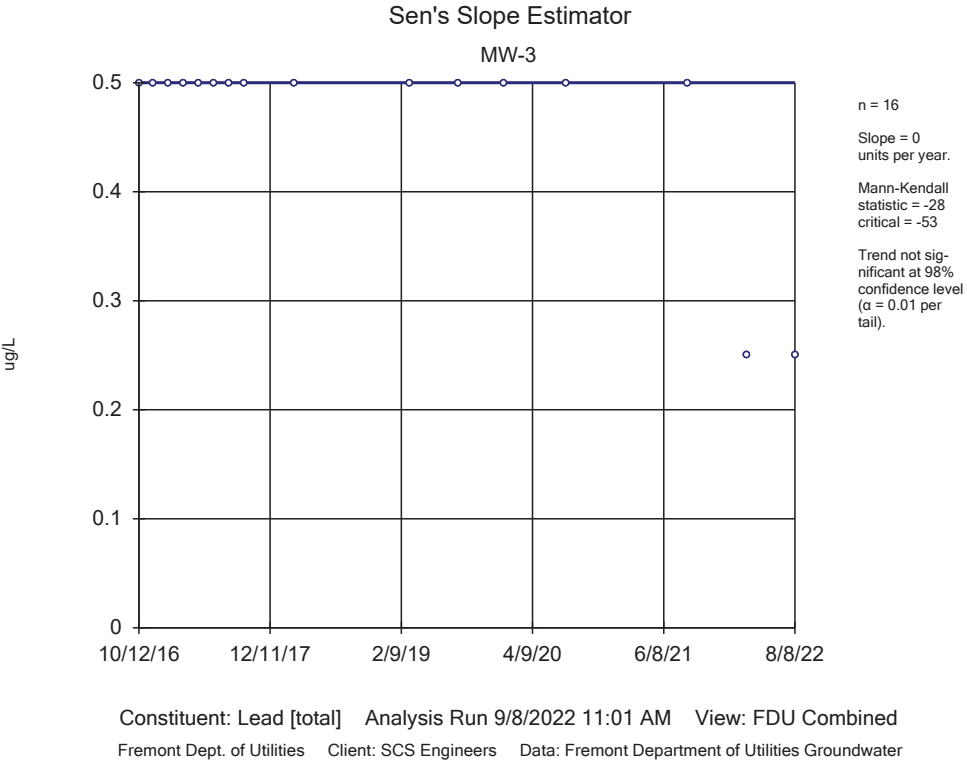


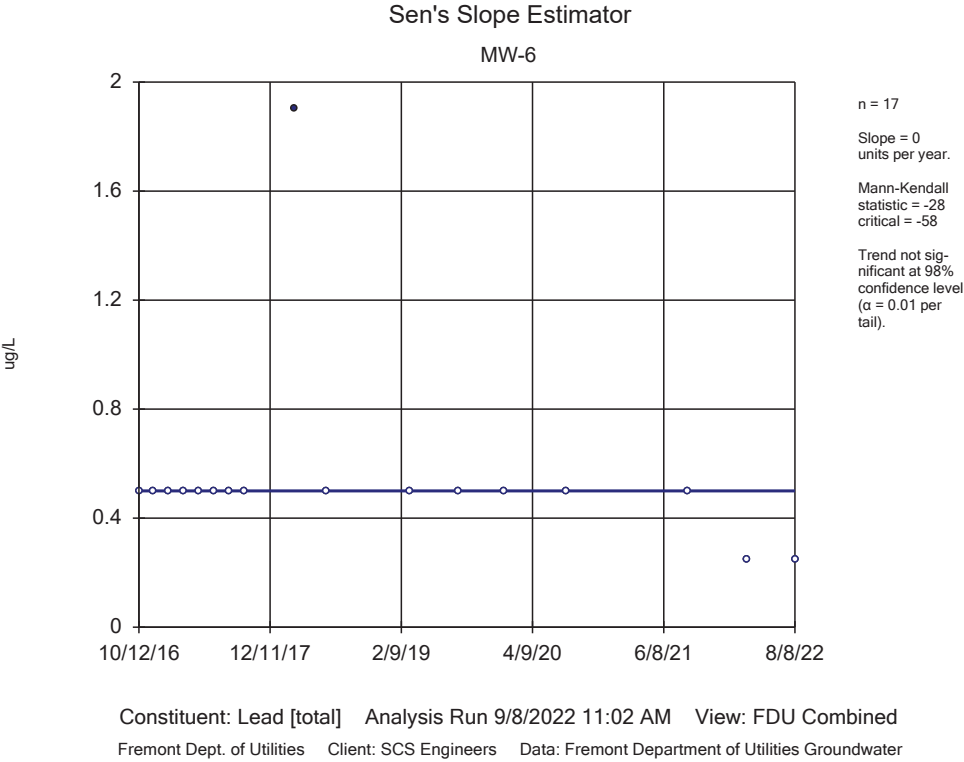
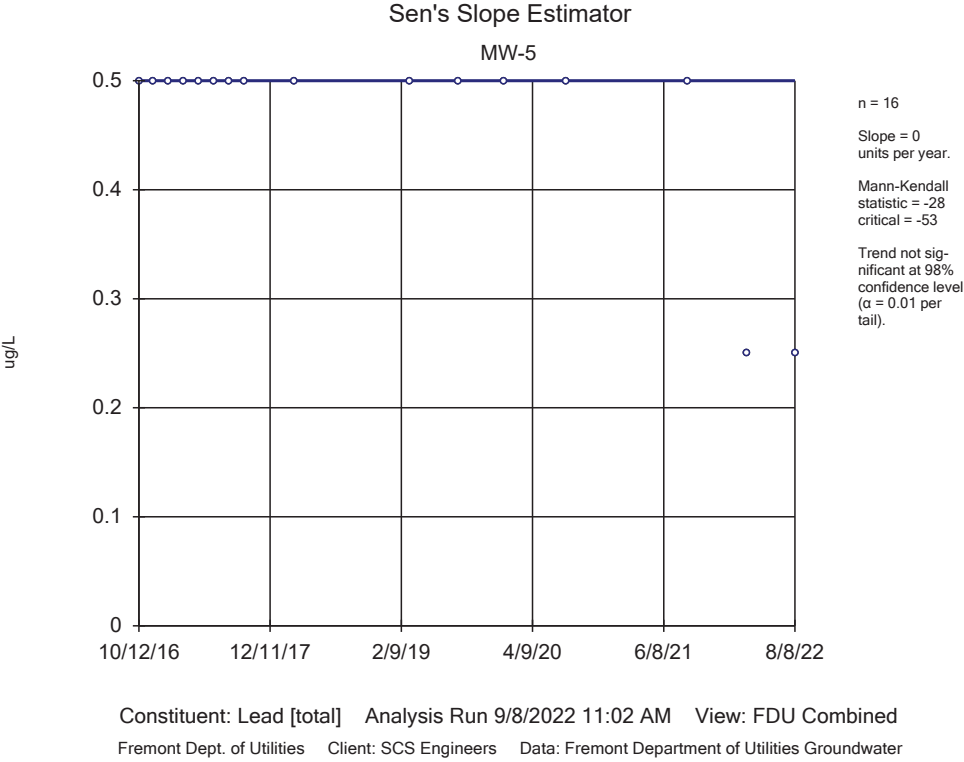
Constituent: Lead [total] Analysis Run 9/8/2022 11:01 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

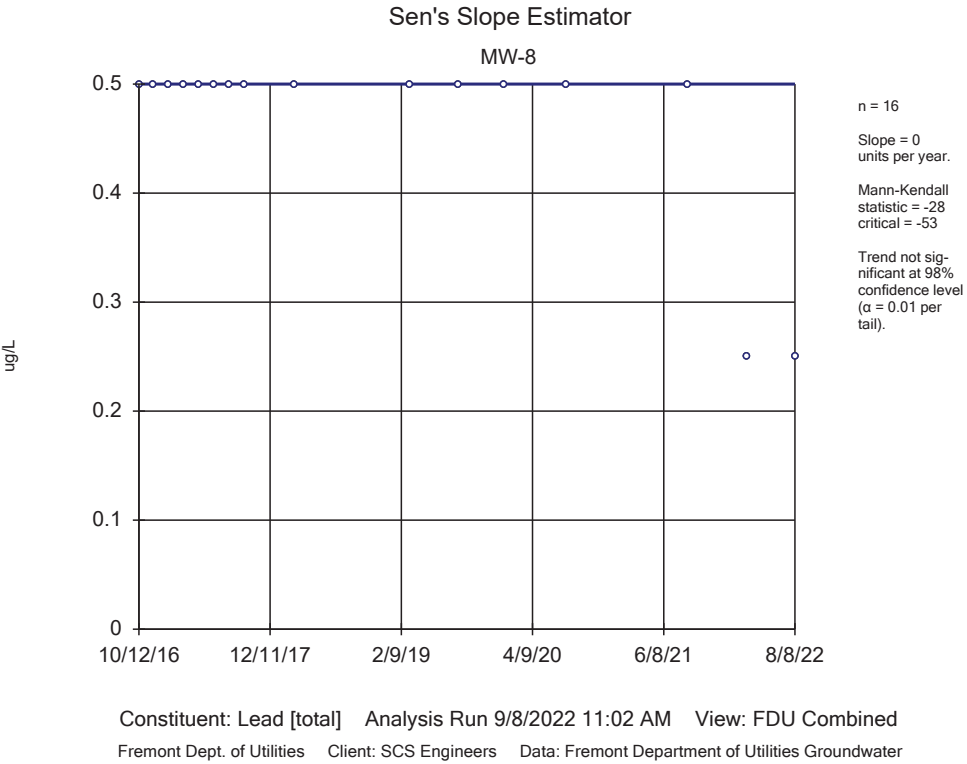
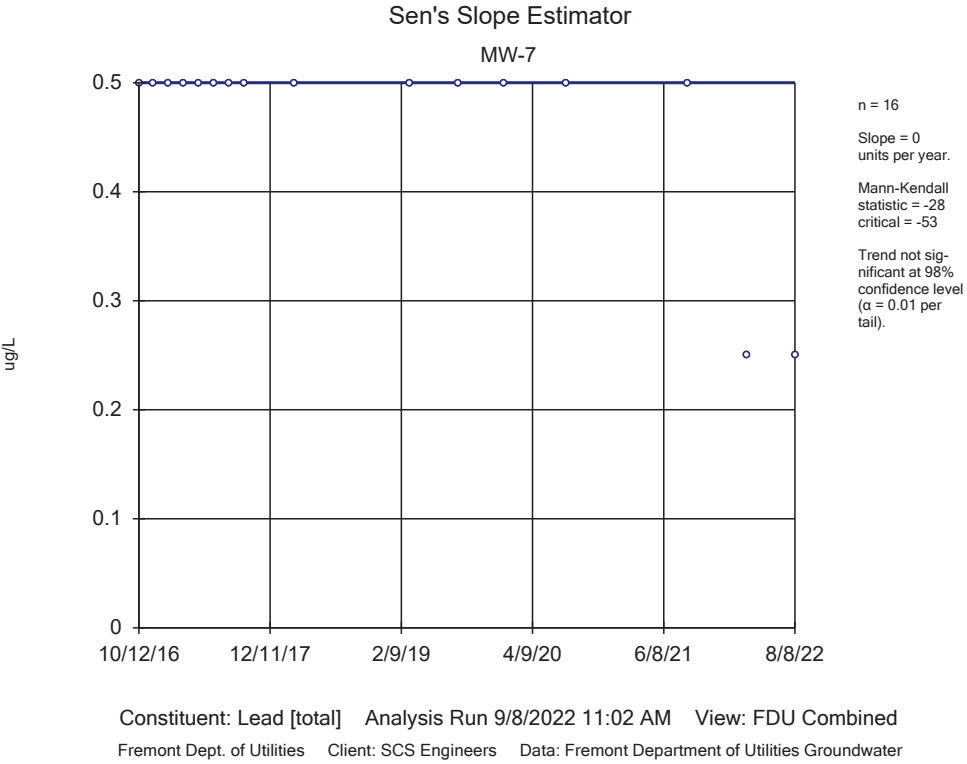
Sen's Slope Estimator



Constituent: Lead [total] Analysis Run 9/8/2022 11:01 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

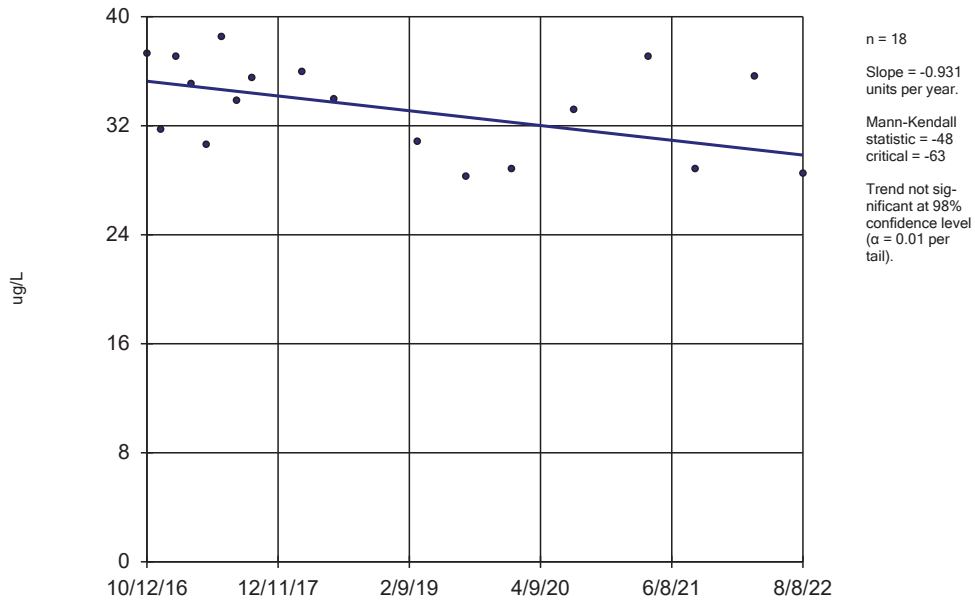






Sen's Slope Estimator

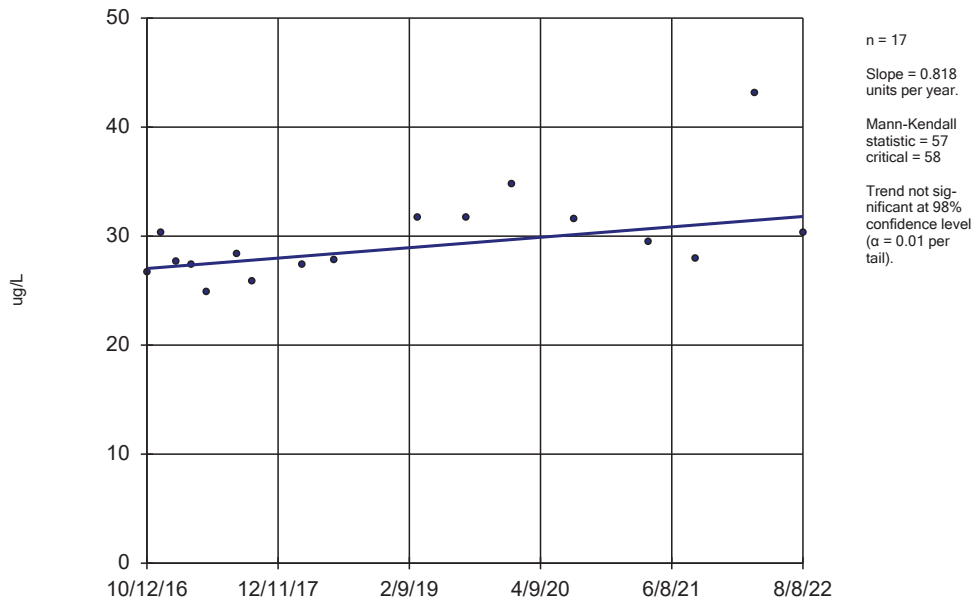
MW-1



Constituent: Lithium Analysis Run 9/8/2022 11:02 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

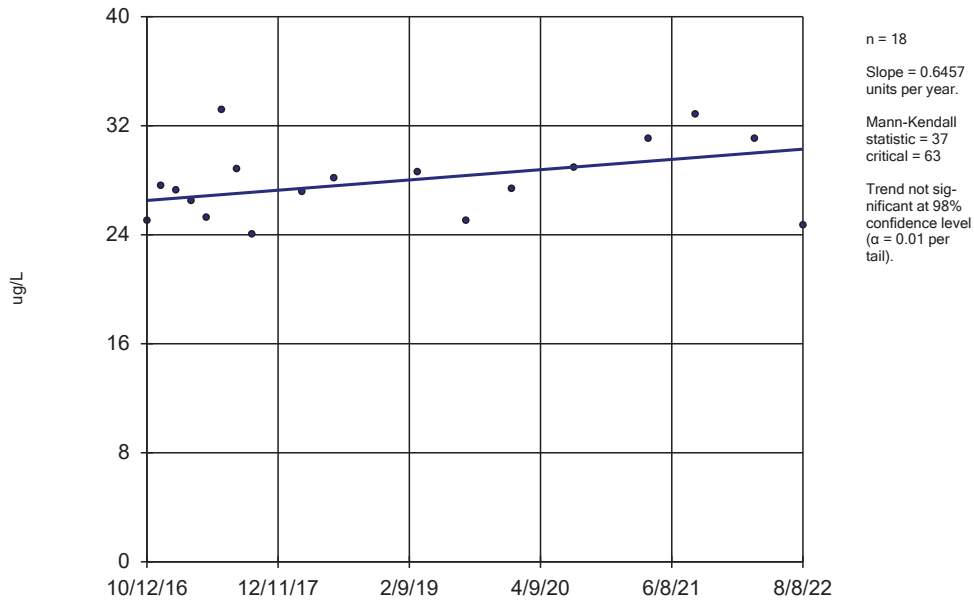
MW-2



Constituent: Lithium Analysis Run 9/8/2022 11:02 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

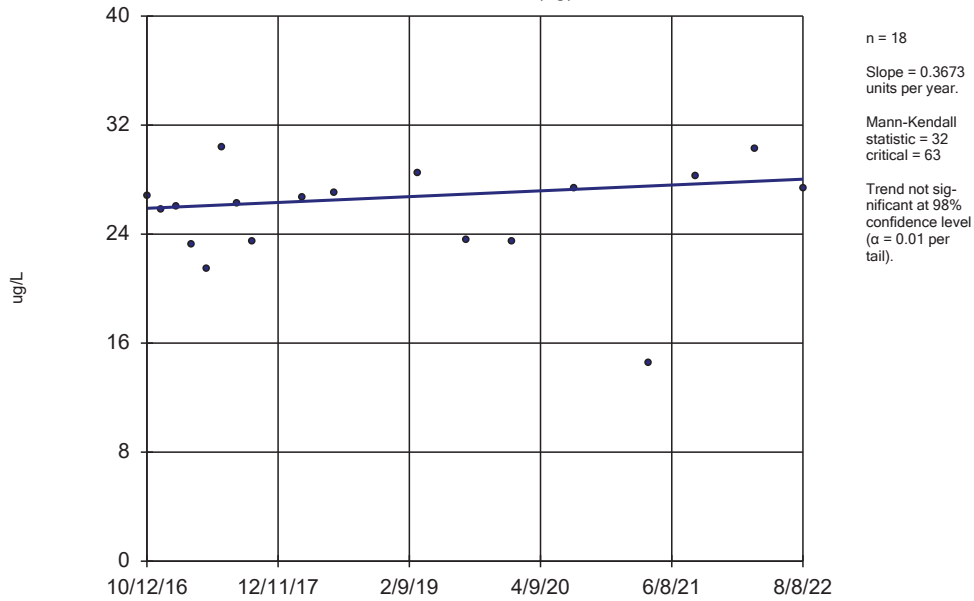
MW-3



Constituent: Lithium Analysis Run 9/8/2022 11:02 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

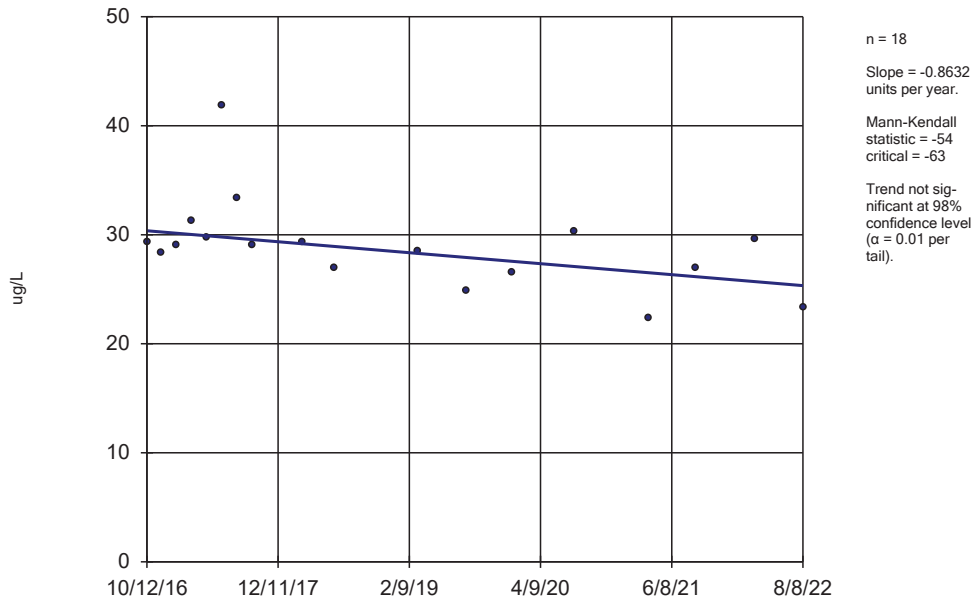
MW-4R (bg)



Constituent: Lithium Analysis Run 9/8/2022 11:02 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

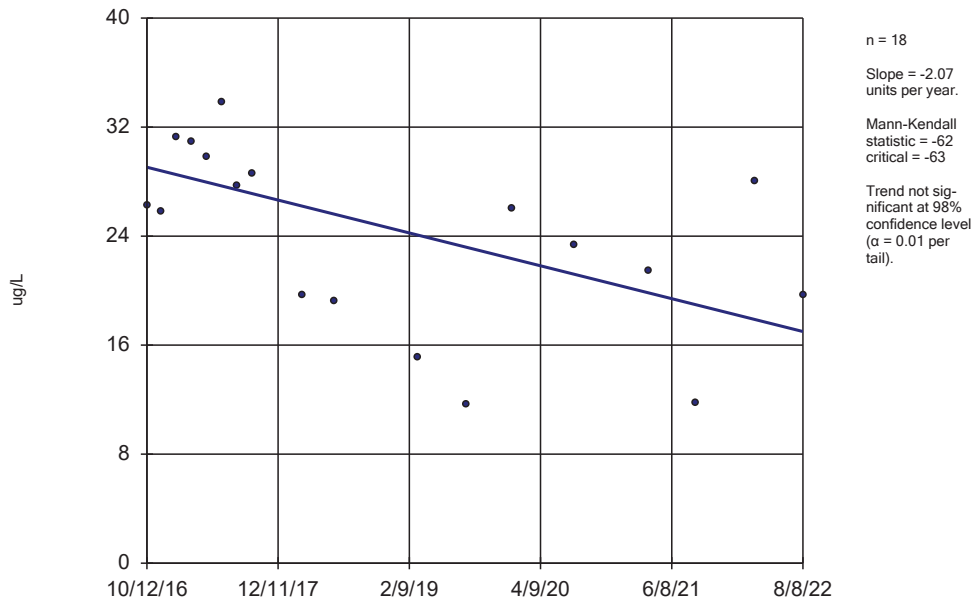
MW-5



Constituent: Lithium Analysis Run 9/8/2022 11:02 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

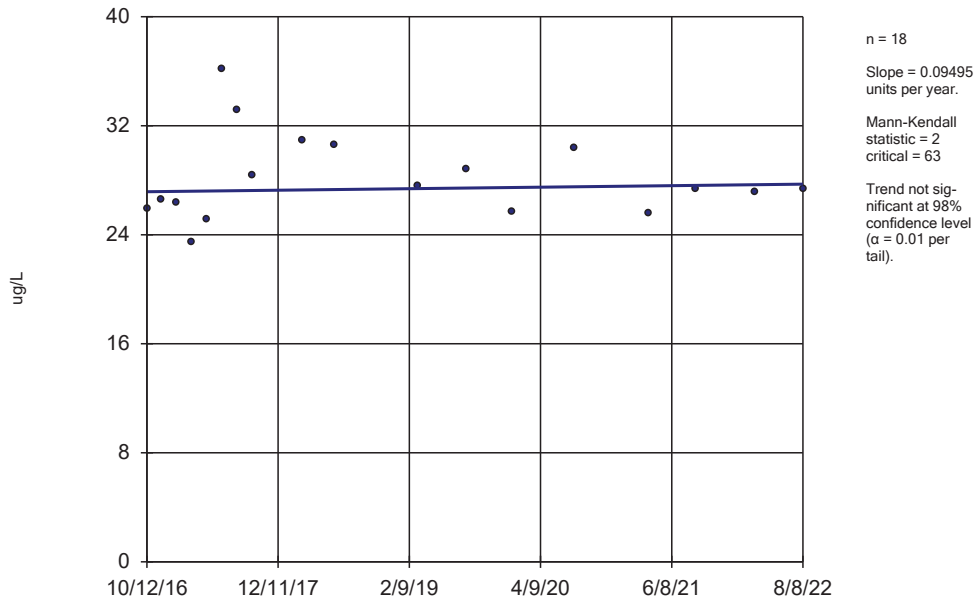
MW-6



Constituent: Lithium Analysis Run 9/8/2022 11:02 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

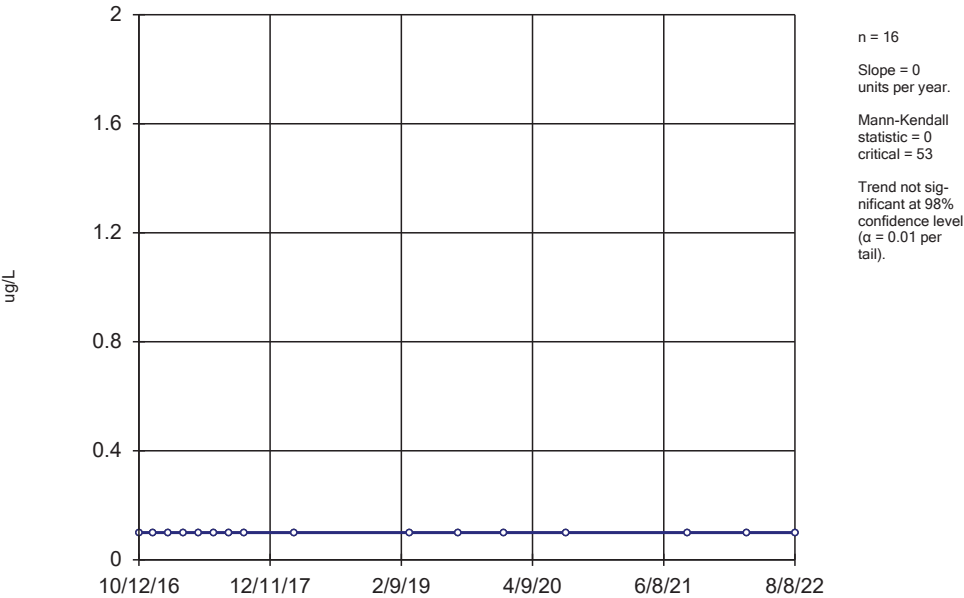
Sen's Slope Estimator

MW-7



Sen's Slope Estimator

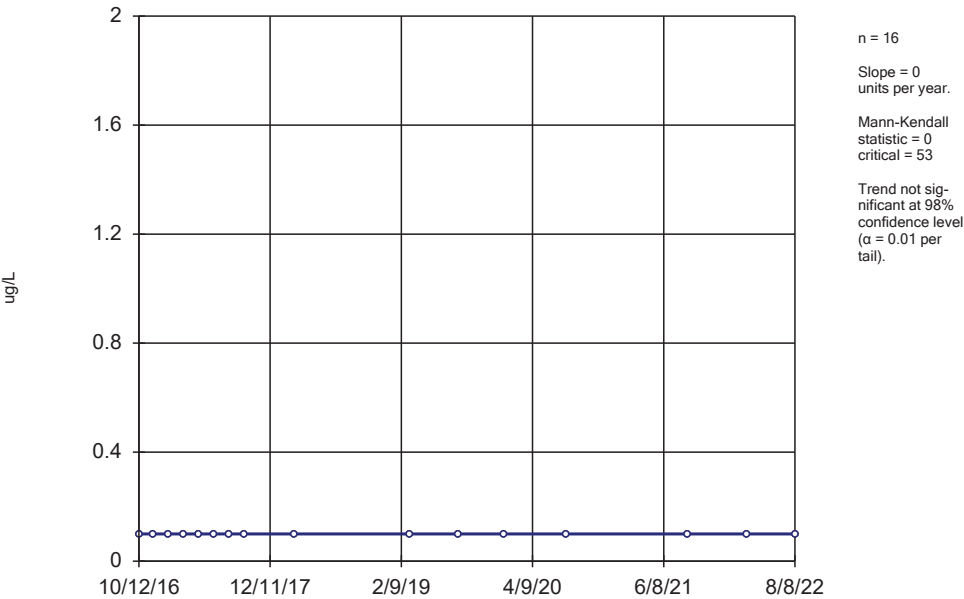
MW-1



Constituent: Mercury Analysis Run 9/8/2022 11:02 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

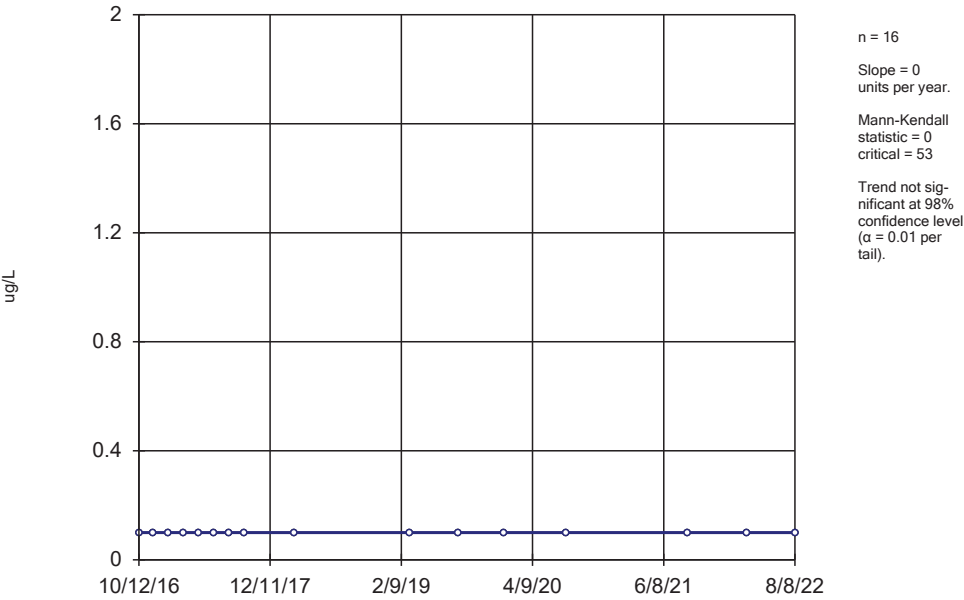
MW-2



Constituent: Mercury Analysis Run 9/8/2022 11:02 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

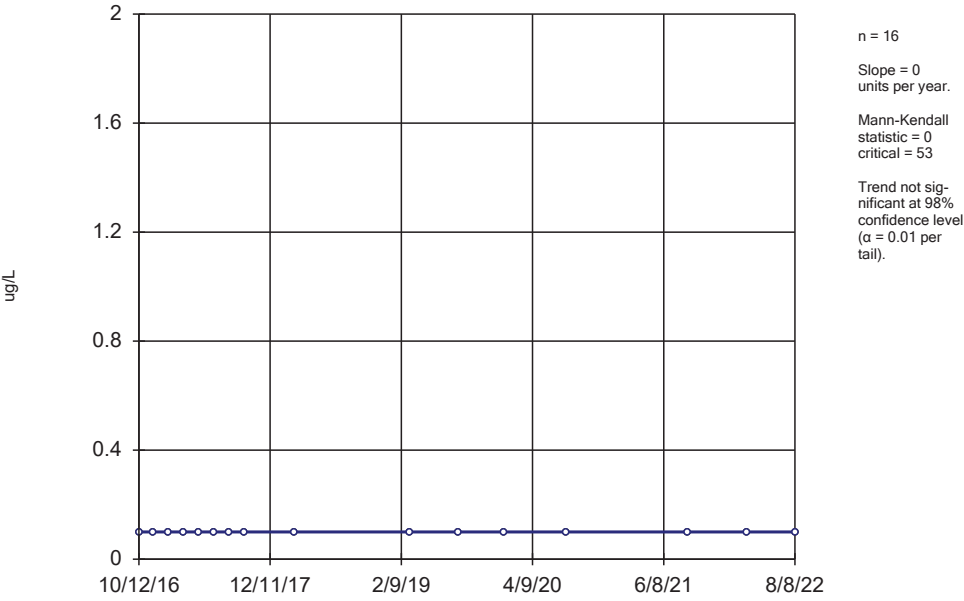
MW-3



Constituent: Mercury Analysis Run 9/8/2022 11:02 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

