SCS ENGINEERS

Transmittal

West Des Moines, IA

PROJECT:	BMC Ag,GW Reporting 2023,IA 27223265.00	DATE:	2/28/2024
SUBJECT:	BMC Aggregates, South Quarry - 07-BUD-20-02 - 2023 Annual Water Quality Report	TRANSMITTAL ID:	00001
PURPOSE:	For your review and comment	VIA:	Info Exchange

FROM

NAME	COMPANY	EMAIL	PHONE
Nathan Ohrt West Des Moines, IA	SCS Engineers	NOhrt@scsengineers.com	

TO

NAME	COMPANY	EMAIL	PHONE
chad.stobbe@dnr.iowa.gov		chad.stobbe@dnr.iowa.gov	

REMARKS:

Good morning Chad-

SCS Engineers, on behalf of BMC Aggregates, L.C., is submitting the attached 2023 Annual Water Quality Report for the South Quarry Beneficial Use Site. If you have any questions or comments regarding this report, please contact me at the number below. Thank you.

Nathan Ohrt
Senior Project Professional
SCS Engineers
1690 All State Court, Suite 100
West Des Moines, IA 50265 USA
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DESCRIPTION OF CONTENTS

QTY	DATED	TITLE	NOTES
1	2/28/2024	BMC Aggregates, South Quarry - 07-BUD-20-02 - 2023 Annual Water Quality Report.pdf	

COPIES:

Sherman Lundy (BMC Aggregates, L.C.)
Nathan Ohrt (SCS Engineers)
Becky Jolly

Transmittal

DATE: 2/28/2024
TRANSMITTAL ID: 00001

February 28, 2024

Mr. Chad Stobbe
Iowa Department of Natural Resources
Land Quality Bureau
Wallace State Office Building
502 East 9th Street
Des Moines, Iowa 50319

Subject: 2023 Annual Water Quality Report
BMC Aggregates L.C. Waterloo South Quarry
Beneficial Use Site
Permit No. 07-BUD-20-02

Dear Chad:

SCS Engineers, on behalf of BMC Aggregates, L.C., has completed the statistical analyses and annual water quality reporting for the BMC Aggregates L.C. Waterloo South Quarry Beneficial Use Site for the year 2023. Groundwater sampling was performed by BMC Aggregates L.C. personnel. Please find enclosed a copy of the 2023 Annual Water Quality Report and associated statistical evaluation.

If you have any questions regarding this report, please contact Nathan Ohrt at (319) 331-9613.

Sincerely,

Nathan Ohrt
Senior Project Professional
SCS Engineers

Timothy C. Buelow, P.E.
Project Director
SCS Engineers

NPO/TCB

Copies: Mr. Sherman Lundy, BMC Aggregates, L.C.

2023 Annual Water Quality Report
BMC Waterloo South Quarry
Beneficial Use Site
La Porte City, Iowa

Permit #07-BUD-20-02

Project No. 27223265.00
February 2024

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Section 1.0
Introduction

1.1 Purpose

SCS Engineers (SCS), on behalf of BMC Aggregates, L.C., has completed the statistical evaluation of the groundwater data for the Waterloo South Quarry Beneficial Use site (South Quarry). BMC Aggregates, L.C. personnel performed the groundwater sampling. The purpose of this Annual Water Quality Report (AWQR) is to document and statistically evaluate the results for groundwater samples collected during 2023 from monitoring wells associated with the South Quarry.

1.2 Site Location

The South Quarry property is depicted in Figure 1-1, Site Map. The facility is located near the intersection of State Highway V37 (Dysart Road) and East Eagle Road near La Porte City in Black Hawk County, Iowa. The locations of the monitoring wells are shown in Figure 1-2, Monitoring Point Locations.

1.3 Background

The *Beneficial Use Determination (BUD)* dated November 18, 2022 (Doc #104627) states that the materials approved for fill are waste foundry sand generated by the John Deere foundry in Waterloo, Iowa and coal combustion residue (CCR) generated by the University of Iowa power plant in Iowa City, Iowa.

1.4 Monitoring Program

The reporting period for this AWQR is from January through December 2023 and includes the March and October 2023 sampling events. The field sampling data and laboratory analytical data sheets for the 2023 sampling events are included in Appendices A and B, respectively. The Summary of Groundwater Chemistry is included in Appendix C.

Table 1-1 summarizes the monitoring points and sampling conducted during this reporting period.

Table 1-1
2023 AWQR Reporting Period Monitoring Summary

Monitoring Wells	March 2023	October 2023
Reiter Farm (b)	Indicators, Inorganics, and Organics	Indicators, Inorganics, and Organics
Well #1	Indicators, Inorganics, and Organics	Indicators, Inorganics, and Organics
Well #2	Indicators, Inorganics, and Organics	Indicators, Inorganics, and Organics
Well #3	Indicators, Inorganics, and Organics	Indicators, Inorganics, and Organics
Well #4	Indicators, Inorganics, and Organics	Indicators, Inorganics, and Organics

(b) denotes background monitoring well.
See Table 1-2 for list of parameters.

Table 1-2 shows the parameters that comprise the sampling list for the South Quarry as required by the permit.

Table 1-2
Permit Parameters

Indicator Parameters:	
Chemical Oxygen Demand	Total Organic Halogens
Phenols	Ammonia Nitrogen
Formaldehyde	Total Dissolved Solids
Inorganic Parameters:	
Aluminum	Lead
Antimony	Magnesium
Arsenic	Manganese
Barium	Mercury
Beryllium	Molybdenum
Boron	Nickel
Cadmium	Selenium
Chloride	Silver
Chromium	Sulfate
Cobalt	Thallium
Copper	Vanadium
Fluoride	Zinc
Iron	Total Suspended Solids
Organic Parameters Detected in Background TCLP:	
Benzene	2-Methylphenol
Chloroform	3/4-Methylphenol
2-Butanone (MEK)	Pyridine

The permit specifies the indicator and inorganic parameters that are to be analyzed during the semi-annual sampling events. Volatile organic compounds (VOCs) and/or semi-volatile organic compounds (SVOCs) detected above the laboratory method detection limit in the approved fill materials are to be analyzed during the semi-annual sampling events. The organic parameters for this reporting period are summarized in Table 1-2.

The groundwater monitoring statistical methods used for the South Quarry were outlier analysis, trend analysis (Mann-Kendall/Sen's Slope), and a confidence interval or confidence band evaluation, as appropriate, for the identification of exceedances of a groundwater protection standard (GWPS) at a statistically significant level (SSL). The results of the 2023 evaluation are included in Appendix D (2023 Statistical Report) and discussed in Section 3.0.

1.5 Field Procedures

BMC Aggregates, L.C. personnel performed the groundwater sampling on March 14 and October 18, 2023. Static water level measurements were obtained utilizing an electronic water level indicator. Samples were collected with bailers with purging of approximately one bailer volume prior to sampling. Temperature and pH measurements were collected in the field with a thermometer and pH probe. Summaries of the field data from the March and October 2023 sampling events are included in Appendix A.

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User: bmadson
Date Saved: 1/31/2024 10:01 AM

Site Map

Figure 1-1

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Legend

Approximate Property Boundary

BMC Aggregates
South Quarry
La Porte City, Iowa
Project No: 27223265.00
Drawing Date: January 2024

N
W E
S

0 445 890 1,780 2,670
Feet

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Monitoring Point Locations

Figure 1-2

Legend

- Approximate Location of Groundwater Monitoring Well
- Approximate Property Boundary

BMC Aggregates
South Quarry
La Porte City, Iowa
Project No: 27223265.00
Drawing Date: January 2024

N W E S

0 445 890 1,780 2,670 Feet

Section 2.0
Hydrogeologic Site Summary

The *Groundwater Monitoring Plan,* dated August 2010, prepared by Robinson Engineering Company described the geology and hydrogeology of the South Quarry as follows.

2.1 Geology

The geology of the area is represented in the open pit area by the Coralville Formation [immediately beneath the overburden (topsoil)] as the former resource ledge of the quarry with the floor in the Little Cedar Formation. The floor interval, formerly known as the Rapid Member of the old Cedar Valley Formation (now part of the Little Cedar Formation), separates the Coralville Formation in the open pit area from the Solon Member of the now abandoned, water filled underground mine.

2.2 Hydrogeology

In terms of the hydrogeology, Miller Creek, which flows to the northeast and is a minor tributary of the Cedar River, is 1300' north of this beneficial fill and reclamation location. The Cedar River is 4 miles east northeast from this site and all surface waters move towards the east or northeast of the South Quarry. Groundwater movement tends to follow this trend moving to the east and slightly northeast of this site. The proposed placement of the monitoring wells reflects this groundwater and surface water trend.

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Section 3.0
Data Evaluation, Summary, and Recommendations

3.1 Data Evaluation

Statistical evaluation was conducted for the inorganic constituents numbered 1 - 25 in Appendix D of the BUD permit (Doc #104627). The results of the statistical evaluation for the groundwater analytical data collected during the March and October 2023 sampling events is located in Appendix D (2023 Statistical Report) of this report. Table 3-1 contains a summary of constituent detections by monitoring point for the reporting period. Following the table are discussions of the analytical data for the monitoring program.

Table 3-1
Constituent Detection Summary

Constituent	Reiter Farm (b)	Well #1	Well #2	Well #3	Well #4
Aluminum	ND	3	ND	3	3,10
Antimony	ND	ND	ND	ND	ND
Arsenic	3	3	3	3	3,10
Barium	3,10	3,10	3,10	3,10	3,10
Beryllium	ND	ND	ND	ND	ND
Boron	ND	ND	ND	ND	ND
Cadmium	ND	ND	ND	ND	ND
Chloride	3,10	3,10	3,10	3,10	3,10
Chromium	ND	ND	ND	3	3,10
Cobalt	ND	ND	ND	ND	ND
Copper	3,10	3,10	3,10	3,10	3,10
Fluoride	3,10	3,10	3,10	3,10	3,10
Iron	ND	3,10	3,10	3	3,10
Lead	3	3	ND	3	3,10
Magnesium	3,10	3,10	3,10	3,10	3,10
Manganese	ND	3,10	3,10	3,10	3,10
Mercury	ND	ND	ND	ND	ND
Molybdenum	3,10	ND	ND	3,10	3,10
Nickel	ND	3	ND	3	3,10
Selenium	ND	ND	ND	3	ND
Silver	ND	ND	ND	ND	ND
Sulfate	3,10	3,10	3,10	3,10	3,10
Thallium	ND	3	ND	ND	ND
Vanadium	ND	ND	ND	3	10
Zinc	3,10	ND	ND	ND	ND
Chloroform	ND	ND	ND	ND	ND
2-Butanone (MEK)	ND	ND	ND	ND	ND
2-Methylphenol	ND	ND	ND	ND	ND

Constituent	Reiter Farm (b)	Well #1	Well #2	Well #3	Well #4
3/4-Methylphenol	ND	ND	ND	ND	ND
Benzene	ND	ND	ND	ND	ND
Pyridine	ND	ND	ND	ND	ND

(b) denotes background monitoring well.
ND – Not Detected.
3 – March 2023 10 – October 2023
J flag concentrations, which are estimated concentrations greater than the method detection limit but below the laboratory reporting limit, were not considered detections for Table 3-1.

Table 3-1 shows that the majority of parameters were fairly consistently detected within individual monitoring wells: either detected during both sampling events or not detected during this reporting period. However, there were more single detections during the March 2023 sampling event compared to the October 2023 sampling event. No VOCs or SVOCs were detected during this reporting period.

3.2 Summary of Analytical Data

The range of concentrations measured during this reporting period is shown in Figure 3-1 (Reporting Period Detection Summary). The background Reiter Farm monitoring well is sampled for the calculation of site background concentrations but is not statistically evaluated. Mann-Kendall trend analysis and confidence intervals were the selected statistical evaluation performed for the constituents numbered 1 - 25 in Appendix D of the BUD permit (Doc #104627). The indicator parameters listed in Appendix D of the permit are not statistically evaluated. Indicator parameter analytical data are included on the last page of Appendix C, Summary of Groundwater Chemistry.

VOCs and SVOCs were not detected in the monitoring well network during this reporting period. Well #1 had four site-wide maximum concentrations, Wells #2 and #3 had two each, the Reiter Farm well had five, and Well #4 had seven site-wide maximum concentrations.

Groundwater protection standards and their sources for the inorganic parameters are included in Table 3-2. The GWPSs in Table 3-2 were first proposed in correspondence dated May 4, 2020 (Doc #97649).

Table 3-2
Source of GWPS

Constituent	GWPS (mg/L)	Source of GWPS
Aluminum	0.2	SMCL
Antimony	0.006	MCL
Arsenic	0.01	MCL
Barium	2	MCL
Beryllium	0.004	MCL
Boron	6	SWS
Cadmium	0.005	MCL
Chloride	250	SMCL
Chromium	0.1	MCL
Cobalt	0.0021	SWS
Copper	1.3	MCL
Fluoride	2.0	SMCL
Iron	0.3	SMCL
Lead	0.015	MCL
Magnesium	26	SS GWPS
Manganese	0.05	SMCL

Constituent	GWPS (mg/L)	Source of GWPS
Mercury	0.002	MCL
Molybdenum	0.04	SWS
Nickel	0.1	SWS
Selenium	0.05	MCL
Silver	0.1	SMCL
Sulfate	250	SMCL
Thallium	0.002	MCL
Vanadium	0.035	SWS
Zinc	2	SWS

MCL – Maximum Contaminant Level
SMCL – Secondary Maximum Contaminant Level
SWS – Iowa Statewide Standard
SS GWPS – Site-Specific Groundwater Protection Standard

3.3 Summary of Statistics

Table 3-3 summarizes the monitoring points and SSLs measured during this reporting period.

Table 3-3
2023 Statistical Summary Table

Monitoring Well	2023 SSL – Parameters
Well #1	Magnesium
Well #2	Magnesium
Well #3	Magnesium
Well #4	None

Magnesium has no health-based regulatory standards. The GWPS for magnesium used in this report was based on the background concentration of the background Reiter Farm water supply well. The Reiter Farm water supply well differs from the groundwater monitoring wells in construction, use, and screened interval, which may contribute to the constituent concentration differences.

Magnesium is prevalent in Iowa geology, including at the South Quarry. The Geological Society of Iowa publication "Geology and Reclamation at the Waterloo South Quarry, Black Hawk County, Iowa (Guidebook 94, April 22, 2017) describes the surficial geology, Devonian stratigraphy, and minerology of the quarry in addition to the beneficial fill/quarry reclamation project that is the basis for this water monitoring project.

The measured 2023 magnesium concentrations in monitoring wells #1, #2, and #3 were reviewed. Recent measured magnesium concentrations in each of the compliance monitoring wells are generally lower than those measured in the pre-2015 time period, indicating apparent improving groundwater quality. The reclamation project previously accepted CCR from the Iowa State University and University of Northern Iowa power plans, but those sources have ceased in recent years, with the fill consisting of waste foundry sand from John Deere in Waterloo and CCR from the University of Iowa power plant. It is unclear what effect that change may have had or will have, if any, on measured concentrations.

Mann-Kendall trend analysis was performed at 99% confidence (α=0.01) using the most recent eight samples. The evaluation indicated a statistically significant decreasing trend for iron and a

statistically significant increasing trend for sulfate, both in Well #1. A summary of the Mann-Kendall results for the SSL constituent-monitoring point pairs is shown in Table 3-4.

Table 3-4
Trending for SSL Well/Constituent Pairs

Monitoring Well	Constituent	Mann-Kendall Statistic	Trend
Well #1	Magnesium	-9	Decreasing
Well #2	Magnesium	16	Increasing
Well #3	Magnesium	-2	Decreasing

The magnesium concentration trends in Wells #1 and #3 are decreasing and increasing in Well #2. A Mann-Kendall statistic of -21 would be considered a statistically significant decreasing trend at 99% confidence while a statistic of 21 would be considered a statistically significant increasing trend. A Mann-Kendall/Sen's Slope trend test summary table and graphs and time series plots are included in Appendix D, 2023 Statistical Report.

Although not necessarily statistically significant, Mann-Kendall statistics can provide an indication of general trending in the data. Trend indications for the downgradient monitoring wells are shown in Table 3-5. The statistics used to develop the general trending differ from the Mann-Kendall statistics used in the diagnostics section of the statistical report in that a much lower trend threshold is applied for the general trending information (α=0.20 versus α=0.01). Trends classified as decreasing or increasing exhibited a statistically significant trend with 80% confidence using the most recent eight data points. Trends classified as stable did not exhibit a statistically significant trend with 80% confidence using the eight most recent data points. A summary of Mann-Kendall statistics by constituent in each monitoring point is included in Appendix E, Mann-Kendall Output (α=0.20).

Table 3-5
Mann-Kendall Summary Table

Trending in Monitoring Wells				
Monitoring Well	Decreasing Trends	Stable Trends	Increasing Trends	Number of Constituents Analyzed
Well #1	13.33%	66.67%	20.00%	15
Well #2	11.76%	82.35%	5.88%	17
Well #3	4.76%	95.24%	0.00%	21
Well #4	0.00%	94.44%	5.56%	18
Site-Wide	7.04%	85.92%	7.04%	71

Review of the Mann-Kendall statistics indicated that approximately 93% of the Mann-Kendall statistics following the 2023 statistical evaluation were considered stable or declining. The constituents with increasing trends are discussed in Table 3-6.

Table 3-6
Increasing Trends

Monitoring Well	Constituent	Comments
Well #1	Chloride	The concentrations measured in 2023 are higher than some previous measurements but are the lowest concentrations measured at the South Quarry.
	Phenols	Phenols were not detected before the October 2022 sampling event, so the low quantified detections in 2023 indicated an increasing trend.
	Sulfate	Sulfate does have some recent elevated concentrations, but sulfate concentrations in Well #1 are the lowest observed at the site.
Well #2	Magnesium	The increasing trend is likely due to the concentration of 40.1 mg/L measured during the October 2023 sampling event, which is the highest in the most recent eleven samples.
Well #4	Lead	Lead was not detected in Well #4 since March 2019 before the March 2023 sampling event, so the low quantified detections in 2023 indicated an increasing trend.

3.4 QA/QC Information

The QA/QC protocols for the March and October 2023 sampling events included laboratory protocols provided by Keystone Laboratories, Inc.; documentation is included in Appendix B (Laboratory Analytical Data Sheets).

3.5 Recommendations

Review of the data indicated the beneficial use project is not having a significant adverse effect on the groundwater at the South Quarry as represented by groundwater samples collected from the monitoring wells associated with the South Quarry. Based on the groundwater sampling analytical results and the statistical evaluation performed on the data, the following is recommended:

- Continue sampling the Reiter Farm monitoring well and monitoring wells Well #1, Well #2, Well #3, and Well #4 for the permit parameters on a semi-annual schedule.

The recommended sampling schedule for the upcoming reporting period (January through December 2024) is summarized in Table 3-7.

Table 3-7
2024 AWQR Reporting Period Sampling Schedule

Monitoring Point	March 2024	October 2024
Reiter Farm	Permit Parameters	Permit Parameters
Well #1	Permit Parameters	Permit Parameters
Well #2	Permit Parameters	Permit Parameters
Well #3	Permit Parameters	Permit Parameters
Well #4	Permit Parameters	Permit Parameters

See Table 1-2 for list of current permit parameters. Required organic parameters will be determined by testing performed by the fill material generators.

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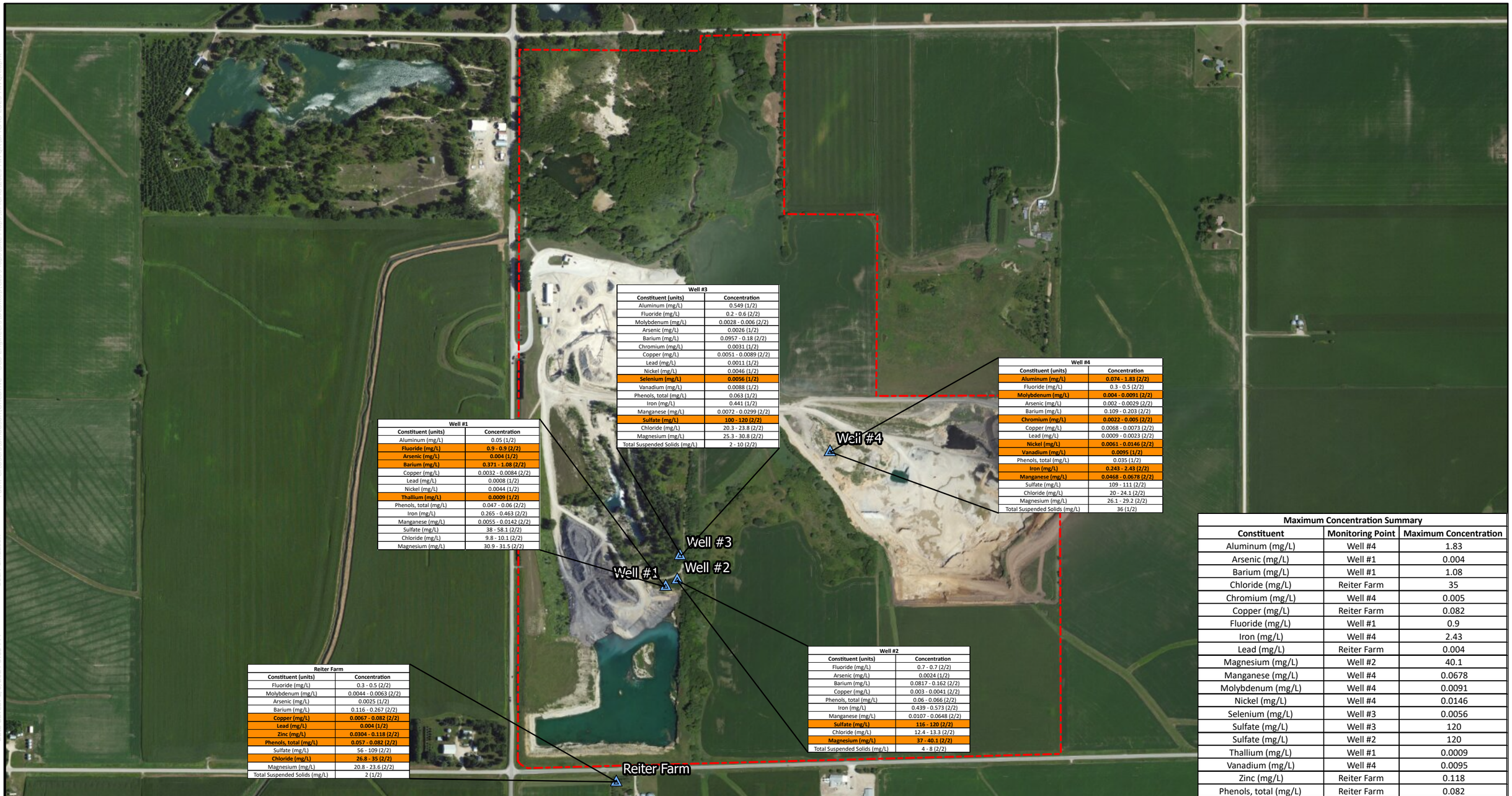

Well #1	
Constituent (units)	**Concentration**
Aluminum (mg/L)	0.05 (1/2)
Fluoride (mg/L)	**0.9 - 0.9 (2/2)**
Arsenic (mg/L)	**0.004 (1/2)**
Barium (mg/L)	**0.371 - 1.08 (2/2)**
Copper (mg/L)	0.0032 - 0.0084 (2/2)
Lead (mg/L)	0.0008 (1/2)
Nickel (mg/L)	0.0044 (1/2)
Thallium (mg/L)	**0.0009 (1/2)**
Phenols, total (mg/L)	0.047 - 0.06 (2/2)
Iron (mg/L)	0.265 - 0.463 (2/2)
Manganese (mg/L)	0.0055 - 0.0142 (2/2)
Sulfate (mg/L)	38 - 58.1 (2/2)
Chloride (mg/L)	9.8 - 10.1 (2/2)
Magnesium (mg/L)	30.9 - 31.5 (2/2)

Well #3	
Constituent (units)	**Concentration**
Aluminum (mg/L)	0.549 (1/2)
Fluoride (mg/L)	0.2 - 0.6 (2/2)
Molybdenum (mg/L)	0.0028 - 0.006 (2/2)
Arsenic (mg/L)	0.0026 (1/2)
Barium (mg/L)	0.0957 - 0.18 (2/2)
Chromium (mg/L)	0.0031 (1/2)
Copper (mg/L)	0.0051 - 0.0089 (2/2)
Lead (mg/L)	0.0011 (1/2)
Nickel (mg/L)	0.0046 (1/2)
Selenium (mg/L)	**0.0056 (1/2)**
Vanadium (mg/L)	0.0088 (1/2)
Phenols, total (mg/L)	0.063 (1/2)
Iron (mg/L)	0.441 (1/2)
Manganese (mg/L)	0.0072 - 0.0299 (2/2)
Sulfate (mg/L)	**100 - 120 (2/2)**
Chloride (mg/L)	20.3 - 23.8 (2/2)
Magnesium (mg/L)	25.3 - 30.8 (2/2)
Total Suspended Solids (mg/L)	2 - 10 (2/2)

Well #4	
Constituent (units)	**Concentration**
Aluminum (mg/L)	**0.074 - 1.83 (2/2)**
Fluoride (mg/L)	0.3 - 0.5 (2/2)
Molybdenum (mg/L)	**0.004 - 0.0091 (2/2)**
Arsenic (mg/L)	0.002 - 0.0029 (2/2)
Barium (mg/L)	0.109 - 0.203 (2/2)
Chromium (mg/L)	**0.0022 - 0.005 (2/2)**
Copper (mg/L)	0.0068 - 0.0073 (2/2)
Lead (mg/L)	0.0009 - 0.0023 (2/2)
Nickel (mg/L)	**0.0061 - 0.0146 (2/2)**
Vanadium (mg/L)	**0.0095 (1/2)**
Phenols, total (mg/L)	0.035 (1/2)
Iron (mg/L)	**0.243 - 2.43 (2/2)**
Manganese (mg/L)	**0.0468 - 0.0678 (2/2)**
Sulfate (mg/L)	109 - 111 (2/2)
Chloride (mg/L)	20 - 24.1 (2/2)
Magnesium (mg/L)	26.1 - 29.2 (2/2)
Total Suspended Solids (mg/L)	36 (1/2)

Reiter Farm	
Constituent (units)	**Concentration**
Fluoride (mg/L)	0.3 - 0.5 (2/2)
Molybdenum (mg/L)	0.0044 - 0.0063 (2/2)
Arsenic (mg/L)	0.0025 (1/2)
Barium (mg/L)	0.116 - 0.267 (2/2)
Copper (mg/L)	**0.0067 - 0.082 (2/2)**
Lead (mg/L)	**0.004 (1/2)**
Zinc (mg/L)	**0.0304 - 0.118 (2/2)**
Phenols, total (mg/L)	**0.057 - 0.082 (2/2)**
Sulfate (mg/L)	56 - 109 (2/2)
Chloride (mg/L)	**26.8 - 35 (2/2)**
Magnesium (mg/L)	20.8 - 23.6 (2/2)
Total Suspended Solids (mg/L)	2 (1/2)

Well #2	
Constituent (units)	**Concentration**
Fluoride (mg/L)	0.7 - 0.7 (2/2)
Arsenic (mg/L)	0.0024 (1/2)
Barium (mg/L)	0.0817 - 0.162 (2/2)
Copper (mg/L)	0.003 - 0.0041 (2/2)
Phenols, total (mg/L)	0.06 - 0.066 (2/2)
Iron (mg/L)	0.439 - 0.573 (2/2)
Manganese (mg/L)	0.0107 - 0.0648 (2/2)
Sulfate (mg/L)	**116 - 120 (2/2)**
Chloride (mg/L)	12.4 - 13.3 (2/2)
Magnesium (mg/L)	**37 - 40.1 (2/2)**
Total Suspended Solids (mg/L)	4 - 8 (2/2)

Maximum Concentration Summary		
Constituent	**Monitoring Point**	**Maximum Concentration**
Aluminum (mg/L)	Well #4	1.83
Arsenic (mg/L)	Well #1	0.004
Barium (mg/L)	Well #1	1.08
Chloride (mg/L)	Reiter Farm	35
Chromium (mg/L)	Well #4	0.005
Copper (mg/L)	Reiter Farm	0.082
Fluoride (mg/L)	Well #1	0.9
Iron (mg/L)	Well #4	2.43
Lead (mg/L)	Reiter Farm	0.004
Magnesium (mg/L)	Well #2	40.1
Manganese (mg/L)	Well #4	0.0678
Molybdenum (mg/L)	Well #4	0.0091
Nickel (mg/L)	Well #4	0.0146
Selenium (mg/L)	Well #3	0.0056
Sulfate (mg/L)	Well #3	120
Sulfate (mg/L)	Well #2	120
Thallium (mg/L)	Well #1	0.0009
Vanadium (mg/L)	Well #4	0.0095
Zinc (mg/L)	Reiter Farm	0.118
Phenols, total (mg/L)	Reiter Farm	0.082

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Site Map

Legend

- Approximate Location of Groundwater Monitoring Well
- Approximate Property Boundary

BMC Aggregates
South Quarry
La Porte City, Iowa
Project No: 27223265.00
Drawing Date: January 2024

Figure 3-1

N W E S

0 445 890 1,780 2,670 Feet

Section 4.0
General Comments

The analysis and opinions expressed in this report are based upon data obtained from the samples collected at the indicated locations and from any other information discussed in this report. This report does not reflect any variation in subsurface stratigraphy, hydrogeology, or chemical concentrations that may occur between sampling locations or across the site. Actual subsurface conditions may vary and may not become evident without further exploration.

SCS has prepared this report for the exclusive use of our client for the specific application to the project discussed. No warranty is expressly stated or implied in this report with regard to the condition of substrate and groundwater below the surface of the facility. SCS has relied upon information furnished by others as noted in the report, and SCS accepts no responsibility for any deficiency, misstatements, or inaccuracy in this report as a result of misstatements, omissions, misrepresentations, fraudulent, or inaccurate information or data provided by others.

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Section 5.0
References

1. Robinson Engineering Company. *Groundwater Monitoring Plan, South Waterloo Quarry, August 2010.*
2. Barker Lemar Engineering Consultants. *Groundwater Statistical Program, BMC Quarry CCR Beneficial Use Site, January 2011.*
3. Geological Society of Iowa. *Geology and Reclamation at the Waterloo South Quarry, Black Hawk County, Iowa. April 22, 2017.*
4. Evora Consulting, *2022 Annual Water Quality Report, BMC Aggregates, L.C., South Quarry, Beneficial Use Site, February 2023.*

Appendix A
Field Sampling Information

Waterloo South Quarry Monitoring Well Reports
Beneficial Use Reclamation Project

March 15, 2023

	Well #1	Well #2	Well #3	Well #4	Upgradient Well
Water Level (feet)	82.2	78.5	77.8	51.2	NA
pH (S.U.)	7.90	8.10	8.20	8.30	7.50
Temperature (° F)	47.6	47.6	47.3	49.8	46.7
Conductivity (µS/cm)	635.6	769.2	705.3	737.3	640.4

Note: “ Water Level” refers to the hydrostatic head of the well.

Waterloo South Quarry Monitoring Well Reports
Beneficial Use Reclamation Project

October 18, 2023

	Well #1	Well #2	Well #3	Well #4	Upgradient Well
Water Level (feet)	76.0	74.2	72.9	42.9	NA
pH (S.U.)	7.70	7.70	7.60	7.70	7.60
Temperature (° F)	52.0	51.0	52.0	55.0	56.0
Conductivity (µS/cm)	589.0	695.0	612.0	672.0	636.0

Note: “ Water Level” refers to the hydrostatic head of the well.

Appendix B
Laboratory Analytical Data Sheets

3/31/2023

Sherman Lundy
BMC Aggregates L.C.
101 BMC Drive
Elk Run Heights, IA 50707

RE: Project: GW Monitoring
Project Number: Miller Creek Area

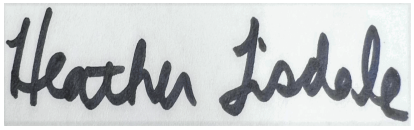
This analytical report is for the samples received on 3/16/2023 12:00:00PM. If you have any questions concerning this report please feel free to contact me at 1-800-858-5227. The samples included in this analytical report are as follows:

Sample ID	Laboratory ID	Matrix	Date Sampled
Well #1	1GC1696-01	Water	03/14/23 08:00
Well #2	1GC1696-02	Water	03/15/23 00:00
Well #3	1GC1696-03	Water	03/14/23 09:00
Well #4	1GC1696-04	Water	03/14/23 09:30
Upgradient Well	1GC1696-05	Water	03/14/23 10:30

Phone: 800-858-5227
600 East 17th Street South
Newton, IA 50208
Fax: 641-792-7989

BMC Aggregates L.C.	Project:	GW Monitoring	
Elk Run Heights, IA 50707	Project Number:	Miller Creek Area	**Reported:**
101 BMC Drive	Project Manager:	Sherman Lundy	03/31/23 16:23

Sincerely,



Heather Tisdale, Project Manager I

Phone: 800-858-5227

600 East 17th Street South
Newton, IA 50208

Fax: 641-792-7989

BMC Aggregates L.C.	Project:	GW Monitoring	
Elk Run Heights, IA 50707	Project Number:	Miller Creek Area	**Reported:**
101 BMC Drive	Project Manager:	Sherman Lundy	03/31/23 16:23

CASE NARRATIVE

All analytical results for this Work Order meet(s) the laboratory established acceptance criteria for the method(s) requested with the following exceptions.

Phone: 800-858-5227 600 East 17th Street South Newton, IA 50208 Fax: 641-792-7989

BMC Aggregates L.C.	Project:	GW Monitoring	
Elk Run Heights, IA 50707	Project Number:	Miller Creek Area	**Reported:**
101 BMC Drive	Project Manager:	Sherman Lundy	03/31/23 16:23

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BMC Aggregates L.C.	Project:	GW Monitoring	
Elk Run Heights, IA 50707	Project Number:	Miller Creek Area	**Reported:**
101 BMC Drive	Project Manager:	Sherman Lundy	03/31/23 16:23

Well #1

1GC1696-01(Water)

Keystone Laboratories - Newton

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Determination of Volatile Organic Compounds										
Benzene	ND		1.0	ug/L	1	1GC0950	03/18/23	03/18/23	EPA 624	
Chloroform	ND		1.0	"	"	"	"	"	"	
2-Butanone (MEK)	ND		10.0	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane			*96.3 %*		*79-129*	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4			*102 %*		*66-134*	"	"	"	"	
Surrogate: Toluene-d8			*97.7 %*		*91-113*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene			*96.4 %*		*83-112*	"	"	"	"	
Determination of Carbonyl Compounds										
Formaldehyde	ND		10.0	ug/L	1	1GC0912	03/17/23	03/20/23	EPA 8315	
Determination of Conventional Chemistry Parameters										
Total Organic Halogens (TOX)	ND		0.010	mg/L	1	1GC1683	03/28/23	03/31/23	EPA 9020	
COD, total	ND		20	"	"	1GC1411	03/28/23	03/29/23	EPA 410.4	
Nitrogen, Ammonia	ND		0.10	"	"	1GC1594	03/30/23	03/30/23	TIMBERLINE	
Phenols, total	**0.060**		0.035	"	"	1GC1174	03/22/23	03/23/23	EPA 420.1	
Solids, total dissolved	**341**		5	"	13.33333	1GC1028	03/20/23	03/21/23	USGS I-1750-85	
Solids, total suspended	ND		2	"	2	1GC0951	03/20/23	03/20/23	USGS I-3765-85	
Determination of Inorganic Anions										
Chloride	**10.1**	0.3	1.0	mg/L	1	1GC1118	03/21/23	03/21/23	EPA 9056	
Fluoride	**0.9**		0.1	"	"	"	"	"	"	
Sulfate	**38.0**	0.4	1.0	"	"	"	"	"	"	
Determination of Total Metals										
Silver, total	ND	0.0015	0.0020	mg/L	4	1GC1180	03/22/23	03/23/23	EPA 200.8	
Aluminum, total	**0.050**		0.050	"	1	1GC1081	03/22/23	03/22/23	EPA 200.7	
Arsenic, total	**0.0040**	0.0006	0.0020	"	4	1GC1180	03/22/23	03/23/23	EPA 200.8	
Barium, total	**1.08**	0.0002	0.0020	"	"	"	"	"	"	
Beryllium, total	ND	0.0001	0.0020	"	"	"	"	"	"	
Boron, total	ND	0.056	0.100	"	1	1GC1081	03/22/23	03/22/23	EPA 200.7	
Cadmium, total	ND	0.00008	0.0002	"	4	1GC1180	03/22/23	03/23/23	EPA 200.8	
Cobalt, total	ND	0.0005	0.0020	"	"	"	"	"	"	
Chromium, total	**0.0011**	0.0007	0.0020	"	"	"	"	"	"	

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BMC Aggregates L.C.	Project:	GW Monitoring	
Elk Run Heights, IA 50707	Project Number:	Miller Creek Area	**Reported:**
101 BMC Drive	Project Manager:	Sherman Lundy	03/31/23 16:23

Well #1

1GC1696-01(Water)

Keystone Laboratories - Newton

Determination of Total Metals

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Copper, total	**0.0084**	0.0008	0.0020	mg/L	4	1GC1180	03/22/23	03/23/23	EPA 200.8	
Iron, total	**0.463**	0.047	0.100	"	1	1GC1081	03/22/23	03/22/23	200.7	
Mercury, total	ND	0.00013	0.00020	"	"	1GC1159	03/22/23	03/24/23	SM 3112B	
Magnesium, total	**31.5**	0.06	0.10	"	"	1GC1081	03/22/23	03/22/23	200.7	
Manganese, total	**0.0142**	0.0017	0.0040	"	4	1GC1180	03/22/23	03/23/23	EPA 200.8	
Molybdenum, total	ND	0.0006	0.0020	"	"	"	"	"	"	
Nickel, total	**0.0044**	0.0007	0.0040	"	"	"	"	"	"	
Lead, total	**0.0008**	0.0005	0.0008	"	"	"	"	"	"	
Antimony, total	ND	0.0008	0.0020	"	"	"	"	"	"	
Selenium, total	ND	0.0011	0.0040	"	"	"	"	"	"	
Thallium, total	**0.0009**	0.0004	0.0008	"	"	"	"	"	"	
Vanadium, total	**0.0051**	0.0043	0.0080	"	"	"	"	"	"	
Zinc, total	**0.0182**	0.0174	0.0200	"	"	"	"	"	"	

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BMC Aggregates L.C.	Project:	GW Monitoring	
Elk Run Heights, IA 50707	Project Number:	Miller Creek Area	**Reported:**
101 BMC Drive	Project Manager:	Sherman Lundy	03/31/23 16:23

Well #2

1GC1696-02(Water)

Keystone Laboratories - Newton

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Determination of Volatile Organic Compounds										
Benzene	ND		1.0	ug/L	1	1GC0950	03/18/23	03/18/23	EPA 624	
Chloroform	ND		1.0	"	"	"	"	"	"	
2-Butanone (MEK)	ND		10.0	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane			*92.8 %*		*79-129*	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4			*95.1 %*		*66-134*	"	"	"	"	
Surrogate: Toluene-d8			*106 %*		*91-113*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene			*104 %*		*83-112*	"	"	"	"	
Determination of Carbonyl Compounds										
Formaldehyde	ND		10.0	ug/L	1	1GC0912	03/17/23	03/20/23	EPA 8315	
Determination of Conventional Chemistry Parameters										
Total Organic Halogens (TOX)	ND		0.010	mg/L	1	1GC1683	03/28/23	03/31/23	EPA 9020	
COD, total	ND		20	"	"	1GC1411	03/28/23	03/29/23	EPA 410.4	
Nitrogen, Ammonia	ND		0.10	"	"	1GC1594	03/30/23	03/30/23	TIMBERLINE	
Phenols, total	**0.060**		0.035	"	"	1GC1244	03/23/23	03/27/23	EPA 420.1	
Solids, total dissolved	**456**		5	"	13.33333	1GC1028	03/20/23	03/21/23	USGS I-1750-85	
Solids, total suspended	**4**		2	"	2	1GC1088	03/22/23	03/22/23	USGS I-3765-85	
Determination of Inorganic Anions										
Chloride	**13.3**	0.3	1.0	mg/L	1	1GC1118	03/21/23	03/21/23	EPA 9056	
Fluoride	**0.7**		0.1	"	"	"	"	"	"	
Sulfate	**116**	1.8	5.0	"	5	1GC1235	03/22/23	03/22/23	"	
Determination of Total Metals										
Silver, total	ND	0.0015	0.0020	mg/L	4	1GC1180	03/22/23	03/23/23	EPA 200.8	
Aluminum, total	ND		0.050	"	1	1GC1081	03/22/23	03/22/23	EPA 200.7	
Arsenic, total	**0.0024**	0.0006	0.0020	"	4	1GC1180	03/22/23	03/23/23	EPA 200.8	
Barium, total	**0.162**	0.0002	0.0020	"	"	"	"	"	"	
Beryllium, total	ND	0.0001	0.0020	"	"	"	"	"	"	
Boron, total	ND	0.056	0.100	"	1	1GC1081	03/22/23	03/22/23	EPA 200.7	
Cadmium, total	ND	0.00008	0.0002	"	4	1GC1180	03/22/23	03/23/23	EPA 200.8	
Cobalt, total	ND	0.0005	0.0020	"	"	"	"	"	"	
Chromium, total	**0.0009**	0.0007	0.0020	"	"	"	"	"	"	

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BMC Aggregates L.C.	Project:	GW Monitoring	
Elk Run Heights, IA 50707	Project Number:	Miller Creek Area	**Reported:**
101 BMC Drive	Project Manager:	Sherman Lundy	03/31/23 16:23

Well #2

1GC1696-02(Water)

Keystone Laboratories - Newton

Determination of Total Metals

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Copper, total	**0.0041**	0.0008	0.0020	mg/L	4	1GC1180	03/22/23	03/23/23	EPA 200.8	
Iron, total	**0.439**	0.047	0.100	"	1	1GC1081	03/22/23	03/22/23	200.7	
Mercury, total	ND	0.00013	0.00020	"	"	1GC1159	03/22/23	03/24/23	SM 3112B	
Magnesium, total	**37.0**	0.06	0.10	"	"	1GC1081	03/22/23	03/22/23	200.7	
Manganese, total	**0.0648**	0.0017	0.0040	"	4	1GC1180	03/22/23	03/23/23	EPA 200.8	
Molybdenum, total	ND	0.0006	0.0020	"	"	"	"	"	"	
Nickel, total	**0.0017**	0.0007	0.0040	"	"	"	"	"	"	
Lead, total	ND	0.0005	0.0008	"	"	"	"	"	"	
Antimony, total	ND	0.0008	0.0020	"	"	"	"	"	"	
Selenium, total	ND	0.0011	0.0040	"	"	"	"	"	"	
Thallium, total	**0.0006**	0.0004	0.0008	"	"	"	"	"	"	
Vanadium, total	**0.0058**	0.0043	0.0080	"	"	"	"	"	"	
Zinc, total	ND	0.0174	0.0200	"	"	"	"	"	"	

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BMC Aggregates L.C.	Project:	GW Monitoring	
Elk Run Heights, IA 50707	Project Number:	Miller Creek Area	**Reported:**
101 BMC Drive	Project Manager:	Sherman Lundy	03/31/23 16:23

Well #3

1GC1696-03(Water)

Keystone Laboratories - Newton

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Determination of Volatile Organic Compounds										
Benzene	ND		1.0	ug/L	1	1GC0950	03/18/23	03/18/23	EPA 624	
Chloroform	ND		1.0	"	"	"	"	"	"	
2-Butanone (MEK)	ND		10.0	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane			*94.7 %*		*79-129*	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4			*100 %*		*66-134*	"	"	"	"	
Surrogate: Toluene-d8			*102 %*		*91-113*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene			*94.9 %*		*83-112*	"	"	"	"	
Determination of Base/Neutral Extractable Compounds										
Pyridine	ND		10	ug/L	1	1GC0973	03/20/23	03/30/23	EPA 625	
Determination of Acid Extractable Compounds										
2-Methylphenol (o-Cresol)	ND		10.0	ug/L	1	1GC0973	"	03/30/23	EPA 625	
(3 & 4)-Methylphenol	ND		10.0	"	"	"	"	"	"	
Surrogate: 2-Fluorophenol			*84.1 %*		*19-139*	"	"	"	"	
Surrogate: Phenol-d6			*57.9 %*		*14-154*	"	"	"	"	
Surrogate: 2,4,6-Tribromophenol			*82.7 %*		*21-151*	"	"	"	"	
Determination of Carbonyl Compounds										
Formaldehyde	ND		10.0	ug/L	1	1GC0912	03/17/23	03/20/23	EPA 8315	
Determination of Conventional Chemistry Parameters										
Total Organic Halogens (TOX)	**0.021**		0.010	mg/L	1	1GC1683	03/28/23	03/31/23	EPA 9020	
COD, total	ND		20	"	"	1GC1411	03/28/23	03/29/23	EPA 410.4	
Nitrogen, Ammonia	ND		0.10	"	"	1GC1594	03/30/23	03/30/23	TIMBERLINE	
Solids, total dissolved	**445**		5	"	13.33333	1GC1028	03/20/23	03/21/23	USGS I-1750-85	
Solids, total suspended	**2**		2	"	2	1GC0951	03/20/23	03/20/23	USGS I-3765-85	

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BMC Aggregates L.C.	Project:	GW Monitoring	
Elk Run Heights, IA 50707	Project Number:	Miller Creek Area	**Reported:**
101 BMC Drive	Project Manager:	Sherman Lundy	03/31/23 16:23

Well #3

1GC1696-03(Water)

Keystone Laboratories - Newton

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Determination of Inorganic Anions										
Chloride	**20.3**	0.3	1.0	mg/L	1	1GC1118	03/21/23	03/21/23	EPA 9056	
Fluoride	**0.2**		0.1	"	"	"	"	"	"	
Sulfate	**120**	1.8	5.0	"	5	1GC1235	03/22/23	03/22/23	"	
Determination of Total Metals										
Silver, total	ND	0.0015	0.0020	mg/L	4	1GC1180	03/22/23	03/23/23	EPA 200.8	
Aluminum, total	**0.549**		0.050	"	1	1GC1082	03/22/23	03/23/23	EPA 200.7	
Arsenic, total	**0.0026**	0.0006	0.0020	"	4	1GC1180	03/22/23	03/23/23	EPA 200.8	
Barium, total	**0.180**	0.0002	0.0020	"	"	"	"	"	"	
Beryllium, total	ND	0.0001	0.0020	"	"	"	"	"	"	
Boron, total	ND	0.056	0.100	"	1	1GC1082	03/22/23	03/23/23	EPA 200.7	
Cadmium, total	ND	0.00008	0.0002	"	4	1GC1180	03/22/23	03/23/23	EPA 200.8	
Cobalt, total	**0.0007**	0.0005	0.0020	"	"	"	"	"	"	
Chromium, total	**0.0031**	0.0007	0.0020	"	"	"	"	"	"	
Copper, total	**0.0089**	0.0008	0.0020	"	"	"	"	"	"	
Iron, total	**0.441**	0.047	0.100	"	1	1GC1082	03/22/23	03/23/23	200.7	
Mercury, total	ND	0.00013	0.00020	"	"	1GC1159	03/22/23	03/24/23	SM 3112B	
Magnesium, total	**25.3**	0.06	0.10	"	"	1GC1082	03/22/23	03/23/23	200.7	
Manganese, total	**0.0299**	0.0017	0.0040	"	4	1GC1180	03/22/23	03/23/23	EPA 200.8	
Molybdenum, total	**0.0060**	0.0006	0.0020	"	"	"	"	"	"	
Nickel, total	**0.0046**	0.0007	0.0040	"	"	"	"	"	"	
Lead, total	**0.0011**	0.0005	0.0008	"	"	"	"	"	"	
Antimony, total	ND	0.0008	0.0020	"	"	"	"	"	"	
Selenium, total	**0.0056**	0.0011	0.0040	"	"	"	"	"	"	
Thallium, total	ND	0.0004	0.0008	"	"	"	"	"	"	
Vanadium, total	**0.0088**	0.0043	0.0080	"	"	"	"	"	"	
Zinc, total	ND	0.0174	0.0200	"	"	"	"	"	"	

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BMC Aggregates L.C.	Project:	GW Monitoring	
Elk Run Heights, IA 50707	Project Number:	Miller Creek Area	**Reported:**
101 BMC Drive	Project Manager:	Sherman Lundy	03/31/23 16:23

Well #3

1GC1696-03RE1(Water)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Keystone Laboratories - Newton										
Determination of Conventional Chemistry Parameters										
Phenols, total	ND		0.035	mg/L	1	1GC1550	03/29/23	03/30/23	EPA 420.1	

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BMC Aggregates L.C.	Project:	GW Monitoring	
Elk Run Heights, IA 50707	Project Number:	Miller Creek Area	**Reported:**
101 BMC Drive	Project Manager:	Sherman Lundy	03/31/23 16:23

Well #4

1GC1696-04(Water)

Keystone Laboratories - Newton

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Determination of Volatile Organic Compounds										
Benzene	ND		1.0	ug/L	1	1GC0950	03/18/23	03/18/23	EPA 624	
Chloroform	ND		1.0	"	"	"	"	"	"	
2-Butanone (MEK)	ND		10.0	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane			*94.3 %*		*79-129*	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4			*96.3 %*		*66-134*	"	"	"	"	
Surrogate: Toluene-d8			*99.1 %*		*91-113*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene			*102 %*		*83-112*	"	"	"	"	
Determination of Base/Neutral Extractable Compounds										
Pyridine	ND		10	ug/L	1	1GC0973	03/20/23	03/30/23	EPA 625	
Determination of Acid Extractable Compounds										
2-Methylphenol (o-Cresol)	ND		10.0	ug/L	1	1GC0973	"	03/30/23	EPA 625	
(3 & 4)-Methylphenol	ND		10.0	"	"	"	"	"	"	
Surrogate: 2-Fluorophenol			*85.7 %*		*19-139*	"	"	"	"	
Surrogate: Phenol-d6			*60.4 %*		*14-154*	"	"	"	"	
Surrogate: 2,4,6-Tribromophenol			*84.4 %*		*21-151*	"	"	"	"	
Determination of Carbonyl Compounds										
Formaldehyde	ND		10.0	ug/L	1	1GC0912	03/17/23	03/20/23	EPA 8315	
Determination of Conventional Chemistry Parameters										
Total Organic Halogens (TOX)	ND		0.010	mg/L	1	1GC1683	03/28/23	03/31/23	EPA 9020	
COD, total	ND		20	"	"	1GC1411	03/28/23	03/29/23	EPA 410.4	
Nitrogen, Ammonia	ND		0.10	"	"	1GC1594	03/30/23	03/30/23	TIMBERLINE	
Solids, total dissolved	**479**		5	"	13.33333	1GC1028	03/20/23	03/21/23	USGS I-1750-85	
Solids, total suspended	ND		2	"	2	1GC0951	03/20/23	03/20/23	USGS I-3765-85	

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BMC Aggregates L.C.	Project:	GW Monitoring	
Elk Run Heights, IA 50707	Project Number:	Miller Creek Area	**Reported:**
101 BMC Drive	Project Manager:	Sherman Lundy	03/31/23 16:23

Well #4

1GC1696-04(Water)

Keystone Laboratories - Newton

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Determination of Inorganic Anions										
Chloride	**24.1**	0.3	1.0	mg/L	1	1GC1118	03/21/23	03/21/23	EPA 9056	
Fluoride	**0.5**		0.1	"	"	"	"	"	"	
Sulfate	**109**	0.4	1.0	"	"	"	"	"	"	
Determination of Total Metals										
Silver, total	ND	0.0015	0.0020	mg/L	4	1GC1180	03/22/23	03/23/23	EPA 200.8	
Aluminum, total	**0.074**		0.050	"	1	1GC1082	03/22/23	03/23/23	EPA 200.7	
Arsenic, total	**0.0029**	0.0006	0.0020	"	4	1GC1180	03/22/23	03/23/23	EPA 200.8	
Barium, total	**0.203**	0.0002	0.0020	"	"	"	"	"	"	
Beryllium, total	ND	0.0001	0.0020	"	"	"	"	"	"	
Boron, total	ND	0.056	0.100	"	1	1GC1082	03/22/23	03/23/23	EPA 200.7	
Cadmium, total	ND	0.00008	0.0002	"	4	1GC1180	03/22/23	03/23/23	EPA 200.8	
Cobalt, total	**0.0005**	0.0005	0.0020	"	"	"	"	"	"	
Chromium, total	**0.0022**	0.0007	0.0020	"	"	"	"	"	"	
Copper, total	**0.0068**	0.0008	0.0020	"	"	"	"	"	"	
Iron, total	**0.243**	0.047	0.100	"	1	1GC1082	03/22/23	03/23/23	200.7	
Mercury, total	ND	0.00013	0.00020	"	"	1GC1159	03/22/23	03/24/23	SM 3112B	
Magnesium, total	**29.2**	0.06	0.10	"	"	1GC1082	03/22/23	03/23/23	200.7	
Manganese, total	**0.0468**	0.0017	0.0040	"	4	1GC1180	03/22/23	03/23/23	EPA 200.8	
Molybdenum, total	**0.0091**	0.0006	0.0020	"	"	"	"	"	"	
Nickel, total	**0.0146**	0.0007	0.0040	"	"	"	"	"	"	
Lead, total	**0.0009**	0.0005	0.0008	"	"	"	"	"	"	
Antimony, total	**0.0010**	0.0008	0.0020	"	"	"	"	"	"	
Selenium, total	**0.0029**	0.0011	0.0040	"	"	"	"	"	"	
Thallium, total	ND	0.0004	0.0008	"	"	"	"	"	"	
Vanadium, total	**0.0066**	0.0043	0.0080	"	"	"	"	"	"	
Zinc, total	ND	0.0174	0.0200	"	"	"	"	"	"	

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BMC Aggregates L.C.	Project:	GW Monitoring	
Elk Run Heights, IA 50707	Project Number:	Miller Creek Area	**Reported:**
101 BMC Drive	Project Manager:	Sherman Lundy	03/31/23 16:23

Well #4

1GC1696-04RE1(Water)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Keystone Laboratories - Newton										
Determination of Conventional Chemistry Parameters										
Phenols, total	ND		0.035	mg/L	1	1GC1550	03/29/23	03/30/23	EPA 420.1	

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BMC Aggregates L.C.	Project:	GW Monitoring	
Elk Run Heights, IA 50707	Project Number:	Miller Creek Area	**Reported:**
101 BMC Drive	Project Manager:	Sherman Lundy	03/31/23 16:23

Upgradient Well

1GC1696-05(Water)

Keystone Laboratories - Newton

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Determination of Volatile Organic Compounds										
Benzene	ND		1.0	ug/L	1	1GC0950	03/18/23	03/18/23	EPA 624	
Chloroform	ND		1.0	"	"	"	"	"	"	
2-Butanone (MEK)	ND		10.0	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane			*94.9 %*		*79-129*	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4			*95.3 %*		*66-134*	"	"	"	"	
Surrogate: Toluene-d8			*106 %*		*91-113*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene			*101 %*		*83-112*	"	"	"	"	
Determination of Base/Neutral Extractable Compounds										
Pyridine	ND		10	ug/L	1	1GC0973	03/20/23	03/30/23	EPA 625	
Determination of Acid Extractable Compounds										
2-Methylphenol (o-Cresol)	ND		10.0	ug/L	1	1GC0973	"	03/30/23	EPA 625	
(3 & 4)-Methylphenol	ND		10.0	"	"	"	"	"	"	
Surrogate: 2-Fluorophenol			*85.5 %*		*19-139*	"	"	"	"	
Surrogate: Phenol-d6			*58.9 %*		*14-154*	"	"	"	"	
Surrogate: 2,4,6-Tribromophenol			*76.1 %*		*21-151*	"	"	"	"	
Determination of Carbonyl Compounds										
Formaldehyde	ND		10.0	ug/L	1	1GC0912	03/17/23	03/20/23	EPA 8315	
Determination of Conventional Chemistry Parameters										
Total Organic Halogens (TOX)	ND		0.010	mg/L	1	1GC1683	03/28/23	03/31/23	EPA 9020	
COD, total	ND		20	"	"	1GC1411	03/28/23	03/29/23	EPA 410.4	
Nitrogen, Ammonia	ND		0.10	"	"	1GC1594	03/30/23	03/30/23	TIMBERLINE	
Phenols, total	**0.057**		0.035	"	"	1GC1244	03/23/23	03/27/23	EPA 420.1	
Solids, total dissolved	**360**		5	"	13.33333	1GC1028	03/20/23	03/21/23	USGS I-1750-85	
Solids, total suspended	**2**		2	"	2	1GC0951	03/20/23	03/20/23	USGS I-3765-85	

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BMC Aggregates L.C.	Project:	GW Monitoring	
Elk Run Heights, IA 50707	Project Number:	Miller Creek Area	**Reported:**
101 BMC Drive	Project Manager:	Sherman Lundy	03/31/23 16:23

Upgradient Well

1GC1696-05(Water)

Keystone Laboratories - Newton

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Determination of Inorganic Anions										
Chloride	**26.8**	0.3	1.0	mg/L	1	1GC1118	03/21/23	03/21/23	EPA 9056	
Fluoride	**0.5**		0.1	"	"	"	"	"	"	
Sulfate	**56.0**	0.4	1.0	"	"	"	"	"	"	
Determination of Total Metals										
Silver, total	ND	0.0015	0.0020	mg/L	4	1GC1180	03/22/23	03/23/23	EPA 200.8	
Aluminum, total	ND		0.050	"	1	1GC1082	03/22/23	03/23/23	EPA 200.7	
Arsenic, total	**0.0025**	0.0006	0.0020	"	4	1GC1180	03/22/23	03/23/23	EPA 200.8	
Barium, total	**0.267**	0.0002	0.0020	"	"	"	"	"	"	
Beryllium, total	ND	0.0001	0.0020	"	"	"	"	"	"	
Boron, total	ND	0.056	0.100	"	1	1GC1082	03/22/23	03/23/23	EPA 200.7	
Cadmium, total	**0.00009**	0.00008	0.0002	"	4	1GC1180	03/22/23	03/23/23	EPA 200.8	
Cobalt, total	ND	0.0005	0.0020	"	"	"	"	"	"	
Chromium, total	**0.0012**	0.0007	0.0020	"	"	"	"	"	"	
Copper, total	**0.0820**	0.0008	0.0020	"	"	"	"	"	"	
Iron, total	ND	0.047	0.100	"	1	1GC1082	03/22/23	03/23/23	200.7	
Mercury, total	ND	0.00013	0.00020	"	"	1GC1159	03/22/23	03/24/23	SM 3112B	
Magnesium, total	**23.6**	0.06	0.10	"	"	1GC1082	03/22/23	03/23/23	200.7	
Manganese, total	**0.0034**	0.0017	0.0040	"	4	1GC1180	03/22/23	03/23/23	EPA 200.8	
Molybdenum, total	**0.0044**	0.0006	0.0020	"	"	"	"	"	"	
Nickel, total	**0.0034**	0.0007	0.0040	"	"	"	"	"	"	
Lead, total	**0.0040**	0.0005	0.0008	"	"	"	"	"	"	
Antimony, total	ND	0.0008	0.0020	"	"	"	"	"	"	
Selenium, total	**0.0037**	0.0011	0.0040	"	"	"	"	"	"	
Thallium, total	ND	0.0004	0.0008	"	"	"	"	"	"	
Vanadium, total	**0.0067**	0.0043	0.0080	"	"	"	"	"	"	
Zinc, total	**0.118**	0.0174	0.0200	"	"	"	"	"	"	

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BMC Aggregates L.C.	Project:	GW Monitoring	
Elk Run Heights, IA 50707	Project Number:	Miller Creek Area	**Reported:**
101 BMC Drive	Project Manager:	Sherman Lundy	03/31/23 16:23

Determination of Volatile Organic Compounds - Quality Control

Keystone Laboratories - Newton

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GC0950 - EPA 5030B											
Blank (1GC0950-BLK1)					Prepared & Analyzed: 03/18/23						
Surrogate: Dibromofluoromethane	*47.6*			*ug/L*	*50.3520*		*94.6*	*79-129*			
Surrogate: 1,2-Dichloroethane-d4	*50.9*			*"*	*50.4080*		*101*	*66-134*			
Surrogate: Toluene-d8	*54.4*			*"*	*50.2360*		*108*	*91-113*			
Surrogate: 4-Bromofluorobenzene	*50.6*			*"*	*50.4200*		*100*	*83-112*			
2-Butanone (MEK)	ND		10.0	"							
Chloroform	ND		1.0	"							
Benzene	ND		1.0	"							
LCS (1GC0950-BS1)					Prepared & Analyzed: 03/18/23						
Surrogate: Dibromofluoromethane	*47.3*			*ug/L*	*50.3520*		*93.9*	*79-129*			
Surrogate: 1,2-Dichloroethane-d4	*46.9*			*"*	*50.4080*		*93.1*	*66-134*			
Surrogate: Toluene-d8	*53.1*			*"*	*50.2360*		*106*	*91-113*			
Surrogate: 4-Bromofluorobenzene	*46.9*			*"*	*50.4200*		*93.0*	*83-112*			
2-Butanone (MEK)	81.73		10.0	"	100.500		81.3	44-158			
Chloroform	47.79		1.0	"	50.1000		95.4	76-132			
Benzene	54.35		1.0	"	50.1525		108	77-130			
LCS Dup (1GC0950-BSD1)					Prepared & Analyzed: 03/18/23						
Surrogate: Dibromofluoromethane	*48.1*			*ug/L*	*50.3520*		*95.6*	*79-129*			
Surrogate: 1,2-Dichloroethane-d4	*50.5*			*"*	*50.4080*		*100*	*66-134*			
Surrogate: Toluene-d8	*52.0*			*"*	*50.2360*		*103*	*91-113*			
Surrogate: 4-Bromofluorobenzene	*46.9*			*"*	*50.4200*		*93.1*	*83-112*			
2-Butanone (MEK)	97.40		10.0	"	100.500		96.9	44-158	17.5	25	
Chloroform	46.04		1.0	"	50.1000		91.9	76-132	3.73	26	
Benzene	51.58		1.0	"	50.1525		103	77-130	5.23	27	
Matrix Spike (1GC0950-MS1)		**Source: 1GC1689-03**			Prepared & Analyzed: 03/18/23						
Surrogate: Dibromofluoromethane	*189*			*ug/L*	*201.408*		*93.6*	*79-129*			
Surrogate: 1,2-Dichloroethane-d4	*191*			*"*	*201.632*		*94.8*	*66-134*			
Surrogate: Toluene-d8	*207*			*"*	*200.944*		*103*	*91-113*			

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BMC Aggregates L.C.	Project:	GW Monitoring	
Elk Run Heights, IA 50707	Project Number:	Miller Creek Area	**Reported:**
101 BMC Drive	Project Manager:	Sherman Lundy	03/31/23 16:23

Determination of Volatile Organic Compounds - Quality Control

Keystone Laboratories - Newton

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GC0950 - EPA 5030B											
Matrix Spike (1GC0950-MS1)		**Source: 1GC1689-03**			Prepared & Analyzed: 03/18/23						
Surrogate: 4-Bromofluorobenzene	*195*			*ug/L*	*201.680*		*96.7*	*83-112*			
2-Butanone (MEK)	411.5		40.0	"	402.000	ND	102	48-169			
Chloroform	204.3		4.0	"	200.400	18.42	92.7	75-133			
Benzene	215.3		4.0	"	200.610	ND	107	79-128			
Matrix Spike Dup (1GC0950-MSD1)		**Source: 1GC1689-03**			Prepared: 03/18/23 Analyzed: 03/19/23						
Surrogate: Dibromofluoromethane	*196*			*ug/L*	*201.408*		*97.2*	*79-129*			
Surrogate: 1,2-Dichloroethane-d4	*196*			*"*	*201.632*		*97.0*	*66-134*			
Surrogate: Toluene-d8	*217*			*"*	*200.944*		*108*	*91-113*			
Surrogate: 4-Bromofluorobenzene	*191*			*"*	*201.680*		*94.5*	*83-112*			
2-Butanone (MEK)	339.3		40.0	"	402.000	ND	84.4	48-169	19.2	17	QR-02
Chloroform	183.2		4.0	"	200.400	18.42	82.2	75-133	10.9	16	
Benzene	191.8		4.0	"	200.610	ND	95.6	79-128	11.6	12	

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BMC Aggregates L.C.	Project:	GW Monitoring	
Elk Run Heights, IA 50707	Project Number:	Miller Creek Area	**Reported:**
101 BMC Drive	Project Manager:	Sherman Lundy	03/31/23 16:23

Determination of Base/Neutral Extractable Compounds - Quality Control

Keystone Laboratories - Newton

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GC0973 - EPA 625 BNA											
Blank (1GC0973-BLK1)					Prepared: 03/20/23 Analyzed: 03/30/23						
Pyridine	ND		10	ug/L							
LCS (1GC0973-BS1)					Prepared: 03/20/23 Analyzed: 03/30/23						
Pyridine	15.2		10	ug/L	41.6667		36.6	13-127			
Reference (1GC0973-SRM1)					Prepared: 03/20/23 Analyzed: 03/30/23						
Pyridine	42.1		10	ug/L	41.6667		101	80-120			

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BMC Aggregates L.C.	Project:	GW Monitoring	
Elk Run Heights, IA 50707	Project Number:	Miller Creek Area	**Reported:**
101 BMC Drive	Project Manager:	Sherman Lundy	03/31/23 16:23

Determination of Acid Extractable Compounds - Quality Control

Keystone Laboratories - Newton

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GC0973 - EPA 625 BNA											
Blank (1GC0973-BLK1)					Prepared: 03/20/23 Analyzed: 03/30/23						
Surrogate: 2-Fluorophenol	*47.3*			*ug/L*	*60.6000*		*78.0*	*19-139*			
Surrogate: Phenol-d6	*30.1*			*"*	*61.9000*		*48.6*	*14-154*			
Surrogate: 2,4,6-Tribromophenol	*53.6*			*"*	*62.2500*		*86.1*	*21-151*			
2-Methylphenol (o-Cresol)	ND		10.0	"							
(3 & 4)-Methylphenol	ND		10.0	"							
LCS (1GC0973-BS1)					Prepared: 03/20/23 Analyzed: 03/30/23						
Surrogate: 2-Fluorophenol	*36.8*			*ug/L*	*60.6000*		*60.7*	*19-139*			
Surrogate: Phenol-d6	*22.7*			*"*	*61.9000*		*36.7*	*14-154*			
Surrogate: 2,4,6-Tribromophenol	*46.5*			*"*	*62.2500*		*74.7*	*21-151*			
2-Methylphenol (o-Cresol)	34.5		10.0	"	41.6667		82.8	50-138			
(3 & 4)-Methylphenol	34.7		10.0	"	41.6667		83.2	56-130			
Reference (1GC0973-SRM1)					Prepared: 03/20/23 Analyzed: 03/30/23						
Surrogate: 2-Fluorophenol	*60.0*			*ug/L*	*60.6000*		*99.0*	*19-139*			
Surrogate: Phenol-d6	*62.6*			*"*	*61.9000*		*101*	*14-154*			
Surrogate: 2,4,6-Tribromophenol	*58.4*			*"*	*62.2500*		*93.8*	*21-151*			
2-Methylphenol (o-Cresol)	42.8		10.0	"	41.6667		103	80-120			
(3 & 4)-Methylphenol	42.5		10.0	"	41.6667		102	80-120			