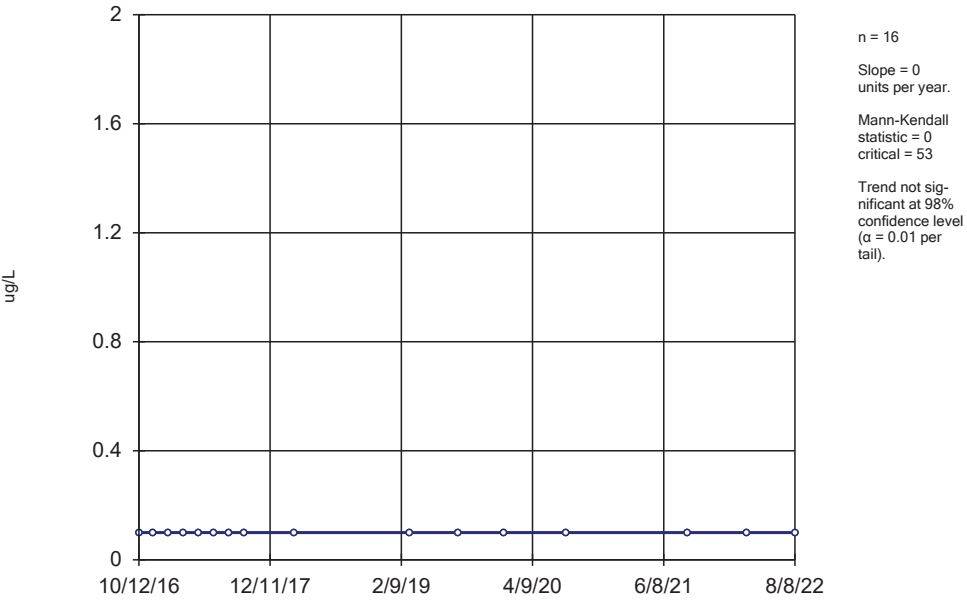
MW-4R (bg)



Constituent: Mercury Analysis Run 9/8/2022 11:02 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

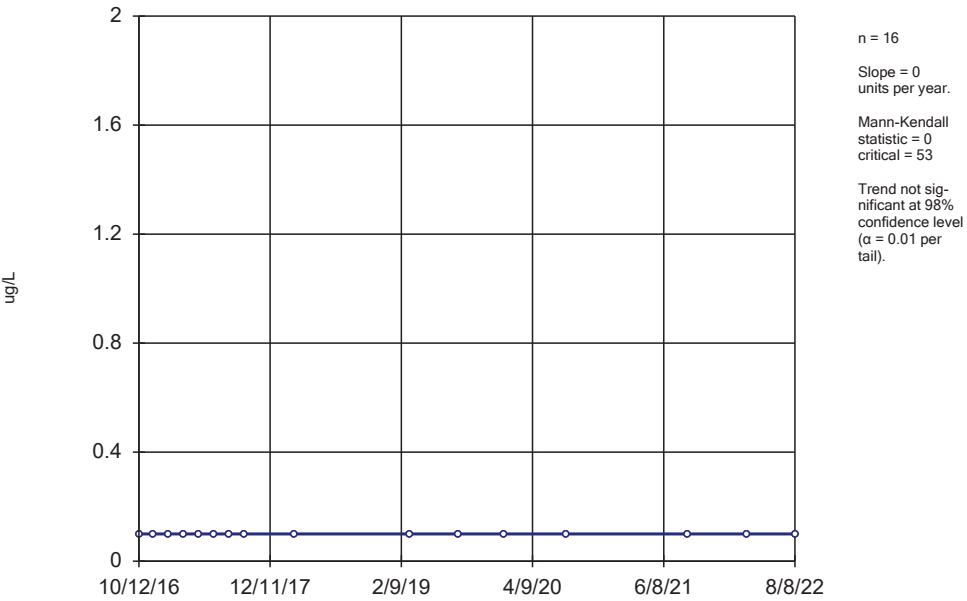
MW-5



Constituent: Mercury Analysis Run 9/8/2022 11:02 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

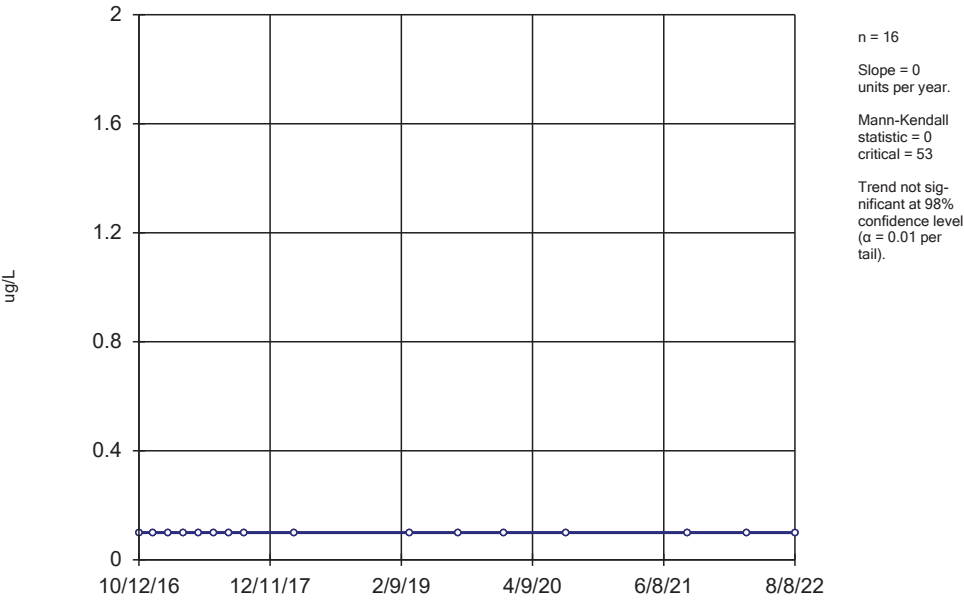
MW-6



Constituent: Mercury Analysis Run 9/8/2022 11:02 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

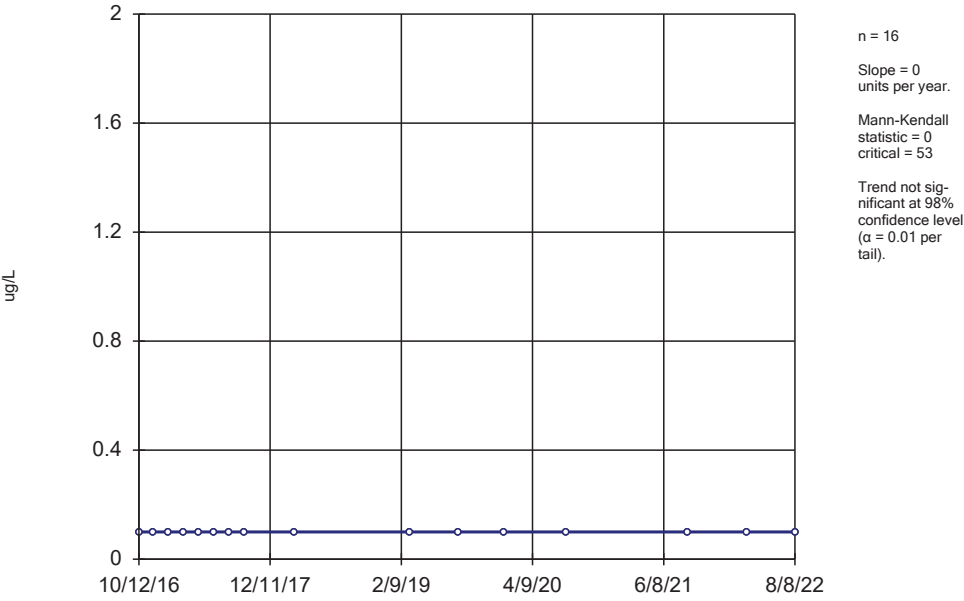
MW-7



Constituent: Mercury Analysis Run 9/8/2022 11:02 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

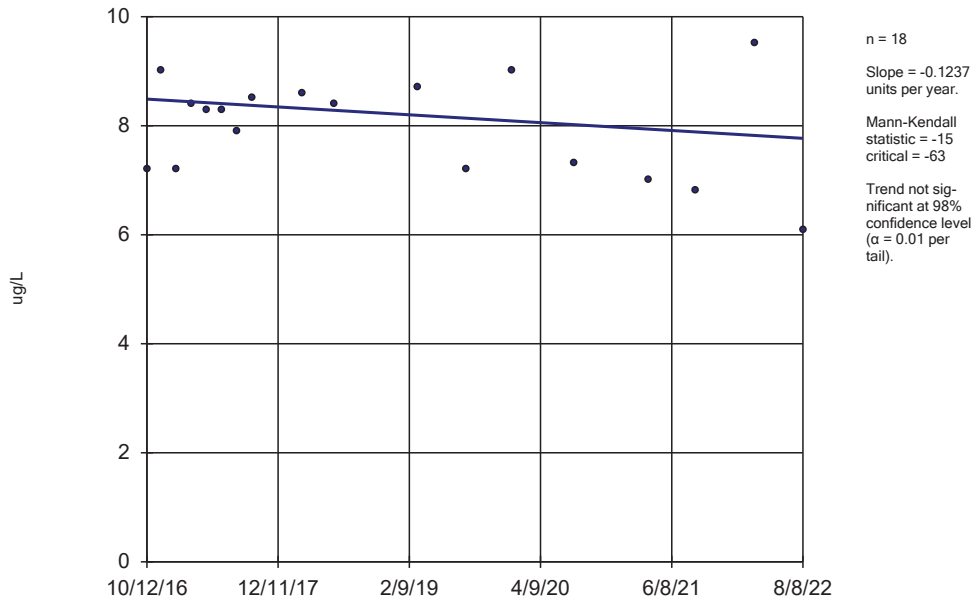
MW-8



Constituent: Mercury Analysis Run 9/8/2022 11:02 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

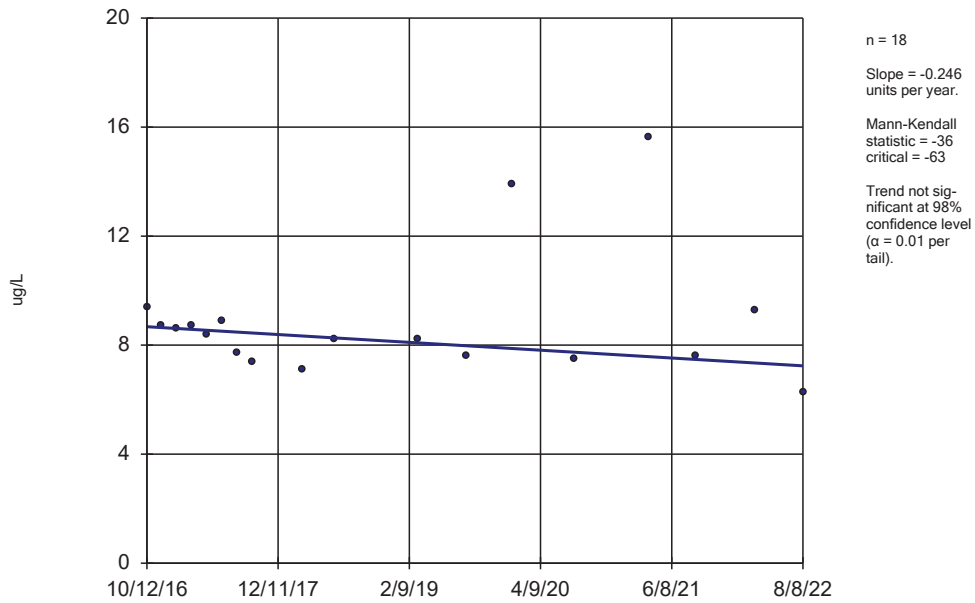
MW-1



Constituent: Molybdenum Analysis Run 9/8/2022 11:02 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

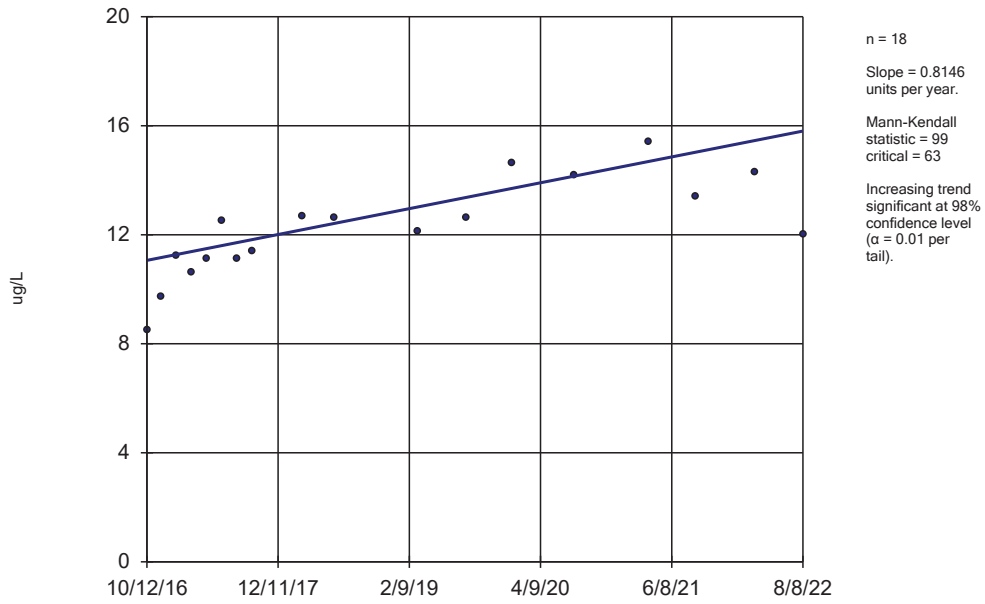
MW-2



Constituent: Molybdenum Analysis Run 9/8/2022 11:02 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

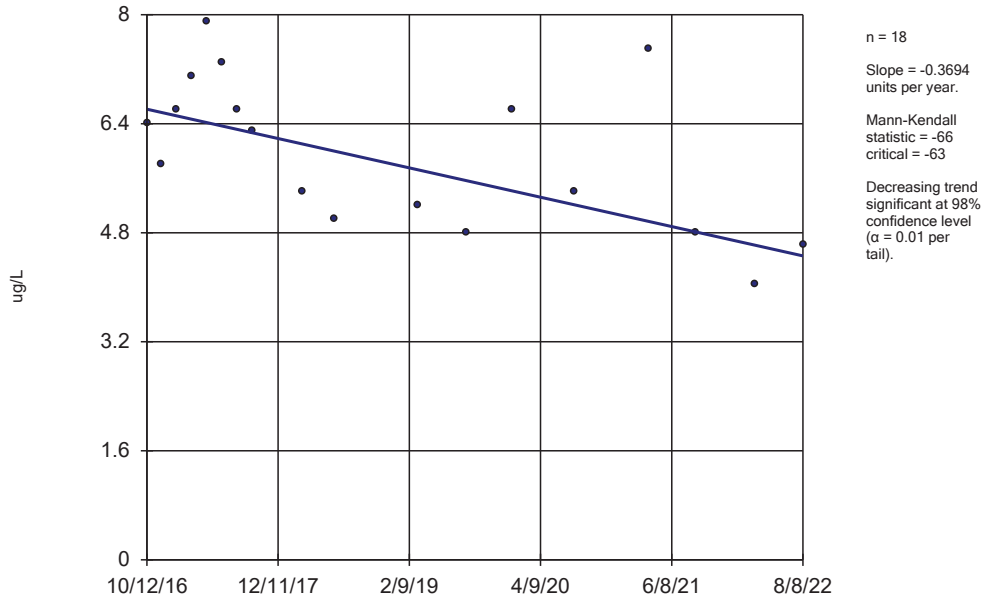
Sen's Slope Estimator

MW-3



Sen's Slope Estimator

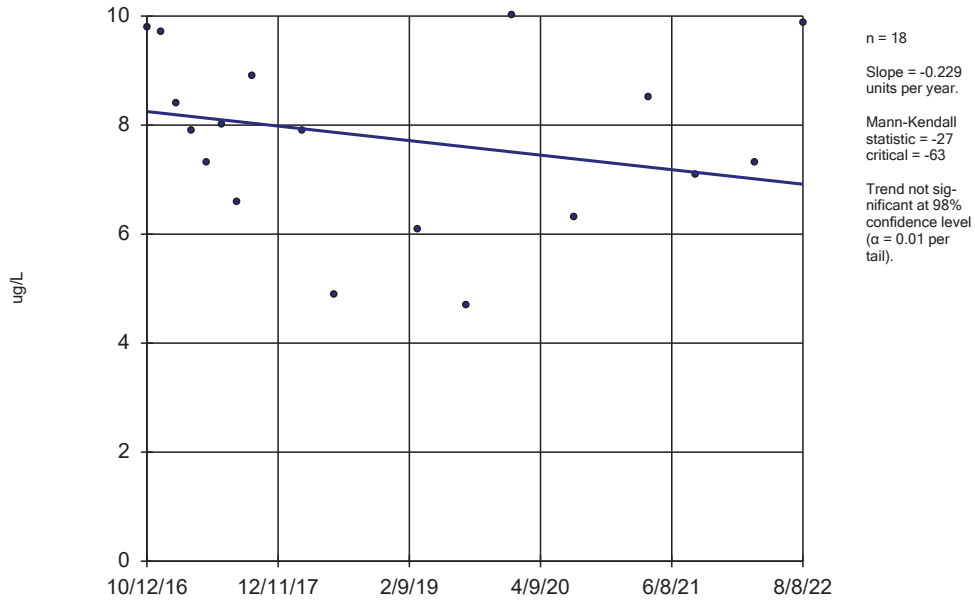
MW-5



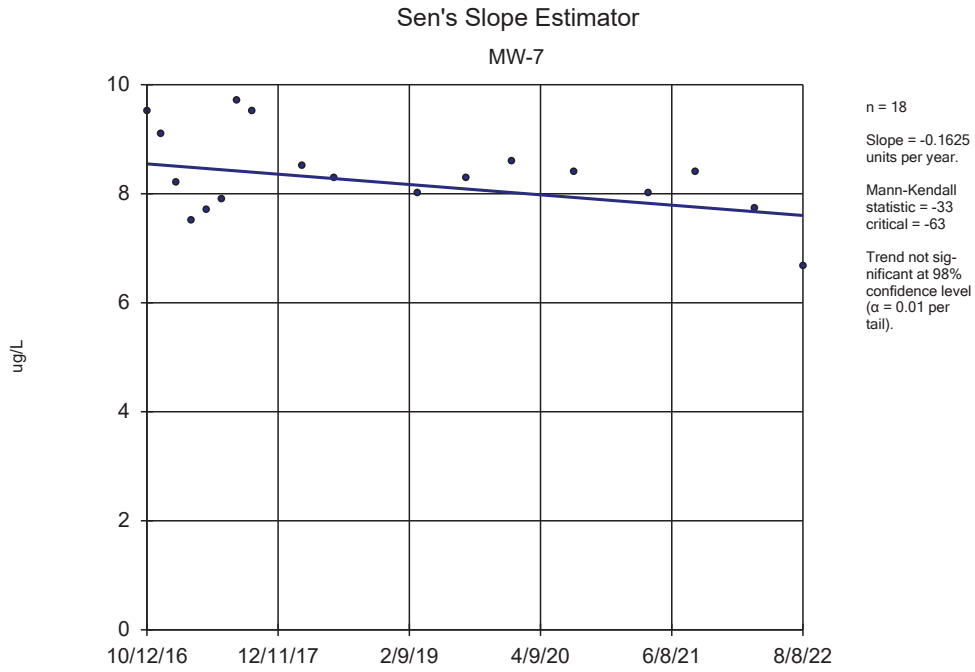
Constituent: Molybdenum Analysis Run 9/8/2022 11:02 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

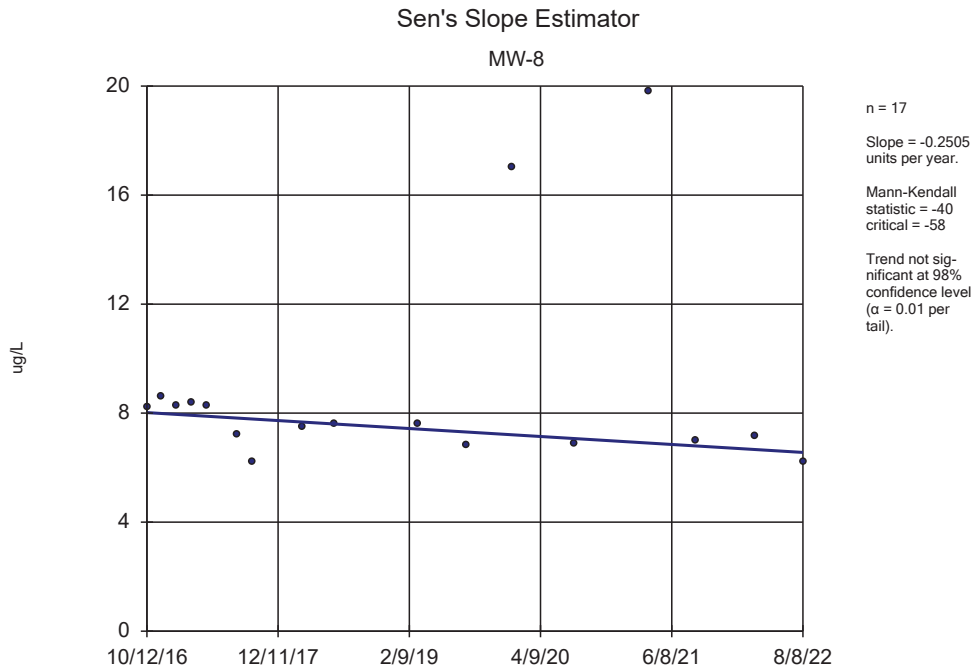
MW-6



Constituent: Molybdenum Analysis Run 9/8/2022 11:03 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater



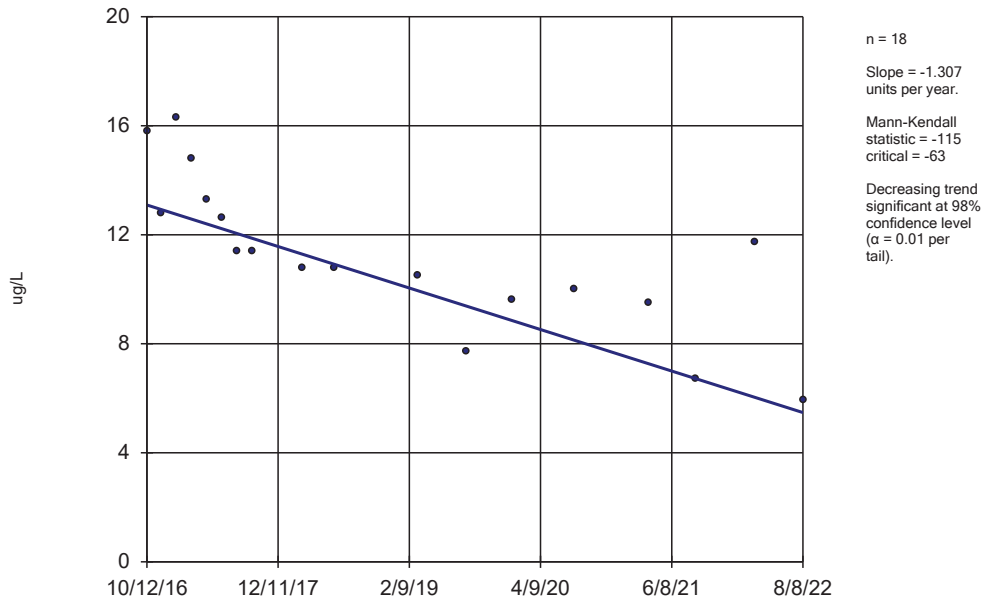
Constituent: Molybdenum Analysis Run 9/8/2022 11:03 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater



Constituent: Molybdenum Analysis Run 9/8/2022 11:03 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

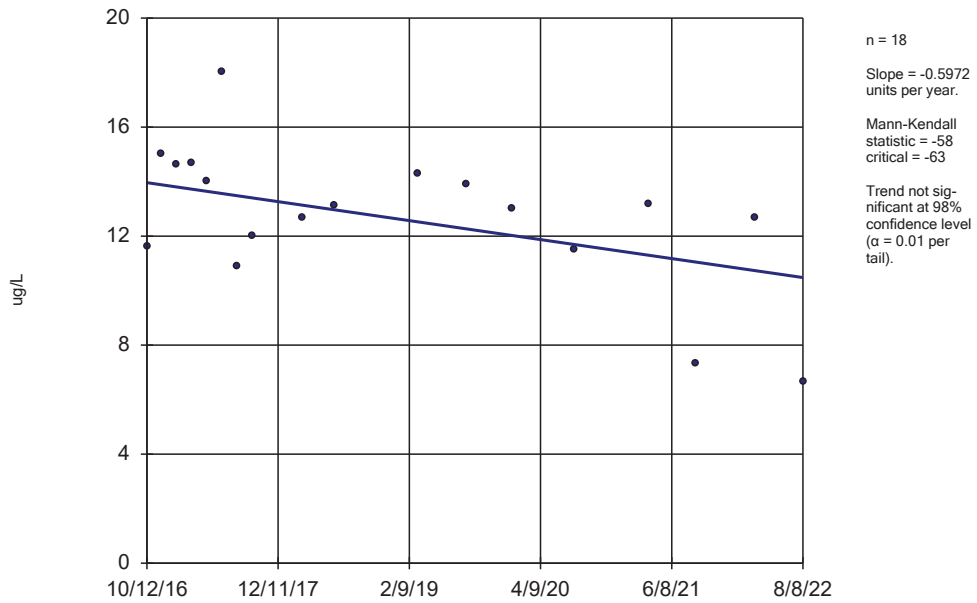
MW-1



Constituent: Selenium [total] Analysis Run 9/8/2022 11:03 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

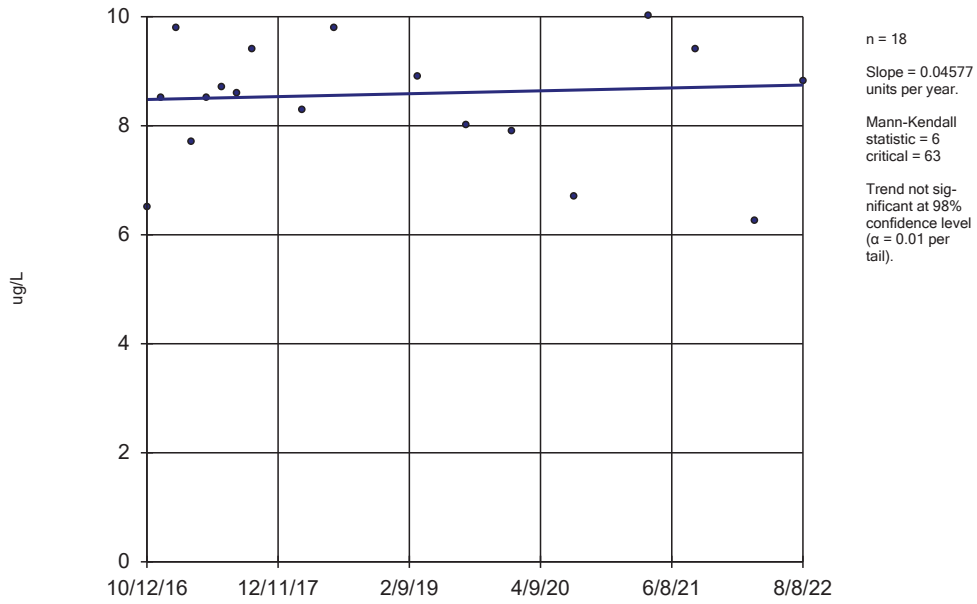
MW-2



Constituent: Selenium [total] Analysis Run 9/8/2022 11:03 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

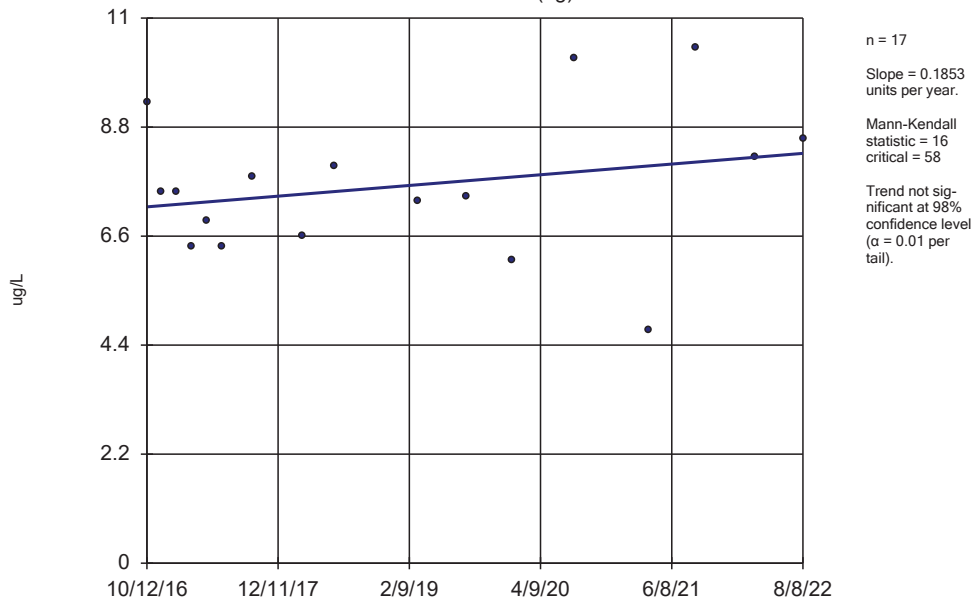
MW-3



Constituent: Selenium [total] Analysis Run 9/8/2022 11:03 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

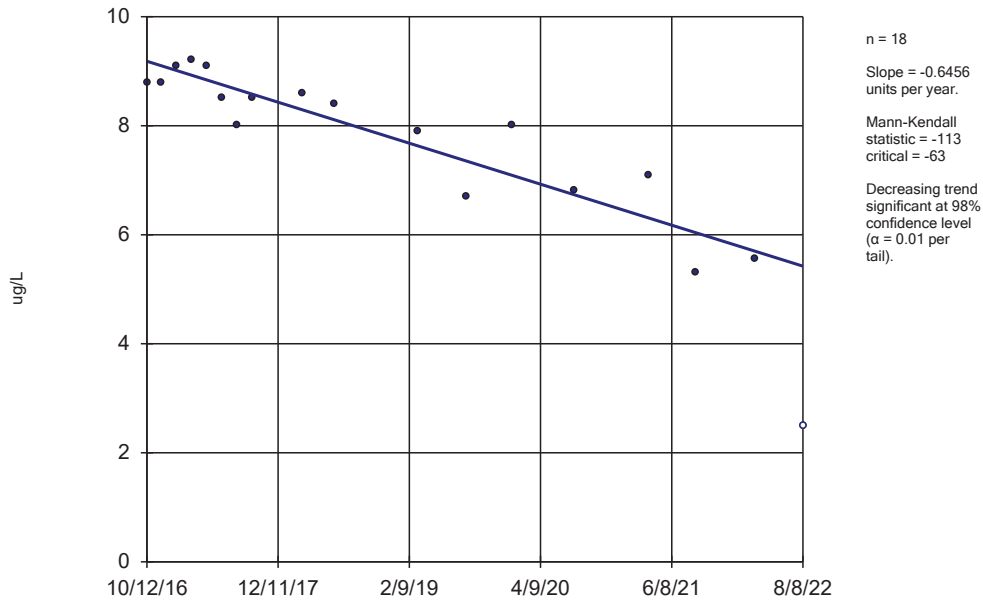
MW-4R (bg)



Constituent: Selenium [total] Analysis Run 9/8/2022 11:03 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

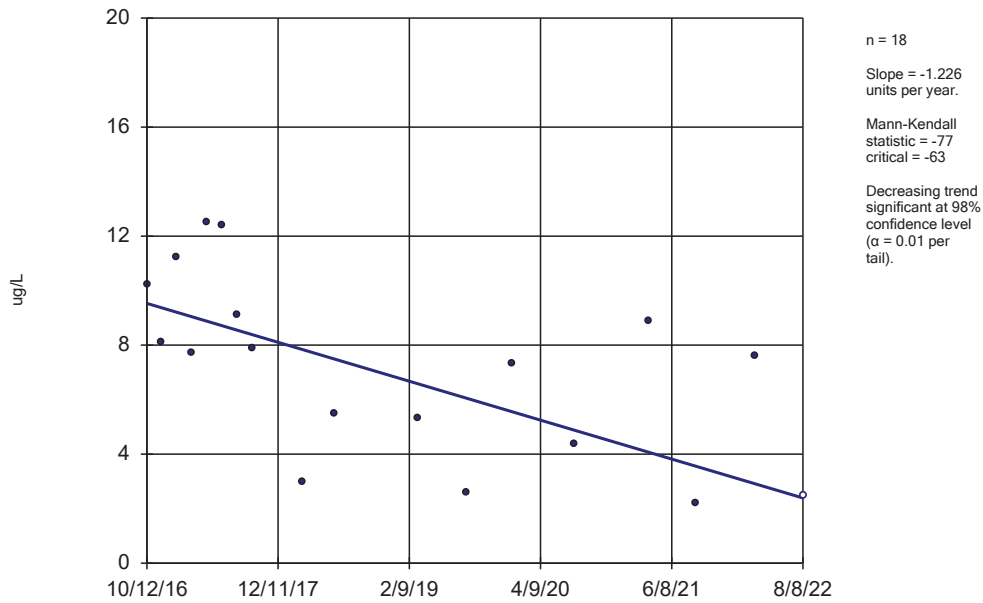
MW-5



Constituent: Selenium [total] Analysis Run 9/8/2022 11:03 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

MW-6

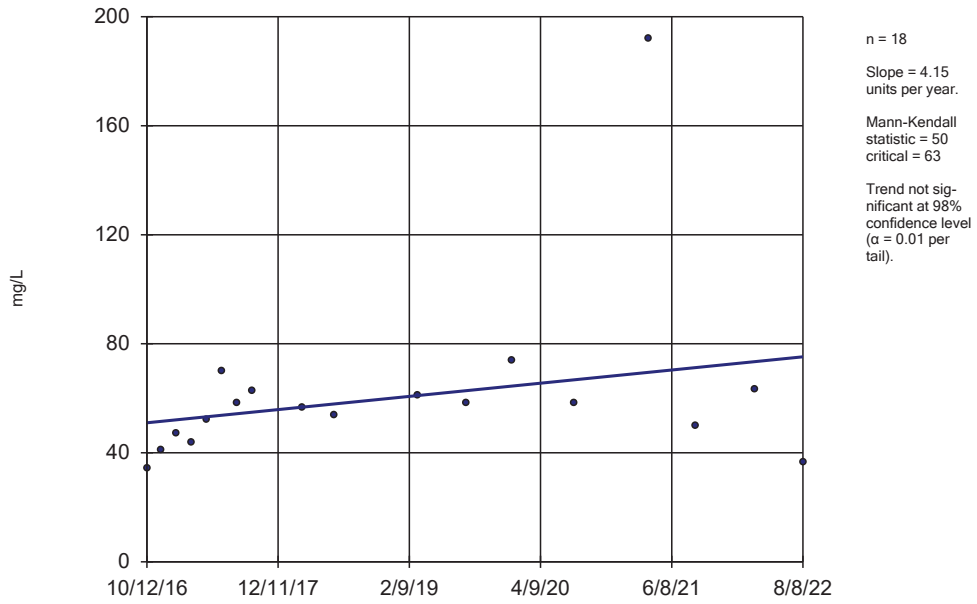


Constituent: Selenium [total] Analysis Run 9/8/2022 11:03 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

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

Sen's Slope Estimator

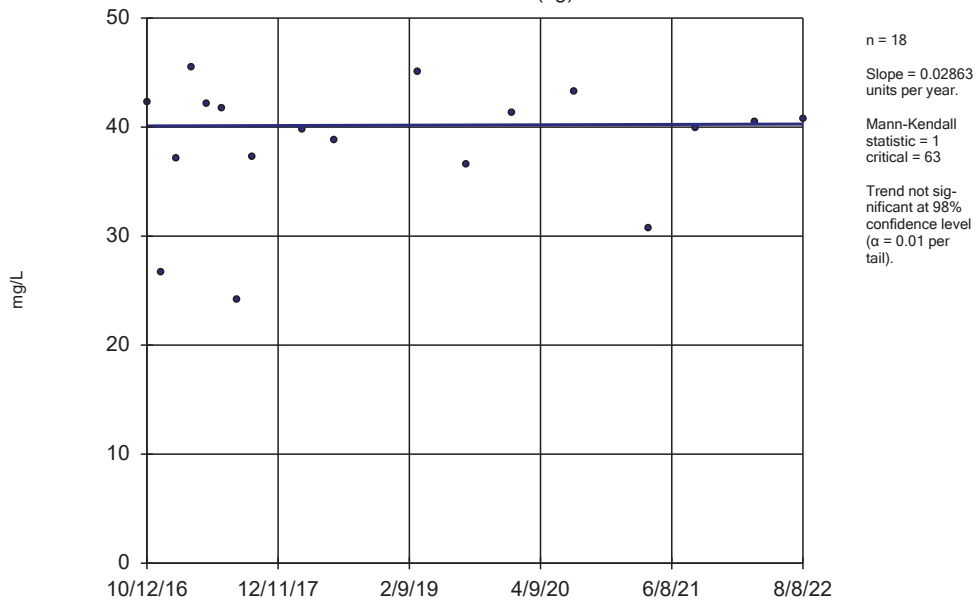
MW-3



Constituent: Sulfate Analysis Run 9/8/2022 11:03 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

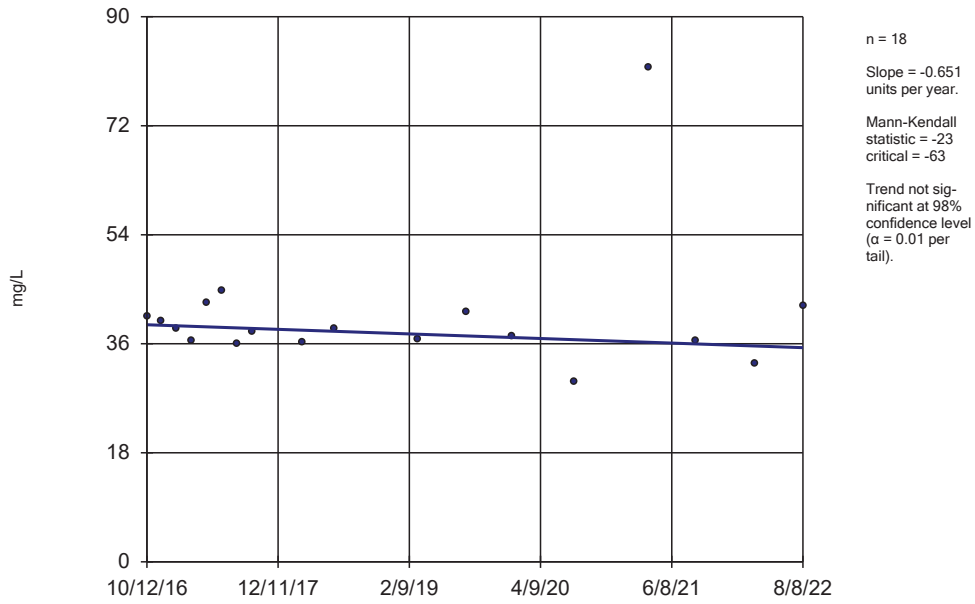
MW-4R (bg)



Constituent: Sulfate Analysis Run 9/8/2022 11:03 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

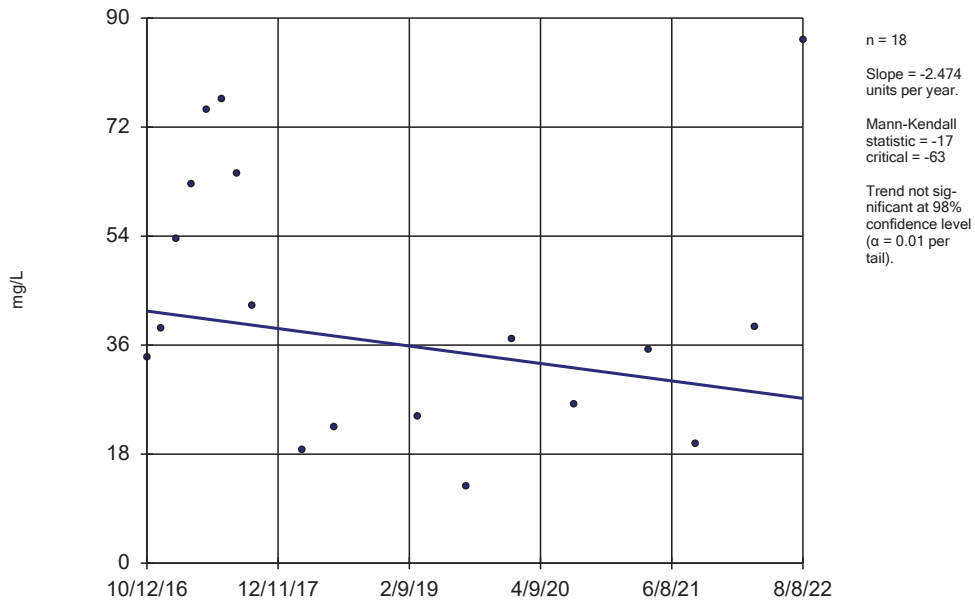
MW-5



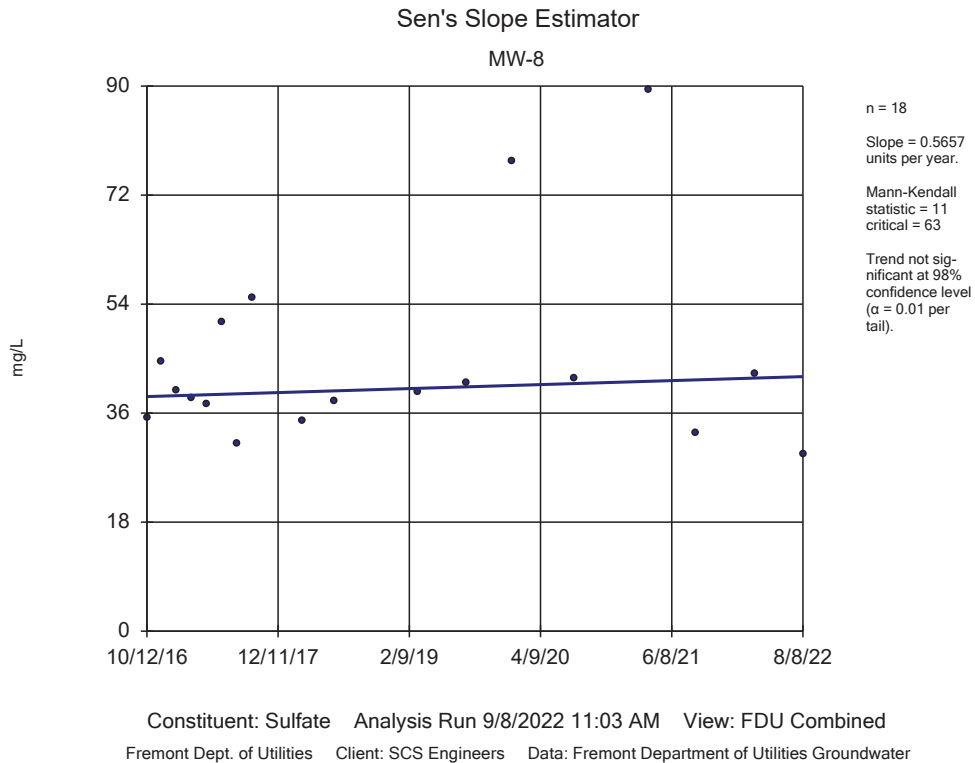
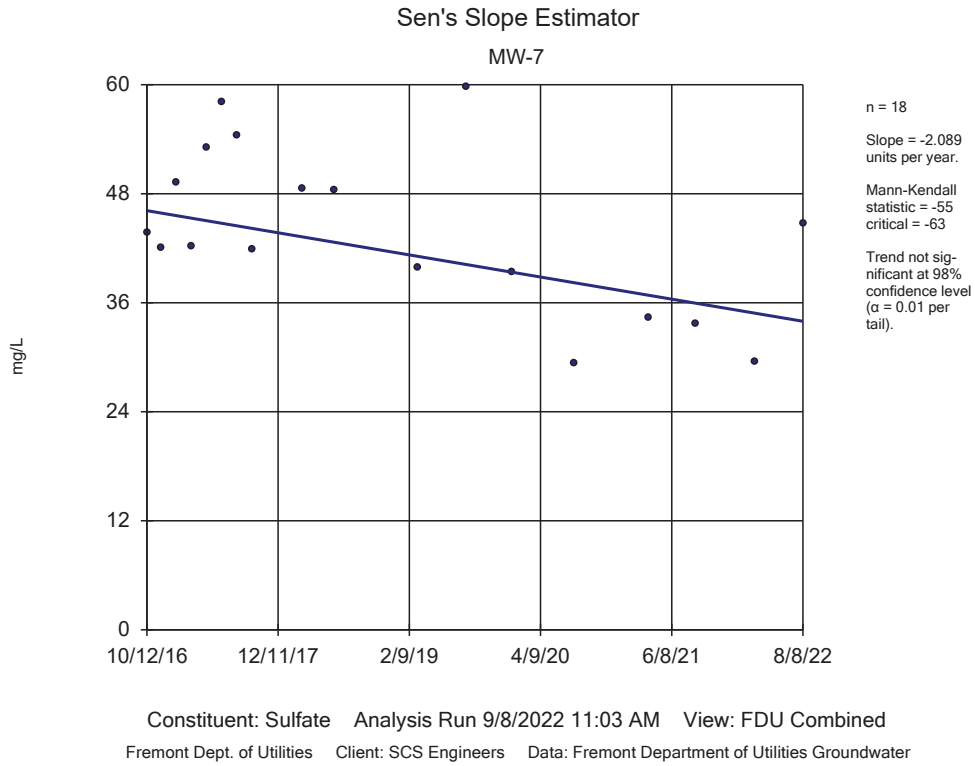
Constituent: Sulfate Analysis Run 9/8/2022 11:03 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

MW-6

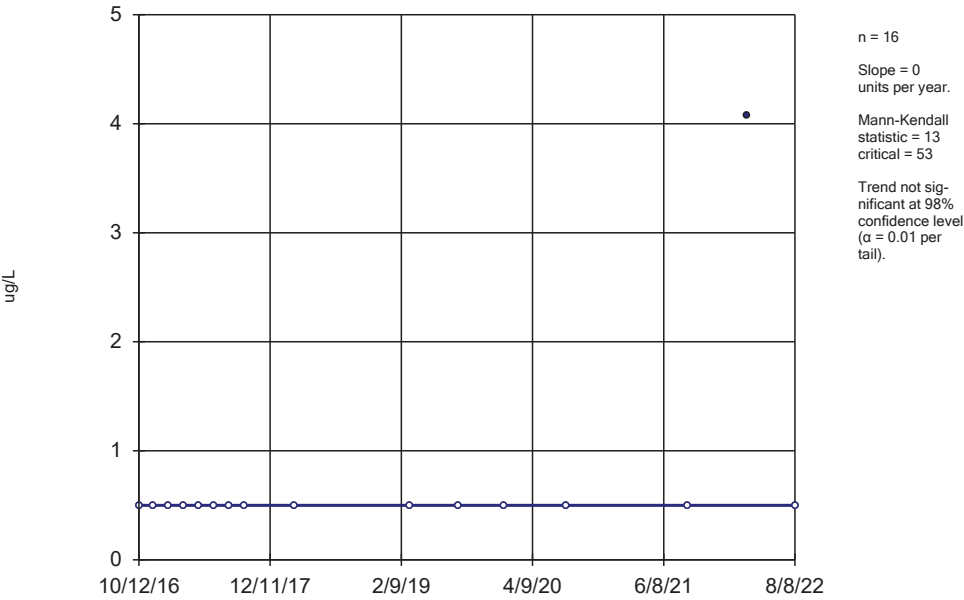


Constituent: Sulfate Analysis Run 9/8/2022 11:03 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater



Sen's Slope Estimator

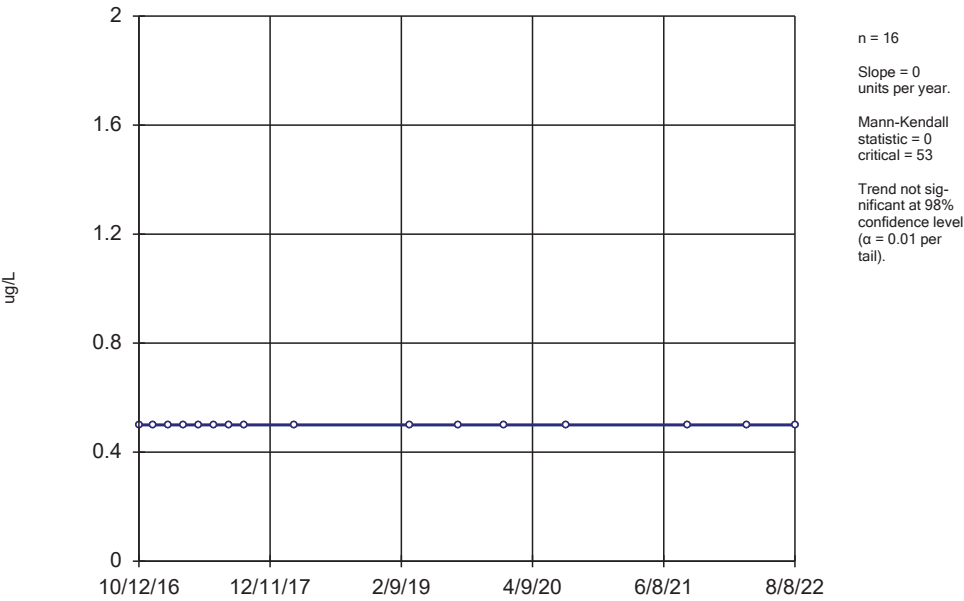
MW-1



Constituent: Thallium [total] Analysis Run 9/8/2022 11:03 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

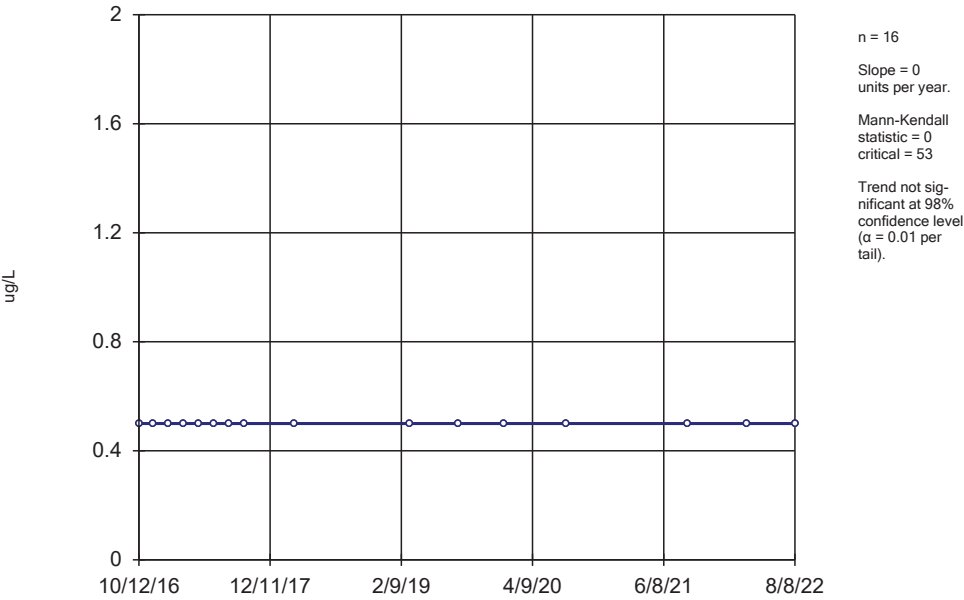
MW-2



Constituent: Thallium [total] Analysis Run 9/8/2022 11:03 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

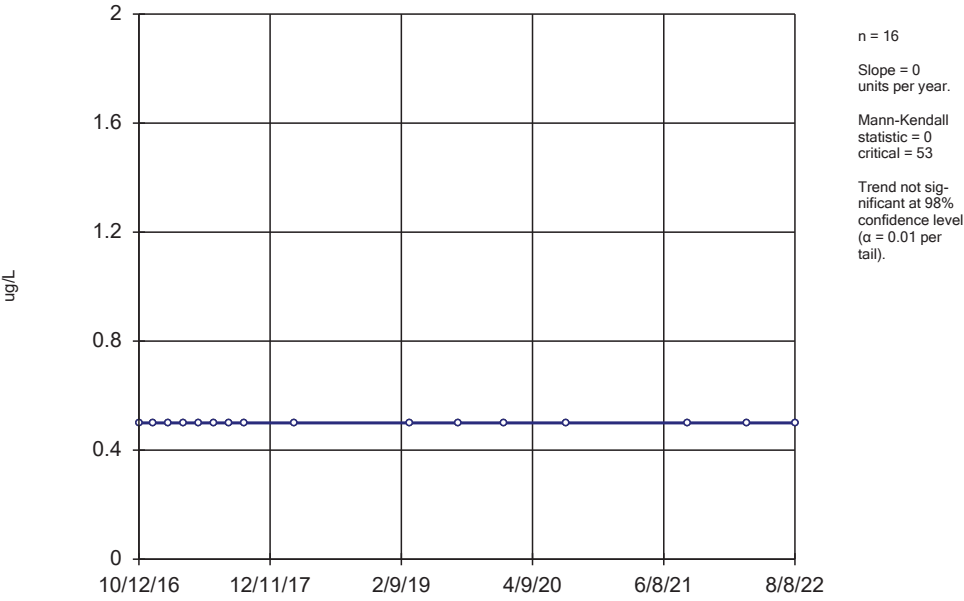
MW-3



Constituent: Thallium [total] Analysis Run 9/8/2022 11:03 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

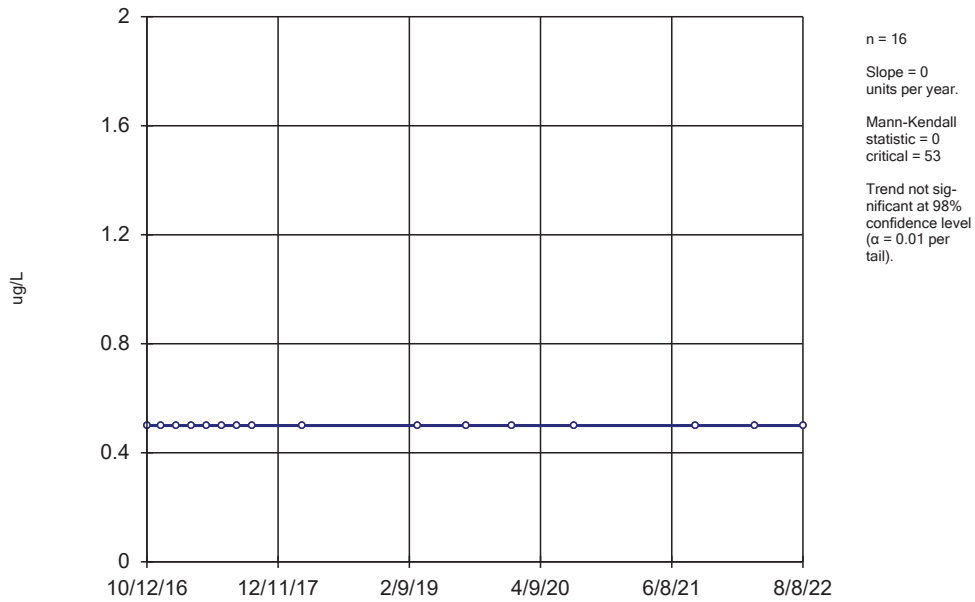
MW-4R (bg)



Constituent: Thallium [total] Analysis Run 9/8/2022 11:03 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

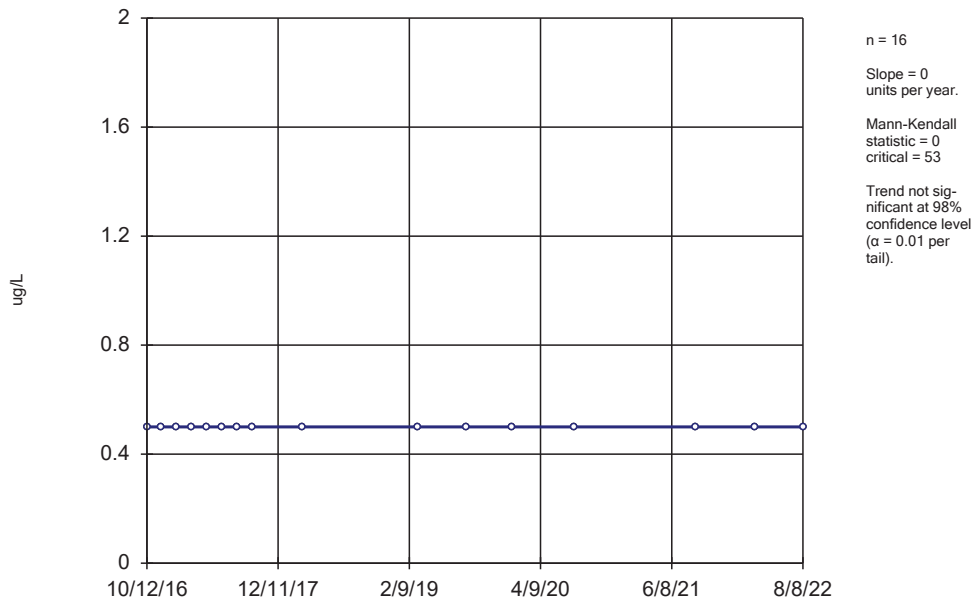
MW-5



Constituent: Thallium [total] Analysis Run 9/8/2022 11:03 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

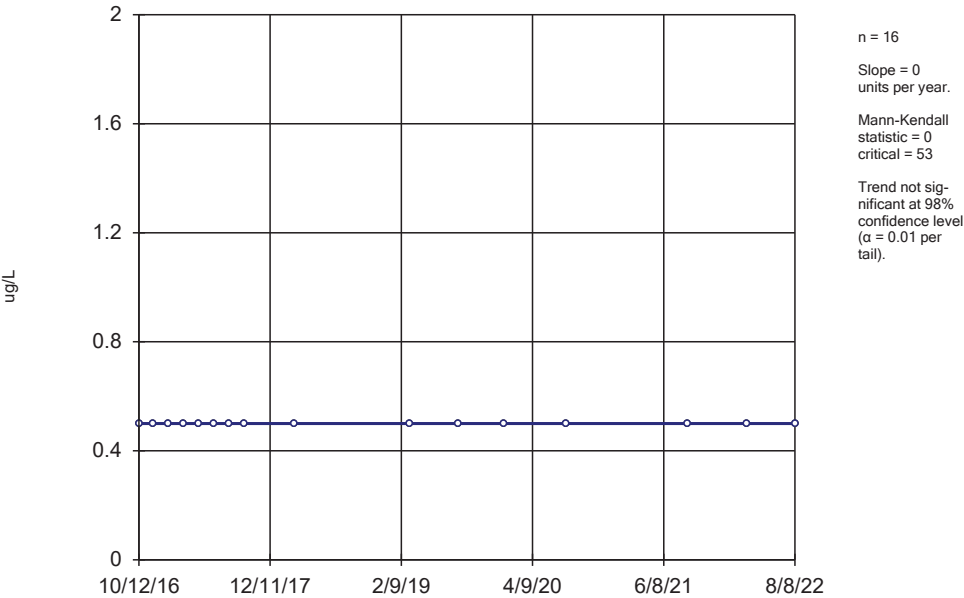
MW-6



Constituent: Thallium [total] Analysis Run 9/8/2022 11:03 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

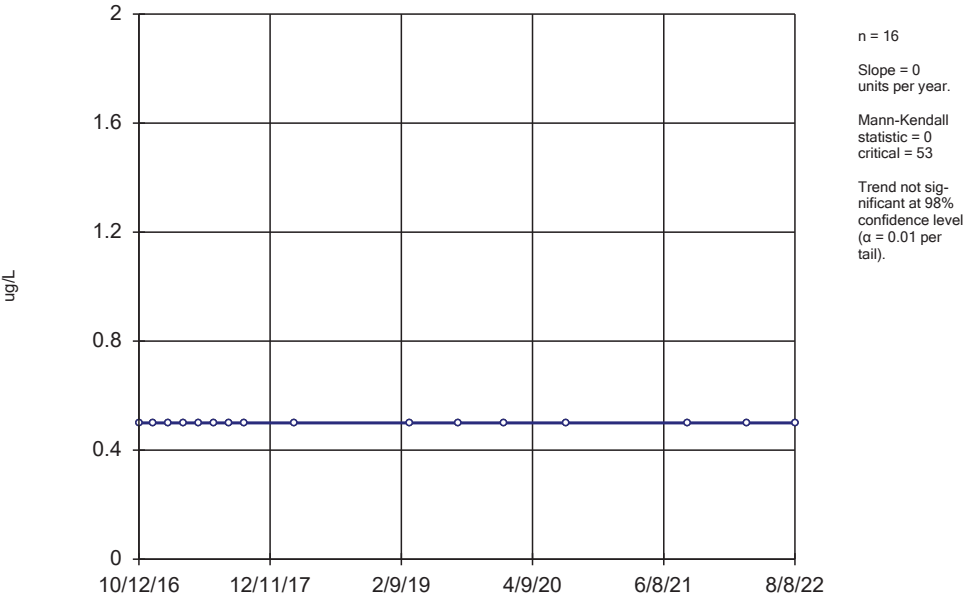
MW-7



Constituent: Thallium [total] Analysis Run 9/8/2022 11:03 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

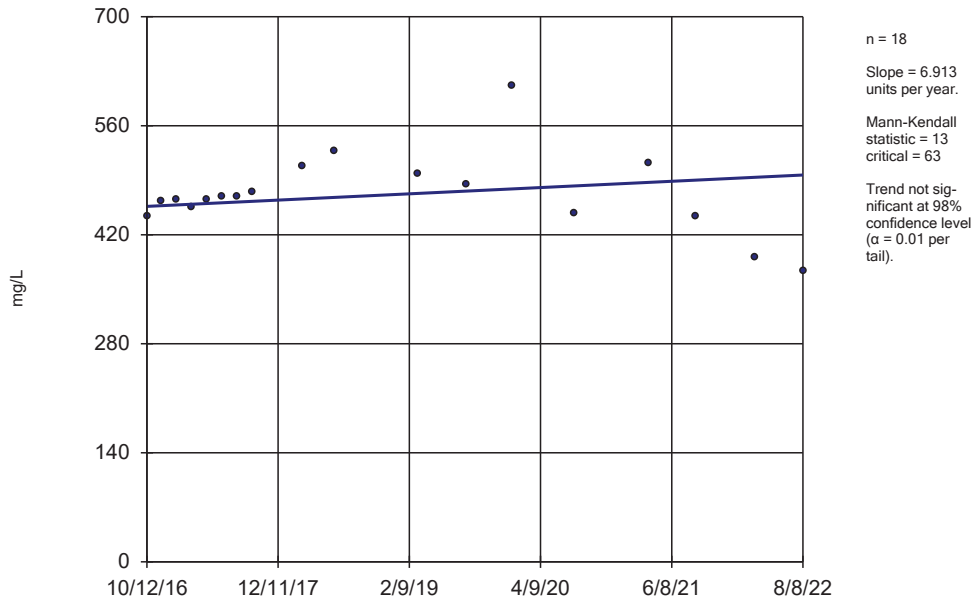
MW-8



Constituent: Thallium [total] Analysis Run 9/8/2022 11:03 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

MW-1

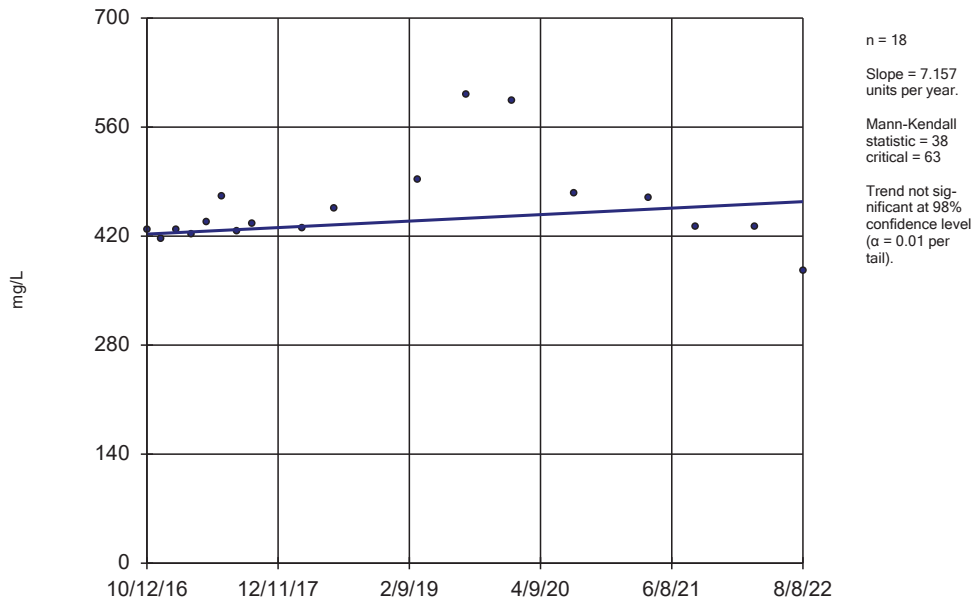


Constituent: Total Dissolved Solids Analysis Run 9/8/2022 11:04 AM View: FDU Combined