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BMC Aggregates L.C.	Project:	GW Monitoring	
Elk Run Heights, IA 50707	Project Number:	Miller Creek Area	**Reported:**
101 BMC Drive	Project Manager:	Sherman Lundy	03/31/23 16:23

Determination of Carbonyl Compounds - Quality Control

Keystone Laboratories - Newton

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GC0912 - EPA 8315 Aldehydes											
Blank (1GC0912-BLK1)					Prepared: 03/17/23 Analyzed: 03/20/23						
Formaldehyde	ND		10.0	ug/L							
LCS (1GC0912-BS1)					Prepared: 03/17/23 Analyzed: 03/20/23						
Formaldehyde	408.5		10.0	ug/L	500.000		81.7	61-142			
Matrix Spike (1GC0912-MS1)		**Source: 1GC1696-01**			Prepared: 03/17/23 Analyzed: 03/20/23						
Formaldehyde	493.0		10.0	ug/L	500.000	ND	98.6	48-148			
Matrix Spike Dup (1GC0912-MSD1)		**Source: 1GC1696-01**			Prepared: 03/17/23 Analyzed: 03/20/23						
Formaldehyde	472.5		10.0	ug/L	500.000	ND	94.5	48-148	4.25	30	

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BMC Aggregates L.C.	Project:	GW Monitoring	
Elk Run Heights, IA 50707	Project Number:	Miller Creek Area	**Reported:**
101 BMC Drive	Project Manager:	Sherman Lundy	03/31/23 16:23

Determination of Conventional Chemistry Parameters - Quality Control

Keystone Laboratories - Newton

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GC0951 - Wet Chem Preparation											
Blank (1GC0951-BLK1)					Prepared & Analyzed: 03/20/23						
Solids, total suspended	ND		1	mg/L							
LCS (1GC0951-BS1)					Prepared & Analyzed: 03/20/23						
Solids, total suspended	14.4		1	mg/L	15.0000		96.0	74-114			
Duplicate (1GC0951-DUP1)		**Source: 1GC1492-01**			Prepared & Analyzed: 03/20/23						
Solids, total suspended	103		7	mg/L		99.3			3.30	30	
Batch 1GC1028 - Wet Chem Preparation											
Blank (1GC1028-BLK1)					Prepared: 03/20/23 Analyzed: 03/21/23						
Solids, total dissolved	ND		5	mg/L							
LCS (1GC1028-BS1)					Prepared: 03/20/23 Analyzed: 03/21/23						
Solids, total dissolved	100		5	mg/L	100.000		100	71-114			
Duplicate (1GC1028-DUP1)		**Source: 1GC1553-01**			Prepared: 03/20/23 Analyzed: 03/21/23						
Solids, total dissolved	1940		5	mg/L		1930			0.310	30	
Batch 1GC1088 - Wet Chem Preparation											
Blank (1GC1088-BLK1)					Prepared & Analyzed: 03/22/23						
Solids, total suspended	ND		1	mg/L							
LCS (1GC1088-BS1)					Prepared & Analyzed: 03/22/23						
Solids, total suspended	14.4		1	mg/L	15.0000		96.0	74-114			

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BMC Aggregates L.C.	Project:	GW Monitoring	
Elk Run Heights, IA 50707	Project Number:	Miller Creek Area	**Reported:**
101 BMC Drive	Project Manager:	Sherman Lundy	03/31/23 16:23

Determination of Conventional Chemistry Parameters - Quality Control

Keystone Laboratories - Newton

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GC1088 - Wet Chem Preparation											
Duplicate (1GC1088-DUP1)		**Source: 1GC1642-01**			Prepared & Analyzed: 03/22/23						
Solids, total suspended	188		20	mg/L		192			2.11	30	
Batch 1GC1174 - Wet Chem Preparation											
Blank (1GC1174-BLK1)					Prepared: 03/22/23 Analyzed: 03/23/23						
Phenols, total	ND		0.035	mg/L							
LCS (1GC1174-BS1)					Prepared: 03/22/23 Analyzed: 03/23/23						
Phenols, total	0.383		0.035	mg/L	0.400000		95.8	62-110			
Matrix Spike (1GC1174-MS1)		**Source: 1GC1696-01**			Prepared: 03/22/23 Analyzed: 03/23/23						
Phenols, total	0.377		0.035	mg/L	0.400000	0.0600	79.2	57-124			
Matrix Spike Dup (1GC1174-MSD1)		**Source: 1GC1696-01**			Prepared: 03/22/23 Analyzed: 03/23/23						
Phenols, total	0.399		0.035	mg/L	0.400000	0.0600	84.7	57-124	5.72	21	
Batch 1GC1244 - Wet Chem Preparation											
Blank (1GC1244-BLK1)					Prepared: 03/23/23 Analyzed: 03/27/23						
Phenols, total	ND		0.035	mg/L							
LCS (1GC1244-BS1)					Prepared: 03/23/23 Analyzed: 03/27/23						
Phenols, total	0.491		0.035	mg/L	0.400000		123	62-110			QS-01
Matrix Spike (1GC1244-MS1)		**Source: 1GC1695-01**			Prepared: 03/23/23 Analyzed: 03/27/23						
Phenols, total	0.500		0.035	mg/L	0.400000	0.0505	112	57-124			

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BMC Aggregates L.C.	Project:	GW Monitoring	
Elk Run Heights, IA 50707	Project Number:	Miller Creek Area	**Reported:**
101 BMC Drive	Project Manager:	Sherman Lundy	03/31/23 16:23

Determination of Conventional Chemistry Parameters - Quality Control

Keystone Laboratories - Newton

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GC1244 - Wet Chem Preparation											
Matrix Spike Dup (1GC1244-MSD1)		**Source: 1GC1695-01**			Prepared: 03/23/23 Analyzed: 03/27/23						
Phenols, total	0.459		0.035	mg/L	0.400000	0.0505	102	57-124	8.58	21	
Batch 1GC1411 - Wet Chem Preparation											
Blank (1GC1411-BLK1)					Prepared: 03/28/23 Analyzed: 03/29/23						
COD, total	ND		20	mg/L							
LCS (1GC1411-BS1)					Prepared: 03/28/23 Analyzed: 03/29/23						
COD, total	109		27	mg/L	100.000		109	90-110			
LCS (1GC1411-BS2)					Prepared: 03/28/23 Analyzed: 03/29/23						
COD, total	79.5		20	mg/L	75.0000		106	90-110			
LCS (1GC1411-BS3)					Prepared: 03/28/23 Analyzed: 03/29/23						
COD, total	81.8		20	mg/L	75.0000		109	90-110			
LCS (1GC1411-BS4)					Prepared: 03/28/23 Analyzed: 03/29/23						
COD, total	82.4		20	mg/L	75.0000		110	90-110			
Matrix Spike (1GC1411-MS1)		**Source: 1GC1696-01**			Prepared: 03/28/23 Analyzed: 03/29/23						
COD, total	119		27	mg/L	100.000	ND	119	90-110			QM-14
Matrix Spike Dup (1GC1411-MSD1)		**Source: 1GC1696-01**			Prepared: 03/28/23 Analyzed: 03/29/23						
COD, total	114		27	mg/L	100.000	ND	114	90-110	4.18	10	QM-14
Batch 1GC1550 - Wet Chem Preparation											
Blank (1GC1550-BLK1)					Prepared: 03/29/23 Analyzed: 03/30/23						
Phenols, total	ND		0.035	mg/L							

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101 BMC Drive	Project Manager:	Sherman Lundy	03/31/23 16:23

Determination of Conventional Chemistry Parameters - Quality Control

Keystone Laboratories - Newton

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GC1550 - Wet Chem Preparation											
LCS (1GC1550-BS1)					Prepared: 03/29/23 Analyzed: 03/30/23						
Phenols, total	0.408		0.035	mg/L	0.400000		102	62-110			
Matrix Spike (1GC1550-MS1)		**Source: 1GC2157-04**			Prepared: 03/29/23 Analyzed: 03/30/23						
Phenols, total	0.380		0.035	mg/L	0.400000	ND	95.0	57-124			
Matrix Spike Dup (1GC1550-MSD1)		**Source: 1GC2157-04**			Prepared: 03/29/23 Analyzed: 03/30/23						
Phenols, total	0.507		0.035	mg/L	0.400000	ND	127	57-124	28.6	21	QM-07
Batch 1GC1594 - General Prep HPLC/IC											
Blank (1GC1594-BLK1)					Prepared & Analyzed: 03/30/23						
Nitrogen, Ammonia	ND		0.10	mg/L							
LCS (1GC1594-BS1)					Prepared & Analyzed: 03/30/23						
Nitrogen, Ammonia	4.96		0.10	mg/L	5.00000		99.1	90-114			
Matrix Spike (1GC1594-MS1)		**Source: 1GC1696-01**			Prepared & Analyzed: 03/30/23						
Nitrogen, Ammonia	5.36		0.10	mg/L	5.00000	ND	107	84-115			
Matrix Spike Dup (1GC1594-MSD1)		**Source: 1GC1696-01**			Prepared & Analyzed: 03/30/23						
Nitrogen, Ammonia	5.44		0.10	mg/L	5.00000	ND	109	84-115	1.51	20	
Batch 1GC1683 - TOX/TX/EOX											
Blank (1GC1683-BLK1)					Prepared & Analyzed: 03/31/23						
Total Organic Halogens (TOX)	ND		0.010	mg/L							

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Determination of Conventional Chemistry Parameters - Quality Control

Keystone Laboratories - Newton

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GC1683 - TOX/TX/EOX											
LCS (1GC1683-BS1)					Prepared & Analyzed: 03/31/23						
Total Organic Halogens (TOX)	0.1155		0.010	mg/L	0.111060		104	76-114			
LCS Dup (1GC1683-BSD1)					Prepared & Analyzed: 03/31/23						
Total Organic Halogens (TOX)	0.1116		0.010	mg/L	0.111060		101	76-114	3.41	18	
Reference (1GC1683-SRM1)					Prepared & Analyzed: 03/31/23						
Total Organic Halogens (TOX)	0.1095		0.010	mg/L	0.108908		101	90-110			
Reference (1GC1683-SRM2)					Prepared & Analyzed: 03/31/23						
Total Organic Halogens (TOX)	0.1025		0.010	mg/L	0.108908		94.2	90-110			
Reference (1GC1683-SRM3)					Prepared & Analyzed: 03/31/23						
Total Organic Halogens (TOX)	0.1117		0.010	mg/L	0.108908		103	90-110			

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BMC Aggregates L.C.	Project:	GW Monitoring	
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101 BMC Drive	Project Manager:	Sherman Lundy	03/31/23 16:23

Determination of Inorganic Anions - Quality Control

Keystone Laboratories - Newton

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GC1118 - General Prep HPLC/IC											
Blank (1GC1118-BLK2)					Prepared & Analyzed: 03/21/23						
Fluoride	ND		0.1	mg/L							
Chloride	ND	0.3	1.0	"							
Sulfate	ND	0.4	1.0	"							
LCS (1GC1118-BS1)					Prepared & Analyzed: 03/21/23						
Fluoride	1.22		0.1	mg/L	1.28606		95.1	80-120			
Chloride	15.12	0.3	1.0	"	15.5751		97.1	80-120			
Sulfate	33.55	0.4	1.0	"	34.2650		97.9	80-120			
LCS Dup (1GC1118-BSD1)					Prepared & Analyzed: 03/21/23						
Fluoride	1.22		0.1	mg/L	1.28606		95.0	80-120	0.0818	10	
Chloride	15.13	0.3	1.0	"	15.5751		97.1	80-120	0.0860	10	
Sulfate	33.20	0.4	1.0	"	34.2650		96.9	80-120	1.05	10	
MRL Check (1GC1118-MRL1)					Prepared & Analyzed: 03/21/23						
Fluoride	0.04		0.1	mg/L	0.0479588		85.5	50-150			
Chloride	0.70	0.3	1.0	"	0.615300		114	50-150			
Sulfate	1.14	0.4	1.0	"	1.10748		103	0-200			
Matrix Spike (1GC1118-MS1)		**Source: 1GC1482-01**			Prepared & Analyzed: 03/21/23						
Fluoride	11.91		1.0	mg/L	12.8606	ND	92.6	77-121			
Chloride	236.4	3.4	10.0	"	155.751	74.64	104	81-116			
Sulfate	400.8	3.6	10.0	"	342.650	58.50	99.9	87-113			
Matrix Spike Dup (1GC1118-MSD1)		**Source: 1GC1482-01**			Prepared & Analyzed: 03/21/23						
Fluoride	11.94		1.0	mg/L	12.8606	ND	92.8	77-121	0.252	10	
Chloride	235.1	3.4	10.0	"	155.751	74.64	103	81-116	0.577	10	
Sulfate	407.8	3.6	10.0	"	342.650	58.50	102	87-113	1.73	10	

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BMC Aggregates L.C.	Project:	GW Monitoring	
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101 BMC Drive	Project Manager:	Sherman Lundy	03/31/23 16:23

Determination of Inorganic Anions - Quality Control

Keystone Laboratories - Newton

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GC1235 - General Prep HPLC/IC											
Blank (1GC1235-BLK1)					Prepared & Analyzed: 03/22/23						
Sulfate	ND	0.4	1.0	mg/L							
LCS (1GC1235-BS1)					Prepared & Analyzed: 03/22/23						
Sulfate	33.45	0.4	1.0	mg/L	34.2650		97.6	80-120			
LCS Dup (1GC1235-BSD1)					Prepared & Analyzed: 03/22/23						
Sulfate	33.11	0.4	1.0	mg/L	34.2650		96.6	80-120	1.04	10	
MRL Check (1GC1235-MRL1)					Prepared & Analyzed: 03/22/23						
Sulfate	1.21	0.4	1.0	mg/L	1.10748		109	0-200			
Matrix Spike (1GC1235-MS1)		**Source: 1GC1937-01**			Prepared & Analyzed: 03/22/23						
Sulfate	391.2	3.6	10.0	mg/L	342.650	54.04	98.4	87-113			
Matrix Spike Dup (1GC1235-MSD1)		**Source: 1GC1937-01**			Prepared & Analyzed: 03/22/23						
Sulfate	402.1	3.6	10.0	mg/L	342.650	54.04	102	87-113	2.77	10	

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101 BMC Drive	Project Manager:	Sherman Lundy	03/31/23 16:23

Determination of Total Metals - Quality Control

Keystone Laboratories - Newton

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GC1081 - EPA 200.2 Total ICP-OES (200.7)											
Blank (1GC1081-BLK1)					Prepared & Analyzed: 03/22/23						
Aluminum, total	ND		0.050	mg/L							
Boron, total	ND	0.056	0.100	"							
Iron, total	ND	0.047	0.100	"							
Magnesium, total	ND	0.06	0.10	"							
LCS (1GC1081-BS1)					Prepared & Analyzed: 03/22/23						
Aluminum, total	2.33		0.050	mg/L	2.20000		106	85-115			
Boron, total	0.227	0.056	0.100	"	0.200000		114	85-115			
Iron, total	2.43	0.047	0.100	"	2.20000		110	85-115			
Magnesium, total	2.38	0.06	0.10	"	2.20000		108	85-115			
Matrix Spike (1GC1081-MS1)		**Source: 1GC1501-01**			Prepared & Analyzed: 03/22/23						
Aluminum, total	2.39		0.050	mg/L	2.20000	0.0847	105	70-130			
Boron, total	0.447	0.056	0.100	"	0.200000	0.214	116	70-130			
Iron, total	4.04	0.047	0.100	"	2.20000	1.49	116	70-130			
Magnesium, total	17.1	0.06	0.10	"	2.20000	14.0	139	70-130			QM-4X
Matrix Spike Dup (1GC1081-MSD1)		**Source: 1GC1501-01**			Prepared & Analyzed: 03/22/23						
Aluminum, total	2.34		0.050	mg/L	2.20000	0.0847	103	70-130	2.07	20	
Boron, total	0.425	0.056	0.100	"	0.200000	0.214	106	70-130	4.99	20	
Iron, total	3.83	0.047	0.100	"	2.20000	1.49	106	70-130	5.30	20	
Magnesium, total	16.1	0.06	0.10	"	2.20000	14.0	94.9	70-130	5.87	20	
Post Spike (1GC1081-PS1)		**Source: 1GC1501-01**			Prepared & Analyzed: 03/22/23						
Aluminum, total	8.77			mg/L	8.80000	0.0847	98.7	85-115			
Boron, total	1.07			"	0.800000	0.214	107	85-115			
Iron, total	10.7			"	8.80000	1.49	105	85-115			
Magnesium, total	23.2			"	8.80000	14.0	105	85-115			

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BMC Aggregates L.C.	Project:	GW Monitoring	
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101 BMC Drive	Project Manager:	Sherman Lundy	03/31/23 16:23

Determination of Total Metals - Quality Control

Keystone Laboratories - Newton

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GC1082 - EPA 200.2 Total ICP-OES (200.7)											
Blank (1GC1082-BLK1)					Prepared: 03/22/23 Analyzed: 03/23/23						
Aluminum, total	ND		0.050	mg/L							
Boron, total	ND	0.056	0.100	"							
Iron, total	ND	0.047	0.100	"							
Magnesium, total	ND	0.06	0.10	"							
LCS (1GC1082-BS1)					Prepared: 03/22/23 Analyzed: 03/23/23						
Aluminum, total	2.23		0.050	mg/L	2.20000		102	85-115			
Boron, total	0.216	0.056	0.100	"	0.200000		108	85-115			
Iron, total	2.37	0.047	0.100	"	2.20000		108	85-115			
Magnesium, total	2.29	0.06	0.10	"	2.20000		104	85-115			
Matrix Spike (1GC1082-MS1)		**Source: 1GC1696-03**			Prepared: 03/22/23 Analyzed: 03/23/23						
Aluminum, total	2.86		0.050	mg/L	2.20000	0.549	105	70-130			
Boron, total	0.259	0.056	0.100	"	0.200000	ND	130	70-130			
Iron, total	2.80	0.047	0.100	"	2.20000	0.441	107	70-130			
Magnesium, total	27.3	0.06	0.10	"	2.20000	25.3	92.4	70-130			
Matrix Spike Dup (1GC1082-MSD1)		**Source: 1GC1696-03**			Prepared: 03/22/23 Analyzed: 03/23/23						
Aluminum, total	2.88		0.050	mg/L	2.20000	0.549	106	70-130	0.851	20	
Boron, total	0.256	0.056	0.100	"	0.200000	ND	128	70-130	1.17	20	
Iron, total	2.81	0.047	0.100	"	2.20000	0.441	108	70-130	0.438	20	
Magnesium, total	27.2	0.06	0.10	"	2.20000	25.3	86.9	70-130	0.446	20	
Post Spike (1GC1082-PS1)		**Source: 1GC1696-03**			Prepared: 03/22/23 Analyzed: 03/23/23						
Aluminum, total	9.40			mg/L	8.80000	0.549	101	85-115			
Boron, total	0.856			"	0.800000	0.0361	102	85-115			
Iron, total	9.58			"	8.80000	0.441	104	85-115			
Magnesium, total	34.7			"	8.80000	25.3	108	85-115			

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101 BMC Drive	Project Manager:	Sherman Lundy	03/31/23 16:23

Determination of Total Metals - Quality Control

Keystone Laboratories - Newton

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GC1159 - EPA 7470A Hg Water											
Blank (1GC1159-BLK1)					Prepared: 03/22/23 Analyzed: 03/24/23						
Mercury, total	ND	0.00013	0.00020	mg/L							
LCS (1GC1159-BS1)					Prepared: 03/22/23 Analyzed: 03/24/23						
Mercury, total	0.00276	0.00013	0.00020	mg/L	0.00250000		111	87-118			
Matrix Spike (1GC1159-MS1)		**Source: 1GC1696-01**			Prepared: 03/22/23 Analyzed: 03/24/23						
Mercury, total	0.00249	0.00013	0.00020	mg/L	0.00250000	ND	99.7	62-131			
Matrix Spike Dup (1GC1159-MSD1)		**Source: 1GC1696-01**			Prepared: 03/22/23 Analyzed: 03/24/23						
Mercury, total	0.00239	0.00013	0.00020	mg/L	0.00250000	ND	95.5	62-131	4.29	17	
Batch 1GC1180 - EPA 200.2 Total ICP-MS											
Blank (1GC1180-BLK1)					Prepared: 03/22/23 Analyzed: 03/23/23						
Antimony, total	ND	0.0008	0.0020	mg/L							
Arsenic, total	0.0008	0.0006	0.0020	"							
Barium, total	ND	0.0002	0.0020	"							
Beryllium, total	ND	0.0001	0.0020	"							
Cadmium, total	ND	0.00008	0.0002	"							
Chromium, total	ND	0.0007	0.0020	"							
Cobalt, total	ND	0.0005	0.0020	"							
Copper, total	ND	0.0008	0.0020	"							
Lead, total	ND	0.0005	0.0008	"							
Manganese, total	ND	0.0017	0.0040	"							
Molybdenum, total	ND	0.0006	0.0020	"							
Nickel, total	ND	0.0007	0.0040	"							
Selenium, total	ND	0.0011	0.0040	"							
Silver, total	ND	0.0015	0.0020	"							
Thallium, total	ND	0.0004	0.0008	"							
Vanadium, total	ND	0.0043	0.0080	"							
Zinc, total	ND	0.0174	0.0200	"							

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Determination of Total Metals - Quality Control

Keystone Laboratories - Newton

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GC1180 - EPA 200.2 Total ICP-MS											
LCS (1GC1180-BS1)					Prepared: 03/22/23 Analyzed: 03/23/23						
Antimony, total	0.182	0.0008	0.0020	mg/L	0.200000		90.8	85-115			
Arsenic, total	0.181	0.0006	0.0020	"	0.200000		90.5	85-115			
Barium, total	0.211	0.0002	0.0020	"	0.200000		105	85-115			
Beryllium, total	0.185	0.0001	0.0020	"	0.200000		92.6	85-115			
Cadmium, total	0.178	0.00008	0.0002	"	0.200000		89.2	85-115			
Chromium, total	0.191	0.0007	0.0020	"	0.200000		95.6	85-115			
Cobalt, total	0.201	0.0005	0.0020	"	0.200000		101	85-115			
Copper, total	0.195	0.0008	0.0020	"	0.200000		97.4	85-115			
Lead, total	0.190	0.0005	0.0008	"	0.200000		95.1	85-115			
Manganese, total	0.191	0.0017	0.0040	"	0.200000		95.5	85-115			
Molybdenum, total	0.189	0.0006	0.0020	"	0.200000		94.6	85-115			
Nickel, total	0.199	0.0007	0.0040	"	0.200000		99.4	85-115			
Selenium, total	0.167	0.0011	0.0040	"	0.200000		83.3	85-115			QS-01
Silver, total	0.193	0.0015	0.0020	"	0.200000		96.4	85-115			
Thallium, total	0.178	0.0004	0.0008	"	0.200000		88.9	85-115			
Vanadium, total	0.201	0.0043	0.0080	"	0.200000		101	85-115			
Zinc, total	0.174	0.0174	0.0200	"	0.200000		87.1	85-115			
Matrix Spike (1GC1180-MS1)				**Source: 1GC1696-01**	Prepared: 03/22/23 Analyzed: 03/23/23						
Antimony, total	0.188	0.0008	0.0020	mg/L	0.200000	ND	94.0	70-130			
Arsenic, total	0.194	0.0006	0.0020	"	0.200000	0.0040	94.8	70-130			
Barium, total	1.33	0.0002	0.0020	"	0.200000	1.08	123	70-130			
Beryllium, total	0.185	0.0001	0.0020	"	0.200000	ND	92.4	70-130			
Cadmium, total	0.180	0.00008	0.0002	"	0.200000	ND	90.2	70-130			
Chromium, total	0.192	0.0007	0.0020	"	0.200000	0.0011	95.4	70-130			
Cobalt, total	0.206	0.0005	0.0020	"	0.200000	ND	103	70-130			
Copper, total	0.191	0.0008	0.0020	"	0.200000	0.0084	91.4	70-130			
Lead, total	0.186	0.0005	0.0008	"	0.200000	0.0008	92.9	70-130			

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BMC Aggregates L.C.	Project:	GW Monitoring	
Elk Run Heights, IA 50707	Project Number:	Miller Creek Area	**Reported:**
101 BMC Drive	Project Manager:	Sherman Lundy	03/31/23 16:23

Determination of Total Metals - Quality Control

Keystone Laboratories - Newton

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GC1180 - EPA 200.2 Total ICP-MS											
Matrix Spike (1GC1180-MS1)		**Source: 1GC1696-01**			Prepared: 03/22/23 Analyzed: 03/23/23						
Manganese, total	0.196	0.0017	0.0040	mg/L	0.200000	0.0142	91.0	70-130			
Molybdenum, total	0.212	0.0006	0.0020	"	0.200000	ND	106	70-130			
Nickel, total	0.199	0.0007	0.0040	"	0.200000	0.0044	97.2	70-130			
Selenium, total	0.173	0.0011	0.0040	"	0.200000	ND	86.6	70-130			
Silver, total	0.195	0.0015	0.0020	"	0.200000	ND	97.5	70-130			
Thallium, total	0.180	0.0004	0.0008	"	0.200000	0.0009	89.4	70-130			
Vanadium, total	0.196	0.0043	0.0080	"	0.200000	0.0051	95.3	70-130			
Zinc, total	0.189	0.0174	0.0200	"	0.200000	0.0182	85.4	70-130			
Matrix Spike Dup (1GC1180-MSD1)		**Source: 1GC1696-01**			Prepared: 03/22/23 Analyzed: 03/23/23						
Antimony, total	0.179	0.0008	0.0020	mg/L	0.200000	ND	89.7	70-130	4.69	20	
Arsenic, total	0.184	0.0006	0.0020	"	0.200000	0.0040	90.0	70-130	5.01	20	
Barium, total	1.28	0.0002	0.0020	"	0.200000	1.08	101	70-130	3.45	20	
Beryllium, total	0.177	0.0001	0.0020	"	0.200000	ND	88.6	70-130	4.17	20	
Cadmium, total	0.171	0.00008	0.0002	"	0.200000	ND	85.6	70-130	5.18	20	
Chromium, total	0.182	0.0007	0.0020	"	0.200000	0.0011	90.4	70-130	5.33	20	
Cobalt, total	0.193	0.0005	0.0020	"	0.200000	ND	96.5	70-130	6.57	20	
Copper, total	0.180	0.0008	0.0020	"	0.200000	0.0084	85.8	70-130	6.03	20	
Lead, total	0.177	0.0005	0.0008	"	0.200000	0.0008	88.0	70-130	5.33	20	
Manganese, total	0.191	0.0017	0.0040	"	0.200000	0.0142	88.3	70-130	2.73	20	
Molybdenum, total	0.203	0.0006	0.0020	"	0.200000	ND	101	70-130	4.33	20	
Nickel, total	0.188	0.0007	0.0040	"	0.200000	0.0044	92.0	70-130	5.38	20	
Selenium, total	0.168	0.0011	0.0040	"	0.200000	ND	83.9	70-130	3.20	20	
Silver, total	0.184	0.0015	0.0020	"	0.200000	ND	91.9	70-130	5.88	20	
Thallium, total	0.172	0.0004	0.0008	"	0.200000	0.0009	85.7	70-130	4.23	20	
Vanadium, total	0.185	0.0043	0.0080	"	0.200000	0.0051	89.9	70-130	5.69	20	
Zinc, total	0.179	0.0174	0.0200	"	0.200000	0.0182	80.6	70-130	5.22	20	

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BMC Aggregates L.C.	Project:	GW Monitoring	
Elk Run Heights, IA 50707	Project Number:	Miller Creek Area	**Reported:**
101 BMC Drive	Project Manager:	Sherman Lundy	03/31/23 16:23

Determination of Total Metals - Quality Control

Keystone Laboratories - Newton

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GC1180 - EPA 200.2 Total ICP-MS											
Post Spike (1GC1180-PS1)		**Source: 1GC1696-01**		Prepared: 03/22/23 Analyzed: 03/23/23							
Antimony, total	0.0840			mg/L	0.0800000	0.0003	105	70-130			
Arsenic, total	0.0879			"	0.0800000	0.0039	105	70-130			
Barium, total	1.31			"	0.0800000	1.06	314	70-130			PS-4X
Beryllium, total	0.0917			"	0.0800000	0.00001	115	70-130			
Cadmium, total	0.0781			"	0.0800000	0.00005	97.5	70-130			
Chromium, total	0.0846			"	0.0800000	0.0011	104	70-130			
Cobalt, total	0.0886			"	0.0800000	0.0001	111	70-130			
Copper, total	0.0883			"	0.0800000	0.0082	100	70-130			
Lead, total	0.0810			"	0.0800000	0.0007	100	70-130			
Manganese, total	0.100			"	0.0800000	0.0139	108	70-130			
Molybdenum, total	0.0944			"	0.0800000	0.0003	118	70-130			
Nickel, total	0.0910			"	0.0800000	0.0043	108	70-130			
Selenium, total	0.0734			"	0.0800000	0.0003	91.4	70-130			
Silver, total	0.0859			"	0.0800000	0.0001	107	70-130			
Thallium, total	0.0784			"	0.0800000	0.0009	96.9	70-130			
Vanadium, total	0.0911			"	0.0800000	0.0050	108	70-130			
Zinc, total	0.0951			"	0.0800000	0.0179	96.6	70-130			

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BMC Aggregates L.C.	Project:	GW Monitoring	
Elk Run Heights, IA 50707	Project Number:	Miller Creek Area	**Reported:**
101 BMC Drive	Project Manager:	Sherman Lundy	03/31/23 16:23

Certified Analyses included in this Report

Method/Matrix	Analyte	Certifications
200.7 in Water		
	Iron, total	SIA1X,KS-NT
	Magnesium, total	SIA1X,KS-NT
EPA 200.7 in Water		
	Aluminum, total	SIA1X,KS-NT
	Boron, total	SIA1X,KS-NT
EPA 200.8 in Water		
	Antimony, total	SIA1X,KS-NT
	Arsenic, total	SIA1X,KS-NT
	Barium, total	SIA1X,KS-NT
	Beryllium, total	SIA1X,KS-NT
	Cadmium, total	SIA1X,KS-NT
	Chromium, total	SIA1X,KS-NT
	Cobalt, total	SIA1X,KS-NT
	Copper, total	SIA1X,KS-NT
	Lead, total	SIA1X,KS-NT
	Manganese, total	SIA1X,KS-NT
	Molybdenum, total	SIA1X,KS-NT
	Nickel, total	SIA1X,KS-NT
	Selenium, total	SIA1X,KS-NT
	Silver, total	SIA1X,KS-NT
	Thallium, total	SIA1X,KS-NT
	Vanadium, total	SIA1X,KS-NT
	Zinc, total	SIA1X,KS-NT
EPA 410.4 in Water		
	COD, total	KS-NT,SIA1X
EPA 420.1 in Water		
	Phenols, total	KS-NT,SIA1X
EPA 624 in Water		

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BMC Aggregates L.C.	Project:	GW Monitoring	
Elk Run Heights, IA 50707	Project Number:	Miller Creek Area	**Reported:**
101 BMC Drive	Project Manager:	Sherman Lundy	03/31/23 16:23

	2-Butanone (MEK)	SIA1X
	Chloroform	KS-NT,SIA1X
	Benzene	KS-NT,SIA1X
EPA 8315 in Water		
	Formaldehyde	SIA1X
EPA 9020 in Water		
	Total Organic Halogens (TOX)	KS-NT,SIA1X
EPA 9056 in Water		
	Fluoride	KS-NT,SIA1X
	Chloride	KS-NT,SIA1X
	Sulfate	KS-NT,SIA1X
SM 3112B in Water		
	Mercury, total	KS-NT,SIA1X
TIMBERLINE in Water		
	Nitrogen, Ammonia	SIA1X,KS-NT
USGS I-1750-85 in Water		
	Solids, total dissolved	KS-NT,SIA1X
USGS I-3765-85 in Water		
	Solids, total suspended	SIA1X,KS-NT

Code	Description	Number	Expires
KS-KC	Kansas Department of Health and Environment-KC	E-10110	04/30/2023
KS-NT	Kansas Department of Health and Environment (NELAP	E-10287	10/31/2023
MO-KC	Missouri Department of Natural Resources	140	04/30/2023
SIA1X	Iowa Dept. of Natural Resources	95	02/01/2024

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BMC Aggregates L.C.	Project:	GW Monitoring	
Elk Run Heights, IA 50707	Project Number:	Miller Creek Area	**Reported:**
101 BMC Drive	Project Manager:	Sherman Lundy	03/31/23 16:23

Notes and Definitions

QS-01	The blank spike recovery and/or blank spike duplicate recovery were outside the established acceptance limits. Batch was accepted based on acceptable MS/MSD/RPD results.
QR-02	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
QM-4X	The spike recovery was outside of QC acceptance limits for the MS and/or MSD due to analyte concentration at 4 times or greater the spike concentration.
QM-14	The spike recovery was outside acceptance limits for the MS and/or MSD. However, all other QC was acceptable.
QM-07	The spike recovery and/or RPD was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
PS-4X	The spike recovery was outside of QC acceptance limits for the Post Spike due to analyte concentration at 4 times or greater the spike concentration.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

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Keystone Laboratories - Newton

CERTIFICATE OF ANALYSIS

1GJ1657

Project Description

GW Monitoring

For:

Sherman Lundy

BMC Aggregates L.C.

101 BMC Drive

Elk Run Heights, IA 50707

Heather Tisdale

Customer Relationship Specialist

Monday, November 20, 2023

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Keystone Laboratories - Newton. If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed above.

I certify that all test results meet all of the requirements of the accrediting authority listed within this report. Analytical results are reported on a 'as received' basis unless specified otherwise. Analytical results for solids with units ending in (dry) are reported on a dry weight basis. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories. The reported results are related only to the samples analyzed as received.

Keystone Laboratories - Newton

CERTIFICATE OF ANALYSIS

1GJ1657

BMC Aggregates L.C.

Sherman Lundy
101 BMC Drive
Elk Run Heights, IA 50707

Project Name: GW Monitoring

Project / PO Number: Sherman Lundy / Miller Creek Ar
Received: 10/19/2023
Reported: 11/20/2023

Sample Summary Report

Sample Name	Laboratory ID	Client Matrix	Sample Type	Sample Begin	Sample Taken	Lab Received
Well #1	1GJ1657-01	Water	GRAB		10/18/23 08:00	10/19/23 11:10
Well #2	1GJ1657-02	Water	GRAB		10/18/23 08:30	10/19/23 11:10
Well #3	1GJ1657-03	Water	GRAB		10/18/23 09:00	10/19/23 11:10
Well #4	1GJ1657-04	Water	GRAB		10/18/23 09:30	10/19/23 11:10
Upgradient Well	1GJ1657-05	Water	GRAB		10/18/23 10:00	10/19/23 11:10

Keystone Laboratories - Newton

CERTIFICATE OF ANALYSIS

1GJ1657

Analytical Testing Parameters

Client Sample ID: Well #1
Sample Matrix: Water
Lab Sample ID: 1GJ1657-01
Collected By: Sherman Lundy
Collection Date: 10/18/2023 8:00

Determination of Volatile Organic Compounds	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 5030B/EPA 624									
2-Butanone (MEK)	<10.0	1.4	10.0	ug/L	1		10/25/23 0000	10/25/23 1349	LNH
Chloroform	<1.0	0.4	1.0	ug/L	1		10/25/23 0000	10/25/23 1349	LNH
Benzene	<1.0	0.3	1.0	ug/L	1		10/25/23 0000	10/25/23 1349	LNH
Surrogate: Dibromofluoromethane	93.9	Limit: 79-129		% Rec	1		10/25/23 0000	10/25/23 1349	LNH
Surrogate: 1,2-Dichloroethane-d4	96.2	Limit: 66-134		% Rec	1		10/25/23 0000	10/25/23 1349	LNH
Surrogate: Toluene-d8	96.5	Limit: 91-113		% Rec	1		10/25/23 0000	10/25/23 1349	LNH
Surrogate: 4-Bromofluorobenzene	99.6	Limit: 83-112		% Rec	1		10/25/23 0000	10/25/23 1349	LNH

Determination of Base/Neutral Extractable Compounds	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 625									
Pyridine	<10	10	10	ug/L	1		10/23/23 1114	10/31/23 1943	EPP

Determination of Acid Extractable Compounds	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 625									
2-Methylphenol (o-Cresol)	<10.0	2.6	10.0	ug/L	1		10/23/23 1114	10/31/23 1943	EPP
(3 & 4)-Methylphenol	<10.0	2.6	10.0	ug/L	1		10/23/23 1114	10/31/23 1943	EPP
Surrogate: 2-Fluorophenol	70.1	Limit: 19-139		% Rec	1		10/23/23 1114	10/31/23 1943	EPP
Surrogate: Phenol-d6	54.5	Limit: 14-154		% Rec	1		10/23/23 1114	10/31/23 1943	EPP
Surrogate: 2,4,6-Tribromophenol	103	Limit: 21-151		% Rec	1		10/23/23 1114	10/31/23 1943	EPP

Determination of Carbonyl Compounds	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 8315									
Formaldehyde	<10.0	10.0	10.0	ug/L	1		10/20/23 1311	10/23/23 1107	EPP

Determination of Conventional Chemistry Parameters	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 410.4									
COD, total	<54	9	54	mg/L	1		10/28/23 1828	11/01/23 1533	AKK
Method: EPA 420.1									
Phenols, total	**0.047**	0.024	0.035	mg/L	1			11/01/23 1336	AKK
Method: EPA 9020									
Total Organic Halogens (TOX)	**0.018**	0.006	0.010	mg/L	1	**TOX-3**	11/09/23 0000	11/14/23 1207	LNH
Method: SM 2510B									

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CERTIFICATE OF ANALYSIS

1GJ1657

Client Sample ID:	Well #1		
Sample Matrix:	Water	**Collected By:**	Sherman Lundy
Lab Sample ID:	1GJ1657-01	**Collection Date:**	10/18/2023 8:00

Determination of Conventional Chemistry Parameters	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Conductivity	**589**	1.8	2.0	uS/cm	1		10/23/23 1122	10/23/23 1325	BSS
Method: TIMBERLINE									
Nitrogen, Ammonia	**1.51**	0.08	0.10	mg/L	1		10/24/23 1622	10/26/23 1509	LJS
Method: USGS I-1750-85									
Total Dissolved Solids (TDS)	**369**	4	5	mg/L	1		10/20/23 1254	10/23/23 0825	MEA
Method: USGS I-3765-85									
Total Suspended Solids (TSS)	<1	0.9	1	mg/L	1		10/20/23 1305	10/23/23 1120	MEA

Determination of Inorganic Anions	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 9056									
Fluoride	**0.9**	0.02	0.1	mg/L	1		10/27/23 0000	10/27/23 1227	MID
Chloride	**9.8**	0.3	1.0	mg/L	1		10/27/23 0000	10/27/23 1227	MID
Sulfate	**58.1**	0.4	1.0	mg/L	1		10/27/23 0000	10/27/23 1227	MID

Determination of Total Metals	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: 200.7									
Iron, total	**0.265**	0.047	0.100	mg/L	1		10/24/23 0755	10/25/23 1716	JAR
Magnesium, total	**30.9**	0.06	0.10	mg/L	1		10/24/23 0755	10/25/23 1716	JAR
Method: EPA 200.7									
Aluminum, total	<0.050	0.038	0.050	mg/L	1		10/24/23 0755	10/25/23 1716	JAR
Boron, total	<0.056	0.056	0.100	mg/L	1		10/24/23 0755	10/25/23 1716	JAR
Method: EPA 200.8									
Antimony, total	<0.0008	0.0008	0.0020	mg/L	4		10/23/23 0937	10/23/23 2300	RVV
Arsenic, total	**0.0015**	0.0006	0.0020	mg/L	4		10/23/23 0937	10/23/23 2300	RVV
Barium, total	**0.371**	0.0002	0.0020	mg/L	4		10/23/23 0937	10/23/23 2300	RVV
Beryllium, total	<0.0001	0.0001	0.0020	mg/L	4		10/23/23 0937	10/23/23 2300	RVV
Cadmium, total	<0.00008	0.00008	0.0002	mg/L	4		10/23/23 0937	10/23/23 2300	RVV
Chromium, total	<0.0007	0.0007	0.0020	mg/L	4		10/23/23 0937	10/23/23 2300	RVV
Cobalt, total	<0.0005	0.0005	0.0020	mg/L	4		10/23/23 0937	10/23/23 2300	RVV
Copper, total	**0.0032**	0.0008	0.0020	mg/L	4		10/23/23 0937	10/23/23 2300	RVV
Lead, total	<0.0005	0.0005	0.0008	mg/L	4		10/23/23 0937	10/23/23 2300	RVV
Manganese, total	**0.0055**	0.0017	0.0040	mg/L	4		10/23/23 0937	10/23/23 2300	RVV
Molybdenum, total	**0.0010**	0.0006	0.0020	mg/L	4		10/23/23 0937	10/23/23 2300	RVV
Nickel, total	**0.0013**	0.0007	0.0040	mg/L	4		10/23/23 0937	10/23/23 2300	RVV
Selenium, total	<0.0011	0.0011	0.0040	mg/L	4		10/23/23 0937	10/23/23 2300	RVV
Silver, total	<0.0015	0.0015	0.0020	mg/L	4		10/23/23 0937	10/23/23 2300	RVV
Thallium, total	<0.0004	0.0004	0.0008	mg/L	4		10/23/23 0937	10/23/23 2300	RVV

Client Sample ID:	Well #1		
Sample Matrix:	Water	**Collected By:**	Sherman Lundy
Lab Sample ID:	1GJ1657-01	**Collection Date:**	10/18/2023 8:00

Determination of Total Metals	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Vanadium, total	<0.0043	0.0043	0.0080	mg/L	4		10/23/23 0937	10/23/23 2300	RVV
Zinc, total	<0.0174	0.0174	0.0200	mg/L	4		10/23/23 0937	10/23/23 2300	RVV
Method: SM 3112B									
Mercury, total	<0.00013	0.00013	0.00020	mg/L	1		10/20/23 0844	10/20/23 1706	JAR

Client Sample ID:	Well #2		
Sample Matrix:	Water	**Collected By:**	Sherman Lundy
Lab Sample ID:	1GJ1657-02	**Collection Date:**	10/18/2023 8:30

Determination of Volatile Organic Compounds	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 5030B/EPA 624									
2-Butanone (MEK)	<10.0	1.4	10.0	ug/L	1		10/25/23 0000	10/25/23 1644	LNH
Chloroform	<1.0	0.4	1.0	ug/L	1		10/25/23 0000	10/25/23 1644	LNH
Benzene	<1.0	0.3	1.0	ug/L	1		10/25/23 0000	10/25/23 1644	LNH
Surrogate: Dibromofluoromethane	93.9	Limit: 79-129		% Rec	1		10/25/23 0000	10/25/23 1644	LNH
Surrogate: 1,2-Dichloroethane-d4	95.9	Limit: 66-134		% Rec	1		10/25/23 0000	10/25/23 1644	LNH
Surrogate: Toluene-d8	97.9	Limit: 91-113		% Rec	1		10/25/23 0000	10/25/23 1644	LNH
Surrogate: 4-Bromofluorobenzene	99.6	Limit: 83-112		% Rec	1		10/25/23 0000	10/25/23 1644	LNH

Determination of Base/Neutral Extractable Compounds	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 625									
Pyridine	<13	13	13	ug/L	1		10/23/23 1114	10/31/23 2007	EPP

Determination of Acid Extractable Compounds	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 625									
2-Methylphenol (o-Cresol)	<12.8	3.4	12.8	ug/L	1		10/23/23 1114	10/31/23 2007	EPP
(3 & 4)-Methylphenol	<12.8	3.3	12.8	ug/L	1		10/23/23 1114	10/31/23 2007	EPP
Surrogate: 2-Fluorophenol	70.9	Limit: 19-139		% Rec	1		10/23/23 1114	10/31/23 2007	EPP
Surrogate: Phenol-d6	63.4	Limit: 14-154		% Rec	1		10/23/23 1114	10/31/23 2007	EPP
Surrogate: 2,4,6-Tribromophenol	97.4	Limit: 21-151		% Rec	1		10/23/23 1114	10/31/23 2007	EPP

Determination of Carbonyl Compounds	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 8315									
Formaldehyde	<10.0	10.0	10.0	ug/L	1		10/20/23 1311	10/23/23 1126	EPP

Determination of Conventional Chemistry Parameters	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 410.4									
COD, total	<54	9	54	mg/L	1		10/28/23 1828	11/01/23 1533	AKK
Method: EPA 420.1									
Phenols, total	**0.066**	0.024	0.035	mg/L	1			11/01/23 1336	AKK
Method: EPA 9020									
Total Organic Halogens (TOX)	**0.016**	0.006	0.010	mg/L	1		11/09/23 0000	11/10/23 1011	LNH
Method: SM 2510B									
Conductivity	**695**	1.8	2.0	uS/cm	1		10/23/23 1122	10/23/23 1325	BSS

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CERTIFICATE OF ANALYSIS

1GJ1657

Client Sample ID:	Well #2		
Sample Matrix:	Water	**Collected By:**	Sherman Lundy
Lab Sample ID:	1GJ1657-02	**Collection Date:**	10/18/2023 8:30

Determination of Conventional Chemistry Parameters	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: TIMBERLINE									
Nitrogen, Ammonia	<0.10	0.08	0.10	mg/L	1		10/24/23 1622	10/26/23 1510	LJS
Method: USGS I-1750-85									
Total Dissolved Solids (TDS)	**481**	4	5	mg/L	1		10/20/23 1254	10/23/23 0825	MEA
Method: USGS I-3765-85									
Total Suspended Solids (TSS)	**8**	0.9	1	mg/L	1		10/20/23 1305	10/23/23 1120	MEA

Determination of Inorganic Anions	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 9056									
Fluoride	**0.7**	0.02	0.1	mg/L	1		10/27/23 0000	10/27/23 1303	MID
Chloride	**12.4**	0.3	1.0	mg/L	1		10/27/23 0000	10/27/23 1303	MID
Sulfate	**120**	1.8	5.0	mg/L	5		10/27/23 0000	10/27/23 1736	MID

Determination of Total Metals	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: 200.7									
Iron, total	**0.573**	0.047	0.100	mg/L	1		10/24/23 0755	10/25/23 1741	JAR
Magnesium, total	**40.1**	0.06	0.10	mg/L	1		10/24/23 0755	10/25/23 1741	JAR
Method: EPA 200.7									
Aluminum, total	<0.050	0.038	0.050	mg/L	1		10/24/23 0755	10/25/23 1741	JAR
Boron, total	<0.056	0.056	0.100	mg/L	1		10/24/23 0755	10/25/23 1741	JAR
Method: EPA 200.8									
Antimony, total	<0.0008	0.0008	0.0020	mg/L	4		10/23/23 0937	10/23/23 2324	RVV
Arsenic, total	**0.0009**	0.0006	0.0020	mg/L	4		10/23/23 0937	10/23/23 2324	RVV
Barium, total	**0.0817**	0.0002	0.0020	mg/L	4		10/23/23 0937	10/23/23 2324	RVV
Beryllium, total	<0.0001	0.0001	0.0020	mg/L	4		10/23/23 0937	10/23/23 2324	RVV
Cadmium, total	<0.00008	0.00008	0.0002	mg/L	4		10/23/23 0937	10/23/23 2324	RVV
Chromium, total	<0.0007	0.0007	0.0020	mg/L	4		10/23/23 0937	10/23/23 2324	RVV
Cobalt, total	<0.0005	0.0005	0.0020	mg/L	4		10/23/23 0937	10/23/23 2324	RVV
Copper, total	**0.0030**	0.0008	0.0020	mg/L	4		10/23/23 0937	10/23/23 2324	RVV
Lead, total	<0.0005	0.0005	0.0008	mg/L	4		10/23/23 0937	10/23/23 2324	RVV
Manganese, total	**0.0107**	0.0017	0.0040	mg/L	4		10/23/23 0937	10/23/23 2324	RVV
Molybdenum, total	<0.0006	0.0006	0.0020	mg/L	4		10/23/23 0937	10/23/23 2324	RVV
Nickel, total	**0.0012**	0.0007	0.0040	mg/L	4		10/23/23 0937	10/23/23 2324	RVV
Selenium, total	<0.0011	0.0011	0.0040	mg/L	4		10/23/23 0937	10/23/23 2324	RVV
Silver, total	**0.0019**	0.0015	0.0020	mg/L	4		10/23/23 0937	10/23/23 2324	RVV
Thallium, total	<0.0004	0.0004	0.0008	mg/L	4		10/23/23 0937	10/23/23 2324	RVV
Vanadium, total	<0.0043	0.0043	0.0080	mg/L	4		10/23/23 0937	10/23/23 2324	RVV

Client Sample ID:	Well #2		
Sample Matrix:	Water	**Collected By:**	Sherman Lundy
Lab Sample ID:	1GJ1657-02	**Collection Date:**	10/18/2023 8:30

Determination of Total Metals	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Zinc, total	<0.0174	0.0174	0.0200	mg/L	4		10/23/23 0937	10/23/23 2324	RVV
Method: SM 3112B									
Mercury, total	<0.00013	0.00013	0.00020	mg/L	1		10/20/23 0844	10/20/23 1716	JAR

Client Sample ID:	Well #3		
Sample Matrix:	Water	**Collected By:**	Sherman Lundy
Lab Sample ID:	1GJ1657-03	**Collection Date:**	10/18/2023 9:00

Determination of Volatile Organic Compounds	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 5030B/EPA 624									
2-Butanone (MEK)	<10.0	1.4	10.0	ug/L	1		10/25/23 0000	10/25/23 1707	LNH
Chloroform	<1.0	0.4	1.0	ug/L	1		10/25/23 0000	10/25/23 1707	LNH
Benzene	<1.0	0.3	1.0	ug/L	1		10/25/23 0000	10/25/23 1707	LNH
Surrogate: Dibromofluoromethane	94.0	Limit: 79-129		% Rec	1		10/25/23 0000	10/25/23 1707	LNH
Surrogate: 1,2-Dichloroethane-d4	97.0	Limit: 66-134		% Rec	1		10/25/23 0000	10/25/23 1707	LNH
Surrogate: Toluene-d8	96.9	Limit: 91-113		% Rec	1		10/25/23 0000	10/25/23 1707	LNH
Surrogate: 4-Bromofluorobenzene	97.6	Limit: 83-112		% Rec	1		10/25/23 0000	10/25/23 1707	LNH

Determination of Base/Neutral Extractable Compounds	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 625									
Pyridine	<10	10	10	ug/L	1		10/23/23 1114	10/31/23 2032	EPP

Determination of Acid Extractable Compounds	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 625									
2-Methylphenol (o-Cresol)	<10.0	2.6	10.0	ug/L	1		10/23/23 1114	10/31/23 2032	EPP
(3 & 4)-Methylphenol	<10.0	2.6	10.0	ug/L	1		10/23/23 1114	10/31/23 2032	EPP
Surrogate: 2-Fluorophenol	69.6	Limit: 19-139		% Rec	1		10/23/23 1114	10/31/23 2032	EPP
Surrogate: Phenol-d6	51.5	Limit: 14-154		% Rec	1		10/23/23 1114	10/31/23 2032	EPP
Surrogate: 2,4,6-Tribromophenol	102	Limit: 21-151		% Rec	1		10/23/23 1114	10/31/23 2032	EPP

Determination of Carbonyl Compounds	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 8315									
Formaldehyde	<10.0	10.0	10.0	ug/L	1		10/20/23 1311	10/23/23 1145	EPP

Determination of Conventional Chemistry Parameters	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 410.4									
COD, total	<54	9	54	mg/L	1		10/28/23 1828	11/01/23 1533	AKK
Method: EPA 420.1									
Phenols, total	**0.063**	0.024	0.035	mg/L	1			11/01/23 1336	AKK
Method: EPA 9020									
Total Organic Halogens (TOX)	**0.054**	0.006	0.010	mg/L	1		11/09/23 0000	11/10/23 1011	LNH
Method: SM 2510B									
Conductivity	**612**	1.8	2.0	uS/cm	1		10/23/23 1122	10/23/23 1325	BSS

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CERTIFICATE OF ANALYSIS

1GJ1657

Client Sample ID:	Well #3		
Sample Matrix:	Water	**Collected By:**	Sherman Lundy
Lab Sample ID:	1GJ1657-03	**Collection Date:**	10/18/2023 9:00

Determination of Conventional Chemistry Parameters	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: TIMBERLINE									
Nitrogen, Ammonia	**0.12**	0.08	0.10	mg/L	1		10/24/23 1622	10/26/23 1515	LJS
Method: USGS I-1750-85									
Total Dissolved Solids (TDS)	**400**	4	5	mg/L	1		10/20/23 1254	10/23/23 0825	MEA
Method: USGS I-3765-85									
Total Suspended Solids (TSS)	**10**	0.9	1	mg/L	1		10/20/23 1305	10/23/23 1120	MEA

Determination of Inorganic Anions	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 9056									
Fluoride	**0.6**	0.02	0.1	mg/L	1		10/27/23 0000	10/27/23 1322	MID
Chloride	**23.8**	0.3	1.0	mg/L	1		10/27/23 0000	10/27/23 1322	MID
Sulfate	**100**	0.4	1.0	mg/L	1		10/27/23 0000	10/27/23 1322	MID

Determination of Total Metals	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: 200.7									
Iron, total	**0.055**	0.047	0.100	mg/L	1		10/24/23 0755	10/25/23 1758	JAR
Magnesium, total	**30.8**	0.06	0.10	mg/L	1		10/24/23 0755	10/25/23 1758	JAR
Method: EPA 200.7									
Aluminum, total	<0.050	0.038	0.050	mg/L	1		10/24/23 0755	10/25/23 1758	JAR
Boron, total	<0.056	0.056	0.100	mg/L	1		10/24/23 0755	10/25/23 1758	JAR
Method: EPA 200.8									
Antimony, total	<0.0008	0.0008	0.0020	mg/L	4		10/23/23 0937	10/23/23 2342	RVV
Arsenic, total	**0.0009**	0.0006	0.0020	mg/L	4		10/23/23 0937	10/23/23 2342	RVV
Barium, total	**0.0957**	0.0002	0.0020	mg/L	4		10/23/23 0937	10/23/23 2342	RVV
Beryllium, total	<0.0001	0.0001	0.0020	mg/L	4		10/23/23 0937	10/23/23 2342	RVV
Cadmium, total	<0.00008	0.00008	0.0002	mg/L	4		10/23/23 0937	10/23/23 2342	RVV
Chromium, total	<0.0007	0.0007	0.0020	mg/L	4		10/23/23 0937	10/23/23 2342	RVV
Cobalt, total	<0.0005	0.0005	0.0020	mg/L	4		10/23/23 0937	10/23/23 2342	RVV
Copper, total	**0.0051**	0.0008	0.0020	mg/L	4		10/23/23 0937	10/23/23 2342	RVV
Lead, total	<0.0005	0.0005	0.0008	mg/L	4		10/23/23 0937	10/23/23 2342	RVV
Manganese, total	**0.0072**	0.0017	0.0040	mg/L	4		10/23/23 0937	10/23/23 2342	RVV
Molybdenum, total	**0.0028**	0.0006	0.0020	mg/L	4		10/23/23 0937	10/23/23 2342	RVV
Nickel, total	**0.0026**	0.0007	0.0040	mg/L	4		10/23/23 0937	10/23/23 2342	RVV
Selenium, total	**0.0014**	0.0011	0.0040	mg/L	4		10/23/23 0937	10/23/23 2342	RVV
Silver, total	<0.0015	0.0015	0.0020	mg/L	4		10/23/23 0937	10/23/23 2342	RVV
Thallium, total	<0.0004	0.0004	0.0008	mg/L	4		10/23/23 0937	10/23/23 2342	RVV
Vanadium, total	<0.0043	0.0043	0.0080	mg/L	4		10/23/23 0937	10/23/23 2342	RVV

Client Sample ID:	Well #3		
Sample Matrix:	Water	**Collected By:**	Sherman Lundy
Lab Sample ID:	1GJ1657-03	**Collection Date:**	10/18/2023 9:00

Determination of Total Metals	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Zinc, total	<0.0174	0.0174	0.0200	mg/L	4		10/23/23 0937	10/23/23 2342	RVV
Method: SM 3112B									
Mercury, total	<0.00013	0.00013	0.00020	mg/L	1		10/20/23 0844	10/20/23 1718	JAR

Client Sample ID:	Well #4		
Sample Matrix:	Water	**Collected By:**	Sherman Lundy
Lab Sample ID:	1GJ1657-04	**Collection Date:**	10/18/2023 9:30

Determination of Volatile Organic Compounds	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 5030B/EPA 624									
2-Butanone (MEK)	<10.0	1.4	10.0	ug/L	1		10/25/23 0000	10/25/23 1730	LNH
Chloroform	<1.0	0.4	1.0	ug/L	1		10/25/23 0000	10/25/23 1730	LNH
Benzene	<1.0	0.3	1.0	ug/L	1		10/25/23 0000	10/25/23 1730	LNH
Surrogate: Dibromofluoromethane	92.2	Limit: 79-129		% Rec	1		10/25/23 0000	10/25/23 1730	LNH
Surrogate: 1,2-Dichloroethane-d4	96.3	Limit: 66-134		% Rec	1		10/25/23 0000	10/25/23 1730	LNH
Surrogate: Toluene-d8	97.8	Limit: 91-113		% Rec	1		10/25/23 0000	10/25/23 1730	LNH
Surrogate: 4-Bromofluorobenzene	99.2	Limit: 83-112		% Rec	1		10/25/23 0000	10/25/23 1730	LNH

Determination of Base/Neutral Extractable Compounds	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 625									
Pyridine	<10	10	10	ug/L	1		10/23/23 1114	10/31/23 2056	EPP

Determination of Acid Extractable Compounds	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 625									
2-Methylphenol (o-Cresol)	<10.0	2.6	10.0	ug/L	1		10/23/23 1114	10/31/23 2056	EPP
(3 & 4)-Methylphenol	<10.0	2.6	10.0	ug/L	1		10/23/23 1114	10/31/23 2056	EPP
Surrogate: 2-Fluorophenol	73.9	Limit: 19-139		% Rec	1		10/23/23 1114	10/31/23 2056	EPP
Surrogate: Phenol-d6	62.4	Limit: 14-154		% Rec	1		10/23/23 1114	10/31/23 2056	EPP
Surrogate: 2,4,6-Tribromophenol	97.5	Limit: 21-151		% Rec	1		10/23/23 1114	10/31/23 2056	EPP

Determination of Carbonyl Compounds	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 8315									
Formaldehyde	<10.0	10.0	10.0	ug/L	1		10/20/23 1311	10/23/23 1204	EPP

Determination of Conventional Chemistry Parameters	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 410.4									
COD, total	<54	9	54	mg/L	1		10/28/23 1828	11/01/23 1533	AKK
Method: EPA 420.1									
Phenols, total	**0.035**	0.024	0.035	mg/L	1			11/01/23 1336	AKK
Method: EPA 9020									
Total Organic Halogens (TOX)	<0.010	0.006	0.010	mg/L	1		11/09/23 0000	11/10/23 1011	LNH
Method: SM 2510B									
Conductivity	**672**	1.8	2.0	uS/cm	1		10/23/23 1122	10/23/23 1325	BSS

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CERTIFICATE OF ANALYSIS

1GJ1657

Client Sample ID:	Well #4		
Sample Matrix:	Water	**Collected By:**	Sherman Lundy
Lab Sample ID:	1GJ1657-04	**Collection Date:**	10/18/2023 9:30

Determination of Conventional Chemistry Parameters	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: TIMBERLINE									
Nitrogen, Ammonia	<0.10	0.08	0.10	mg/L	1		10/24/23 1622	10/26/23 1516	LJS
Method: USGS I-1750-85									
Total Dissolved Solids (TDS)	**459**	4	5	mg/L	1		10/20/23 1254	10/23/23 0825	MEA
Method: USGS I-3765-85									
Total Suspended Solids (TSS)	**36**	0.9	1	mg/L	1		10/20/23 1305	10/23/23 1120	MEA

Determination of Inorganic Anions	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 9056									
Fluoride	**0.3**	0.02	0.1	mg/L	1		10/27/23 0000	10/27/23 1340	MID
Chloride	**20.0**	0.3	1.0	mg/L	1		10/27/23 0000	10/27/23 1340	MID
Sulfate	**111**	0.4	1.0	mg/L	1		10/27/23 0000	10/27/23 1340	MID

Determination of Total Metals	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: 200.7									
Iron, total	**2.43**	0.047	0.100	mg/L	1		10/24/23 0755	10/25/23 1804	JAR
Magnesium, total	**26.1**	0.06	0.10	mg/L	1		10/24/23 0755	10/25/23 1804	JAR
Method: EPA 200.7									
Aluminum, total	**1.83**	0.038	0.050	mg/L	1		10/24/23 0755	10/25/23 1804	JAR
Boron, total	<0.056	0.056	0.100	mg/L	1		10/24/23 0755	10/25/23 1804	JAR
Method: EPA 200.8									
Antimony, total	<0.0008	0.0008	0.0020	mg/L	4		10/23/23 0937	10/23/23 2348	RVV
Arsenic, total	**0.0020**	0.0006	0.0020	mg/L	4		10/23/23 0937	10/23/23 2348	RVV
Barium, total	**0.109**	0.0002	0.0020	mg/L	4		10/23/23 0937	10/23/23 2348	RVV
Beryllium, total	**0.0001**	0.0001	0.0020	mg/L	4		10/23/23 0937	10/23/23 2348	RVV
Cadmium, total	<0.00008	0.00008	0.0002	mg/L	4		10/23/23 0937	10/23/23 2348	RVV
Chromium, total	**0.0050**	0.0007	0.0020	mg/L	4		10/23/23 0937	10/23/23 2348	RVV
Cobalt, total	**0.0015**	0.0005	0.0020	mg/L	4		10/23/23 0937	10/23/23 2348	RVV
Copper, total	**0.0073**	0.0008	0.0020	mg/L	4		10/23/23 0937	10/23/23 2348	RVV
Lead, total	**0.0023**	0.0005	0.0008	mg/L	4		10/23/23 0937	10/23/23 2348	RVV
Manganese, total	**0.0678**	0.0017	0.0040	mg/L	4		10/23/23 0937	10/23/23 2348	RVV
Molybdenum, total	**0.0040**	0.0006	0.0020	mg/L	4		10/23/23 0937	10/23/23 2348	RVV
Nickel, total	**0.0061**	0.0007	0.0040	mg/L	4		10/23/23 0937	10/23/23 2348	RVV
Selenium, total	**0.0036**	0.0011	0.0040	mg/L	4		10/23/23 0937	10/23/23 2348	RVV
Silver, total	<0.0015	0.0015	0.0020	mg/L	4		10/23/23 0937	10/23/23 2348	RVV
Thallium, total	<0.0004	0.0004	0.0008	mg/L	4		10/23/23 0937	10/23/23 2348	RVV
Vanadium, total	**0.0095**	0.0043	0.0080	mg/L	4		10/23/23 0937	10/23/23 2348	RVV

Client Sample ID:	Well #4		
Sample Matrix:	Water	**Collected By:**	Sherman Lundy
Lab Sample ID:	1GJ1657-04	**Collection Date:**	10/18/2023 9:30

Determination of Total Metals	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Zinc, total	<0.0174	0.0174	0.0200	mg/L	4		10/23/23 0937	10/23/23 2348	RVV
Method: SM 3112B									
Mercury, total	<0.00013	0.00013	0.00020	mg/L	1		10/20/23 0844	10/20/23 1720	JAR

Client Sample ID:	Upgradient Well		
Sample Matrix:	Water	**Collected By:**	Sherman Lundy
Lab Sample ID:	1GJ1657-05	**Collection Date:**	10/18/2023 10:00

Determination of Volatile Organic Compounds	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 5030B/EPA 624									
2-Butanone (MEK)	<10.0	1.4	10.0	ug/L	1		10/25/23 0000	10/25/23 1752	LNH
Chloroform	<1.0	0.4	1.0	ug/L	1		10/25/23 0000	10/25/23 1752	LNH
Benzene	<1.0	0.3	1.0	ug/L	1		10/25/23 0000	10/25/23 1752	LNH
Surrogate: Dibromofluoromethane	93.4	Limit: 79-129		% Rec	1		10/25/23 0000	10/25/23 1752	LNH
Surrogate: 1,2-Dichloroethane-d4	97.2	Limit: 66-134		% Rec	1		10/25/23 0000	10/25/23 1752	LNH
Surrogate: Toluene-d8	96.6	Limit: 91-113		% Rec	1		10/25/23 0000	10/25/23 1752	LNH
Surrogate: 4-Bromofluorobenzene	98.3	Limit: 83-112		% Rec	1		10/25/23 0000	10/25/23 1752	LNH

Determination of Base/Neutral Extractable Compounds	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 625									
Pyridine	<10	10	10	ug/L	1		10/23/23 1114	10/31/23 2121	EPP

Determination of Acid Extractable Compounds	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 625									
2-Methylphenol (o-Cresol)	<10.0	2.6	10.0	ug/L	1		10/23/23 1114	10/31/23 2121	EPP
(3 & 4)-Methylphenol	<10.0	2.6	10.0	ug/L	1		10/23/23 1114	10/31/23 2121	EPP
Surrogate: 2-Fluorophenol	82.5	Limit: 19-139		% Rec	1		10/23/23 1114	10/31/23 2121	EPP
Surrogate: Phenol-d6	73.4	Limit: 14-154		% Rec	1		10/23/23 1114	10/31/23 2121	EPP
Surrogate: 2,4,6-Tribromophenol	101	Limit: 21-151		% Rec	1		10/23/23 1114	10/31/23 2121	EPP

Determination of Carbonyl Compounds	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 8315									
Formaldehyde	<10.0	10.0	10.0	ug/L	1		10/20/23 1311	10/23/23 1223	EPP