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

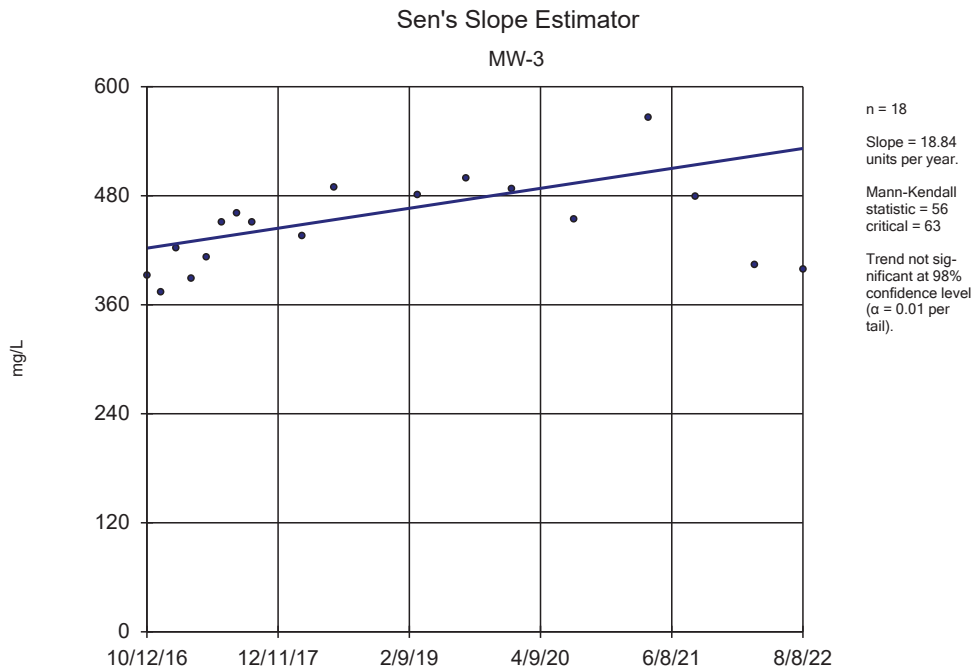
Sen's Slope Estimator

MW-2

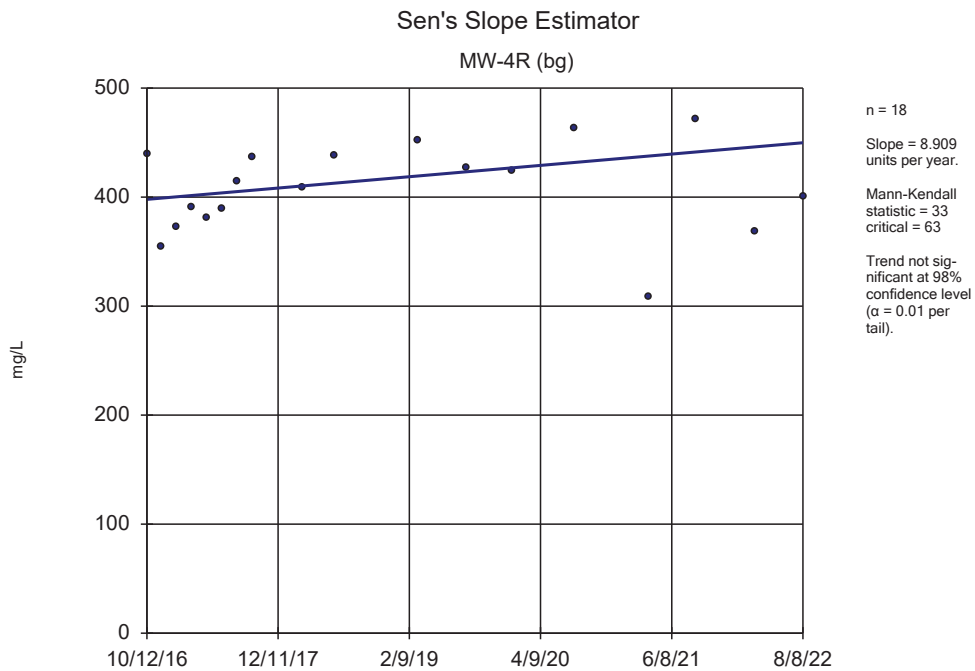


Constituent: Total Dissolved Solids Analysis Run 9/8/2022 11:04 AM View: FDU Combined

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



Constituent: Total Dissolved Solids Analysis Run 9/8/2022 11:04 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

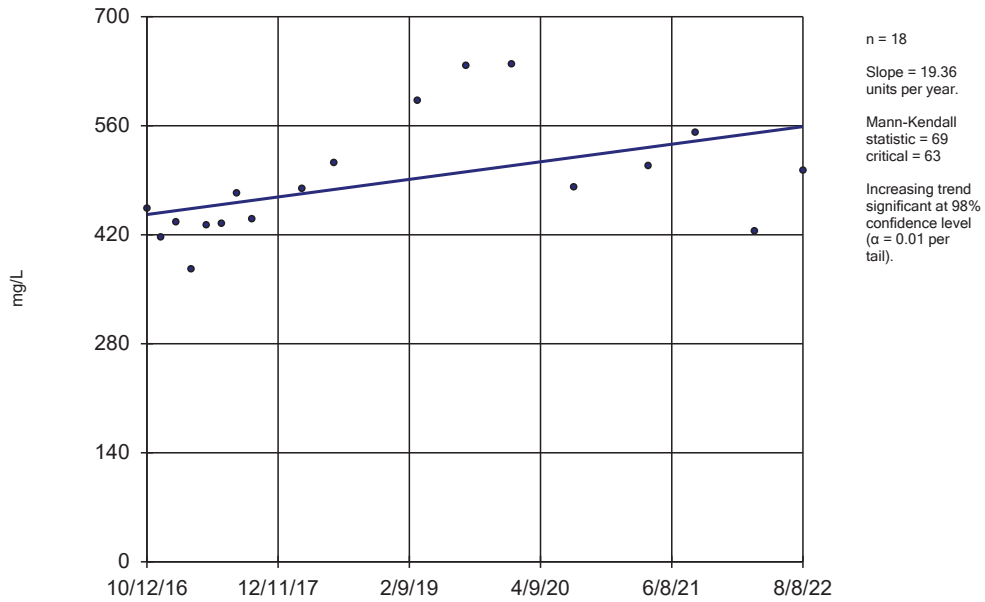


Constituent: Total Dissolved Solids Analysis Run 9/8/2022 11:04 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

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

Sen's Slope Estimator

MW-7

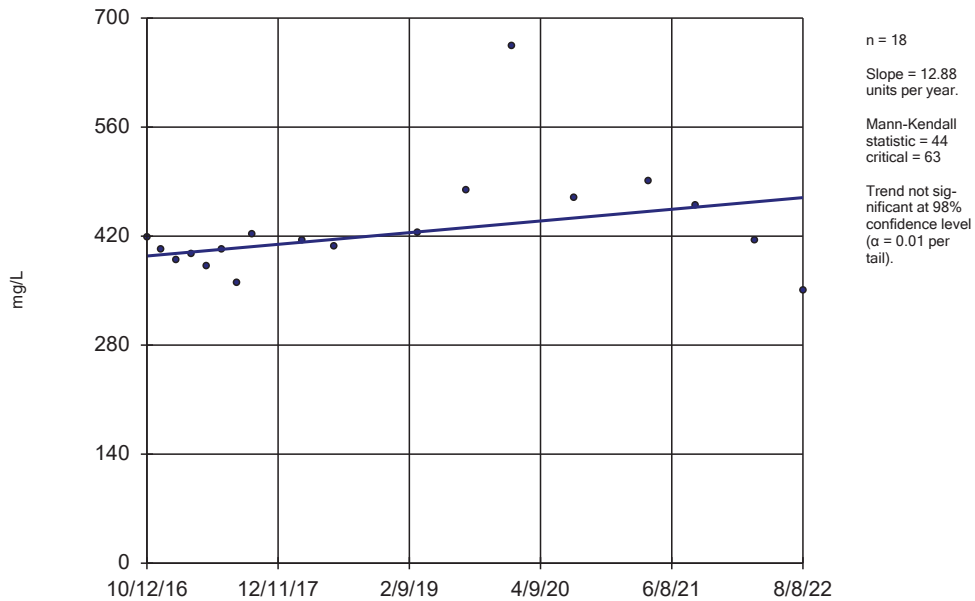


Constituent: Total Dissolved Solids Analysis Run 9/8/2022 11:04 AM View: FDU Combined

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

Sen's Slope Estimator

MW-8

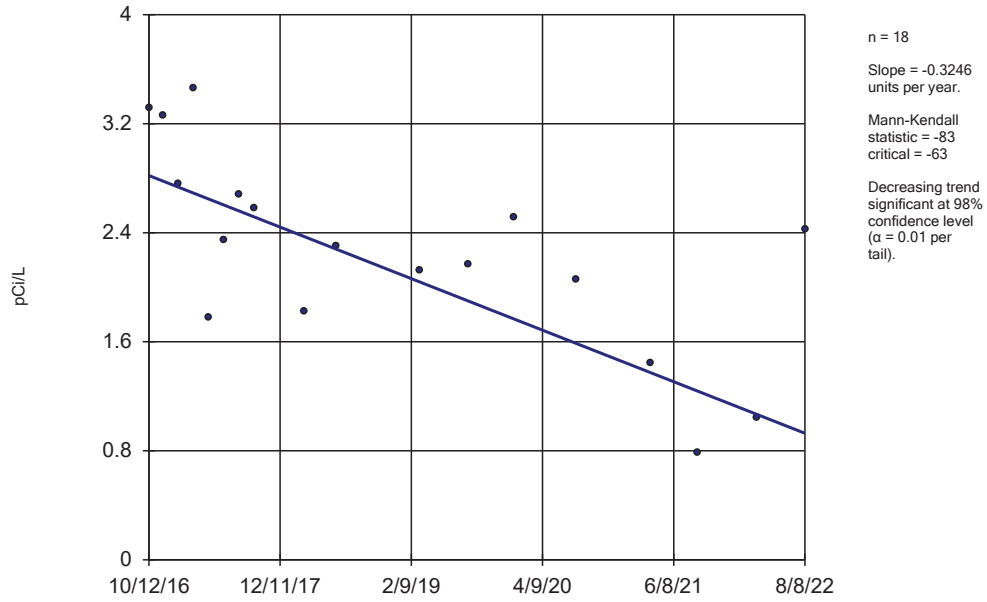


Constituent: Total Dissolved Solids Analysis Run 9/8/2022 11:04 AM View: FDU Combined

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

Sen's Slope Estimator

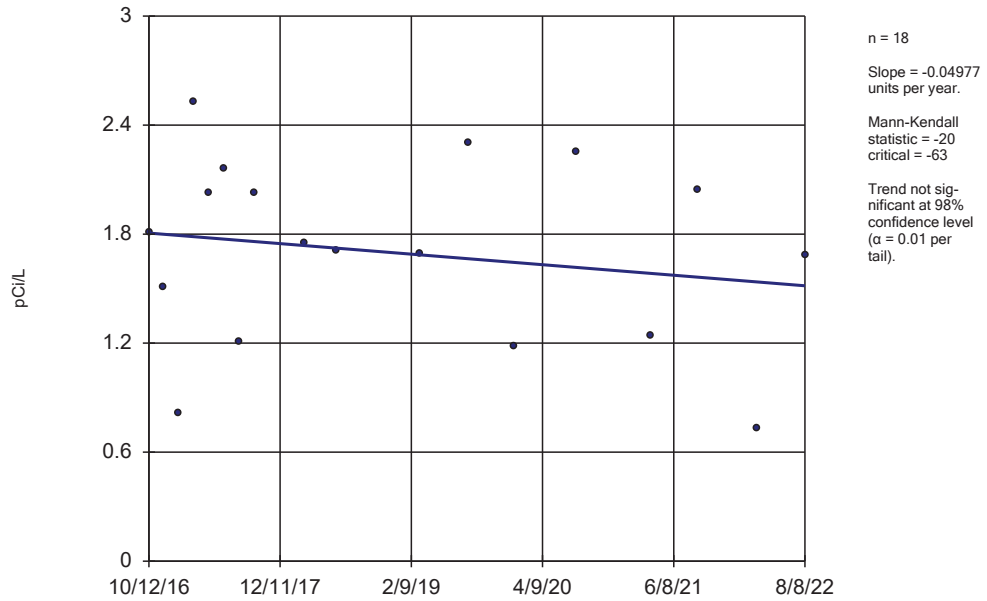
MW-1



Constituent: Total Radium Analysis Run 9/8/2022 11:04 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

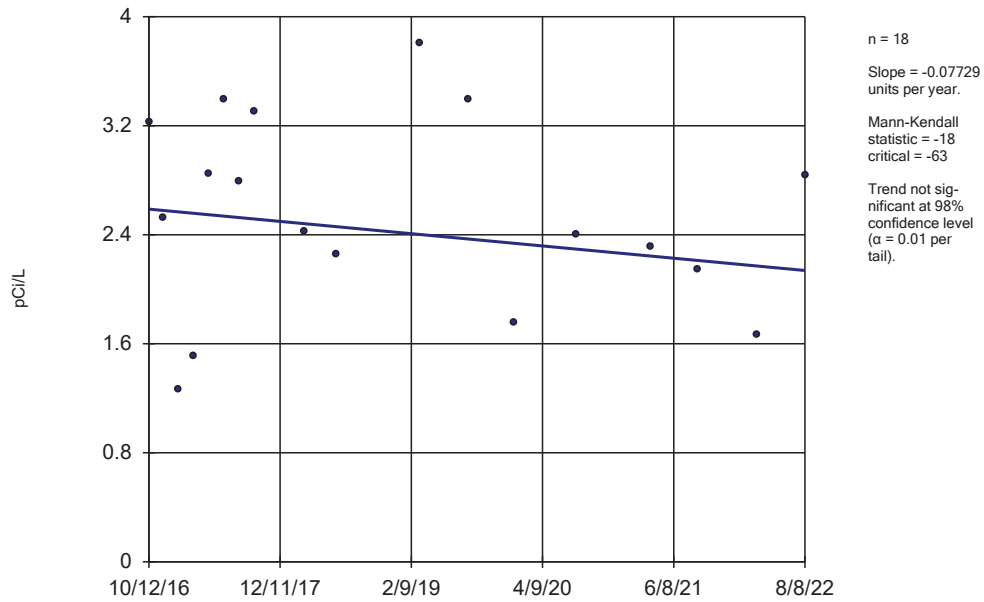
MW-2



Constituent: Total Radium Analysis Run 9/8/2022 11:04 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

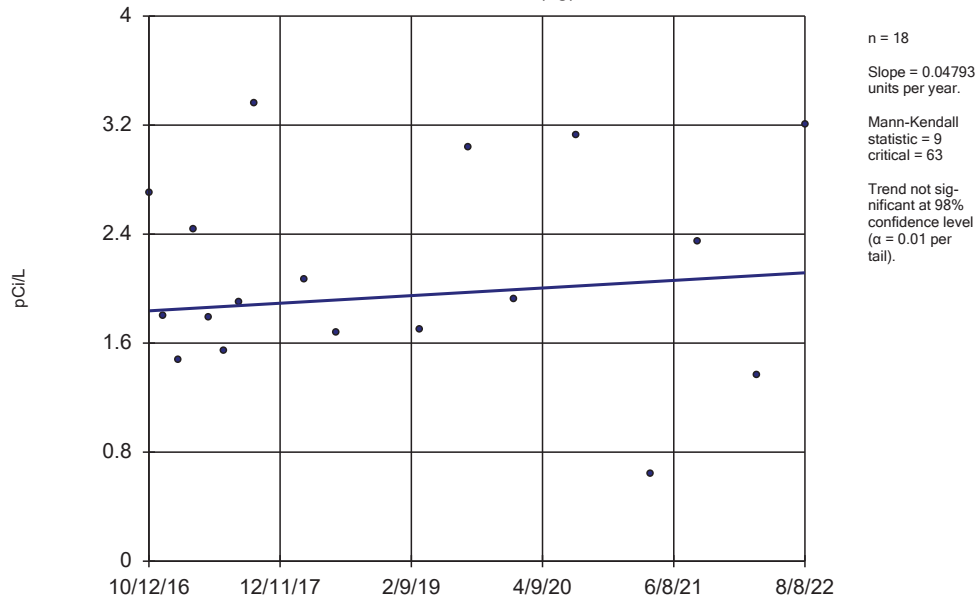
MW-3



Constituent: Total Radium Analysis Run 9/8/2022 11:04 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

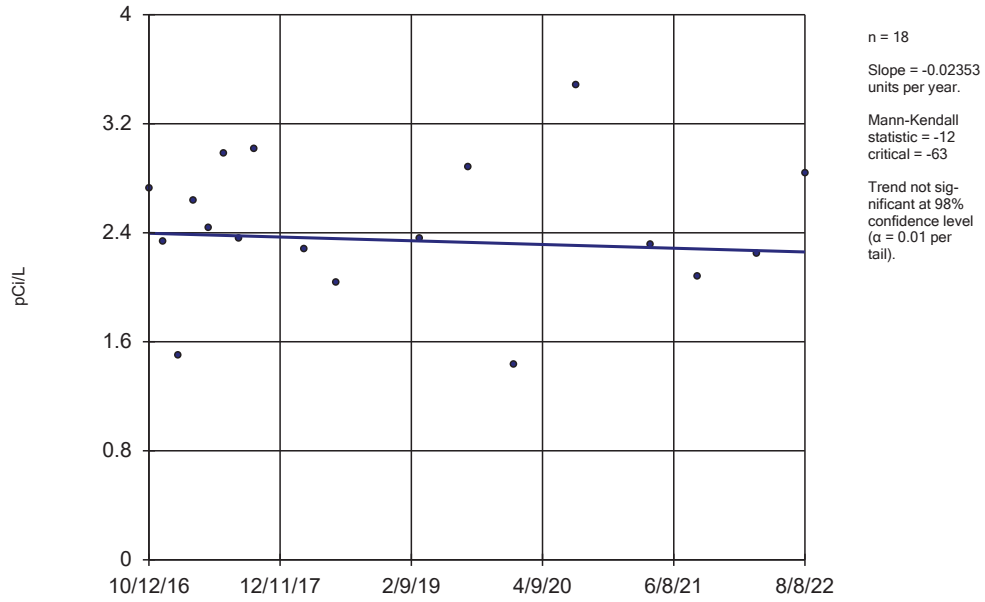
MW-4R (bg)



Constituent: Total Radium Analysis Run 9/8/2022 11:04 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

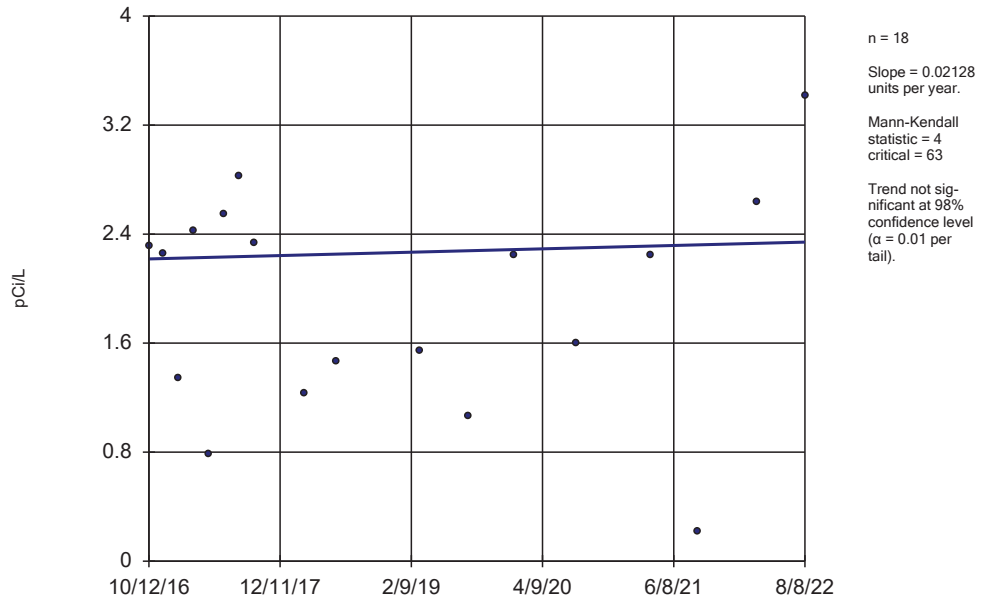
MW-5



Constituent: Total Radium Analysis Run 9/8/2022 11:04 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

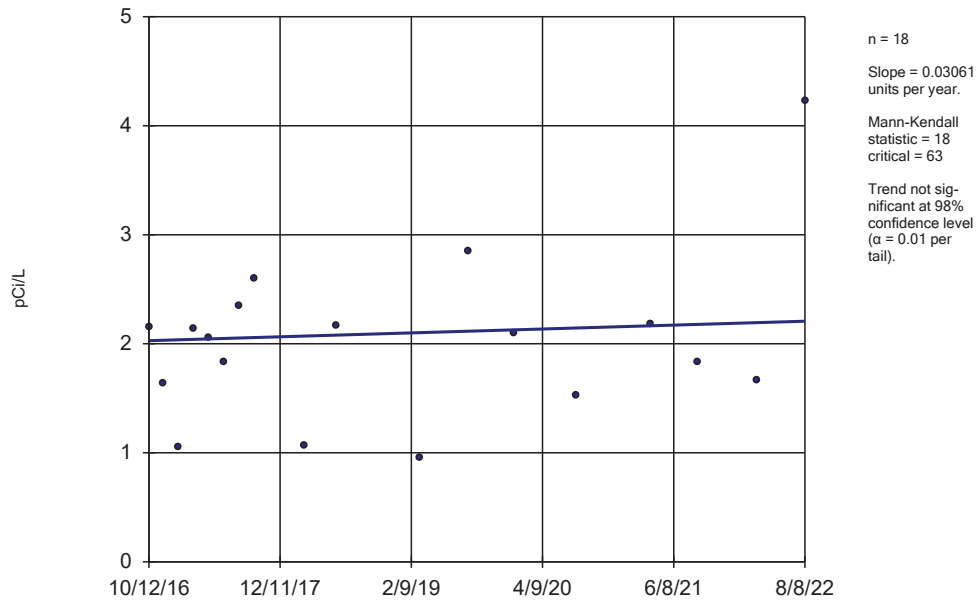
MW-6



Constituent: Total Radium Analysis Run 9/8/2022 11:04 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

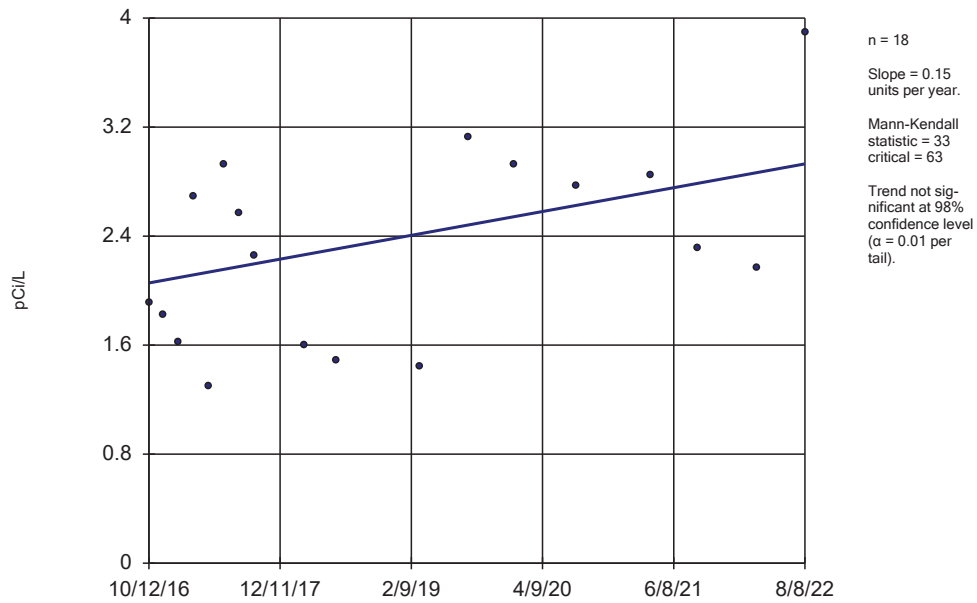
MW-7



Constituent: Total Radium Analysis Run 9/8/2022 11:04 AM View: FDU Combined
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Sen's Slope Estimator

MW-8



Constituent: Total Radium Analysis Run 9/8/2022 11:04 AM View: FDU Combined
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 9/8/2022, 11:32 AM

<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>
Antimony [total] (ug/L)	MW-1	1	0.5	6	No	16	93.75	No	0.01	NP (NDs)
Antimony [total] (ug/L)	MW-2	1	0.5	6	No	16	93.75	No	0.01	NP (NDs)
Antimony [total] (ug/L)	MW-3	1	0.5	6	No	16	100	No	0.01	NP (NDs)
Antimony [total] (ug/L)	MW-4R (bg)	1	0.5	6	No	16	100	No	0.01	NP (NDs)
Antimony [total] (ug/L)	MW-5	1	0.5	6	No	16	100	No	0.01	NP (NDs)
Antimony [total] (ug/L)	MW-6	1	0.5	6	No	16	100	No	0.01	NP (NDs)
Antimony [total] (ug/L)	MW-7	1	0.5	6	No	16	100	No	0.01	NP (NDs)
Antimony [total] (ug/L)	MW-8	1	0.5	6	No	16	100	No	0.01	NP (NDs)
Arsenic [total] (ug/L)	MW-1	4.2	3.2	10	No	18	0	No	0.01	NP (normality)
Arsenic [total] (ug/L)	MW-2	4.118	3.705	10	No	18	0	No	0.01	Param.
Arsenic [total] (ug/L)	MW-3	3.32	2.966	10	No	18	0	No	0.01	Param.
Arsenic [total] (ug/L)	MW-4R (bg)	4.558	3.71	10	No	18	0	No	0.01	Param.
Arsenic [total] (ug/L)	MW-5	4.625	4.315	10	No	18	0	No	0.01	Param.
Arsenic [total] (ug/L)	MW-6	3.55	2.8	10	No	18	0	No	0.01	NP (normality)
Arsenic [total] (ug/L)	MW-7	3.761	3.426	10	No	18	0	No	0.01	Param.
Arsenic [total] (ug/L)	MW-8	2.68	2.473	10	No	18	0	No	0.01	Param.
Barium [total] (ug/L)	MW-1	147.2	127.4	200	No	18	0	No	0.01	Param.
Barium [total] (ug/L)	MW-2	109.7	97.79	200	No	18	0	No	0.01	Param.
Barium [total] (ug/L)	MW-3	181.2	167	200	No	18	0	No	0.01	Param.
Barium [total] (ug/L)	MW-4R (bg)	133	120.1	200	No	18	0	No	0.01	Param.
Barium [total] (ug/L)	MW-5	144.7	129.4	200	No	18	0	No	0.01	Param.
Barium [total] (ug/L)	MW-6	154.7	105.9	200	No	18	0	No	0.01	Param.
Barium [total] (ug/L)	MW-7	130.7	114.1	200	No	18	0	No	0.01	Param.
Barium [total] (ug/L)	MW-8	160.8	143.8	200	No	18	0	No	0.01	Param.
Boron (ug/L)	MW-1	145.7	128.4	172.5	No	18	0	No	0.01	Param.
Boron (ug/L)	MW-2	138	115	172.5	No	17	0	No	0.01	NP (normality)
Boron (ug/L)	MW-3	115	50	172.5	No	18	27.78	No	0.01	NP (Cohens/xfrm)
Boron (ug/L)	MW-4R (bg)	232.3	105.1	172.5	No	18	27.78	No	0.01	Param.
Boron (ug/L)	MW-5	137	120	172.5	No	18	0	No	0.01	NP (normality)
Boron (ug/L)	MW-6	138	50	172.5	No	18	44.44	No	0.01	NP (normality)
Boron (ug/L)	MW-7	175.1	132.3	172.5	No	18	11.11	x^2	0.01	Param.
Boron (ug/L)	MW-8	161	109	172.5	No	16	0	No	0.01	NP (normality)
Calcium (mg/L)	MW-1	107.3	100.7	86.52	Yes	18	0	No	0.01	Param.
Calcium (mg/L)	MW-2	115	98	86.52	Yes	18	0	No	0.01	NP (normality)
Calcium (mg/L)	MW-3	101.9	91.94	86.52	Yes	18	0	No	0.01	Param.
Calcium (mg/L)	MW-4R (bg)	93.23	79.8	86.52	No	18	0	No	0.01	Param.
Calcium (mg/L)	MW-5	111.4	99.47	86.52	Yes	18	0	No	0.01	Param.
Calcium (mg/L)	MW-6	91.33	65.85	86.52	No	18	0	x^2	0.01	Param.
Calcium (mg/L)	MW-7	102.7	92.89	86.52	Yes	18	0	No	0.01	Param.
Calcium (mg/L)	MW-8	98.54	87.87	86.52	Yes	18	0	No	0.01	Param.
Chloride (mg/L)	MW-1	30.4	10.9	250	No	18	0	No	0.01	NP (normality)
Chloride (mg/L)	MW-2	19.77	14.27	250	No	17	0	x^(1/3)	0.01	Param.
Chloride (mg/L)	MW-3	41.8	27.5	250	No	18	0	No	0.01	NP (normality)
Chloride (mg/L)	MW-4R (bg)	30.86	18.08	250	No	17	0	No	0.01	Param.
Chloride (mg/L)	MW-5	29.7	17.33	250	No	18	0	No	0.01	Param.
Chloride (mg/L)	MW-6	69.78	36.48	250	No	17	0	x^(1/3)	0.01	Param.
Chloride (mg/L)	MW-7	101	19.1	250	No	18	0	No	0.01	NP (normality)
Chloride (mg/L)	MW-8	32.35	23.41	250	No	18	0	No	0.01	Param.
Chromium [total] (ug/L)	MW-1	1.7	0.5	50	No	16	93.75	No	0.01	NP (NDs)
Chromium [total] (ug/L)	MW-2	2.5	0.5	50	No	16	100	No	0.01	NP (NDs)

Confidence Interval

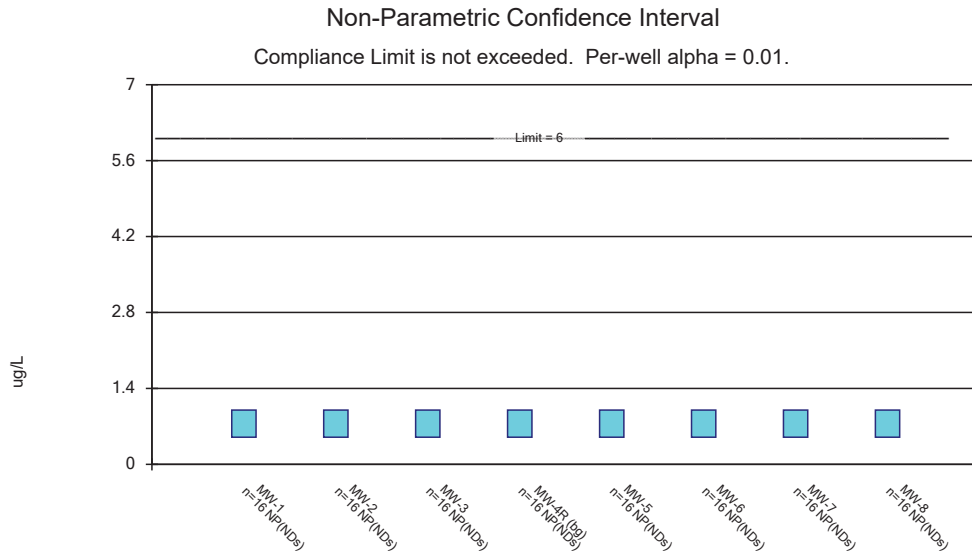
Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater Printed 9/8/2022, 11:32 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
Chromium [total] (ug/L)	MW-3	2.5	0.5	50	No	16	100	No	0.01	NP (NDs)
Chromium [total] (ug/L)	MW-4R (bg)	1.9	0.5	50	No	16	93.75	No	0.01	NP (NDs)
Chromium [total] (ug/L)	MW-5	2.5	0.5	50	No	16	100	No	0.01	NP (NDs)
Chromium [total] (ug/L)	MW-6	2.5	0.5	50	No	16	100	No	0.01	NP (NDs)
Chromium [total] (ug/L)	MW-7	2.5	0.5	50	No	16	100	No	0.01	NP (NDs)
Chromium [total] (ug/L)	MW-8	2.5	0.5	50	No	16	100	No	0.01	NP (NDs)
Cobalt [total] (ug/L)	MW-1	0.5	0.25	0.4688	No	16	100	No	0.01	NP (NDs)
Cobalt [total] (ug/L)	MW-2	0.5	0.25	0.4688	No	16	100	No	0.01	NP (NDs)
Cobalt [total] (ug/L)	MW-3	0.5	0.25	0.4688	No	16	100	No	0.01	NP (NDs)
Cobalt [total] (ug/L)	MW-4R (bg)	0.5	0.25	0.4688	No	16	100	No	0.01	NP (NDs)
Cobalt [total] (ug/L)	MW-5	0.5	0.25	0.4688	No	16	100	No	0.01	NP (NDs)
Cobalt [total] (ug/L)	MW-6	0.5	0.25	0.4688	No	16	100	No	0.01	NP (NDs)
Cobalt [total] (ug/L)	MW-7	0.5	0.25	0.4688	No	16	100	No	0.01	NP (NDs)
Cobalt [total] (ug/L)	MW-8	0.5	0.25	0.4688	No	16	100	No	0.01	NP (NDs)
Fluoride (mg/L)	MW-1	1.4	1.2	4	No	18	0	No	0.01	NP (normality)
Fluoride (mg/L)	MW-2	1.083	0.9108	4	No	18	0	sqrt(x)	0.01	Param.
Fluoride (mg/L)	MW-3	0.8224	0.7009	4	No	18	5.556	x^3	0.01	Param.
Fluoride (mg/L)	MW-4R (bg)	0.9263	0.7492	4	No	18	5.556	x^2	0.01	Param.
Fluoride (mg/L)	MW-5	1.18	0.9787	4	No	18	0	No	0.01	Param.
Fluoride (mg/L)	MW-6	0.6006	0.4746	4	No	18	5.556	No	0.01	Param.
Fluoride (mg/L)	MW-7	0.9102	0.7839	4	No	18	5.556	x^3	0.01	Param.
Fluoride (mg/L)	MW-8	0.8271	0.6953	4	No	18	5.556	x^3	0.01	Param.
Lead [total] (ug/L)	MW-1	0.5	0.25	50	No	16	100	No	0.01	NP (NDs)
Lead [total] (ug/L)	MW-2	0.5	0.25	50	No	16	100	No	0.01	NP (NDs)
Lead [total] (ug/L)	MW-3	0.5	0.25	50	No	16	100	No	0.01	NP (NDs)
Lead [total] (ug/L)	MW-4R (bg)	1.4	0.25	50	No	15	93.33	No	0.01	NP (NDs)
Lead [total] (ug/L)	MW-5	0.5	0.25	50	No	16	100	No	0.01	NP (NDs)
Lead [total] (ug/L)	MW-6	1.9	0.25	50	No	17	94.12	No	0.01	NP (NDs)
Lead [total] (ug/L)	MW-7	0.5	0.25	50	No	16	100	No	0.01	NP (NDs)
Lead [total] (ug/L)	MW-8	0.5	0.25	50	No	16	100	No	0.01	NP (NDs)
Lithium (ug/L)	MW-1	35.4	31.28	40	No	18	0	No	0.01	Param.
Lithium (ug/L)	MW-2	31.7	26.7	40	No	17	0	No	0.01	NP (normality)
Lithium (ug/L)	MW-3	29.55	26.24	40	No	18	0	No	0.01	Param.
Lithium (ug/L)	MW-4R (bg)	27.75	23.73	40	No	18	0	x^2	0.01	Param.
Lithium (ug/L)	MW-5	31.13	26.37	40	No	18	0	ln(x)	0.01	Param.
Lithium (ug/L)	MW-6	27.87	19.87	40	No	18	0	No	0.01	Param.
Lithium (ug/L)	MW-7	30.03	26.24	40	No	18	0	No	0.01	Param.
Lithium (ug/L)	MW-8	29.72	26.43	40	No	17	0	sqrt(x)	0.01	Param.
Mercury (ug/L)	MW-1	0.1	0.1	2	No	16	100	No	0.01	NP (NDs)
Mercury (ug/L)	MW-2	0.1	0.1	2	No	16	100	No	0.01	NP (NDs)
Mercury (ug/L)	MW-3	0.1	0.1	2	No	16	100	No	0.01	NP (NDs)
Mercury (ug/L)	MW-4R (bg)	0.1	0.1	2	No	16	100	No	0.01	NP (NDs)
Mercury (ug/L)	MW-5	0.1	0.1	2	No	16	100	No	0.01	NP (NDs)
Mercury (ug/L)	MW-6	0.1	0.1	2	No	16	100	No	0.01	NP (NDs)
Mercury (ug/L)	MW-7	0.1	0.1	2	No	16	100	No	0.01	NP (NDs)
Mercury (ug/L)	MW-8	0.1	0.1	2	No	16	100	No	0.01	NP (NDs)
Molybdenum (ug/L)	MW-1	8.523	7.409	100	No	18	0	No	0.01	Param.
Molybdenum (ug/L)	MW-2	9.3	7.5	100	No	18	0	No	0.01	NP (normality)
Molybdenum (ug/L)	MW-3	13.29	11.15	100	No	18	0	No	0.01	Param.
Molybdenum (ug/L)	MW-4R (bg)	7.637	5.326	100	No	18	0	ln(x)	0.01	Param.

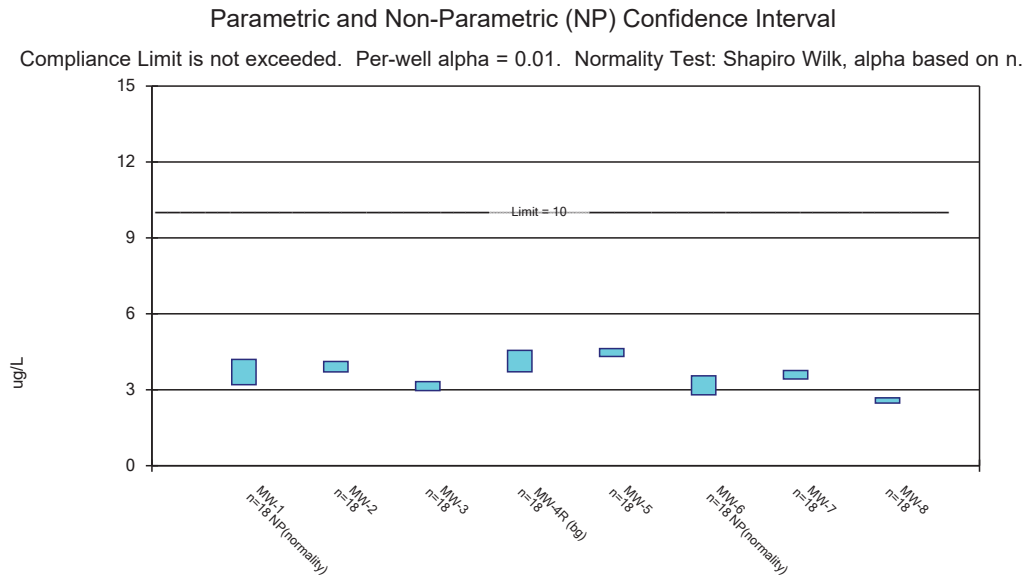
Confidence Interval

Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater Printed 9/8/2022, 11:32 AM

<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-5	6.638	5.29	100	No	18	0	No	0.01	Param.
Molybdenum (ug/L)	MW-6	8.715	6.76	100	No	18	0	No	0.01	Param.
Molybdenum (ug/L)	MW-7	8.796	7.871	100	No	18	0	No	0.01	Param.
Molybdenum (ug/L)	MW-8	8.4	6.9	100	No	17	0	No	0.01	NP (normality)
Selenium [total] (ug/L)	MW-1	12.92	9.485	50	No	18	0	No	0.01	Param.
Selenium [total] (ug/L)	MW-2	14.33	11.13	50	No	18	0	No	0.01	Param.
Selenium [total] (ug/L)	MW-3	9.106	7.757	50	No	18	0	No	0.01	Param.
Selenium [total] (ug/L)	MW-4R (bg)	8.518	6.688	50	No	17	0	No	0.01	Param.
Selenium [total] (ug/L)	MW-5	8.592	7.101	50	No	18	5.556	x^3	0.01	Param.
Selenium [total] (ug/L)	MW-6	9.15	5.12	50	No	18	5.556	No	0.01	Param.
Selenium [total] (ug/L)	MW-7	10.76	8.449	50	No	18	0	No	0.01	Param.
Selenium [total] (ug/L)	MW-8	12.4	10.1	50	No	18	0	No	0.01	Param.
Sulfate (mg/L)	MW-1	52.82	42.26	250	No	18	0	No	0.01	Param.
Sulfate (mg/L)	MW-2	59.94	40.45	250	No	17	0	sqrt(x)	0.01	Param.
Sulfate (mg/L)	MW-3	63.1	43.9	250	No	18	0	No	0.01	NP (normality)
Sulfate (mg/L)	MW-4R (bg)	42.02	35.59	250	No	18	0	x^2	0.01	Param.
Sulfate (mg/L)	MW-5	42.2	36.3	250	No	18	0	No	0.01	NP (normality)
Sulfate (mg/L)	MW-6	56.05	29.36	250	No	18	0	No	0.01	Param.
Sulfate (mg/L)	MW-7	49.44	38.55	250	No	18	0	No	0.01	Param.
Sulfate (mg/L)	MW-8	50.9	34.7	250	No	18	0	No	0.01	NP (normality)
Thallium [total] (ug/L)	MW-1	4.08	0.5	2	No	16	93.75	No	0.01	NP (NDs)
Thallium [total] (ug/L)	MW-2	0.5	0.5	2	No	16	100	No	0.01	NP (NDs)
Thallium [total] (ug/L)	MW-3	0.5	0.5	2	No	16	100	No	0.01	NP (NDs)
Thallium [total] (ug/L)	MW-4R (bg)	0.5	0.5	2	No	16	100	No	0.01	NP (NDs)
Thallium [total] (ug/L)	MW-5	0.5	0.5	2	No	16	100	No	0.01	NP (NDs)
Thallium [total] (ug/L)	MW-6	0.5	0.5	2	No	16	100	No	0.01	NP (NDs)
Thallium [total] (ug/L)	MW-7	0.5	0.5	2	No	16	100	No	0.01	NP (NDs)
Thallium [total] (ug/L)	MW-8	0.5	0.5	2	No	16	100	No	0.01	NP (NDs)
Total Dissolved Solids (mg/L)	MW-1	503.3	441	500	No	18	0	No	0.01	Param.
Total Dissolved Solids (mg/L)	MW-2	474	426	500	No	18	0	No	0.01	NP (normality)
Total Dissolved Solids (mg/L)	MW-3	476.2	417.1	500	No	18	0	No	0.01	Param.
Total Dissolved Solids (mg/L)	MW-4R (bg)	433	382.5	500	No	18	0	No	0.01	Param.
Total Dissolved Solids (mg/L)	MW-5	492.3	442	500	No	18	0	x^3	0.01	Param.
Total Dissolved Solids (mg/L)	MW-6	516.7	347.4	500	No	18	0	No	0.01	Param.
Total Dissolved Solids (mg/L)	MW-7	533.3	442.6	500	No	18	0	No	0.01	Param.
Total Dissolved Solids (mg/L)	MW-8	468	389	500	No	18	0	No	0.01	NP (normality)
Total Radium (pCi/L)	MW-1	2.709	1.829	5	No	18	0	No	0.01	Param.
Total Radium (pCi/L)	MW-2	2.011	1.397	5	No	18	0	No	0.01	Param.
Total Radium (pCi/L)	MW-3	2.982	2.115	5	No	18	0	No	0.01	Param.
Total Radium (pCi/L)	MW-4R (bg)	2.561	1.67	5	No	18	0	No	0.01	Param.
Total Radium (pCi/L)	MW-5	2.75	2.129	5	No	18	0	No	0.01	Param.
Total Radium (pCi/L)	MW-6	2.403	1.428	5	No	18	0	No	0.01	Param.
Total Radium (pCi/L)	MW-7	2.416	1.548	5	No	18	0	sqrt(x)	0.01	Param.
Total Radium (pCi/L)	MW-8	2.742	1.887	5	No	18	0	No	0.01	Param.



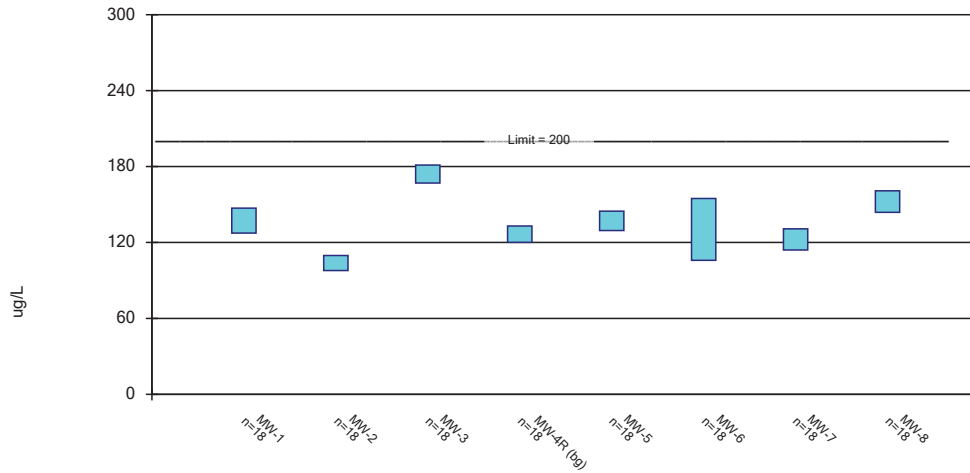
Constituent: Antimony [total] Analysis Run 9/8/2022 11:17 AM View: FDU Combined
 Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater



Constituent: Arsenic [total] Analysis Run 9/8/2022 11:18 AM View: FDU Combined
 Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Parametric Confidence Interval

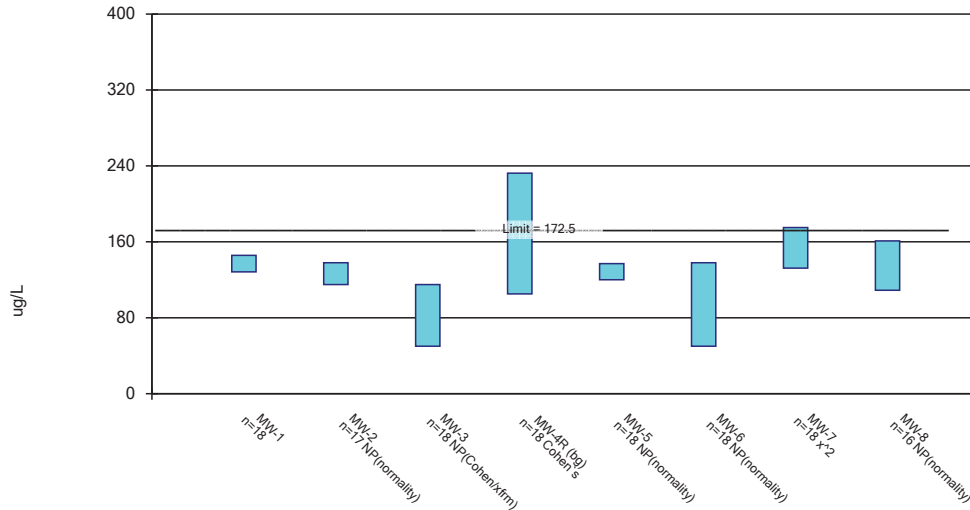
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Barium [total] Analysis Run 9/8/2022 11:18 AM View: FDU Combined
 Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Parametric and Non-Parametric (NP) Confidence Interval

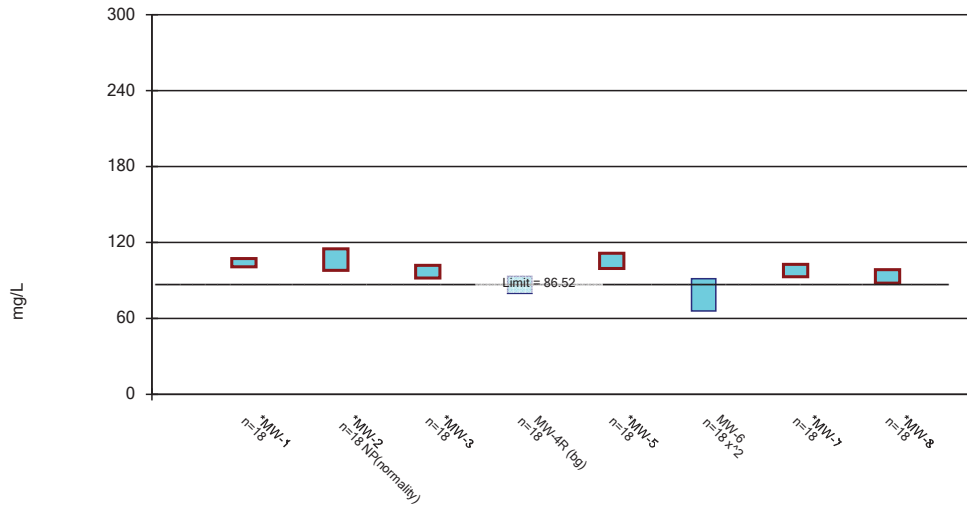
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Boron Analysis Run 9/8/2022 11:18 AM View: FDU Combined
 Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Parametric and Non-Parametric (NP) Confidence Interval

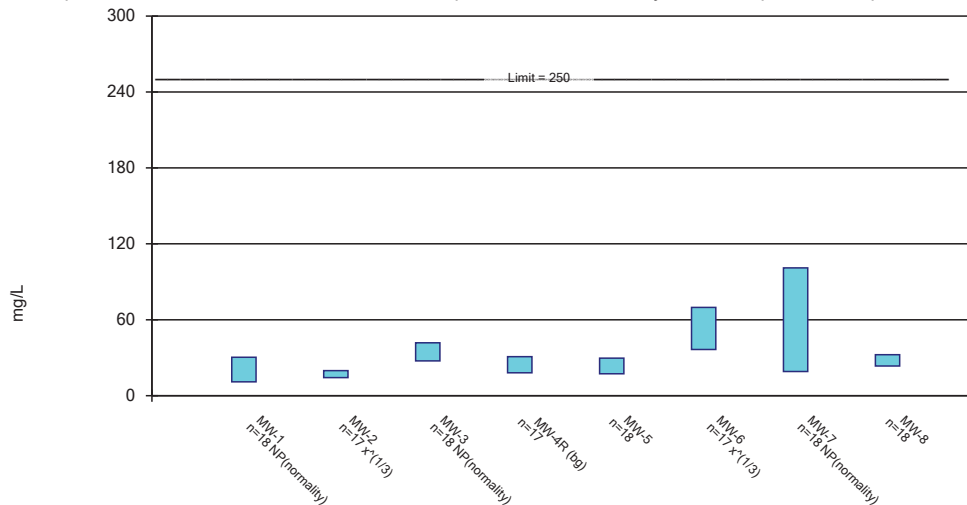
Compliance limit is exceeded.* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



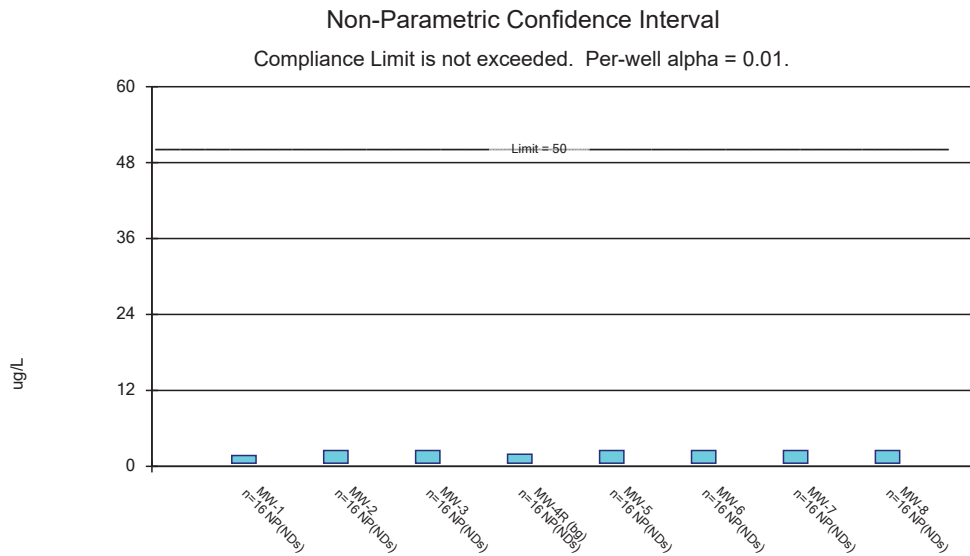
Constituent: Calcium Analysis Run 9/8/2022 11:18 AM View: FDU Combined
 Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Parametric and Non-Parametric (NP) Confidence Interval

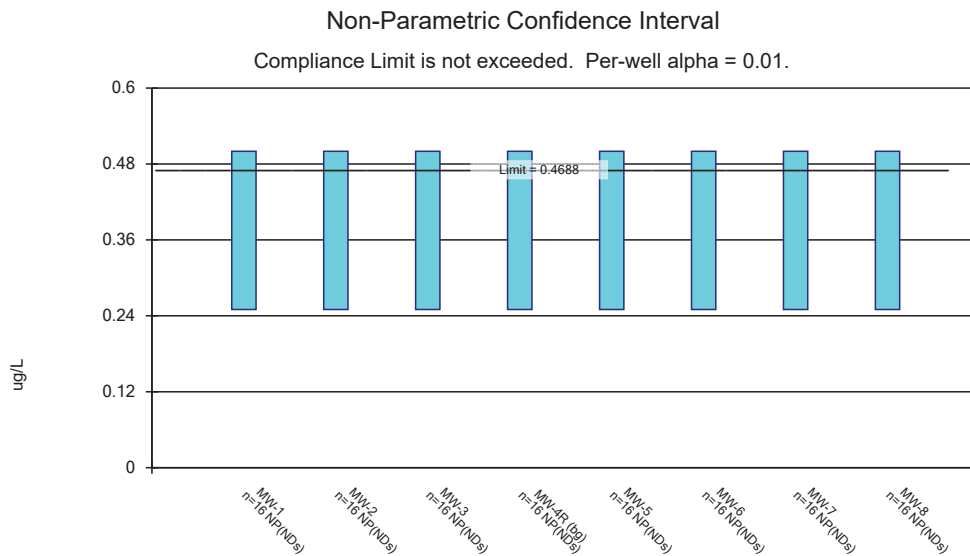
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Chloride Analysis Run 9/8/2022 11:18 AM View: FDU Combined
 Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater



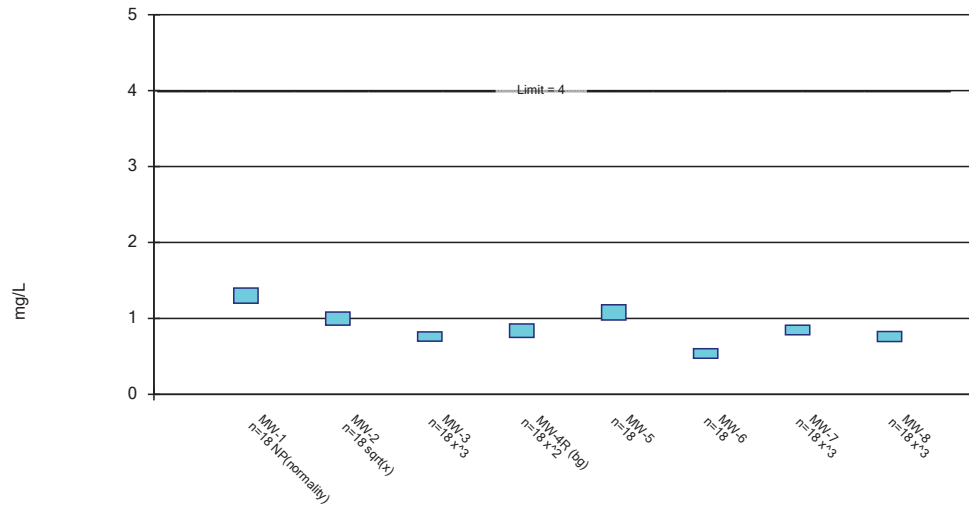
Constituent: Chromium [total] Analysis Run 9/8/2022 11:18 AM View: FDU Combined
 Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater



Constituent: Cobalt [total] Analysis Run 9/8/2022 11:19 AM View: FDU Combined
 Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Parametric and Non-Parametric (NP) Confidence Interval

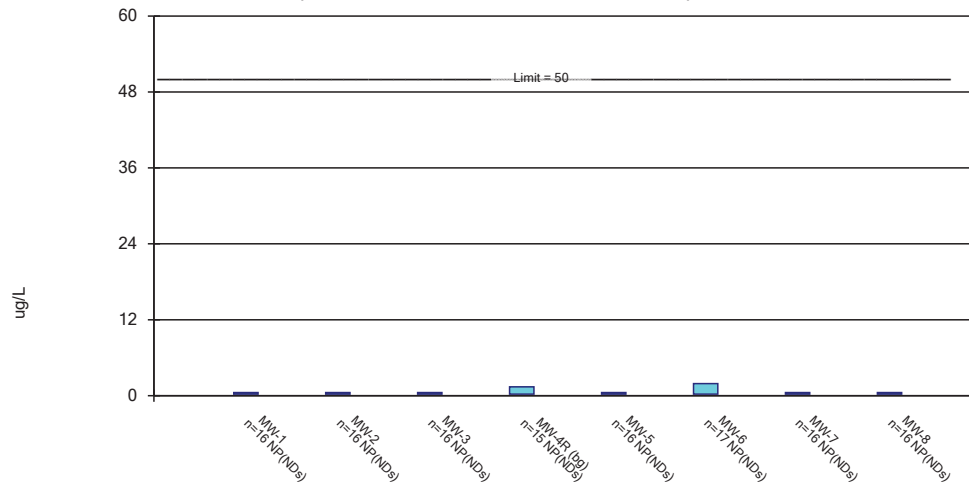
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Fluoride Analysis Run 9/8/2022 11:19 AM View: FDU Combined
 Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Non-Parametric Confidence Interval

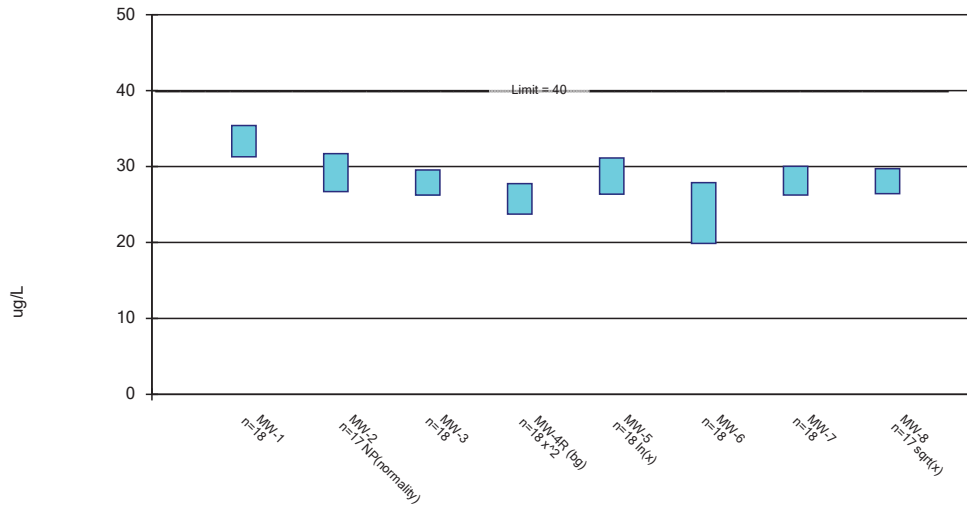
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Lead [total] Analysis Run 9/8/2022 11:19 AM View: FDU Combined
 Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Parametric and Non-Parametric (NP) Confidence Interval

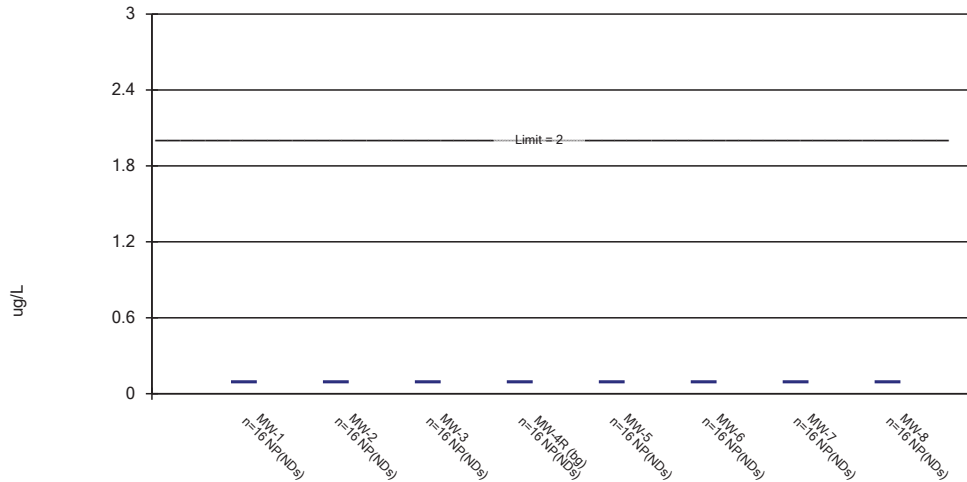
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Lithium Analysis Run 9/8/2022 11:19 AM View: FDU Combined
 Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Non-Parametric Confidence Interval

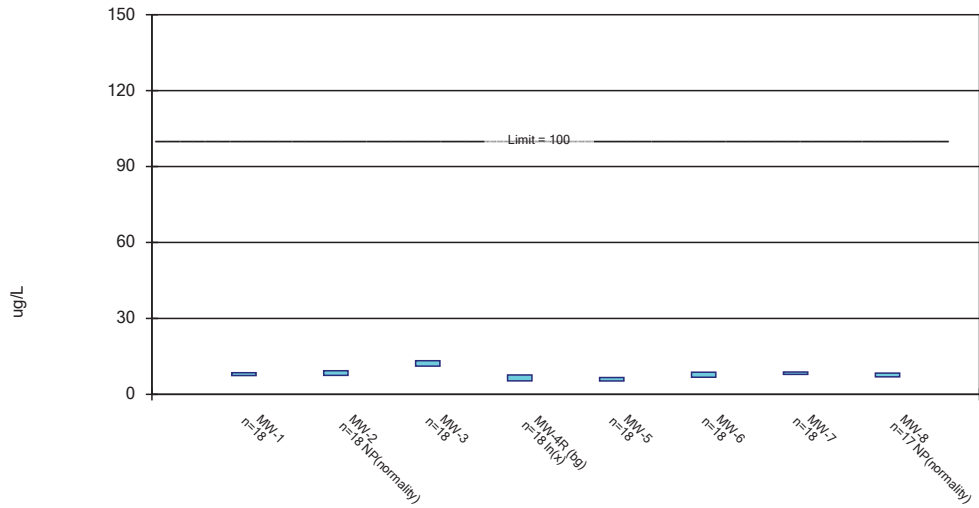
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Mercury Analysis Run 9/8/2022 11:19 AM View: FDU Combined
 Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Parametric and Non-Parametric (NP) Confidence Interval

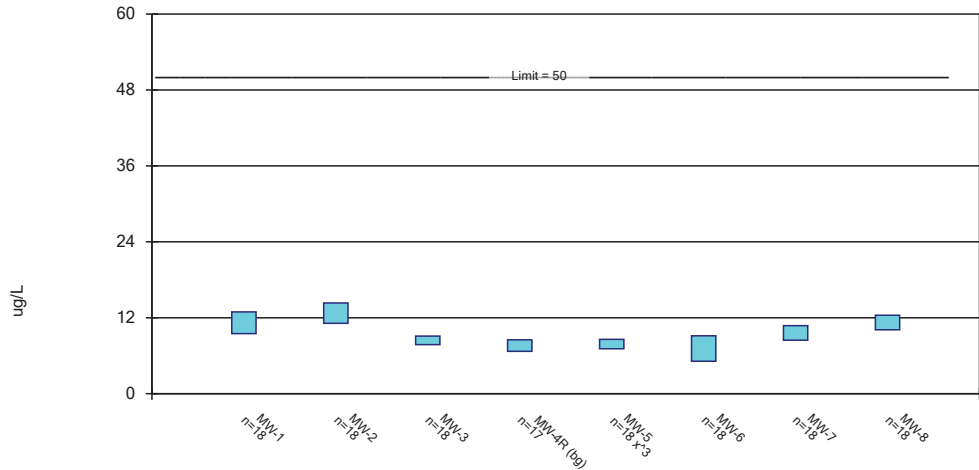
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Molybdenum Analysis Run 9/8/2022 11:19 AM View: FDU Combined
 Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Parametric Confidence Interval

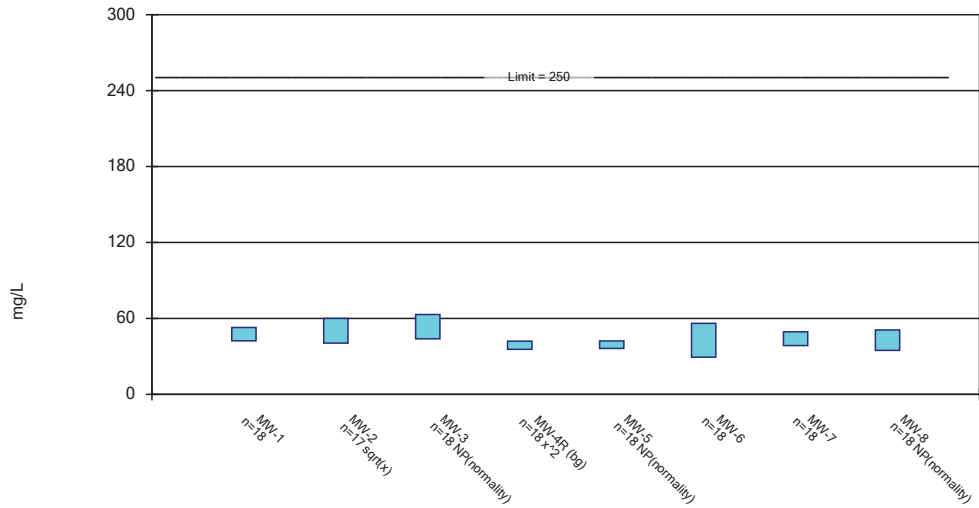
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Selenium [total] Analysis Run 9/8/2022 11:19 AM View: FDU Combined
 Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Parametric and Non-Parametric (NP) Confidence Interval

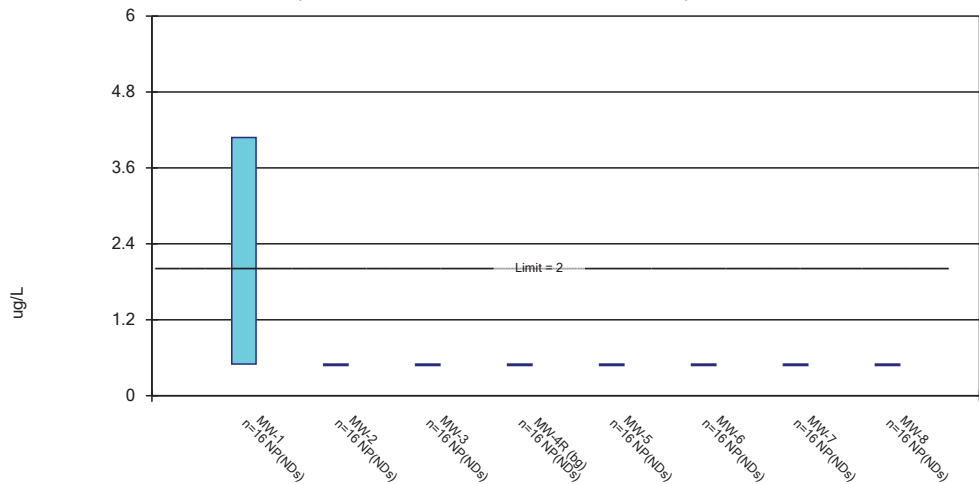
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Sulfate Analysis Run 9/8/2022 11:20 AM View: FDU Combined
 Fremont Dept. of Utilities Client: SCS Engineers Data: Fremont Department of Utilities Groundwater

Non-Parametric Confidence Interval

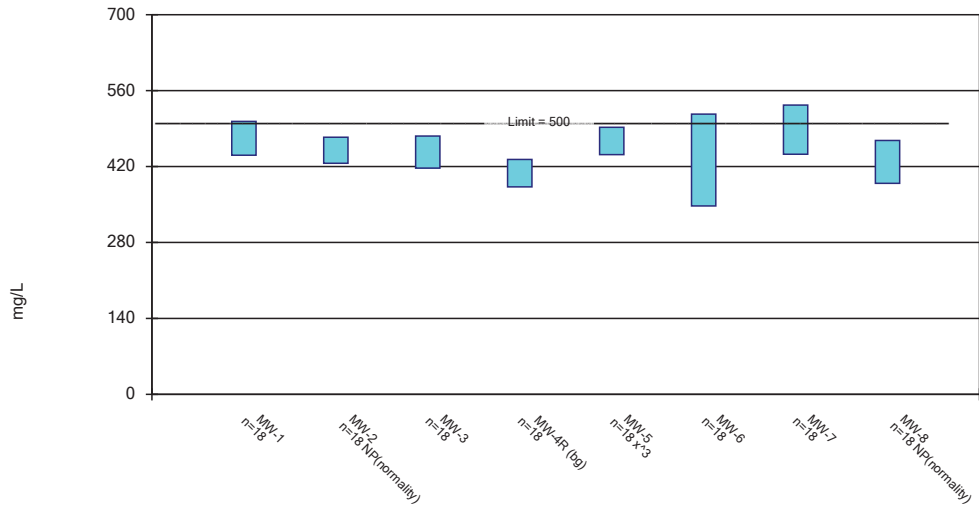
Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: Thallium [total] Analysis Run 9/8/2022 11:20 AM View: FDU Combined
 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.