Determination of Conventional Chemistry Parameters	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 410.4									
COD, total	<54	9	54	mg/L	1		10/28/23 1828	11/01/23 1533	AKK
Method: EPA 420.1									
Phenols, total	**0.082**	0.024	0.035	mg/L	1			11/01/23 1336	AKK
Method: EPA 9020									
Total Organic Halogens (TOX)	<0.010	0.006	0.010	mg/L	1		11/09/23 0000	11/10/23 1011	LNH
Method: SM 2510B									
Conductivity	**636**	1.8	2.0	uS/cm	1		10/23/23 1122	10/23/23 1325	BSS

Keystone Laboratories - Newton

CERTIFICATE OF ANALYSIS

1GJ1657

Client Sample ID:	Upgradient Well		
Sample Matrix:	Water	**Collected By:**	Sherman Lundy
Lab Sample ID:	1GJ1657-05	**Collection Date:**	10/18/2023 10:00

Determination of Conventional Chemistry Parameters	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: TIMBERLINE									
Nitrogen, Ammonia	<0.10	0.08	0.10	mg/L	1		10/24/23 1622	10/26/23 1517	LJS
Method: USGS I-1750-85									
Total Dissolved Solids (TDS)	**425**	4	5	mg/L	1		10/20/23 1254	10/23/23 0825	MEA
Method: USGS I-3765-85									
Total Suspended Solids (TSS)	<1	0.9	1	mg/L	1		10/20/23 1305	10/23/23 1120	MEA

Determination of Inorganic Anions	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 9056									
Fluoride	**0.3**	0.02	0.1	mg/L	1		10/27/23 0000	10/27/23 1358	MID
Chloride	**35.0**	0.3	1.0	mg/L	1		10/27/23 0000	10/27/23 1358	MID
Sulfate	**109**	0.4	1.0	mg/L	1		10/27/23 0000	10/27/23 1358	MID

Determination of Total Metals	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: 200.7									
Iron, total	<0.047	0.047	0.100	mg/L	1		10/24/23 0755	10/25/23 1809	JAR
Magnesium, total	**20.8**	0.06	0.10	mg/L	1		10/24/23 0755	10/25/23 1809	JAR
Method: EPA 200.7									
Aluminum, total	<0.050	0.038	0.050	mg/L	1		10/24/23 0755	10/25/23 1809	JAR
Boron, total	**0.058**	0.056	0.100	mg/L	1		10/24/23 0755	10/25/23 1809	JAR
Method: EPA 200.8									
Antimony, total	**0.0009**	0.0008	0.0020	mg/L	4		10/23/23 0937	10/23/23 2354	RVV
Arsenic, total	**0.0006**	0.0006	0.0020	mg/L	4		10/23/23 0937	10/23/23 2354	RVV
Barium, total	**0.116**	0.0002	0.0020	mg/L	4		10/23/23 0937	10/23/23 2354	RVV
Beryllium, total	<0.0001	0.0001	0.0020	mg/L	4		10/23/23 0937	10/23/23 2354	RVV
Cadmium, total	<0.00008	0.00008	0.0002	mg/L	4		10/23/23 0937	10/23/23 2354	RVV
Chromium, total	<0.0007	0.0007	0.0020	mg/L	4		10/23/23 0937	10/23/23 2354	RVV
Cobalt, total	<0.0005	0.0005	0.0020	mg/L	4		10/23/23 0937	10/23/23 2354	RVV
Copper, total	**0.0067**	0.0008	0.0020	mg/L	4		10/23/23 0937	10/23/23 2354	RVV
Lead, total	**0.0007**	0.0005	0.0008	mg/L	4		10/23/23 0937	10/23/23 2354	RVV
Manganese, total	<0.0017	0.0017	0.0040	mg/L	4		10/23/23 0937	10/23/23 2354	RVV
Molybdenum, total	**0.0063**	0.0006	0.0020	mg/L	4		10/23/23 0937	10/23/23 2354	RVV
Nickel, total	**0.0018**	0.0007	0.0040	mg/L	4		10/23/23 0937	10/23/23 2354	RVV
Selenium, total	**0.0035**	0.0011	0.0040	mg/L	4		10/23/23 0937	10/23/23 2354	RVV
Silver, total	<0.0015	0.0015	0.0020	mg/L	4		10/23/23 0937	10/23/23 2354	RVV
Thallium, total	<0.0004	0.0004	0.0008	mg/L	4		10/23/23 0937	10/23/23 2354	RVV
Vanadium, total	<0.0043	0.0043	0.0080	mg/L	4		10/23/23 0937	10/23/23 2354	RVV

Client Sample ID:	Upgradient Well		
Sample Matrix:	Water	**Collected By:**	Sherman Lundy
Lab Sample ID:	1GJ1657-05	**Collection Date:**	10/18/2023 10:00

Determination of Total Metals	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Zinc, total	**0.0304**	0.0174	0.0200	mg/L	4		10/23/23 0937	10/23/23 2354	RVV
Method: SM 3112B									
Mercury, total	<0.00013	0.00013	0.00020	mg/L	1		10/20/23 0844	10/20/23 1722	JAR

Batch Log Summary

Method	Batch	Laboratory ID	Client / Source ID
SM 3112B	1GJ1247	1GJ1247-BLK1	
		1GJ1247-BS1	
		1GJ1657-01	Well #1
		1GJ1247-MS1	1GJ1657-01
		1GJ1247-MSD1	1GJ1657-01
		1GJ1657-02	Well #2
		1GJ1657-03	Well #3
		1GJ1657-04	Well #4
		1GJ1657-05	Upgradient Well

Method	Batch	Laboratory ID	Client / Source ID
USGS I-1750-85	1GJ1274	1GJ1274-BS1	
		1GJ1274-DUP1	1GJ1657-01
		1GJ1657-05	Upgradient Well
		1GJ1657-01	Well #1
		1GJ1657-02	Well #2
		1GJ1657-03	Well #3
		1GJ1657-04	Well #4
		1GJ1274-BLK1	

Method	Batch	Laboratory ID	Client / Source ID
USGS I-3765-85	1GJ1278	1GJ1657-02	Well #2
		1GJ1278-BS1	
		1GJ1657-01	Well #1
		1GJ1657-04	Well #4
		1GJ1657-05	Upgradient Well
		1GJ1657-03	Well #3
		1GJ1278-BLK1	
		1GJ1278-DUP1	1GJ1652-01

Method	Batch	Laboratory ID	Client / Source ID
EPA 8315	1GJ1279	1GJ1279-BLK1	
		1GJ1657-01	Well #1
		1GJ1657-02	Well #2
		1GJ1657-03	Well #3
		1GJ1657-04	Well #4
		1GJ1657-05	Upgradient Well
		1GJ1279-MS1	1GJ1657-01
		1GJ1279-MSD1	1GJ1657-01

Method	Batch	Laboratory ID	Client / Source ID

EPA 200.8	1GJ1310	1GJ1310-BLK1	
		1GJ1310-BLK1	
		1GJ1310-BS1	
		1GJ1310-BS1	
		1GJ1657-01	Well #1
		1GJ1657-01	Well #1
		1GJ1310-MS1	1GJ1657-01
		1GJ1310-MS1	1GJ1657-01
		1GJ1310-MSD1	1GJ1657-01
		1GJ1310-MSD1	1GJ1657-01
		1GJ1310-PS1	1GJ1657-01
		1GJ1310-PS1	1GJ1657-01
		1GJ1657-02	Well #2
		1GJ1657-02	Well #2
		1GJ1657-03	Well #3
		1GJ1657-03	Well #3
		1GJ1657-04	Well #4
		1GJ1657-04	Well #4
		1GJ1657-05	Upgradient Well
		1GJ1657-05	Upgradient Well

Method	Batch	Laboratory ID	Client / Source ID
EPA 625	1GJ1322	1GJ1322-BLK1	
		1GJ1322-BLK1	
		1GJ1322-BS1	
		1GJ1322-BS1	
		1GJ1322-BSD1	
		1GJ1322-BSD1	
		1GJ1322-SRM1	
		1GJ1322-SRM1	
		1GJ1657-01	Well #1
		1GJ1657-01	Well #1
		1GJ1657-02	Well #2
		1GJ1657-02	Well #2
		1GJ1657-03	Well #3
		1GJ1657-03	Well #3
		1GJ1657-04	Well #4
		1GJ1657-04	Well #4
		1GJ1657-05	Upgradient Well
		1GJ1657-05	Upgradient Well

Method	Batch	Laboratory ID	Client / Source ID
SM 2510B	1GJ1323	1GJ1323-DUP1	1GJ1770-01

SM 2510B	1GJ1323	1GJ1323-BLK1	
		1GJ1657-03	Well #3
		1GJ1657-04	Well #4
		1GJ1657-01	Well #1
		1GJ1657-05	Upgradient Well
		1GJ1323-MRL1	
		1GJ1657-02	Well #2
		1GJ1323-SRM1	

Method	Batch	Laboratory ID	Client / Source ID
EPA 200.7	1GJ1372	1GJ1372-BLK1	
		1GJ1372-BLK1	
200.7		1GJ1372-BLK1	
EPA 200.7		1GJ1372-BS1	
200.7		1GJ1372-BS1	
EPA 200.7		1GJ1372-BS1	
		1GJ1657-01	Well #1
		1GJ1657-01	Well #1
200.7		1GJ1657-01	Well #1
EPA 200.7		1GJ1372-MS1	1GJ1657-01
200.7		1GJ1372-MS1	1GJ1657-01
EPA 200.7		1GJ1372-MS1	1GJ1657-01
		1GJ1372-MSD1	1GJ1657-01
200.7		1GJ1372-MSD1	1GJ1657-01
EPA 200.7		1GJ1372-MSD1	1GJ1657-01
		1GJ1372-PS1	1GJ1657-01
200.7		1GJ1372-PS1	1GJ1657-01
EPA 200.7		1GJ1372-PS1	1GJ1657-01
200.7		1GJ1657-02	Well #2
EPA 200.7		1GJ1657-02	Well #2
		1GJ1657-02	Well #2
200.7		1GJ1657-03	Well #3
EPA 200.7		1GJ1657-03	Well #3
		1GJ1657-03	Well #3
		1GJ1657-04	Well #4
		1GJ1657-04	Well #4
200.7		1GJ1657-04	Well #4
		1GJ1657-05	Upgradient Well
EPA 200.7		1GJ1657-05	Upgradient Well
		1GJ1657-05	Upgradient Well

Method	Batch	Laboratory ID	Client / Source ID
TIMBERLINE	1GJ1471	1GJ1471-BLK1	

TIMBERLINE	1GJ1471	1GJ1471-BS1	
		1GJ1471-MS1	1GJ1650-02
		1GJ1471-MSD1	1GJ1650-02
		1GJ1657-01	Well #1
		1GJ1657-02	Well #2
		1GJ1657-03	Well #3
		1GJ1657-04	Well #4
		1GJ1657-05	Upgradient Well

Method	Batch	Laboratory ID	Client / Source ID
EPA 624	1GJ1580	1GJ1580-BS1	
		1GJ1580-BSD1	
		1GJ1580-BLK1	
		1GJ1657-01	Well #1
		1GJ1657-02	Well #2
		1GJ1657-03	Well #3
		1GJ1657-04	Well #4
		1GJ1657-05	Upgradient Well
		1GJ1580-MS1	3GJ0143-01
		1GJ1580-MSD1	3GJ0143-01

Method	Batch	Laboratory ID	Client / Source ID
EPA 410.4	1GJ1709	1GJ1657-05	Upgradient Well
		1GJ1709-BS1	
		1GJ1709-BLK1	
		1GJ1709-MSD1	1GJ1657-01
		1GJ1657-04	Well #4
		1GJ1657-02	Well #2
		1GJ1657-03	Well #3
		1GJ1709-MS1	1GJ1657-01
		1GJ1657-01	Well #1

Method	Batch	Laboratory ID	Client / Source ID
EPA 9056	1GJ1774	1GJ1774-BLK1	
		1GJ1774-BLK1	
		1GJ1774-MRL1	
		1GJ1774-MRL1	
		1GJ1774-BS1	
		1GJ1774-BS1	
		1GJ1774-BSD1	
		1GJ1774-BSD1	
		1GJ1657-01	Well #1
		1GJ1657-01	Well #1
		1GJ1657-02	Well #2

EPA 9056	1GJ1774	1GJ1657-02	Well #2
		1GJ1657-03	Well #3
		1GJ1657-03	Well #3
		1GJ1657-04	Well #4
		1GJ1657-04	Well #4
		1GJ1657-05	Upgradient Well
		1GJ1657-05	Upgradient Well
		1GJ1774-BLK2	
		1GJ1774-BLK2	
		1GJ1774-MS1	1GJ2051-01
		1GJ1774-MS1	1GJ2051-01
		1GJ1774-MSD1	1GJ2051-01
		1GJ1774-MSD1	1GJ2051-01
		1GJ1657-02	Well #2
		1GJ1774-BS2	
		1GJ1774-BS2	
		1GJ1774-BSD2	
		1GJ1774-BSD2	
		1GJ1774-MS2	1GJ2199-02
		1GJ1774-MS2	1GJ2199-02
		1GJ1774-MSD2	1GJ2199-02
		1GJ1774-MSD2	1GJ2199-02
		1GJ1774-BLK3	
		1GJ1774-BLK3	

Method	Batch	Laboratory ID	Client / Source ID
EPA 420.1	1GK0046	1GJ1657-02	Well #2
		1GK0046-BLK1	
		1GJ1657-04	Well #4
		1GJ1657-03	Well #3
		1GJ1657-01	Well #1
		1GK0046-MSD1	1GJ1657-01
		1GK0046-MS1	1GJ1657-01
		1GJ1657-05	Upgradient Well
		1GK0046-BS1	

Method	Batch	Laboratory ID	Client / Source ID
EPA 9020	1GK0635	1GJ1657-04	Well #4
		1GK0635-SRM1	
		1GK0635-SRM2	
		1GK0635-SRM3	
		1GJ1657-05	Upgradient Well
		1GJ1657-02	Well #2

EPA 9020	1GK0635	1GJ1657-03	Well #3
		1GK0635-BLK1	
		1GK0635-BS1	
		1GK0635-BSD1	
		1GJ1657-01	Well #1

Batch Quality Control Summary: Keystone Laboratories - Newton

Determination of Volatile Organic Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GJ1580 - EPA 5030B - EPA 624										
Blank (1GJ1580-BLK1)			Prepared: 10/25/23 00:00 Analyzed: 10/25/23 09:33							
2-Butanone (MEK)	<10.0	10.0	ug/L							
Chloroform	<1.0	1.0	ug/L							
Benzene	<1.0	1.0	ug/L							
Surrogate: Dibromofluoromethane	*46.3*		ug/L	*50.4*		*92.0*	*79-129*			
Surrogate: 1,2-Dichloroethane-d4	*47.6*		ug/L	*50.4*		*94.5*	*66-134*			
Surrogate: Toluene-d8	*48.8*		ug/L	*50.2*		*97.2*	*91-113*			
Surrogate: 4-Bromofluorobenzene	*49.4*		ug/L	*50.4*		*98.0*	*83-112*			
LCS (1GJ1580-BS1)			Prepared: 10/25/23 00:00 Analyzed: 10/25/23 08:24							
2-Butanone (MEK)	108.1	10.0	ug/L	103		105	44-158			
Chloroform	47.93	1.0	ug/L	50.0		95.9	76-132			
Benzene	49.03	1.0	ug/L	50.0		98.1	77-130			
Surrogate: Dibromofluoromethane	*47.2*		ug/L	*50.4*		*93.8*	*79-129*			
Surrogate: 1,2-Dichloroethane-d4	*47.2*		ug/L	*50.4*		*93.7*	*66-134*			
Surrogate: Toluene-d8	*50.1*		ug/L	*50.2*		*99.6*	*91-113*			
Surrogate: 4-Bromofluorobenzene	*50.1*		ug/L	*50.4*		*99.4*	*83-112*			
LCS Dup (1GJ1580-BSD1)			Prepared: 10/25/23 00:00 Analyzed: 10/25/23 08:47							
2-Butanone (MEK)	107.4	10.0	ug/L	103		104	44-158	0.668	25	
Chloroform	47.62	1.0	ug/L	50.0		95.2	76-132	0.649	26	
Benzene	48.14	1.0	ug/L	50.0		96.3	77-130	1.83	27	
Surrogate: Dibromofluoromethane	*47.5*		ug/L	*50.4*		*94.3*	*79-129*			
Surrogate: 1,2-Dichloroethane-d4	*47.4*		ug/L	*50.4*		*94.0*	*66-134*			
Surrogate: Toluene-d8	*49.6*		ug/L	*50.2*		*98.7*	*91-113*			
Surrogate: 4-Bromofluorobenzene	*50.0*		ug/L	*50.4*		*99.3*	*83-112*			
Matrix Spike (1GJ1580-MS1)	**Source: 3GJ0143-01**		Prepared: 10/25/23 00:00 Analyzed: 10/25/23 19:01							
2-Butanone (MEK)	1022	100	ug/L	1030	ND	99.0	48-169			
Chloroform	470.2	10.0	ug/L	500	5.03	93.0	75-133			
Benzene	480.7	10.0	ug/L	500	ND	96.1	79-128			
Surrogate: Dibromofluoromethane	*469*		ug/L	*504*		*93.1*	*79-129*			
Surrogate: 1,2-Dichloroethane-d4	*472*		ug/L	*504*		*93.6*	*66-134*			
Surrogate: Toluene-d8	*501*		ug/L	*502*		*99.6*	*91-113*			
Surrogate: 4-Bromofluorobenzene	*497*		ug/L	*504*		*98.5*	*83-112*			
Matrix Spike Dup (1GJ1580-MSD1)	**Source: 3GJ0143-01**		Prepared: 10/25/23 00:00 Analyzed: 10/25/23 19:23							
2-Butanone (MEK)	1065	100	ug/L	1030	ND	103	48-169	4.08	17	

Determination of Volatile Organic Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GJ1580 - EPA 5030B - EPA 624										
Matrix Spike Dup (1GJ1580-MSD1)	**Source: 3GJ0143-01**		Prepared: 10/25/23 00:00 Analyzed: 10/25/23 19:23							
Chloroform	472.0	10.0	ug/L	500	5.03	93.4	75-133	0.382	16	
Benzene	469.3	10.0	ug/L	500	ND	93.9	79-128	2.40	12	
Surrogate: Dibromofluoromethane	*477*		ug/L	*504*		*94.7*	*79-129*			
Surrogate: 1,2-Dichloroethane-d4	*472*		ug/L	*504*		*93.7*	*66-134*			
Surrogate: Toluene-d8	*497*		ug/L	*502*		*99.0*	*91-113*			
Surrogate: 4-Bromofluorobenzene	*496*		ug/L	*504*		*98.4*	*83-112*			

Determination of Base/Neutral Extractable Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GJ1322 - EPA 625 BNA - EPA 625										
Blank (1GJ1322-BLK1)			Prepared: 10/23/23 11:14 Analyzed: 10/31/23 16:27							
Pyridine	<10	10	ug/L							
LCS (1GJ1322-BS1)			Prepared: 10/23/23 11:14 Analyzed: 10/31/23 16:51							
Pyridine	15.0	10	ug/L	40.0		37.4	13-127			
LCS Dup (1GJ1322-BSD1)			Prepared: 10/23/23 11:14 Analyzed: 10/31/23 17:16							
Pyridine	14.1	10	ug/L	40.0		35.3	13-127	5.84	30	
Reference (1GJ1322-SRM1)			Prepared: 10/23/23 11:14 Analyzed: 10/31/23 17:40							
Pyridine	28.5	10	ug/L	40.0		71.3	80-120			QR-06

Determination of Acid Extractable Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GJ1322 - EPA 625 BNA - EPA 625										
Blank (1GJ1322-BLK1)			Prepared: 10/23/23 11:14 Analyzed: 10/31/23 16:27							
2-Methylphenol (o-Cresol)	<10.0	10.0	ug/L							
(3 & 4)-Methylphenol	<10.0	10.0	ug/L							
Surrogate: 2-Fluorophenol	*52.0*		ug/L	*60.6*		*85.9*	*19-139*			
Surrogate: Phenol-d6	*47.5*		ug/L	*61.9*		*76.8*	*14-154*			
Surrogate: 2,4,6-Tribromophenol	*66.2*		ug/L	*62.2*		*106*	*21-151*			
LCS (1GJ1322-BS1)			Prepared: 10/23/23 11:14 Analyzed: 10/31/23 16:51							
2-Methylphenol (o-Cresol)	31.7	10.0	ug/L	40.0		79.2	50-138			
(3 & 4)-Methylphenol	32.9	10.0	ug/L	40.0		82.4	56-130			
Surrogate: 2-Fluorophenol	*47.7*		ug/L	*60.6*		*78.7*	*19-139*			
Surrogate: Phenol-d6	*43.4*		ug/L	*61.9*		*70.1*	*14-154*			
Surrogate: 2,4,6-Tribromophenol	*70.2*		ug/L	*62.2*		*113*	*21-151*			
LCS Dup (1GJ1322-BSD1)			Prepared: 10/23/23 11:14 Analyzed: 10/31/23 17:16							
2-Methylphenol (o-Cresol)	30.8	10.0	ug/L	40.0		77.0	50-138	2.72	24	

Determination of Acid Extractable Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GJ1322 - EPA 625 BNA - EPA 625										
LCS Dup (1GJ1322-BSD1)				Prepared: 10/23/23 11:14 Analyzed: 10/31/23 17:16						
(3 & 4)-Methylphenol	31.8	10.0	ug/L	40.0		79.6	56-130	3.36	26	
Surrogate: 2-Fluorophenol	*43.5*		ug/L	*60.6*		*71.8*	*19-139*			
Surrogate: Phenol-d6	*39.6*		ug/L	*61.9*		*64.0*	*14-154*			
Surrogate: 2,4,6-Tribromophenol	*67.5*		ug/L	*62.2*		*108*	*21-151*			
Reference (1GJ1322-SRM1)				Prepared: 10/23/23 11:14 Analyzed: 10/31/23 17:40						
2-Methylphenol (o-Cresol)	31.4	10.0	ug/L	40.0		78.5	80-120			QR-06
(3 & 4)-Methylphenol	32.5	10.0	ug/L	40.0		81.2	80-120			
Surrogate: 2-Fluorophenol	*54.8*		ug/L	*60.6*		*90.4*	*19-139*			
Surrogate: Phenol-d6	*52.1*		ug/L	*61.9*		*84.2*	*14-154*			
Surrogate: 2,4,6-Tribromophenol	*69.3*		ug/L	*62.2*		*111*	*21-151*			

Determination of Carbonyl Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GJ1279 - EPA 8315 Aldehydes - EPA 8315										
Blank (1GJ1279-BLK1)				Prepared: 10/20/23 13:11 Analyzed: 10/23/23 10:48						
Formaldehyde	<10.0	10.0	ug/L							
Matrix Spike (1GJ1279-MS1)	**Source: 1GJ1657-01**			Prepared: 10/20/23 13:11 Analyzed: 10/23/23 13:02						
Formaldehyde	305.0	10.0	ug/L	500	ND	61.0	48-148			
Matrix Spike Dup (1GJ1279-MSD1)	**Source: 1GJ1657-01**			Prepared: 10/20/23 13:11 Analyzed: 10/23/23 13:21						
Formaldehyde	506.4	10.0	ug/L	500	ND	101	48-148	49.6	30	QR-02

Determination of Conventional Chemistry Parameters	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GJ1274 - Wet Chem Preparation - USGS I-1750-85										
Blank (1GJ1274-BLK1)				Prepared: 10/20/23 12:54 Analyzed: 10/23/23 08:25						
Total Dissolved Solids (TDS)	<5	5	mg/L							
LCS (1GJ1274-BS1)				Prepared: 10/20/23 12:54 Analyzed: 10/23/23 08:25						
Total Dissolved Solids (TDS)	97	5	mg/L	100		97.3	71-114			
Duplicate (1GJ1274-DUP1)	**Source: 1GJ1657-01**			Prepared: 10/20/23 12:54 Analyzed: 10/23/23 08:25						
Total Dissolved Solids (TDS)	381	5	mg/L		369			3.20	30	
Batch 1GJ1278 - Wet Chem Preparation - USGS I-3765-85										
Blank (1GJ1278-BLK1)				Prepared: 10/20/23 13:05 Analyzed: 10/23/23 11:20						
Total Suspended Solids (TSS)	<1	1	mg/L							
LCS (1GJ1278-BS1)				Prepared: 10/20/23 13:05 Analyzed: 10/23/23 11:20						
Total Suspended Solids (TSS)	13.1	1	mg/L	15.0		87.3	74-114			

Determination of Conventional Chemistry Parameters	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GJ1278 - Wet Chem Preparation - USGS I-3765-85										
Duplicate (1GJ1278-DUP1)	**Source: 1GJ1652-01**		Prepared: 10/20/23 13:05 Analyzed: 10/23/23 11:20							
Total Suspended Solids (TSS)	73.0	1	mg/L		74.0			1.36	30	
Batch 1GJ1323 - Wet Chem Preparation - SM 2510B										
Blank (1GJ1323-BLK1)			Prepared: 10/23/23 11:22 Analyzed: 10/23/23 13:25							
Conductivity	<2.0	2.0	uS/cm							
Duplicate (1GJ1323-DUP1)	**Source: 1GJ1770-01**		Prepared: 10/23/23 11:22 Analyzed: 10/23/23 13:25							
Conductivity	560	2.0	uS/cm		560			0.107	10	
Reference (1GJ1323-SRM1)			Prepared: 10/23/23 11:22 Analyzed: 10/23/23 13:25							
Conductivity	242	2.0	uS/cm	250		96.6	90-110			
Batch 1GJ1471 - General Prep HPLC/IC - TIMBERLINE										
Blank (1GJ1471-BLK1)			Prepared: 10/24/23 16:22 Analyzed: 10/26/23 14:52							
Nitrogen, Ammonia	<0.10	0.10	mg/L							
LCS (1GJ1471-BS1)			Prepared: 10/24/23 16:22 Analyzed: 10/26/23 14:53							
Nitrogen, Ammonia	4.85	0.10	mg/L	5.00		97.0	90-114			
Matrix Spike (1GJ1471-MS1)	**Source: 1GJ1650-02**		Prepared: 10/24/23 16:22 Analyzed: 10/26/23 14:55							
Nitrogen, Ammonia	5.07	0.10	mg/L	5.00	ND	101	84-115			
Matrix Spike Dup (1GJ1471-MSD1)	**Source: 1GJ1650-02**		Prepared: 10/24/23 16:22 Analyzed: 10/26/23 14:56							
Nitrogen, Ammonia	5.10	0.10	mg/L	5.00	ND	102	84-115	0.612	20	
Batch 1GJ1709 - Wet Chem Preparation - EPA 410.4										
Blank (1GJ1709-BLK1)			Prepared: 10/28/23 18:28 Analyzed: 11/01/23 15:33							
COD, total	<20	20	mg/L							
LCS (1GJ1709-BS1)			Prepared: 10/28/23 18:28 Analyzed: 11/01/23 15:33							
COD, total	156	20	mg/L	146		107	90-110			
Matrix Spike (1GJ1709-MS1)	**Source: 1GJ1657-01**		Prepared: 10/28/23 18:28 Analyzed: 11/01/23 15:33							
COD, total	421	40	mg/L	292	ND	144	90-110			QM-07
Matrix Spike Dup (1GJ1709-MSD1)	**Source: 1GJ1657-01**		Prepared: 10/28/23 18:28 Analyzed: 11/01/23 15:33							
COD, total	296	40	mg/L	292	ND	101	90-110	34.7	10	QM-07
Batch 1GK0046 - Wet Chem Preparation - EPA 420.1										
Blank (1GK0046-BLK1)			Prepared & Analyzed: 11/01/23 13:36							
Phenols, total	<0.035	0.035	mg/L							
LCS (1GK0046-BS1)			Prepared & Analyzed: 11/01/23 13:36							
Phenols, total	0.361	0.035	mg/L	0.400		90.2	62-110			
Matrix Spike (1GK0046-MS1)	**Source: 1GJ1657-01**		Prepared & Analyzed: 11/01/23 13:36							
Phenols, total	0.370	0.035	mg/L	0.400	0.0473	80.8	57-124			

Determination of Conventional Chemistry Parameters	Result		RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GK0046 - Wet Chem Preparation - EPA 420.1											
Matrix Spike Dup (1GK0046-MSD1)	**Source: 1GJ1657-01**			Prepared & Analyzed: 11/01/23 13:36							
Phenols, total	0.462		0.035	mg/L	0.400	0.0473	104	57-124	22.1	21	QR-02
Batch 1GK0635 - TOX/TX/EOX - EPA 9020											
Blank (1GK0635-BLK1)				Prepared: 11/09/23 00:00 Analyzed: 11/10/23 10:11							
Total Organic Halogens (TOX)	<0.010		0.010	mg/L							
LCS (1GK0635-BS1)				Prepared: 11/09/23 00:00 Analyzed: 11/10/23 10:11							
Total Organic Halogens (TOX)	0.1220		0.010	mg/L	0.121		101	76-114			
LCS Dup (1GK0635-BSD1)				Prepared: 11/09/23 00:00 Analyzed: 11/10/23 10:11							
Total Organic Halogens (TOX)	0.1126		0.010	mg/L	0.121		93.4	76-114	7.99	18	
Reference (1GK0635-SRM1)				Prepared: 11/09/23 00:00 Analyzed: 11/10/23 10:11							
Total Organic Halogens (TOX)	0.1132		0.010	mg/L	0.111		102	90-110			
Reference (1GK0635-SRM2)				Prepared: 11/09/23 00:00 Analyzed: 11/10/23 10:11							
Total Organic Halogens (TOX)	0.1081		0.010	mg/L	0.111		97.3	90-110			
Reference (1GK0635-SRM3)				Prepared: 11/09/23 00:00 Analyzed: 11/10/23 10:11							
Total Organic Halogens (TOX)	0.1094		0.010	mg/L	0.111		98.5	90-110			

Determination of Inorganic Anions	Result		RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GJ1774 - General Prep HPLC/IC - EPA 9056											
Blank (1GJ1774-BLK1)				Prepared: 10/27/23 00:00 Analyzed: 10/27/23 10:20							
Fluoride	<0.1		0.1	mg/L							
Chloride	<0.3	0.3	1.0	mg/L							
Sulfate	<0.4	0.4	1.0	mg/L							
Blank (1GJ1774-BLK2)				Prepared: 10/27/23 00:00 Analyzed: 10/27/23 14:34							
Fluoride	<0.1		0.1	mg/L							
Chloride	<0.3	0.3	1.0	mg/L							
Sulfate	<0.4	0.4	1.0	mg/L							
Blank (1GJ1774-BLK3)				Prepared: 10/27/23 00:00 Analyzed: 10/28/23 01:28							
Fluoride	<0.1		0.1	mg/L							
Chloride	<0.3	0.3	1.0	mg/L							
Sulfate	<0.4	0.4	1.0	mg/L							
LCS (1GJ1774-BS1)				Prepared: 10/27/23 00:00 Analyzed: 10/27/23 10:56							
Fluoride	1.08		0.1	mg/L	1.19		91.1	80-120			
Chloride	14.73	0.3	1.0	mg/L	15.2		97.0	80-120			
Sulfate	34.21	0.4	1.0	mg/L	34.1		100	80-120			
LCS (1GJ1774-BS2)				Prepared: 10/27/23 00:00 Analyzed: 10/27/23 21:14							
Fluoride	1.08		0.1	mg/L	1.19		90.5	80-120			
Chloride	14.89	0.3	1.0	mg/L	15.2		98.1	80-120			

Determination of Inorganic Anions	Result	MDL	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GJ1774 - General Prep HPLC/IC - EPA 9056											
LCS (1GJ1774-BS2)					Prepared: 10/27/23 00:00 Analyzed: 10/27/23 21:14						
Sulfate	34.18	0.4	1.0	mg/L	34.1		100	80-120			
LCS Dup (1GJ1774-BSD1)					Prepared: 10/27/23 00:00 Analyzed: 10/27/23 11:15						
Fluoride	1.08		0.1	mg/L	1.19		90.5	80-120	0.647	10	
Chloride	14.74	0.3	1.0	mg/L	15.2		97.1	80-120	0.0882	10	
Sulfate	34.29	0.4	1.0	mg/L	34.1		101	80-120	0.231	10	
LCS Dup (1GJ1774-BSD2)					Prepared: 10/27/23 00:00 Analyzed: 10/27/23 21:32						
Fluoride	1.08		0.1	mg/L	1.19		90.4	80-120	0.0928	10	
Chloride	14.86	0.3	1.0	mg/L	15.2		97.9	80-120	0.229	10	
Sulfate	34.07	0.4	1.0	mg/L	34.1		100	80-120	0.349	10	
Matrix Spike (1GJ1774-MS1)		**Source: 1GJ2051-01**			Prepared: 10/27/23 00:00 Analyzed: 10/27/23 16:59						
Fluoride	1.24		0.1	mg/L	1.19	ND	104	77-121			
Chloride	15.05	0.3	1.0	mg/L	15.2	ND	99.1	81-116			
Sulfate	34.33	0.4	1.0	mg/L	34.1	ND	101	87-113			
Matrix Spike (1GJ1774-MS2)		**Source: 1GJ2199-02**			Prepared: 10/27/23 00:00 Analyzed: 10/28/23 00:33						
Fluoride	13.28		1.0	mg/L	11.9	1.40	99.7	77-121			
Chloride	444.2	3.4	10.0	mg/L	152	276.4	111	81-116			
Sulfate	718.6	3.6	10.0	mg/L	341	356.3	106	87-113			
Matrix Spike Dup (1GJ1774-MSD1)		**Source: 1GJ2051-01**			Prepared: 10/27/23 00:00 Analyzed: 10/27/23 17:18						
Fluoride	1.24		0.1	mg/L	1.19	ND	104	77-121	0.404	10	
Chloride	14.96	0.3	1.0	mg/L	15.2	ND	98.5	81-116	0.620	10	
Sulfate	34.26	0.4	1.0	mg/L	34.1	ND	101	87-113	0.204	10	
Matrix Spike Dup (1GJ1774-MSD2)		**Source: 1GJ2199-02**			Prepared: 10/27/23 00:00 Analyzed: 10/28/23 00:52						
Fluoride	12.98		1.0	mg/L	11.9	1.40	97.2	77-121	2.28	10	
Chloride	439.5	3.4	10.0	mg/L	152	276.4	107	81-116	1.05	10	
Sulfate	722.2	3.6	10.0	mg/L	341	356.3	107	87-113	0.500	10	

Determination of Total Metals	Result	MDL	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GJ1247 - EPA 7470A Hg Water - SM 3112B											
Blank (1GJ1247-BLK1)					Prepared: 10/20/23 08:44 Analyzed: 10/20/23 17:02						
Mercury, total	<0.00013	0.00013	0.00020	mg/L							
LCS (1GJ1247-BS1)					Prepared: 10/20/23 08:44 Analyzed: 10/20/23 17:04						
Mercury, total	0.00243	0.00013	0.00020	mg/L	0.00250		97.3	87-118			
Matrix Spike (1GJ1247-MS1)		**Source: 1GJ1657-01**			Prepared: 10/20/23 08:44 Analyzed: 10/20/23 17:12						
Mercury, total	0.00251	0.00013	0.00020	mg/L	0.00250	ND	101	62-131			
Matrix Spike Dup (1GJ1247-MSD1)		**Source: 1GJ1657-01**			Prepared: 10/20/23 08:44 Analyzed: 10/20/23 17:14						
Mercury, total	0.00230	0.00013	0.00020	mg/L	0.00250	ND	92.1	62-131	8.80	17	
Batch 1GJ1310 - EPA 200.2 Total ICP-MS - EPA 200.8											

Determination of Total Metals	Result	MDL	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GJ1310 - EPA 200.2 Total ICP-MS - EPA 200.8											
Blank (1GJ1310-BLK1)				Prepared: 10/23/23 09:37 Analyzed: 10/23/23 22:30							
Antimony, total	<0.0008	0.0008	0.0020	mg/L							
Arsenic, total	<0.0006	0.0006	0.0020	mg/L							
Barium, total	<0.0002	0.0002	0.0020	mg/L							
Beryllium, total	<0.0001	0.0001	0.0020	mg/L							
Cadmium, total	<0.00008	0.00008	0.0002	mg/L							
Chromium, total	<0.0007	0.0007	0.0020	mg/L							
Cobalt, total	<0.0005	0.0005	0.0020	mg/L							
Copper, total	<0.0008	0.0008	0.0020	mg/L							
Lead, total	<0.0005	0.0005	0.0008	mg/L							
Manganese, total	<0.0017	0.0017	0.0040	mg/L							
Molybdenum, total	<0.0006	0.0006	0.0020	mg/L							
Nickel, total	<0.0007	0.0007	0.0040	mg/L							
Selenium, total	<0.0011	0.0011	0.0040	mg/L							
Silver, total	<0.0015	0.0015	0.0020	mg/L							
Thallium, total	<0.0004	0.0004	0.0008	mg/L							
Vanadium, total	<0.0043	0.0043	0.0080	mg/L							
Zinc, total	<0.0174	0.0174	0.0200	mg/L							
LCS (1GJ1310-BS1)				Prepared: 10/23/23 09:37 Analyzed: 10/23/23 22:36							
Antimony, total	0.0952	0.0008	0.0020	mg/L	0.100		95.2	85-115			
Arsenic, total	0.0952	0.0006	0.0020	mg/L	0.100		95.2	85-115			
Barium, total	0.102	0.0002	0.0020	mg/L	0.100		102	85-115			
Beryllium, total	0.0933	0.0001	0.0020	mg/L	0.100		93.3	85-115			
Cadmium, total	0.0945	0.00008	0.0002	mg/L	0.100		94.5	85-115			
Chromium, total	0.0947	0.0007	0.0020	mg/L	0.100		94.7	85-115			
Cobalt, total	0.0973	0.0005	0.0020	mg/L	0.100		97.3	85-115			
Copper, total	0.0954	0.0008	0.0020	mg/L	0.100		95.4	85-115			
Lead, total	0.0975	0.0005	0.0008	mg/L	0.100		97.5	85-115			
Manganese, total	0.0936	0.0017	0.0040	mg/L	0.100		93.6	85-115			
Molybdenum, total	0.0975	0.0006	0.0020	mg/L	0.100		97.5	85-115			
Nickel, total	0.0964	0.0007	0.0040	mg/L	0.100		96.4	85-115			
Selenium, total	0.0920	0.0011	0.0040	mg/L	0.100		92.0	85-115			
Silver, total	0.104	0.0015	0.0020	mg/L	0.100		104	85-115			
Thallium, total	0.0964	0.0004	0.0008	mg/L	0.100		96.4	85-115			
Vanadium, total	0.0971	0.0043	0.0080	mg/L	0.100		97.1	85-115			
Zinc, total	0.0938	0.0174	0.0200	mg/L	0.100		93.8	85-115			
Matrix Spike (1GJ1310-MS1)		**Source: 1GJ1657-01**		Prepared: 10/23/23 09:37 Analyzed: 10/23/23 23:06							
Antimony, total	0.0977	0.0008	0.0020	mg/L	0.100	ND	97.7	70-130			
Arsenic, total	0.0970	0.0006	0.0020	mg/L	0.100	0.0015	95.5	70-130			
Barium, total	0.460	0.0002	0.0020	mg/L	0.100	0.371	88.9	70-130			
Beryllium, total	0.0936	0.0001	0.0020	mg/L	0.100	ND	93.6	70-130			
Cadmium, total	0.0958	0.00008	0.0002	mg/L	0.100	ND	95.8	70-130			
Chromium, total	0.0936	0.0007	0.0020	mg/L	0.100	ND	93.6	70-130			
Cobalt, total	0.0942	0.0005	0.0020	mg/L	0.100	ND	94.2	70-130			

Determination of Total Metals	Result	MDL	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GJ1310 - EPA 200.2 Total ICP-MS - EPA 200.8											
Matrix Spike (1GJ1310-MS1)		**Source: 1GJ1657-01**		Prepared: 10/23/23 09:37 Analyzed: 10/23/23 23:06							
Copper, total	0.0933	0.0008	0.0020	mg/L	0.100	0.0032	90.1	70-130			
Lead, total	0.104	0.0005	0.0008	mg/L	0.100	ND	104	70-130			
Manganese, total	0.0954	0.0017	0.0040	mg/L	0.100	0.0055	90.0	70-130			
Molybdenum, total	0.106	0.0006	0.0020	mg/L	0.100	0.0010	105	70-130			
Nickel, total	0.0947	0.0007	0.0040	mg/L	0.100	0.0013	93.4	70-130			
Selenium, total	0.0935	0.0011	0.0040	mg/L	0.100	ND	93.5	70-130			
Silver, total	0.104	0.0015	0.0020	mg/L	0.100	ND	104	70-130			
Thallium, total	0.0961	0.0004	0.0008	mg/L	0.100	ND	96.1	70-130			
Vanadium, total	0.0984	0.0043	0.0080	mg/L	0.100	ND	98.4	70-130			
Zinc, total	0.0974	0.0174	0.0200	mg/L	0.100	ND	97.4	70-130			
Matrix Spike Dup (1GJ1310-MSD1)		**Source: 1GJ1657-01**		Prepared: 10/23/23 09:37 Analyzed: 10/23/23 23:12							
Antimony, total	0.101	0.0008	0.0020	mg/L	0.100	ND	101	70-130	2.88	20	
Arsenic, total	0.100	0.0006	0.0020	mg/L	0.100	0.0015	98.7	70-130	3.28	20	
Barium, total	0.486	0.0002	0.0020	mg/L	0.100	0.371	115	70-130	5.50	20	
Beryllium, total	0.0969	0.0001	0.0020	mg/L	0.100	ND	96.9	70-130	3.44	20	
Cadmium, total	0.0992	0.00008	0.0002	mg/L	0.100	ND	99.2	70-130	3.52	20	
Chromium, total	0.0962	0.0007	0.0020	mg/L	0.100	ND	96.2	70-130	2.71	20	
Cobalt, total	0.0966	0.0005	0.0020	mg/L	0.100	ND	96.6	70-130	2.44	20	
Copper, total	0.0959	0.0008	0.0020	mg/L	0.100	0.0032	92.7	70-130	2.78	20	
Lead, total	0.0966	0.0005	0.0008	mg/L	0.100	ND	96.6	70-130	6.99	20	
Manganese, total	0.0988	0.0017	0.0040	mg/L	0.100	0.0055	93.3	70-130	3.44	20	
Molybdenum, total	0.107	0.0006	0.0020	mg/L	0.100	0.0010	106	70-130	1.27	20	
Nickel, total	0.0952	0.0007	0.0040	mg/L	0.100	0.0013	94.0	70-130	0.558	20	
Selenium, total	0.0970	0.0011	0.0040	mg/L	0.100	ND	97.0	70-130	3.75	20	
Silver, total	0.107	0.0015	0.0020	mg/L	0.100	ND	107	70-130	3.41	20	
Thallium, total	0.0976	0.0004	0.0008	mg/L	0.100	ND	97.6	70-130	1.50	20	
Vanadium, total	0.101	0.0043	0.0080	mg/L	0.100	ND	101	70-130	3.05	20	
Zinc, total	0.0969	0.0174	0.0200	mg/L	0.100	ND	96.9	70-130	0.545	20	
Post Spike (1GJ1310-PS1)		**Source: 1GJ1657-01**		Prepared: 10/23/23 09:37 Analyzed: 10/23/23 23:18							
Antimony, total	0.0825			mg/L	0.0800	0.0002	103	70-130			
Arsenic, total	0.0812			mg/L	0.0800	0.0015	99.6	70-130			
Barium, total	0.456			mg/L	0.0800	0.363	116	70-130			
Beryllium, total	0.0792			mg/L	0.0800	0.000004	99.1	70-130			
Cadmium, total	0.0804			mg/L	0.0800	-0.000001	101	70-130			
Chromium, total	0.0785			mg/L	0.0800	0.0002	97.8	70-130			
Cobalt, total	0.0795			mg/L	0.0800	0.00005	99.4	70-130			
Copper, total	0.0793			mg/L	0.0800	0.0031	95.2	70-130			
Lead, total	0.0795			mg/L	0.0800	0.0001	99.2	70-130			
Manganese, total	0.0821			mg/L	0.0800	0.0054	96.0	70-130			
Molybdenum, total	0.0870			mg/L	0.0800	0.0010	108	70-130			
Nickel, total	0.0808			mg/L	0.0800	0.0012	99.5	70-130			
Selenium, total	0.0739			mg/L	0.0800	0.0005	91.7	70-130			
Silver, total	0.0863			mg/L	0.0800	0.0011	106	70-130			

Determination of Total Metals	Result	MDL	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GJ1310 - EPA 200.2 Total ICP-MS - EPA 200.8											
Post Spike (1GJ1310-PS1)		**Source: 1GJ1657-01**		Prepared: 10/23/23 09:37 Analyzed: 10/23/23 23:18							
Thallium, total	0.0811			mg/L	0.0800	0.00004	101	70-130			
Vanadium, total	0.0852			mg/L	0.0800	0.0021	104	70-130			
Zinc, total	0.0809			mg/L	0.0800	0.0052	94.6	70-130			
Batch 1GJ1372 - EPA 200.2 Total ICP-OES (200.7) - EPA 200.7											
Blank (1GJ1372-BLK1)				Prepared: 10/24/23 07:55 Analyzed: 10/25/23 17:04							
Aluminum, total	<0.050		0.050	mg/L							
Boron, total	<0.056	0.056	0.100	mg/L							
Iron, total	<0.047	0.047	0.100	mg/L							
Magnesium, total	<0.06	0.06	0.10	mg/L							
LCS (1GJ1372-BS1)				Prepared: 10/24/23 07:55 Analyzed: 10/25/23 17:10							
Aluminum, total	2.35		0.050	mg/L	2.20		107	85-115			
Boron, total	0.214	0.056	0.100	mg/L	0.200		107	85-115			
Iron, total	2.47	0.047	0.100	mg/L	2.20		112	85-115			
Magnesium, total	2.37	0.06	0.10	mg/L	2.20		108	85-115			
Matrix Spike (1GJ1372-MS1)		**Source: 1GJ1657-01**		Prepared: 10/24/23 07:55 Analyzed: 10/25/23 17:22							
Aluminum, total	2.39		0.050	mg/L	2.20	0.0387	107	70-130			
Boron, total	0.247	0.056	0.100	mg/L	0.200	ND	123	70-130			
Iron, total	2.72	0.047	0.100	mg/L	2.20	0.265	112	70-130			
Magnesium, total	34.7	0.06	0.10	mg/L	2.20	30.9	172	70-130			QM-4X
Matrix Spike Dup (1GJ1372-MSD1)		**Source: 1GJ1657-01**		Prepared: 10/24/23 07:55 Analyzed: 10/25/23 17:27							
Aluminum, total	2.42		0.050	mg/L	2.20	0.0387	108	70-130	1.01	20	
Boron, total	0.242	0.056	0.100	mg/L	0.200	ND	121	70-130	1.94	20	
Iron, total	2.69	0.047	0.100	mg/L	2.20	0.265	110	70-130	1.20	20	
Magnesium, total	33.9	0.06	0.10	mg/L	2.20	30.9	136	70-130	2.31	20	QM-4X
Post Spike (1GJ1372-PS1)		**Source: 1GJ1657-01**		Prepared: 10/24/23 07:55 Analyzed: 10/25/23 17:33							
Aluminum, total	8.82			mg/L	8.80	0.0387	99.8	85-115			
Boron, total	0.848			mg/L	0.800	0.0300	102	85-115			
Iron, total	9.39			mg/L	8.80	0.265	104	85-115			
Magnesium, total	39.8			mg/L	8.80	30.9	101	85-115			

Definitions

MDL:	Minimum Detection Limit
QM-07:	The spike recovery and/or RPD was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
QM-4X:	The spike recovery was outside of QC acceptance limits for the MS and/or MSD due to analyte concentration at 4 times or greater the spike concentration.
QR-02:	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
QR-06:	The reference standard was outside of established control limits.
RL:	Reporting Limit
RPD:	Relative Percent Difference
TOX-3:	The RPD value for the sample duplicates are outside of acceptance limits due to matrix interference. The reported value is an average of all test measurements.

Cooler Receipt Log

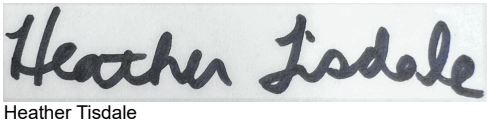
Cooler ID: Default Cooler Temp: 2.2°C

Cooler Inspection Checklist

Custody Seals	No	Containers Intact	Yes
COC/Labels Agree	Yes	Preservation Confirmed	No
Received On Ice	Yes		

Report Comments

Reviewed and Approved By:



Heather Tisdale
Customer Relationship Specialist
heather.tisdale@microbac.com
11/20/23 08:57

CHAIN OF CUSTODY

Keystone LABORATORIES
A Microbac Company

600 East 17th Street South
Newton, IA 50208
641-792-8451

1GJ1657

BMC Aggregates L.C.
PM: Heather Tisdale

SITE INFORMATION

Sampler: Sherman Lundy

Project: GW Monitoring
Miller Creek Area

REPORT TO

Sherman Lundy
BMC Aggregates L.C.
101 BMC Drive
Elk Run Heights, IA 50707

INVOICE TO

Accounts Payable
BMC Aggregates L.C.
101 BMC Drive
Elk Run Heights, IA 50707

SPECIAL INSTRUCTIONS

None

Turn Around Time

☐ Standard ☐ RUSH, need by ___/___/___

LAB USE ONLY

Work Order 1GJ1657
Temperature 2.0/1.4/2.2
Turn-Cooler: No

- ☐ Custody Seal
- ☐ Containers Intact
- ☐ COC/Labels Agree
- ☐ Preservation Confirmed
- ☒ Received on Ice

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	Number of Containers	Analyses	Lab Sample Number
-001	Well #1	Water	GRAB	10/16/23	8AM	12	624@benzene, 624@chloroform, 624@mek, 624-base-analysis, 625@pyridine, 625-126, 8315@Formaldehyde, 9020-100, ag-i-200.8, al-i-200.7, as-i-200.8, ba-i-200.8, be-i-200.8, b-i-200.7, cd-i-200.8, cl-9056-w, cod-i-410.4, co-i-200.8, cr-t-200.8, cu-i-200.8, f-9056, fe-i-200.7, hg-i-3112-low, mg-i-200.7, mn-i-200.8, mo-t-200.8, nh3-timberline, ni-i-200.8, pb-i-200.8, phenol-i-420.1, sb-i-200.8, se-i-200.8, so4-9056-w, tds-i-1750-85, tl-i-200.8, tss-i-3765-85, add→ Conductivity - TT	01

Relinquished By: Sherman Lundy Date/Time: 10/18/23 12:25 PM

Received By: TTMoore Date/Time: 10/18/23 1225

Relinquished By: Date/Time: EE-EDM

Received for Lab By: Echo McMurry Date/Time: 10/19/23 @ 1110

Remarks:

Original - Lab Copy Yellow - Sampler Copy

CHAIN OF CUSTODY

Keystone LABORATORIES
A Microbac Company
600 East 17th Street South
Newton, IA 50208
641-792-8451

1GJ1657

BMC Aggregates L.C.
PM: Heather Tisdale

6/2023 12:02:56P

w.keystonelabs.co

SITE INFORMATION

Sampler: Sherman Lundy

Project: GW Monitoring
Miller Creek Area

SPECIAL INSTRUCTIONS

None

Turn Around Time

☐ Standard ☐ RUSH, need by ___/___/___

REPORT TO

Sherman Lundy
BMC Aggregates L.C.
101 BMC Drive
Elk Run Heights, IA 50707

INVOICE TO

Accounts Payable
BMC Aggregates L.C.
101 BMC Drive
Elk Run Heights, IA 50707

LAB USE ONLY

Work Order 1GJ1657
Temperature 2.0
Turn-Cooler: No

- ☐ Custody Seal
- ☐ Containers Intact
- ☐ COC/Labels Agree
- ☐ Preservation Confirmed
- ☒ Received on Ice

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	Number of Containers	Analyses	Lab Sample Number
	Well #1			10/18/23	9AM	12 Total	v-t-200.8 zn-t-200.8	01

Sherman Lundy 10/18/23 12:25PM
Relinquished By Date/Time

T Thone 10/18/23 1225
Received By Date/Time

Relinquished By Date/Time

Jacho McMurry 10/19/23 1110
Received for Lab By Date/Time

Remarks:

Original - Lab Copy Yellow - Sampler Copy

Keystone LABORATORIES
A Microbac Company

600 East 17th Street South
Newton, IA 50208
641-792-8451

1GJ1657

BMC Aggregates L.C.
PM: Heather Tisdale

SITE INFORMATION

Sampler: Sherman Lundy

Project: GW Monitoring
Miller Creek Area

SPECIAL INSTRUCTIONS

None

Turn Around Time

☐ Standard ☐ RUSH, need by ___/___/___

REPORT TO

Sherman Lundy
BMC Aggregates L.C.
101 BMC Drive
Elk Run Heights, IA 50707

INVOICE TO

Accounts Payable
BMC Aggregates L.C.
101 BMC Drive
Elk Run Heights, IA 50707

LAB USE ONLY

Work Order 1GJ1657
Temperature 2.0/1.4/2.2
Turn-Cooler: No

- ☐ Custody Seal
- ☐ Containers Intact
- ☐ COC/Labels Agree
- ☐ Preservation Confirmed
- ☒ Received on Ice

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	Number of Containers	Analyses	Lab Sample Number
-001	Well #2	Water	GRAB	10/18/23	8:30AM	12	624@benzene, 624@chloroform, 624@meek, 624-base-analysis, 625@pyridine, 625-126, 8315@Formaldehyde, 9020-100, ag-t-200.8, al-t-200.7, as-t-200.8, ba-t-200.8, be-t-200.8, b-t-200.7, cd-t-200.8, cl-9056-w, cod-t-410.4, co-t-200.8, cr-t-200.8, cu-t-200.8, f-9056, fe-t-200.7, hg-t-3112-low, mg-t-200.7, mn-t-200.8, mo-t-200.8, nh3-timberline, ni-t-200.8, pb-t-200.8, phenol-t-420.1, sb-t-200.8, se-t-200.8, so4-9056-w, tds-t-1750-85, tl-t-200.8, tss-t-3765-85	

Add Conductivity

Sherman Lundy 10/18/23 12:25 PM
Relinquished By Date/Time

Relinquished By Date/Time

I Thone 10/18/23 1225
Received By Date/Time

Zach McMurry 10/19/23 1110
Received for Lab By Date/Time

Remarks:

Original - Lab Copy Yellow - Sampler Copy

Keystone LABORATORIES
A Microbac Company

600 East 17th Street South
Newton, IA 50208
641-792-8451

1GJ1657

BMC Aggregates L.C.
PM: Heather Tisdale

SITE INFORMATION

Sampler: Sherman Lundy

Project: GW Monitoring
Miller Creek Area

SPECIAL INSTRUCTIONS

None

Turn Around Time

☐ Standard ☐ RUSH, need by ___/___/___

REPORT TO

Sherman Lundy
BMC Aggregates L.C.
101 BMC Drive
Elk Run Heights, IA 50707

INVOICE TO

Accounts Payable
BMC Aggregates L.C.
101 BMC Drive
Elk Run Heights, IA 50707

LAB USE ONLY

Work Order 1GJ1657
Temperature 2.0/1.4/2.2
Turn-Cooler: No

- ☐ Custody Seal
- ☐ Containers Intact
- ☐ COC/Labels Agree
- ☐ Preservation Confirmed
- ☒ Received on Ice

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	Number of Containers	Analyses	Lab Sample Number
	Well #2			10/18/23	8:30AM	12 Total	v-t-200.8 zn-t-200.8 Conductivity	02

Sherman Lundy 10/18/23 12:25PM
Relinquished By Date/Time

T Thone 10/18/23 1225
Received By Date/Time

Relinquished By Date/Time

Echo McMurry 10/19/23 1110
Received for Lab By Date/Time

Remarks:

Original - Lab Copy Yellow - Sampler Copy

Keystone LABORATORIES
A Microbac Company

600 East 17th Street Sou
Newton, IA 50208
641-792-8451

1GJ1657

BMC Aggregates L.C.
PM: Heather Tisdale

SITE INFORMATION

Sampler: Sherman Lundy

Project: GW Monitoring
Miller Creek Area

SPECIAL INSTRUCTIONS

None

Turn Around Time

☐ Standard ☐ RUSH, need by ___/___/___

REPORT TO

Sherman Lundy
BMC Aggregates L.C.
101 BMC Drive
Elk Run Heights, IA 50707

INVOICE TO

Accounts Payable
BMC Aggregates L.C.
101 BMC Drive
Elk Run Heights, IA 50707

LAB USE ONLY

Work Order 1GJ1657
Temperature 2.0/1.4/2.2
Turn-Cooler: No

☐ Custody Seal
☐ Containers Intact
☐ COC/Labels Agree
☐ Preservation Confirmed
☒ Received on Ice

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	Number of Containers	Analyses	Lab Sample Number
-001	Well #3	Water	GRAB	10/18/23	9AM	12	624@benzene, 624@chloroform, 624@meek, 624-base-analysis, 625@pyridine, 625-126, 8315@Formaldehyde, 9020-100, ag-t-200.8, al-i-200.7, as-t-200.8, ba-t-200.8, be-i-200.8, b-i-200.7, cd-t-200.8, cl-9056-w, cod-t-410.4, co-t-200.8, cr-t-200.8, cu-t-200.8, f-9056, fe-t-200.7, hg-i-3112-low, mg-t-200.7, mn-t-200.8, mo-t-200.8, nh3-timberline, ni-i-200.8, pb-t-200.8, phenol-t-420.1, sb-i-200.8, se-i-200.8, so4-9056-w, tds-i-1750-85, ti-t-200.8, tss-i-3765-85	03

Add Conductivity

Sherman Lundy 10/18/23 12:25pm
Relinquished By Date/Time

T Thone 10/18/23 12:25
Received By Date/Time

Relinquished By Date/Time

Received for Lab By Date/Time

Remarks:

Original - Lab Copy Yellow - Sampler Copy

Keystone LABORATORIES
A Microbac Company

600 East 17th Street S
Newton, IA 50208
641-792-8451

1GJ1657

BMC Aggregates L.C.
PM: Heather Tisdale

SITE INFORMATION

Sampler: Sherman Lundy

Project: GW Monitoring
Miller Creek Area

SPECIAL INSTRUCTIONS

None

Turn Around Time

☐ Standard ☐ RUSH, need by ___/___/___

REPORT TO

Sherman Lundy
BMC Aggregates L.C.
101 BMC Drive
Elk Run Heights, IA 50707

INVOICE TO

Accounts Payable
BMC Aggregates L.C.
101 BMC Drive
Elk Run Heights, IA 50707

LAB USE ONLY

Work Order 1GJ1657
Temperature 2.0/1.4/2.2
Turn-Cooler: No

☐ Custody Seal
☐ Containers Intact
☐ COC/Labels Agree
☐ Preservation Confirmed
☒ Received on Ice

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	Number of Containers	Analyses	Lab Sample Number
	Well #3			10/18/23	9AM	12 Total	v-t-200.8 zn-t-200.8	03

Sherman Lundy 10/18/23 12:25PM
Relinquished By Date/Time

T Thone 10/18/23 1225
Received By Date/Time

Relinquished By Date/Time

Echo McMurry 10/19/23 1110
Received for Lab By Date/Time

Remarks:

Original - Lab Copy Yellow - Sampler Copy

Keystone LABORATORIES
A Microbac Company

600 East 17th Street Sout
Newton, IA 50208
641-792-8451

1GJ1657

BMC Aggregates L.C.
PM: Heather Tisdale

SITE INFORMATION

Sampler: Sherman Lundy

Project: GW Monitoring
Miller Creek Area

REPORT TO

Sherman Lundy
BMC Aggregates L.C.
101 BMC Drive
Elk Run Heights, IA 50707

INVOICE TO

Accounts Payable
BMC Aggregates L.C.
101 BMC Drive
Elk Run Heights, IA 50707

SPECIAL INSTRUCTIONS

None

Turn Around Time

☐ Standard ☐ RUSH, need by ___/___/___

LAB USE ONLY

Work Order 1GJ1657
Temperature 2.0/1.4/2.2
Turn-Cooler: No

☐ Custody Seal
☐ Containers Intact
☐ COC/Labels Agree
☐ Preservation Confirmed
☒ Received on Ice

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	Number of Containers	Analyses	Lab Sample Number
-001	Well #4	Water	GRAB	10/18/23	9:30Am	12	624@benzene, 624@chloroform, 624@mek, 624-base-analysis, 625@pyridine, 625-126, 8315@Formaldehyde, 9020-100, ag-t-200.8, al-t-200.7, as-t-200.8, ba-t-200.8, be-t-200.8, b-t-200.7, cd-t-200.8, cl-9056-w, cod-t-410.4, co-t-200.8, cr-t-200.8, cu-t-200.8, f-9056, fe-t-200.7, hg-i-3112-low, mg-t-200.7, mn-t-200.8, mo-t-200.8, ni3-timberline, ni-t-200.8, pb-t-200.8, phenol-t-420.1, sb-t-200.8, se-t-200.8, so4-9056-w, tds-t-1750-85, tl-t-200.8, tss-t-3765-85, Add Conductivity	QA

Sherman Lundy 10/18/23 12:25PM
Relinquished By Date/Time

Relinquished By Date/Time

I Thome 10/18/23 1225
Received By Date/Time

Echo McMurry 10/19/23 1110
Received for Lab By Date/Time

Remarks:

Original - Lab Copy Yellow - Sampler Copy

Keystone LABORATORIES
A Microbac Company

600 East 17th Street Sout
Newton, IA 50208
641-792-3451

1GJ1657

BMC Aggregates L.C.
PM: Heather Tisdale

SITE INFORMATION

Sampler: Sherman Lundy

Project: GW Monitoring
Miller Creek Area

SPECIAL INSTRUCTIONS

None

Turn Around Time

☐ Standard ☐ RUSH, need by ___/___/___

REPORT TO

Sherman Lundy
BMC Aggregates L.C.
101 BMC Drive
Elk Run Heights, IA 50707

INVOICE TO

Accounts Payable
BMC Aggregates L.C.
101 BMC Drive
Elk Run Heights, IA 50707

LAB USE ONLY

Work Order 1GJ1657
Temperature 2.0/1.4/2.2
Turn-Cooler: No

☐ Custody Seal
☐ Containers Intact
☐ COC/Labels Agree
☐ Preservation Confirmed
☒ Received on Ice

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	Number of Containers	Analyses	Lab Sample Number
	Well #4			10/18/23	9:30Am	12 Total	v-t-200.8 zn-t-200.8 Conductivity	04

Sherman Lundy 10/18/23 12:25PM
Relinquished By Date/Time

None 10/18/23 1225
Received By Date/Time

Relinquished By Date/Time

Echo McMurray 10/19/23 1110
Received for Lab By Date/Time

Remarks:

Original - Lab Copy Yellow - Sampler Copy

Keystone LABORATORIES
A Microbac Company

600 East 17th Street South
Newton, IA 50208
641-792-8451

1GJ1657

BMC Aggregates L.C.
PM: Heather Tisdale

SITE INFORMATION

Sampler: Sherman Lundy

Project: GW Monitoring
Miller Creek Area

SPECIAL INSTRUCTIONS

None

Turn Around Time

☐ Standard ☐ RUSH, need by ___/___/___

REPORT TO

Sherman Lundy
BMC Aggregates L.C.
101 BMC Drive
Elk Run Heights, IA 50707

INVOICE TO

Accounts Payable
BMC Aggregates L.C.
101 BMC Drive
Elk Run Heights, IA 50707

LAB USE ONLY

Work Order 1GJ1657
Temperature 2.0
Turn-Cooler: No

☐ Custody Seal
☐ Containers Intact
☐ COC/Labels Agree
☐ Preservation Confirmed
☒ Received on Ice

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	Number of Containers	Analyses		Lab Sample Number
-001	**Upgradient Well**	Water	GRAB	10/18/23	10AM	12	624@benzene	624@chloroform	05
							624@meek	624-base-analysis	
							625@pyridine	625-126	
							8315@Formaldehyde	9020-100	
							ag-t-200.8	al-t-200.7	
							as-t-200.8	ba-t-200.8	
							be-t-200.8	b-t-200.7	
							cd-t-200.8	cl-9056-w	
							cod-t-410.4	co-t-200.8	
							cr-t-200.8	cu-t-200.8	
							f-9056	fe-t-200.7	
							hg-t-3112-low	mg-t-200.7	
							mn-t-200.8	mo-t-200.8	
							nh3-timberline	ni-t-200.8	
							pb-t-200.8	phenol-t-420.1	
							sb-t-200.8	se-t-200.8	
							so4-9056-w	tds-t-1750-85	
							tl-t-200.8	tss-t-3765-85	
						Add	Conductivity		

Sherman Lundy 10/18/23 12:25PM
Relinquished By Date/Time

Relinquished By Date/Time

F. Thorpe 10/18/23 1225
Received By Date/Time

Received for Lab By Date/Time

Remarks:

Original - Lab Copy Yellow - Sampler Copy

Keystone LABORATORIES
A Microbac Company

600 East 17th Street South
Newton, IA 50208
641-792-8451

1GJ1657

BMC Aggregates L.C.
PM: Heather Tisdale

SITE INFORMATION

Sampler: Sherman Lundy

Project: GW Monitoring
Miller Creek Area

SPECIAL INSTRUCTIONS

None

Turn Around Time

☐ Standard ☐ RUSH, need by ___/___/___

REPORT TO

Sherman Lundy
BMC Aggregates L.C.
101 BMC Drive
Elk Run Heights, IA 50707

INVOICE TO

Accounts Payable
BMC Aggregates L.C.
101 BMC Drive
Elk Run Heights, IA 50707

LAB USE ONLY

Work Order 1GJ1657
Temperature 2.0
Turn-Cooler: No

☐ Custody Seal
☐ Containers Intact
☐ COC/Labels Agree
☐ Preservation Confirmed
☒ Received on Ice

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	Number of Containers	Analyses		Lab Sample Number
	Upgradient Well			10/18/23	1014	Total 12	v-t-200.8	zr-t-200.8	05

Sherman Lundy 10/18/23 12:25PM
Relinquished By Date/Time

Relinquished By Date/Time

Received By Date/Time

Received for Lab By Date/Time

Remarks:

Original - Lab Copy Yellow - Sampler Copy

Appendix C
Summary of Groundwater Chemistry

SCS ENGINEERS

Summary of Groundwater Chemistry
BMC Aggregates L.C. South Waterloo Quarry

Total Metals Constituents	Sample Date	ReiterFarm UPG	Well#1 DNG	Well#2 DNG	Well#3 DNG	Well#4 DNG
Aluminum, mg/L (CAS NO - 7429-90-5)	3/19/2019	< 0.05	0.165	0.247	0.408	12.2
	10/16/2019	< 0.05	< 0.05	< 0.05	< 0.05	0.308
	3/18/2020	< 0.05	0.062	< 0.05	< 0.05	0.233
	10/16/2020	< 0.05	0.077	0.061	0.096	0.971
	3/17/2021	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	10/20/2021	< 0.05	< 0.05	0.069	0.259	0.512
	3/17/2022	0.057	< 0.05	0.092	0.093	0.327
	10/18/2022	< 0.05	< 0.05	0.059	< 0.05	< 0.05
	3/14/2023	< 0.05	0.05	< 0.05	0.549	0.074
	10/18/2023	< 0.05	< 0.05	< 0.05	< 0.05	1.83
Antimony, mg/L (CAS NO - 7440-36-0)	12/16/2009	< 0.0002	N/A	N/A	N/A	N/A
	12/16/2009	0.0011	N/A	N/A	N/A	N/A
	1/15/2010	< 0.0002	N/A	N/A	N/A	N/A
	2/18/2010	0.0005	0.001	0.0012	0.0007	0.0018
	3/16/2010	< 0.0002	0.0002	0.0011	0.0007	N/A
	3/23/2010	N/A	N/A	N/A	N/A	< 0.0002
	4/15/2010	0.0003	0.0011	0.0017	0.002	0.0006
	5/17/2010	0.0002	0.0029	0.0011	0.0013	0.0023
	6/21/2010	< 0.0002	0.0008	0.0011	0.0018	0.0002
	7/16/2010	0.0005	0.0038	0.0029	0.0047	0.0014
	8/18/2010	0.0006	0.0009	0.0021	0.0008	0.0012
	9/20/2010	< 0.0002	< 0.0002	0.0014	0.0017	0.0018
	10/18/2010	< 0.0002	0.0041	0.0027	< 0.0002	0.0013
	11/16/2010	< 0.0002	< 0.0002	0.0022	0.0018	< 0.0002
	12/16/2010	< 0.0002	< 0.0002	0.0025	0.0013	< 0.0002
	1/13/2011	< 0.0002	< 0.0002	0.0023	< 0.0002	< 0.0002
	2/16/2011	0.0003	0.0005	0.0028	0.001	0.0006
	5/18/2011	< 0.0002	< 0.0002	0.0018	< 0.0002	< 0.0002
	8/17/2011	< 0.0002	0.0005	0.003	0.0013	0.0005
	10/17/2011	< 0.0002	< 0.0002	0.0014	0.0006	0.0009
	1/18/2012	0.0002	0.0003	0.0015	0.0009	0.0003
	4/17/2012	< 0.0002	0.0006	0.0013	0.0012	0.0001
	7/17/2012	0.0002	0.0004	0.0002	0.0013	0.0012
	11/14/2012	< 0.0002	0.0004	0.0012	0.0007	0.0006
	3/19/2013	< 0.0002	0.0006	0.0016	0.0008	0.0003
	6/17/2013	0.001	0.0019	0.004	0.0017	0.0008
	9/17/2013	< 0.0002	0.0007	0.001	0.0005	0.0002
	12/17/2013	0.0002	0.0009	0.0013	0.0007	0.0003
	2/17/2014	0.0005	0.001	0.0014	0.0012	0.0004
	4/15/2014	0.0003	0.0004	0.0007	0.0006	0.0005
	7/15/2014	< 0.0002	0.001	0.0008	0.0005	0.0004
	10/13/2014	0.0006	0.0012	0.0016	0.001	0.0007
	1/16/2015	< 0.0002	0.0004	0.0007	0.0006	< 0.0002
	5/13/2015	0.0002	0.0003	0.0004	0.0019	0.0001
	8/18/2015	0.0001	0.0003	0.0006	0.0003	0.0018
	11/17/2015	< 0.0002	0.0003	0.0004	0.0013	0.0002
	3/16/2016	< 0.0001	0.0002*	0.0011*	0.0011*	0.0002*
	10/12/2016	< 0.0001	0.0009*	0.0008*	0.003	0.0002*
	3/16/2017	0.0001*	0.0006*	0.0007*	0.001*	0.0003*
	10/12/2017	0.0003*	0.0002*	0.0007*	0.0003*	0.0003*
	3/14/2018	0.0002*	< 0.0001	0.0009*	0.0002*	0.0003*
	10/17/2018	< 0.0001	0.0003*	0.0017*	0.0002*	0.0005*
	3/19/2019	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
	10/16/2019	0.0003*	< 0.0001	0.0002*	0.0009*	0.0002*
	3/18/2020	< 0.0008	< 0.0008	< 0.0008	0.0008*	< 0.0008
	10/16/2020	< 0.0008	< 0.0008	< 0.0008	0.0008*	< 0.0008
	3/17/2021	< 0.0008	< 0.0008	< 0.0008	< 0.0008	< 0.0008
	10/20/2021	0.0005*	< 0.0002	0.0002*	0.0004*	0.0007*
	3/17/2022	< 0.0008	< 0.0008	< 0.0008	< 0.0008	< 0.0008
	10/18/2022	< 0.0008	< 0.0008	< 0.0008	< 0.0008	< 0.0008
	3/14/2023	< 0.0008	< 0.0008	< 0.0008	< 0.0008	0.001*
	10/18/2023	0.0009*	< 0.0008	< 0.0008	< 0.0008	< 0.0008
Arsenic, mg/L (CAS NO - 7440-38-2)	12/16/2009	< 0.0003	N/A	N/A	N/A	N/A
	12/16/2009	0.0013	N/A	N/A	N/A	N/A
	1/15/2010	< 0.0003	N/A	N/A	N/A	N/A
	2/18/2010	0.0006	0.0014	0.001	0.001	0.0006
	3/16/2010	0.0022	0.0012	0.0037	0.0037	N/A
	3/23/2010	N/A	N/A	N/A	N/A	< 0.0003
	4/15/2010	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003
	5/17/2010	0.0009	< 0.0003	0.0015	0.0015	0.003

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Total Metals Constituents	Sample Date	ReiterFarm UPG	Well#1 DNG	Well#2 DNG	Well#3 DNG	Well#4 DNG
Arsenic, mg/L (CAS NO - 7440-38-2)	6/21/2010	0.0013	0.0007	0.0021	0.0017	0.0025
	7/16/2010	< 0.0003	0.001	0.0016	< 0.0003	0.0009
	8/18/2010	0.0019	0.0049	0.0019	0.0036	0.0017
	9/20/2010	0.0006	0.0007	0.0016	0.0006	< 0.0003
	10/18/2010	< 0.0003	0.0009	0.0015	0.0026	0.0006
	11/16/2010	< 0.0003	0.0012	0.0012	< 0.0003	< 0.0003
	12/16/2010	0.0022	0.0017	0.0024	0.0017	0.0011
	1/13/2011	< 0.0003	0.002	0.0018	< 0.0003	< 0.0003
	2/16/2011	0.0003	0.0013	0.0003	0.0003	0.0003
	5/18/2011	0.0003	0.0039	0.0018	0.0015	0.0003
	8/17/2011	< 0.0003	0.0027	< 0.0003	< 0.0003	< 0.0003
	10/17/2011	< 0.0003	0.0031	< 0.0003	< 0.0003	< 0.0003
	1/18/2012	< 0.0003	0.0099	0.0075	0.0073	< 0.0003
	4/17/2012	0.0008	0.0057	0.002	0.0057	0.0011
	7/17/2012	0.0012	0.0045	0.0009	0.0076	0.0015
	11/14/2012	< 0.0003	0.0009	< 0.0003	0.0068	< 0.0003
	3/19/2013	< 0.0003	0.0025	< 0.0003	0.0061	0.001
	6/17/2013	< 0.0003	0.0022	0.0004	0.0102	< 0.0003
	9/17/2013	0.0004	0.0034	0.001	0.0099	0.001
	12/17/2013	0.0004	0.0023	0.001	0.0124	0.0007
	2/17/2014	0.0005	0.0034	0.0006	0.0118	< 0.0003
	4/15/2014	0.0005	0.0038	0.0005	0.0112	0.0012
	7/15/2014	0.0003	0.0005	0.0015	0.01	0.0036
	10/13/2014	0.0004	0.0019	0.0006	0.009	0.0006
	1/16/2015	0.0004	0.0033	0.0006	0.0107	0.0007
	5/13/2015	0.0003	0.0026	0.0018	0.0097	0.0005
	8/18/2015	0.0003	0.0031	0.0013	0.0009	0.0088
	11/17/2015	0.0004	0.0034	0.0008	0.0089	0.0006
	3/16/2016	0.0003*	0.0027	0.0009*	0.0088	0.0009*
	10/12/2016	0.0004*	0.0027	0.0022	0.0065	0.0013*
	3/16/2017	0.0003*	0.0031	0.0008*	0.0069	0.0011*
	10/12/2017	0.0005*	0.0021	0.0007*	0.0006*	0.0013*
	3/14/2018	0.0002*	0.0028	0.0007*	0.0004*	0.0012*
	10/17/2018	< 0.0001	0.0027	0.0004*	0.0064	0.0023
	3/19/2019	0.0001	0.0029	0.0013	0.0045	0.0057
	10/16/2019	0.0004*	0.0022	0.0003*	0.0028	0.0005*
	3/18/2020	0.0007*	0.0035	0.0007*	0.0015*	0.0011*
	10/16/2020	< 0.0006	0.0026	< 0.0006	0.002	0.0009*
	3/17/2021	< 0.0006	0.0032	0.0008*	< 0.0006	0.0009*
	10/20/2021	< 0.0006	0.0017*	< 0.0006	0.002	< 0.0006
	3/17/2022	< 0.0006	0.0014*	< 0.0006	< 0.0006	< 0.0006
	10/18/2022	0.0009*	0.0022	0.001*	0.0011*	0.0008*
	3/14/2023	0.0025	0.004	0.0024	0.0026	0.0029
	10/18/2023	0.0006*	0.0015*	0.0009*	0.0009*	0.002
Barium, mg/L (CAS NO - 7440-39-3)	12/16/2009	0.241	N/A	N/A	N/A	N/A
	12/16/2009	0.241	N/A	N/A	N/A	N/A
	1/15/2010	0.111	N/A	N/A	N/A	N/A
	2/18/2010	0.111	0.0435	0.0492	0.0431	0.128
	3/16/2010	0.085	0.0416	0.0412	0.0343	N/A
	3/23/2010	N/A	N/A	N/A	N/A	0.0826
	4/15/2010	0.113	0.0531	0.0491	0.0478	0.223
	5/17/2010	0.114	0.0554	0.0507	0.0476	0.116
	6/21/2010	0.115	0.0663	0.0636	0.0486	0.138
	7/16/2010	0.119	0.0749	0.0673	0.0512	0.132
	8/18/2010	0.132	0.116	0.077	0.153	0.136
	9/20/2010	0.0984	0.186	0.0971	0.51	0.112
	10/18/2010	0.118	0.262	0.197	0.208	0.133
	11/16/2010	0.107	0.336	0.11	0.0689	0.0484
	12/16/2010	0.144	0.37	0.126	0.0979	0.0808
	1/13/2011	0.104	0.394	0.121	0.0752	0.0397
	2/16/2011	0.136	0.502	0.143	0.174	0.0909
	5/18/2011	0.119	0.532	0.157	0.217	0.147
	8/17/2011	0.107	0.511	0.198	0.228	0.0638
	10/17/2011	0.0877	0.041	0.0562	0.0675	0.0433
	1/18/2012	0.0954	0.464	0.215	0.356	0.103
	4/17/2012	0.113	0.511	0.258	0.456	0.126
	7/17/2012	0.0984	0.418	0.0388	0.425	0.247
	11/14/2012	0.107	0.487	0.295	0.549	0.136
	3/19/2013	0.107	0.534	0.317	0.582	0.184
	6/17/2013	0.134	0.431	0.332	0.712	0.0895

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Total Metals Constituents	Sample Date	ReiterFarm UPG	Well#1 DNG	Well#2 DNG	Well#3 DNG	Well#4 DNG
Barium, mg/L (CAS NO - 7440-39-3)	9/17/2013	0.0978	0.466	0.291	0.639	0.109
	12/17/2013	0.104	0.484	0.3	0.694	0.0934
	2/17/2014	0.0832	0.537	0.297	0.715	0.064
	4/15/2014	0.114	0.552	0.284	0.614	0.172
	7/15/2014	0.118	0.285	0.439	0.562	0.411
	10/13/2014	0.115	0.477	0.335	0.569	0.122
	1/16/2015	0.108	0.543	0.335	0.611	0.111
	5/13/2015	0.131	0.505	0.327	0.438	0.109
	8/18/2015	0.113	0.554	0.329	0.171	0.388
	11/17/2015	0.115	0.545	0.331	0.416	0.131
	3/16/2016	0.133	0.582	0.287	0.402	0.0653
	10/12/2016	0.146	0.527	0.364	0.291	0.162
	3/16/2017	0.102	0.591	0.122	0.274	0.214
	10/12/2017	0.241	0.761	0.104	0.117	0.214
	3/14/2018	0.101	0.829	0.105	0.0953	0.279
	10/17/2018	0.118	0.792	0.0979	0.221	0.206
	3/19/2019	0.106	0.84	0.116	0.0992	1.05
	10/16/2019	0.14	0.812	0.0695	0.0973	0.0862
	3/18/2020	0.126	0.779	0.0721	0.098	0.0478
	10/16/2020	0.153	0.734	0.063	0.118	0.0906
	3/17/2021	0.0942	0.934	0.0845	0.118	0.254
	10/20/2021	0.111	0.591	0.0629	0.13	0.0641
	3/17/2022	0.0991	0.602	0.0682	0.133	0.0845
	10/18/2022	0.132	0.551	0.077	0.096	0.0934
	3/14/2023	0.267	1.08	0.162	0.18	0.203
	10/18/2023	0.116	0.371	0.0817	0.0957	0.109
Beryllium, mg/L (CAS NO - 7440-41-7)	12/16/2009	< 0.00005	N/A	N/A	N/A	N/A
	12/16/2009	0.0003	N/A	N/A	N/A	N/A
	1/15/2010	< 0.00005	N/A	N/A	N/A	N/A
	2/18/2010	< 0.00005	< 0.00005	< 0.00005	< 0.00005	0.0003
	3/16/2010	< 0.00005	< 0.00005	< 0.00005	< 0.00005	N/A
	3/23/2010	N/A	N/A	N/A	N/A	< 0.00005
	4/15/2010	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005
	5/17/2010	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005
	6/21/2010	< 0.00005	< 0.00005	< 0.00005	< 0.00005	0.0006
	7/16/2010	0.0004	0.0004	0.0004	0.0006	0.0004
	8/18/2010	0.0002	0.0002	0.0002	0.0002	0.0002
	9/20/2010	0.0002	0.0002	0.0002	0.0003	0.0002
	10/18/2010	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005
	11/16/2010	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005
	12/16/2010	0.0004	< 0.00005	< 0.00005	< 0.00005	< 0.00005
	1/13/2011	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005
	2/16/2011	0.00005	0.00005	0.00005	0.00005	0.00005
	5/18/2011	0.00005	0.0001	0.00005	0.00005	0.00009
	8/17/2011	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005
	10/17/2011	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005
	1/18/2012	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005
	4/17/2012	< 0.00005	< 0.00005	< 0.00005	< 0.00005	0.0001
	7/17/2012	0.0002	< 0.00005	< 0.00005	< 0.00005	< 0.00005
	11/14/2012	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005
	3/19/2013	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005
	6/17/2013	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005
	9/17/2013	< 0.00005	< 0.00005	< 0.00005	< 0.00005	0.0001
	12/17/2013	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005
	2/17/2014	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005
	4/15/2014	< 0.00005	< 0.00005	< 0.00005	< 0.00005	0.0002
	7/15/2014	< 0.00005	< 0.00005	< 0.00005	< 0.00005	0.0006
	10/13/2014	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005
	1/16/2015	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005
	5/13/2015	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005
	8/18/2015	< 0.00005	0.00003	0.00003	0.0002	0.00004
	11/17/2015	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005
	3/16/2016	< 0.00003	< 0.00003	< 0.00003	< 0.00003	< 0.00003
	10/12/2016	< 0.00003	< 0.00003	< 0.00003	< 0.00003	0.0002*
	3/16/2017	< 0.00003	< 0.00003	< 0.00003	< 0.00003	0.0002*
	10/12/2017	0.00004*	< 0.00003	< 0.00003	< 0.00003	0.0003*
	3/14/2018	< 0.00003	< 0.00003	< 0.00003	< 0.00003	0.0003*
	10/17/2018	< 0.00003	< 0.00003	< 0.00003	< 0.00003	0.0002*
	3/19/2019	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
	10/16/2019	< 0.00003	< 0.00003	< 0.00003	< 0.00003	< 0.00003

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Total Metals Constituents	Sample Date	ReiterFarm UPG	Well#1 DNG	Well#2 DNG	Well#3 DNG	Well#4 DNG
Beryllium, mg/L (CAS NO - 7440-41-7)	3/18/2020	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
	10/16/2020	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
	3/17/2021	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
	10/20/2021	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
	3/17/2022	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
	10/18/2022	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
	3/14/2023	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
	10/18/2023	< 0.0001	< 0.0001	< 0.0001	< 0.0001	0.0001*
Boron, mg/L (CAS NO - 7440-42-8)	12/16/2009	< 0.004	N/A	N/A	N/A	N/A
	12/16/2009	< 0.004	N/A	N/A	N/A	N/A
	1/15/2010	< 0.004	N/A	N/A	N/A	N/A
	2/18/2010	0.019	0.059	0.058	0.036	0.045
	3/16/2010	0.059	0.168	0.048	0.115	N/A
	3/23/2010	N/A	N/A	N/A	N/A	0.012
	4/15/2010	0.022	0.047	0.067	0.046	0.014
	5/17/2010	0.043	0.085	0.088	0.066	0.039
	6/21/2010	0.021	0.047	0.064	0.043	0.011
	7/16/2010	0.016	0.048	0.069	0.048	0.013
	8/18/2010	0.028	0.05	0.071	0.065	0.026
	9/20/2010	0.063	0.092	0.134	0.087	0.076
	10/18/2010	0.029	0.035	0.08	0.058	0.046
	11/16/2010	0.032	0.049	0.06	0.067	0.071
	12/16/2010	0.03	0.05	0.069	0.051	0.067
	1/13/2011	0.032	0.062	0.074	0.058	0.073
	2/16/2011	0.04	0.066	0.084	0.064	0.047
	5/18/2011	0.004	0.039	0.052	0.033	0.015
	8/17/2011	0.018	0.047	0.066	0.042	0.396
	10/17/2011	< 0.004	< 0.004	< 0.004	< 0.004	0.53
	1/18/2012	0.08	0.188	0.039	0.115	0.027
	4/17/2012	0.028	0.045	0.063	0.054	0.062
	7/17/2012	0.025	0.062	0.092	0.052	0.053
	11/14/2012	0.027	0.044	0.051	0.05	0.078
	3/19/2013	0.049	0.03	0.041	0.038	0.018
	6/17/2013	0.008	0.051	0.052	0.044	0.047
	9/17/2013	0.03	0.042	0.054	0.052	0.107
	12/17/2013	0.033	0.044	0.056	0.055	0.064
	2/17/2014	0.006	< 0.004	< 0.004	< 0.004	< 0.004
	4/15/2014	0.05	0.038	0.047	0.042	0.034
	7/15/2014	0.023	0.05	0.038	0.047	0.071
	10/13/2014	0.029	0.041	0.048	0.047	0.083
	1/16/2015	0.019	0.033	0.045	0.043	0.053
	5/13/2015	0.009	0.03	0.036	0.058	0.038
	8/18/2015	0.023	0.039	0.043	0.066	0.061
	11/17/2015	0.038	0.054	0.045	0.064	0.049
	3/16/2016	0.027*	0.054*	0.05*	0.063*	0.045*
	10/12/2016	0.028*	0.059*	0.042*	0.055*	0.07*
	3/16/2017	0.027*	0.046*	0.038*	0.059*	0.054*
	10/12/2017	0.052*	0.06*	0.051*	0.081*	0.082*
	3/14/2018	< 0.057	< 0.057	< 0.057	< 0.057	< 0.057
	10/17/2018	< 0.057	0.064*	< 0.057	0.067*	0.092*
	3/19/2019	< 0.057	< 0.057	< 0.057	< 0.057	0.081
	10/16/2019	< 0.057	< 0.057	< 0.057	< 0.057	< 0.057
	3/18/2020	< 0.056	0.064*	< 0.056	< 0.056	0.16
	10/16/2020	< 0.056	< 0.056	< 0.056	< 0.056	< 0.056
	3/17/2021	< 0.056	< 0.056	< 0.056	< 0.056	< 0.056
	10/20/2021	< 0.056	< 0.056	< 0.056	< 0.056	< 0.056
	3/17/2022	< 0.056	< 0.056	0.058*	< 0.056	< 0.056
	10/18/2022	0.089*	0.062*	< 0.056	< 0.056	< 0.056
	3/14/2023	< 0.056	< 0.056	< 0.056	< 0.056	< 0.056
	10/18/2023	0.058*	< 0.056	< 0.056	< 0.056	< 0.056
Cadmium, mg/L (CAS NO - 7440-43-9)	12/16/2009	< 0.0002	N/A	N/A	N/A	N/A
	12/16/2009	0.0007	N/A	N/A	N/A	N/A
	1/15/2010	< 0.0002	N/A	N/A	N/A	N/A
	2/18/2010	0.0002	0.0004	< 0.0002	< 0.0002	0.0004
	3/16/2010	< 0.0002	< 0.0002	< 0.0002	< 0.0002	N/A
	3/23/2010	N/A	N/A	N/A	N/A	< 0.0002
	4/15/2010	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
	5/17/2010	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
	6/21/2010	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
	7/16/2010	0.0003	0.0003	0.0004	0.0005	0.0003

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Total Metals Constituents	Sample Date	ReiterFarm UPG	Well#1 DNG	Well#2 DNG	Well#3 DNG	Well#4 DNG
Cadmium, mg/L (CAS NO - 7440-43-9)	8/18/2010	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
	9/20/2010	**0.0003**	< 0.0002	< 0.0002	< 0.0002	**0.0001**
	10/18/2010	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
	11/16/2010	**0.0002**	**0.0003**	**0.0003**	**0.0005**	**0.0003**
	12/16/2010	**0.0108**	**0.0002**	**0.0003**	**0.0004**	**0.0008**
	1/13/2011	**0.0028**	**0.0002**	**0.0002**	**0.0003**	**0.0005**
	2/16/2011	**0.0044**	**0.0003**	**0.0003**	**0.0005**	**0.0004**
	5/18/2011	**0.0002**	**0.0002**	**0.0003**	**0.0004**	**0.0004**
	8/17/2011	< 0.0002	**0.0003**	< 0.0002	< 0.0002	< 0.0002
	10/17/2011	**0.0004**	< 0.0002	< 0.0002	< 0.0002	< 0.0002
	1/18/2012	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
	4/17/2012	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
	7/17/2012	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
	11/14/2012	**0.0001**	**0.0001**	**0.0002**	**0.0008**	**0.00008**
	3/19/2013	**0.00009**	< 0.0002	< 0.0002	< 0.0002	**0.0001**
	6/17/2013	**0.0002**	< 0.0002	**0.0001**	< 0.0002	< 0.0002
	9/17/2013	< 0.0002	< 0.0002	< 0.0002	< 0.0002	**0.0001**
	12/17/2013	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
	2/17/2014	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
	4/15/2014	< 0.0002	< 0.0002	< 0.0002	< 0.0002	**0.0002**
	7/15/2014	**0.0001**	< 0.0002	< 0.0002	< 0.0002	**0.00008**
	10/13/2014	**0.0001**	< 0.0002	< 0.0002	< 0.0002	< 0.0002
	1/16/2015	**0.0002**	**0.0001**	**0.0001**	**0.0001**	**0.0001**
	5/13/2015	**0.0001**	< 0.0002	< 0.0002	**0.0002**	< 0.0002
	8/18/2015	**0.0001**	< 0.0002	< 0.0002	< 0.0002	**0.0002**
	11/17/2015	**0.0001**	**0.0001**	< 0.0002	**0.0002**	< 0.0002
	3/16/2016	0.00009*	< 0.00007	< 0.00007	0.0001*	< 0.00007
	10/12/2016	0.00008*	< 0.00007	0.00009*	0.00007*	< 0.00007
	3/16/2017	0.00007*	< 0.00007	< 0.00007	0.0001*	< 0.00007
	10/12/2017	0.0002*	< 0.00007	< 0.00007	< 0.00007	0.00007*
	3/14/2018	0.0001*	< 0.00007	< 0.00007	< 0.00007	0.00007*
	10/17/2018	0.0003*	< 0.00007	< 0.00007	< 0.00007	0.00009*
	3/19/2019	**0.0002**	< 0.00007	< 0.00007	**0.0002**	**0.0002**
	10/16/2019	0.0001*	< 0.00007	< 0.00007	< 0.00007	< 0.00007
	3/18/2020	0.0001*	< 0.00008	< 0.00008	< 0.00008	0.00008*
	10/16/2020	< 0.00008	< 0.00008	< 0.00008	0.00009*	< 0.00008
	3/17/2021	0.00008*	< 0.00008	< 0.00008	< 0.00008	< 0.00008
	10/20/2021	< 0.00008	< 0.00008	< 0.00008	0.00008*	< 0.00008
	3/17/2022	< 0.00008	< 0.00008	0.0001*	< 0.00008	< 0.00008
	10/18/2022	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008
	3/14/2023	0.00009*	< 0.00008	< 0.00008	< 0.00008	< 0.00008
	10/18/2023	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008
Chloride, mg/L (CAS NO - 16887-00-6)	1/15/2010	**53.6**	N/A	N/A	N/A	N/A
	2/18/2010	**20.3**	**44.6**	**43.4**	**25**	**33.2**
	3/16/2010	**24.6**	**23.7**	**21.2**	**28.1**	N/A
	3/23/2010	N/A	N/A	N/A	N/A	**16.5**
	4/15/2010	**20**	**19.5**	**16**	**25.1**	**17.2**
	5/17/2010	**20.4**	**31.9**	**16.5**	**21.4**	**17.4**
	6/21/2010	**20.4**	**19.3**	**16.4**	**20.6**	**17.8**
	7/16/2010	**25.5**	**22.7**	**17.3**	**23.8**	**15.7**
	8/18/2010	**29.9**	**28**	**27.3**	**27.2**	**24.9**
	9/20/2010	**27.1**	**25.9**	**26.2**	**29.7**	**26.6**
	10/18/2010	**21**	**17.4**	**14.9**	**19.6**	**18.2**
	11/16/2010	**15.2**	**15.4**	**15.1**	**20**	**17.9**
	12/16/2010	**13.8**	**15.8**	**15.2**	**20.2**	**23.8**
	1/13/2011	**14**	**15.2**	**15.6**	**21.1**	**19.6**
	2/16/2011	**19.3**	**18.9**	**16.8**	**22.5**	**15.4**
	5/18/2011	**28.7**	**17.5**	**23.2**	**20.7**	**24.8**
	8/17/2011	**13.4**	**14.4**	**13.5**	**16.7**	**26.4**
	1/18/2012	**16.2**	**14.9**	**14.8**	**19.1**	**17.4**
	4/17/2012	**17.6**	**14.7**	**14.1**	**18.7**	**18.7**
	7/17/2012	**12.7**	**11.4**	**35.2**	**13.7**	**9.3**
	11/14/2012	**21.1**	**19.1**	**16.6**	**22.6**	**27.6**
	3/19/2013	**19.4**	**15.1**	**11.3**	**19.7**	**14.7**
	6/17/2013	**24.3**	**11.7**	**11.1**	**18.1**	**18.4**
	9/17/2013	**19.4**	**12.1**	**11**	**19.4**	**30**
	12/17/2013	**18.3**	**11.8**	**10.3**	**16.8**	**17.1**
	2/17/2014	**19.6**	**13.7**	**13**	**19.4**	**18.6**
	4/15/2014	**20.6**	**12.9**	**11**	**18**	**21.7**
	7/15/2014	**26**	**13.7**	**11.1**	**19**	**23**

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Total Metals Constituents	Sample Date	ReiterFarm UPG	Well#1 DNG	Well#2 DNG	Well#3 DNG	Well#4 DNG
Chloride, mg/L (CAS NO - 16887-00-6)	10/13/2014	22.2	14.2	10.5	18.9	19.9
	1/16/2015	26.8	14.7	11.5	20	23.2
	5/13/2015	30.1	13.6	10.2	2240	21.6
	8/18/2015	26.6	12.8	9.5	2000	24.6
	11/17/2015	21.6	14.1	9.8	1950	21.8
	3/16/2016	29	11	7.3	1570	22.7
	10/12/2016	27.2	11	9.3	1350	21.2
	3/16/2017	28.1	10.2	10.6	1250	21.7
	10/12/2017	23.6	9.3	11.6	29.1	16.3
	3/14/2018	25.6	9	11.8	28.5	11.8
	10/17/2018	17.9	10.4	11.9	578	16.7
	3/19/2019	20.7	9.4	13.9	112	14.4
	10/16/2019	30.4	17.5	16.4	33.4	21.2
	3/18/2020	23.9	8.9	14.1	23.9	29.7
	10/16/2020	27.4	9.3	12.6	22.1	12.6
	3/17/2021	17.3	9	13.2	22.5	13.3
	10/20/2021	27.2	9.6	12.5	29.9	15.3
	3/17/2022	22.9	9.2	15.2	25.1	18.5
	10/18/2022	38.3	9.2	12.4	22	21
	3/14/2023	26.8	10.1	13.3	20.3	24.1
	10/18/2023	35	9.8	12.4	23.8	20
Chromium, mg/L (CAS NO - 7440-47-3)	12/16/2009	< 0.0009	N/A	N/A	N/A	N/A
	12/16/2009	0.0072	N/A	N/A	N/A	N/A
	1/15/2010	< 0.0009	N/A	N/A	N/A	N/A
	2/18/2010	< 0.0009	< 0.0009	0.0009	< 0.0009	< 0.0009
	3/16/2010	0.0038	0.0045	0.102	0.0044	N/A
	3/23/2010	N/A	N/A	N/A	N/A	0.0031
	4/15/2010	< 0.0009	< 0.0009	0.0009	< 0.0009	< 0.0009
	5/17/2010	< 0.0009	0.0027	0.0018	0.0021	0.0023
	6/21/2010	0.002	0.0061	0.0078	0.0361	0.012
	7/16/2010	0.0021	0.006	0.0026	0.0209	0.0027
	8/18/2010	0.001	0.0038	0.0157	0.0009	0.0012
	9/20/2010	< 0.0009	< 0.0009	0.017	0.0142	0.0131
	10/18/2010	< 0.0009	0.0329	0.0168	< 0.0009	< 0.0009
	11/16/2010	0.0001	< 0.0002	< 0.0002	< 0.0002	< 0.0002
	12/16/2010	0.0004	< 0.0002	< 0.0002	< 0.0002	< 0.0002
	1/13/2011	0.0003	< 0.0002	< 0.0002	< 0.0002	< 0.0002
	2/16/2011	0.0003	0.0002	0.00006	0.00006	0.00006
	5/18/2011	0.0001	0.0002	0.0002	0.0002	0.0002
	8/17/2011	< 0.0009	< 0.0009	< 0.0009	< 0.0009	< 0.0009
	10/17/2011	< 0.0009	< 0.0009	< 0.0009	< 0.0009	< 0.0009
	1/18/2012	< 0.0009	< 0.0009	< 0.0009	< 0.0009	< 0.0009
	4/17/2012	< 0.0009	< 0.0009	< 0.0009	0.0022	< 0.0009
	7/17/2012	0.0046	< 0.0009	< 0.0009	< 0.0009	< 0.0009
	11/14/2012	0.0102	0.0014	0.0021	0.0013	0.0019
	3/19/2013	< 0.0009	< 0.0009	< 0.0009	< 0.0009	< 0.0009
	6/17/2013	0.0064	0.0002	0.0009	0.0007	< 0.0009
	9/17/2013	0.0005	0.0002	0.0002	0.0003	0.0017
	12/17/2013	0.0008	< 0.0009	0.0002	0.0009	0.0009
	2/17/2014	0.0012	0.0002	0.0002	0.0007	< 0.0009
	4/15/2014	0.0001	0.0001	< 0.0009	0.0007	0.001
	7/15/2014	0.0006	0.0001	< 0.0009	0.0005	0.0011
	10/13/2014	0.0019	0.0024	0.0001	0.0003	0.0007
	1/16/2015	0.0014	0.0002	0.0004	0.0006	0.0296
	5/13/2015	0.001	< 0.0009	< 0.0009	0.028	0.0014
	8/18/2015	0.0006	< 0.0009	< 0.0009	0.0021	0.0218
	11/17/2015	0.0007	0.0004	0.0004	0.012	0.0026
	3/16/2016	0.0017*	0.0006*	0.0005*	0.0081	0.0007*
	10/12/2016	0.0029	< 0.0003	0.0004*	0.0007*	0.0007*
	3/16/2017	0.0007*	0.0004*	0.0028	0.0016*	0.0026
	10/12/2017	0.0048	< 0.0003	0.0004*	0.0006*	0.0009*
	3/14/2018	0.0003*	0.0012*	0.0003*	0.0003*	0.0011*
	10/17/2018	0.0007*	< 0.0003	0.0014*	0.0007*	0.0018*
	3/19/2019	0.0009	0.0019	0.0034	0.0149	0.0094
	10/16/2019	0.0011*	0.0005*	0.0003*	0.0005*	0.0018*
	3/18/2020	< 0.0007	< 0.0007	< 0.0007	< 0.0007	0.001*
	10/16/2020	0.001*	0.0008*	< 0.0007	0.0007*	0.0027
	3/17/2021	< 0.0007	0.0008*	0.0021	0.0007*	< 0.0007
	10/20/2021	0.0012*	< 0.0007	0.0008*	0.002	0.001*
	3/17/2022	< 0.0007	< 0.0007	< 0.0007	< 0.0007	0.0015*

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Total Metals Constituents	Sample Date	ReiterFarm UPG	Well#1 DNG	Well#2 DNG	Well#3 DNG	Well#4 DNG
Chromium, mg/L (CAS NO - 7440-47-3)	10/18/2022	< 0.0007	< 0.0007	< 0.0007	< 0.0007	< 0.0007
	3/14/2023	0.0012*	0.0011*	0.0009*	**0.0031**	**0.0022**
	10/18/2023	< 0.0007	< 0.0007	< 0.0007	< 0.0007	**0.005**
Cobalt, mg/L (CAS NO - 7440-48-4)	12/16/2009	**0.0072**	N/A	N/A	N/A	N/A
	12/16/2009	**0.0072**	N/A	N/A	N/A	N/A
	1/15/2010	**0.0003**	N/A	N/A	N/A	N/A
	2/18/2010	**0.0002**	**0.0003**	**0.0003**	**0.0005**	**0.0007**
	3/16/2010	**0.0002**	**0.0007**	**0.0024**	**0.0005**	N/A
	3/23/2010	N/A	N/A	N/A	N/A	**0.0008**
	4/15/2010	**0.0002**	**0.0003**	**0.0007**	**0.0004**	**0.0003**
	5/17/2010	**0.0001**	**0.0004**	**0.0005**	**0.0004**	**0.0002**
	6/21/2010	**0.0002**	**0.0007**	**0.0006**	**0.0012**	**0.0005**
	7/16/2010	**0.0003**	**0.0009**	**0.0005**	**0.0012**	**0.0004**
	8/18/2010	**0.0003**	**0.0005**	**0.0007**	**0.0025**	**0.0004**
	9/20/2010	**0.0002**	**0.0003**	**0.0007**	**0.0008**	**0.0007**
	10/18/2010	**0.0004**	**0.0005**	**0.0007**	**0.0003**	**0.0002**
	11/16/2010	< 0.0009	< 0.0009	< 0.0009	< 0.0009	< 0.0009
	12/16/2010	**0.004**	< 0.0009	< 0.0009	< 0.0009	< 0.0009
	1/13/2011	**0.0019**	< 0.0009	< 0.0009	< 0.0009	< 0.0009
	2/16/2011	**0.0164**	**0.0009**	**0.0009**	**0.0009**	**0.0009**
	5/18/2011	**0.0009**	**0.0009**	**0.0009**	**0.0009**	**0.0009**
	8/17/2011	**0.0003**	**0.0004**	**0.0006**	**0.0008**	**0.0004**
	10/17/2011	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
	1/18/2012	**0.0002**	**0.0002**	**0.0003**	**0.0008**	**0.0003**
	4/17/2012	**0.0003**	**0.0003**	**0.0003**	**0.0009**	**0.0004**
	7/17/2012	**0.0033**	**0.0002**	**0.0006**	**0.0007**	**0.0003**
	11/14/2012	**0.0006**	**0.0002**	**0.0003**	**0.0008**	**0.0006**
	3/19/2013	**0.0004**	**0.0002**	**0.0002**	**0.0004**	**0.0006**
	6/17/2013	**0.0015**	< 0.0001	**0.0001**	**0.0004**	**0.0002**
	9/17/2013	< 0.0001	< 0.0001	< 0.0001	**0.0003**	**0.0004**
	12/17/2013	**0.0001**	< 0.0001	< 0.0001	**0.0003**	**0.0004**
	2/17/2014	**0.0008**	**0.00007**	**0.00008**	**0.0003**	**0.0002**
	4/15/2014	< 0.0001	< 0.0001	< 0.0001	**0.0003**	**0.0003**
	7/15/2014	< 0.0001	< 0.0001	< 0.0001	**0.0002**	**0.0003**
	10/13/2014	**0.0005**	< 0.0001	< 0.0001	**0.0002**	**0.0003**
	1/16/2015	< 0.0001	< 0.0001	< 0.0001	**0.0002**	**0.002**
	5/13/2015	**0.0001**	**0.00004**	**0.00007**	**0.0081**	**0.0002**
	8/18/2015	**0.00007**	**0.00004**	**0.00006**	**0.0002**	**0.0064**
	11/17/2015	**0.00009**	**0.00006**	< 0.0001	**0.0045**	**0.0001**
	3/16/2016	0.00008*	< 0.00004	0.00007*	**0.0035**	0.00007*
	10/12/2016	0.0001*	< 0.00004	0.0001*	**0.0071**	0.0002*
	3/16/2017	0.00008*	< 0.00004	0.00005*	**0.0073**	0.0002*
	10/12/2017	0.0002*	< 0.00004	0.00007*	0.0001*	0.0006*
	3/14/2018	0.0001*	0.00009*	0.00005*	0.0002*	0.0002*
	10/17/2018	0.0002*	0.0002*	0.0002*	0.0003*	0.0003*
	3/19/2019	**0.0001**	**0.00005**	**0.0002**	**0.0092**	**0.0018**
	10/16/2019	0.00005*	0.00005*	0.00004*	0.0006*	0.0002*
	3/18/2020	< 0.0005	< 0.0005	< 0.0005	0.0009*	< 0.0005
	10/16/2020	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.0005*
	3/17/2021	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
	10/20/2021	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
	3/17/2022	0.0006*	< 0.0005	< 0.0005	< 0.0005	0.0005*
	10/18/2022	0.0013*	0.0017*	0.0014*	0.0013*	0.0016*
	3/14/2023	< 0.0005	< 0.0005	< 0.0005	0.0007*	0.0005*
	10/18/2023	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.0015*
Copper, mg/L (CAS NO - 7440-50-8)	12/16/2009	**0.0214**	N/A	N/A	N/A	N/A
	12/16/2009	**0.0214**	N/A	N/A	N/A	N/A
	1/15/2010	**0.0054**	N/A	N/A	N/A	N/A
	2/18/2010	**0.003**	**0.0672**	**0.0941**	**0.0041**	**0.0081**
	3/16/2010	**0.0029**	**0.0147**	**0.0111**	**0.0069**	N/A
	3/23/2010	N/A	N/A	N/A	N/A	**0.0041**
	4/15/2010	**0.0018**	**0.0117**	**0.0031**	**0.0092**	**0.0083**
	5/17/2010	**0.0019**	**0.0164**	**0.0006**	**0.0077**	**0.0033**
	6/21/2010	**0.0062**	**0.0099**	**0.0032**	**2.56**	**0.764**
	7/16/2010	**0.0074**	**0.0106**	**0.0019**	**0.631**	**0.0248**
	8/18/2010	**0.0034**	**0.0036**	**0.0025**	**0.0033**	**0.016**
	9/20/2010	**0.0025**	**0.0014**	**0.0017**	**0.033**	**0.0047**
	10/18/2010	**0.0048**	**0.001**	**0.0029**	**0.0043**	**0.0054**
	11/16/2010	**0.0088**	**0.0018**	**0.0014**	**0.0162**	**0.0017**
	12/16/2010	**0.0584**	**0.0012**	**0.0018**	**0.0113**	**0.0015**

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Summary of Groundwater Chemistry
BMC Aggregates L.C. South Waterloo Quarry

Total Metals Constituents	Sample Date	ReiterFarm UPG	Well#1 DNG	Well#2 DNG	Well#3 DNG	Well#4 DNG
Copper, mg/L (CAS NO - 7440-50-8)	1/13/2011	0.0274	0.0005	0.0016	0.0032	0.0012
	2/16/2011	0.0194	0.0013	0.0013	0.0075	0.0011
	5/18/2011	0.0027	0.0004	0.0015	0.0017	0.0012
	8/17/2011	0.004	0.0011	0.0021	0.0077	< 0.0004
	10/17/2011	0.0133	< 0.0004	< 0.0004	< 0.0004	0.0025
	1/18/2012	0.0041	< 0.0004	0.0008	0.0133	0.0191
	4/17/2012	0.002	0.0008	< 0.0004	0.016	< 0.0004
	7/17/2012	0.0228	< 0.0004	0.0011	0.0079	0.0019
	11/14/2012	0.0072	0.0029	0.0018	0.0065	0.0031
	3/19/2013	0.118	0.0033	0.0026	0.0074	0.0033
	6/17/2013	0.0183	0.0031	0.0128	0.0101	0.0473
	9/17/2013	0.0043	0.0029	0.0023	0.0041	0.0058
	12/17/2013	0.0062	0.0015	0.0022	0.0068	0.0022
	2/17/2014	0.003	0.002	0.0023	0.0037	0.004
	4/15/2014	0.0238	0.0013	0.0011	0.0024	0.0043
	7/15/2014	0.0191	0.0011	0.0017	0.0032	0.0026
	10/13/2014	0.0261	0.0022	0.0022	0.0035	0.0033
	1/16/2015	0.0158	0.0025	0.0028	0.0042	0.0053
	5/13/2015	0.342	0.0017	0.001	0.0103	0.0017
	8/18/2015	0.0125	0.0013	0.0009	0.0021	0.0095
	11/17/2015	0.0945	0.0014	0.0011	0.0083	0.0035
	3/16/2016	0.0391	0.0015*	0.0016*	0.0116	0.0022
	10/12/2016	0.0241	0.0013*	0.0048	0.0095	0.0056
	3/16/2017	0.0266	0.0036	0.0021	0.0059	0.0039
	10/12/2017	0.0927	0.0046	0.0043	0.0169	0.0045
	3/14/2018	0.688	0.0026	0.002	0.006	0.0064
	10/17/2018	0.0256	0.0056	0.005	< 0.004	< 0.004
	3/19/2019	0.0119	0.0043	0.0086	0.0149	0.0103
	10/16/2019	0.0538	0.0034	0.0015*	0.0017*	0.0024
	3/18/2020	0.0615	0.0028	0.002	0.0039	0.0055
	10/16/2020	0.014	0.0032	0.0015*	0.0032	0.0087
	3/17/2021	0.0907	0.0027	0.0057	0.0041	0.003
	10/20/2021	0.0718	0.002	0.0026	0.0055	0.002
	3/17/2022	0.0293	0.002	0.0101	0.0023	0.0045
	10/18/2022	0.0235	0.0032	0.0032	0.0031	0.0034
	3/14/2023	0.082	0.0084	0.0041	0.0089	0.0068
	10/18/2023	0.0067	0.0032	0.003	0.0051	0.0073
Fluoride, mg/L (CAS NO - 16984-48-8)	3/19/2019	0.3	1	0.8	< 0.2	0.2
	10/16/2019	0.2	1.7	1	0.6	0.3
	3/18/2020	0.4	0.9	0.7	0.6	0.3
	10/16/2020	0.2	0.8	0.6	0.5	0.2
	3/17/2021	0.8	0.9	0.7	0.6	0.7
	10/20/2021	0.2	0.7	0.6	0.5	0.2
	3/17/2022	0.2	0.9	0.7	0.5	0.3
	10/18/2022	0.3	1	0.8	0.7	0.5
	3/14/2023	0.5	0.9	0.7	0.2	0.5
	10/18/2023	0.3	0.9	0.7	0.6	0.3
Iron, mg/L (CAS NO - 7439-89-6)	1/15/2010	0.109	N/A	N/A	N/A	N/A
	2/18/2010	0.121	0.164	0.208	0.1	1.57
	3/16/2010	0.073	0.103	0.787	0.147	N/A
	3/23/2010	N/A	N/A	N/A	N/A	0.086
	4/15/2010	0.098	0.583	0.142	0.062	0.207
	5/17/2010	0.067	0.362	0.595	0.103	0.173
	6/21/2010	< 0.038	1.29	0.819	0.668	< 0.038
	7/16/2010	< 0.038	1.65	0.373	1.02	0.252
	8/18/2010	< 0.038	0.702	0.522	25.6	0.132
	9/20/2010	< 0.038	0.741	1.49	1.29	0.552
	10/18/2010	0.343	0.496	3.34	18.5	0.13
	11/16/2010	0.187	0.638	0.492	2.05	0.256
	12/16/2010	6.02	0.28	0.445	3.38	1.35
	1/13/2011	1.33	0.146	0.271	1.21	0.118
	2/16/2011	2.9	0.226	0.333	8.42	0.066
	5/18/2011	0.038	0.415	0.193	14.2	0.385
	8/17/2011	< 0.038	0.722	0.747	9.76	< 0.038
	10/17/2011	< 0.038	0.611	0.562	12.1	< 0.038
	1/18/2012	0.22	0.673	0.184	14.1	0.181
	4/17/2012	< 0.038	1.64	0.215	22.8	0.122
	7/17/2012	1.9	1.15	0.067	23.4	0.027
	11/14/2012	1.11	2.21	0.684	28.7	1.19
	3/19/2013	0.179	2.38	1.05	27.3	1.16

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Total Metals Constituents	Sample Date	ReiterFarm UPG	Well#1 DNG	Well#2 DNG	Well#3 DNG	Well#4 DNG
Iron, mg/L (CAS NO - 7439-89-6)	6/17/2013	1.52	1.24	0.777	25.6	0.128
	9/17/2013	< 0.038	2.03	0.521	23.7	0.707
	12/17/2013	0.136	0.543	0.447	18.4	0.268
	2/17/2014	0.267	1.71	0.249	22.4	0.257
	4/15/2014	< 0.038	2.19	0.091	18.2	0.431
	7/15/2014	0.053	0.099	0.24	19.3	1.96
	10/13/2014	0.107	0.49	0.158	8.57	0.343
	1/16/2015	0.031	1.8	0.31	11.8	0.823
	5/13/2015	0.037	1.23	3.32	1.25	0.093
	8/18/2015	0.041	1.58	2.54	0.842	1.04
	11/17/2015	0.133	1.45	0.379	0.373	0.098
	3/16/2016	0.028*	0.941	1.43	0.372	0.026*
	10/12/2016	0.079*	1.18	1.57	0.517	0.793
	3/16/2017	0.049*	1.54	2.56	1.29	1.14
	10/12/2017	0.035*	0.805	2.68	0.313	0.439
	3/14/2018	< 0.057	1.53	2.28	0.387	1.77
	10/17/2018	< 0.057	1.09	1.18	4.02	0.799
	3/19/2019	0.13	1.7	3.65	0.973	6.96
	10/16/2019	< 0.057	0.807	0.658	0.226	0.254
	3/18/2020	< 0.047	1.41	1.71	0.671	0.112
	10/16/2020	< 0.047	1.09	1.49	3	0.851
	3/17/2021	< 0.047	0.813	0.697	0.073*	0.056*
	10/20/2021	< 0.047	0.533	0.815	0.803	0.349
	3/17/2022	< 0.047	0.624	0.177	0.083*	0.385
	10/18/2022	< 0.047	0.249	0.188	< 0.047	< 0.047
	3/14/2023	< 0.047	0.463	0.439	0.441	0.243
	10/18/2023	< 0.047	0.265	0.573	0.055*	2.43
Lead, mg/L (CAS NO - 7439-92-1)	12/16/2009	0.0143	N/A	N/A	N/A	N/A
	12/16/2009	0.0143	N/A	N/A	N/A	N/A
	1/15/2010	0.0008	N/A	N/A	N/A	N/A
	2/18/2010	0.0005	< 0.0002	0.0004	< 0.0002	0.0032
	3/16/2010	0.0005	0.0003	0.0007	0.0008	N/A
	3/23/2010	N/A	N/A	N/A	N/A	0.0002
	4/15/2010	0.0003	0.0015	0.0004	0.0005	0.0003
	5/17/2010	0.0008	0.0015	0.0013	0.001	< 0.0002
	6/21/2010	0.0002	0.0008	0.0003	0.0008	< 0.0002
	7/16/2010	0.0008	0.0013	0.0006	0.0014	0.0006
	8/18/2010	< 0.0002	< 0.0002	0.0002	0.0004	0.0002
	9/20/2010	< 0.0002	< 0.0002	0.0004	0.0003	< 0.0002
	10/18/2010	0.0004	< 0.0002	0.0005	< 0.0002	< 0.0002
	11/16/2010	0.0006	0.0003	< 0.0002	< 0.0002	< 0.0002
	12/16/2010	0.0243	0.0003	0.0003	0.0004	0.0033
	1/13/2011	0.0179	< 0.0002	< 0.0002	< 0.0002	< 0.0002
	2/16/2011	0.0131	0.0003	0.0003	0.0003	0.0002
	5/18/2011	0.0003	0.0002	0.0003	0.0002	0.0042
	8/17/2011	0.0002	< 0.0002	0.0003	0.0002	< 0.0002
	10/17/2011	0.0011	< 0.0002	< 0.0002	< 0.0002	< 0.0002
	1/18/2012	0.0002	< 0.0002	< 0.0002	0.0004	0.0011
	4/17/2012	0.0005	0.0005	0.0002	0.0007	0.0004
	7/17/2012	0.0029	< 0.0002	< 0.0002	< 0.0002	< 0.0002
	11/14/2012	0.0075	0.0007	0.0005	0.0006	0.0083
	3/19/2013	0.002	0.0025	0.0011	0.0011	0.008
	6/17/2013	0.0161	0.0001	0.0038	0.0068	0.0087
	9/17/2013	0.0008	0.0007	0.0007	0.0005	0.0042
	12/17/2013	0.0006	0.0003	0.0003	0.0004	0.0015
	2/17/2014	0.0013	0.0003	0.0003	0.0003	0.0011
	4/15/2014	< 0.0002	< 0.0002	< 0.0002	< 0.0002	0.002
	7/15/2014	0.0013	< 0.0002	< 0.0002	< 0.0002	0.0103
	10/13/2014	0.0015	0.0004	0.0008	0.0003	0.0021
	1/16/2015	0.00012	0.0003	< 0.0002	0.0004	0.0019
	5/13/2015	0.0173	< 0.0002	< 0.0002	0.00007	0.0005
	8/18/2015	0.0014	0.0002	0.0002	0.0028	0.0003
	11/17/2015	0.002	0.0002	0.00007	0.0002	0.0012
	3/16/2016	0.0013	0.0002*	0.0001*	0.0003*	0.0004*
	10/12/2016	0.0019	0.0001*	0.0003*	0.0002*	0.0061
	3/16/2017	0.0011	0.0003*	0.0003*	0.0005*	0.0041
	10/12/2017	0.0029	0.0001*	0.0005*	0.0006*	0.0058
	3/14/2018	0.0151	0.0002*	0.0002*	0.0002*	0.0078
	10/17/2018	0.0025	< 0.0008	< 0.0008	< 0.0008	0.0028
	3/19/2019	0.0014	0.0072	0.0206	0.0111	0.0274

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Total Metals Constituents	Sample Date	ReiterFarm UPG	Well#1 DNG	Well#2 DNG	Well#3 DNG	Well#4 DNG
Lead, mg/L (CAS NO - 7439-92-1)	10/16/2019	0.0038	0.0003*	0.0001*	0.0001*	0.0005*
	3/18/2020	0.002	< 0.0005	< 0.0005	< 0.0005	< 0.0005
	10/16/2020	0.0019	< 0.0005	< 0.0005	< 0.0005	0.0007*
	3/17/2021	0.0074	0.0005*	0.0008	< 0.0005	< 0.0005
	10/20/2021	0.0072	0.0009	0.0007*	0.0021	0.0005*
	3/17/2022	0.0015	< 0.0005	0.0007*	< 0.0005	0.0006*
	10/18/2022	0.002	< 0.0005	< 0.0005	< 0.0005	< 0.0005
	3/14/2023	0.004	0.0008	< 0.0005	0.0011	0.0009
	10/18/2023	0.0007*	< 0.0005	< 0.0005	< 0.0005	0.0023
Magnesium, mg/L (CAS NO - 7439-95-4)	1/15/2010	21.9	N/A	N/A	N/A	N/A
	2/18/2010	21.3	60.2	58.5	32.6	39
	3/16/2010	20.5	54.7	38.6	36.5	N/A
	3/23/2010	N/A	N/A	N/A	N/A	20.7
	4/15/2010	22.4	53.6	41.3	35.4	22.1
	5/17/2010	21.5	56.6	40.1	33.3	20.3
	6/21/2010	22.2	52.9	42.1	35.7	3.87
	7/16/2010	24.8	56.7	42.5	37.2	21.5
	8/18/2010	22.4	53.4	38.1	51.4	20.2
	9/20/2010	22.8	49.9	40.4	34.6	25.3
	10/18/2010	23.1	30.2	38.5	39.4	26.7
	11/16/2010	23.9	49.8	41.7	38.2	43.2
	12/16/2010	33	47.2	41.7	39.1	48
	1/13/2011	22.3	46.9	41.3	38.3	46.9
	2/16/2011	25.4	48.1	42.1	39	28.1
	5/18/2011	19.1	46.8	39.8	41.2	24.6
	8/17/2011	19.5	42	40.9	35.4	10.9
	10/17/2011	20.8	41.5	41	40.6	8.31
	1/18/2012	21.2	40.3	43.2	43.3	25
	4/17/2012	23	40.9	44	51.7	26.3
	7/17/2012	22.5	38.3	52.2	50.1	41.6
	11/14/2012	21.1	38.2	41	52.4	49.7
	3/19/2013	26.4	37.7	45.1	54.8	23.8
	6/17/2013	20.1	26.8	39.2	51.8	27.3
	9/17/2013	21.1	32.2	42.3	51.1	53.2
	12/17/2013	19.8	30.1	40.1	48.1	34.7
	2/17/2014	40.3	36.3	45.8	53.6	24.7
	4/15/2014	26.8	36	41.9	45.4	32.9
	7/15/2014	20.2	44	33.5	47.5	23.8
	10/13/2014	21	33.5	42.3	45	35.9
	1/16/2015	22.5	34.6	45.6	48.3	33.2
	5/13/2015	23.1	36.3	44.3	55.4	37
	8/18/2015	19.7	35.9	44.3	34.7	49.4
	11/17/2015	22.1	36.1	41.2	53.7	34.7
	3/16/2016	22.1	33.5	36.1	51.8	29.6
	10/12/2016	21.3	31.8	38.8	45.7	23
	3/16/2017	23.3	34.3	39.1	48.9	34.6
	10/12/2017	21.9	32.2	38.3	26.5	30.5
	3/14/2018	24	37.1	43	25.1	37.6
	10/17/2018	19.9	31.3	35.5	36.8	22.3
	3/19/2019	22.5	32	38.1	30.3	24.9
	10/16/2019	23.1	33.5	37.6	27.8	26.5
	3/18/2020	23.3	33	34.7	27.1	32
	10/16/2020	23.6	31.2	36.5	28.7	24.6
	3/17/2021	25.8	32.8	35	28.5	29.5
	10/20/2021	19.3	30.7	34.3	28.2	22
	3/17/2022	20.5	31.2	35.5	28.3	26.4
	10/18/2022	22.3	32.7	37.6	27.8	28.1
	3/14/2023	23.6	31.5	37	25.3	29.2
	10/18/2023	20.8	30.9	40.1	30.8	26.1
Manganese, mg/L (CAS NO - 7439-96-5)	12/16/2009	1.59	N/A	N/A	N/A	N/A
	12/16/2009	1.59	N/A	N/A	N/A	N/A
	1/15/2010	0.0146	N/A	N/A	N/A	N/A
	2/18/2010	0.0043	0.0065	0.0111	0.0254	0.0273
	3/16/2010	0.0059	0.0212	0.039	0.0198	N/A
	3/23/2010	N/A	N/A	N/A	N/A	0.0093
	4/15/2010	0.0046	0.0174	0.0307	0.0186	0.0088
	5/17/2010	0.0043	0.0164	0.0733	0.0229	0.0092
	6/21/2010	0.0032	0.0578	0.0787	0.0548	0.003
	7/16/2010	0.0035	0.0795	0.0839	0.0588	0.0135
	8/18/2010	< 0.0019	0.0633	0.0871	0.414	0.0076

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Total Metals Constituents	Sample Date	ReiterFarm UPG	Well#1 DNG	Well#2 DNG	Well#3 DNG	Well#4 DNG
Manganese, mg/L (CAS NO - 7439-96-5)	9/20/2010	0.0022	0.0513	0.0849	0.0965	0.0157
	10/18/2010	0.004	0.0531	0.0961	0.19	0.0079
	11/16/2010	0.0035	0.0456	0.0769	0.113	0.0033
	12/16/2010	0.159	0.0434	0.0844	0.139	0.0257
	1/13/2011	0.0823	0.0425	0.0833	0.126	0.0092
	2/16/2011	0.0684	0.0425	0.071	0.142	0.0046
	5/18/2011	0.0008	0.0402	0.0865	0.166	0.0051
	8/17/2011	0.0022	0.0407	0.0913	0.167	0.002
	10/17/2011	0.0021	0.0331	0.0726	0.139	< 0.0019
	1/18/2012	< 0.0019	0.0338	0.0547	0.173	0.0048
	4/17/2012	0.0051	0.0313	0.0734	0.148	0.0072
	7/17/2012	0.0548	0.0236	0.004	0.121	0.0416
	11/14/2012	0.017	< 0.0019	0.033	0.0972	0.0157
	3/19/2013	0.0079	0.0232	0.0612	0.103	0.0203
	6/17/2013	0.049	0.0234	0.072	0.125	0.0057
	9/17/2013	0.0021	0.0226	0.0542	0.103	0.0261
	12/17/2013	0.0028	0.0065	0.0192	0.102	0.0268
	2/17/2014	0.0258	0.0159	0.0122	0.102	0.0755
	4/15/2014	0.0142	0.0187	0.0123	0.0828	0.0263
	7/15/2014	0.0078	0.0537	0.0266	0.0738	0.0205
	10/13/2014	0.0043	0.0257	0.0469	0.0732	0.0105
	1/16/2015	0.0028	0.0195	0.0214	0.0837	0.0224
	5/13/2015	0.0019	0.0169	0.0759	0.009	0.0036
	8/18/2015	0.0028	0.0221	0.0623	0.0063	0.009
	11/17/2015	0.0026	0.0198	0.0359	0.0053	0.0054
	3/16/2016	0.002*	0.0192	0.0547	0.0173	0.0039*
	10/12/2016	0.003*	0.0153	0.0867	0.196	0.0076
	3/16/2017	0.0022*	0.0167	0.0452	0.21	0.0096
	10/12/2017	0.008	0.0142	0.0421	0.0066	0.0133
	3/14/2018	< 0.004	0.0131	0.0411	0.0053	0.0268
	10/17/2018	0.0037*	0.0131	0.0397	0.0973	0.0082
	3/19/2019	0.0075	0.0198	0.0504	0.204	0.0719
	10/16/2019	0.0026*	0.0129	0.0248	0.0241	0.0091
	3/18/2020	0.0028*	0.0172	0.0284	0.0311	0.0039*
	10/16/2020	0.0018*	0.0164	0.0235	0.0307	0.0209
	3/17/2021	0.0211	0.0216	0.04	0.0034*	0.02
	10/20/2021	0.0026*	0.0114	0.0232	0.0352	0.0071
	3/17/2022	0.0025*	0.0137	0.0148	0.0214	0.0131
	10/18/2022	< 0.0017	0.0019*	0.022	0.0027*	0.004
	3/14/2023	0.0034*	0.0142	0.0648	0.0299	0.0468
	10/18/2023	< 0.0017	0.0055	0.0107	0.0072	0.0678
Mercury, mg/L (CAS NO - 7439-97-6)	12/16/2009	< 0.00002	N/A	N/A	N/A	N/A
	12/16/2009	0.00003	N/A	N/A	N/A	N/A
	1/15/2010	0.00004	N/A	N/A	N/A	N/A
	2/18/2010	0.00008	0.00003	0.00005	0.00011	0.00016
	3/16/2010	< 0.00002	< 0.00002	< 0.00002	< 0.00002	N/A
	3/23/2010	N/A	N/A	N/A	N/A	0.00005
	4/15/2010	0.00003	0.00002	< 0.00002	0.00004	< 0.00002
	5/17/2010	< 0.00002	0.00006	< 0.00002	< 0.00002	< 0.00002
	6/21/2010	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002
	7/16/2010	0.00008	0.00006	0.00007	0.00007	0.00013
	8/18/2010	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002
	9/20/2010	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002
	10/18/2010	0.00007	0.00002	0.00006	< 0.00002	< 0.00002
	11/16/2010	0.00003	0.00006	0.00003	0.00007	0.00008
	12/16/2010	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002
	1/13/2011	0.00003	< 0.00002	0.00003	0.00005	0.00005
	2/16/2011	0.00007	0.00009	0.00008	0.00002	0.00007
	5/18/2011	0.00014	0.00002	0.00002	0.00002	0.00002
	8/17/2011	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002
	10/17/2011	< 0.00002	< 0.00002	< 0.00002	0.00033	< 0.00002
	1/18/2012	< 0.00002	< 0.00002	< 0.00002	< 0.00002	0.00013
	4/17/2012	< 0.00002	0.004	< 0.00002	< 0.00002	< 0.00002
	7/17/2012	< 0.00002	0.00015	< 0.00002	< 0.00002	< 0.00002
	11/14/2012	0.00025	0.00032	0.00037	0.00027	0.00018
	3/19/2013	0.00013	< 0.00002	< 0.00002	0.00017	0.00023
	6/17/2013	0.00018	0.00019	0.00021	0.00022	0.00018
	9/17/2013	< 0.00002	0.00024	0.00014	< 0.00002	0.00008
	12/17/2013	0.00012	0.0001	0.00014	0.00015	0.00009
	2/17/2014	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002

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Total Metals Constituents	Sample Date	ReiterFarm UPG	Well#1 DNG	Well#2 DNG	Well#3 DNG	Well#4 DNG
Mercury, mg/L (CAS NO - 7439-97-6)	4/15/2014	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002
	7/15/2014	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002
	10/13/2014	< 0.00002	< 0.00002	< 0.00002	< 0.00002	0.00014
	1/16/2015	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002
	5/13/2015	< 0.00002	< 0.00002	< 0.00002	0.00014	< 0.00002
	8/18/2015	0.00009	0.00011	0.00011	0.00011	0.0002
	11/17/2015	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002
	3/16/2016	< 0.00009	< 0.00009	< 0.00009	< 0.00009	< 0.00009
	10/12/2016	< 0.00009	< 0.00009	< 0.00009	< 0.00009	< 0.00009
	3/16/2017	< 0.00009	< 0.00009	< 0.00009	0.00015*	< 0.00009
	10/12/2017	< 0.00013	< 0.00013	< 0.00013	< 0.00013	< 0.00013
	3/14/2018	< 0.00012	< 0.00012	< 0.00012	< 0.00012	< 0.00012
	10/17/2018	< 0.00012	< 0.00012	< 0.00012	< 0.00012	< 0.00012
	3/19/2019	< 0.00012	< 0.00012	< 0.00012	< 0.00012	< 0.00012
	10/16/2019	< 0.00012	< 0.00012	< 0.00012	< 0.00012	< 0.00012
	3/18/2020	< 0.00012	< 0.00012	< 0.00012	< 0.00012	< 0.00012
	10/16/2020	0.00014*	< 0.00013	< 0.00013	< 0.00013	< 0.00013
	3/17/2021	< 0.00013	< 0.00013	< 0.00013	< 0.00013	< 0.00013
	10/20/2021	< 0.00013	< 0.00013	< 0.00013	< 0.00013	< 0.00013
	3/17/2022	< 0.00013	< 0.00013	< 0.00013	< 0.00013	< 0.00013
	10/18/2022	< 0.00013	< 0.00013	< 0.00013	< 0.00013	< 0.00013
	3/14/2023	< 0.00013	< 0.00013	< 0.00013	< 0.00013	< 0.00013
	10/18/2023	< 0.00013	< 0.00013	< 0.00013	< 0.00013	< 0.00013
Molybdenum, mg/L (CAS NO - 7439-98-7)	12/16/2009	< 0.0001	N/A	N/A	N/A	N/A
	12/16/2009	0.002	N/A	N/A	N/A	N/A
	1/15/2010	0.0008	N/A	N/A	N/A	N/A
	2/18/2010	0.0006	0.017	0.0173	0.007	0.0081
	3/16/2010	0.0002	0.0063	0.0143	0.0076	N/A
	3/23/2010	N/A	N/A	N/A	N/A	0.0024
	4/15/2010	0.0004	0.0075	0.0133	0.0104	0.0021
	5/17/2010	0.0003	0.0145	0.0119	0.0104	0.0016
	6/21/2010	0.0007	0.0073	0.0067	0.0937	0.023
	7/16/2010	0.0007	0.0067	0.0057	0.0319	0.0022
	8/18/2010	0.0004	0.0022	0.0036	0.0006	0.0029
	9/20/2010	0.0008	0.0021	0.0024	0.0039	0.0053
	10/18/2010	0.0005	0.0009	0.0036	0.0005	0.0048
	11/16/2010	0.0006	0.0005	0.0015	0.0031	0.0073
	12/16/2010	0.0004	0.0002	0.0016	0.0019	0.0082
	1/13/2011	0.0005	0.0001	0.0013	0.001	0.0076
	2/16/2011	0.0009	0.0004	0.0014	0.001	0.0023
	5/18/2011	0.0003	0.0001	0.0006	0.0002	0.0024
	8/17/2011	0.0007	0.0003	0.0015	0.001	0.0399
	10/17/2011	< 0.0001	< 0.0001	< 0.0001	< 0.0001	0.0644
	1/18/2012	0.0009	0.0018	0.0012	0.0014	0.0057
	4/17/2012	0.0009	0.0002	0.0002	0.0009	0.0077
	7/17/2012	0.0007	< 0.0001	0.0121	0.001	0.0005
	11/14/2012	0.0012	0.0005	< 0.0001	0.0006	0.0119
	3/19/2013	0.0047	0.0005	< 0.0001	0.0006	0.0035
	6/17/2013	0.0007	0.0003	0.0006	0.0009	0.0046
	9/17/2013	0.0006	< 0.0001	0.0004	0.0005	0.0156
	12/17/2013	0.001	< 0.0001	0.0004	0.0006	0.0053
	2/17/2014	0.0078	0.0004	0.0006	0.0006	0.0035
	4/15/2014	0.0057	0.0003	0.0006	0.0005	0.0075
	7/15/2014	0.0003	0.0004	< 0.0001	0.0003	0.0117
	10/13/2014	0.0009	0.0008	0.0007	0.0004	0.0094
	1/16/2015	0.0009	< 0.0001	0.0007	0.0003	0.006
	5/13/2015	0.0008	0.0001	0.0004	0.0208	0.0013
	8/18/2015	0.0006	0.0003	0.0004	0.0034	0.0152
	11/17/2015	0.0016	0.008	0.0009	0.0125	0.002
	3/16/2016	0.0004*	0.0001*	0.0012*	0.0114	0.0155
	10/12/2016	0.0006*	< 0.00006	0.021	0.0074	0.0285
	3/16/2017	0.0005*	< 0.00006	0.0003*	0.0076	0.0086
	10/12/2017	0.0055	< 0.00006	0.0002*	0.0039	0.0036
	3/14/2018	< 0.0019	< 0.0019	< 0.0019	0.0031	< 0.0019
	10/17/2018	0.0006*	0.0001*	0.0003*	0.0009*	0.0586
	3/19/2019	< 0.002	< 0.002	< 0.002	0.0081	0.0083
	10/16/2019	0.003	0.0001*	0.0005*	0.0089	0.0154
	3/18/2020	0.0011*	< 0.0006	< 0.0006	0.009	0.0755
	10/16/2020	0.0014*	< 0.0006	< 0.0006	0.0051	0.0023
	3/17/2021	0.0015*	0.0009*	0.0008*	0.0051	0.0008*