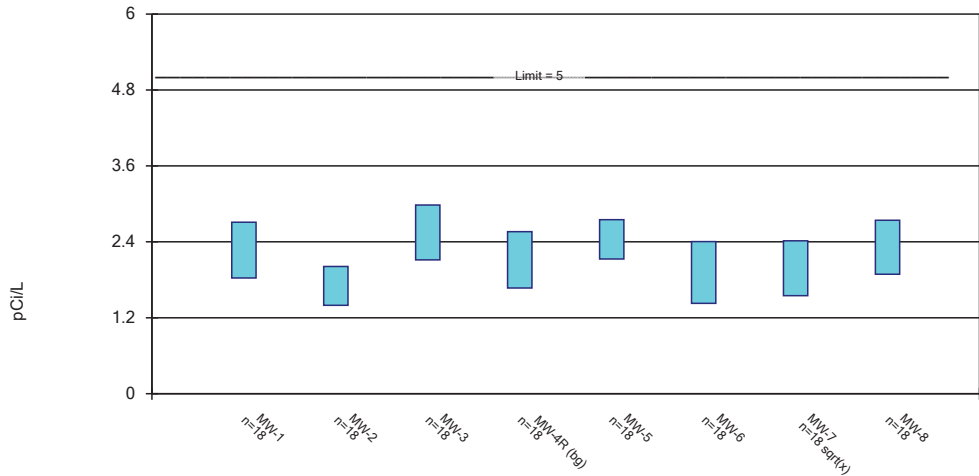


Constituent: Total Dissolved Solids Analysis Run 9/8/2022 11:20 AM View: FDU Combined

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 9/8/2022 11:20 AM View: FDU Combined

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

B Supporting information

B.1 Field Data Sheets

Field Data Sheet

1N e 1122
= 23.89
15 e 1124
= 23.87

Project Name: FDU GW Sampling
Project Location: Fremont, NE
Project Number: 27219045.02

Monitoring Point: Mw-1
Date(s): 8/8/22

Field Team Members

Name: CC Affiliation: SCS Engineers
Name: EW Affiliation: SCS Engineers

Weather Conditions

Mean Temp: 65 °F (Mean) Wind Direction: N S W (circle two if needed)
Precipitation: None Light Heavy Sky: Cloudy Sunny Partly

Well Observations

Well Pad Good Locks

Yes	No
<u>x</u>	<u>x</u>

Casing ↓ Protective Casing Well
Protective Casing ↓
Reference Mark/Identification ↓

Groundwater Level Measurements

Date/Time Measured: 8/8/22 Total Depth: 29.0 feet below TOC
Static Water Level: 23.14 feet below TOC
TD - SWL: 5.86 water column (ft.)

Purging Activities

Purged By: CC Purge Date: 8/8/22
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: 5.86 - 10 = 526 Min Purge Volume: 100 mL
Initial Parameter Readings: Temp (°C) 13.92 pH 7.37 ORP 142
Sp. Cond. 0.701 Turbidity 0.0 DO 5.51
Physical appearance of purge water: Clear

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)
1114	850	400	13.90	7.33	144	0.704	0.0	5.45	23.16
1117	2050	400	13.80	7.22	145	0.704	0.0	5.29	23.18
1120	3250	400	13.80	7.27	146	0.705	0.0	5.29	23.18

Sampling Activities

Sampled By: CC Sample Date/Time: 8/8/22 1120
Sample Method: Bailer Dedicated Pump Non-Dedicated Pump Peristaltic Pump (circle one)
Sample Parameters: Temp (°C) 13.80 pH 7.27 ORP 146
Sp. Cond. 0.705 Turbidity 0.0 DO 5.29
Water Level 23.18 (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-2
 Date(s): 8/8/22

Field Team Members

Name: CC Affiliation: SCS Engineers
 Name: EW Affiliation: SCS Engineers

Weather Conditions

Mean Temp: 74 °F (Mean) Wind Direction: N S D W (circle two if needed)
 Precipitation: None Light Heavy Sky: Cloudy Sunny Partly

Well Observations

Well Pad Good Locks

Yes	No
☒	☐

 Casing ↓ Protective Casing

☒	☐

 Protective Casing ↓ Well

☒	☐

 Reference Mark/Identification ↓

Groundwater Level Measurements

Date/Time Measured: 8/8/22 1132 Total Depth: 28.00 feet below TOC
 Static Water Level: 19.72 feet below TOC
 TD - SWL: 8.18 water column (ft.)

Purging Activities

Purged By: CC Purge Date: 8/8/22
 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: 8.18 × 10 = 81.8 Min Purge Volume: 100 mL
 Initial Parameter Readings: Temp (°C) 13.74 pH 7.51 ORP 147
 Sp. Cond. 0.746 Turbidity 0.0 DO 12.84
 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)
1139	700	400	13.72	7.26	143	0.743	0.0	12.26	19.75
1142	1900	400	13.57	7.17	147	0.739	0.0	11.62	19.75
1145	3100	400	13.58	7.11	150	0.739	0.0	11.34	19.75

Sampling Activities

Sampled By: CC Sample Date/Time: 8/8/22 1145
 Sample Method: Bailer Dedicated Pump Non-Dedicated Pump Peristaltic Pump (circle one)
 Sample Parameters: Temp (°C) 13.58 pH 7.11 ORP 150
 Sp. Cond. 0.738 Turbidity 0.0 DO 11.34
 Water Level 19.75 (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): 8/8/22

Field Team Members

Name: CC Affiliation: SCS Engineers
 Name: EW Affiliation: SCS Engineers

Weather Conditions

Mean Temp: 66 °F (Mean) Wind Direction: N S E W (circle two if needed)
 Precipitation: None Light Heavy Sky: Cloudy Sunny Partly

Well Observations

Well Pad 600
 Casing ↓
 Protective Casing ↓
 Reference Mark/Identification ↓

Locks	Yes	No
Protective Casing	<u>X</u>	
Well		<u>X</u>

Groundwater Level Measurements

Date/Time Measured: 8/8/22 0955
 Total Depth: 28.00 feet below TOC
 Static Water Level: 20.47 feet below TOC
 TD - SWL: 7.53 water column (ft.)

Purging Activities

Purged By: CC Purge Date: 8/8/22
 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: 7.53 × 10 = 75.3 Min Purge Volume: 100 mL
 Initial Parameter Readings: Temp (°C) 18.45 pH 8.22 ORP 114
 Sp. Cond. 0.794 Turbidity 0.0 DO 3.99

Physical appearance of purge water:

Purge Time	Cumulative Purge Vol. (mL)	Purge Rate (mL/m)	Temp (°C)	pH	ORP (mV)	10% 0.2 SU		Dissolved Oxygen (mg/L)	Water Level (ft below TOC)
						Specific Conductivity (mS/cm)	Turbidity (NTU)		
1001	500	150	17.82	7.95	112	0.719	0.0	3.84	20.92
1004	500	150	16.92	8.78	130	0.753	0.0	3.37	16.97
1007	1500	150	16.79	7.64	130	0.794	0.0	3.77	20.95

Sampling Activities

Sampled By: CC Sample Date/Time: 8/8/22
 Sample Method: Bailer Dedicated Pump Non-Dedicated Pump Peristaltic Pump (circle one)
 Sample Parameters: Temp (°C) 16.79 pH 7.611 ORP 130
 Sp. Cond. 0.794 Turbidity 0.0 DO 3.72
 Water Level 20.99 (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): 8/8/22

Field Team Members

Name: CC Affiliation: SCS Engineers
 Name: AW Affiliation: SCS Engineers

Weather Conditions

Mean Temp: 66 °F (Mean) Wind Direction: N S E W (circle two if needed)
 Precipitation: None Light Heavy Sky: Cloudy Sunny Partly

Well Observations

Well Pad Casoo Locks

Yes	No
<u>X</u>	
	<u>X</u>

 Casing ↓ Protective Casing Well
 Protective Casing ↓
 Reference Mark/Identification ↓

Groundwater Level Measurements

Date/Time Measured: 8/8/22 0905 Total Depth: 28.00 feet below TOC
 Static Water Level: 18.5 feet below TOC
 TD - SWL: 9.5 water column (ft.)

Purging Activities

Purged By: CC Purge Date: 8/8/22
 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: 9.5 x 10 = 95 Min Purge Volume: 100 mL
 Initial Parameter Readings: Temp (°C) 17.22 pH 9.45 ORP 73
 Sp. Cond. 0.730 Turbidity 0 DO 5.06
 Physical appearance of purge water: clear

Purge Time	Cumulative Purge Vol. (mL)	Purge Rate (mL/m)	10%		0.2 SU		10%		Water Level (ft below TOC)
			Temp (°C)	pH	ORP (mV)	Specific Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	
0924	6500	700	15.58	9.15	98	6.795	0.0	4.22	18.93
0927	1100	200	15.31	8.97	96	6.785	0.0	3.62	18.95
0930	1700	700	15.01	8.83	101	6.786	0.0	3.45	18.95

Sampling Activities

Sampled By: CC Sample Date/Time: 8/8/22 0930
 Sample Method: Bailer Dedicated Pump Non-Dedicated Pump Peristaltic Pump (circle one)
 Sample Parameters: Temp (°C) 15.01 pH 8.33 ORP 101
 Sp. Cond. 0.786 Turbidity 0.0 DO 3.45
 Water Level 18.95 (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: MU-5
 Date(s): 8/13/22

Field Team Members

Name: CC Affiliation: SCS Engineers
 Name: MS 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 Locks

Yes	No
<u>X</u>	

 Casing ↓ Protective Casing Well

	<u>X</u>

 Protective Casing ↓
 Reference Mark/Identification ↓

Groundwater Level Measurements

Total Depth: 28.00 feet below TOC
 Static Water Level: 15.39 feet below TOC
 Date/Time Measured: 8/18/22 1042 TD - SWL: 8.61 water column (ft.)

Purging Activities

Purged By: CC Purge Date: 8/18/22
 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: 8.61 x 12 = 86.1 Min Purge Volume: 100 mL
 Initial Parameter Readings: Temp (°C) 14.24 pH 7.37 ORP 176
 Sp. Cond. 2913 Turbidity 0.0 DO 6.15
 Physical appearance of purge water: Clear

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)
1047	900	300	13.78	7.67	131	2.693	0.0	6.49	15.39
1050	1300	300	13.40	7.53	126	2.688	0.0	6.45	15.40
1053	2200	300	13.26	7.40	149	2.681	0.0	6.15	15.31

Sampling Activities

Sampled By: CC Sample Date/Time: 8/18/22 1053
 Sample Method: Bailer Dedicated Pump Non-Dedicated Pump Peristaltic Pump (circle one)
 Sample Parameters: Temp (°C) 13.26 pH 7.40 ORP 140
 Sp. Cond. 2691 Turbidity 0.0 DO 6.15
 Water Level 15.31 (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): 8/8/22

Field Team Members

Name: CC Affiliation: SCS Engineers
 Name: CC Affiliation: SCS Engineers

Weather Conditions

Mean Temp: 78 °F (Mean) Wind Direction: N S E W (circle two if needed)
 Precipitation: None Light Heavy Sky: Cloudy Sunny Partly

Well Observations

Well Pad 6000 Locks

Yes	No
<u>X</u>	

 Casing ↓ Protective Casing Well

	<u>X</u>

 Protective Casing
 Reference Mark/Identification ↓

Groundwater Level Measurements

Total Depth: 28.05 feet below TOC
 Static Water Level: 19.84 feet below TOC
 Date/Time Measured: 8/8/22 1244 TD - SWL: 8.16 water column (ft.)

Purging Activities

Purged By: CC Purge Date: 8/8/22
 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: 3.16 x 10 = 31.6 Min Purge Volume: 100 mL
 Initial Parameter Readings: Temp (°C) 17.43 pH 7.13 ORP 145
 Sp. Cond. 0.209 Turbidity 1.2 DO 6.44
 Physical appearance of purge water: CLEAR

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)
1251	500	400	16.41	7.13	147	0.828	0.0	5.83	19.91
1254	1700	400	15.31	7.09	152	0.879	0.0	2.39	19.91
1257	2900	400	15.19	7.04	153	0.876	0.0	2.92	19.91

Sampling Activities

Sampled By: CC Sample Date/Time: 8/8/22
 Sample Method: Bailer Dedicated Pump Non-Dedicated Pump Peristaltic Pump (circle one)
 Sample Parameters: Temp (°C) 15.19 pH 7.04 ORP 153
 Sp. Cond. 0.876 Turbidity 0.0 DO 2.92
 Water Level 19.91 (feet below TOC)

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

DUP1 TAKEN HOLE C 2355

Electronic Form Completed By: _____ Date: _____

Field Data Sheet

Project Name: FDU GW Sampling
 Project Location: Fremont, NE
 Project Number: 27219045.02

Monitoring Point: mm-7
 Date(s): 8/8/22

Field Team Members

Name: CC Affiliation: SCS Engineers
 Name: EW Affiliation: SCS Engineers

Weather Conditions

Mean Temp: 77 °F (Mean) Wind Direction: ☒ N ☐ S ☐ E ☐ W (circle two if needed)
 Precipitation: ☒ None ☐ Light ☐ Heavy Sky: ☐ Cloudy ☐ Sunny ☒ Partly

Well Observations

Well Pad 6000
 Casing ↓
 Protective Casing ↓
 Reference Mark/Identification ↓

Locks	Yes	No
Protective Casing	☒	☐
Well	☐	☒

Groundwater Level Measurements

Date/Time Measured: 8/8/22 1225
 Total Depth: 23.00 feet below TOC
 Static Water Level: 12.84 feet below TOC
 TD - SWL: 8.16 water column (ft.)

Purging Activities

Purged By: CC Purge Date: 8/8/22
 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: 8.16 * 10 = 81.6 Min Purge Volume: 150 mL
 Initial Parameter Readings: Temp (°C) 16.85 pH 6.93 ORP 142
 Sp. Cond. 0.875 Turbidity 0.2 DO 6.19
 Physical appearance of purge water: clear

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)
1227	750	300	16.85	6.93	142	0.875	0.2	6.19	19.59
1230	1550	300	16.85	6.86	152	0.884	0.2	6.00	19.58
1233	2450	300	15.81	6.85	154	0.880	0.2	6.00	19.56

Sampling Activities

Sampled By: CC Sample Date/Time: 8/8/22 1233
 Sample Method: ☒ Bailer ☒ Dedicated Pump ☐ Non-Dedicated Pump ☐ Peristaltic Pump (circle one)
 Sample Parameters: Temp (°C) 15.81 pH 6.85 ORP 154
 Sp. Cond. 0.880 Turbidity 0.2 DO 6.00
 Water Level 19.56 (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: M11F-8
 Date(s): 8/9/22

Field Team Members

Name: CC Affiliation: SCS Engineers
 Name: EW Affiliation: SCS Engineers

Weather Conditions

Mean Temp: 74 °F (Mean) Wind Direction: (N) S < E W (circle two if needed)
 Precipitation: None Light Heavy Sky: Cloudy Sunny Partly

Well Observations

Well Pad GWD Locks

Yes	No
<u>X</u>	

 Casing Protective Casing
 Protective Casing Well

Yes	No
	<u>X</u>

 Reference Mark/Identification

Groundwater Level Measurements

Date/Time Measured: 8/9/22 Total Depth: 23.0 feet below TOC
 Static Water Level: 20.01 feet below TOC
 TD - SWL: 7.99 water column (ft.)

Purging Activities

Purged By: CC Purge Date: 8/9/22
 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: 7.59 - 1.5 = 7.99 Min Purge Volume: 1.00 mL
 Initial Parameter Readings: Temp (°C) 17.20 pH 7.10 ORP 149
 Sp. Cond. 0.760 Turbidity 3.10 DO 7.65

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)
1204	700	400	16.50	7.15	144	0.750	0.0	10.90	20.00
1207	1900	400	15.28	7.07	149	0.747	0.0	5.42	20.00
1210	3100	400	15.17	7.01	152	0.715	0.0	5.00	20.00

Sampling Activities

Sampled By: CC Sample Date/Time: 8/9/22 1210
 Sample Method: Bailer Dedicated Pump Non-Dedicated Pump Peristaltic Pump (circle one)
 Sample Parameters: Temp (°C) 15.12 pH 7.01 ORP 152
 Sp. Cond. 0.715 Turbidity 0.0 DO 5.00
 Water Level 20.00 (feet below TOC)

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

Electronic Form Completed By: Date:

B.2 Chain of Custody

Cedar Falls, IA 50613
phone 319.277.2401 fax 319.277.2425

TestAmerica Laboratories, Inc. d/b/a Eurofins TestAmerica

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Project Manager: Morgan Sykes Email: msykes@scsengineers.com Tel/Fax: (402) 938-0323		Site Contact: Charles Joyce Lab Contact: Shawn Hayes		Date: 3/2/2022	COC No: 1 of 1 COCs													
Analysis Turnaround Time ☐ CALENDAR DAYS ☐ WORKING DAYS TAT if different from Below _____ ☐ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day		Sampler: For Lab Use Only: Walk-in Client: Lab Sampling: Job / SDG No.:																
Client Contact SCS Engineers 14755 Grover Street Omaha, NE 68144 (402) 884-6202 Phone (913) 681-0012 FAX Project Name: City of Fremont Site: FDU P O # 27219425.02	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	6020 Total Metals	9056 Chloride-Fluoride-Sulfate	2540C TDS	9040 pH	9315 Radium-226	9320 Radium-228	Total Radium	Sample Specific Notes:	
	MW-1	8.3.22	1120	G	WT	5			X	X	X	X	X	X	X	X		
	MW-2	8.3.22	1145	G	WT	5			X	X	X	X	X	X	X	X		
	MW-3	8.3.22	1207	G	WT	5			X	X	X	X	X	X	X	X		
	MW-4R	8.3.22	0930	G	WT	5			X	X	X	X	X	X	X	X		
	MW-5	8.3.22	1053	G	WT	5			X	X	X	X	X	X	X	X		
	MW-6	8.3.22	1257	G	WT	5			X	X	X	X	X	X	X	X		
	MW-7	8.3.22	1233	G	WT	5			X	X	X	X	X	X	X	X		
	MW-8	8.3.22	1210	G	WT	5			X	X	X	X	X	X	X	X		
	DUPLICATE	8.3.22	2359	G	WT	5			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. ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown																		
Special Instructions/QC Requirements & Comments: Please email results to cjoyce@scsengineers.com as well.																		
Custody Seals Intact: ☐ Yes ☐ No		Custody Seal No.:		Cooler Temp. (°C):		Obs'd:		Corr'd:		Therm ID No.:								
Relinquished by:		Company:		Date/Time:		Received by:		Company:		Date/Time:								
Relinquished by:		Company:		Date/Time:		Received by:		Company:		Date/Time:								
Relinquished by:		Company:		Date/Time:		Received in Laboratory by:		Company:		Date/Time:								

B.3 Testing Results

ANALYTICAL REPORT

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Tel: (319)277-2401

Laboratory Job ID: 310-237575-1
Client Project/Site: FDU - City of Fremont

For:
SCS Engineers
14755 Grover St
Omaha, Nebraska 68144

Attn: Morgan Sykes



Authorized for release by:
8/23/2022 5:37:13 PM
Brian Graettinger, Lab Director
(319)595-2012
Brian.Graettinger@et.eurofinsus.com

Designee for
Shirley Thompson, Client Service Manager
(319)277-2401
Shirley.Thompson@et.eurofinsus.com

LINKS

Review your project
results through



Have a Question?



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www.eurofinsus.com/Env

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



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Certification Summary	28
Method Summary	29
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Case Narrative

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

Job ID: 310-237575-1

Job ID: 310-237575-1

Laboratory: Eurofins Cedar Falls

Narrative

Job Narrative 310-237575-1

Comments

No additional comments.

Receipt

The samples were received on 8/9/2022 9:50 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 0.7° C and 3.2° C.

HPLC/IC

Methods 300.0, 9056A: The following samples were diluted due to the nature of the sample matrix: MW-3 (310-237575-3), MW-4R (310-237575-4), MW-6 (310-237575-6), MW-7 (310-237575-7), MW-8 (310-237575-8) and DUPLICATE (310-237575-9). 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

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

General Chemistry

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

Sample Summary

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

Job ID: 310-237575-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-237575-1	MW-1	Water	08/08/22 11:20	08/09/22 09:50
310-237575-2	MW-2	Water	08/08/22 11:45	08/09/22 09:50
310-237575-3	MW-3	Water	08/08/22 10:07	08/09/22 09:50
310-237575-4	MW-4R	Water	08/08/22 09:30	08/09/22 09:50
310-237575-5	MW-5	Water	08/08/22 10:53	08/09/22 09:50
310-237575-6	MW-6	Water	08/08/22 12:57	08/09/22 09:50
310-237575-7	MW-7	Water	08/08/22 12:33	08/09/22 09:50
310-237575-8	MW-8	Water	08/08/22 12:10	08/09/22 09:50
310-237575-9	DUPLICATE	Water	08/08/22 23:59	08/09/22 09:50

Detection Summary

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

Job ID: 310-237575-1

Client Sample ID: MW-1

Lab Sample ID: 310-237575-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	31.3		5.00		mg/L	5		9056A	Total/NA
Fluoride	0.798		0.500		mg/L	5		9056A	Total/NA
Sulfate	59.5		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.00420		0.00200		mg/L	1		6020A	Total/NA
Barium	0.126		0.00200		mg/L	1		6020A	Total/NA
Boron	0.132		0.100		mg/L	1		6020A	Total/NA
Calcium	93.0		0.500		mg/L	1		6020A	Total/NA
Lithium	0.0285		0.0100		mg/L	1		6020A	Total/NA
Molybdenum	0.00608		0.00200		mg/L	1		6020A	Total/NA
Selenium	0.00596		0.00500		mg/L	1		6020A	Total/NA
pH	7.19	HF	0.100		SU	1		9040C	Total/NA
Total Dissolved Solids	374		50.0		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-2

Lab Sample ID: 310-237575-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	25.7		5.00		mg/L	5		9056A	Total/NA
Fluoride	0.857		0.500		mg/L	5		9056A	Total/NA
Sulfate	32.0		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.00406		0.00200		mg/L	1		6020A	Total/NA
Barium	0.129		0.00200		mg/L	1		6020A	Total/NA
Boron	0.134		0.100		mg/L	1		6020A	Total/NA
Calcium	106		0.500		mg/L	1		6020A	Total/NA
Lithium	0.0303		0.0100		mg/L	1		6020A	Total/NA
Molybdenum	0.00626		0.00200		mg/L	1		6020A	Total/NA
Selenium	0.00664		0.00500		mg/L	1		6020A	Total/NA
pH	7.13	HF	0.100		SU	1		9040C	Total/NA
Total Dissolved Solids	376		50.0		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-3

Lab Sample ID: 310-237575-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	41.8		5.00		mg/L	5		9056A	Total/NA
Sulfate	36.5		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.00342		0.00200		mg/L	1		6020A	Total/NA
Barium	0.183		0.00200		mg/L	1		6020A	Total/NA
Boron	0.136		0.100		mg/L	1		6020A	Total/NA
Calcium	107		0.500		mg/L	1		6020A	Total/NA
Lithium	0.0247		0.0100		mg/L	1		6020A	Total/NA
Molybdenum	0.0120		0.00200		mg/L	1		6020A	Total/NA
Selenium	0.00883		0.00500		mg/L	1		6020A	Total/NA
pH	7.06	HF	0.100		SU	1		9040C	Total/NA
Total Dissolved Solids	398		50.0		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-4R

Lab Sample ID: 310-237575-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	42.6		5.00		mg/L	5		9056A	Total/NA
Sulfate	40.7		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.00540		0.00200		mg/L	1		6020A	Total/NA
Barium	0.129		0.00200		mg/L	1		6020A	Total/NA
Boron	0.115		0.100		mg/L	1		6020A	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: 310-237575-1

Client Sample ID: MW-4R (Continued)

Lab Sample ID: 310-237575-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	103		0.500		mg/L	1		6020A	Total/NA
Lithium	0.0274		0.0100		mg/L	1		6020A	Total/NA
Molybdenum	0.00489		0.00200		mg/L	1		6020A	Total/NA
Selenium	0.00855		0.00500		mg/L	1		6020A	Total/NA
pH	7.12	HF	0.100		SU	1		9040C	Total/NA
Total Dissolved Solids	400		50.0		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-5

Lab Sample ID: 310-237575-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	26.1		5.00		mg/L	5		9056A	Total/NA
Fluoride	0.655		0.500		mg/L	5		9056A	Total/NA
Sulfate	42.2		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.00422		0.00200		mg/L	1		6020A	Total/NA
Barium	0.125		0.00200		mg/L	1		6020A	Total/NA
Boron	0.120		0.100		mg/L	1		6020A	Total/NA
Calcium	91.3		0.500		mg/L	1		6020A	Total/NA
Lithium	0.0233		0.0100		mg/L	1		6020A	Total/NA
Molybdenum	0.00462		0.00200		mg/L	1		6020A	Total/NA
pH	7.18	HF	0.100		SU	1		9040C	Total/NA
Total Dissolved Solids	348		50.0		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-6

Lab Sample ID: 310-237575-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	27.6		5.00		mg/L	5		9056A	Total/NA
Sulfate	86.3		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.00311		0.00200		mg/L	1		6020A	Total/NA
Barium	0.127		0.00200		mg/L	1		6020A	Total/NA
Boron	0.135		0.100		mg/L	1		6020A	Total/NA
Calcium	96.0		0.500		mg/L	1		6020A	Total/NA
Lithium	0.0197		0.0100		mg/L	1		6020A	Total/NA
Molybdenum	0.00987		0.00200		mg/L	1		6020A	Total/NA
pH	7.09	HF	0.100		SU	1		9040C	Total/NA
Total Dissolved Solids	360		50.0		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-7

Lab Sample ID: 310-237575-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	101		5.00		mg/L	5		9056A	Total/NA
Sulfate	44.7		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.00365		0.00200		mg/L	1		6020A	Total/NA
Barium	0.159		0.00200		mg/L	1		6020A	Total/NA
Boron	0.118		0.100		mg/L	1		6020A	Total/NA
Cadmium	0.000106		0.000100		mg/L	1		6020A	Total/NA
Calcium	106		0.500		mg/L	1		6020A	Total/NA
Lithium	0.0273		0.0100		mg/L	1		6020A	Total/NA
Molybdenum	0.00667		0.00200		mg/L	1		6020A	Total/NA
Selenium	0.0114		0.00500		mg/L	1		6020A	Total/NA
pH	7.11	HF	0.100		SU	1		9040C	Total/NA
Total Dissolved Solids	502		50.0		mg/L	1		SM 2540C	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: 310-237575-1

Client Sample ID: MW-8

Lab Sample ID: 310-237575-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	28.5		5.00		mg/L	5		9056A	Total/NA
Sulfate	29.3		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.00256		0.00200		mg/L	1		6020A	Total/NA
Barium	0.170		0.00200		mg/L	1		6020A	Total/NA
Boron	0.109		0.100		mg/L	1		6020A	Total/NA
Calcium	101		0.500		mg/L	1		6020A	Total/NA
Lithium	0.0255		0.0100		mg/L	1		6020A	Total/NA
Molybdenum	0.00619		0.00200		mg/L	1		6020A	Total/NA
Selenium	0.00899		0.00500		mg/L	1		6020A	Total/NA
pH	7.01	HF	0.100		SU	1		9040C	Total/NA
Total Dissolved Solids	350		50.0		mg/L	1		SM 2540C	Total/NA

Client Sample ID: DUPLICATE

Lab Sample ID: 310-237575-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	27.6		5.00		mg/L	5		9056A	Total/NA
Sulfate	86.6		5.00		mg/L	5		9056A	Total/NA
Arsenic	0.00310		0.00200		mg/L	1		6020A	Total/NA
Barium	0.130		0.00200		mg/L	1		6020A	Total/NA
Boron	0.129		0.100		mg/L	1		6020A	Total/NA
Calcium	96.8		0.500		mg/L	1		6020A	Total/NA
Lithium	0.0210		0.0100		mg/L	1		6020A	Total/NA
Molybdenum	0.0103		0.00200		mg/L	1		6020A	Total/NA
pH	7.08	HF	0.100		SU	1		9040C	Total/NA
Total Dissolved Solids	364		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: 310-237575-1

Client Sample ID: MW-1

Lab Sample ID: 310-237575-1

Date Collected: 08/08/22 11:20

Matrix: Water

Date Received: 08/09/22 09:50

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	31.3		5.00		mg/L			08/18/22 17:55	5
Fluoride	0.798		0.500		mg/L			08/18/22 17:55	5
Sulfate	59.5		5.00		mg/L			08/18/22 17:55	5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		08/11/22 09:00	08/22/22 19:35	1
Arsenic	0.00420		0.00200		mg/L		08/11/22 09:00	08/22/22 19:35	1
Barium	0.126		0.00200		mg/L		08/11/22 09:00	08/22/22 19:35	1
Beryllium	<0.00100		0.00100		mg/L		08/11/22 09:00	08/22/22 19:35	1
Boron	0.132		0.100		mg/L		08/11/22 09:00	08/22/22 19:35	1
Cadmium	<0.000100		0.000100		mg/L		08/11/22 09:00	08/22/22 19:35	1
Calcium	93.0		0.500		mg/L		08/11/22 09:00	08/22/22 19:35	1
Chromium	<0.00500		0.00500		mg/L		08/11/22 09:00	08/22/22 19:35	1
Cobalt	<0.000500		0.000500		mg/L		08/11/22 09:00	08/22/22 19:35	1
Lead	<0.000500		0.000500		mg/L		08/11/22 09:00	08/22/22 19:35	1
Lithium	0.0285		0.0100		mg/L		08/11/22 09:00	08/22/22 19:35	1
Molybdenum	0.00608		0.00200		mg/L		08/11/22 09:00	08/22/22 19:35	1
Selenium	0.00596		0.00500		mg/L		08/11/22 09:00	08/22/22 19:35	1
Thallium	<0.00100		0.00100		mg/L		08/11/22 09:00	08/22/22 19:35	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		08/16/22 12:13	08/17/22 12:40	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	374		50.0		mg/L			08/10/22 14:56	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.19	HF	0.100		SU			08/09/22 11:18	1

Client Sample Results

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

Job ID: 310-237575-1

Client Sample ID: MW-2

Lab Sample ID: 310-237575-2

Date Collected: 08/08/22 11:45

Matrix: Water

Date Received: 08/09/22 09:50

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	25.7		5.00		mg/L			08/18/22 18:37	5
Fluoride	0.857		0.500		mg/L			08/18/22 18:37	5
Sulfate	32.0		5.00		mg/L			08/18/22 18:37	5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		08/11/22 09:00	08/22/22 19:39	1
Arsenic	0.00406		0.00200		mg/L		08/11/22 09:00	08/22/22 19:39	1
Barium	0.129		0.00200		mg/L		08/11/22 09:00	08/22/22 19:39	1
Beryllium	<0.00100		0.00100		mg/L		08/11/22 09:00	08/22/22 19:39	1
Boron	0.134		0.100		mg/L		08/11/22 09:00	08/22/22 19:39	1
Cadmium	<0.000100		0.000100		mg/L		08/11/22 09:00	08/22/22 19:39	1
Calcium	106		0.500		mg/L		08/11/22 09:00	08/22/22 19:39	1
Chromium	<0.00500		0.00500		mg/L		08/11/22 09:00	08/22/22 19:39	1
Cobalt	<0.000500		0.000500		mg/L		08/11/22 09:00	08/22/22 19:39	1
Lead	<0.000500		0.000500		mg/L		08/11/22 09:00	08/22/22 19:39	1
Lithium	0.0303		0.0100		mg/L		08/11/22 09:00	08/22/22 19:39	1
Molybdenum	0.00626		0.00200		mg/L		08/11/22 09:00	08/22/22 19:39	1
Selenium	0.00664		0.00500		mg/L		08/11/22 09:00	08/22/22 19:39	1
Thallium	<0.00100		0.00100		mg/L		08/11/22 09:00	08/22/22 19:39	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		08/16/22 12:13	08/17/22 12:47	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	376		50.0		mg/L			08/10/22 14:56	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.13	HF	0.100		SU			08/09/22 11:19	1