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Total Metals Constituents	Sample Date	ReiterFarm UPG	Well#1 DNG	Well#2 DNG	Well#3 DNG	Well#4 DNG
Molybdenum, mg/L (CAS NO - 7439-98-7)	10/20/2021	0.0035	< 0.0006	< 0.0006	0.0023	0.0024
	3/17/2022	0.0011*	< 0.0006	< 0.0006	0.0063	0.0021
	10/18/2022	0.0066	< 0.0006	< 0.0006	0.0047	0.0043
	3/14/2023	0.0044	< 0.0006	< 0.0006	0.006	0.0091
	10/18/2023	0.0063	0.001*	< 0.0006	0.0028	0.004
Nickel, mg/L (CAS NO - 7440-02-0)	12/16/2009	0.0417	N/A	N/A	N/A	N/A
	12/16/2009	0.0417	N/A	N/A	N/A	N/A
	1/15/2010	0.0052	N/A	N/A	N/A	N/A
	2/18/2010	0.0039	0.0045	0.0049	0.0072	0.0077
	3/16/2010	0.0034	0.0062	0.0632	0.0066	N/A
	3/23/2010	N/A	N/A	N/A	N/A	0.0085
	4/15/2010	0.0028	0.0041	0.005	0.0089	0.0041
	5/17/2010	0.0033	0.0067	0.0048	0.0079	0.0051
	6/21/2010	0.0042	0.0069	0.0074	0.0254	0.0091
	7/16/2010	0.0048	0.0078	0.0072	0.0246	0.0058
	8/18/2010	0.0253	0.0055	0.0112	0.0088	0.0054
	9/20/2010	0.004	0.0045	0.0128	0.0135	0.0124
	10/18/2010	0.0032	0.0156	0.0119	0.0034	0.005
	11/16/2010	0.0033	0.003	0.0032	0.0073	0.0068
	12/16/2010	0.0238	0.0039	0.0045	0.0075	0.0121
	1/13/2011	0.0092	0.0027	0.0033	0.0055	0.0119
	2/16/2011	0.0188	0.0031	0.0034	0.0061	0.0047
	5/18/2011	0.005	0.0041	0.0044	0.007	0.0061
	8/17/2011	0.0048	0.005	0.0059	0.0079	0.0052
	10/17/2011	0.0037	0.0035	0.0037	0.0078	0.0046
	1/18/2012	0.0025	0.0025	0.0027	0.007	0.0035
	4/17/2012	0.0057	0.005	0.0054	0.0131	0.0087
	7/17/2012	0.0232	0.0027	0.0149	0.0095	0.0086
	11/14/2012	0.0089	0.0049	0.0052	0.0099	0.0147
	3/19/2013	0.0041	0.0036	0.0043	0.0064	0.0046
	6/17/2013	0.007	0.0008	0.0023	0.0027	0.0015
	9/17/2013	0.0006	0.0008	0.0009	0.0022	0.012
	12/17/2013	0.0008	0.0006	0.0009	0.0029	0.0069
	2/17/2014	0.0104	0.0006	0.001	0.003	0.0008
	4/15/2014	0.0016	0.0005	0.0006	0.003	0.0064
	7/15/2014	0.0009	0.0009	0.0011	0.0028	0.004
	10/13/2014	0.0026	0.0024	0.0011	0.0047	0.0051
	1/16/2015	0.0015	0.0009	0.001	0.0029	0.0787
	5/13/2015	0.0051	< 0.0001	< 0.0001	0.0431	0.0018
	8/18/2015	0.0021	0.0015	0.0016	0.0034	0.0446
	11/17/2015	0.0014	0.0012	0.0006	0.0484	0.0032
	3/16/2016	0.0018*	0.0009*	0.0014*	0.0477	0.0013*
	10/12/2016	0.0019*	0.0012*	0.0017*	0.0391	0.002*
	3/16/2017	0.001*	0.0019*	0.0009*	0.0424	0.0024*
	10/12/2017	0.0039*	0.001*	0.0019*	0.0015*	0.0044
	3/14/2018	0.0094	0.0007*	0.0063	0.0026*	0.0021*
	10/17/2018	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
	3/19/2019	0.0015	0.0021	0.0032	0.0675	0.0109
	10/16/2019	0.0011*	0.0011*	0.0008*	0.0102	0.0027*
	3/18/2020	0.003*	0.0011*	0.001*	0.0167	0.0033*
	10/16/2020	< 0.0007	0.0007*	< 0.0007	0.0069	0.0024*
	3/17/2021	0.0026*	0.0015*	0.0012*	0.0064	0.0021*
	10/20/2021	0.0015*	< 0.0007	< 0.0007	0.0034*	0.0012*
	3/17/2022	0.0011*	0.0007*	0.0014*	0.0021*	0.0036*
	10/18/2022	< 0.0007	< 0.0007	< 0.0007	0.006	0.0067
	3/14/2023	0.0034*	0.0044	0.0017*	0.0046	0.0146
	10/18/2023	0.0018*	0.0013*	0.0012*	0.0026*	0.0061
Selenium, mg/L (CAS NO - 7782-49-2)	12/16/2009	< 0.0002	N/A	N/A	N/A	N/A
	12/16/2009	0.0012	N/A	N/A	N/A	N/A
	1/15/2010	0.0011	N/A	N/A	N/A	N/A
	2/18/2010	0.001	< 0.0002	< 0.0002	0.0014	< 0.0002
	3/16/2010	0.0012	< 0.0002	0.0002	0.0017	N/A
	3/23/2010	N/A	N/A	N/A	N/A	0.0003
	4/15/2010	0.0018	< 0.0002	< 0.0002	0.0019	0.0013
	5/17/2010	0.0015	0.0002	< 0.0002	0.0017	0.0011
	6/21/2010	0.0012	0.0002	< 0.0002	0.0007	0.0009
	7/16/2010	0.0016	0.0002	0.0004	0.0012	0.0013
	8/18/2010	0.0012	< 0.0002	0.0006	< 0.0002	0.001
	9/20/2010	0.0013	< 0.0002	0.0002	< 0.0002	0.0006
	10/18/2010	0.0012	< 0.0002	< 0.0002	< 0.0002	0.0011

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Total Metals Constituents	Sample Date	ReiterFarm UPG	Well#1 DNG	Well#2 DNG	Well#3 DNG	Well#4 DNG
Selenium, mg/L (CAS NO - 7782-49-2)	11/16/2010	0.0007	< 0.0002	< 0.0002	< 0.0002	< 0.0002
	12/16/2010	0.0021	0.0004	0.0004	0.0003	< 0.0002
	1/13/2011	0.002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
	2/16/2011	0.0022	0.0002	0.0002	0.0002	0.0012
	5/18/2011	0.0034	0.0011	0.0009	0.0008	0.0019
	8/17/2011	0.0016	< 0.0002	< 0.0002	< 0.0002	0.0084
	10/17/2011	0.0037	0.0089	0.0028	0.0209	0.0109
	1/18/2012	0.0036	< 0.0002	< 0.0002	< 0.0002	0.0049
	4/17/2012	0.0037	0.0006	< 0.0002	0.0007	0.0042
	7/17/2012	0.0032	0.0005	0.0018	0.0008	0.0006
	11/14/2012	0.0028	< 0.0002	< 0.0002	< 0.0002	< 0.0002
	3/19/2013	0.0034	< 0.0002	< 0.0002	< 0.0002	0.0015
	6/17/2013	0.0021	< 0.0002	< 0.0002	< 0.0002	0.0029
	9/17/2013	0.0022	< 0.0002	< 0.0002	< 0.0002	0.0015
	12/17/2013	0.0032	< 0.0002	< 0.0002	< 0.0002	0.0014
	2/17/2014	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
	4/15/2014	0.0032	< 0.0002	< 0.0002	< 0.0002	0.0013
	7/15/2014	0.0007	< 0.0002	< 0.0002	< 0.0002	0.0017
	10/13/2014	0.0018	< 0.0002	< 0.0002	0.0006	0.0011
	1/16/2015	0.0021	0.0005	0.0004	< 0.0002	0.0014
	5/13/2015	0.0019	< 0.0002	< 0.0002	0.0034	0.0012
	8/18/2015	0.0017	< 0.0002	< 0.0002	0.0017	0.003
	11/17/2015	0.0031	< 0.0002	< 0.0002	0.0023	< 0.0002
	3/16/2016	0.0027*	< 0.0011	< 0.0011	0.0021*	0.0018*
	10/12/2016	0.003*	< 0.0011	0.0039*	0.0027*	0.0033*
	3/16/2017	0.0025*	< 0.0011	< 0.0011	0.0015*	0.0018*
	10/12/2017	0.007	< 0.0011	< 0.0011	0.004	0.0028*
	3/14/2018	0.0022*	< 0.0011	< 0.0011	0.0018*	< 0.0011
	10/17/2018	0.0037*	0.0023*	0.0019*	0.0012*	0.0047
	3/19/2019	< 0.0011	< 0.0011	< 0.0011	0.0019	0.0044
	10/16/2019	0.0029*	< 0.0011	< 0.0011	0.0011*	0.0012*
	3/18/2020	0.0013*	< 0.0011	< 0.0011	0.0012*	0.0065
	10/16/2020	0.0017*	0.0013*	< 0.0011	0.0018*	0.0016*
	3/17/2021	< 0.0011	< 0.0011	< 0.0011	< 0.0011	< 0.0011
	10/20/2021	0.0015*	< 0.0011	< 0.0011	< 0.0011	0.0016*
	3/17/2022	0.0015*	< 0.0011	< 0.0011	< 0.0011	0.0011*
	10/18/2022	0.002*	< 0.0011	0.0024*	< 0.0011	< 0.0011
	3/14/2023	0.0037*	< 0.0011	< 0.0011	0.0056	0.0029*
	10/18/2023	0.0035*	< 0.0011	< 0.0011	0.0014*	0.0036*
Silver, mg/L (CAS NO - 7440-22-4)	12/16/2009	< 0.0012	N/A	N/A	N/A	N/A
	12/16/2009	< 0.0012	N/A	N/A	N/A	N/A
	1/15/2010	< 0.0012	N/A	N/A	N/A	N/A
	2/18/2010	< 0.0012	< 0.0012	< 0.0012	< 0.0012	< 0.0012
	3/16/2010	< 0.0012	< 0.0012	< 0.0012	< 0.0012	N/A
	3/23/2010	N/A	N/A	N/A	N/A	< 0.0012
	4/15/2010	< 0.0012	< 0.0012	< 0.0012	< 0.0012	< 0.0012
	5/17/2010	< 0.0012	< 0.0012	< 0.0012	< 0.0012	< 0.0012
	6/21/2010	< 0.0012	< 0.0012	< 0.0012	< 0.0012	< 0.0012
	7/16/2010	< 0.0012	< 0.0012	< 0.0012	< 0.0012	< 0.0012
	8/18/2010	< 0.0012	< 0.0012	< 0.0012	< 0.0012	< 0.0012
	9/20/2010	< 0.0012	< 0.0012	< 0.0012	< 0.0012	< 0.0012
	10/18/2010	< 0.0012	< 0.0012	< 0.0012	< 0.0012	< 0.0012
	11/16/2010	< 0.0012	< 0.0012	< 0.0012	< 0.0012	< 0.0012
	12/16/2010	< 0.0012	< 0.0012	< 0.0012	< 0.0012	< 0.0012
	1/13/2011	< 0.0012	< 0.0012	< 0.0012	< 0.0012	< 0.0012
	2/16/2011	0.00008	0.0012	0.0012	0.0012	0.0012
	5/18/2011	0.0012	0.0012	0.0012	0.0012	0.0012
	8/17/2011	< 0.0012	< 0.0012	< 0.0012	< 0.0012	< 0.0012
	10/17/2011	< 0.0012	< 0.0012	< 0.0012	< 0.0012	< 0.0012
	1/18/2012	< 0.0012	< 0.0012	< 0.0012	< 0.0012	< 0.0012
	4/17/2012	< 0.0012	0.00009	< 0.0012	< 0.0012	< 0.0012
	7/17/2012	< 0.0012	< 0.0012	< 0.0012	< 0.0012	< 0.0012
	11/14/2012	< 0.0012	0.0003	0.0003	0.0004	< 0.0012
	3/19/2013	< 0.0012	< 0.0012	< 0.0012	< 0.0012	< 0.0012
	6/17/2013	< 0.0012	< 0.0012	< 0.0012	< 0.0012	< 0.0012
	9/17/2013	< 0.0012	< 0.0012	< 0.0012	0.0001	< 0.0012
	12/17/2013	< 0.0012	0.0001	< 0.0012	0.0003	< 0.0012
	2/17/2014	< 0.0012	< 0.0012	< 0.0012	< 0.0012	< 0.0012
	4/15/2014	< 0.0012	< 0.0012	< 0.0012	< 0.0012	< 0.0012
	7/15/2014	< 0.0012	< 0.0012	< 0.0012	< 0.0012	< 0.0012

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BMC Aggregates L.C. South Waterloo Quarry

Total Metals Constituents	Sample Date	ReiterFarm UPG	Well#1 DNG	Well#2 DNG	Well#3 DNG	Well#4 DNG
Silver, mg/L (CAS NO - 7440-22-4)	10/13/2014	< 0.0012	< 0.0012	< 0.0012	< 0.0012	< 0.0012
	1/16/2015	< 0.0012	< 0.0012	< 0.0012	< 0.0012	< 0.0012
	5/13/2015	< 0.0012	< 0.0012	< 0.0012	**0.0001**	< 0.0012
	8/18/2015	< 0.0012	< 0.0012	< 0.0012	**0.00005**	**0.0001**
	11/17/2015	< 0.0012	**0.00004**	< 0.0012	**0.00009**	< 0.0012
	3/16/2016	< 0.00004	< 0.00004	< 0.00004	< 0.00004	< 0.00004
	10/12/2016	0.0013*	0.0014*	0.0014*	0.0014*	0.0013*
	3/16/2017	0.0004*	0.0005*	0.0004*	0.0004*	0.0004*
	10/12/2017	0.0009*	0.0009*	0.0014*	0.001*	0.0009*
	3/14/2018	< 0.0007	< 0.0007	< 0.0007	< 0.0007	< 0.0007
	10/17/2018	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
	3/19/2019	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
	10/16/2019	< 0.0019	< 0.0019	< 0.0019	< 0.0019	< 0.0019
	3/18/2020	< 0.0025	< 0.0025	< 0.0025	< 0.0025	< 0.0025
	10/16/2020	< 0.0025	< 0.0025	< 0.0025	< 0.0025	< 0.0025
	3/17/2021	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
	10/20/2021	< 0.0025	< 0.0002	< 0.0002	< 0.0025	< 0.0025
	3/17/2022	< 0.0008	< 0.0008	< 0.0008	< 0.0008	< 0.0008
	10/18/2022	< 0.0015	< 0.0015	**0.0023**	< 0.0015	< 0.0015
	3/14/2023	< 0.0015	< 0.0015	< 0.0015	< 0.0015	< 0.0015
	10/18/2023	< 0.0015	< 0.0015	0.0019*	< 0.0015	< 0.0015
Sulfate, mg/L (CAS NO - 14808-79-8)	1/15/2010	**509**	N/A	N/A	N/A	N/A
	2/18/2010	**40.5**	**141**	**134**	**101**	**228**
	3/16/2010	**17.5**	**139**	**62.6**	**86.7**	N/A
	3/23/2010	N/A	N/A	N/A	N/A	**41.8**
	4/15/2010	**25.4**	**141**	**68**	**88.2**	**28.7**
	5/17/2010	**24.1**	**138**	**57.8**	**90.8**	**19.3**
	6/21/2010	**29.8**	**126**	**39.5**	**92.3**	**18**
	7/16/2010	**27.8**	**103**	**37.3**	**82.6**	**17.1**
	8/18/2010	**54.4**	**100**	**69**	**0.7**	**53.4**
	9/20/2010	**40.9**	**56.9**	**34.1**	**69.3**	**118**
	10/18/2010	**34**	**32.2**	**10.5**	**0.3**	**147**
	11/16/2010	**35.3**	**21.6**	**25.8**	**49.4**	**275**
	12/16/2010	**35.1**	**14.3**	**26.6**	**22.5**	**385**
	1/13/2011	**36.5**	**10.5**	**28.5**	**40**	**422**
	2/16/2011	**26.2**	**14.1**	**28.4**	**11.6**	**128**
	5/18/2011	**23.2**	**7.8**	**28.1**	**0.7**	**123**
	8/17/2011	**33.9**	**3**	**17.7**	**0.7**	**197**
	1/18/2012	**39.3**	**1.3**	**13.6**	**1**	**101**
	4/17/2012	**40.9**	**2.1**	**11.6**	**2.1**	**122**
	7/17/2012	**36.4**	**2.9**	**529**	**6.6**	**12.9**
	11/14/2012	**40.4**	**13.9**	**28.2**	**16.1**	**443**
	3/19/2013	**120**	**1.5**	**26.2**	**2.1**	**104**
	6/17/2013	**22.3**	**1.7**	**25.9**	**6.4**	**124**
	9/17/2013	**34.5**	**2.3**	**27.4**	**4.1**	**545**
	12/17/2013	**38.4**	**2.8**	**26.8**	**2**	**257**
	2/17/2014	**315**	**2.4**	**37.2**	**2.2**	**115**
	4/15/2014	**137**	**0.9**	**33.8**	**9.7**	**334**
	7/15/2014	**23.2**	**2.5**	**36.4**	**14.2**	**257**
	10/13/2014	**40**	**2.2**	**38.4**	**10.6**	**288**
	1/16/2015	**50.7**	< 8	**39.9**	**7.6**	**259**
	5/13/2015	**27.3**	**1.9**	**43.5**	**100**	**300**
	8/18/2015	**32.2**	**1.8**	**56.5**	**134**	**320**
	11/17/2015	**285**	**2.2**	**58**	**174**	**285**
	3/16/2016	**24.3**	**2.9**	**53.6**	**196**	**268**
	10/12/2016	**32.6**	**5.4**	**104**	**224**	**280**
	3/16/2017	**31.1**	**6.3**	**127**	**216**	**252**
	10/12/2017	**34.6**	**7.2**	**134**	**85.3**	**163**
	3/14/2018	**31.9**	**7.3**	**136**	**84.7**	**135**
	10/17/2018	**15.4**	**11**	**144**	**14**	**294**
	3/19/2019	**27.9**	**11**	**150**	**214**	**144**
	10/16/2019	**51.8**	**15.8**	**152**	**103**	**105**
	3/18/2020	**38.2**	**12.9**	**137**	**100**	**267**
	10/16/2020	**46.7**	**14**	**127**	**82.9**	**70.5**
	3/17/2021	**46.7**	**17.2**	**135**	**86.8**	**73.4**
	10/20/2021	**56.5**	**33.3**	**128**	**73.7**	**97.7**
	3/17/2022	**28.7**	**37.2**	**123**	**105**	**102**
	10/18/2022	**111**	**36.8**	**120**	**90.8**	**96.4**
	3/14/2023	**56**	**38**	**116**	**120**	**109**
	10/18/2023	**109**	**58.1**	**120**	**100**	**111**

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Total Metals Constituents	Sample Date	ReiterFarm UPG	Well#1 DNG	Well#2 DNG	Well#3 DNG	Well#4 DNG
Thallium, mg/L (CAS NO - 7440-28-0)	12/16/2009	**0.0118**	N/A	N/A	N/A	N/A
	12/16/2009	**0.0012**	N/A	N/A	N/A	N/A
	1/15/2010	< 0.0002	N/A	N/A	N/A	N/A
	2/18/2010	< 0.0002	**0.0012**	< 0.0002	< 0.0002	< 0.0002
	3/16/2010	< 0.0002	< 0.0002	**0.0019**	< 0.0002	N/A
	3/23/2010	N/A	N/A	N/A	N/A	< 0.0002
	4/15/2010	< 0.0002	**0.0014**	**0.0035**	**0.0017**	**0.0012**
	5/17/2010	< 0.0002	**0.0053**	**0.0116**	**0.0042**	**0.0019**
	6/21/2010	< 0.0002	< 0.0002	**0.0012**	< 0.0002	< 0.0002
	7/16/2010	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
	8/18/2010	**0.0003**	**0.0002**	**0.0007**	< 0.0002	**0.0005**
	9/20/2010	< 0.0002	**0.0007**	**0.0005**	**0.0002**	**0.0004**
	10/18/2010	**0.0003**	**0.0018**	**0.0005**	**0.0003**	**0.0006**
	11/16/2010	< 0.0002	< 0.0002	< 0.0002	< 0.0002	**0.0008**
	12/16/2010	**0.0004**	< 0.0002	< 0.0002	< 0.0002	**0.0014**
	1/13/2011	< 0.0002	< 0.0002	< 0.0002	< 0.0002	**0.0011**
	2/16/2011	**0.0002**	**0.0002**	**0.0002**	**0.0002**	**0.0008**
	5/18/2011	**0.0002**	**0.0002**	**0.0005**	**0.0002**	**0.0002**
	8/17/2011	< 0.0002	< 0.0002	< 0.0002	**0.001**	**0.0007**
	10/17/2011	**0.0008**	< 0.0002	< 0.0002	**0.0008**	**0.0007**
	1/18/2012	< 0.0002	< 0.0002	< 0.0002	< 0.0002	**0.0005**
	4/17/2012	< 0.0002	**0.001**	< 0.0002	< 0.0002	< 0.0002
	7/17/2012	< 0.0002	**0.0007**	**0.0011**	**0.0006**	< 0.0002
	11/14/2012	**0.0004**	< 0.0002	< 0.0002	< 0.0002	**0.0011**
	3/19/2013	< 0.0002	**0.0002**	< 0.0002	< 0.0002	**0.0003**
	6/17/2013	**0.0002**	**0.0002**	**0.0002**	**0.0001**	**0.0002**
	9/17/2013	< 0.0002	< 0.0002	< 0.0002	< 0.0002	**0.001**
	12/17/2013	< 0.0002	< 0.0002	< 0.0002	< 0.0002	**0.0005**
	2/17/2014	**0.0006**	**0.001**	**0.0003**	**0.0002**	**0.0002**
	4/15/2014	**0.0002**	**0.0008**	**0.0008**	**0.0001**	**0.0001**
	7/15/2014	**0.0001**	**0.0002**	**0.0002**	**0.0001**	**0.0002**
	10/13/2014	**0.0001**	**0.001**	**0.0002**	**0.0001**	**0.0006**
	1/16/2015	< 0.0002	**0.0004**	**0.0002**	< 0.0002	**0.0003**
	5/13/2015	< 0.0002	< 0.0002	< 0.0002	< 0.0002	**0.0001**
	8/18/2015	**0.0001**	**0.0001**	**0.0001**	**0.0002**	**0.0001**
	11/17/2015	< 0.0002	**0.0001**	**0.0001**	**0.0001**	**0.0002**
	3/16/2016	< 0.0001	< 0.0001	< 0.0001	0.0002*	< 0.0001
	10/12/2016	< 0.0001	< 0.0001	< 0.0001	0.0006*	< 0.0001
	3/16/2017	0.0002*	0.0005*	0.0004*	**0.0013**	0.0004*
	10/12/2017	0.0002*	< 0.0001	0.0003*	0.0003*	0.0005*
	3/14/2018	< 0.0001	< 0.0001	0.0001*	0.0001*	0.0001*
	10/17/2018	0.0001*	0.0001*	0.0001*	0.0001*	0.0002*
	3/19/2019	< 0.0001	< 0.0001	< 0.0001	**0.001**	**0.0002**
	10/16/2019	< 0.0001	< 0.0001	< 0.0001	0.0002*	< 0.0001
	3/18/2020	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004
	10/16/2020	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004
	3/17/2021	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004
	10/20/2021	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004
	3/17/2022	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004
	10/18/2022	0.0004*	< 0.0004	**0.0018**	**0.0012**	0.0004*
	3/14/2023	< 0.0004	**0.0009**	0.0006*	< 0.0004	< 0.0004
	10/18/2023	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004
Vanadium, mg/L (CAS NO - 7440-62-2)	12/16/2009	< 0.0007	N/A	N/A	N/A	N/A
	12/16/2009	< 0.0007	N/A	N/A	N/A	N/A
	1/15/2010	< 0.0007	N/A	N/A	N/A	N/A
	2/18/2010	< 0.0007	< 0.0007	< 0.0007	< 0.0007	< 0.0007
	3/16/2010	**0.0031**	**0.0049**	**0.0049**	**0.0052**	N/A
	3/23/2010	N/A	N/A	N/A	N/A	**0.0022**
	4/15/2010	< 0.0007	< 0.0007	< 0.0007	< 0.0007	< 0.0007
	5/17/2010	< 0.0007	< 0.0007	< 0.0007	< 0.0007	< 0.0007
	6/21/2010	< 0.0007	**0.0034**	< 0.0007	< 0.0007	< 0.0007
	7/16/2010	< 0.0007	**0.0007**	< 0.0007	**0.0027**	< 0.0007
	8/18/2010	**0.0081**	**0.0118**	**0.0109**	**0.0033**	**0.0096**
	9/20/2010	< 0.0007	**0.0007**	< 0.0007	< 0.0007	< 0.0007
	10/18/2010	< 0.0007	**0.0007**	< 0.0007	< 0.0007	< 0.0007
	11/16/2010	< 0.0007	< 0.0007	< 0.0007	< 0.0007	< 0.0007
	12/16/2010	< 0.0007	< 0.0007	< 0.0007	< 0.0007	< 0.0007
	1/13/2011	< 0.0007	< 0.0007	< 0.0007	< 0.0007	< 0.0007
	2/16/2011	**0.0034**	**0.0021**	**0.0026**	**0.0007**	**0.0019**
	5/18/2011	**0.0007**	**0.0007**	**0.0007**	**0.0007**	**0.0007**

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Total Metals Constituents	Sample Date	ReiterFarm UPG	Well#1 DNG	Well#2 DNG	Well#3 DNG	Well#4 DNG
Vanadium, mg/L (CAS NO - 7440-62-2)	8/17/2011	< 0.0007	< 0.0007	< 0.0007	< 0.0007	< 0.0007
	10/17/2011	< 0.0007	< 0.0007	< 0.0007	< 0.0007	< 0.0007
	1/18/2012	< 0.0007	< 0.0007	< 0.0007	< 0.0007	0.0033
	4/17/2012	< 0.0007	< 0.0007	< 0.0007	< 0.0007	0.0026
	7/17/2012	0.0031	< 0.0007	< 0.0007	< 0.0007	< 0.0007
	11/14/2012	< 0.0007	< 0.0007	< 0.0007	< 0.0007	< 0.0007
	3/19/2013	0.0068	0.0056	0.0068	< 0.0007	0.0068
	6/17/2013	0.0024	0.0005	0.0005	0.0005	0.0009
	9/17/2013	0.0005	0.0005	0.0003	0.0003	0.0015
	12/17/2013	0.0008	0.0005	0.0004	0.0013	0.0012
	2/17/2014	0.0012	0.0003	0.0003	0.0006	0.0003
	4/15/2014	0.0006	< 0.0007	< 0.0007	0.0006	0.0069
	7/15/2014	0.0005	< 0.0007	< 0.0007	0.0008	0.0087
	10/13/2014	0.0006	< 0.0007	< 0.0007	< 0.0007	0.0017
	1/16/2015	0.0006	< 0.0007	< 0.0007	0.0012	0.0011
	5/13/2015	0.0005	0.0005	0.0003	0.0013	0.0006
	8/18/2015	0.0003	0.0004	0.0003	0.0032	0.0009
	11/17/2015	0.0008	0.0007	0.0005	0.0006	0.0008
	3/16/2016	0.0007*	0.0005*	0.0011*	0.0007*	0.002*
	10/12/2016	0.0008*	0.0006*	0.0016*	0.0008*	0.0019*
	3/16/2017	0.0002*	0.0004*	0.0004*	0.0004*	0.0013*
	10/12/2017	0.001*	0.0002*	0.0007*	0.0007*	0.0011*
	3/14/2018	0.0004*	0.0002*	0.0004*	0.0004*	0.0018*
	10/17/2018	0.0002*	0.0003*	0.0003*	0.0033*	0.0129
	3/19/2019	< 0.004	0.0042	0.0052	0.063	0.0164
	10/16/2019	< 0.002	< 0.002	< 0.002	< 0.002	0.0026*
	3/18/2020	< 0.0043	< 0.0043	< 0.0043	< 0.0043	0.0175
	10/16/2020	< 0.0043	< 0.0043	< 0.0043	< 0.0043	< 0.0043
	3/17/2021	< 0.0043	< 0.0043	< 0.0043	< 0.0043	< 0.0043
	10/20/2021	< 0.0043	< 0.0043	< 0.0043	< 0.0043	< 0.0043
	3/17/2022	< 0.0043	< 0.0043	< 0.0043	< 0.0043	< 0.0043
	10/18/2022	0.0054*	0.0056*	0.0056*	0.007*	0.0049*
	3/14/2023	0.0067*	0.0051*	0.0058*	0.0088	0.0066*
	10/18/2023	< 0.0043	< 0.0043	< 0.0043	< 0.0043	0.0095
Zinc, mg/L (CAS NO - 7440-66-6)	12/16/2009	0.12	N/A	N/A	N/A	N/A
	12/16/2009	0.12	N/A	N/A	N/A	N/A
	1/15/2010	0.0706	N/A	N/A	N/A	N/A
	2/18/2010	0.0537	0.0281	0.0361	0.0276	0.007
	3/16/2010	0.0375	0.0089	0.0076	0.0191	N/A
	3/23/2010	N/A	N/A	N/A	N/A	0.0091
	4/15/2010	0.0363	1.11	0.004	0.0477	0.0113
	5/17/2010	0.0326	0.0453	0.0106	0.0422	0.0229
	6/21/2010	0.0444	0.245	0.0088	0.134	0.0203
	7/16/2010	0.0561	0.0122	0.005	0.0742	0.0098
	8/18/2010	0.0809	0.0035	0.0043	0.0088	0.009
	9/20/2010	0.0533	0.0036	0.0083	0.0286	0.0686
	10/18/2010	0.0483	0.0029	0.0091	0.0136	0.0166
	11/16/2010	0.0714	0.0053	0.0052	0.0179	0.0065
	12/16/2010	0.139	0.009	0.008	0.0137	0.0104
	1/13/2011	0.522	0.0016	0.0054	0.0061	0.0039
	2/16/2011	0.173	0.0036	0.0037	0.0086	0.0027
	5/18/2011	0.0452	0.0023	0.003	0.0039	0.0029
	8/17/2011	0.0511	0.0023	0.007	0.0131	0.0023
	10/17/2011	0.0767	0.0116	0.0174	0.0207	0.0117
	1/18/2012	0.0377	0.0204	0.0135	0.0253	0.147
	4/17/2012	0.0391	0.0056	0.0051	0.0164	0.0032
	7/17/2012	0.111	0.002	0.0053	0.0158	0.0175
	11/14/2012	0.066	0.0267	0.0179	0.0278	0.0159
	3/19/2013	0.127	0.0119	0.0112	0.0101	0.0171
	6/17/2013	0.0877	0.0137	0.0297	0.0091	0.0598
	9/17/2013	0.0252	0.0098	0.0077	0.0061	0.0134
	12/17/2013	0.0434	0.0099	0.0138	0.0189	0.0109
	2/17/2014	0.0221	0.0156	0.009	0.0236	0.299
	4/15/2014	0.213	0.011	0.0132	0.107	0.0362
	7/15/2014	0.0481	0.008	0.0105	0.0086	0.0152
	10/13/2014	0.0937	0.0109	0.0055	0.007	0.0093
	1/16/2015	0.0589	0.007	0.0077	0.0057	0.0113
	5/13/2015	0.286	0.004	0.008	0.232	0.0042
	8/18/2015	0.0694	0.0058	0.0057	0.0156	0.233
	11/17/2015	0.131	0.0369	0.0343	0.261	0.0345

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Total Metals Constituents	Sample Date	ReiterFarm UPG	Well#1 DNG	Well#2 DNG	Well#3 DNG	Well#4 DNG
Zinc, mg/L (CAS NO - 7440-66-6)	3/16/2016	0.0737	0.0027*	0.0069*	0.236	< 0.002
	10/12/2016	0.128	0.003*	0.011	0.158	0.0064*
	3/16/2017	0.11	0.0062*	0.0072*	0.137	0.0081
	10/12/2017	0.342	0.0078*	0.0142	0.0359	0.0126
	3/14/2018	0.515	0.0055*	0.0067*	0.0373	0.0143
	10/17/2018	0.143	0.0103	0.0103	0.019	< 0.008
	3/19/2019	0.0786	0.0133	0.0256	0.1	0.048
	10/16/2019	0.115	0.015*	0.0105*	0.0119*	0.0126*
	3/18/2020	0.184	< 0.0174	< 0.0174	< 0.0174	< 0.0174
	10/16/2020	0.092	< 0.0174	< 0.0174	< 0.0174	< 0.0174
	3/17/2021	0.123	< 0.0174	< 0.0174	< 0.0174	< 0.0174
	10/20/2021	0.132	< 0.0174	< 0.0174	0.0218	< 0.0174
	3/17/2022	0.119	< 0.0174	0.0211	< 0.0174	< 0.0174
	10/18/2022	0.0965	< 0.0174	< 0.0174	< 0.0174	< 0.0174
	3/14/2023	0.118	0.0182*	< 0.0174	< 0.0174	< 0.0174
	10/18/2023	0.0304	< 0.0174	< 0.0174	< 0.0174	< 0.0174
Total Suspended Solids, mg/L (CAS NO - TSS)	3/16/2016	< 2	9	13	4	36
	10/12/2016	20	5	4	4	632
	3/16/2017	< 2	4	< 4	5	440
	10/12/2017	< 4	< 4	4	< 4	60
	3/14/2018	< 4	< 4	139	< 4	69
	10/17/2018	< 2	4	14	10	494
	3/19/2019	9	9	4	3	20
	10/16/2019	< 2	4	< 2	2	66
	3/18/2020	< 2	3	4	< 2	4
	10/16/2020	14	10	5	< 2	5
	3/17/2021	< 2	< 2	5	5	< 2
	10/20/2021	3	3	5	5	30
	3/17/2022	< 2	2	4	< 2	31
	10/18/2022	< 2	5	12	7	< 2
	3/14/2023	2	< 2	4	2	< 2
	10/18/2023	< 1	< 1	8	10	36

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

Denotes Detection.
Denotes Confirmed Outlier. Statistically Excluded.

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

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Summary of Groundwater Chemistry
BMC Aggregates L.C. South Waterloo Quarry

Appendix I VOC Constituents	Sample Date	ReiterFarm UPG	Well#1 DNG	Well#2 DNG	Well#3 DNG	Well#4 DNG
Pyridine, ug/L (CAS NO - 110-86-1)	10/17/2018	< 10	< 10	< 10	< 10	< 10
	3/19/2019	< 10	< 10	< 10	< 10	< 10
	10/16/2019	< 10	< 10	< 10	< 10	< 10
	3/18/2020	< 14	< 10	< 10	< 14	< 10
	10/16/2020	< 10	< 10	< 10	< 10	< 10
	3/17/2021	< 13	< 10	< 10	< 10	< 10
	10/20/2021	< 10	< 10	< 10	< 10	< 10
	3/17/2022	< 10	< 10	< 10	< 10	< 10
	10/18/2022	< 10	< 10	< 10	< 10	< 10
	3/14/2023	< 10	N/A	N/A	< 10	< 10
	10/18/2023	< 10	< 10	< 13	< 10	< 10
2-Butanone, ug/L (CAS NO - 78-93-3)	10/17/2018	< 5	< 5	< 5	**47.4**	< 5
	11/14/2018	N/A	N/A	N/A	**28.3**	N/A
	3/19/2019	< 5	< 5	< 5	< 5	< 5
	10/16/2019	< 5	< 5	< 5	< 5	< 5
	3/18/2020	< 5	< 5	< 5	< 5	< 5
	10/16/2020	< 5	< 5	< 5	< 5	< 5
	3/17/2021	< 5	< 5	< 5	< 5	< 5
	10/20/2021	< 5	< 5	< 5	< 5	< 5
	3/17/2022	< 10	< 10	< 10	< 10	< 10
	10/18/2022	< 10	< 10	< 10	< 10	< 10
	3/14/2023	< 10	< 10	< 10	< 10	< 10
	10/18/2023	< 10	< 10	< 10	< 10	< 10
Benzene, ug/L (CAS NO - 71-43-2)	10/17/2018	< 1	< 1	< 1	< 1	< 1
	3/19/2019	< 1	< 1	< 1	< 1	< 1
	10/16/2019	< 1	< 1	< 1	< 1	< 1
	3/18/2020	< 1	< 1	< 1	< 1	< 1
	10/16/2020	< 1	< 1	< 1	< 1	< 1
	3/17/2021	< 1	< 1	< 1	< 1	< 1
	10/20/2021	< 1	< 1	< 1	< 1	< 1
	3/17/2022	< 1	< 1	< 1	< 1	< 1
	10/18/2022	< 1	< 1	< 1	< 1	< 1
	3/14/2023	< 1	< 1	< 1	< 1	< 1
	10/18/2023	< 1	< 1	< 1	< 1	< 1
Chloroform, ug/L (CAS NO - 67-66-3)	10/17/2018	< 1	< 1	< 1	**410**	< 1
	11/14/2018	N/A	N/A	N/A	**18.5**	N/A
	3/19/2019	< 1	< 1	< 1	**80.6**	< 1
	5/3/2019	N/A	N/A	N/A	**9**	N/A
	10/16/2019	< 1	< 1	< 1	< 1	< 1
	3/18/2020	< 1	< 1	< 1	< 1	< 1
	10/16/2020	< 1	< 1	< 1	< 1	< 1
	3/17/2021	< 1	< 1	< 1	**6.8**	< 1
	10/20/2021	< 1	< 1	< 1	< 1	< 1
	3/17/2022	< 1	< 1	< 1	< 1	< 1
	10/18/2022	< 1	< 1	< 1	< 1	< 1
	3/14/2023	< 1	< 1	< 1	< 1	< 1
	10/18/2023	< 1	< 1	< 1	< 1	< 1
2-Methylphenol, ug/L (CAS NO - 95-48-7)	10/17/2018	< 10	< 10	< 10	< 10	< 10
	11/14/2018	N/A	N/A	N/A	< 10	N/A
	3/19/2019	< 10	< 10	< 10	< 10	< 10
	10/16/2019	< 10	< 10	< 10	< 10	< 10
	3/18/2020	< 13.6	< 10	< 10	< 14.4	< 10
	10/16/2020	< 10	< 10	< 10	< 10	< 10
	3/17/2021	< 12.8	< 10	< 10	< 10	< 10
	10/20/2021	< 10	< 10	< 10	< 10	< 10
	3/17/2022	< 12.5	< 10	< 10	< 13	< 10
	10/18/2022	< 10	< 10	< 10	< 10	< 10
	3/14/2023	< 10	N/A	N/A	< 10	< 10
	10/18/2023	< 10	< 10	< 12.8	< 10	< 10
3/4-Methylphenol, ug/L (CAS NO - T-34MP)	10/17/2018	< 10	< 10	< 10	**22.5**	< 10
	11/14/2018	N/A	N/A	N/A	< 10	N/A
	3/19/2019	< 10	< 10	< 10	< 10	< 10
	10/16/2019	< 10	< 10	< 10	< 10	< 10
	3/18/2020	< 13.6	< 10	< 10	< 14.4	< 10
	10/16/2020	< 10	< 10	< 10	< 10	< 10
	3/17/2021	< 12.8	< 10	< 10	< 10	< 10
	10/20/2021	< 10	< 10	< 10	< 10	< 10
	3/17/2022	< 12.5	< 10	< 10	< 13	< 10
	10/18/2022	< 10	< 10	< 10	< 10	< 10

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Summary of Groundwater Chemistry
BMC Aggregates L.C. South Waterloo Quarry

Appendix I VOC Constituents	Sample Date	ReiterFarm UPG	Well#1 DNG	Well#2 DNG	Well#3 DNG	Well#4 DNG
3/4-Methylphenol, ug/L (CAS NO - T-34MP)	3/14/2023	< 10	N/A	N/A	< 10	< 10
	10/18/2023	< 10	< 10	< 12.8	< 10	< 10

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

Denotes Detection.

Denotes Confirmed Outlier. Statistically Excluded.

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

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Summary of Groundwater Chemistry
BMC Aggregates L.C. South Waterloo Quarry

Other Constituents	Sample Date	ReiterFarm UPG	Well#1 DNG	Well#2 DNG	Well#3 DNG	Well#4 DNG
Conductivity, uS/cm (CAS NO - COND)	10/17/2018	603	628	849	2580	1060
Total Dissolved Solids, mg/L (CAS NO - TDS)	10/17/2018	311	305	445	1370	626
	3/19/2019	311	337	469	815	492
	10/16/2019	366	308	491	458	466
	3/18/2020	343	333	493	415	736
	10/16/2020	300	291	444	409	348
	3/17/2021	365	313	483	443	604
	10/20/2021	385	303	564	481	443
	3/17/2022	359	351	536	447	429
	10/18/2022	391	339	391	392	415
	3/14/2023	360	341	456	445	479
	10/18/2023	425	369	481	400	459
Chemical Oxygen Demand, mg/L (CAS NO - COD)	3/19/2019	< 20	< 20	< 20	687	36
	10/16/2019	< 20	< 20	< 20	< 20	< 20
	3/18/2020	< 20	< 20	< 20	< 20	< 20
	10/16/2020	< 20	< 20	< 20	< 20	< 20
	3/17/2021	< 20	< 20	< 20	< 20	83
	10/20/2021	< 20	< 20	21	39	22
	3/17/2022	< 20	< 20	< 20	< 20	< 20
	10/18/2022	< 20	< 20	< 20	< 20	< 20
	3/14/2023	< 20	< 20	< 20	< 20	< 20
	10/18/2023	< 54	< 54	< 54	< 54	< 54
Total Organic Halogens, mg/L (CAS NO - TOH)	3/19/2019	0.02	0.012	0.034	0.364	0.014
	10/16/2019	< 0.01	0.021	0.011	0.131	< 0.01
	3/18/2020	0.012	< 0.01	0.01	0.024	< 0.01
	10/16/2020	< 0.01	< 0.01	0.038	0.053	< 0.01
	3/17/2021	< 0.01	< 0.01	0.011	0.02	0.031
	10/20/2021	< 0.01	< 0.01	0.015	0.103	0.014
	3/17/2022	0.025	0.018	< 0.01	0.033	< 0.01
	10/18/2022	< 0.01	0.017	0.014	0.017	0.013
	3/14/2023	< 0.01	< 0.01	< 0.01	0.021	< 0.01
	10/18/2023	< 0.01	0.018	0.016	0.054	< 0.01
Ammonia as N, mg/L (CAS NO - 7664-41-7)	3/19/2019	< 0.1	< 0.1	< 0.1	2.03	0.11
	10/16/2019	< 0.1	< 0.1	< 0.1	0.11	< 0.1
	3/18/2020	< 0.1	< 0.1	0.11	0.1	< 0.1
	10/16/2020	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
	3/17/2021	< 0.1	< 0.1	< 0.1	< 0.1	0.22
	10/20/2021	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
	3/17/2022	< 0.1	< 0.1	0.19	< 0.1	< 0.1
	10/18/2022	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
	3/14/2023	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
	10/18/2023	< 0.1	1.51	< 0.1	0.12	< 0.1
Formaldehyde, ug/L (CAS NO - 50-00-0)	3/19/2019	< 10	< 10	< 10	351	< 10
	5/3/2019	N/A	N/A	N/A	< 10	N/A
	10/16/2019	< 10	< 10	< 10	< 10	< 10
	3/18/2020	< 10	29.6	< 10	< 10	< 10
	10/16/2020	< 10	< 10	< 10	< 10	< 10
	3/17/2021	< 10	10.9	11.7	11.7	< 10
	10/20/2021	< 10	< 10	< 10	< 10	< 10
	3/17/2022	< 10	< 10	< 10	< 10	< 10
	10/18/2022	< 10	< 10	< 10	< 10	< 10
	3/14/2023	< 10	< 10	< 10	< 10	< 10
	10/18/2023	< 10	< 10	< 10	< 10	< 10
Phenols, total, mg/L (CAS NO - 108-95-2)	3/19/2019	< 0.035	< 0.035	< 0.035	< 0.035	< 0.035
	10/16/2019	< 0.035	< 0.035	< 0.035	< 0.035	0.039
	3/18/2020	< 0.035	< 0.035	< 0.035	< 0.035	< 0.035
	10/16/2020	0.043	< 0.035	0.082	< 0.035	< 0.035
	3/17/2021	< 0.035	< 0.035	< 0.035	< 0.035	< 0.035
	10/20/2021	< 0.035	< 0.035	< 0.035	< 0.035	< 0.035
	3/17/2022	< 0.035	< 0.035	< 0.035	< 0.035	< 0.035
	10/18/2022	< 0.035	0.06	< 0.035	< 0.035	< 0.035
	3/14/2023	0.057	0.06	0.06	< 0.035	< 0.035
	10/18/2023	0.082	0.047	0.066	0.063	0.035

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

Denotes Detection.
Denotes Confirmed Outlier. Statistically Excluded.

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

Appendix D
2023 Statistical Report

2023 STATISTICAL REPORT

FOR

BMC WATERLOO SOUTH QUARRY
BENEFICIAL USE SITE

WATERLOO, IOWA

SUBMITTAL DATE: FEBRUARY 2024

PREPARED FOR:
BMC AGGREGATES, L.C.

PREPARED BY:
SCS ENGINEERS

2023 Statistical Report

Purpose

The purpose of this document is to describe the statistical method for the evaluation of groundwater analytical data collected from the BMC Aggregates L.C. Waterloo South Quarry (South Quarry) related to the beneficial use of coal combustion residue from the University of Iowa power plant and waste foundry sand from the John Deere foundry in Waterloo, Iowa.

Monitoring Network

The monitoring network for the South Quarry currently consists of five monitoring points as listed in Table 1. Also summarized in Table 1 is the number of sampling events completed through the end of this reporting period.

Table 1
Groundwater Monitoring Summary

Monitoring Well	Monitoring Program	Number of Samples Collected
Reiter Farm (b)	Not Applicable	50
Well #1	Assessment	48
Well #2	Assessment	48
Well #3	Assessment	48
Well #4	Assessment	48

(b) denotes background monitoring point.

As selected statistical methods are intrawell, the Reiter Farm background monitoring well is not used for statistical evaluation.

Statistical Method

Diagnostic and Exploratory Evaluations and Tests of Assumptions

The assessment monitoring statistical program includes diagnostic and exploratory evaluations and statistical tests of assumptions, as appropriate, including the following:

- Time Series Plots
- Shapiro-Wilk test for normality
- Ohio Environmental Protection Agency (EPA) Method for identification of outliers
- Mann-Kendall/Sen's Slope trend test

Management of Non-Detect Data

Non-detect values in the dataset are managed using simple substitution or the Kaplan-Meier estimator. If less than 15% of the data are non-detects, simple substitution is used, where non-detect values are assigned a concentration of one-half (½) of the practical quantification limit (PQL). If greater than 15% but less than 50% of the data are non-detects, the Kaplan-Meier estimator is used to define the distribution of the dataset. If non-detects comprise greater than 50% of the available data, non-parametric statistical methods are used.

Management of Outliers

Background datasets are evaluated for outliers using the Ohio EPA Method included in the Sanitas™ statistical software program and described below, which includes the use of Dixon's, Rosner's, and

Tukey's outlier tests, as appropriate based on the diagnostic tests, for the datasets that contain less than 75% of the measured concentrations below the PQL. Outliers are not confirmed unless a physical cause or explanation for the outlier is determined.

Management of Data (ND data < 75%)

If less than 75% of the background dataset is below the PQL, outliers are statistically evaluated using the following guidelines.

- A parametric dataset with n < 20 is evaluated with the Dixon's outlier test.
- A parametric dataset with n ≥ 20 is evaluated with the Rosner's outlier test.
- A non-parametric dataset is evaluated with the Tukey's outlier test.

In accordance with the Ohio EPA Method, if a statistically significant outlier is not found using the above tests, but the highest value data point exceeds the second highest data point by an order of magnitude, the highest point is considered an outlier.

Management of Data (ND data ≥ 75%)

If greater than or equal to 75% of the background dataset is less than the PQL, outliers are statistically evaluated using the following guidelines.

- Single detection ≥ the PQL:
    - If ≥ 50% of the background dataset has detections ≥ the method detection limit (MDL), any value ≥ two times the PQL of background is considered an outlier.
    - If < 50% of the background dataset has detections ≥ the MDL, any value ≥ the PQL of background is considered an outlier.
- Two or more detections ≥ the PQL:
    - If ≥ 50% of the background dataset has detections ≥ the MDL, any value ≥ three times the PQL of background is considered an outlier.
    - If < 50% of the background dataset has detections ≥ the MDL, any value ≥ two times the PQL of background is considered an outlier.

The chloride outliers identified in Well #3 from the May, August, and November 2015 sampling events, the March and October 2016 sampling events, the March 2017 sampling event, and the October 2018 sampling event were confirmed due to the fact that the well was treated with chlorine to control iron-fouling bacteria on multiple occasions. The confirmed outliers are shown in Appendix C of the Annual Water Quality Report, Summary of Groundwater Chemistry. Indicated outliers in the background monitoring well were not confirmed at this time as there was no information to link the indicated outliers to a physical cause or explanation.

Assessment Monitoring Statistical Program

Confidence intervals or confidence bands, as appropriate, were selected as the appropriate statistical methods for comparison of the groundwater analytical data against a fixed groundwater protection standard (GWPS). The assessment monitoring statistical evaluations are performed using the most recent eight samples or all samples if less than eight samples are available. The confidence intervals or confidence bands used for the assessment monitoring statistical evaluation are established using the process below. Transformation of the distribution is not considered.

Confidence Intervals or Confidence Bands

- A parametric confidence interval around a normal mean is calculated if the dataset has a normal distribution and no statistically significant trend is present.

- A non-parametric confidence interval around a median is calculated if the dataset does not have a normal distribution and no statistically significant trend is present.
- Non-parametric confidence bands around a Theil-Sen trend line are calculated if the dataset has a statistically significant trend.

If the lower confidence limit or any part of the lower confidence band, as appropriate, exceeds the GWPS, then the monitoring point is considered to have exceeded a GWPS at a statistically significant level (SSL).

Statistical Evaluation

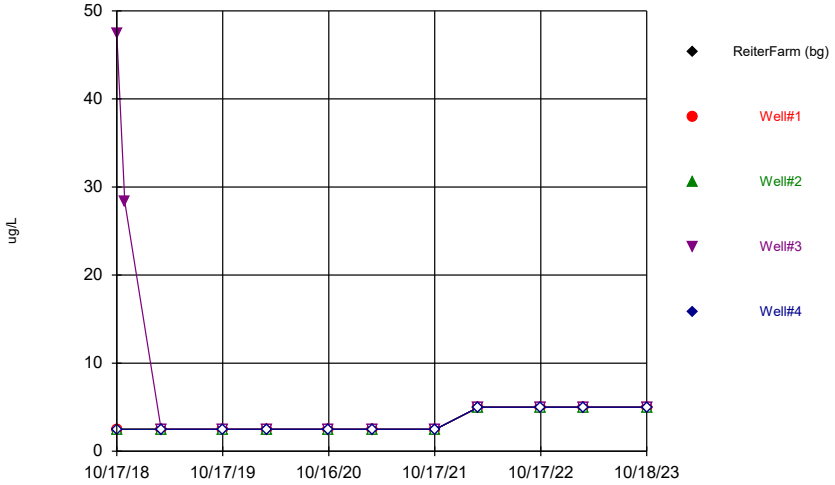
The reporting period for this statistical evaluation is January to December 2023 and includes data from the March 14 and October 18, 2023 semi-annual sampling events. Listed below are the statistical outputs attached to this report. Sanitas™ statistical software was used to perform the statistical analyses.

- Attachment A Time Series Plots
- Attachment B Outlier Test Summary Table and Graphs
- Attachment C Mann-Kendall/Sen's Slope Trend Test Summary Table and Graphs
- Attachment D Confidence Interval Summary Table and Graphs
- Attachment E Theil-Sen Trend Line and Confidence Bands Summary Table and Graphs

Attachment A
Time Series Plots

Sanitas™ v.9.6.37 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Time Series



Constituent: 2-Butanone Analysis Run 12/21/2023 3:59 PM View: 2023AWQR - Time Series
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

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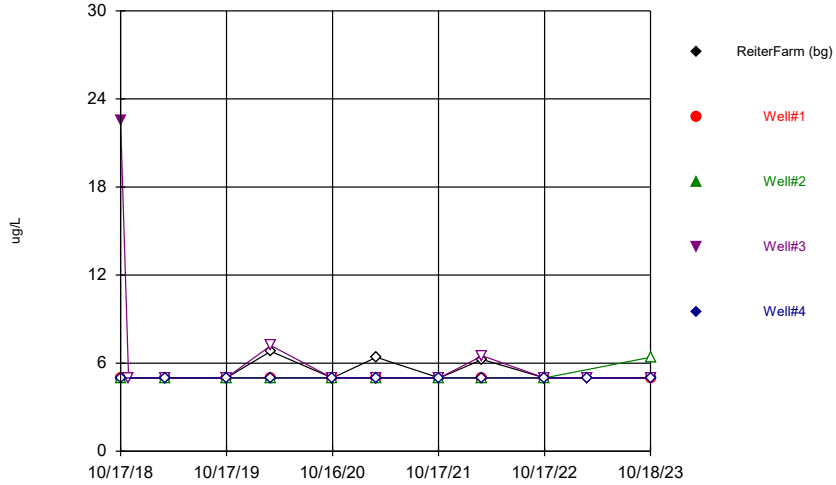
Hollow symbols indicate censored values.

Time Series



Constituent: 3/4-Methylphenol Analysis Run 12/21/2023 3:59 PM View: 2023AWQR - Time Series
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

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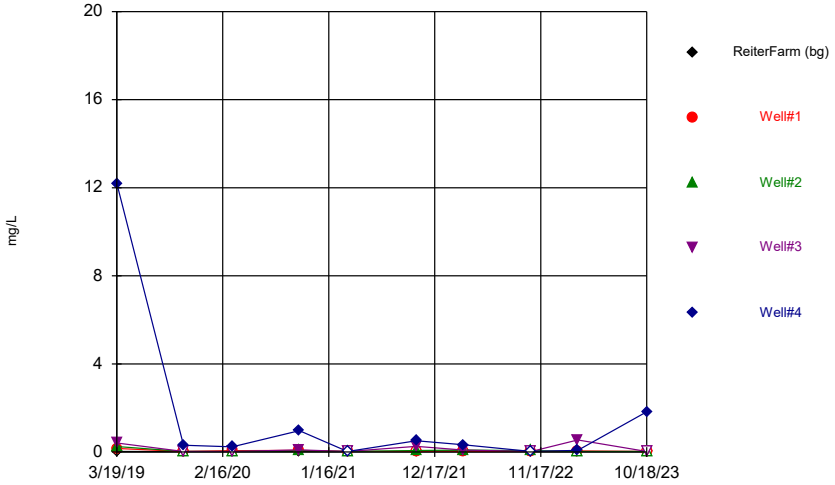
Hollow symbols indicate censored values.

Time Series



Constituent: Aluminum Analysis Run 12/21/2023 3:59 PM View: 2023AWQR - Time Series
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

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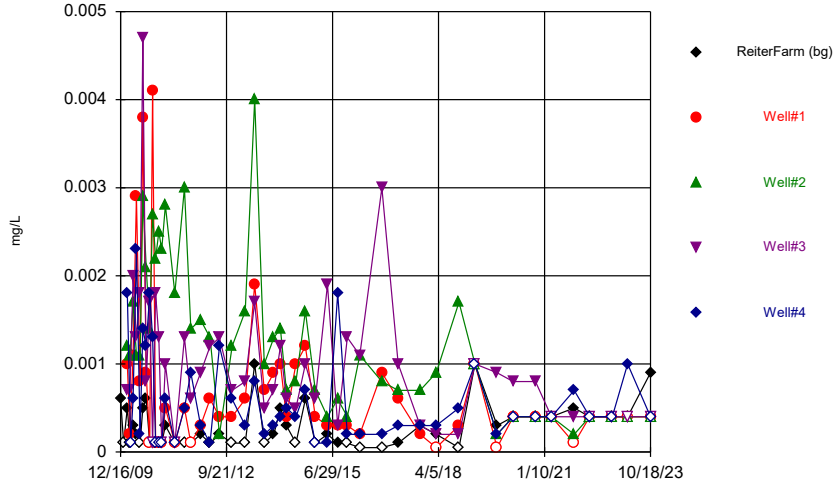
Hollow symbols indicate censored values.

Time Series



Constituent: Antimony Analysis Run 12/21/2023 3:59 PM View: 2023AWQR - Time Series
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

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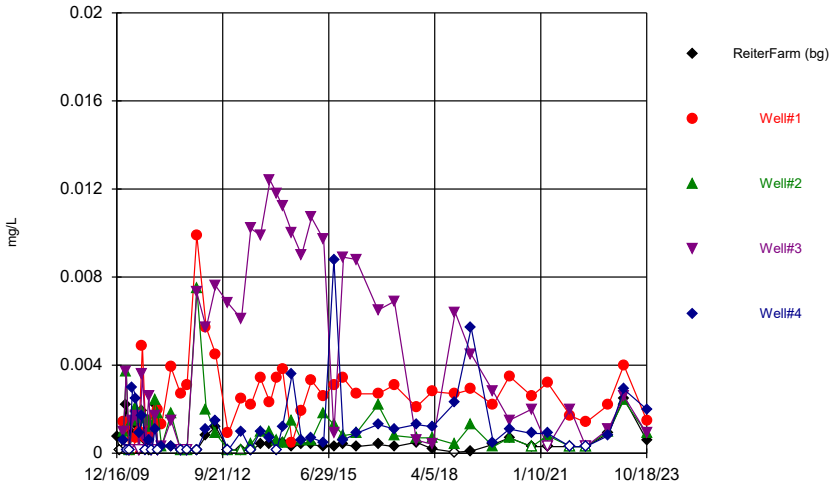
Hollow symbols indicate censored values.

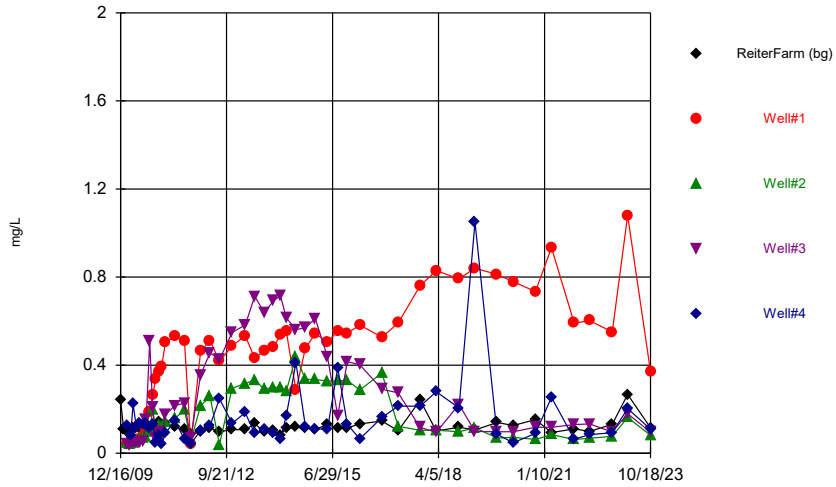
Time Series



Constituent: Arsenic Analysis Run 12/21/2023 3:59 PM View: 2023AWQR - Time Series
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.9.6.37 Software licensed to SCS Engineers. UG

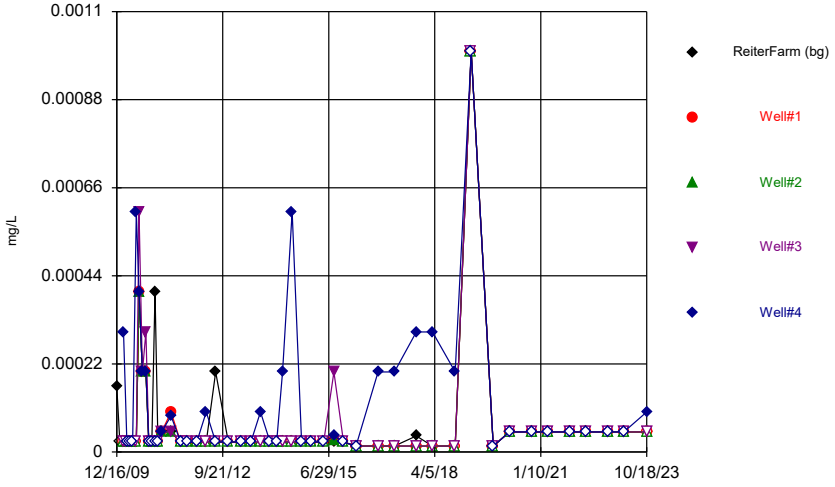
Time Series



Constituent: Barium Analysis Run 12/21/2023 3:59 PM View: 2023AWQR - Time Series
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.9.6.37 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

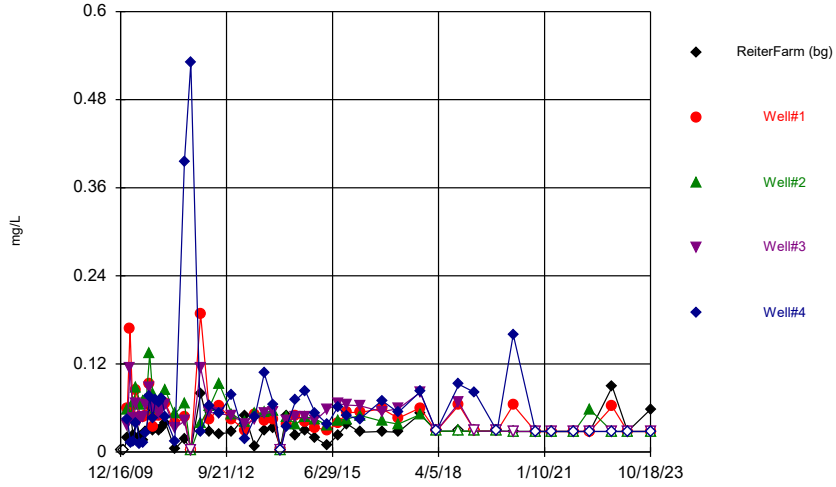
Time Series



Constituent: Beryllium Analysis Run 12/21/2023 3:59 PM View: 2023AWQR - Time Series
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.9.6.37 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Time Series



Constituent: Boron Analysis Run 12/21/2023 3:59 PM View: 2023AWQR - Time Series
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

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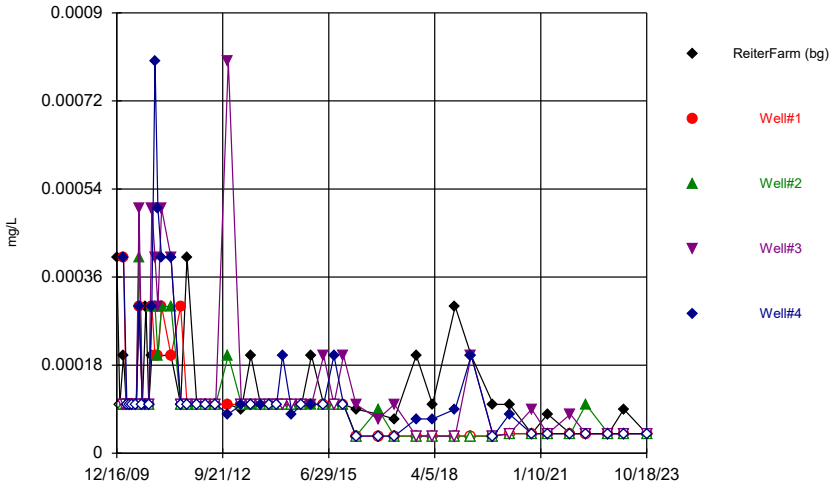
Hollow symbols indicate censored values.

Time Series



Constituent: Cadmium Analysis Run 12/21/2023 3:59 PM View: 2023AWQR - Time Series
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

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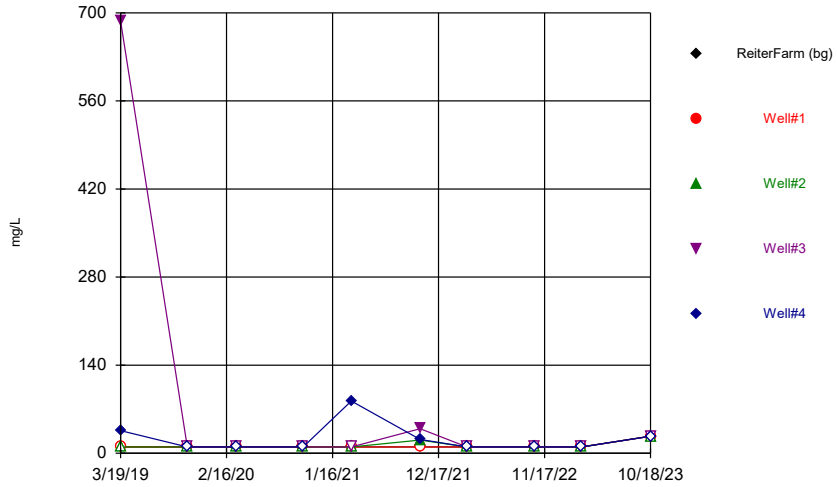
Hollow symbols indicate censored values.

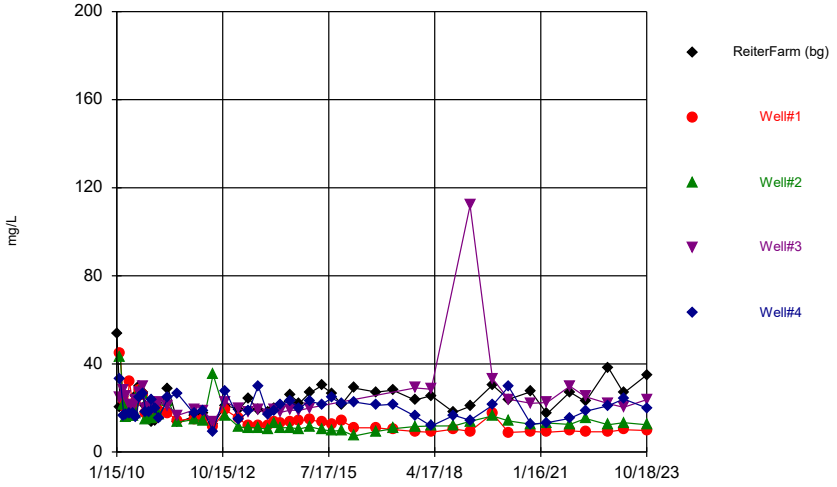
Time Series



Constituent: Chemical Oxygen Demand Analysis Run 12/21/2023 3:59 PM View: 2023AWQR - Time Serie
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.9.6.37 Software licensed to SCS Engineers. UG

Time Series



Constituent: Chloride Analysis Run 12/21/2023 3:59 PM View: 2023AWQR - Time Series
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

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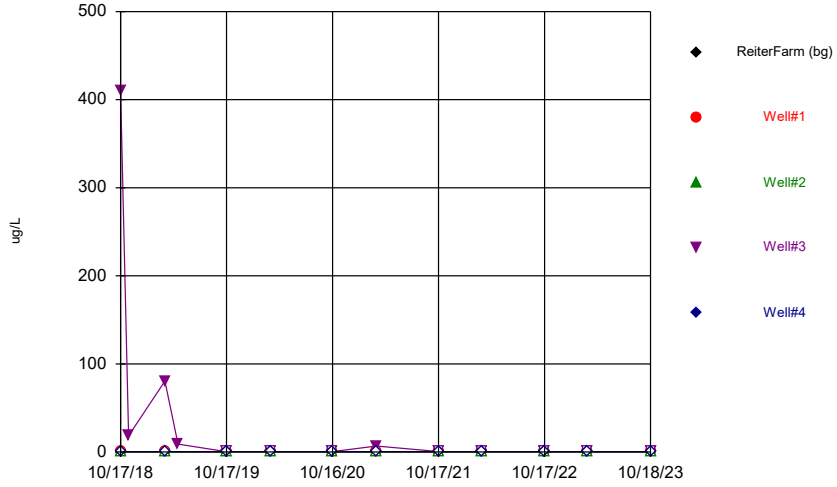
Hollow symbols indicate censored values.

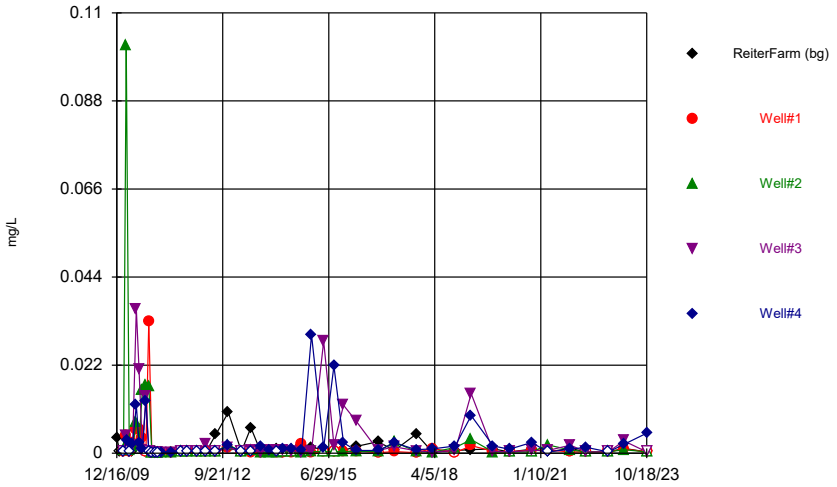
Time Series



Constituent: Chloroform Analysis Run 12/21/2023 3:59 PM View: 2023AWQR - Time Series
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.9.6.37 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

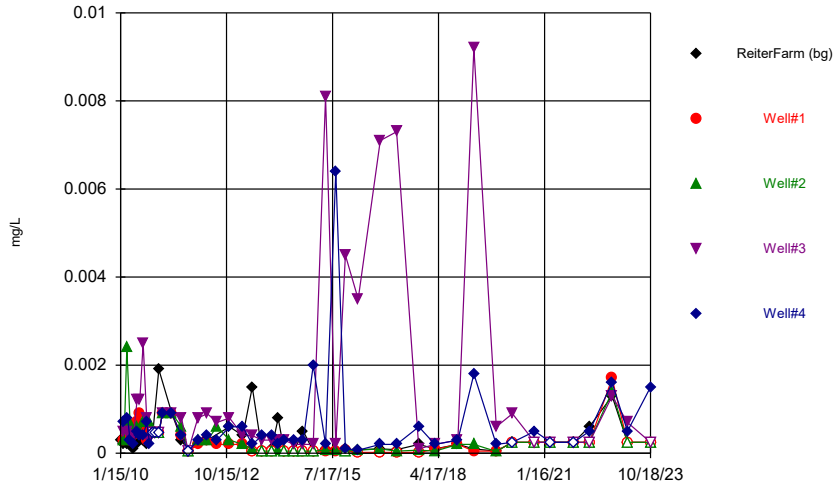
Time Series



Constituent: Chromium Analysis Run 12/21/2023 3:59 PM View: 2023AWQR - Time Series
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.9.6.37 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

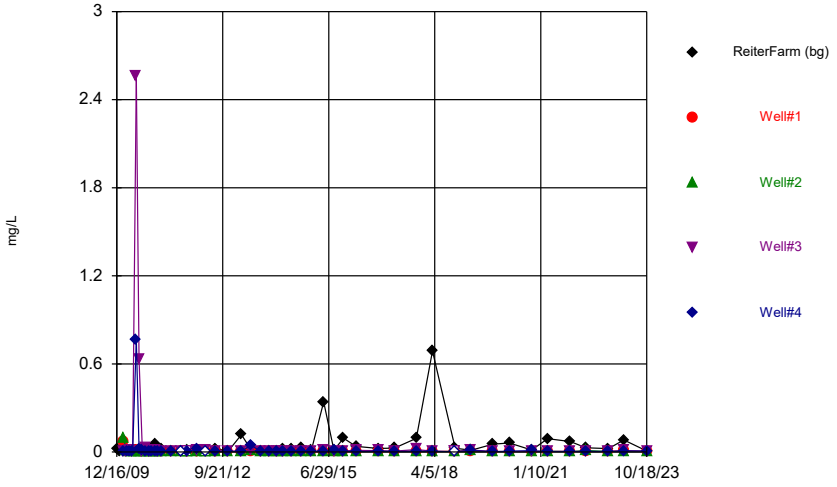
Time Series



Constituent: Cobalt Analysis Run 12/21/2023 3:59 PM View: 2023AWQR - Time Series
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.9.6.37 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

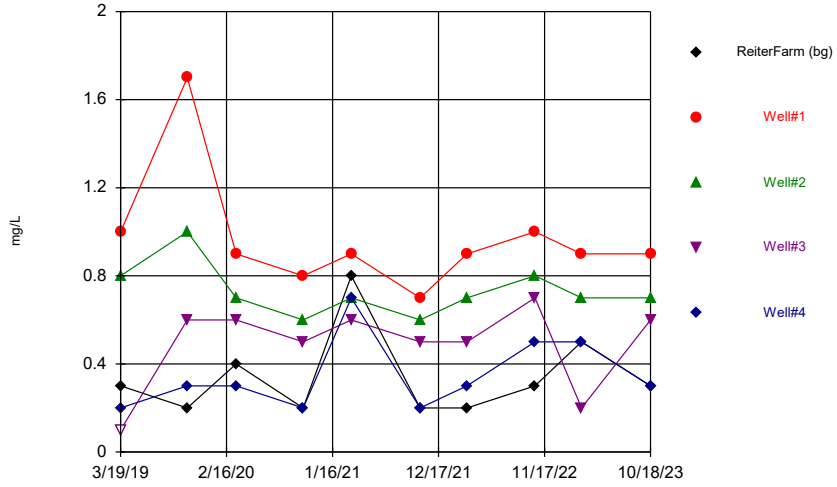
Time Series



Constituent: Copper Analysis Run 12/21/2023 3:59 PM View: 2023AWQR - Time Series
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.9.6.37 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

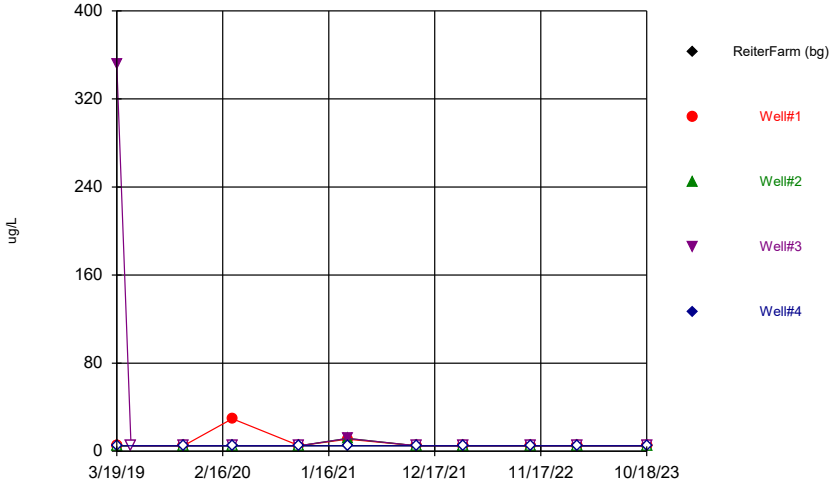
Time Series



Constituent: Fluoride Analysis Run 12/21/2023 3:59 PM View: 2023AWQR - Time Series
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.9.6.37 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

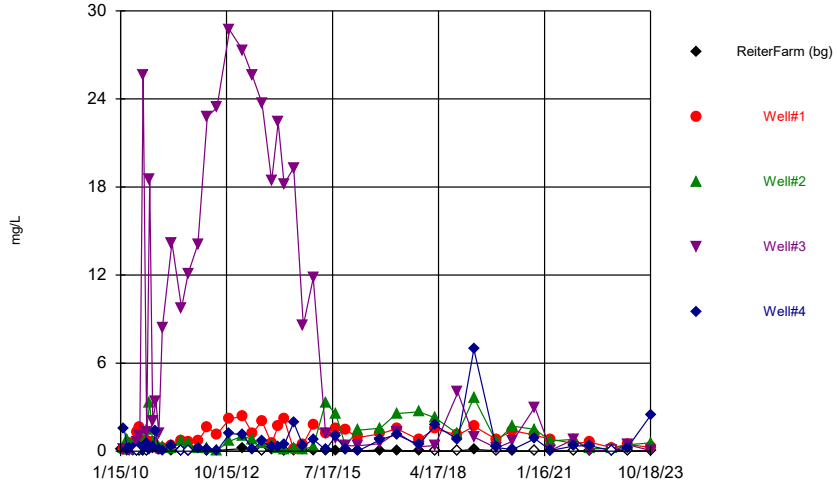
Time Series



Constituent: Formaldehyde Analysis Run 12/21/2023 3:59 PM View: 2023AWQR - Time Series
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.9.6.37 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

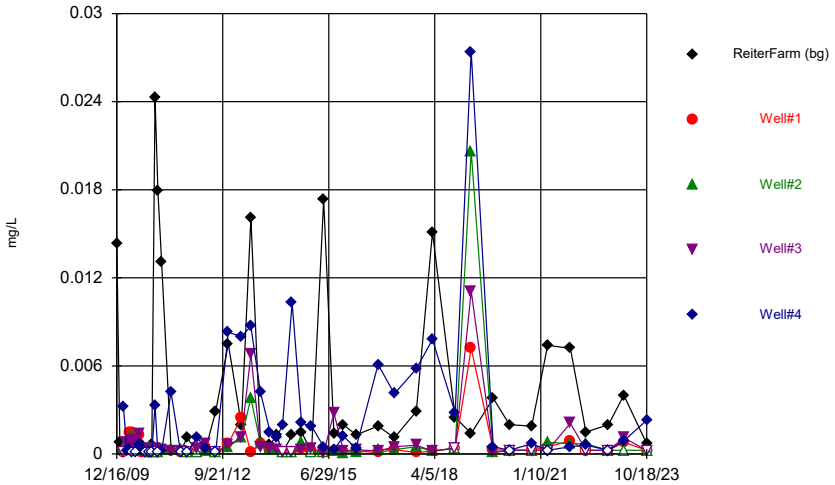
Time Series



Constituent: Iron Analysis Run 12/21/2023 3:59 PM View: 2023AWQR - Time Series
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.9.6.37 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

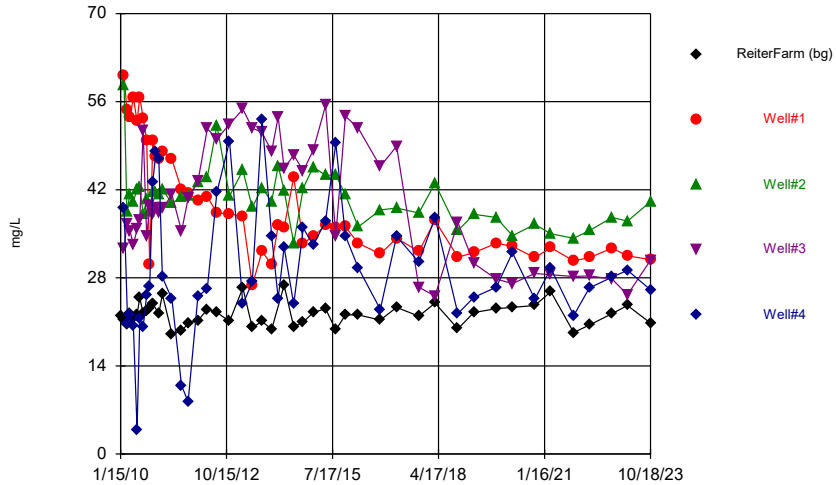
Time Series



Constituent: Lead Analysis Run 12/21/2023 3:59 PM View: 2023AWQR - Time Series
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.9.6.37 Software licensed to SCS Engineers. UG

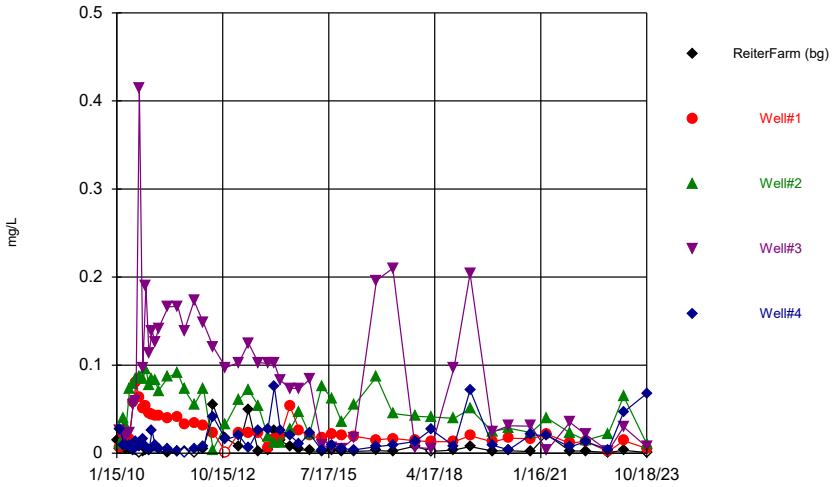
Time Series



Constituent: Magnesium Analysis Run 12/21/2023 3:59 PM View: 2023AWQR - Time Series
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.9.6.37 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

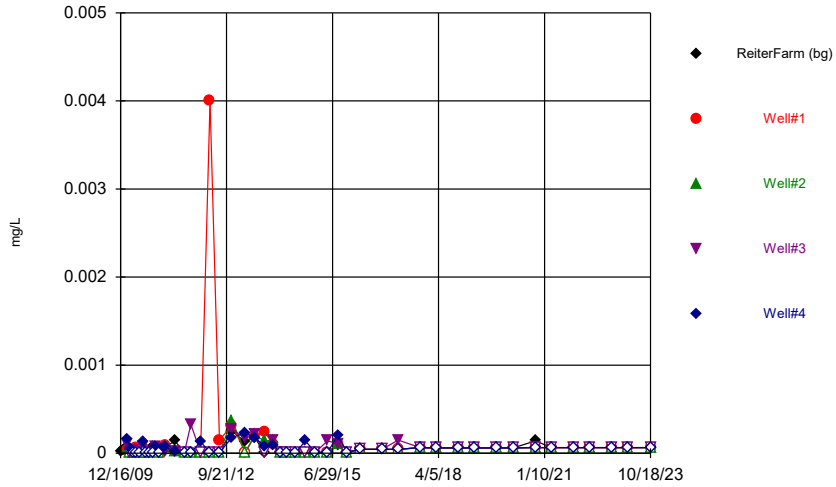
Time Series



Constituent: Manganese Analysis Run 12/21/2023 4:00 PM View: 2023AWQR - Time Series
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.9.6.37 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

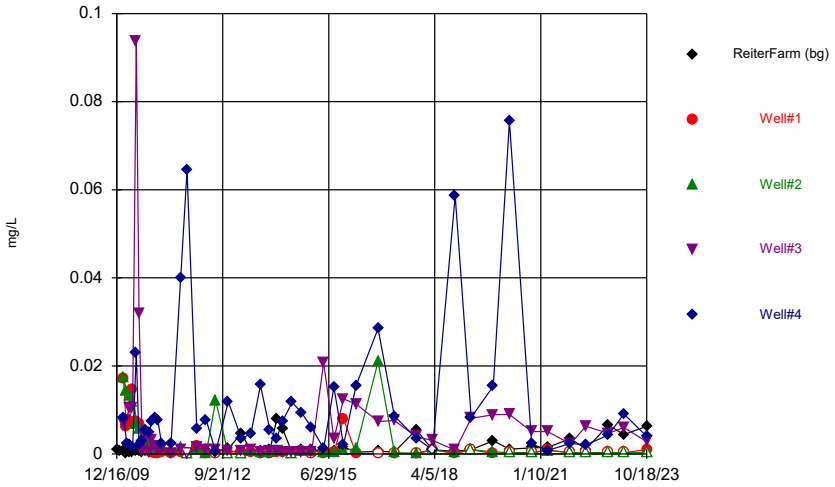
Time Series



Constituent: Mercury Analysis Run 12/21/2023 4:00 PM View: 2023AWQR - Time Series
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.9.6.37 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

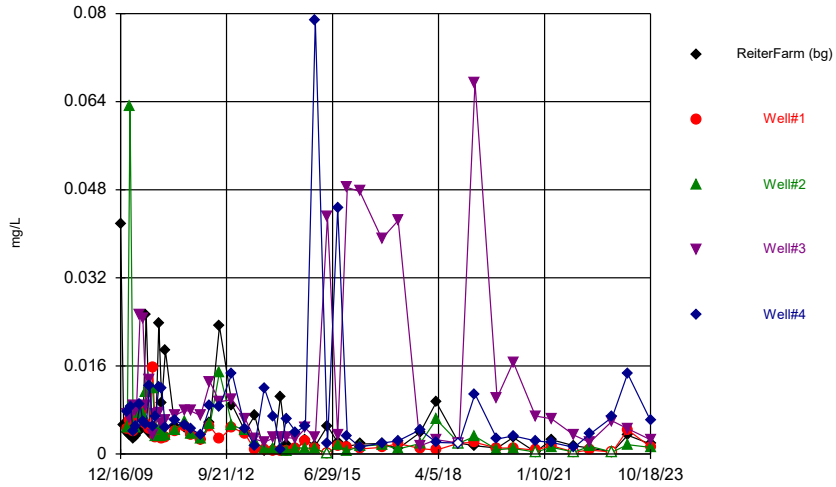
Time Series



Constituent: Molybdenum Analysis Run 12/21/2023 4:00 PM View: 2023AWQR - Time Series
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.9.6.37 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

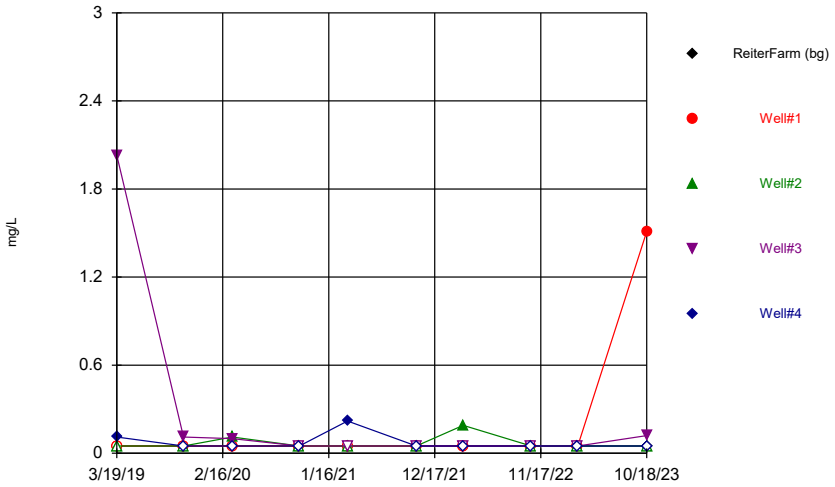
Time Series



Constituent: Nickel Analysis Run 12/21/2023 4:00 PM View: 2023AWQR - Time Series
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.9.6.37 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

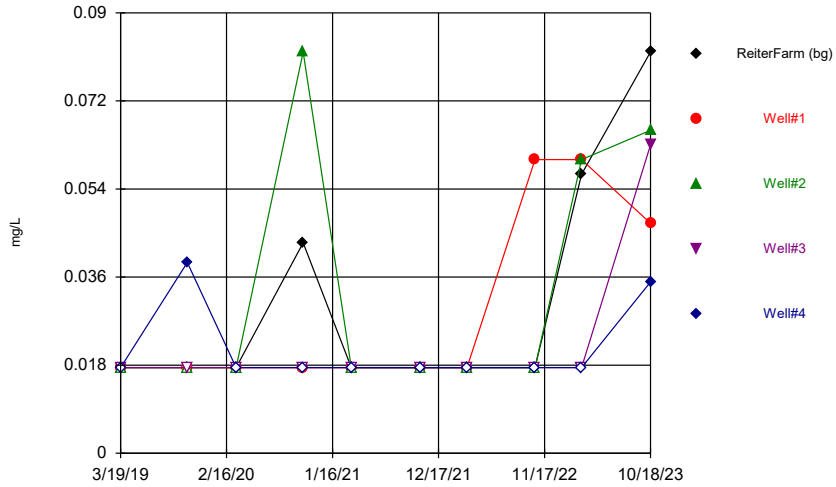
Time Series



Constituent: Nitrogen, Ammonia Analysis Run 12/21/2023 4:00 PM View: 2023AWQR - Time Series
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.9.6.37 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

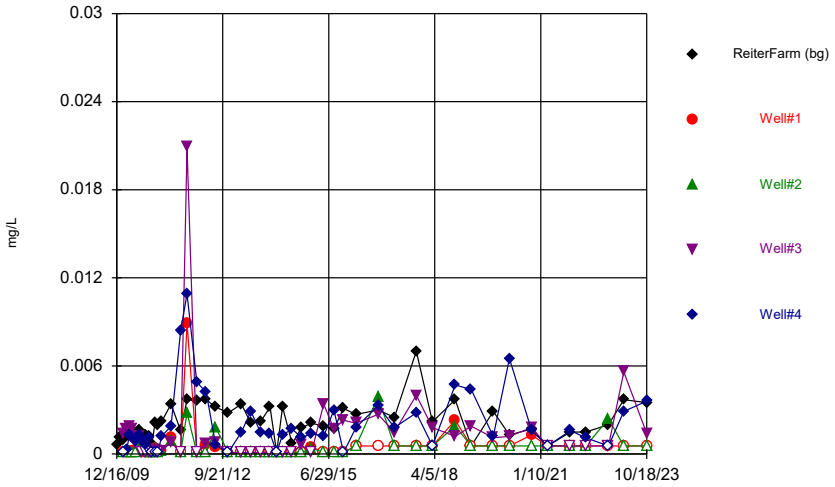
Time Series



Constituent: Phenols, total Analysis Run 12/21/2023 4:00 PM View: 2023AWQR - Time Series
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.9.6.37 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

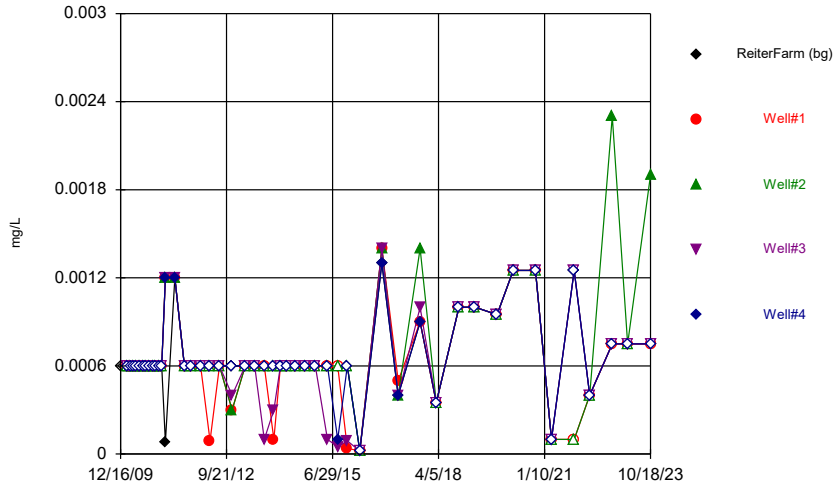
Time Series



Constituent: Selenium Analysis Run 12/21/2023 4:00 PM View: 2023AWQR - Time Series
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.9.6.37 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

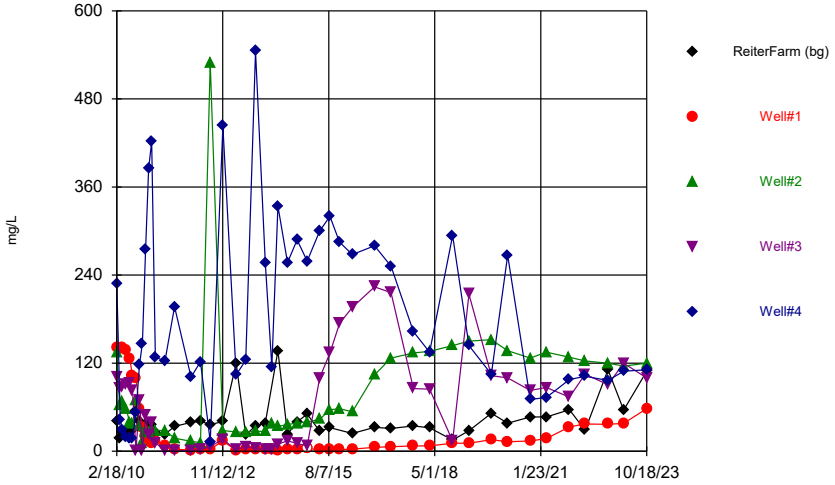
Time Series



Constituent: Silver Analysis Run 12/21/2023 4:00 PM View: 2023AWQR - Time Series
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.9.6.37 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

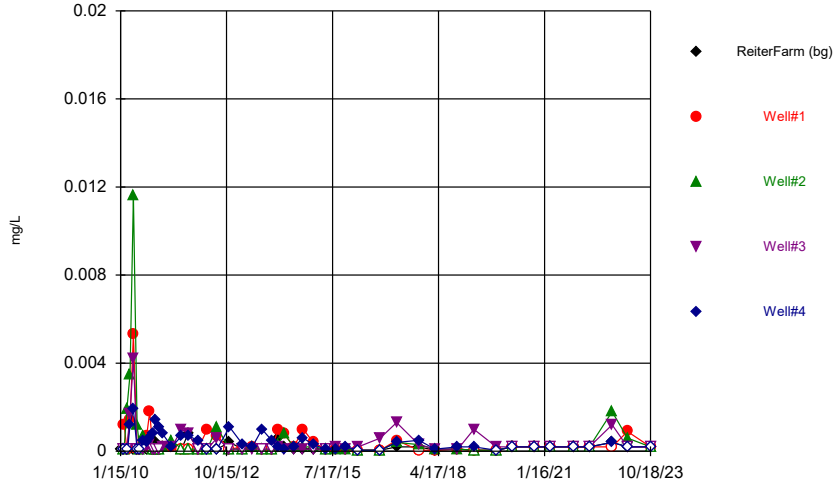
Time Series



Constituent: Sulfate Analysis Run 12/21/2023 4:00 PM View: 2023AWQR - Time Series
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.9.6.37 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

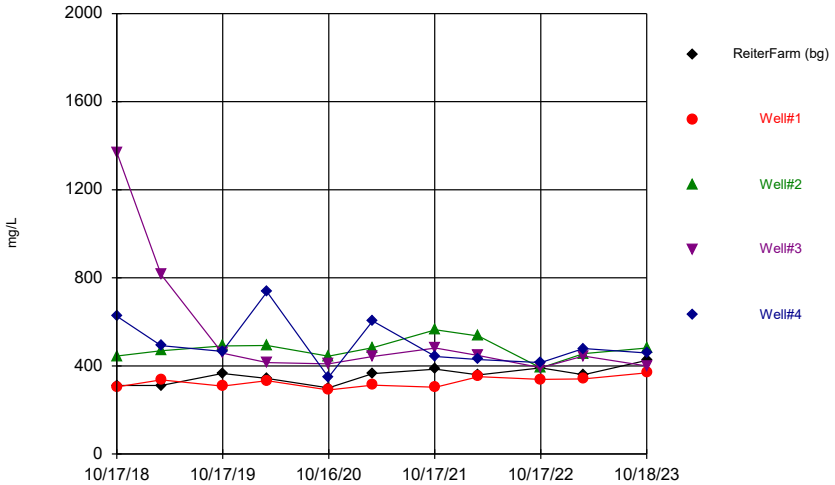
Time Series



Constituent: Thallium Analysis Run 12/21/2023 4:00 PM View: 2023AWQR - Time Series
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.9.6.37 Software licensed to SCS Engineers. UG

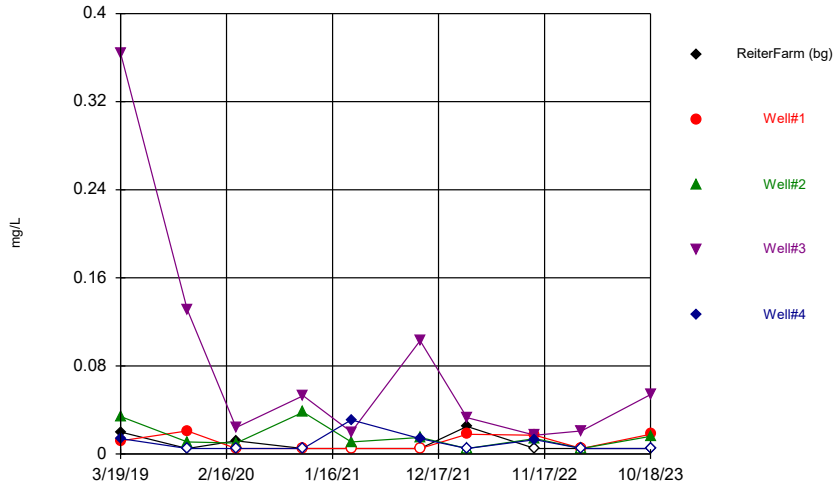
Time Series



Constituent: Total Dissolved Solids Analysis Run 12/21/2023 4:00 PM View: 2023AWQR - Time Series
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.9.6.37 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

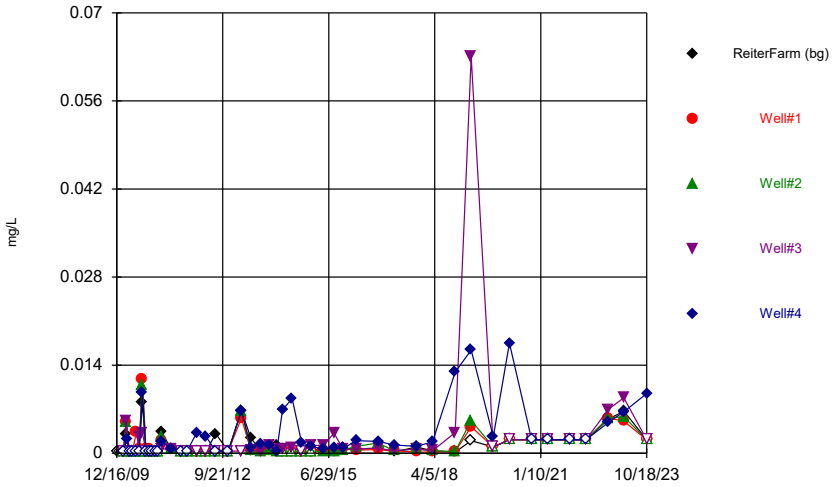
Time Series



Constituent: Total Organic Halogens Analysis Run 12/21/2023 4:00 PM View: 2023AWQR - Time Series
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.9.6.37 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

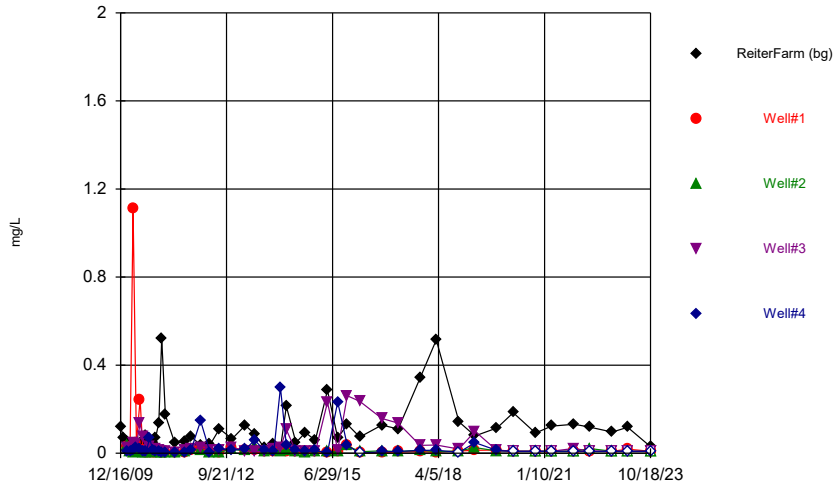
Time Series



Constituent: Vanadium Analysis Run 12/21/2023 4:00 PM View: 2023AWQR - Time Series
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.9.6.37 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Time Series



Constituent: Zinc Analysis Run 12/21/2023 4:00 PM View: 2023AWQR - Time Series
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Attachment B
Outlier Tests Summary Table and Graphs

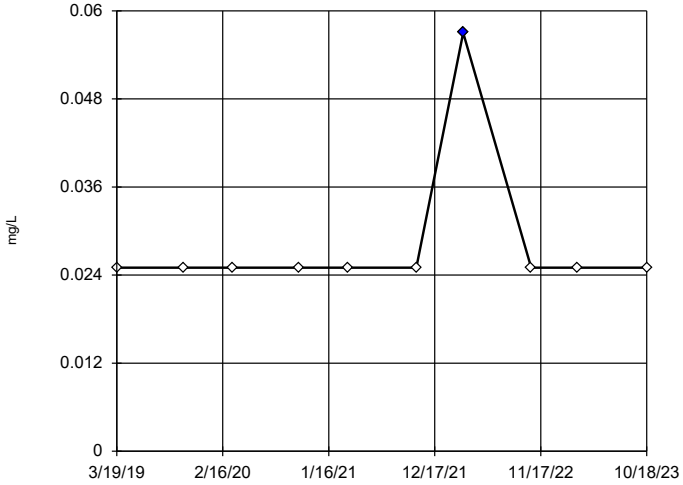
Outlier Analysis

BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master Printed 12/21/2023, 4:23 PM

Constituent	Well	Outlier	Value(s)	Date(s)	Method	Alpha	N	Mean	Std. Dev.	Normality Test
Aluminum (mg/L)	**ReiterFarm (bg)**	**Yes**	**0.057**	**3/17/2022**	**OH**	**NaN**	**10**	**0.0282**	**0.01012**	**n/a**
Antimony (mg/L)	ReiterFarm (bg)	No	n/a	n/a	NP (nrm)/OH	NaN	50	0.000279	0.0002414	ShapiroFrancia
Arsenic (mg/L)	ReiterFarm (bg)	No	n/a	n/a	EPA/OH	0.05	50	0.0005375	0.0005672	ShapiroFrancia
Barium (mg/L)	**ReiterFarm (bg)**	**Yes**	**0.267,0.241,0.241**	**3/14/2023,12/16/2009,10/12/2017**	**Rosner/OH**	**0.01**	**50**	**0.122**	**0.03615**	**ShapiroWilk**
Beryllium (mg/L)	**ReiterFarm (bg)**	**Yes**	**0.001,0.0004,0.0004,0.0002,0.0002...**	**3/19/2019,7/16/2010,12/16/2010,8/18/2010,9/20/201**	**OH**	**NaN**	**50**	**0.00007685**	**0.0001575**	**n/a**
Boron (mg/L)	**ReiterFarm (bg)**	**Yes**	**0.08,0.089**	**1/18/2012,10/18/2022**	**NP (nrm)/OH**	**NaN**	**50**	**0.03004**	**0.01792**	**ShapiroFrancia**
Cadmium (mg/L)	ReiterFarm (bg)	No	n/a	n/a	NP (nrm)/OH	NaN	47	0.0001319	0.00008624	ShapiroWilk
Chloride (mg/L)	**ReiterFarm (bg)**	**Yes**	**53.6**	**1/15/2010**	**Rosner/OH**	**0.01**	**48**	**23.56**	**7.101**	**ShapiroWilk**
Chromium (mg/L)	ReiterFarm (bg)	No	n/a	n/a	EPA/OH	0.05	50	0.001342	0.001858	ShapiroFrancia
Cobalt (mg/L)	ReiterFarm (bg)	No	n/a	n/a	EPA/OH	0.05	46	0.0003298	0.0003869	ShapiroWilk
Copper (mg/L)	ReiterFarm (bg)	No	n/a	n/a	EPA/OH	0.05	50	0.04511	0.107	ShapiroFrancia
Fluoride (mg/L)	ReiterFarm (bg)	No	n/a	n/a	EPA/OH	0.05	10	0.34	0.1897	ShapiroWilk
Iron (mg/L)	ReiterFarm (bg)	No	n/a	n/a	NP (nrm)/OH	NaN	43	0.0699	0.07461	ShapiroWilk
Lead (mg/L)	ReiterFarm (bg)	No	n/a	n/a	EPA/OH	0.05	50	0.003772	0.005754	ShapiroFrancia
Magnesium (mg/L)	ReiterFarm (bg)	No	n/a	n/a	EPA/OH	0.05	47	22.17	1.823	ShapiroWilk
Manganese (mg/L)	**ReiterFarm (bg)**	**Yes**	**0.0548,0.049,0.0258,0.0211**	**7/17/2012,6/17/2013,2/17/2014,3/17/2021**	**NP (nrm)/OH**	**NaN**	**46**	**0.007063**	**0.01105**	**ShapiroWilk**
Mercury (mg/L)	ReiterFarm (bg)	No	n/a	n/a	NP (nrm)/OH	NaN	50	0.0000516	0.00005015	ShapiroFrancia
Molybdenum (mg/L)	**ReiterFarm (bg)**	**Yes**	**0.0047,0.0078,0.0057,0.0055,0.006...**	**3/19/2013,2/17/2014,4/15/2014,10/12/2017,10/18/20**	**NP (nrm)/OH**	**NaN**	**50**	**0.001553**	**0.001895**	**ShapiroFrancia**
Nickel (mg/L)	ReiterFarm (bg)	No	n/a	n/a	EPA/OH	0.05	50	0.00571	0.007817	ShapiroFrancia
Selenium (mg/L)	**ReiterFarm (bg)**	**Yes**	**0.007**	**10/12/2017**	**Rosner/OH**	**0.01**	**50**	**0.002171**	**0.001216**	**ShapiroWilk**
Silver (mg/L)	ReiterFarm (bg)	No	n/a	n/a	OH	NaN	50	0.000658	0.0002691	n/a
Sulfate (mg/L)	**ReiterFarm (bg)**	**Yes**	**120,137,111,109**	**3/19/2013,4/15/2014,10/18/2022,10/18/2023**	**NP (nrm)/OH**	**NaN**	**45**	**42.44**	**26.32**	**ShapiroWilk**
Thallium (mg/L)	ReiterFarm (bg)	No	n/a	n/a	NP (nrm)/OH	NaN	49	0.0001724	0.0001425	ShapiroWilk
Vanadium (mg/L)	ReiterFarm (bg)	No	n/a	n/a	NP (nrm)/OH	NaN	50	0.001425	0.001825	ShapiroFrancia
Zinc (mg/L)	ReiterFarm (bg)	No	n/a	n/a	EPA/OH	0.05	50	0.1114	0.1049	ShapiroFrancia

Ohio EPA 0715 Outlier Algorithm

ReiterFarm (bg)



n = 10

Statistical outlier is drawn as solid.
Outlier per Ohio method.

Constituent: Aluminum Analysis Run 12/21/2023 4:19 PM View: 2023AWQR - Outliers
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

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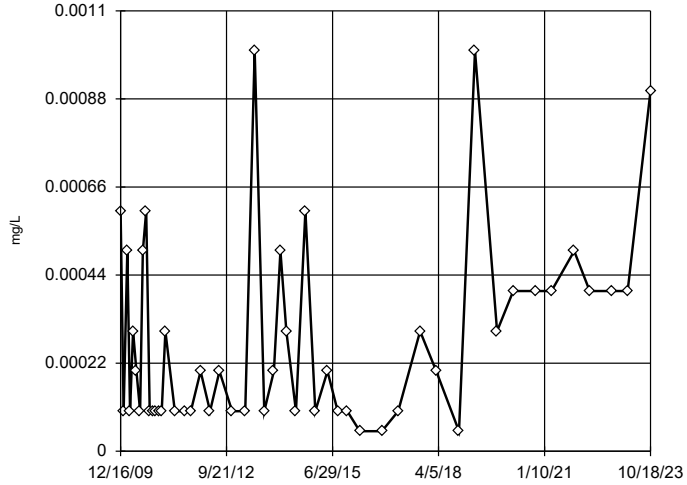
Tukey's Outlier Screening / Ohio EPA 0715 Outlier Algorithm

ReiterFarm (bg)



n = 50

No outliers found.
Tukey's method used in lieu of parametric test because the Shapiro Francia normality test failed at the 0.01 alpha level.

The results were invalidated, because both the lower and upper quartiles represent reporting limits.

Constituent: Antimony Analysis Run 12/21/2023 4:19 PM View: 2023AWQR - Outliers
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

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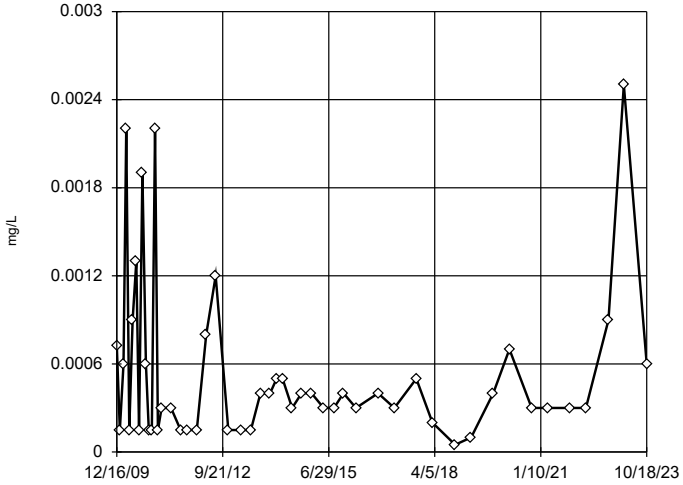
EPA Screening (suspected outliers for Rosner's Test)

ReiterFarm (bg)



n = 50

Rosner's will not be run.
No suspect values identified or unable to establish suspect values.
Ohio method in use.
Mean 0.0005375, std. dev. 0.0005672, critical Tn 2.956

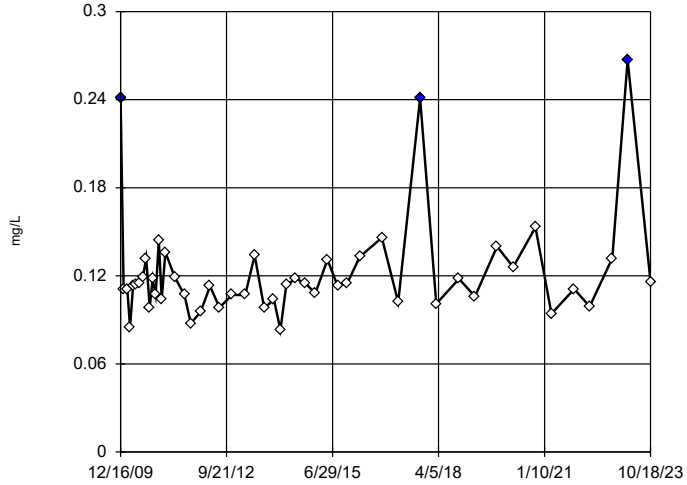
Normality test used:
Shapiro Francia@alpha = 0.01
Calculated = 0.95
Critical = 0.935 (after natural log transformation)
The distribution was found to be log-normal.

Constituent: Arsenic Analysis Run 12/21/2023 4:19 PM View: 2023AWQR - Outliers
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.9.6.37 Software licensed to SCS Engineers. UG

Rosner's Outlier Test / Ohio EPA 0715 Outlier Algorithm

ReiterFarm (bg)



n = 50

Statistical outliers are drawn as solid.

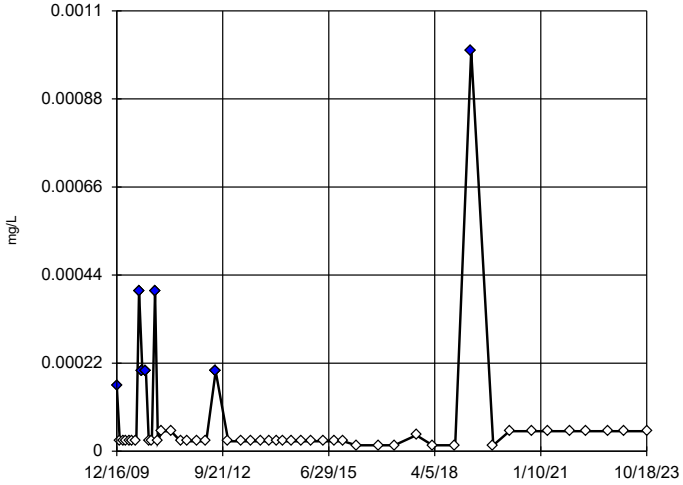
k = 5
r = 5.155
Tabulated value = 2.94
Alpha = 0.01

Normality test used:
Shapiro Wilk@alpha = 0.01
Calculated = 0.9656
Critical = 0.928
The distribution, after removal of suspect values, was found to be normally distributed.

Constituent: Barium Analysis Run 12/21/2023 4:19 PM View: 2023AWQR - Outliers
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Ohio EPA 0715 Outlier Algorithm

ReiterFarm (bg)



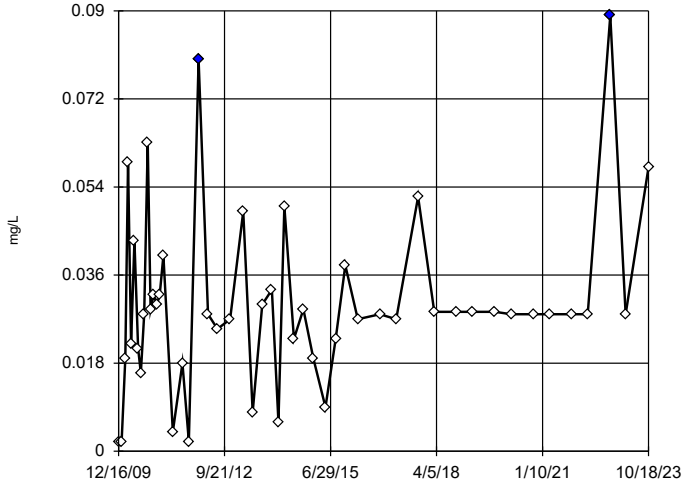
n = 50

Statistical outliers are drawn as solid.
Outliers per Ohio method.

Constituent: Beryllium Analysis Run 12/21/2023 4:19 PM View: 2023AWQR - Outliers
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Tukey's Outlier Screening / Ohio EPA 0715 Outlier Algorithm

ReiterFarm (bg)



n = 50

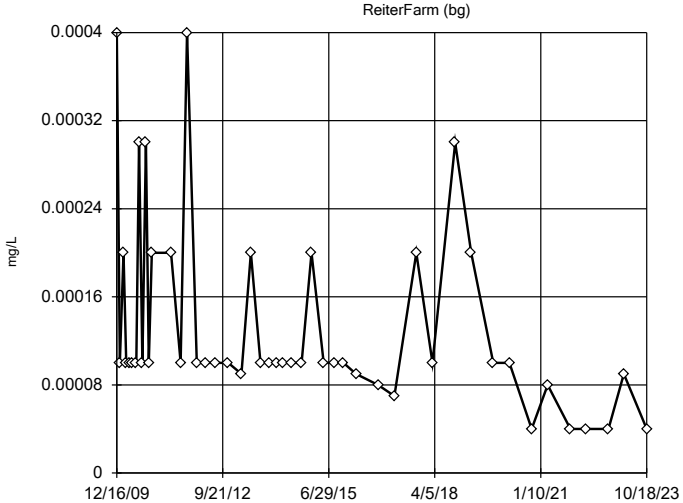
Outliers are drawn as solid.
Tukey's method used in lieu of parametric test because the Shapiro Francia normality test failed at the 0.01 alpha level.

High cutoff = 0.0655,
low cutoff = -0.0115,
based on IQR multiplier of 3.

Constituent: Boron Analysis Run 12/21/2023 4:19 PM View: 2023AWQR - Outliers
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Tukey's Outlier Screening / Ohio EPA 0715 Outlier Algorithm

ReiterFarm (bg)



n = 47

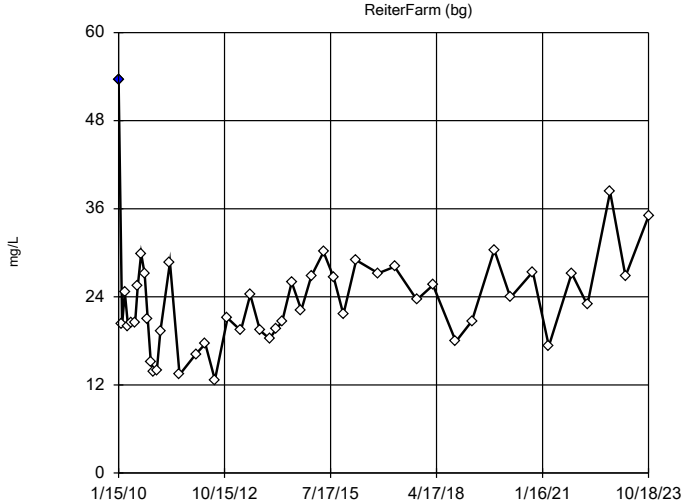
No outliers found.
Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.01 alpha level.

High cutoff = 0.0005,
low cutoff = -0.0002,
based on IQR multiplier of 3.

Constituent: Cadmium Analysis Run 12/21/2023 4:19 PM View: 2023AWQR - Outliers
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Rosner's Outlier Test / Ohio EPA 0715 Outlier Algorithm

ReiterFarm (bg)



n = 48

Statistical outlier is drawn as solid.

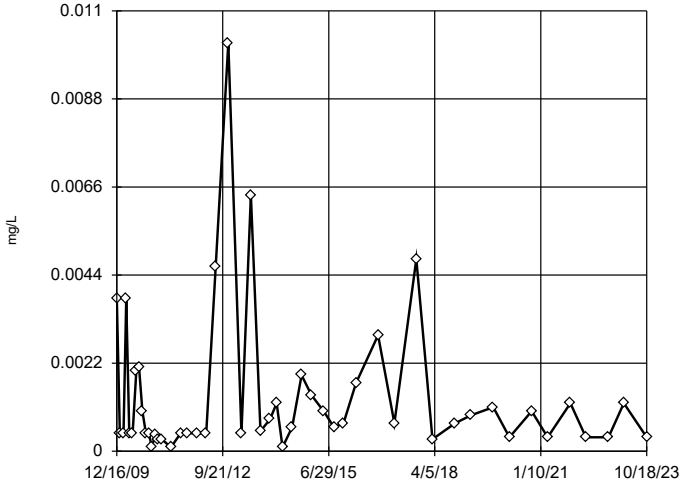
k = 1
r = 4.23
Tabulated value = 3.06
Alpha = 0.01

Normality test used:
Shapiro Wilk@alpha = 0.01
Calculated = 0.9732
Critical = 0.928
The distribution, after removal of suspect value, was found to be normally distributed.

Constituent: Chloride Analysis Run 12/21/2023 4:19 PM View: 2023AWQR - Outliers
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

EPA Screening (suspected outliers for Rosner's Test)

ReiterFarm (bg)



n = 50

Rosner's will not be run.
No suspect values identified or unable to establish suspect values.
Ohio method in use.
Mean 0.001342, std. dev. 0.001858, critical Tn 2.956

Normality test used:
Shapiro Francia@alpha = 0.01
Calculated = 0.9449
Critical = 0.935 (after natural log transformation)
The distribution was found to be log-normal.

Constituent: Chromium Analysis Run 12/21/2023 4:19 PM View: 2023AWQR - Outliers
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

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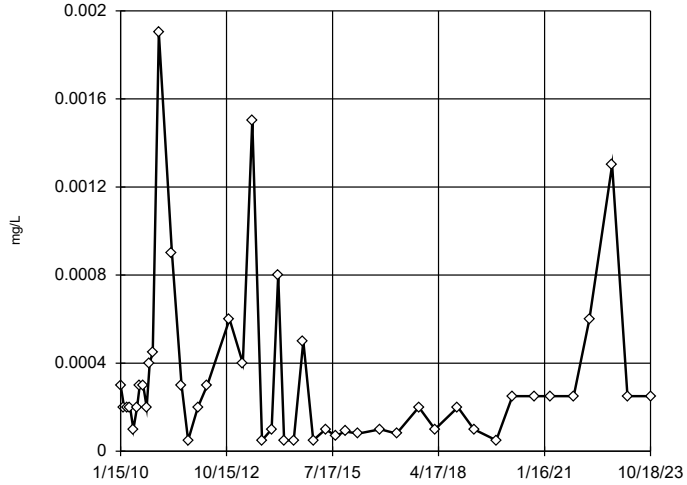
EPA Screening (suspected outliers for Rosner's Test)

ReiterFarm (bg)



n = 46

Rosner's will not be run.
No suspect values identified or unable to establish suspect values.
Ohio method in use.
Mean 0.0003298, std. dev. 0.0003869, critical Tn 2.923

Normality test used:
Shapiro Wilk@alpha = 0.01
Calculated = 0.9429
Critical = 0.927 (after natural log transformation)
The distribution was found to be log-normal.

Constituent: Cobalt Analysis Run 12/21/2023 4:19 PM View: 2023AWQR - Outliers
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

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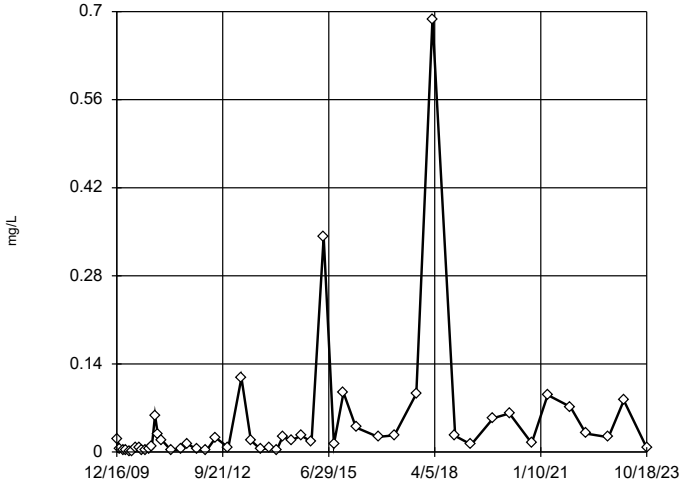
EPA Screening (suspected outliers for Rosner's Test)

ReiterFarm (bg)



n = 50

Rosner's will not be run.
No suspect values identified or unable to establish suspect values.
Ohio method in use.
Mean 0.04511, std. dev. 0.107, critical Tn 2.956

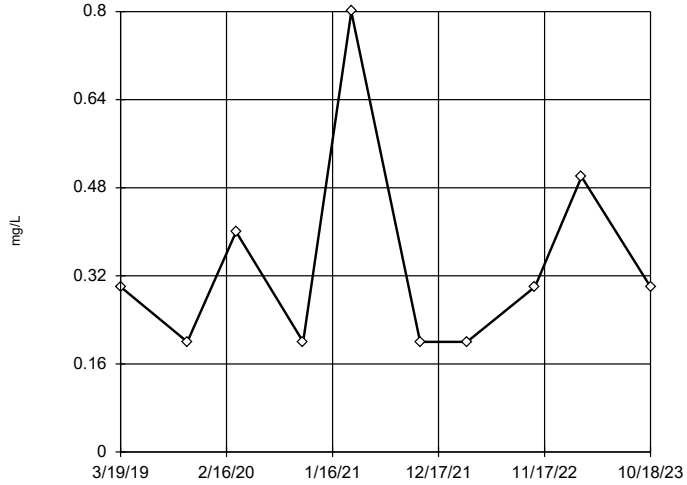
Normality test used:
Shapiro Francia@alpha = 0.01
Calculated = 0.9678
Critical = 0.935 (after natural log transformation)
The distribution was found to be log-normal.

Constituent: Copper Analysis Run 12/21/2023 4:19 PM View: 2023AWQR - Outliers
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.9.6.37 Software licensed to SCS Engineers. UG

EPA Screening (suspected outliers for Dixon's Test)

ReiterFarm (bg)



n = 10

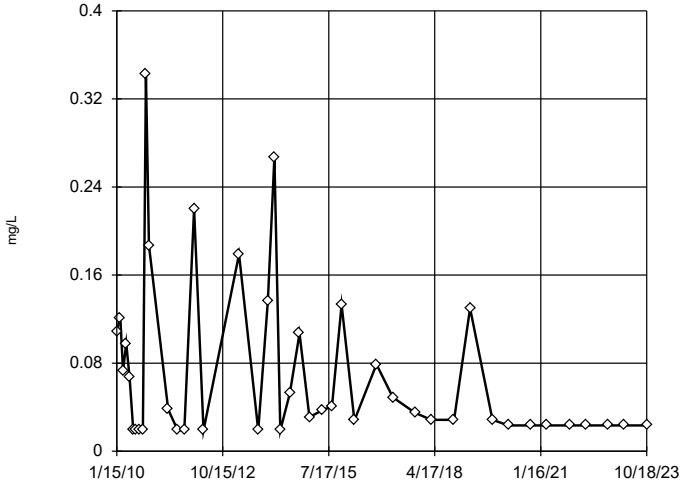
Dixon's will not be run.
No suspect values identified or unable to establish suspect values.
Ohio method in use.
Mean 0.34, std. dev. 0.1897, critical Tn 2.176

Normality test used:
Shapiro Wilk@alpha = 0.01
Calculated = 0.8555
Critical = 0.781 (after natural log transformation)
The distribution was found to be log-normal.

Constituent: Fluoride Analysis Run 12/21/2023 4:19 PM View: 2023AWQR - Outliers
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Tukey's Outlier Screening / Ohio EPA 0715 Outlier Algorithm

ReiterFarm (bg)



n = 43

No outliers found.
Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.01 alpha level.

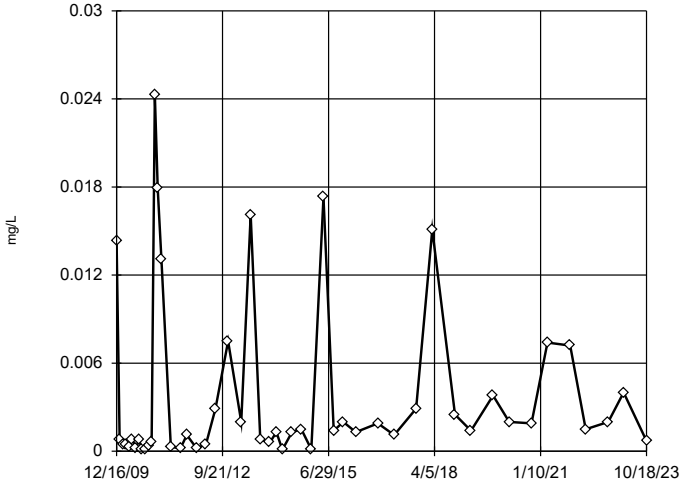
High cutoff = 0.3575, low cutoff = -0.227, based on IQR multiplier of 3.

Constituent: Iron Analysis Run 12/21/2023 4:19 PM View: 2023AWQR - Outliers
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.9.6.37 Software licensed to SCS Engineers. UG

EPA Screening (suspected outliers for Rosner's Test)

ReiterFarm (bg)



n = 50

Rosner's will not be run.
No suspect values identified or unable to establish suspect values.
Ohio method in use.
Mean 0.003772, std. dev. 0.005754, critical Tn 2.956

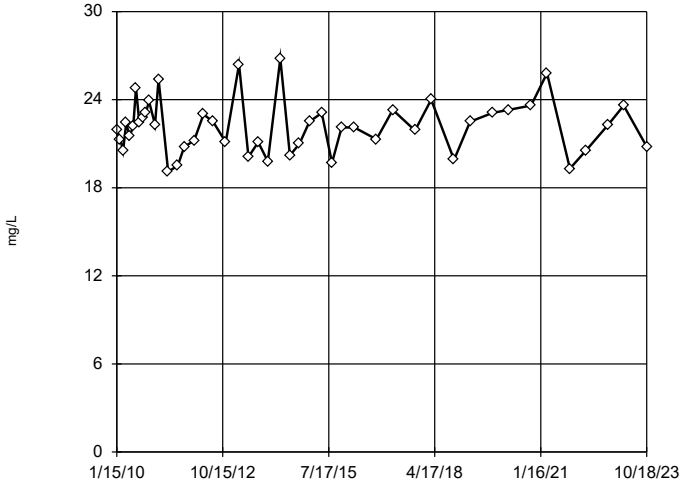
Normality test used:
Shapiro Francia@alpha = 0.01
Calculated = 0.978
Critical = 0.935 (after natural log transformation)
The distribution was found to be log-normal.

Constituent: Lead Analysis Run 12/21/2023 4:19 PM View: 2023AWQR - Outliers
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.9.6.37 Software licensed to SCS Engineers. UG

EPA Screening (suspected outliers for Rosner's Test)

ReiterFarm (bg)



n = 47

Rosner's will not be run.
No suspect values identified or unable to establish suspect values.
Ohio method in use.
Mean 22.17, std. dev. 1.823, critical Tn 2.931

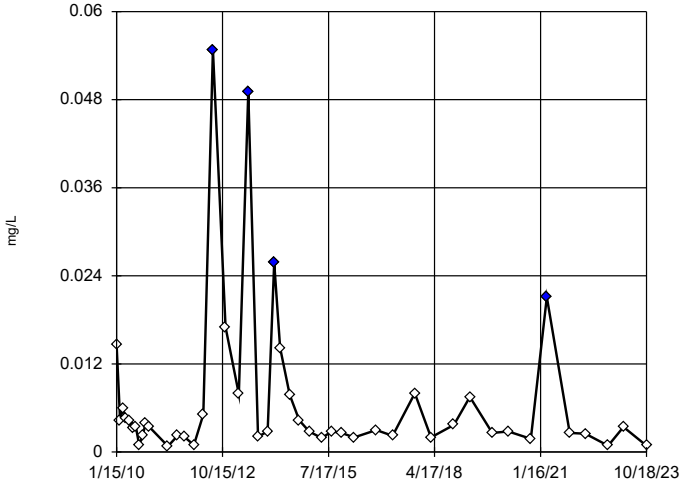
Normality test used:
Shapiro Wilk@alpha = 0.01
Calculated = 0.9594
Critical = 0.928
The distribution was found to be normally distributed.

Constituent: Magnesium Analysis Run 12/21/2023 4:19 PM View: 2023AWQR - Outliers
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.9.6.37 Software licensed to SCS Engineers. UG

Tukey's Outlier Screening / Ohio EPA 0715 Outlier Algorithm

ReiterFarm (bg)



n = 46

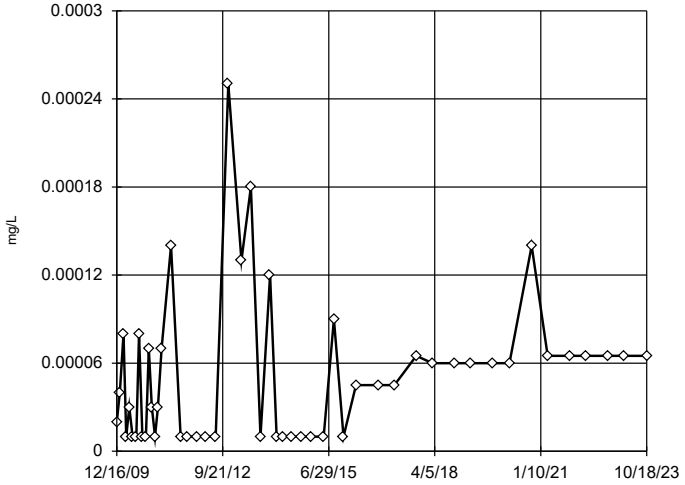
Outliers are drawn as solid.
Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.01 alpha level.