Client Sample Results

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

Job ID: 310-237575-1

Client Sample ID: MW-3

Lab Sample ID: 310-237575-3

Date Collected: 08/08/22 10:07

Matrix: Water

Date Received: 08/09/22 09:50

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	41.8		5.00		mg/L			08/18/22 19:19	5
Fluoride	<0.500		0.500		mg/L			08/18/22 19:19	5
Sulfate	36.5		5.00		mg/L			08/18/22 19:19	5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		08/11/22 09:00	08/22/22 19:57	1
Arsenic	0.00342		0.00200		mg/L		08/11/22 09:00	08/22/22 19:57	1
Barium	0.183		0.00200		mg/L		08/11/22 09:00	08/22/22 19:57	1
Beryllium	<0.00100		0.00100		mg/L		08/11/22 09:00	08/22/22 19:57	1
Boron	0.136		0.100		mg/L		08/11/22 09:00	08/22/22 19:57	1
Cadmium	<0.000100		0.000100		mg/L		08/11/22 09:00	08/22/22 19:57	1
Calcium	107		0.500		mg/L		08/11/22 09:00	08/22/22 19:57	1
Chromium	<0.00500		0.00500		mg/L		08/11/22 09:00	08/22/22 19:57	1
Cobalt	<0.000500		0.000500		mg/L		08/11/22 09:00	08/22/22 19:57	1
Lead	<0.000500		0.000500		mg/L		08/11/22 09:00	08/22/22 19:57	1
Lithium	0.0247		0.0100		mg/L		08/11/22 09:00	08/22/22 19:57	1
Molybdenum	0.0120		0.00200		mg/L		08/11/22 09:00	08/22/22 19:57	1
Selenium	0.00883		0.00500		mg/L		08/11/22 09:00	08/22/22 19:57	1
Thallium	<0.00100		0.00100		mg/L		08/11/22 09:00	08/22/22 19:57	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		08/16/22 12:13	08/17/22 12:49	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	398		50.0		mg/L			08/10/22 14:56	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.06	HF	0.100		SU			08/09/22 11:20	1

Client Sample Results

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

Job ID: 310-237575-1

Client Sample ID: MW-4R

Lab Sample ID: 310-237575-4

Date Collected: 08/08/22 09:30

Matrix: Water

Date Received: 08/09/22 09:50

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	42.6		5.00		mg/L			08/18/22 19:33	5
Fluoride	<0.500		0.500		mg/L			08/18/22 19:33	5
Sulfate	40.7		5.00		mg/L			08/18/22 19:33	5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		08/11/22 09:00	08/22/22 20:01	1
Arsenic	0.00540		0.00200		mg/L		08/11/22 09:00	08/22/22 20:01	1
Barium	0.129		0.00200		mg/L		08/11/22 09:00	08/22/22 20:01	1
Beryllium	<0.00100		0.00100		mg/L		08/11/22 09:00	08/22/22 20:01	1
Boron	0.115		0.100		mg/L		08/11/22 09:00	08/22/22 20:01	1
Cadmium	<0.000100		0.000100		mg/L		08/11/22 09:00	08/22/22 20:01	1
Calcium	103		0.500		mg/L		08/11/22 09:00	08/22/22 20:01	1
Chromium	<0.00500		0.00500		mg/L		08/11/22 09:00	08/22/22 20:01	1
Cobalt	<0.000500		0.000500		mg/L		08/11/22 09:00	08/22/22 20:01	1
Lead	<0.000500		0.000500		mg/L		08/11/22 09:00	08/22/22 20:01	1
Lithium	0.0274		0.0100		mg/L		08/11/22 09:00	08/22/22 20:01	1
Molybdenum	0.00489		0.00200		mg/L		08/11/22 09:00	08/22/22 20:01	1
Selenium	0.00855		0.00500		mg/L		08/11/22 09:00	08/22/22 20:01	1
Thallium	<0.00100		0.00100		mg/L		08/11/22 09:00	08/22/22 20:01	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		08/16/22 12:13	08/17/22 12:51	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	400		50.0		mg/L			08/10/22 14:56	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.12	HF	0.100		SU			08/09/22 11:21	1

Client Sample Results

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

Job ID: 310-237575-1

Client Sample ID: MW-5

Lab Sample ID: 310-237575-5

Date Collected: 08/08/22 10:53

Matrix: Water

Date Received: 08/09/22 09:50

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	26.1		5.00		mg/L			08/18/22 19:48	5
Fluoride	0.655		0.500		mg/L			08/18/22 19:48	5
Sulfate	42.2		5.00		mg/L			08/18/22 19:48	5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		08/11/22 09:00	08/22/22 20:04	1
Arsenic	0.00422		0.00200		mg/L		08/11/22 09:00	08/22/22 20:04	1
Barium	0.125		0.00200		mg/L		08/11/22 09:00	08/22/22 20:04	1
Beryllium	<0.00100		0.00100		mg/L		08/11/22 09:00	08/22/22 20:04	1
Boron	0.120		0.100		mg/L		08/11/22 09:00	08/22/22 20:04	1
Cadmium	<0.000100		0.000100		mg/L		08/11/22 09:00	08/22/22 20:04	1
Calcium	91.3		0.500		mg/L		08/11/22 09:00	08/22/22 20:04	1
Chromium	<0.00500		0.00500		mg/L		08/11/22 09:00	08/22/22 20:04	1
Cobalt	<0.000500		0.000500		mg/L		08/11/22 09:00	08/22/22 20:04	1
Lead	<0.000500		0.000500		mg/L		08/11/22 09:00	08/22/22 20:04	1
Lithium	0.0233		0.0100		mg/L		08/11/22 09:00	08/22/22 20:04	1
Molybdenum	0.00462		0.00200		mg/L		08/11/22 09:00	08/22/22 20:04	1
Selenium	<0.00500		0.00500		mg/L		08/11/22 09:00	08/22/22 20:04	1
Thallium	<0.00100		0.00100		mg/L		08/11/22 09:00	08/22/22 20:04	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		08/16/22 12:13	08/17/22 12:53	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	348		50.0		mg/L			08/10/22 14:56	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.18	HF	0.100		SU			08/09/22 11:22	1

Client Sample Results

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

Job ID: 310-237575-1

Client Sample ID: MW-6

Lab Sample ID: 310-237575-6

Date Collected: 08/08/22 12:57

Matrix: Water

Date Received: 08/09/22 09:50

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	27.6		5.00		mg/L			08/18/22 20:02	5
Fluoride	<0.500		0.500		mg/L			08/18/22 20:02	5
Sulfate	86.3		5.00		mg/L			08/18/22 20:02	5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		08/11/22 09:00	08/22/22 20:08	1
Arsenic	0.00311		0.00200		mg/L		08/11/22 09:00	08/22/22 20:08	1
Barium	0.127		0.00200		mg/L		08/11/22 09:00	08/22/22 20:08	1
Beryllium	<0.00100		0.00100		mg/L		08/11/22 09:00	08/22/22 20:08	1
Boron	0.135		0.100		mg/L		08/11/22 09:00	08/22/22 20:08	1
Cadmium	<0.000100		0.000100		mg/L		08/11/22 09:00	08/22/22 20:08	1
Calcium	96.0		0.500		mg/L		08/11/22 09:00	08/22/22 20:08	1
Chromium	<0.00500		0.00500		mg/L		08/11/22 09:00	08/22/22 20:08	1
Cobalt	<0.000500		0.000500		mg/L		08/11/22 09:00	08/22/22 20:08	1
Lead	<0.000500		0.000500		mg/L		08/11/22 09:00	08/22/22 20:08	1
Lithium	0.0197		0.0100		mg/L		08/11/22 09:00	08/22/22 20:08	1
Molybdenum	0.00987		0.00200		mg/L		08/11/22 09:00	08/22/22 20:08	1
Selenium	<0.00500		0.00500		mg/L		08/11/22 09:00	08/22/22 20:08	1
Thallium	<0.00100		0.00100		mg/L		08/11/22 09:00	08/22/22 20:08	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		08/16/22 12:13	08/17/22 12:55	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	360		50.0		mg/L			08/10/22 14:56	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.09	HF	0.100		SU			08/09/22 11:23	1

Client Sample Results

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

Job ID: 310-237575-1

Client Sample ID: MW-7

Lab Sample ID: 310-237575-7

Date Collected: 08/08/22 12:33

Matrix: Water

Date Received: 08/09/22 09:50

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	101		5.00		mg/L			08/18/22 20:16	5
Fluoride	<0.500		0.500		mg/L			08/18/22 20:16	5
Sulfate	44.7		5.00		mg/L			08/18/22 20:16	5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		08/11/22 09:00	08/22/22 20:12	1
Arsenic	0.00365		0.00200		mg/L		08/11/22 09:00	08/22/22 20:12	1
Barium	0.159		0.00200		mg/L		08/11/22 09:00	08/22/22 20:12	1
Beryllium	<0.00100		0.00100		mg/L		08/11/22 09:00	08/22/22 20:12	1
Boron	0.118		0.100		mg/L		08/11/22 09:00	08/22/22 20:12	1
Cadmium	0.000106		0.000100		mg/L		08/11/22 09:00	08/22/22 20:12	1
Calcium	106		0.500		mg/L		08/11/22 09:00	08/22/22 20:12	1
Chromium	<0.00500		0.00500		mg/L		08/11/22 09:00	08/22/22 20:12	1
Cobalt	<0.000500		0.000500		mg/L		08/11/22 09:00	08/22/22 20:12	1
Lead	<0.000500		0.000500		mg/L		08/11/22 09:00	08/22/22 20:12	1
Lithium	0.0273		0.0100		mg/L		08/11/22 09:00	08/22/22 20:12	1
Molybdenum	0.00667		0.00200		mg/L		08/11/22 09:00	08/22/22 20:12	1
Selenium	0.0114		0.00500		mg/L		08/11/22 09:00	08/22/22 20:12	1
Thallium	<0.00100		0.00100		mg/L		08/11/22 09:00	08/22/22 20:12	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		08/16/22 12:13	08/17/22 12:57	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	502		50.0		mg/L			08/10/22 14:56	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.11	HF	0.100		SU			08/09/22 11:26	1

Client Sample Results

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

Job ID: 310-237575-1

Client Sample ID: MW-8

Lab Sample ID: 310-237575-8

Date Collected: 08/08/22 12:10

Matrix: Water

Date Received: 08/09/22 09:50

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	28.5		5.00		mg/L			08/18/22 20:30	5
Fluoride	<0.500		0.500		mg/L			08/18/22 20:30	5
Sulfate	29.3		5.00		mg/L			08/18/22 20:30	5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		08/11/22 09:00	08/22/22 20:19	1
Arsenic	0.00256		0.00200		mg/L		08/11/22 09:00	08/22/22 20:19	1
Barium	0.170		0.00200		mg/L		08/11/22 09:00	08/22/22 20:19	1
Beryllium	<0.00100		0.00100		mg/L		08/11/22 09:00	08/22/22 20:19	1
Boron	0.109		0.100		mg/L		08/11/22 09:00	08/22/22 20:19	1
Cadmium	<0.000100		0.000100		mg/L		08/11/22 09:00	08/22/22 20:19	1
Calcium	101		0.500		mg/L		08/11/22 09:00	08/22/22 20:19	1
Chromium	<0.00500		0.00500		mg/L		08/11/22 09:00	08/22/22 20:19	1
Cobalt	<0.000500		0.000500		mg/L		08/11/22 09:00	08/22/22 20:19	1
Lead	<0.000500		0.000500		mg/L		08/11/22 09:00	08/22/22 20:19	1
Lithium	0.0255		0.0100		mg/L		08/11/22 09:00	08/22/22 20:19	1
Molybdenum	0.00619		0.00200		mg/L		08/11/22 09:00	08/22/22 20:19	1
Selenium	0.00899		0.00500		mg/L		08/11/22 09:00	08/22/22 20:19	1
Thallium	<0.00100		0.00100		mg/L		08/11/22 09:00	08/22/22 20:19	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		08/16/22 12:13	08/17/22 12:59	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	350		50.0		mg/L			08/10/22 14:56	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.01	HF	0.100		SU			08/09/22 11:28	1

Client Sample Results

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

Job ID: 310-237575-1

Client Sample ID: DUPLICATE

Lab Sample ID: 310-237575-9

Date Collected: 08/08/22 23:59

Matrix: Water

Date Received: 08/09/22 09:50

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	27.6		5.00		mg/L			08/18/22 20:44	5
Fluoride	<0.500		0.500		mg/L			08/18/22 20:44	5
Sulfate	86.6		5.00		mg/L			08/18/22 20:44	5

Method: 6020A - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		08/11/22 09:00	08/22/22 20:23	1
Arsenic	0.00310		0.00200		mg/L		08/11/22 09:00	08/22/22 20:23	1
Barium	0.130		0.00200		mg/L		08/11/22 09:00	08/22/22 20:23	1
Beryllium	<0.00100		0.00100		mg/L		08/11/22 09:00	08/22/22 20:23	1
Boron	0.129		0.100		mg/L		08/11/22 09:00	08/22/22 20:23	1
Cadmium	<0.000100		0.000100		mg/L		08/11/22 09:00	08/22/22 20:23	1
Calcium	96.8		0.500		mg/L		08/11/22 09:00	08/22/22 20:23	1
Chromium	<0.00500		0.00500		mg/L		08/11/22 09:00	08/22/22 20:23	1
Cobalt	<0.000500		0.000500		mg/L		08/11/22 09:00	08/22/22 20:23	1
Lead	<0.000500		0.000500		mg/L		08/11/22 09:00	08/22/22 20:23	1
Lithium	0.0210		0.0100		mg/L		08/11/22 09:00	08/22/22 20:23	1
Molybdenum	0.0103		0.00200		mg/L		08/11/22 09:00	08/22/22 20:23	1
Selenium	<0.00500		0.00500		mg/L		08/11/22 09:00	08/22/22 20:23	1
Thallium	<0.00100		0.00100		mg/L		08/11/22 09:00	08/22/22 20:23	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		08/16/22 12:13	08/17/22 13:02	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	364		50.0		mg/L			08/10/22 14:56	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.08	HF	0.100		SU			08/09/22 11:29	1

Definitions/Glossary

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

Job ID: 310-237575-1

Qualifiers

General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.

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: 310-237575-1

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 310-363213/3

Matrix: Water

Analysis Batch: 363213

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			08/18/22 17:26	1
Fluoride	<0.100		0.100		mg/L			08/18/22 17:26	1
Sulfate	<1.00		1.00		mg/L			08/18/22 17:26	1

Lab Sample ID: LCS 310-363213/4

Matrix: Water

Analysis Batch: 363213

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	10.0	9.948		mg/L		99	90 - 110
Fluoride	2.00	2.030		mg/L		101	90 - 110
Sulfate	10.0	10.25		mg/L		102	90 - 110

Lab Sample ID: 310-237575-1 MS

Matrix: Water

Analysis Batch: 363213

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	31.3		25.0	55.63		mg/L		97	80 - 120
Fluoride	0.798		5.00	5.602		mg/L		96	80 - 120
Sulfate	59.5		25.0	84.08		mg/L		98	80 - 120

Lab Sample ID: 310-237575-1 MSD

Matrix: Water

Analysis Batch: 363213

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	31.3		25.0	55.51		mg/L		97	80 - 120	0	15
Fluoride	0.798		5.00	6.250		mg/L		109	80 - 120	11	15
Sulfate	59.5		25.0	84.24		mg/L		99	80 - 120	0	15

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 310-362209/1-A

Matrix: Water

Analysis Batch: 362656

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 362209

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		08/11/22 09:00	08/15/22 14:11	1
Arsenic	<0.00200		0.00200		mg/L		08/11/22 09:00	08/15/22 14:11	1
Barium	<0.00200		0.00200		mg/L		08/11/22 09:00	08/15/22 14:11	1
Beryllium	<0.00100		0.00100		mg/L		08/11/22 09:00	08/15/22 14:11	1
Boron	<0.100		0.100		mg/L		08/11/22 09:00	08/15/22 14:11	1
Cadmium	<0.000100		0.000100		mg/L		08/11/22 09:00	08/15/22 14:11	1
Calcium	<0.500		0.500		mg/L		08/11/22 09:00	08/15/22 14:11	1
Chromium	<0.00500		0.00500		mg/L		08/11/22 09:00	08/15/22 14:11	1
Cobalt	<0.000500		0.000500		mg/L		08/11/22 09:00	08/15/22 14:11	1
Lead	<0.000500		0.000500		mg/L		08/11/22 09:00	08/15/22 14:11	1
Lithium	<0.0100		0.0100		mg/L		08/11/22 09:00	08/15/22 14:11	1
Molybdenum	<0.00200		0.00200		mg/L		08/11/22 09:00	08/15/22 14:11	1

Eurofins Cedar Falls

QC Sample Results

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

Job ID: 310-237575-1

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

Lab Sample ID: MB 310-362209/1-A

Matrix: Water

Analysis Batch: 362656

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 362209

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	<0.00500		0.00500		mg/L		08/11/22 09:00	08/15/22 14:11	1
Thallium	<0.00100		0.00100		mg/L		08/11/22 09:00	08/15/22 14:11	1

Lab Sample ID: LCS 310-362209/2-A

Matrix: Water

Analysis Batch: 362656

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 362209

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	0.200	0.2306		mg/L		115	80 - 120
Arsenic	0.200	0.2115		mg/L		106	80 - 120
Barium	0.100	0.1063		mg/L		106	80 - 120
Beryllium	0.100	0.1099		mg/L		110	80 - 120
Boron	0.200	0.1988		mg/L		99	80 - 120
Cadmium	0.100	0.1123		mg/L		112	80 - 120
Calcium	2.00	1.657		mg/L		83	80 - 120
Chromium	0.100	0.1107		mg/L		111	80 - 120
Cobalt	0.100	0.1100		mg/L		110	80 - 120
Lead	0.200	0.2209		mg/L		110	80 - 120
Lithium	0.200	0.2343		mg/L		117	80 - 120
Molybdenum	0.200	0.2158		mg/L		108	80 - 120
Selenium	0.400	0.4013		mg/L		100	80 - 120
Thallium	0.200	0.2262		mg/L		113	80 - 120

Lab Sample ID: 310-237575-7 DU

Matrix: Water

Analysis Batch: 363387

Client Sample ID: MW-7

Prep Type: Total/NA

Prep Batch: 362209

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Antimony	<0.00200		<0.00200		mg/L		NC	20
Arsenic	0.00365		0.003755		mg/L		3	20
Barium	0.159		0.1607		mg/L		1	20
Beryllium	<0.00100		<0.00100		mg/L		NC	20
Boron	0.118		0.1185		mg/L		0.7	20
Cadmium	0.000106		0.0001170		mg/L		10	20
Calcium	106		107.8		mg/L		2	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	0.0273		0.02790		mg/L		2	20
Molybdenum	0.00667		0.006842		mg/L		3	20
Selenium	0.0114		0.01120		mg/L		2	20
Thallium	<0.00100		<0.00100		mg/L		NC	20

Eurofins Cedar Falls

QC Sample Results

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

Job ID: 310-237575-1

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 310-362746/1-A
Matrix: Water
Analysis Batch: 362929

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 362746

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		08/16/22 12:13	08/17/22 12:25	1

Lab Sample ID: LCS 310-362746/2-A
Matrix: Water
Analysis Batch: 362929

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 362746

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00167	0.001619		mg/L		97	80 - 120

Method: 9040C - pH

Lab Sample ID: LCS 310-362057/1
Matrix: Water
Analysis Batch: 362057

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	7.040		SU		101	98 - 102

Lab Sample ID: 310-237575-7 DU
Matrix: Water
Analysis Batch: 362057

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

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.11	HF	7.090		SU		0.3	20

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

Lab Sample ID: MB 310-362226/1
Matrix: Water
Analysis Batch: 362226

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			08/10/22 14:56	1

Lab Sample ID: LCS 310-362226/2
Matrix: Water
Analysis Batch: 362226

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	924.0		mg/L		92	90 - 110

Lab Sample ID: 310-237575-1 DU
Matrix: Water
Analysis Batch: 362226

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

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	374		334.0		mg/L		11	20

Eurofins Cedar Falls

QC Sample Results

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

Job ID: 310-237575-1

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

Lab Sample ID: 310-237575-9 DU				Client Sample ID: DUPLICATE			
Matrix: Water				Prep Type: Total/NA			
Analysis Batch: 362226							
Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD Limit
Total Dissolved Solids	364		360.0		mg/L		1 20

QC Association Summary

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

Job ID: 310-237575-1

HPLC/IC

Analysis Batch: 363213

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-237575-1	MW-1	Total/NA	Water	9056A	
310-237575-2	MW-2	Total/NA	Water	9056A	
310-237575-3	MW-3	Total/NA	Water	9056A	
310-237575-4	MW-4R	Total/NA	Water	9056A	
310-237575-5	MW-5	Total/NA	Water	9056A	
310-237575-6	MW-6	Total/NA	Water	9056A	
310-237575-7	MW-7	Total/NA	Water	9056A	
310-237575-8	MW-8	Total/NA	Water	9056A	
310-237575-9	DUPLICATE	Total/NA	Water	9056A	
MB 310-363213/3	Method Blank	Total/NA	Water	9056A	
LCS 310-363213/4	Lab Control Sample	Total/NA	Water	9056A	
310-237575-1 MS	MW-1	Total/NA	Water	9056A	
310-237575-1 MSD	MW-1	Total/NA	Water	9056A	

Metals

Prep Batch: 362209

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-237575-1	MW-1	Total/NA	Water	3005A	
310-237575-2	MW-2	Total/NA	Water	3005A	
310-237575-3	MW-3	Total/NA	Water	3005A	
310-237575-4	MW-4R	Total/NA	Water	3005A	
310-237575-5	MW-5	Total/NA	Water	3005A	
310-237575-6	MW-6	Total/NA	Water	3005A	
310-237575-7	MW-7	Total/NA	Water	3005A	
310-237575-8	MW-8	Total/NA	Water	3005A	
310-237575-9	DUPLICATE	Total/NA	Water	3005A	
MB 310-362209/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-362209/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-237575-7 DU	MW-7	Total/NA	Water	3005A	

Analysis Batch: 362656

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 310-362209/1-A	Method Blank	Total/NA	Water	6020A	362209
LCS 310-362209/2-A	Lab Control Sample	Total/NA	Water	6020A	362209

Prep Batch: 362746

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-237575-1	MW-1	Total/NA	Water	7470A	
310-237575-2	MW-2	Total/NA	Water	7470A	
310-237575-3	MW-3	Total/NA	Water	7470A	
310-237575-4	MW-4R	Total/NA	Water	7470A	
310-237575-5	MW-5	Total/NA	Water	7470A	
310-237575-6	MW-6	Total/NA	Water	7470A	
310-237575-7	MW-7	Total/NA	Water	7470A	
310-237575-8	MW-8	Total/NA	Water	7470A	
310-237575-9	DUPLICATE	Total/NA	Water	7470A	
MB 310-362746/1-A	Method Blank	Total/NA	Water	7470A	
LCS 310-362746/2-A	Lab Control Sample	Total/NA	Water	7470A	

Eurofins Cedar Falls

QC Association Summary

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

Job ID: 310-237575-1

Metals

Analysis Batch: 362929

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-237575-1	MW-1	Total/NA	Water	7470A	362746
310-237575-2	MW-2	Total/NA	Water	7470A	362746
310-237575-3	MW-3	Total/NA	Water	7470A	362746
310-237575-4	MW-4R	Total/NA	Water	7470A	362746
310-237575-5	MW-5	Total/NA	Water	7470A	362746
310-237575-6	MW-6	Total/NA	Water	7470A	362746
310-237575-7	MW-7	Total/NA	Water	7470A	362746
310-237575-8	MW-8	Total/NA	Water	7470A	362746
310-237575-9	DUPLICATE	Total/NA	Water	7470A	362746
MB 310-362746/1-A	Method Blank	Total/NA	Water	7470A	362746
LCS 310-362746/2-A	Lab Control Sample	Total/NA	Water	7470A	362746

Analysis Batch: 363387

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-237575-1	MW-1	Total/NA	Water	6020A	362209
310-237575-2	MW-2	Total/NA	Water	6020A	362209
310-237575-3	MW-3	Total/NA	Water	6020A	362209
310-237575-4	MW-4R	Total/NA	Water	6020A	362209
310-237575-5	MW-5	Total/NA	Water	6020A	362209
310-237575-6	MW-6	Total/NA	Water	6020A	362209
310-237575-7	MW-7	Total/NA	Water	6020A	362209
310-237575-8	MW-8	Total/NA	Water	6020A	362209
310-237575-9	DUPLICATE	Total/NA	Water	6020A	362209
310-237575-7 DU	MW-7	Total/NA	Water	6020A	362209

General Chemistry

Analysis Batch: 362057

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-237575-1	MW-1	Total/NA	Water	9040C	
310-237575-2	MW-2	Total/NA	Water	9040C	
310-237575-3	MW-3	Total/NA	Water	9040C	
310-237575-4	MW-4R	Total/NA	Water	9040C	
310-237575-5	MW-5	Total/NA	Water	9040C	
310-237575-6	MW-6	Total/NA	Water	9040C	
310-237575-7	MW-7	Total/NA	Water	9040C	
310-237575-8	MW-8	Total/NA	Water	9040C	
310-237575-9	DUPLICATE	Total/NA	Water	9040C	
LCS 310-362057/1	Lab Control Sample	Total/NA	Water	9040C	
310-237575-7 DU	MW-7	Total/NA	Water	9040C	

Analysis Batch: 362226

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-237575-1	MW-1	Total/NA	Water	SM 2540C	
310-237575-2	MW-2	Total/NA	Water	SM 2540C	
310-237575-3	MW-3	Total/NA	Water	SM 2540C	
310-237575-4	MW-4R	Total/NA	Water	SM 2540C	
310-237575-5	MW-5	Total/NA	Water	SM 2540C	
310-237575-6	MW-6	Total/NA	Water	SM 2540C	
310-237575-7	MW-7	Total/NA	Water	SM 2540C	
310-237575-8	MW-8	Total/NA	Water	SM 2540C	

Eurofins Cedar Falls

QC Association Summary

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

Job ID: 310-237575-1

General Chemistry (Continued)

Analysis Batch: 362226 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-237575-9	DUPLICATE	Total/NA	Water	SM 2540C	
MB 310-362226/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-362226/2	Lab Control Sample	Total/NA	Water	SM 2540C	
310-237575-1 DU	MW-1	Total/NA	Water	SM 2540C	
310-237575-9 DU	DUPLICATE	Total/NA	Water	SM 2540C	

Lab Chronicle

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

Job ID: 310-237575-1

Client Sample ID: MW-1

Lab Sample ID: 310-237575-1

Date Collected: 08/08/22 11:20

Matrix: Water

Date Received: 08/09/22 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	363213	DHM5	EET CF	08/18/22 17:55
Total/NA	Prep	3005A			362209	QTZ5	EET CF	08/11/22 09:00
Total/NA	Analysis	6020A		1	363387	A6US	EET CF	08/22/22 19:35
Total/NA	Prep	7470A			362746	XXW3	EET CF	08/16/22 12:13
Total/NA	Analysis	7470A		1	362929	XXW3	EET CF	08/17/22 12:40
Total/NA	Analysis	9040C		1	362057	W9YR	EET CF	08/09/22 11:18
Total/NA	Analysis	SM 2540C		1	362226	ENB7	EET CF	08/10/22 14:56

Client Sample ID: MW-2

Lab Sample ID: 310-237575-2

Date Collected: 08/08/22 11:45

Matrix: Water

Date Received: 08/09/22 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	363213	DHM5	EET CF	08/18/22 18:37
Total/NA	Prep	3005A			362209	QTZ5	EET CF	08/11/22 09:00
Total/NA	Analysis	6020A		1	363387	A6US	EET CF	08/22/22 19:39
Total/NA	Prep	7470A			362746	XXW3	EET CF	08/16/22 12:13
Total/NA	Analysis	7470A		1	362929	XXW3	EET CF	08/17/22 12:47
Total/NA	Analysis	9040C		1	362057	W9YR	EET CF	08/09/22 11:19
Total/NA	Analysis	SM 2540C		1	362226	ENB7	EET CF	08/10/22 14:56

Client Sample ID: MW-3

Lab Sample ID: 310-237575-3

Date Collected: 08/08/22 10:07

Matrix: Water

Date Received: 08/09/22 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	363213	DHM5	EET CF	08/18/22 19:19
Total/NA	Prep	3005A			362209	QTZ5	EET CF	08/11/22 09:00
Total/NA	Analysis	6020A		1	363387	A6US	EET CF	08/22/22 19:57
Total/NA	Prep	7470A			362746	XXW3	EET CF	08/16/22 12:13
Total/NA	Analysis	7470A		1	362929	XXW3	EET CF	08/17/22 12:49
Total/NA	Analysis	9040C		1	362057	W9YR	EET CF	08/09/22 11:20
Total/NA	Analysis	SM 2540C		1	362226	ENB7	EET CF	08/10/22 14:56

Client Sample ID: MW-4R

Lab Sample ID: 310-237575-4

Date Collected: 08/08/22 09:30

Matrix: Water

Date Received: 08/09/22 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	363213	DHM5	EET CF	08/18/22 19:33
Total/NA	Prep	3005A			362209	QTZ5	EET CF	08/11/22 09:00
Total/NA	Analysis	6020A		1	363387	A6US	EET CF	08/22/22 20:01
Total/NA	Prep	7470A			362746	XXW3	EET CF	08/16/22 12:13
Total/NA	Analysis	7470A		1	362929	XXW3	EET CF	08/17/22 12:51

Eurofins Cedar Falls

Lab Chronicle

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

Job ID: 310-237575-1

Client Sample ID: MW-4R

Lab Sample ID: 310-237575-4

Date Collected: 08/08/22 09:30

Matrix: Water

Date Received: 08/09/22 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9040C		1	362057	W9YR	EET CF	08/09/22 11:21
Total/NA	Analysis	SM 2540C		1	362226	ENB7	EET CF	08/10/22 14:56

Client Sample ID: MW-5

Lab Sample ID: 310-237575-5

Date Collected: 08/08/22 10:53

Matrix: Water

Date Received: 08/09/22 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	363213	DHM5	EET CF	08/18/22 19:48
Total/NA	Prep	3005A			362209	QTZ5	EET CF	08/11/22 09:00
Total/NA	Analysis	6020A		1	363387	A6US	EET CF	08/22/22 20:04
Total/NA	Prep	7470A			362746	XXW3	EET CF	08/16/22 12:13
Total/NA	Analysis	7470A		1	362929	XXW3	EET CF	08/17/22 12:53
Total/NA	Analysis	9040C		1	362057	W9YR	EET CF	08/09/22 11:22
Total/NA	Analysis	SM 2540C		1	362226	ENB7	EET CF	08/10/22 14:56

Client Sample ID: MW-6

Lab Sample ID: 310-237575-6

Date Collected: 08/08/22 12:57

Matrix: Water

Date Received: 08/09/22 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	363213	DHM5	EET CF	08/18/22 20:02
Total/NA	Prep	3005A			362209	QTZ5	EET CF	08/11/22 09:00
Total/NA	Analysis	6020A		1	363387	A6US	EET CF	08/22/22 20:08
Total/NA	Prep	7470A			362746	XXW3	EET CF	08/16/22 12:13
Total/NA	Analysis	7470A		1	362929	XXW3	EET CF	08/17/22 12:55
Total/NA	Analysis	9040C		1	362057	W9YR	EET CF	08/09/22 11:23
Total/NA	Analysis	SM 2540C		1	362226	ENB7	EET CF	08/10/22 14:56

Client Sample ID: MW-7

Lab Sample ID: 310-237575-7

Date Collected: 08/08/22 12:33

Matrix: Water

Date Received: 08/09/22 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	363213	DHM5	EET CF	08/18/22 20:16
Total/NA	Prep	3005A			362209	QTZ5	EET CF	08/11/22 09:00
Total/NA	Analysis	6020A		1	363387	A6US	EET CF	08/22/22 20:12
Total/NA	Prep	7470A			362746	XXW3	EET CF	08/16/22 12:13
Total/NA	Analysis	7470A		1	362929	XXW3	EET CF	08/17/22 12:57
Total/NA	Analysis	9040C		1	362057	W9YR	EET CF	08/09/22 11:26
Total/NA	Analysis	SM 2540C		1	362226	ENB7	EET CF	08/10/22 14:56

Lab Chronicle

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

Job ID: 310-237575-1

Client Sample ID: MW-8

Lab Sample ID: 310-237575-8

Date Collected: 08/08/22 12:10

Matrix: Water

Date Received: 08/09/22 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	363213	DHM5	EET CF	08/18/22 20:30
Total/NA	Prep	3005A			362209	QTZ5	EET CF	08/11/22 09:00
Total/NA	Analysis	6020A		1	363387	A6US	EET CF	08/22/22 20:19
Total/NA	Prep	7470A			362746	XXW3	EET CF	08/16/22 12:13
Total/NA	Analysis	7470A		1	362929	XXW3	EET CF	08/17/22 12:59
Total/NA	Analysis	9040C		1	362057	W9YR	EET CF	08/09/22 11:28
Total/NA	Analysis	SM 2540C		1	362226	ENB7	EET CF	08/10/22 14:56

Client Sample ID: DUPLICATE

Lab Sample ID: 310-237575-9

Date Collected: 08/08/22 23:59

Matrix: Water

Date Received: 08/09/22 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	363213	DHM5	EET CF	08/18/22 20:44
Total/NA	Prep	3005A			362209	QTZ5	EET CF	08/11/22 09:00
Total/NA	Analysis	6020A		1	363387	A6US	EET CF	08/22/22 20:23
Total/NA	Prep	7470A			362746	XXW3	EET CF	08/16/22 12:13
Total/NA	Analysis	7470A		1	362929	XXW3	EET CF	08/17/22 13:02
Total/NA	Analysis	9040C		1	362057	W9YR	EET CF	08/09/22 11:29
Total/NA	Analysis	SM 2540C		1	362226	ENB7	EET CF	08/10/22 14:56

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: 310-237575-1

Laboratory: Eurofins Cedar Falls

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-21 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Eurofins Cedar Falls

Method Summary

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

Job ID: 310-237575-1

Method	Method Description	Protocol	Laboratory
9056A	Anions, Ion Chromatography	SW846	EET CF
6020A	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"

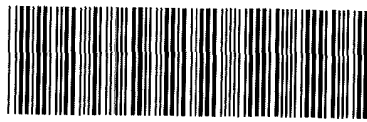
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

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



Environment Testing
America



310-237575 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: <u>SCS Engineers</u>			
City/State:	CITY <u>Omaha</u>	STATE <u>NE</u>	Project:
Receipt Information			
Date/Time Received:	DATE <u>8-9-22</u>	TIME <u>950</u>	Received By: <u>ML</u>
Delivery Type: ☐ UPS ☒ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other: _____			
Condition of Cooler/Containers			
Sample(s) received in Cooler?		☒ Yes ☐ No	If yes: Cooler ID: _____
Multiple Coolers?		☒ Yes ☐ No	If yes: Cooler # <u>1</u> of <u>2</u>
Cooler Custody Seals Present?		☒ Yes ☐ No	If yes: Cooler custody seals intact? ☒ Yes ☐ No
Sample Custody Seals Present?		☐ Yes ☒ No	If yes: Sample custody seals intact? ☐ Yes ☐ No
Trip Blank Present?		☐ Yes ☐ No	If yes: Which VOA samples are in cooler? ↓
Temperature Record			
Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other: _____ ☐ NONE			
Thermometer ID: <u>T</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>0.7</u>		Corrected Temp (°C): <u>0.7</u>	
Sample Container Temperature			
Container(s) used:	CONTAINER 1		CONTAINER 2
Uncorrected Temp (°C):			
Corrected Temp (°C):			
Exceptions Noted			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No a) If yes: Is there evidence that the chilling process began? ☐ Yes ☐ No			
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No			
NOTE: If yes, contact PM before proceeding. If no, proceed with login			
Additional Comments			



Environment Testing
America

Place COC scanning label
here

Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: <u>SCS Engineers</u>			
City/State:	CITY <u>Omaha</u>	STATE <u>NE</u>	Project:
Receipt Information			
Date/Time Received:	DATE <u>8-9-22</u>	TIME <u>950</u>	Received By: <u>ML</u>
Delivery Type: ☐ UPS ☒ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other: _____			
Condition of Cooler/Containers			
Sample(s) received in Cooler?		☒ Yes ☐ No	If yes: Cooler ID: _____
Multiple Coolers?		☒ Yes ☐ No	If yes: Cooler # <u>2</u> of <u>2</u>
Cooler Custody Seals Present?		☒ Yes ☐ No	If yes: Cooler custody seals intact? ☒ Yes ☐ No
Sample Custody Seals Present?		☐ Yes ☒ No	If yes: Sample custody seals intact? ☐ Yes ☐ No
Trip Blank Present?		☐ Yes ☐ No	If yes: Which VOA samples are in cooler? ↓
Temperature Record			
Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other: _____ ☐ NONE			
Thermometer ID: <u>T</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>3.2</u>		Corrected Temp (°C): <u>3.2</u>	
Sample Container Temperature			
Container(s) used:	<u>CONTAINER 1</u>		<u>CONTAINER 2</u>
Uncorrected Temp (°C):			
Corrected Temp (°C):			
Exceptions Noted			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No a) If yes: Is there evidence that the chilling process began? ☐ Yes ☐ No			
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No			
NOTE: If yes, contact PM before proceeding. If no, proceed with login			
Additional Comments			

Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-237575-1

Login Number: 237575

List Source: Eurofins Cedar Falls

List Number: 1

Creator: Costello, Mackenzie K

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

ANALYTICAL REPORT

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Tel: (319)277-2401

Laboratory Job ID: 310-237575-2

Client Project/Site: FDU - City of Fremont

For:

SCS Engineers
14755 Grover St
Omaha, Nebraska 68144

Attn: Morgan Sykes



Authorized for release by:

9/7/2022 5:03:08 PM

Shirley Thompson, Client Service Manager
(319)277-2401

Shirley.Thompson@et.eurofinsus.com

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



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Case Narrative

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

Job ID: 310-237575-2

Job ID: 310-237575-2

Laboratory: Eurofins Cedar Falls

Narrative

Job Narrative 310-237575-2

Comments

No additional comments.