High cutoff = 0.02035, low cutoff = -0.0115, based on IQR multiplier of 3.

Constituent: Manganese Analysis Run 12/21/2023 4:19 PM View: 2023AWQR - Outliers
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Tukey's Outlier Screening / Ohio EPA 0715 Outlier Algorithm

ReiterFarm (bg)



n = 50

No outliers found.
Tukey's method used in lieu of parametric test because the Shapiro Francia normality test failed at the 0.01 alpha level.

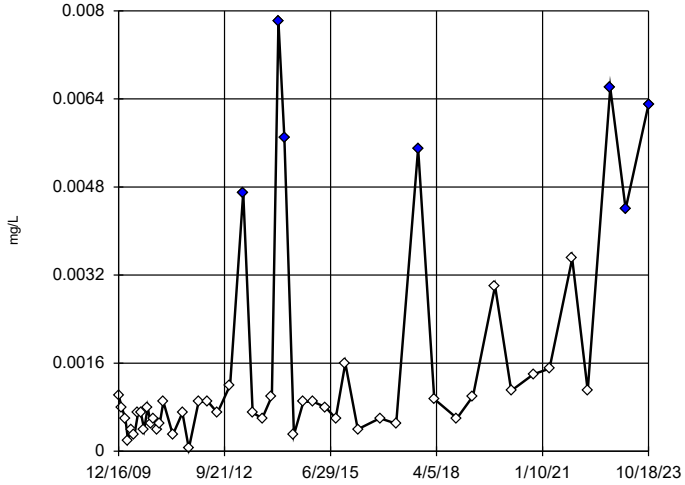
The results were invalidated, because both the lower and upper quartiles represent reporting limits.

Constituent: Mercury Analysis Run 12/21/2023 4:19 PM View: 2023AWQR - Outliers
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.9.6.37 Software licensed to SCS Engineers. UG

Tukey's Outlier Screening / Ohio EPA 0715 Outlier Algorithm

ReiterFarm (bg)



n = 50

Outliers are drawn as solid.
Tukey's method used in lieu of parametric test because the Shapiro Francia normality test failed at the 0.01 alpha level.

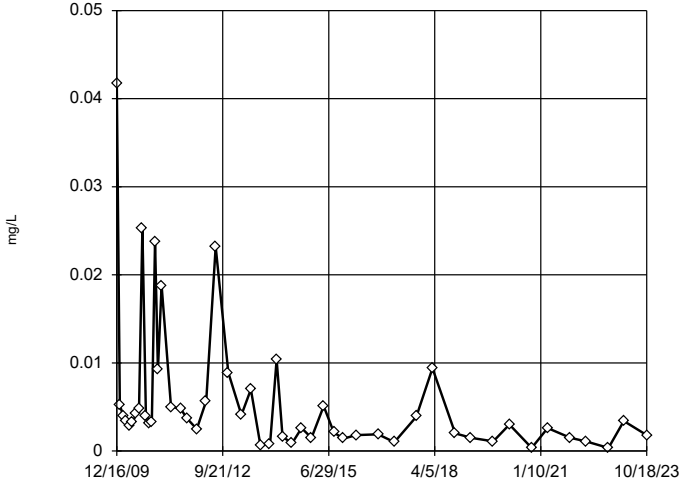
High cutoff = 0.00355, low cutoff = -0.0017, based on IQR multiplier of 3.

Constituent: Molybdenum Analysis Run 12/21/2023 4:19 PM View: 2023AWQR - Outliers
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.9.6.37 Software licensed to SCS Engineers. UG

EPA Screening (suspected outliers for Rosner's Test)

ReiterFarm (bg)



n = 50

Rosner's will not be run.
No suspect values identified or unable to establish suspect values.
Ohio method in use.
Mean 0.00571, std. dev. 0.007817, critical Tn 2.956

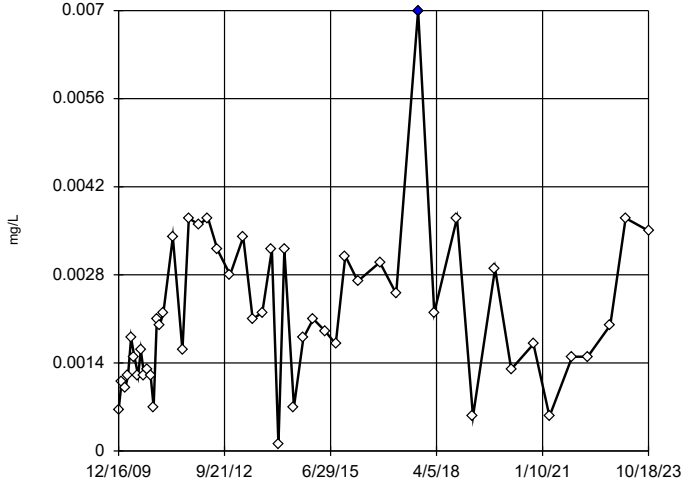
Normality test used:
Shapiro Francia@alpha = 0.01
Calculated = 0.9755
Critical = 0.935 (after natural log transformation)
The distribution was found to be log-normal.

Constituent: Nickel Analysis Run 12/21/2023 4:19 PM View: 2023AWQR - Outliers
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.9.6.37 Software licensed to SCS Engineers. UG

Rosner's Outlier Test / Ohio EPA 0715 Outlier Algorithm

ReiterFarm (bg)



n = 50

Statistical outlier is drawn as solid.

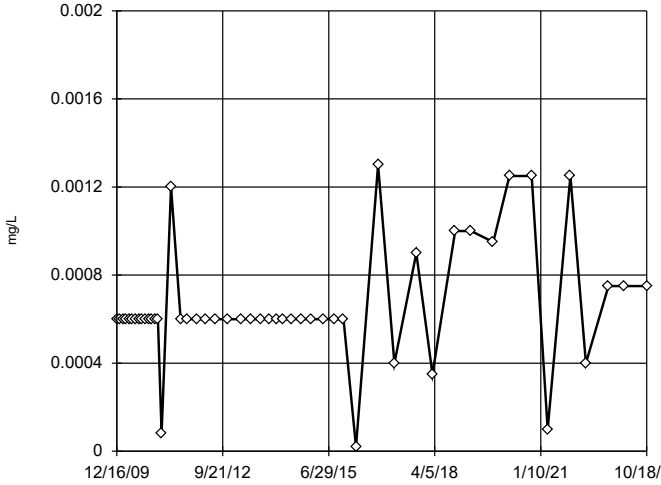
k = 1
r = 3.973
Tabulated value = 3.08
Alpha = 0.01

Normality test used:
Shapiro Wilk@alpha = 0.01
Calculated = 0.9403
Critical = 0.929 (after natural log transformation)
The distribution, after removal of suspect value, was found to be log-normal.

Constituent: Selenium Analysis Run 12/21/2023 4:19 PM View: 2023AWQR - Outliers
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Ohio EPA 0715 Outlier Algorithm

ReiterFarm (bg)



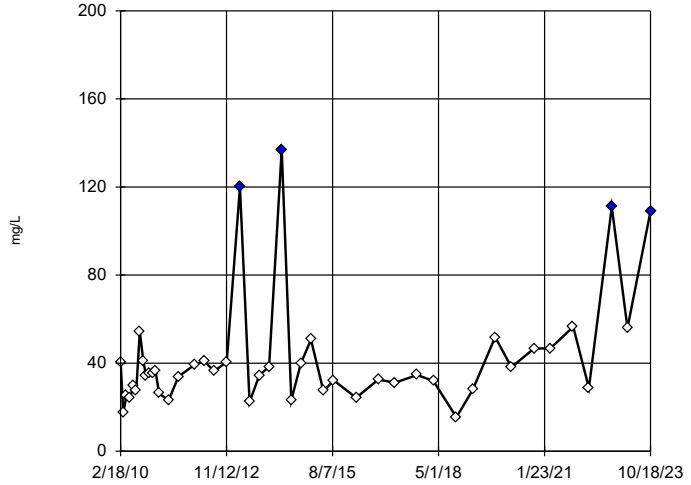
n = 50

No statistical outliers.

Constituent: Silver Analysis Run 12/21/2023 4:19 PM View: 2023AWQR - Outliers
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Tukey's Outlier Screening / Ohio EPA 0715 Outlier Algorithm

ReiterFarm (bg)



n = 45

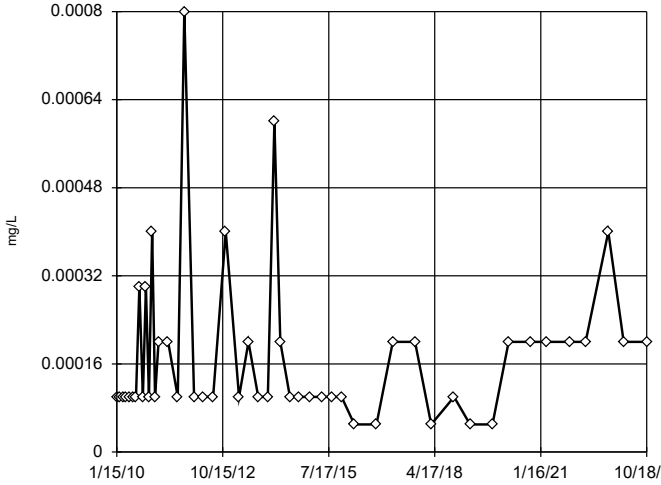
Outliers are drawn as solid.
Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.01 alpha level.

High cutoff = 91.65, low cutoff = -20, based on IQR multiplier of 3.

Constituent: Sulfate Analysis Run 12/21/2023 4:19 PM View: 2023AWQR - Outliers
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Tukey's Outlier Screening / Ohio EPA 0715 Outlier Algorithm

ReiterFarm (bg)



n = 49

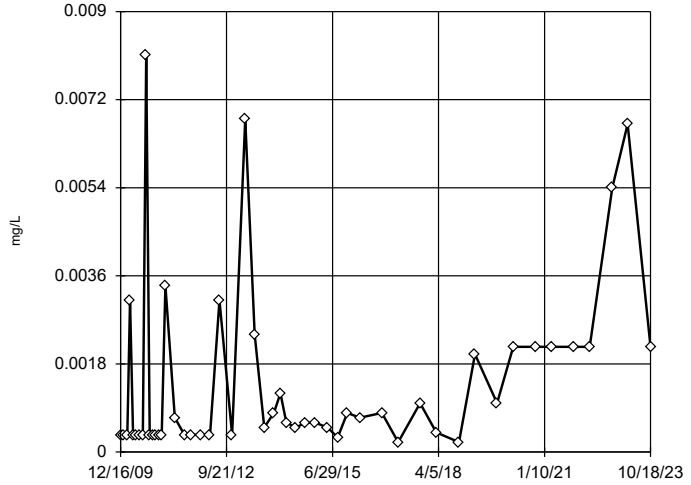
No outliers found.
Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.01 alpha level.

The results were invalid-ated, because both the lower and upper quartiles represent reporting limits.

Constituent: Thallium Analysis Run 12/21/2023 4:19 PM View: 2023AWQR - Outliers
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Tukey's Outlier Screening / Ohio EPA 0715 Outlier Algorithm

ReiterFarm (bg)



n = 50

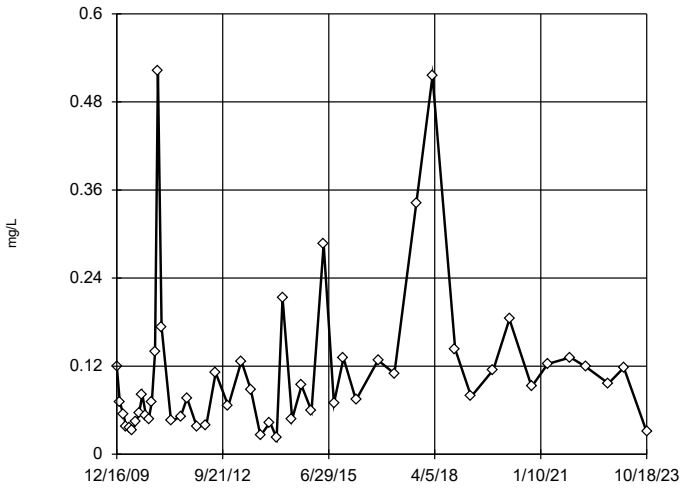
No outliers found.
Tukey's method used in lieu of parametric test because the Shapiro Francia normality test failed at the 0.01 alpha level.

The results were invalid-ated, because both the lower and upper quartiles represent reporting limits.

Constituent: Vanadium Analysis Run 12/21/2023 4:19 PM View: 2023AWQR - Outliers
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

EPA Screening (suspected outliers for Rosner's Test)

ReiterFarm (bg)



n = 50

Rosner's will not be run.
No suspect values identified or unable to establish suspect values.
Ohio method in use.
Mean 0.1114, std. dev. 0.1049, critical Tn 2.956

Normality test used:
Shapiro Francia@alpha = 0.01
Calculated = 0.9694
Critical = 0.935 (after natural log transformation)
The distribution was found to be log-normal.

Constituent: Zinc Analysis Run 12/21/2023 4:19 PM View: 2023AWQR - Outliers

BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Attachment C

Mann-Kendall/Sen's Slope Trend Test Summary Table and Graphs

Trend Test

BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR Printed 2/12/2024, 4:15 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Alpha	Method
Aluminum (mg/L)	Well#1	0	-8	-21	No	8	62.5	0.01	NP
Aluminum (mg/L)	Well#2	0	-2	-21	No	8	50	0.01	NP
Aluminum (mg/L)	Well#3	0	2	21	No	8	50	0.01	NP
Aluminum (mg/L)	Well#4	0.0123	1	21	No	8	25	0.01	NP
Arsenic (mg/L)	Well#1	-0.0004343	-8	-21	No	8	0	0.01	NP
Arsenic (mg/L)	Well#2	0.0001209	11	21	No	8	37.5	0.01	NP
Arsenic (mg/L)	Well#3	0	0	21	No	8	25	0.01	NP
Arsenic (mg/L)	Well#4	0.0001255	2	21	No	8	25	0.01	NP
Barium (mg/L)	Well#1	-0.08994	-10	-21	No	8	0	0.01	NP
Barium (mg/L)	Well#2	0.006601	10	21	No	8	0	0.01	NP
Barium (mg/L)	Well#3	0.008994	3	21	No	8	0	0.01	NP
Barium (mg/L)	Well#4	0.01633	12	21	No	8	0	0.01	NP
Boron (mg/L)	Well#4	0	-7	-21	No	8	87.5	0.01	NP
Chloride (mg/L)	Well#1	0.2255	15	21	No	8	0	0.01	NP
Chloride (mg/L)	Well#2	-0.1001	-9	-21	No	8	0	0.01	NP
Chloride (mg/L)	Well#3	-0.5246	-6	-21	No	8	0	0.01	NP
Chloride (mg/L)	Well#4	2.629	10	21	No	8	0	0.01	NP
Chloroform (ug/L)	Well#3	0	-3	-21	No	8	87.5	0.01	NP
Chromium (mg/L)	Well#2	0	0	21	No	8	62.5	0.01	NP
Chromium (mg/L)	Well#3	0	1	21	No	8	50	0.01	NP
Chromium (mg/L)	Well#4	0.0007355	8	21	No	8	25	0.01	NP
Copper (mg/L)	Well#1	0.0001331	6	21	No	8	0	0.01	NP
Copper (mg/L)	Well#2	0.0004815	8	21	No	8	0	0.01	NP
Copper (mg/L)	Well#3	0.0005092	6	21	No	8	0	0.01	NP
Copper (mg/L)	Well#4	0.0004684	4	21	No	8	0	0.01	NP
Fluoride (mg/L)	Well#1	0	6	21	No	8	0	0.01	NP
Fluoride (mg/L)	Well#2	0	7	21	No	8	0	0.01	NP
Fluoride (mg/L)	Well#3	0	-2	-21	No	8	0	0.01	NP
Fluoride (mg/L)	Well#4	0.01664	5	21	No	8	0	0.01	NP
Iron (mg/L)	**Well#1**	**-0.318**	**-22**	**-21**	**Yes**	**8**	**0**	**0.01**	**NP**
Iron (mg/L)	Well#2	-0.3495	-14	-21	No	8	0	0.01	NP
Iron (mg/L)	Well#3	-0.2111	-12	-21	No	8	12.5	0.01	NP
Iron (mg/L)	Well#4	0.09133	4	21	No	8	12.5	0.01	NP
Lead (mg/L)	Well#1	0	2	21	No	8	62.5	0.01	NP
Lead (mg/L)	Well#2	0	-5	-21	No	8	62.5	0.01	NP
Lead (mg/L)	Well#3	0	3	21	No	8	75	0.01	NP
Lead (mg/L)	Well#4	0.0002664	13	21	No	8	37.5	0.01	NP
Magnesium (mg/L)	Well#1	-0.1947	-9	-21	No	8	0	0.01	NP
Magnesium (mg/L)	Well#2	1.16	16	21	No	8	0	0.01	NP
Magnesium (mg/L)	Well#3	-0.2412	-2	-21	No	8	0	0.01	NP
Magnesium (mg/L)	Well#4	-0.5349	-4	-21	No	8	0	0.01	NP
Manganese (mg/L)	Well#1	-0.003445	-14	-21	No	8	0	0.01	NP
Manganese (mg/L)	Well#2	-0.002923	-10	-21	No	8	0	0.01	NP
Manganese (mg/L)	Well#3	-0.004325	-10	-21	No	8	0	0.01	NP
Manganese (mg/L)	Well#4	0.0139	10	21	No	8	0	0.01	NP
Molybdenum (mg/L)	Well#3	-0.0008268	-9	-21	No	8	0	0.01	NP
Molybdenum (mg/L)	Well#4	0.0006839	4	21	No	8	0	0.01	NP
Nickel (mg/L)	Well#1	0.00002788	2	21	No	8	25	0.01	NP
Nickel (mg/L)	Well#3	-0.003277	-18	-21	No	8	0	0.01	NP
Nickel (mg/L)	Well#4	0.001522	12	21	No	8	0	0.01	NP

Trend Test

BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR Printed 2/12/2024, 4:15 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Alpha	Method
Selenium (mg/L)	Well#3	0	2	21	No	8	50	0.01	NP
Selenium (mg/L)	Well#4	0	0	21	No	8	25	0.01	NP
Silver (mg/L)	Well#2	0.0002581	6	21	No	8	75	0.01	NP
Sulfate (mg/L)	**Well#1**	**11.77**	**26**	**21**	**Yes**	**8**	**0**	**0.01**	**NP**
Sulfate (mg/L)	Well#2	-5.724	-21	-21	No	8	0	0.01	NP
Sulfate (mg/L)	Well#3	5.394	9	21	No	8	0	0.01	NP
Sulfate (mg/L)	Well#4	7.573	10	21	No	8	0	0.01	NP
Thallium (mg/L)	Well#1	0	5	21	No	8	87.5	0.01	NP
Thallium (mg/L)	Well#2	0	7	21	No	8	75	0.01	NP
Thallium (mg/L)	Well#3	0	3	21	No	8	87.5	0.01	NP
Vanadium (mg/L)	Well#3	0	9	21	No	8	75	0.01	NP
Vanadium (mg/L)	Well#4	0.001551	8	21	No	8	50	0.01	NP
Zinc (mg/L)	Well#2	0	1	21	No	8	87.5	0.01	NP
Zinc (mg/L)	Well#3	0	-1	-21	No	8	87.5	0.01	NP

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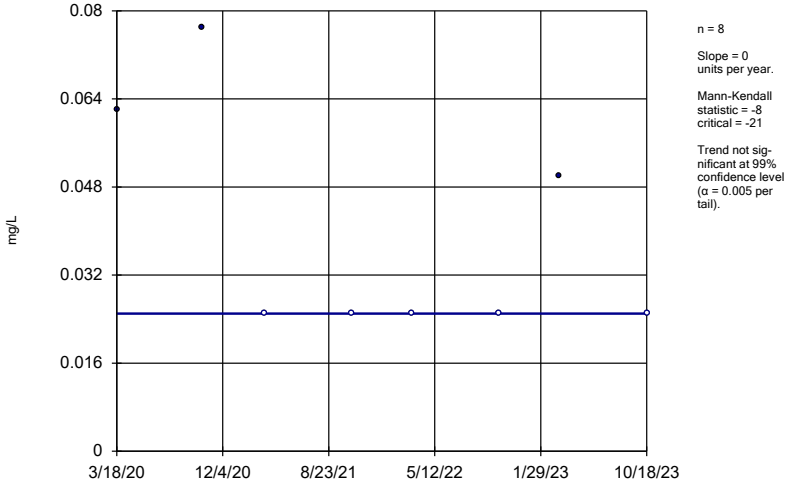
Hollow symbols indicate censored values.

Sen's Slope Estimator

Well#1



n = 8

Slope = 0 units per year.

Mann-Kendall statistic = -8
critical = -21

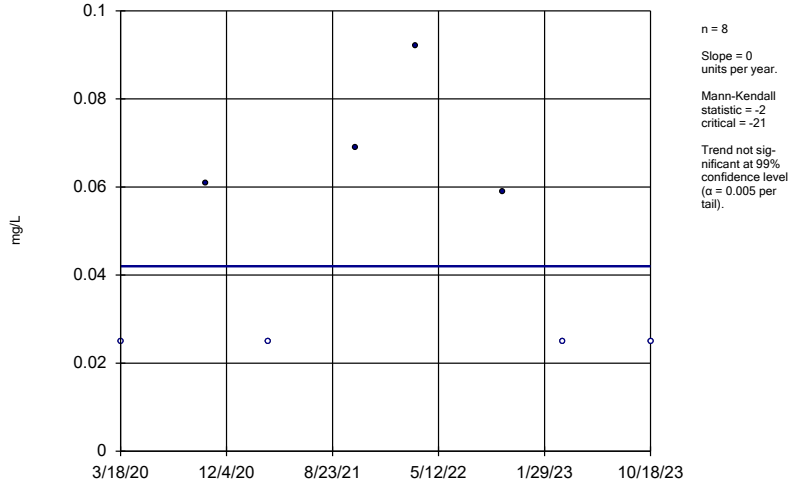
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Aluminum Analysis Run 2/12/2024 4:13 PM View: 2023AWQR - Mann Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

Sanitas™ v.10.0.15d Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

Well#2



n = 8

Slope = 0 units per year.

Mann-Kendall statistic = -2
critical = -21

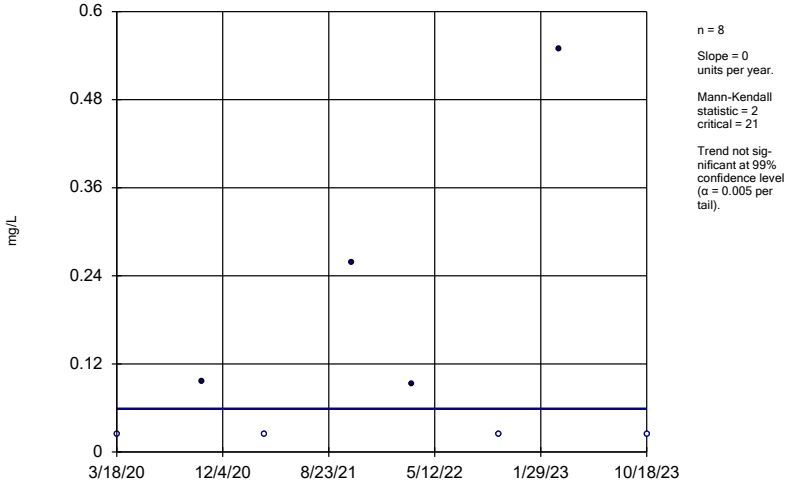
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Aluminum Analysis Run 2/12/2024 4:13 PM View: 2023AWQR - Mann Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

Sanitas™ v.10.0.15d Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

Well#3



n = 8

Slope = 0 units per year.

Mann-Kendall statistic = 2
critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Aluminum Analysis Run 2/12/2024 4:13 PM View: 2023AWQR - Mann Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

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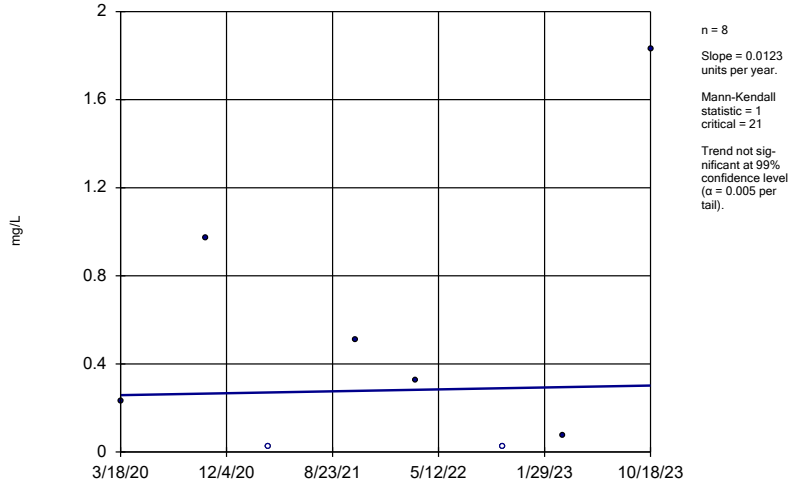
Hollow symbols indicate censored values.

Sen's Slope Estimator

Well#4



n = 8

Slope = 0.0123 units per year.

Mann-Kendall statistic = 1
critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Aluminum Analysis Run 2/12/2024 4:13 PM View: 2023AWQR - Mann Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

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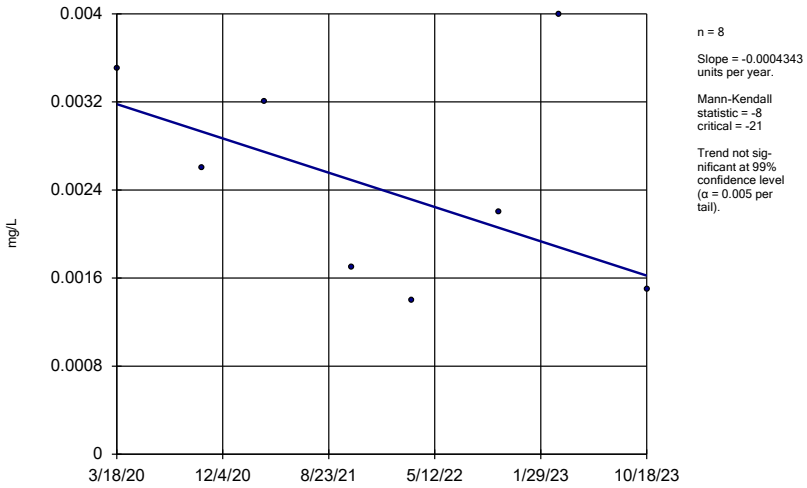
Sen's Slope Estimator

Well#1



n = 8

Slope = -0.0004343 units per year.

Mann-Kendall statistic = -8
critical = -21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Arsenic Analysis Run 2/12/2024 4:13 PM View: 2023AWQR - Mann Kendall

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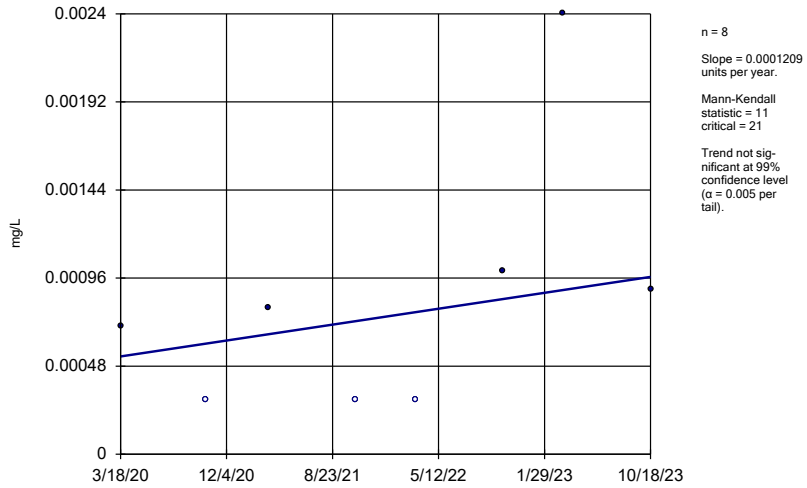
Hollow symbols indicate censored values.

Sen's Slope Estimator

Well#2



n = 8

Slope = 0.0001209 units per year.

Mann-Kendall statistic = 11
critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Arsenic Analysis Run 2/12/2024 4:13 PM View: 2023AWQR - Mann Kendall

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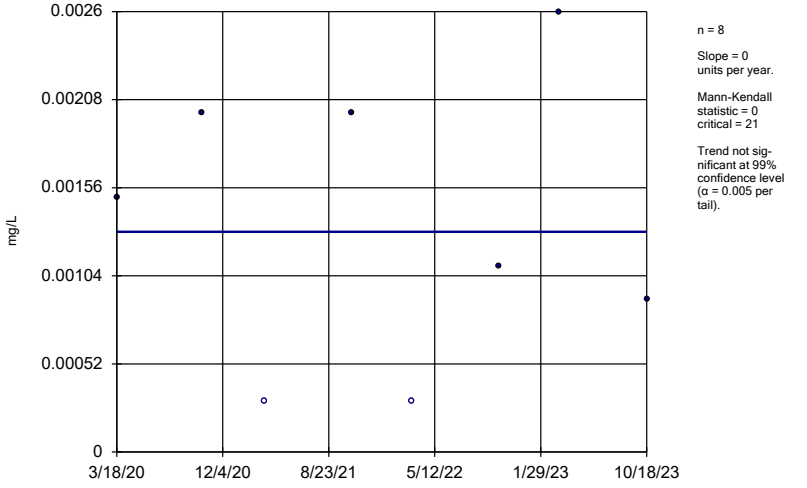
Hollow symbols indicate censored values.

Sen's Slope Estimator

Well#3



n = 8

Slope = 0 units per year.

Mann-Kendall statistic = 0
critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Arsenic Analysis Run 2/12/2024 4:13 PM View: 2023AWQR - Mann Kendall

BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

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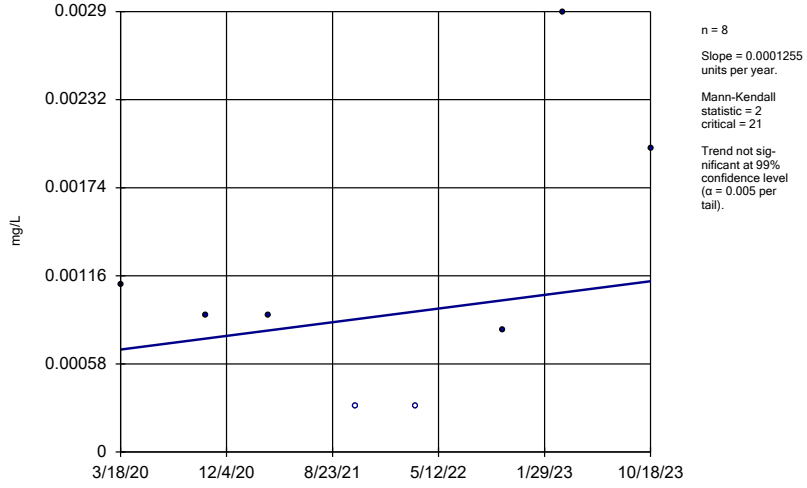
Hollow symbols indicate censored values.

Sen's Slope Estimator

Well#4



n = 8

Slope = 0.0001255 units per year.

Mann-Kendall statistic = 2
critical = 21

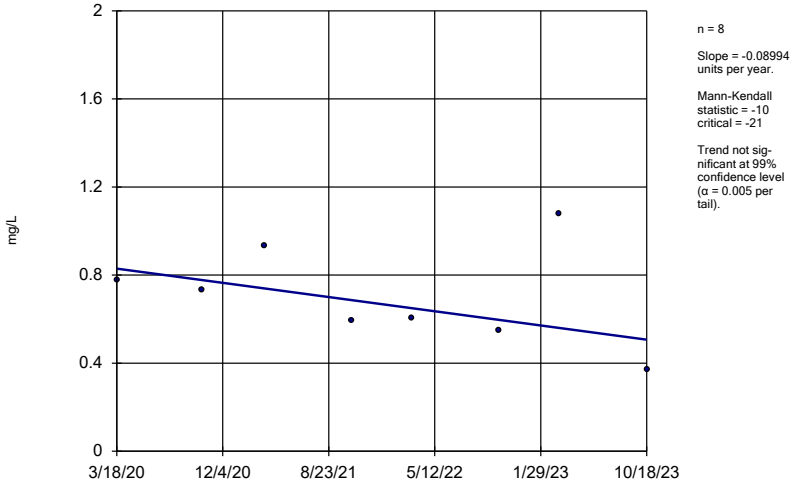
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Arsenic Analysis Run 2/12/2024 4:13 PM View: 2023AWQR - Mann Kendall

BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

Sen's Slope Estimator

Well#1



n = 8

Slope = -0.08994 units per year.

Mann-Kendall statistic = -10
critical = -21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Barium Analysis Run 2/12/2024 4:13 PM View: 2023AWQR - Mann Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

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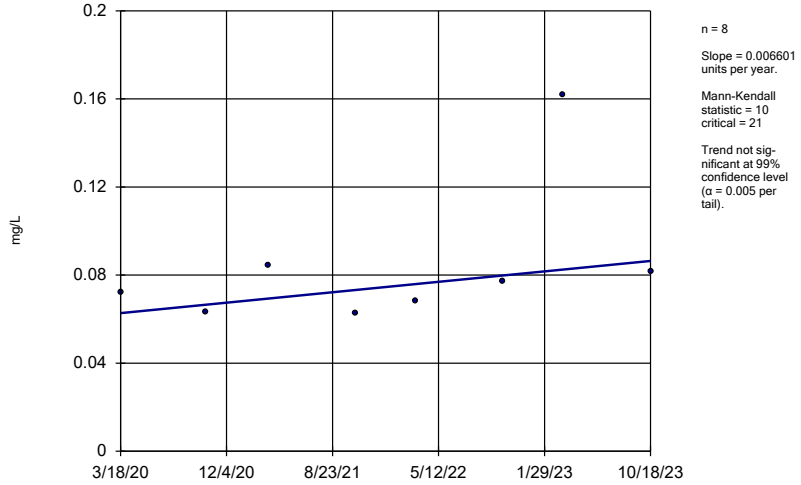
Sen's Slope Estimator

Well#2



n = 8

Slope = 0.006601 units per year.

Mann-Kendall statistic = 10
critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Barium Analysis Run 2/12/2024 4:13 PM View: 2023AWQR - Mann Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

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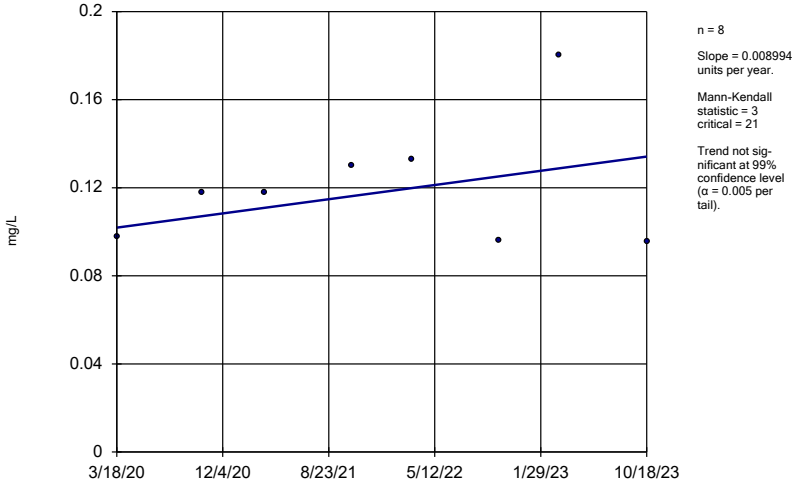
Sen's Slope Estimator

Well#3



n = 8

Slope = 0.008994 units per year.

Mann-Kendall statistic = 3
critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Barium Analysis Run 2/12/2024 4:13 PM View: 2023AWQR - Mann Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

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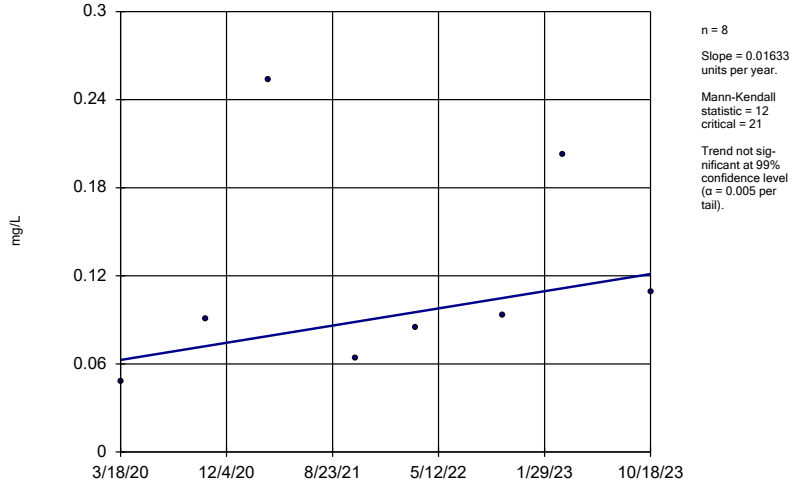
Sen's Slope Estimator

Well#4



n = 8

Slope = 0.01633 units per year.

Mann-Kendall statistic = 12
critical = 21

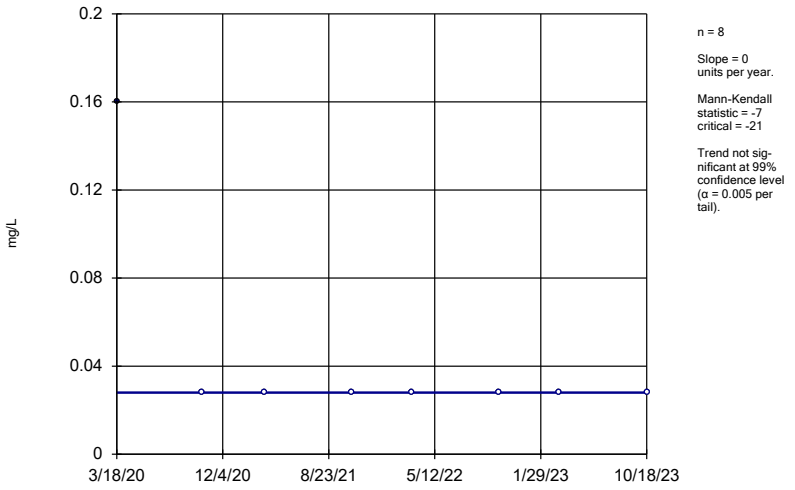
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Barium Analysis Run 2/12/2024 4:13 PM View: 2023AWQR - Mann Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

Hollow symbols indicate censored values.

Sen's Slope Estimator

Well#4



Constituent: Boron Analysis Run 2/12/2024 4:13 PM View: 2023AWQR - Mann Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

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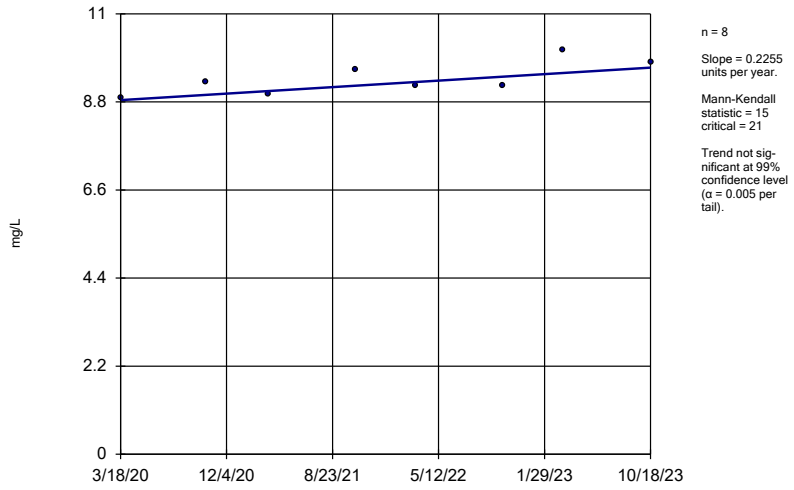
Sen's Slope Estimator

Well#1



Constituent: Chloride Analysis Run 2/12/2024 4:13 PM View: 2023AWQR - Mann Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

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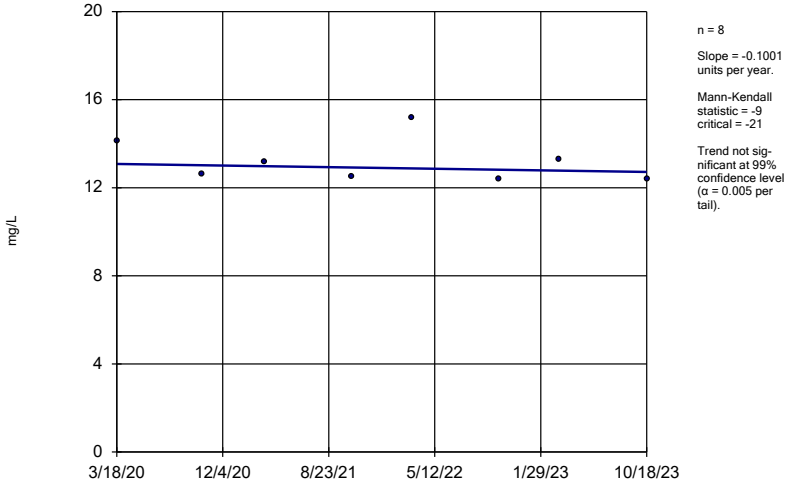
Sen's Slope Estimator

Well#2



Constituent: Chloride Analysis Run 2/12/2024 4:13 PM View: 2023AWQR - Mann Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

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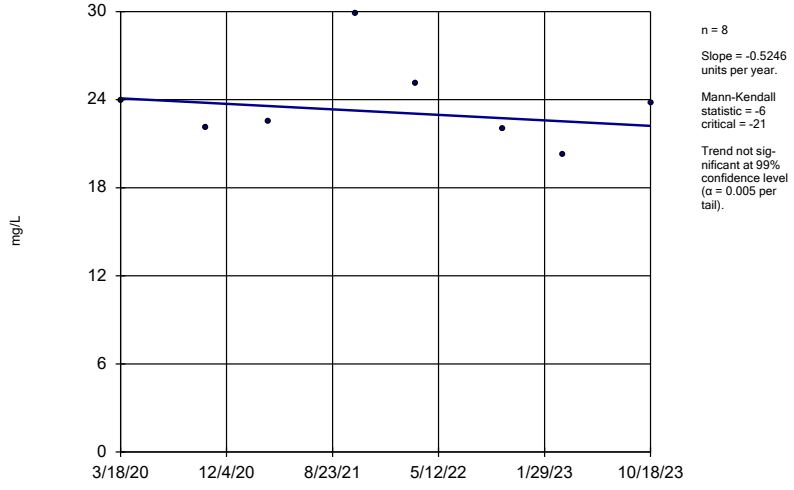
Sen's Slope Estimator

Well#3

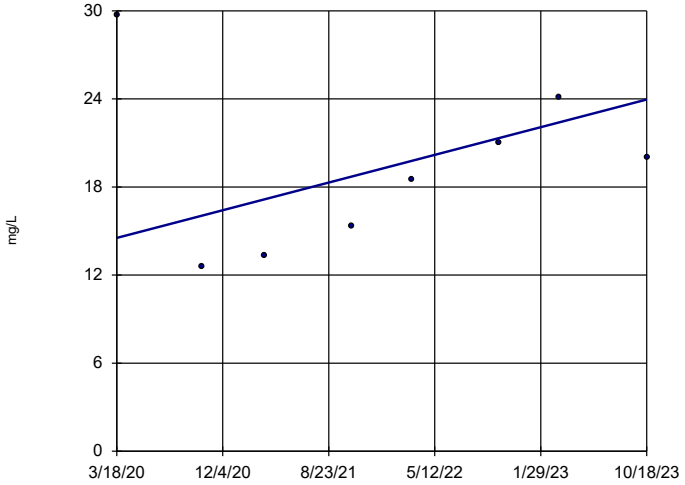


Constituent: Chloride Analysis Run 2/12/2024 4:13 PM View: 2023AWQR - Mann Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

Sanitas™ v.10.0.15d Software licensed to SCS Engineers. UG

Sen's Slope Estimator

Well#4



n = 8

Slope = 2.629 units per year.

Mann-Kendall statistic = 10 critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chloride Analysis Run 2/12/2024 4:13 PM View: 2023AWQR - Mann Kendall

BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

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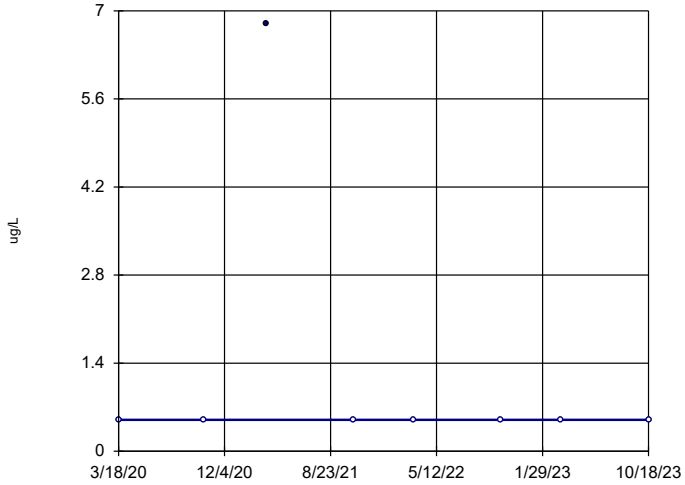
Hollow symbols indicate censored values.

Sen's Slope Estimator

Well#3



n = 8

Slope = 0 units per year.

Mann-Kendall statistic = -3 critical = -21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chloroform Analysis Run 2/12/2024 4:13 PM View: 2023AWQR - Mann Kendall

BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

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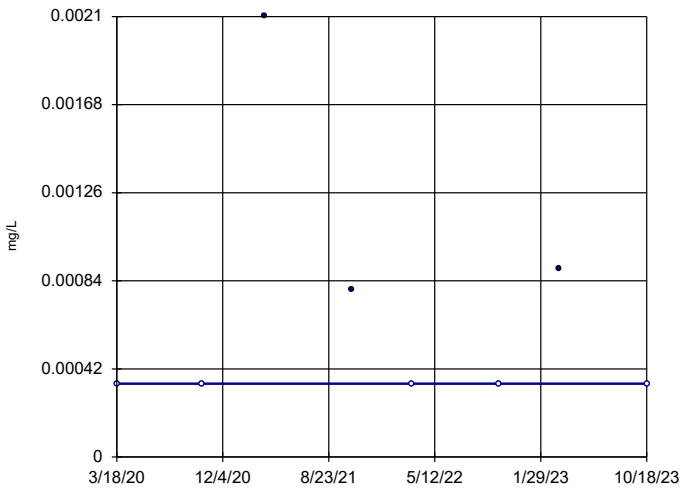
Hollow symbols indicate censored values.

Sen's Slope Estimator

Well#2



n = 8

Slope = 0 units per year.

Mann-Kendall statistic = 0 critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chromium Analysis Run 2/12/2024 4:13 PM View: 2023AWQR - Mann Kendall

BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

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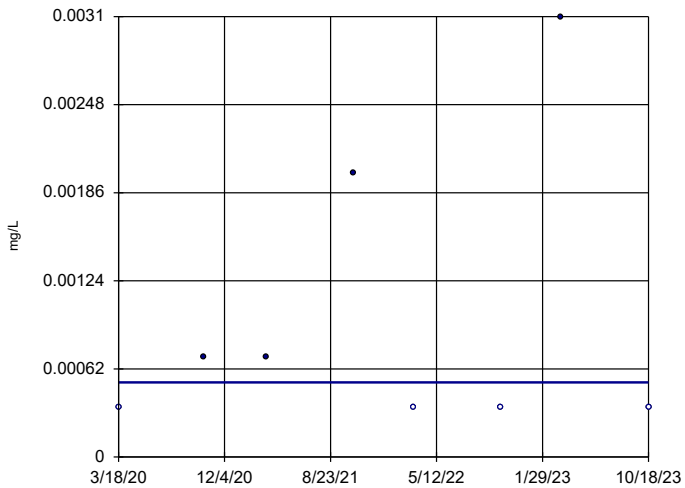
Hollow symbols indicate censored values.

Sen's Slope Estimator

Well#3



n = 8

Slope = 0 units per year.

Mann-Kendall statistic = 1 critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

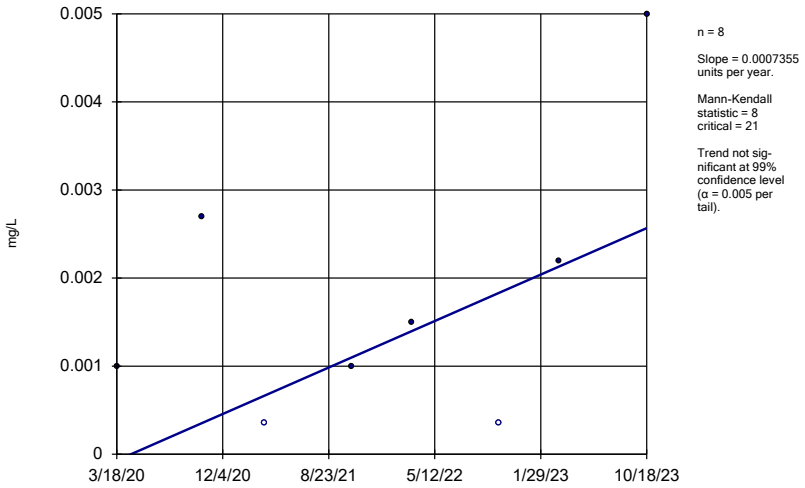
Constituent: Chromium Analysis Run 2/12/2024 4:13 PM View: 2023AWQR - Mann Kendall

BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

Hollow symbols indicate censored values.

Sen's Slope Estimator

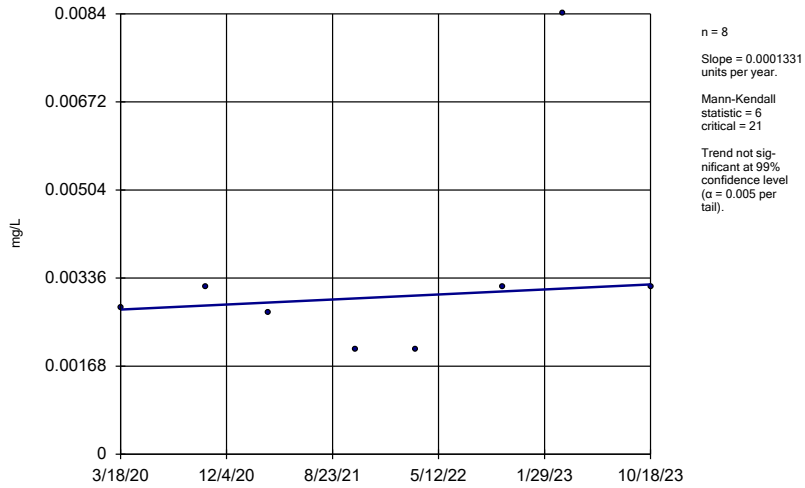
Well#4



Constituent: Chromium Analysis Run 2/12/2024 4:13 PM View: 2023AWQR - Mann Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

Sen's Slope Estimator

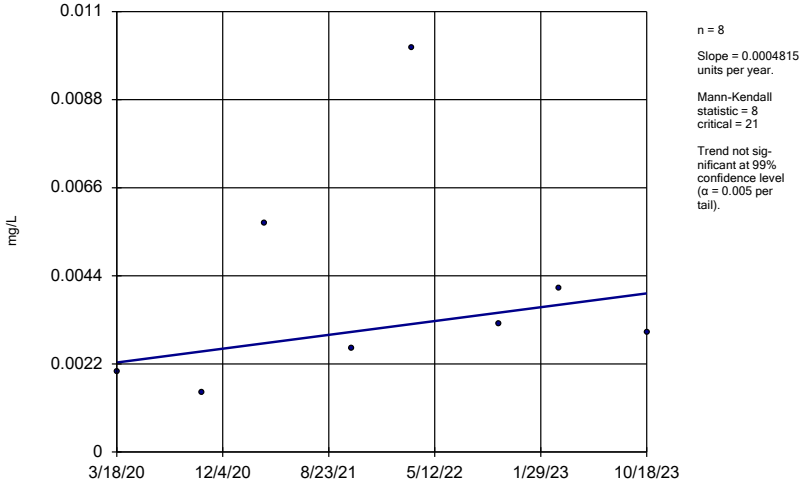
Well#1



Constituent: Copper Analysis Run 2/12/2024 4:13 PM View: 2023AWQR - Mann Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

Sen's Slope Estimator

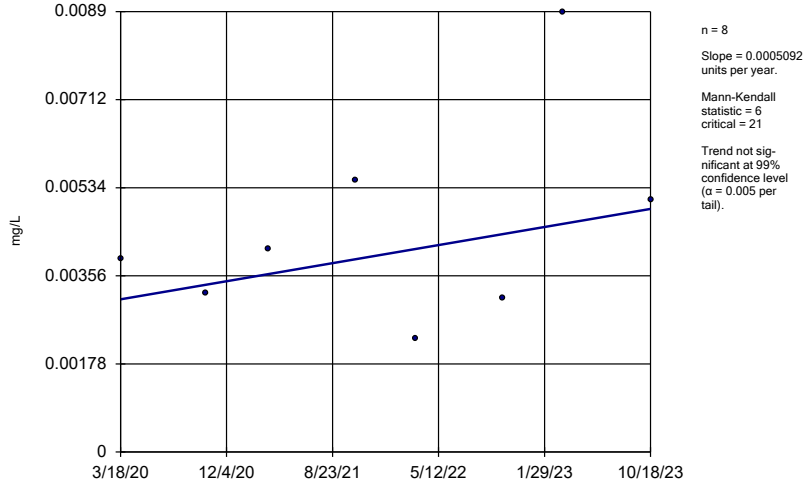
Well#2



Constituent: Copper Analysis Run 2/12/2024 4:13 PM View: 2023AWQR - Mann Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

Sen's Slope Estimator

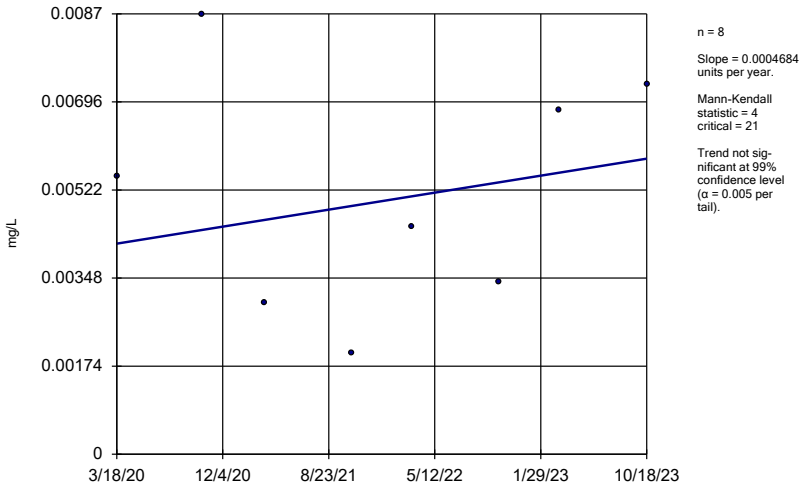
Well#3



Constituent: Copper Analysis Run 2/12/2024 4:13 PM View: 2023AWQR - Mann Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

Sen's Slope Estimator

Well#4

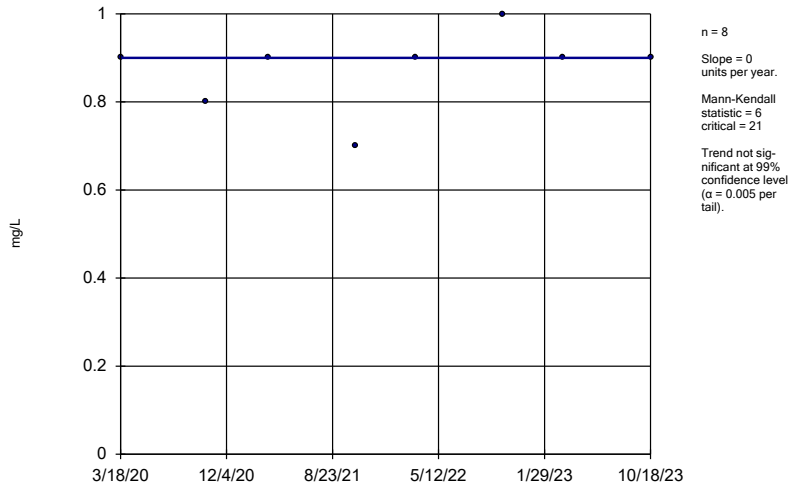


Constituent: Copper Analysis Run 2/12/2024 4:13 PM View: 2023AWQR - Mann Kendall

BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

Sen's Slope Estimator

Well#1

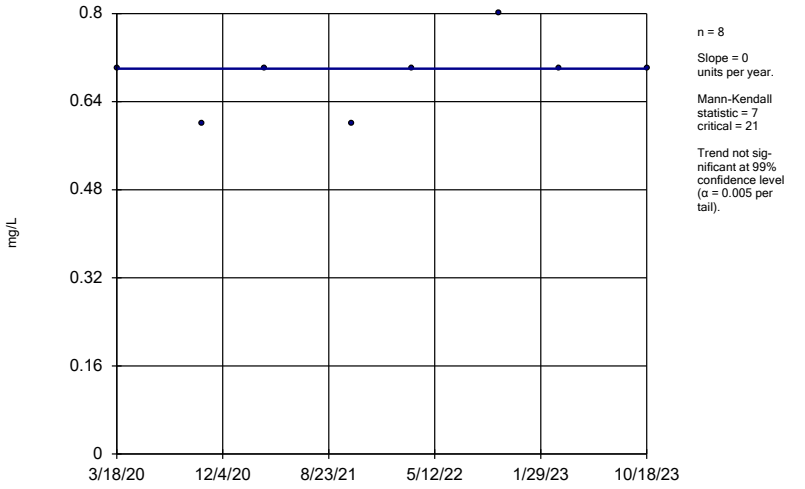


Constituent: Fluoride Analysis Run 2/12/2024 4:13 PM View: 2023AWQR - Mann Kendall

BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

Sen's Slope Estimator

Well#2

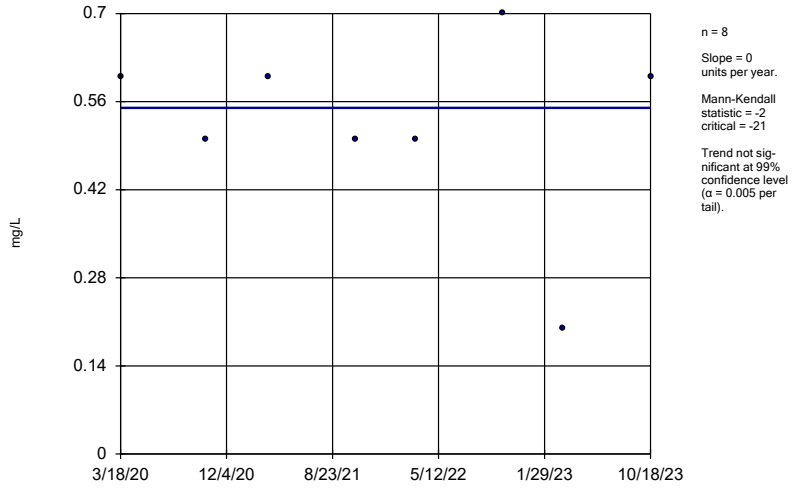


Constituent: Fluoride Analysis Run 2/12/2024 4:13 PM View: 2023AWQR - Mann Kendall

BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

Sen's Slope Estimator

Well#3

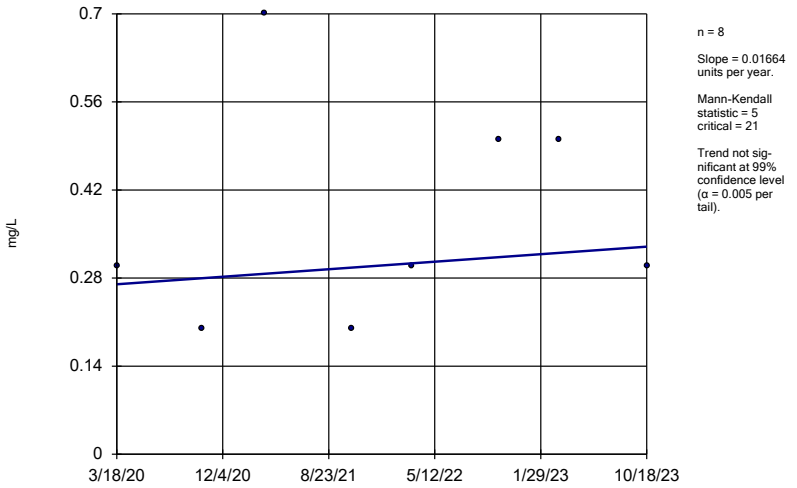


Constituent: Fluoride Analysis Run 2/12/2024 4:13 PM View: 2023AWQR - Mann Kendall

BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

Sen's Slope Estimator

Well#4



n = 8

Slope = 0.01664 units per year.

Mann-Kendall statistic = 5
critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Fluoride Analysis Run 2/12/2024 4:13 PM View: 2023AWQR - Mann Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

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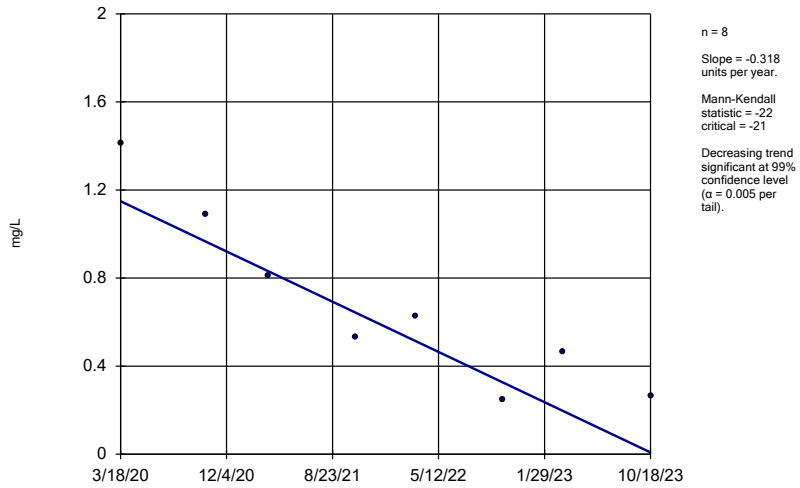
Sen's Slope Estimator

Well#1



n = 8

Slope = -0.318 units per year.

Mann-Kendall statistic = -22
critical = -21

Decreasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Iron Analysis Run 2/12/2024 4:13 PM View: 2023AWQR - Mann Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

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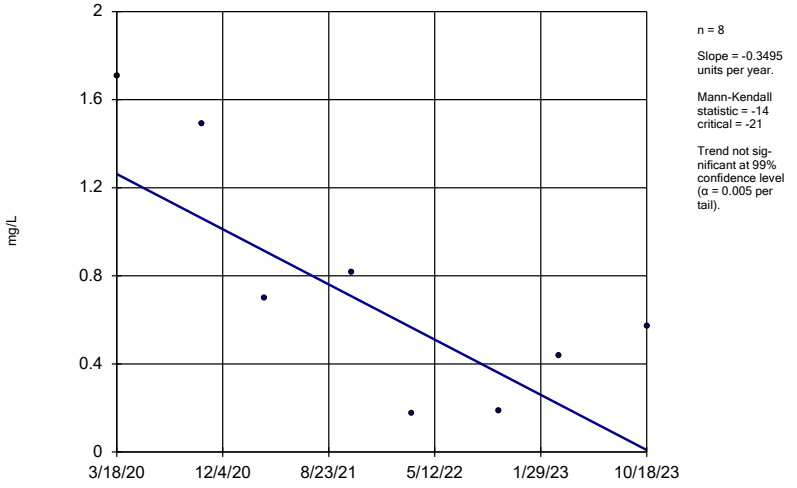
Sen's Slope Estimator

Well#2



n = 8

Slope = -0.3495 units per year.

Mann-Kendall statistic = -14
critical = -21

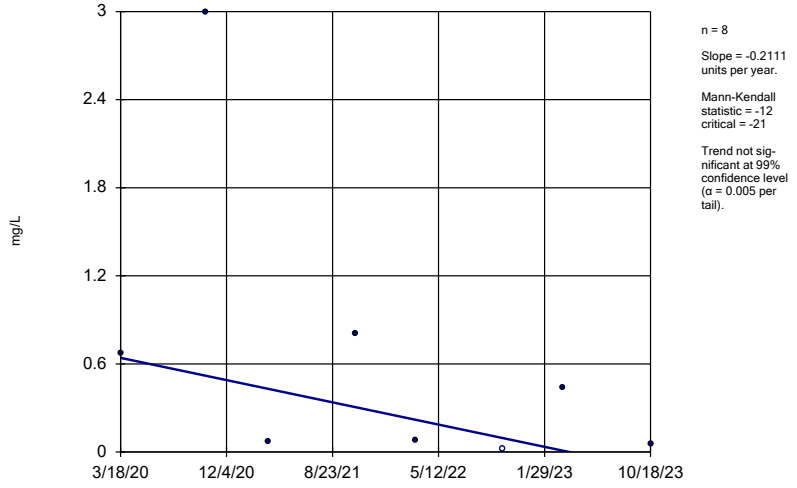
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Iron Analysis Run 2/12/2024 4:13 PM View: 2023AWQR - Mann Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

Sanitas™ v.10.0.15d Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

Well#3



n = 8

Slope = -0.2111 units per year.