Receipt

The samples were received on 8/9/2022 9:50 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 0.7° C and 3.2° C.

RAD

Methods 903.0, 9315: Radium-226 batch 577588 Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. MW-2 (310-237575-2), (LCS 160-577588/2-A), (LCSD 160-577588/3-A) and (MB 160-577588/1-A)

Methods 903.0, 9315: Radium-226 batch 578113 Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. MW-1 (310-237575-1), MW-3 (310-237575-3), MW-4R (310-237575-4), MW-5 (310-237575-5), MW-6 (310-237575-6), MW-7 (310-237575-7), MW-8 (310-237575-8), DUPLICATE (310-237575-9), (LCS 160-578113/2-A), (LCSD 160-578113/3-A) and (MB 160-578113/1-A)

Methods 904.0, 9320: Radium-228 batch 578120 The LCS recovered at (133%). The limits in our LIMS system at 75-125 reflect the requirements of a regulatory agency that represents a large amount of our work. However the samples associated with this LCS are not from this agency and are therefore held to our in-house statistical limits of (62-148%) per method requirements. The LCS passes, no further action is required (LCSD 160-578120/3-A)

Methods 904.0, 9320: Radium-228 578120 Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. MW-1 (310-237575-1), MW-3 (310-237575-3), MW-4R (310-237575-4), MW-5 (310-237575-5), MW-6 (310-237575-6), MW-7 (310-237575-7), MW-8 (310-237575-8), DUPLICATE (310-237575-9), (LCS 160-578120/2-A), (LCSD 160-578120/3-A) and (MB 160-578120/1-A)

Methods 904.0, 9320: Radium-228 batch 577608 Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. MW-2 (310-237575-2), (LCS 160-577608/2-A), (LCSD 160-577608/3-A) and (MB 160-577608/1-A)

Method PrecSep_0: Radium-228 Prep Batch 160-577608 Insufficient sample volume was available to perform a sample duplicate for the following samples: MW-2 (310-237575-2). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

Method PrecSep_0: Radium-228 Prep Batch 160-578120 Insufficient sample volume was available to perform a sample duplicate for the following samples: MW-1 (310-237575-1), MW-3 (310-237575-3), MW-4R (310-237575-4), MW-5 (310-237575-5), MW-6 (310-237575-6), MW-7 (310-237575-7), MW-8 (310-237575-8) and DUPLICATE (310-237575-9). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

Method PrecSep-21: Radium-226 Prep Batch 160-577588 Insufficient sample volume was available to perform a sample duplicate for the following samples: MW-2 (310-237575-2). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

Method PrecSep-21: Radium-226 Prep Batch 160-578113 Insufficient sample volume was available to perform a sample duplicate for the following samples: MW-1 (310-237575-1), MW-3 (310-237575-3), MW-4R (310-237575-4), MW-5 (310-237575-5), MW-6 (310-237575-6), MW-7 (310-237575-7), MW-8 (310-237575-8) and DUPLICATE (310-237575-9). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

Case Narrative

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

Job ID: 310-237575-2

Job ID: 310-237575-2 (Continued)

Laboratory: Eurofins Cedar Falls (Continued)

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

Sample Summary

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

Job ID: 310-237575-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-237575-1	MW-1	Water	08/08/22 11:20	08/09/22 09:50
310-237575-2	MW-2	Water	08/08/22 11:45	08/09/22 09:50
310-237575-3	MW-3	Water	08/08/22 10:07	08/09/22 09:50
310-237575-4	MW-4R	Water	08/08/22 09:30	08/09/22 09:50
310-237575-5	MW-5	Water	08/08/22 10:53	08/09/22 09:50
310-237575-6	MW-6	Water	08/08/22 12:57	08/09/22 09:50
310-237575-7	MW-7	Water	08/08/22 12:33	08/09/22 09:50
310-237575-8	MW-8	Water	08/08/22 12:10	08/09/22 09:50
310-237575-9	DUPLICATE	Water	08/08/22 23:59	08/09/22 09:50

Client Sample Results

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

Job ID: 310-237575-2

Client Sample ID: MW-1

Lab Sample ID: 310-237575-1

Date Collected: 08/08/22 11:20

Matrix: Water

Date Received: 08/09/22 09:50

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.428		0.117	0.123	1.00	0.0939	pCi/L	08/15/22 16:22	09/06/22 11:42	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.5		40 - 110					08/15/22 16:22	09/06/22 11:42	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.99		0.483	0.517	1.00	0.491	pCi/L	08/15/22 17:08	08/25/22 11:32	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.5		40 - 110					08/15/22 17:08	08/25/22 11:32	1
Y Carrier	86.0		40 - 110					08/15/22 17:08	08/25/22 11:32	1

Method: 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	2.42		0.497	0.531	5.00	0.491	pCi/L		09/06/22 22:21	1

Client Sample Results

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

Job ID: 310-237575-2

Client Sample ID: MW-2

Lab Sample ID: 310-237575-2

Date Collected: 08/08/22 11:45

Matrix: Water

Date Received: 08/09/22 09:50

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.408		0.112	0.118	1.00	0.0889	pCi/L	08/11/22 13:36	09/02/22 12:36	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.0		40 - 110					08/11/22 13:36	09/02/22 12:36	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.27		0.410	0.426	1.00	0.484	pCi/L	08/11/22 13:36	08/19/22 11:05	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.0		40 - 110					08/11/22 13:36	08/19/22 11:05	1
Y Carrier	87.1		40 - 110					08/11/22 13:36	08/19/22 11:05	1

Method: 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	1.68		0.425	0.442	5.00	0.484	pCi/L		09/06/22 12:34	1

Client Sample Results

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

Job ID: 310-237575-2

Client Sample ID: MW-3

Lab Sample ID: 310-237575-3

Date Collected: 08/08/22 10:07

Matrix: Water

Date Received: 08/09/22 09:50

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.675		0.141	0.154	1.00	0.0850	pCi/L	08/15/22 16:22	09/06/22 11:43	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	91.5		40 - 110					08/15/22 16:22	09/06/22 11:43	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	2.17		0.479	0.519	1.00	0.432	pCi/L	08/15/22 17:08	08/25/22 11:32	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	91.5		40 - 110					08/15/22 17:08	08/25/22 11:32	1
Y Carrier	87.1		40 - 110					08/15/22 17:08	08/25/22 11:32	1

Method: 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		0.499	0.541	5.00	0.432	pCi/L		09/06/22 22:21	1

Client Sample Results

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

Job ID: 310-237575-2

Client Sample ID: MW-4R

Lab Sample ID: 310-237575-4

Date Collected: 08/08/22 09:30

Matrix: Water

Date Received: 08/09/22 09:50

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.460		0.116	0.123	1.00	0.0808	pCi/L	08/15/22 16:22	09/06/22 11:43	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.8		40 - 110					08/15/22 16:22	09/06/22 11:43	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	2.74		0.537	0.593	1.00	0.477	pCi/L	08/15/22 17:08	08/25/22 11:33	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.8		40 - 110					08/15/22 17:08	08/25/22 11:33	1
Y Carrier	87.1		40 - 110					08/15/22 17:08	08/25/22 11:33	1

Method: 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		0.549	0.606	5.00	0.477	pCi/L		09/06/22 22:21	1

Client Sample Results

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

Job ID: 310-237575-2

Client Sample ID: MW-5

Lab Sample ID: 310-237575-5

Date Collected: 08/08/22 10:53

Matrix: Water

Date Received: 08/09/22 09:50

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.441		0.116	0.122	1.00	0.0863	pCi/L	08/15/22 16:22	09/06/22 11:43	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.5		40 - 110					08/15/22 16:22	09/06/22 11:43	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	2.40		0.536	0.579	1.00	0.554	pCi/L	08/15/22 17:08	08/25/22 11:33	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.5		40 - 110					08/15/22 17:08	08/25/22 11:33	1
Y Carrier	89.0		40 - 110					08/15/22 17:08	08/25/22 11:33	1

Method: 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		0.548	0.592	5.00	0.554	pCi/L		09/06/22 22:21	1

Client Sample Results

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

Job ID: 310-237575-2

Client Sample ID: MW-6

Lab Sample ID: 310-237575-6

Date Collected: 08/08/22 12:57

Matrix: Water

Date Received: 08/09/22 09:50

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.466		0.121	0.128	1.00	0.0966	pCi/L	08/15/22 16:22	09/06/22 11:43	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.0		40 - 110					08/15/22 16:22	09/06/22 11:43	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	2.94		0.543	0.606	1.00	0.455	pCi/L	08/15/22 17:08	08/25/22 11:34	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.0		40 - 110					08/15/22 17:08	08/25/22 11:34	1
Y Carrier	88.2		40 - 110					08/15/22 17:08	08/25/22 11:34	1

Method: 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	3.41		0.556	0.619	5.00	0.455	pCi/L		09/06/22 22:21	1

Client Sample Results

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

Job ID: 310-237575-2

Client Sample ID: MW-7

Lab Sample ID: 310-237575-7

Date Collected: 08/08/22 12:33

Matrix: Water

Date Received: 08/09/22 09:50

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.524		0.124	0.133	1.00	0.0804	pCi/L	08/15/22 16:22	09/06/22 11:44	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.8		40 - 110					08/15/22 16:22	09/06/22 11:44	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	3.71		0.592	0.683	1.00	0.453	pCi/L	08/15/22 17:08	08/25/22 11:35	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.8		40 - 110					08/15/22 17:08	08/25/22 11:35	1
Y Carrier	87.5		40 - 110					08/15/22 17:08	08/25/22 11:35	1

Method: 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	4.23		0.605	0.696	5.00	0.453	pCi/L		09/06/22 22:21	1

Client Sample Results

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

Job ID: 310-237575-2

Client Sample ID: MW-8

Lab Sample ID: 310-237575-8

Date Collected: 08/08/22 12:10

Matrix: Water

Date Received: 08/09/22 09:50

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.626		0.137	0.148	1.00	0.0944	pCi/L	08/15/22 16:22	09/06/22 11:44	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.8		40 - 110					08/15/22 16:22	09/06/22 11:44	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	3.26		0.575	0.649	1.00	0.489	pCi/L	08/15/22 17:08	08/25/22 11:35	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.8		40 - 110					08/15/22 17:08	08/25/22 11:35	1
Y Carrier	88.2		40 - 110					08/15/22 17:08	08/25/22 11:35	1

Method: 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	3.89		0.591	0.666	5.00	0.489	pCi/L		09/06/22 22:21	1

Client Sample Results

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

Job ID: 310-237575-2

Client Sample ID: DUPLICATE

Lab Sample ID: 310-237575-9

Date Collected: 08/08/22 23:59

Matrix: Water

Date Received: 08/09/22 09:50

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.383		0.110	0.115	1.00	0.0856	pCi/L	08/15/22 16:22	09/06/22 11:45	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.5		40 - 110					08/15/22 16:22	09/06/22 11:45	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	2.71		0.502	0.560	1.00	0.411	pCi/L	08/15/22 17:08	08/25/22 11:35	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.5		40 - 110					08/15/22 17:08	08/25/22 11:35	1
Y Carrier	92.0		40 - 110					08/15/22 17:08	08/25/22 11:35	1

Method: 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	3.09		0.514	0.572	5.00	0.411	pCi/L		09/06/22 22:21	1

Definitions/Glossary

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

Job ID: 310-237575-2

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: 310-237575-2

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-577588/1-A

Matrix: Water

Analysis Batch: 580333

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 577588

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.02632	U	0.0515	0.0515	1.00	0.0924	pCi/L	08/11/22 13:36	09/02/22 09:30	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.8		40 - 110					08/11/22 13:36	09/02/22 09:30	1

Lab Sample ID: LCS 160-577588/2-A

Matrix: Water

Analysis Batch: 580333

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 577588

Analyte		Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-226		11.3	10.48		1.08	1.00	0.116	pCi/L	92	75 - 125
Carrier	LCS %Yield	LCS Qualifier	Limits							
Ba Carrier	96.5		40 - 110							

Lab Sample ID: LCSD 160-577588/3-A

Matrix: Water

Analysis Batch: 580333

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 577588

Analyte		Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-226		11.3	9.655		0.998	1.00	0.102	pCi/L	85	75 - 125	0.40	1
Carrier	LCSD %Yield	LCSD Qualifier	Limits									
Ba Carrier	101		40 - 110									

Lab Sample ID: MB 160-578113/1-A

Matrix: Water

Analysis Batch: 581006

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 578113

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.05210	U	0.0709	0.0711	1.00	0.119	pCi/L	08/15/22 16:22	09/06/22 11:48	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	97.5		40 - 110					08/15/22 16:22	09/06/22 11:48	1

Lab Sample ID: LCS 160-578113/2-A

Matrix: Water

Analysis Batch: 581006

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 578113

Analyte		Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-226		11.3	9.246		0.974	1.00	0.109	pCi/L	82	75 - 125

Eurofins Cedar Falls

QC Sample Results

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

Job ID: 310-237575-2

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

Lab Sample ID: LCS 160-578113/2-A
Matrix: Water
Analysis Batch: 581006

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 578113

	LCS	LCS	
Carrier	%Yield	Qualifier	Limits
Ba Carrier	96.5		40 - 110

Lab Sample ID: LCSD 160-578113/3-A
Matrix: Water
Analysis Batch: 581006

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 578113

Analyte	Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-226	11.3	10.95		1.13	1.00	0.118	pCi/L	97	75 - 125	0.81	1

	LCSD	LCSD	
Carrier	%Yield	Qualifier	Limits
Ba Carrier	95.5		40 - 110

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-577608/1-A
Matrix: Water
Analysis Batch: 578688

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 577608

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.3711	U	0.306	0.308	1.00	0.477	pCi/L	08/11/22 13:36	08/19/22 10:57	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	96.8		40 - 110	08/11/22 13:36	08/19/22 10:57	1
Y Carrier	85.2		40 - 110	08/11/22 13:36	08/19/22 10:57	1

Lab Sample ID: LCS 160-577608/2-A
Matrix: Water
Analysis Batch: 578688

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 577608

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-228	8.35	9.252		1.22	1.00	0.388	pCi/L	111	75 - 125

	LCS	LCS	
Carrier	%Yield	Qualifier	Limits
Ba Carrier	96.5		40 - 110
Y Carrier	86.7		40 - 110

Lab Sample ID: LCSD 160-577608/3-A
Matrix: Water
Analysis Batch: 578688

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 577608

Analyte	Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-228	8.35	9.215		1.23	1.00	0.426	pCi/L	110	75 - 125	0.02	1

Eurofins Cedar Falls

QC Sample Results

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

Job ID: 310-237575-2

Method: 9320 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCSD 160-577608/3-A
Matrix: Water
Analysis Batch: 578688

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 577608

	LCSD	LCSD	
Carrier	%Yield	Qualifier	Limits
Ba Carrier	101		40 - 110
Y Carrier	80.7		40 - 110

Lab Sample ID: MB 160-578120/1-A
Matrix: Water
Analysis Batch: 579477

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 578120

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.5213		0.325	0.329	1.00	0.479	pCi/L	08/15/22 17:08	08/25/22 11:18	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	97.5		40 - 110					08/15/22 17:08	08/25/22 11:18	1
Y Carrier	85.6		40 - 110					08/15/22 17:08	08/25/22 11:18	1

Lab Sample ID: LCS 160-578120/2-A
Matrix: Water
Analysis Batch: 579477

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 578120

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-228	8.33	10.28		1.33	1.00	0.476	pCi/L	123	75 - 125
Carrier	%Yield	Qualifier	Limits						
Ba Carrier	96.5		40 - 110						
Y Carrier	86.4		40 - 110						

Lab Sample ID: LCSD 160-578120/3-A
Matrix: Water
Analysis Batch: 579477

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 578120

Analyte	Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-228	8.33	11.07		1.44	1.00	0.555	pCi/L	133	75 - 125	0.28	1
Carrier	%Yield	Qualifier	Limits								
Ba Carrier	95.5		40 - 110								
Y Carrier	83.0		40 - 110								

Eurofins Cedar Falls

QC Association Summary

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

Job ID: 310-237575-2

Rad

Prep Batch: 577588

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-237575-2	MW-2	Total/NA	Water	PrecSep-21	
MB 160-577588/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-577588/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-577588/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 577608

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-237575-2	MW-2	Total/NA	Water	PrecSep_0	
MB 160-577608/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-577608/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-577608/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Prep Batch: 578113

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-237575-1	MW-1	Total/NA	Water	PrecSep-21	
310-237575-3	MW-3	Total/NA	Water	PrecSep-21	
310-237575-4	MW-4R	Total/NA	Water	PrecSep-21	
310-237575-5	MW-5	Total/NA	Water	PrecSep-21	
310-237575-6	MW-6	Total/NA	Water	PrecSep-21	
310-237575-7	MW-7	Total/NA	Water	PrecSep-21	
310-237575-8	MW-8	Total/NA	Water	PrecSep-21	
310-237575-9	DUPLICATE	Total/NA	Water	PrecSep-21	
MB 160-578113/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-578113/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-578113/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 578120

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-237575-1	MW-1	Total/NA	Water	PrecSep_0	
310-237575-3	MW-3	Total/NA	Water	PrecSep_0	
310-237575-4	MW-4R	Total/NA	Water	PrecSep_0	
310-237575-5	MW-5	Total/NA	Water	PrecSep_0	
310-237575-6	MW-6	Total/NA	Water	PrecSep_0	
310-237575-7	MW-7	Total/NA	Water	PrecSep_0	
310-237575-8	MW-8	Total/NA	Water	PrecSep_0	
310-237575-9	DUPLICATE	Total/NA	Water	PrecSep_0	
MB 160-578120/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-578120/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-578120/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Lab Chronicle

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

Job ID: 310-237575-2

Client Sample ID: MW-1

Date Collected: 08/08/22 11:20

Date Received: 08/09/22 09:50

Lab Sample ID: 310-237575-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			578113	MS	EET SL	08/15/22 16:22
Total/NA	Analysis	9315		1	581004	FLC	EET SL	09/06/22 11:42
Total/NA	Prep	PrecSep_0			578120	MS	EET SL	08/15/22 17:08
Total/NA	Analysis	9320		1	579470	FLC	EET SL	08/25/22 11:32
Total/NA	Analysis	Ra226_Ra228		1	581030	EMH	EET SL	09/06/22 22:21

Client Sample ID: MW-2

Date Collected: 08/08/22 11:45

Date Received: 08/09/22 09:50

Lab Sample ID: 310-237575-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			577588	MS	EET SL	08/11/22 13:36
Total/NA	Analysis	9315		1	580437	FLC	EET SL	09/02/22 12:36
Total/NA	Prep	PrecSep_0			577608	MLK	EET SL	08/11/22 13:36
Total/NA	Analysis	9320		1	578688	FLC	EET SL	08/19/22 11:05
Total/NA	Analysis	Ra226_Ra228		1	580994	SCB	EET SL	09/06/22 12:34

Client Sample ID: MW-3

Date Collected: 08/08/22 10:07

Date Received: 08/09/22 09:50

Lab Sample ID: 310-237575-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			578113	MS	EET SL	08/15/22 16:22
Total/NA	Analysis	9315		1	581004	FLC	EET SL	09/06/22 11:43
Total/NA	Prep	PrecSep_0			578120	MS	EET SL	08/15/22 17:08
Total/NA	Analysis	9320		1	579470	FLC	EET SL	08/25/22 11:32
Total/NA	Analysis	Ra226_Ra228		1	581030	EMH	EET SL	09/06/22 22:21

Client Sample ID: MW-4R

Date Collected: 08/08/22 09:30

Date Received: 08/09/22 09:50

Lab Sample ID: 310-237575-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			578113	MS	EET SL	08/15/22 16:22
Total/NA	Analysis	9315		1	581004	FLC	EET SL	09/06/22 11:43
Total/NA	Prep	PrecSep_0			578120	MS	EET SL	08/15/22 17:08
Total/NA	Analysis	9320		1	579459	FLC	EET SL	08/25/22 11:33
Total/NA	Analysis	Ra226_Ra228		1	581030	EMH	EET SL	09/06/22 22:21

Lab Chronicle

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

Job ID: 310-237575-2

Client Sample ID: MW-5

Date Collected: 08/08/22 10:53

Date Received: 08/09/22 09:50

Lab Sample ID: 310-237575-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			578113	MS	EET SL	08/15/22 16:22
Total/NA	Analysis	9315		1	581004	FLC	EET SL	09/06/22 11:43
Total/NA	Prep	PrecSep_0			578120	MS	EET SL	08/15/22 17:08
Total/NA	Analysis	9320		1	579459	FLC	EET SL	08/25/22 11:33
Total/NA	Analysis	Ra226_Ra228		1	581030	EMH	EET SL	09/06/22 22:21

Client Sample ID: MW-6

Date Collected: 08/08/22 12:57

Date Received: 08/09/22 09:50

Lab Sample ID: 310-237575-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			578113	MS	EET SL	08/15/22 16:22
Total/NA	Analysis	9315		1	581004	FLC	EET SL	09/06/22 11:43
Total/NA	Prep	PrecSep_0			578120	MS	EET SL	08/15/22 17:08
Total/NA	Analysis	9320		1	579459	FLC	EET SL	08/25/22 11:34
Total/NA	Analysis	Ra226_Ra228		1	581030	EMH	EET SL	09/06/22 22:21

Client Sample ID: MW-7

Date Collected: 08/08/22 12:33

Date Received: 08/09/22 09:50

Lab Sample ID: 310-237575-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			578113	MS	EET SL	08/15/22 16:22
Total/NA	Analysis	9315		1	581004	FLC	EET SL	09/06/22 11:44
Total/NA	Prep	PrecSep_0			578120	MS	EET SL	08/15/22 17:08
Total/NA	Analysis	9320		1	579454	FLC	EET SL	08/25/22 11:35
Total/NA	Analysis	Ra226_Ra228		1	581030	EMH	EET SL	09/06/22 22:21

Client Sample ID: MW-8

Date Collected: 08/08/22 12:10

Date Received: 08/09/22 09:50

Lab Sample ID: 310-237575-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			578113	MS	EET SL	08/15/22 16:22
Total/NA	Analysis	9315		1	581004	FLC	EET SL	09/06/22 11:44
Total/NA	Prep	PrecSep_0			578120	MS	EET SL	08/15/22 17:08
Total/NA	Analysis	9320		1	579454	FLC	EET SL	08/25/22 11:35
Total/NA	Analysis	Ra226_Ra228		1	581030	EMH	EET SL	09/06/22 22:21

Lab Chronicle

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

Job ID: 310-237575-2

Client Sample ID: DUPLICATE

Lab Sample ID: 310-237575-9

Date Collected: 08/08/22 23:59

Matrix: Water

Date Received: 08/09/22 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	PrecSep-21			578113	MS	EET SL	08/15/22 16:22
Total/NA	Analysis	9315		1	581004	FLC	EET SL	09/06/22 11:45
Total/NA	Prep	PrecSep_0			578120	MS	EET SL	08/15/22 17:08
Total/NA	Analysis	9320		1	579454	FLC	EET SL	08/25/22 11:35
Total/NA	Analysis	Ra226_Ra228		1	581030	EMH	EET SL	09/06/22 22:21

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: 310-237575-2

Laboratory: Eurofins St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-22
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	07-01-22 *
Connecticut	State	PH-0241	03-31-23
Florida	NELAP	E87689	06-30-23
HI - RadChem Recognition	State	n/a	06-30-23
Illinois	NELAP	200023	11-30-22
Iowa	State	373	12-01-22
Kansas	NELAP	E-10236	10-31-22
Kentucky (DW)	State	KY90125	12-31-22
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-22
Louisiana	NELAP	04080	06-30-22 *
Louisiana (All)	NELAP	04080	06-30-23
Louisiana (DW)	State	LA011	12-31-22
Maryland	State	310	09-30-23
MI - RadChem Recognition	State	9005	06-30-23
Missouri	State	780	06-30-25
Nevada	State	MO000542020-1	07-31-23
New Jersey	NELAP	MO002	06-30-23
New York	NELAP	11616	04-01-23
North Dakota	State	R-207	06-30-23
NRC	NRC	24-24817-01	12-31-22
Oklahoma	NELAP	9997	08-31-22 *
Oregon	NELAP	4157	09-01-23
Pennsylvania	NELAP	68-00540	02-28-23
South Carolina	State	85002001	06-30-22 *
Texas	NELAP	T104704193	07-31-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-17-00028	03-11-23
Utah	NELAP	MO000542021-14	07-31-23
Virginia	NELAP	10310	06-14-23
Washington	State	C592	08-30-23
West Virginia DEP	State	381	10-31-22

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Eurofins Cedar Falls

Method Summary

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

Job ID: 310-237575-2

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.

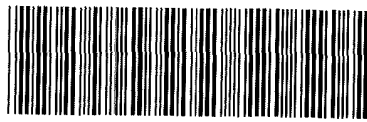
TAL-STL = TestAmerica Laboratories, St. Louis, Facility Standard Operating Procedure.

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566



Environment Testing
America



310-237575 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: <u>SCS Engineers</u>			
City/State:	CITY <u>Omaha</u>	STATE <u>NE</u>	Project:
Receipt Information			
Date/Time Received:	DATE <u>8-9-22</u>	TIME <u>950</u>	Received By: <u>ML</u>
Delivery Type: ☐ UPS ☒ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other: _____			
Condition of Cooler/Containers			
Sample(s) received in Cooler?		☒ Yes ☐ No	If yes: Cooler ID: _____
Multiple Coolers?		☒ Yes ☐ No	If yes: Cooler # <u>1</u> of <u>2</u>
Cooler Custody Seals Present?		☒ Yes ☐ No	If yes: Cooler custody seals intact? ☒ Yes ☐ No
Sample Custody Seals Present?		☐ Yes ☒ No	If yes: Sample custody seals intact? ☐ Yes ☐ No
Trip Blank Present?		☐ Yes ☐ No	If yes: Which VOA samples are in cooler? ↓
Temperature Record			
Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other: _____ ☐ NONE			
Thermometer ID: <u>T</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>0.7</u>		Corrected Temp (°C): <u>0.7</u>	
Sample Container Temperature			
Container(s) used:	CONTAINER 1		CONTAINER 2
Uncorrected Temp (°C):			
Corrected Temp (°C):			
Exceptions Noted			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No a) If yes: Is there evidence that the chilling process began? ☐ Yes ☐ No			
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No			
NOTE: If yes, contact PM before proceeding. If no, proceed with login			
Additional Comments			



Environment Testing
America

Place COC scanning label
here

Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: <u>SCS Engineers</u>			
City/State:	CITY <u>Omaha</u>	STATE <u>NE</u>	Project:
Receipt Information			
Date/Time Received:	DATE <u>8-9-22</u>	TIME <u>950</u>	Received By: <u>ML</u>
Delivery Type: ☐ UPS ☒ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☐ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other: _____			
Condition of Cooler/Containers			
Sample(s) received in Cooler?		☒ Yes ☐ No	If yes: Cooler ID: _____
Multiple Coolers?		☒ Yes ☐ No	If yes: Cooler # <u>2</u> of <u>2</u>
Cooler Custody Seals Present?		☒ Yes ☐ No	If yes: Cooler custody seals intact? ☒ Yes ☐ No
Sample Custody Seals Present?		☐ Yes ☒ No	If yes: Sample custody seals intact? ☐ Yes ☐ No
Trip Blank Present?		☐ Yes ☐ No	If yes: Which VOA samples are in cooler? ↓
Temperature Record			
Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other: _____ ☐ NONE			
Thermometer ID: <u>T</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>3.2</u>		Corrected Temp (°C): <u>3.2</u>	
Sample Container Temperature			
Container(s) used:	<u>CONTAINER 1</u>		<u>CONTAINER 2</u>
Uncorrected Temp (°C):			
Corrected Temp (°C):			
Exceptions Noted			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No a) If yes: Is there evidence that the chilling process began? ☐ Yes ☐ No			
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No			
NOTE: If yes, contact PM before proceeding. If no, proceed with login			
Additional Comments			

[illegible]

Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-237575-2

Login Number: 237575

List Source: Eurofins Cedar Falls

List Number: 1

Creator: Costello, Mackenzie K

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

Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-237575-2

Login Number: 237575

List Number: 2

Creator: Booker, Autumn R

List Source: Eurofins St. Louis

List Creation: 08/10/22 10:20 AM

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ 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?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Tracer/Carrier Summary

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

Job ID: 310-237575-2

Method: 9315 - Radium-226 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)					
		Ba					
Lab Sample ID	Client Sample ID	(40-110)					
310-237575-1	MW-1	93.5					
310-237575-2	MW-2	96.0					
310-237575-3	MW-3	91.5					
310-237575-4	MW-4R	93.8					
310-237575-5	MW-5	93.5					
310-237575-6	MW-6	95.0					
310-237575-7	MW-7	95.8					
310-237575-8	MW-8	95.8					
310-237575-9	DUPLICATE	96.5					
LCS 160-577588/2-A	Lab Control Sample	96.5					
LCS 160-578113/2-A	Lab Control Sample	96.5					
LCSD 160-577588/3-A	Lab Control Sample Dup	101					
LCSD 160-578113/3-A	Lab Control Sample Dup	95.5					
MB 160-577588/1-A	Method Blank	96.8					
MB 160-578113/1-A	Method Blank	97.5					
Tracer/Carrier Legend							
Ba = Ba Carrier							

Method: 9320 - Radium-228 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)					
		Ba	Y				
Lab Sample ID	Client Sample ID	(40-110)	(40-110)				
310-237575-1	MW-1	93.5	86.0				
310-237575-2	MW-2	96.0	87.1				
310-237575-3	MW-3	91.5	87.1				
310-237575-4	MW-4R	93.8	87.1				
310-237575-5	MW-5	93.5	89.0				
310-237575-6	MW-6	95.0	88.2				
310-237575-7	MW-7	95.8	87.5				
310-237575-8	MW-8	95.8	88.2				
310-237575-9	DUPLICATE	96.5	92.0				
LCS 160-577608/2-A	Lab Control Sample	96.5	86.7				
LCS 160-578120/2-A	Lab Control Sample	96.5	86.4				
LCSD 160-577608/3-A	Lab Control Sample Dup	101	80.7				
LCSD 160-578120/3-A	Lab Control Sample Dup	95.5	83.0				
MB 160-577608/1-A	Method Blank	96.8	85.2				
MB 160-578120/1-A	Method Blank	97.5	85.6				
Tracer/Carrier Legend							
Ba = Ba Carrier							
Y = Y Carrier							