Mann-Kendall statistic = -12
critical = -21

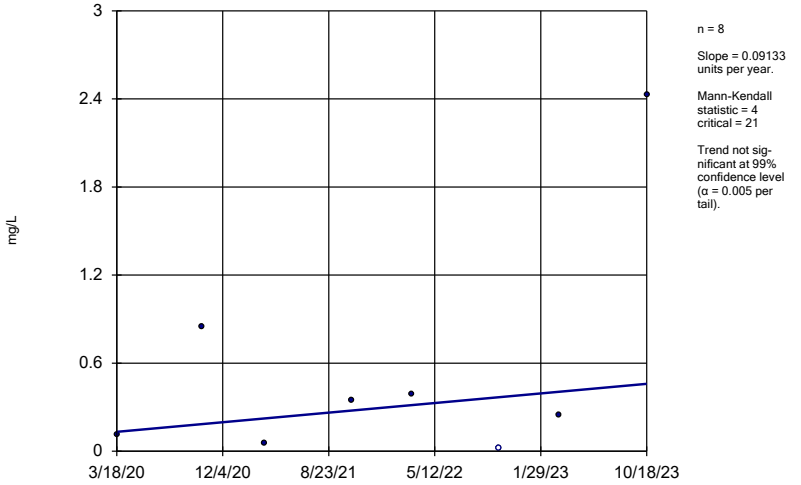
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Iron Analysis Run 2/12/2024 4:13 PM View: 2023AWQR - Mann Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

Sanitas™ v.10.0.15d Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

Well#4



n = 8

Slope = 0.09133 units per year.

Mann-Kendall statistic = 4
critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Iron Analysis Run 2/12/2024 4:13 PM View: 2023AWQR - Mann Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

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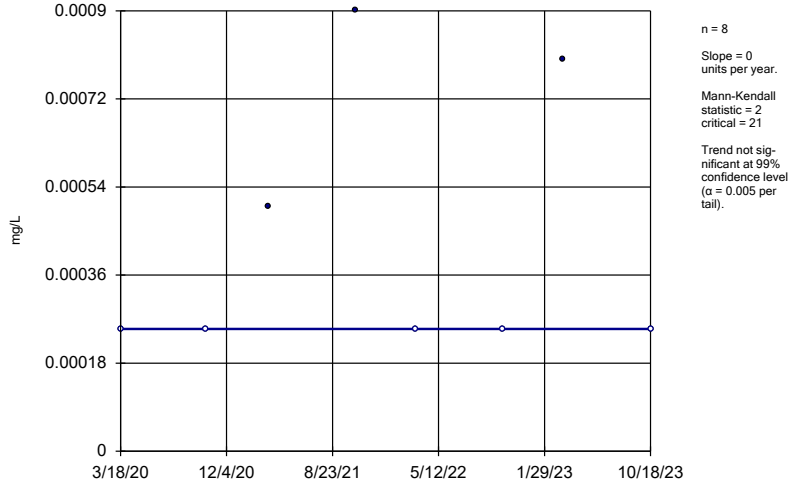
Hollow symbols indicate censored values.

Sen's Slope Estimator

Well#1



n = 8

Slope = 0 units per year.

Mann-Kendall statistic = 2
critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Lead Analysis Run 2/12/2024 4:13 PM View: 2023AWQR - Mann Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

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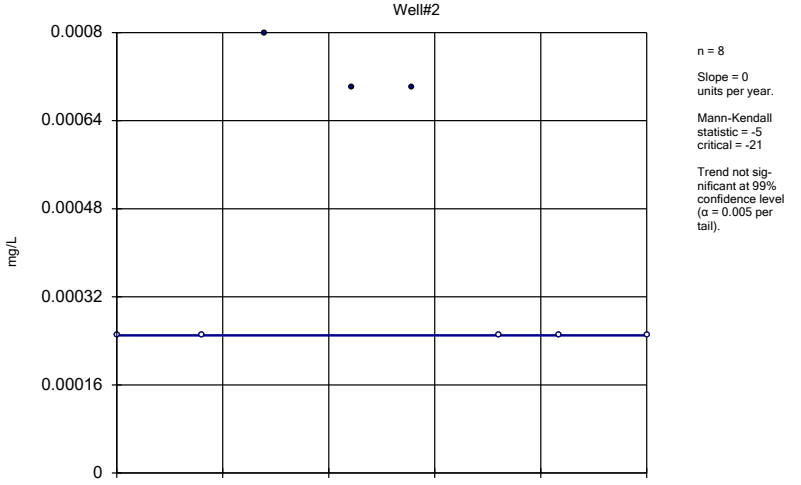
Hollow symbols indicate censored values.

Sen's Slope Estimator

Well#2



n = 8

Slope = 0 units per year.

Mann-Kendall statistic = -5
critical = -21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Lead Analysis Run 2/12/2024 4:13 PM View: 2023AWQR - Mann Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

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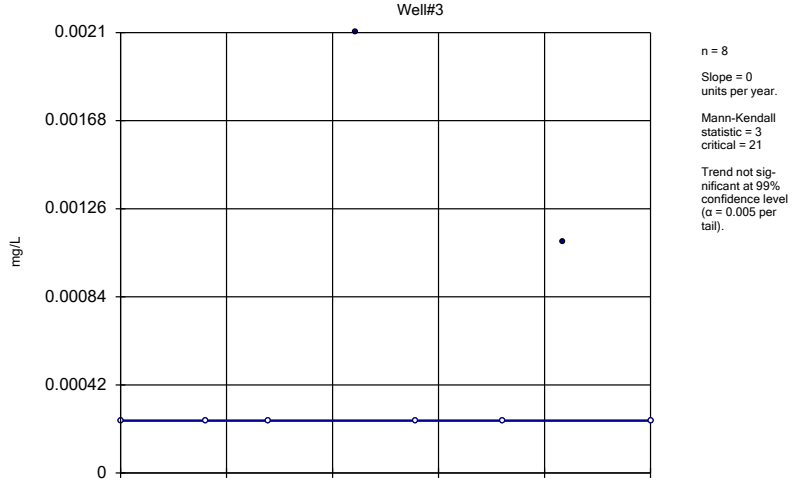
Hollow symbols indicate censored values.

Sen's Slope Estimator

Well#3



n = 8

Slope = 0 units per year.

Mann-Kendall statistic = 3
critical = 21

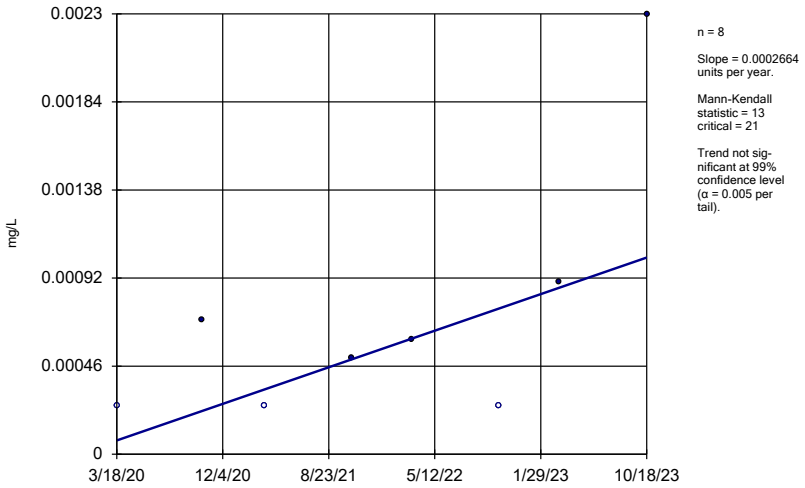
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Lead Analysis Run 2/12/2024 4:13 PM View: 2023AWQR - Mann Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

Hollow symbols indicate censored values.

Sen's Slope Estimator

Well#4

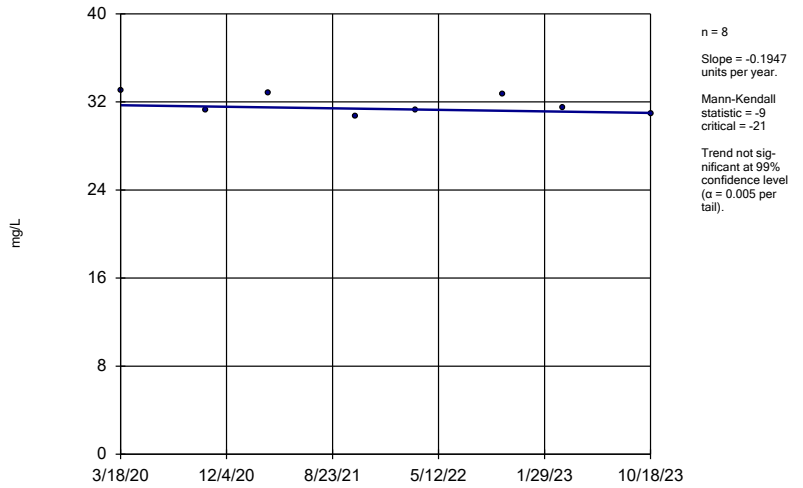


Constituent: Lead Analysis Run 2/12/2024 4:13 PM View: 2023AWQR - Mann Kendall

BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

Sen's Slope Estimator

Well#1

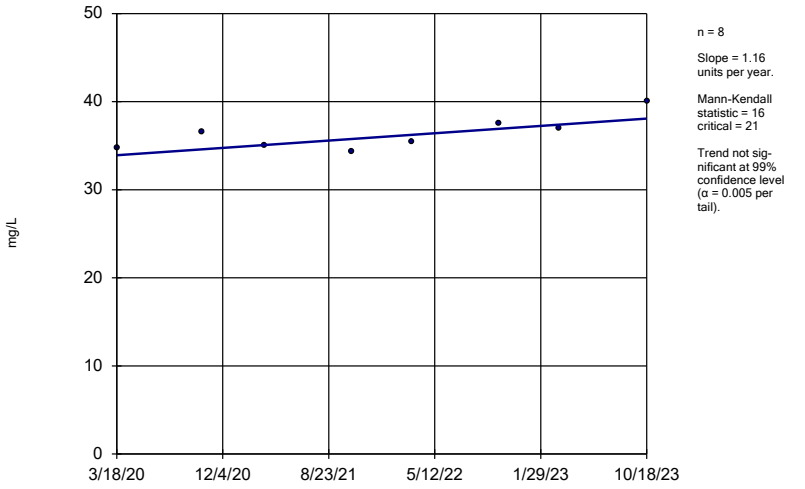


Constituent: Magnesium Analysis Run 2/12/2024 4:13 PM View: 2023AWQR - Mann Kendall

BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

Sen's Slope Estimator

Well#2

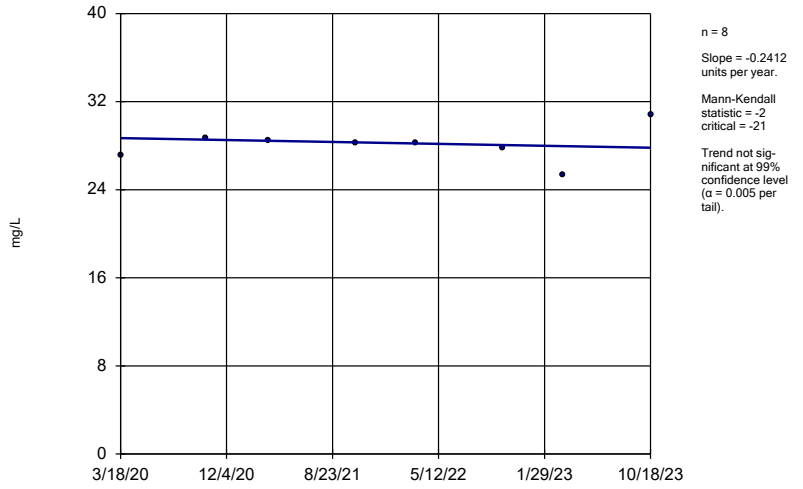


Constituent: Magnesium Analysis Run 2/12/2024 4:13 PM View: 2023AWQR - Mann Kendall

BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

Sen's Slope Estimator

Well#3

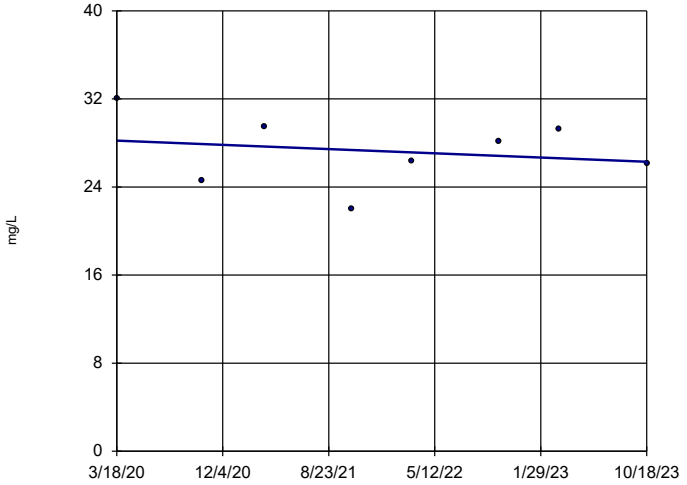


Constituent: Magnesium Analysis Run 2/12/2024 4:13 PM View: 2023AWQR - Mann Kendall

BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

Sen's Slope Estimator

Well#4



n = 8

Slope = -0.5349 units per year.

Mann-Kendall statistic = -4
critical = -21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Magnesium Analysis Run 2/12/2024 4:13 PM View: 2023AWQR - Mann Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

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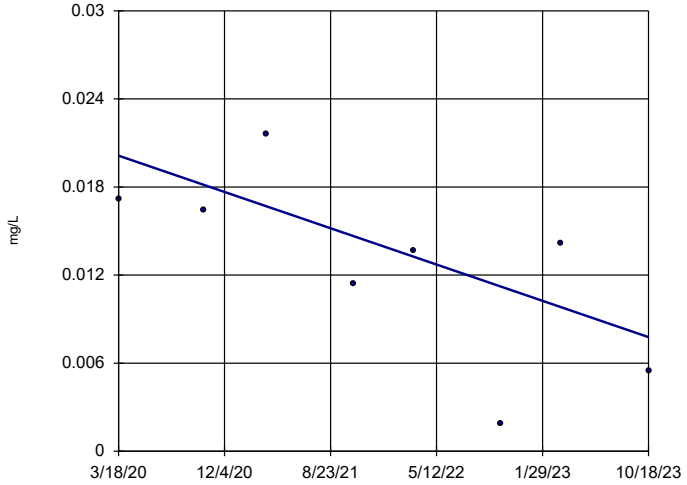
Sen's Slope Estimator

Well#1



n = 8

Slope = -0.003445 units per year.

Mann-Kendall statistic = -14
critical = -21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Manganese Analysis Run 2/12/2024 4:13 PM View: 2023AWQR - Mann Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

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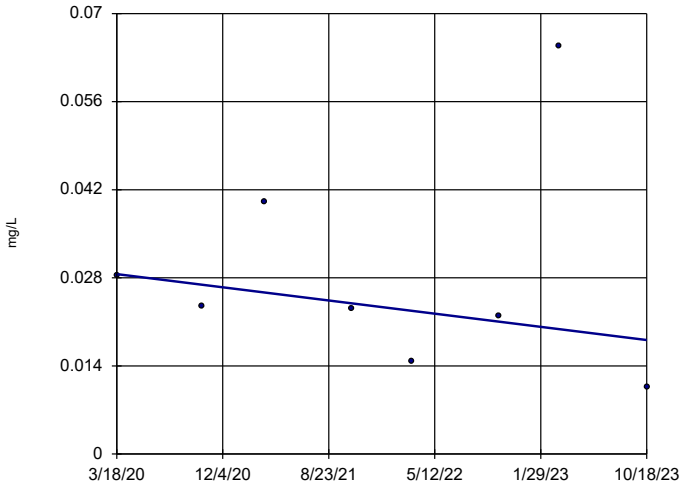
Sen's Slope Estimator

Well#2



n = 8

Slope = -0.002923 units per year.

Mann-Kendall statistic = -10
critical = -21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Manganese Analysis Run 2/12/2024 4:13 PM View: 2023AWQR - Mann Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

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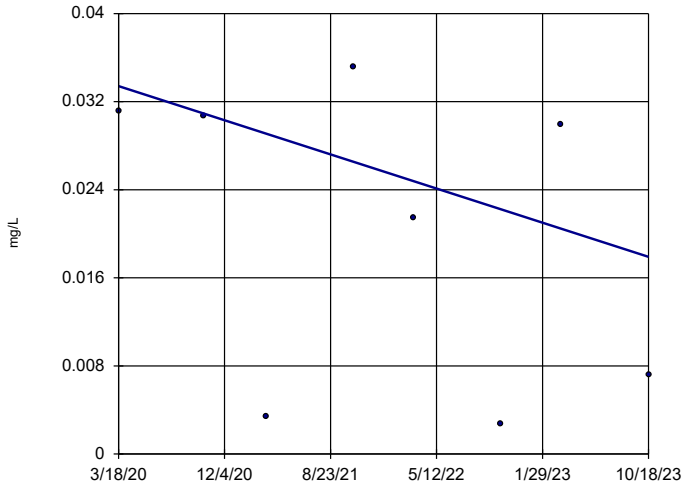
Sen's Slope Estimator

Well#3



n = 8

Slope = -0.004325 units per year.

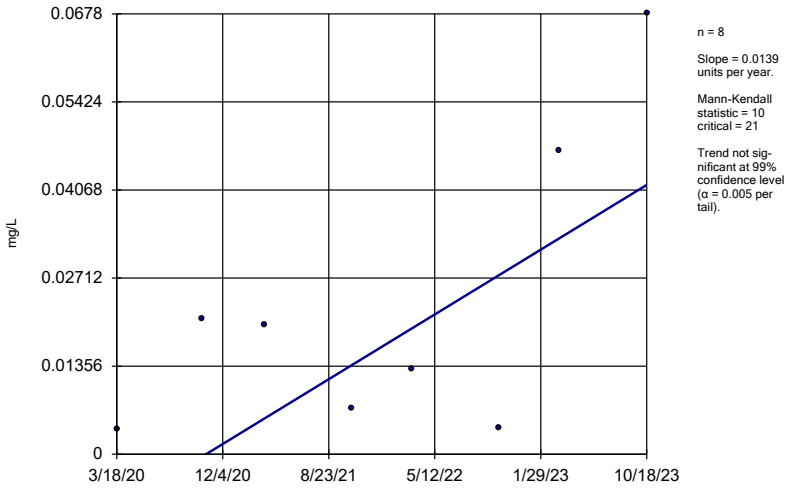
Mann-Kendall statistic = -10
critical = -21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Manganese Analysis Run 2/12/2024 4:13 PM View: 2023AWQR - Mann Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

Sen's Slope Estimator

Well#4

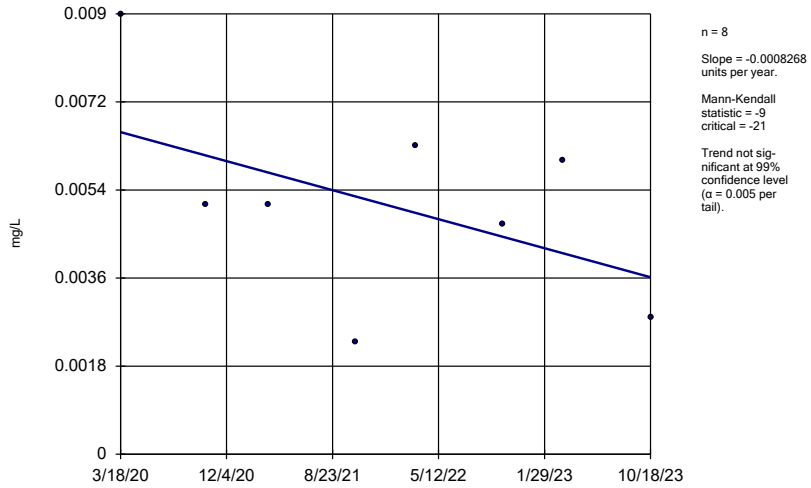


Constituent: Manganese Analysis Run 2/12/2024 4:14 PM View: 2023AWQR - Mann Kendall

BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

Sen's Slope Estimator

Well#3

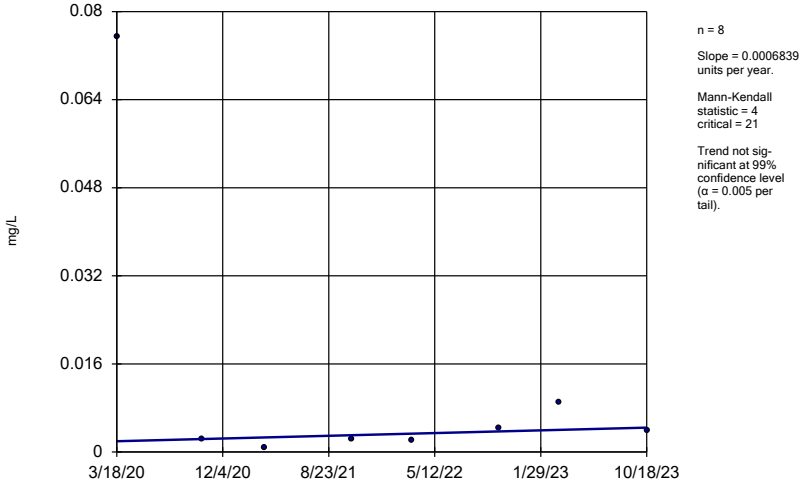


Constituent: Molybdenum Analysis Run 2/12/2024 4:14 PM View: 2023AWQR - Mann Kendall

BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

Sen's Slope Estimator

Well#4



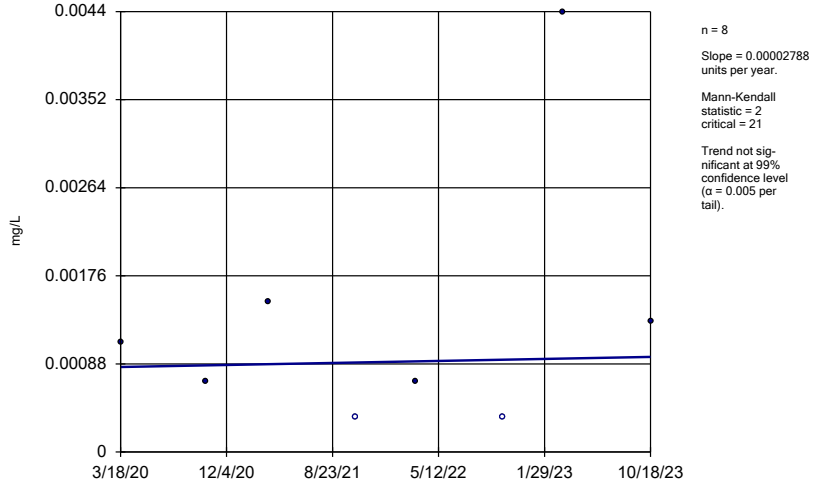
Constituent: Molybdenum Analysis Run 2/12/2024 4:14 PM View: 2023AWQR - Mann Kendall

BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

Hollow symbols indicate censored values.

Sen's Slope Estimator

Well#1

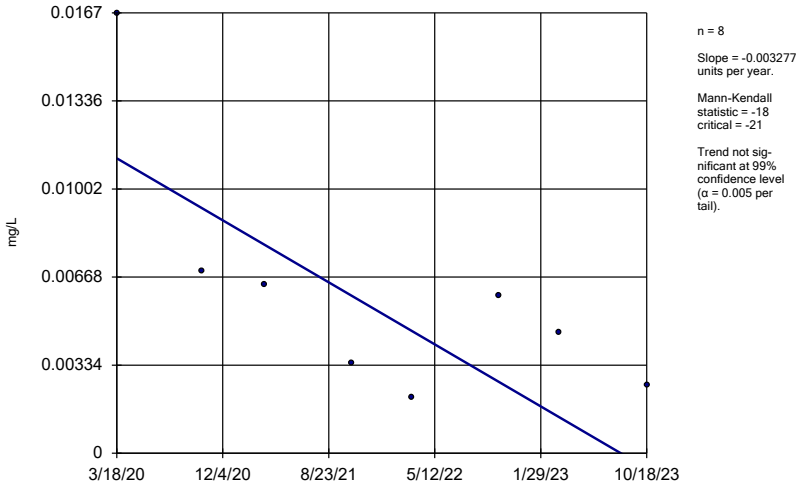


Constituent: Nickel Analysis Run 2/12/2024 4:14 PM View: 2023AWQR - Mann Kendall

BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

Sen's Slope Estimator

Well#3



n = 8

Slope = -0.003277 units per year.

Mann-Kendall statistic = -18
critical = -21

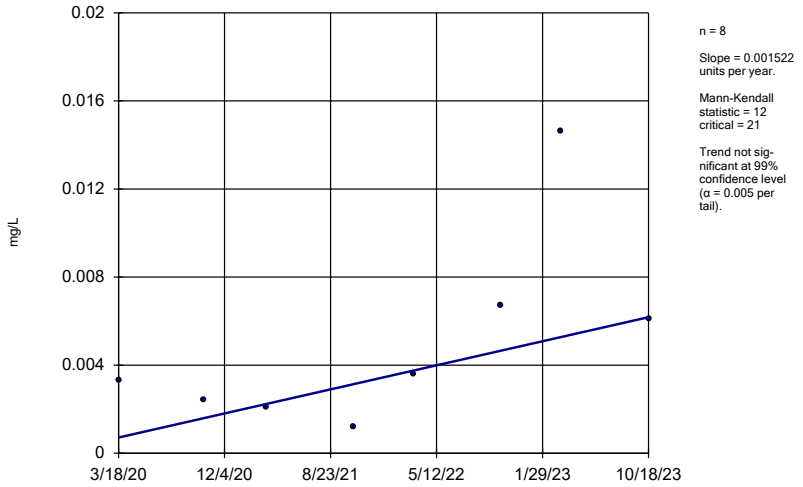
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Nickel Analysis Run 2/12/2024 4:14 PM View: 2023AWQR - Mann Kendall

BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

Sen's Slope Estimator

Well#4



n = 8

Slope = 0.001522 units per year.

Mann-Kendall statistic = 12
critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

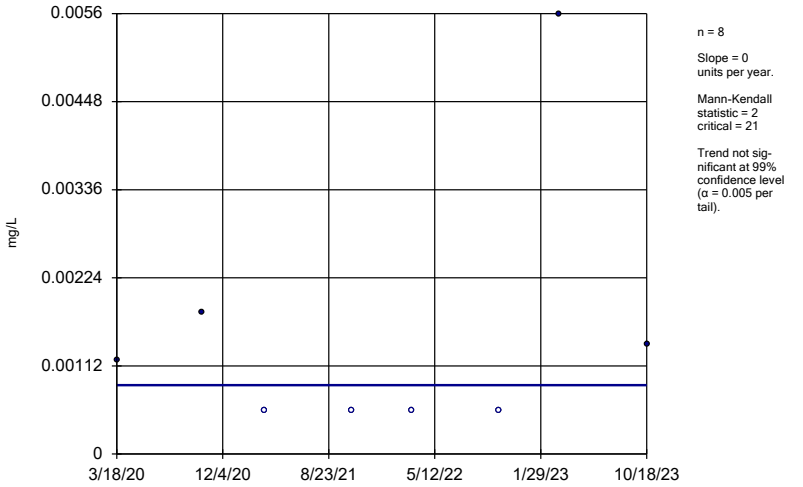
Constituent: Nickel Analysis Run 2/12/2024 4:14 PM View: 2023AWQR - Mann Kendall

BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

Hollow symbols indicate censored values.

Sen's Slope Estimator

Well#3



n = 8

Slope = 0 units per year.

Mann-Kendall statistic = 2
critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

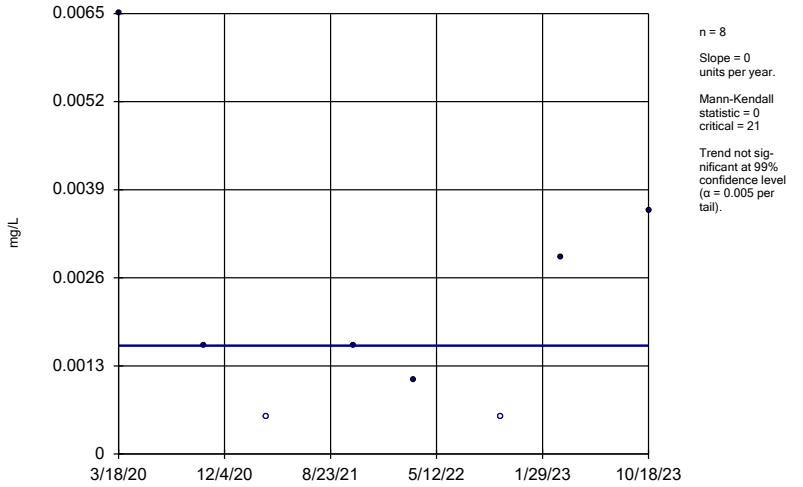
Constituent: Selenium Analysis Run 2/12/2024 4:14 PM View: 2023AWQR - Mann Kendall

BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

Hollow symbols indicate censored values.

Sen's Slope Estimator

Well#4



n = 8

Slope = 0 units per year.

Mann-Kendall statistic = 0
critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

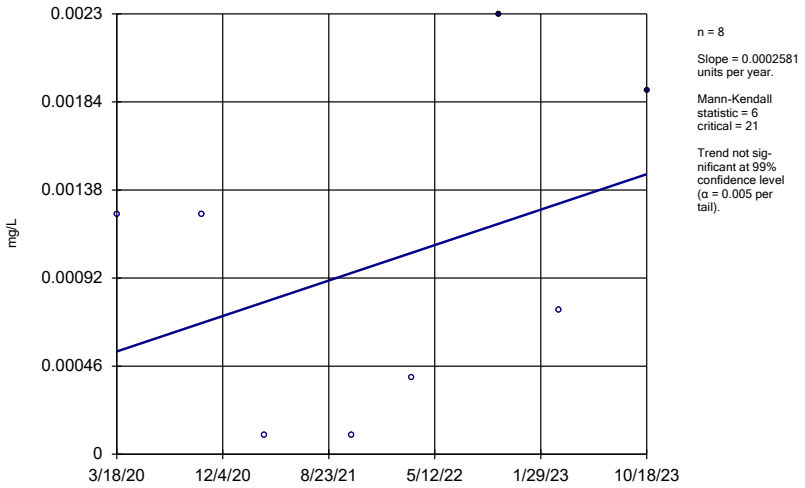
Constituent: Selenium Analysis Run 2/12/2024 4:14 PM View: 2023AWQR - Mann Kendall

BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

Hollow symbols indicate censored values.

Sen's Slope Estimator

Well#2

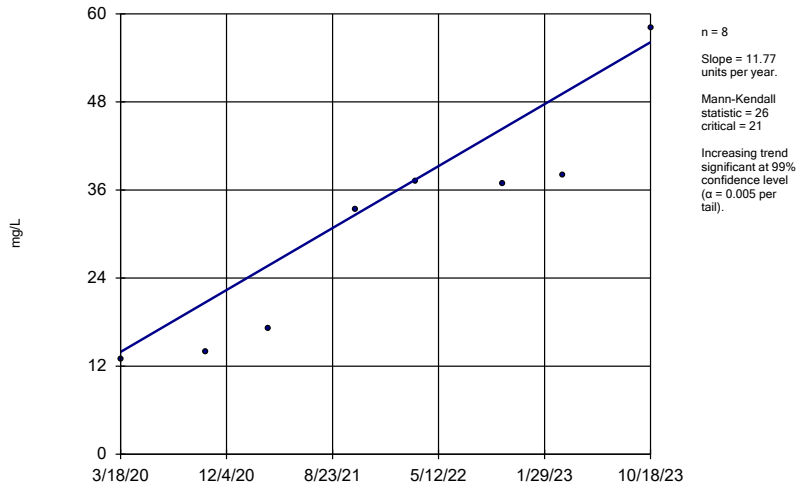


Constituent: Silver Analysis Run 2/12/2024 4:14 PM View: 2023AWQR - Mann Kendall

BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

Sen's Slope Estimator

Well#1

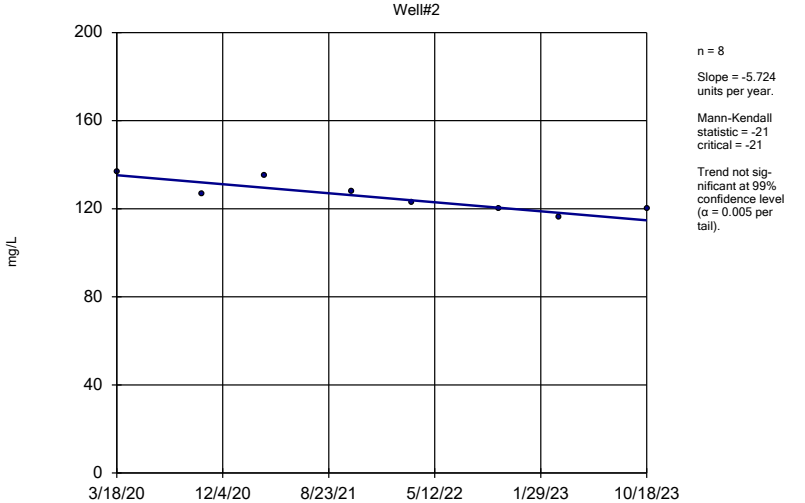


Constituent: Sulfate Analysis Run 2/12/2024 4:14 PM View: 2023AWQR - Mann Kendall

BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

Sen's Slope Estimator

Well#2

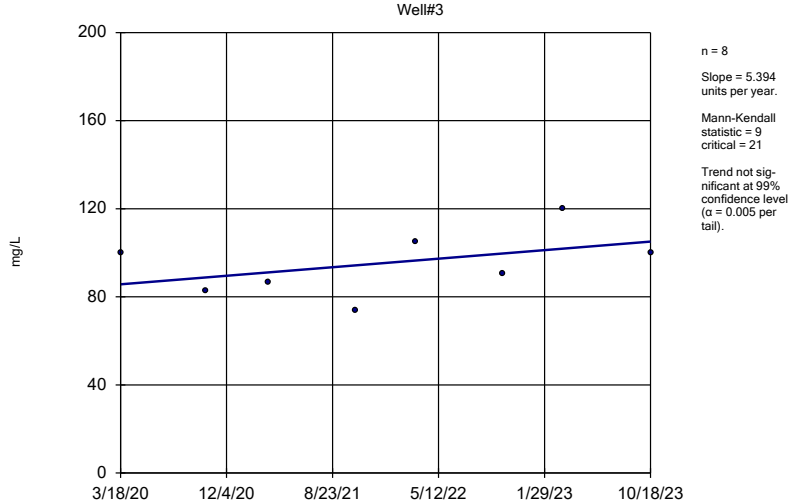


Constituent: Sulfate Analysis Run 2/12/2024 4:14 PM View: 2023AWQR - Mann Kendall

BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

Sen's Slope Estimator

Well#3



Constituent: Sulfate Analysis Run 2/12/2024 4:14 PM View: 2023AWQR - Mann Kendall

BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

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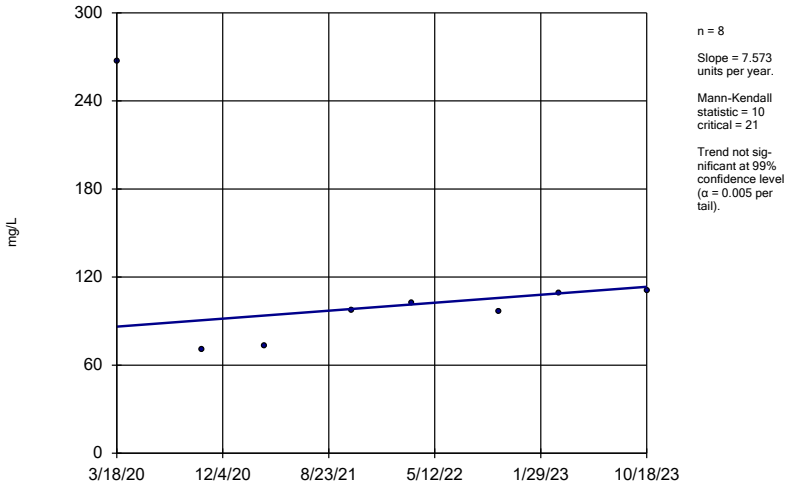
Sen's Slope Estimator

Well#4



Constituent: Sulfate Analysis Run 2/12/2024 4:14 PM View: 2023AWQR - Mann Kendall

BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

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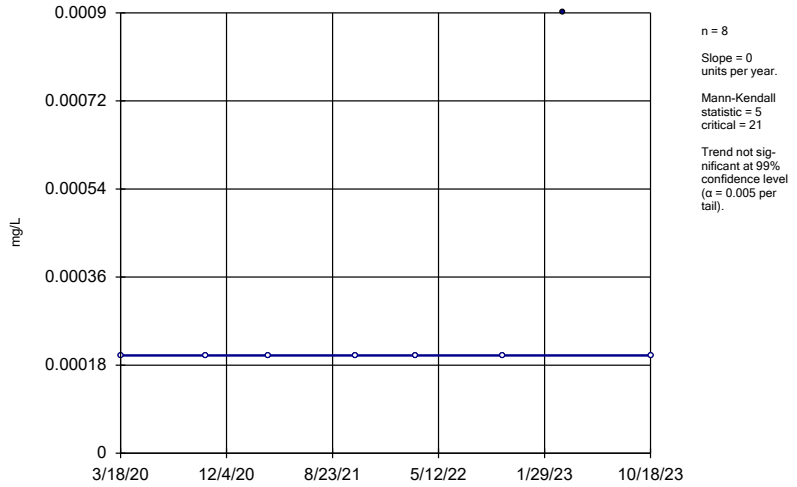
Hollow symbols indicate censored values.

Sen's Slope Estimator

Well#1



Constituent: Thallium Analysis Run 2/12/2024 4:14 PM View: 2023AWQR - Mann Kendall

BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

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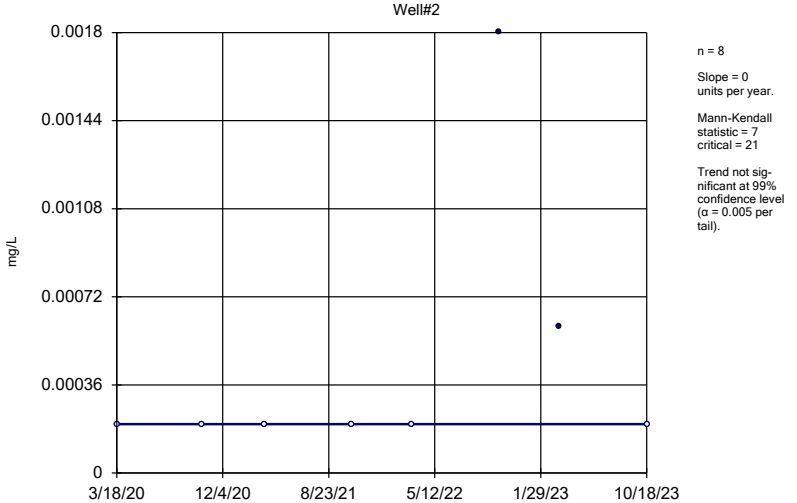
Hollow symbols indicate censored values.

Sen's Slope Estimator

Well#2



Constituent: Thallium Analysis Run 2/12/2024 4:14 PM View: 2023AWQR - Mann Kendall

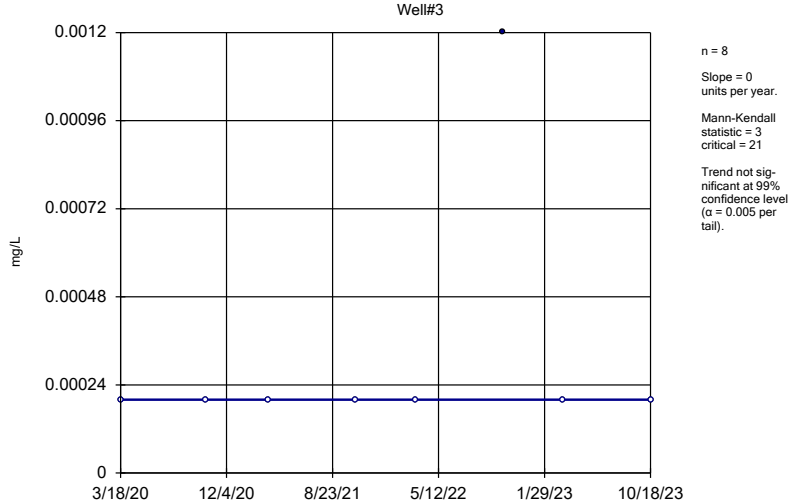
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

Sanitas™ v.10.0.15d Software licensed to SCS Engineers. UG

Hollow symbols indicate censored values.

Sen's Slope Estimator

Well#3



Constituent: Thallium Analysis Run 2/12/2024 4:14 PM View: 2023AWQR - Mann Kendall

BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

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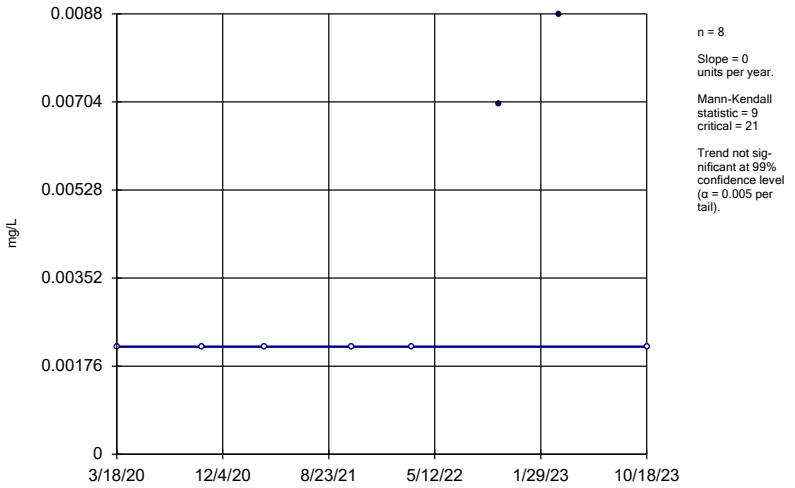
Hollow symbols indicate censored values.

Sen's Slope Estimator

Well#3

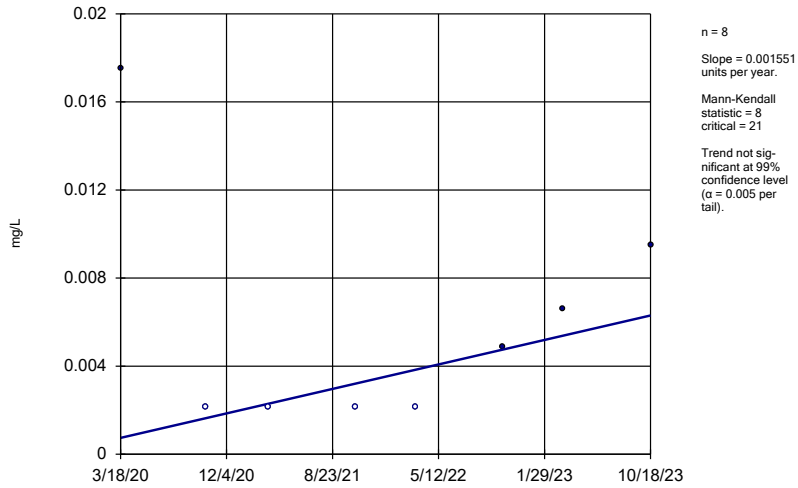


Constituent: Vanadium Analysis Run 2/12/2024 4:14 PM View: 2023AWQR - Mann Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

Sanitas™ v.10.0.15d Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

Well#4



Constituent: Vanadium Analysis Run 2/12/2024 4:14 PM View: 2023AWQR - Mann Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

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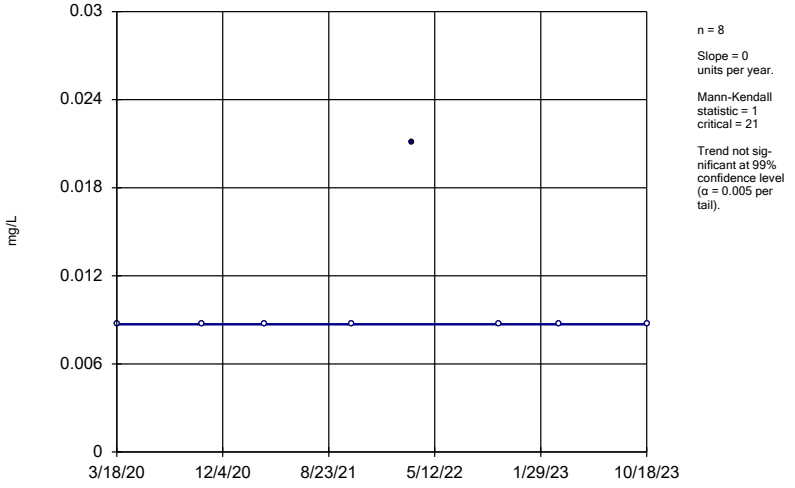
Hollow symbols indicate censored values.

Sen's Slope Estimator

Well#2

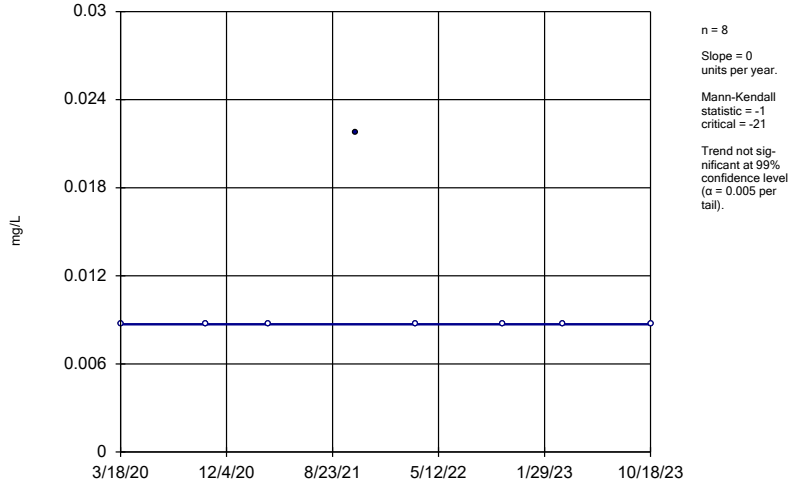


Constituent: Zinc Analysis Run 2/12/2024 4:14 PM View: 2023AWQR - Mann Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

Sanitas™ v.10.0.15d Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

Well#3



Constituent: Zinc Analysis Run 2/12/2024 4:14 PM View: 2023AWQR - Mann Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

Attachment D

Confidence Interval Summary Table and Graphs

Confidence Interval

BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR Printed 2/12/2024, 4:17 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
Aluminum (mg/L)	Well#1	0.077	0.025	0.2	No	8	62.5	No	0.004	NP (NDs)
Aluminum (mg/L)	Well#2	0.07467	0.04558	0.2	No	8	50	No	0.01	Param.
Aluminum (mg/L)	Well#3	0.549	0.025	0.2	No	8	50	No	0.004	NP (normality)
Aluminum (mg/L)	Well#4	1.119	0	0.2	No	8	25	No	0.01	Param.
Arsenic (mg/L)	Well#1	0.003549	0.001476	0.01	No	8	0	No	0.01	Param.
Arsenic (mg/L)	Well#2	0.00155	0.0003504	0.01	No	8	37.5	No	0.01	Param.
Arsenic (mg/L)	Well#3	0.001995	0.000565	0.01	No	8	25	No	0.01	Param.
Arsenic (mg/L)	Well#4	0.002017	0.0003745	0.01	No	8	25	No	0.01	Param.
Barium (mg/L)	Well#1	0.945	0.4655	2	No	8	0	No	0.01	Param.
Barium (mg/L)	Well#2	0.162	0.0629	2	No	8	0	No	0.004	NP (normality)
Barium (mg/L)	Well#3	0.1508	0.09133	2	No	8	0	No	0.01	Param.
Barium (mg/L)	Well#4	0.1944	0.04217	2	No	8	0	No	0.01	Param.
Boron (mg/L)	Well#4	0.16	0.028	6	No	8	87.5	No	0.004	NP (NDs)
Chloride (mg/L)	Well#1	9.824	8.951	250	No	8	0	No	0.01	Param.
Chloride (mg/L)	Well#2	14.27	12.16	250	No	8	0	No	0.01	Param.
Chloride (mg/L)	Well#3	26.77	20.63	250	No	8	0	No	0.01	Param.
Chloride (mg/L)	Well#4	25.42	13.21	250	No	8	0	No	0.01	Param.
Chloroform (ug/L)	Well#3	6.8	0.5	80	No	8	87.5	No	0.004	NP (NDs)
Chromium (mg/L)	Well#2	0.0021	0.00035	0.1	No	8	62.5	No	0.004	NP (NDs)
Chromium (mg/L)	Well#3	0.0031	0.00035	0.1	No	8	50	No	0.004	NP (normality)
Chromium (mg/L)	Well#4	0.003291	0.0003339	0.1	No	8	25	No	0.01	Param.
Copper (mg/L)	Well#1	0.0084	0.002	1.3	No	8	0	No	0.004	NP (normality)
Copper (mg/L)	Well#2	0.006968	0.001082	1.3	No	8	0	No	0.01	Param.
Copper (mg/L)	Well#3	0.006697	0.002328	1.3	No	8	0	No	0.01	Param.
Copper (mg/L)	Well#4	0.007623	0.002677	1.3	No	8	0	No	0.01	Param.
Fluoride (mg/L)	Well#1	0.969	0.781	2	No	8	0	No	0.01	Param.
Fluoride (mg/L)	Well#2	0.7554	0.6196	2	No	8	0	No	0.01	Param.
Fluoride (mg/L)	Well#3	0.6827	0.3673	2	No	8	0	No	0.01	Param.
Fluoride (mg/L)	Well#4	0.5608	0.1892	2	No	8	0	No	0.01	Param.
Iron (mg/L)	Well#2	1.362	0.1605	0.3	No	8	0	No	0.01	Param.
Iron (mg/L)	Well#3	3	0.0235	0.3	No	8	12.5	No	0.004	NP (normality)
Iron (mg/L)	Well#4	2.43	0.0235	0.3	No	8	12.5	No	0.004	NP (normality)
Lead (mg/L)	Well#1	0.0009	0.00025	0.015	No	8	62.5	No	0.004	NP (NDs)
Lead (mg/L)	Well#2	0.0008	0.00025	0.015	No	8	62.5	No	0.004	NP (NDs)
Lead (mg/L)	Well#3	0.0021	0.00025	0.015	No	8	75	No	0.004	NP (NDs)
Lead (mg/L)	Well#4	0.0023	0.00025	0.015	No	8	37.5	No	0.004	NP (normality)
Magnesium (mg/L)	**Well#1**	**32.74**	**30.76**	**26.08**	**Yes**	**8**	**0**	**No**	**0.01**	**Param.**
Magnesium (mg/L)	**Well#2**	**38.36**	**34.31**	**26.08**	**Yes**	**8**	**0**	**No**	**0.01**	**Param.**
Magnesium (mg/L)	**Well#3**	**29.73**	**26.45**	**26.08**	**Yes**	**8**	**0**	**No**	**0.01**	**Param.**
Magnesium (mg/L)	Well#4	30.56	23.92	26.08	No	8	0	No	0.01	Param.
Manganese (mg/L)	Well#1	0.01952	0.005956	0.05	No	8	0	No	0.01	Param.
Manganese (mg/L)	Well#2	0.04656	0.01029	0.05	No	8	0	No	0.01	Param.
Manganese (mg/L)	Well#3	0.03468	0.005716	0.05	No	8	0	No	0.01	Param.
Manganese (mg/L)	Well#4	0.0472	0	0.05	No	8	0	No	0.01	Param.
Molybdenum (mg/L)	Well#3	0.007383	0.002942	0.04	No	8	0	No	0.01	Param.
Molybdenum (mg/L)	Well#4	0.0755	0.0008	0.04	No	8	0	No	0.004	NP (normality)
Nickel (mg/L)	Well#1	0.0044	0.00035	0.1	No	8	25	No	0.004	NP (normality)
Nickel (mg/L)	Well#3	0.01101	0.001166	0.1	No	8	0	No	0.01	Param.
Nickel (mg/L)	Well#4	0.00958	0.0004196	0.1	No	8	0	No	0.01	Param.
Selenium (mg/L)	Well#3	0.0056	0.00055	0.05	No	8	50	No	0.004	NP (normality)

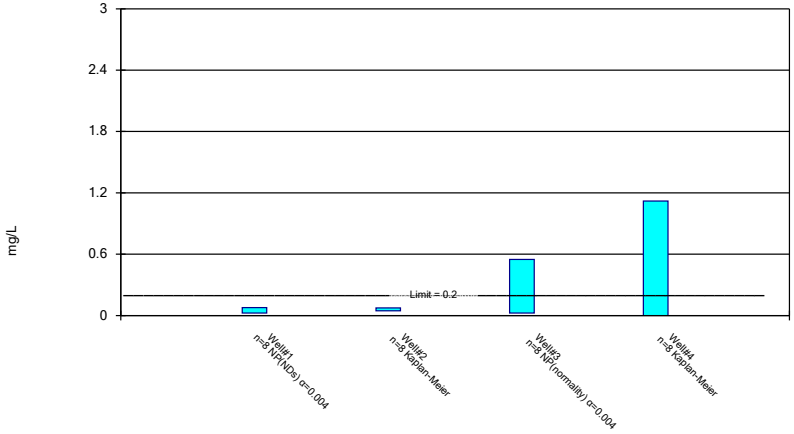
Confidence Interval

BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR Printed 2/12/2024, 4:17 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
Selenium (mg/L)	Well#4	0.004282	0.000468	0.05	No	8	25	No	0.01	Param.
Silver (mg/L)	Well#2	0.0023	0.0001	0.1	No	8	75	No	0.004	NP (NDs)
Sulfate (mg/L)	Well#2	133.6	117.9	250	No	8	0	No	0.01	Param.
Sulfate (mg/L)	Well#3	110.2	79.59	250	No	8	0	No	0.01	Param.
Sulfate (mg/L)	Well#4	267	70.5	250	No	8	0	No	0.004	NP (normality)
Thallium (mg/L)	Well#1	0.0009	0.0002	0.002	No	8	87.5	No	0.004	NP (NDs)
Thallium (mg/L)	Well#2	0.0018	0.0002	0.002	No	8	75	No	0.004	NP (NDs)
Thallium (mg/L)	Well#3	0.0012	0.0002	0.002	No	8	87.5	No	0.004	NP (NDs)
Vanadium (mg/L)	Well#3	0.0088	0.00215	0.035	No	8	75	No	0.004	NP (NDs)
Vanadium (mg/L)	Well#4	0.01156	0.002369	0.035	No	8	50	No	0.01	Param.
Zinc (mg/L)	Well#2	0.0211	0.0087	2	No	8	87.5	No	0.004	NP (NDs)
Zinc (mg/L)	Well#3	0.0218	0.0087	2	No	8	87.5	No	0.004	NP (NDs)

Parametric and Non-Parametric (NP) Confidence Interval

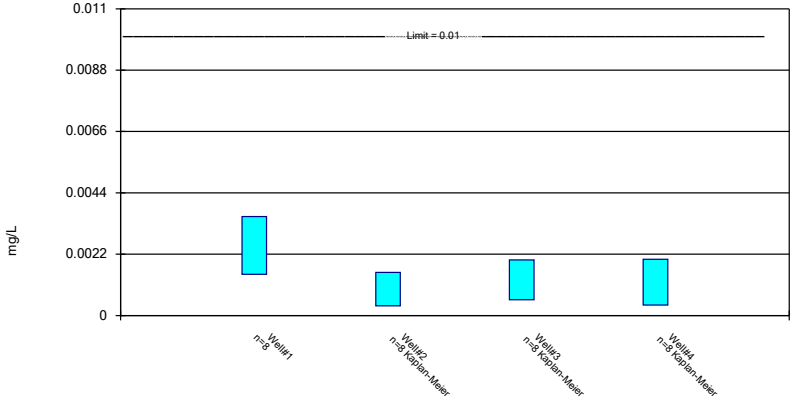
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Aluminum Analysis Run 2/12/2024 4:16 PM View: 2023AWQR - Confidence Interval
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

Parametric Confidence Interval

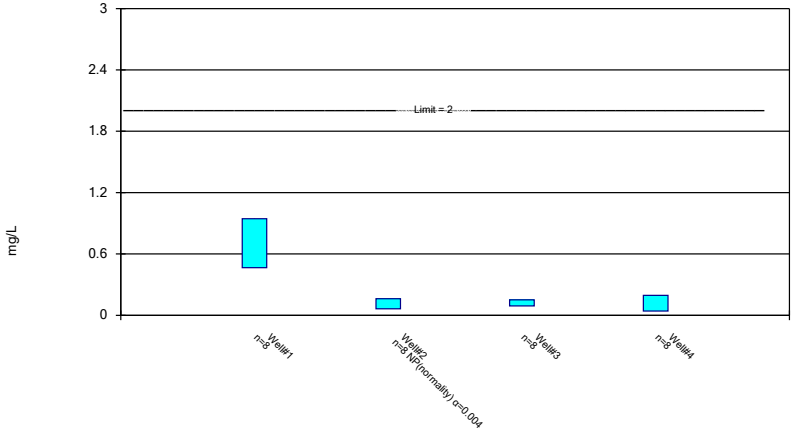
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Arsenic Analysis Run 2/12/2024 4:16 PM View: 2023AWQR - Confidence Interval
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

Parametric and Non-Parametric (NP) Confidence Interval

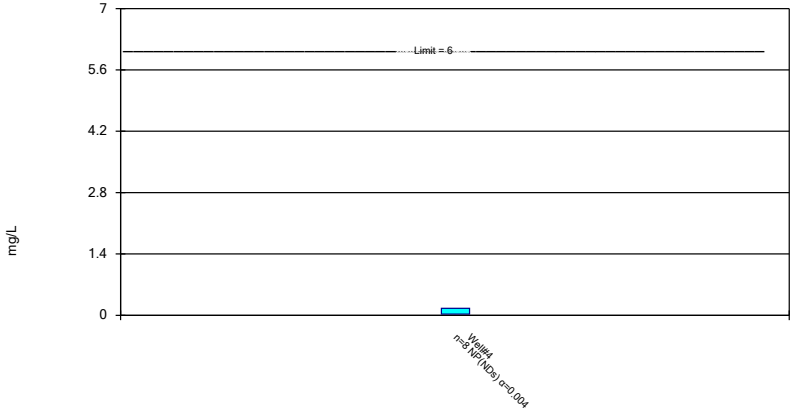
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Barium Analysis Run 2/12/2024 4:16 PM View: 2023AWQR - Confidence Interval
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

Non-Parametric Confidence Interval

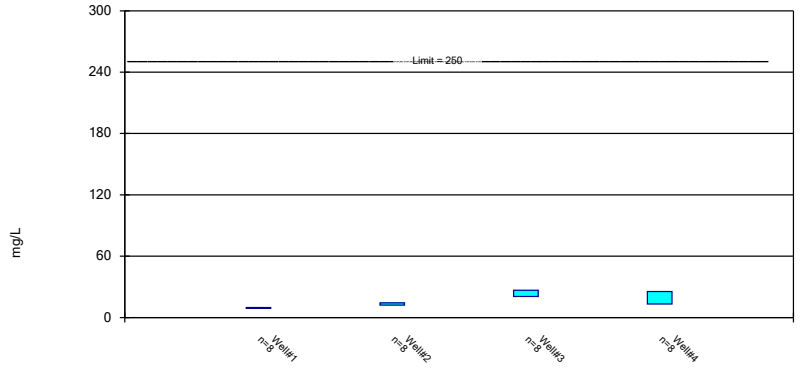
Compliance Limit is not exceeded.



Constituent: Boron Analysis Run 2/12/2024 4:16 PM View: 2023AWQR - Confidence Interval
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

Parametric Confidence Interval

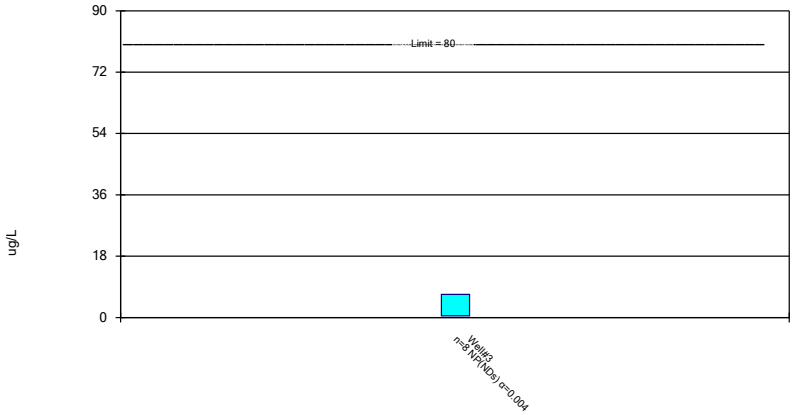
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Chloride Analysis Run 2/12/2024 4:16 PM View: 2023AWQR - Confidence Interval
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

Non-Parametric Confidence Interval

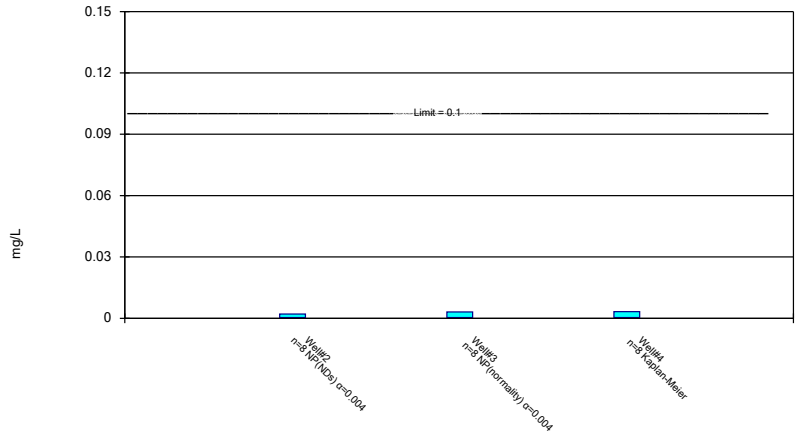
Compliance Limit is not exceeded.



Constituent: Chloroform Analysis Run 2/12/2024 4:16 PM View: 2023AWQR - Confidence Interval
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

Parametric and Non-Parametric (NP) Confidence Interval

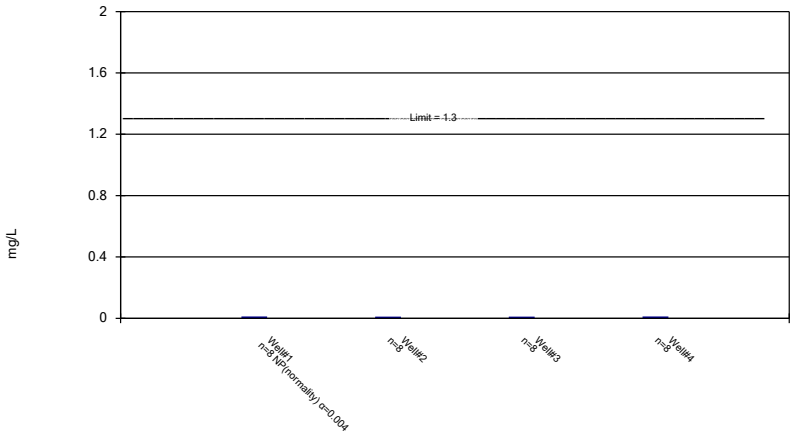
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Chromium Analysis Run 2/12/2024 4:16 PM View: 2023AWQR - Confidence Interval
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

Parametric and Non-Parametric (NP) Confidence Interval

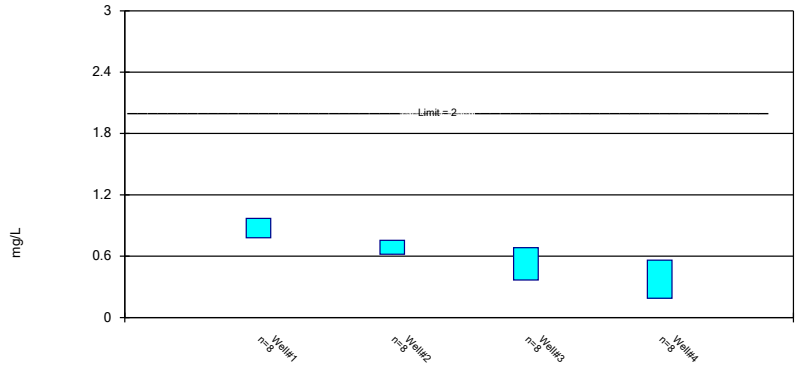
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Copper Analysis Run 2/12/2024 4:16 PM View: 2023AWQR - Confidence Interval
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

Parametric Confidence Interval

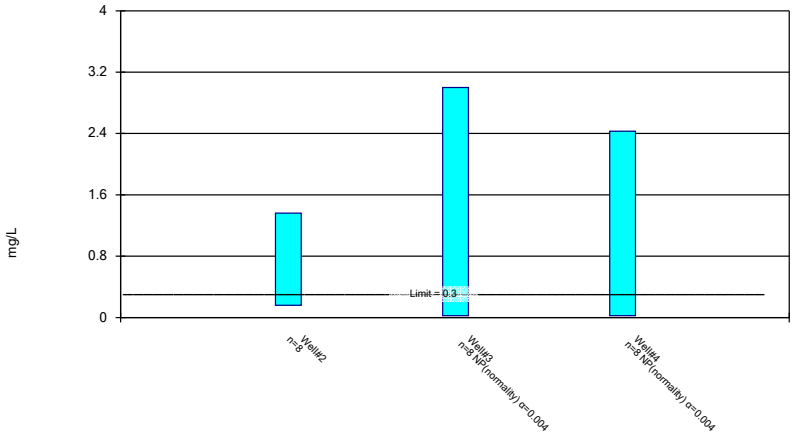
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Fluoride Analysis Run 2/12/2024 4:16 PM View: 2023AWQR - Confidence Interval
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

Parametric and Non-Parametric (NP) Confidence Interval

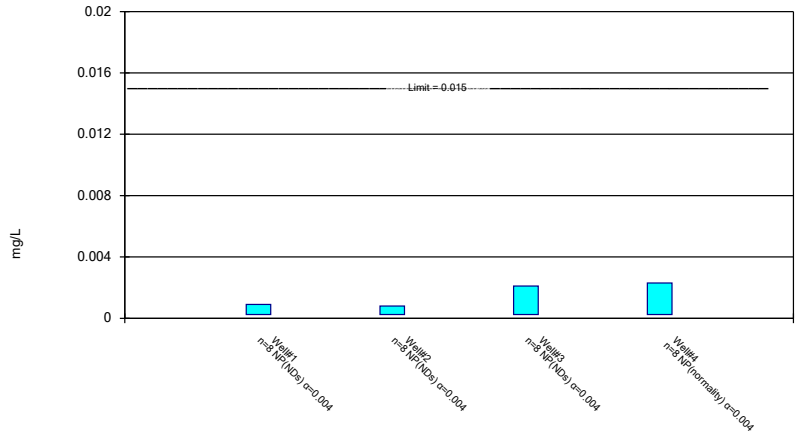
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Iron Analysis Run 2/12/2024 4:16 PM View: 2023AWQR - Confidence Interval
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

Non-Parametric Confidence Interval

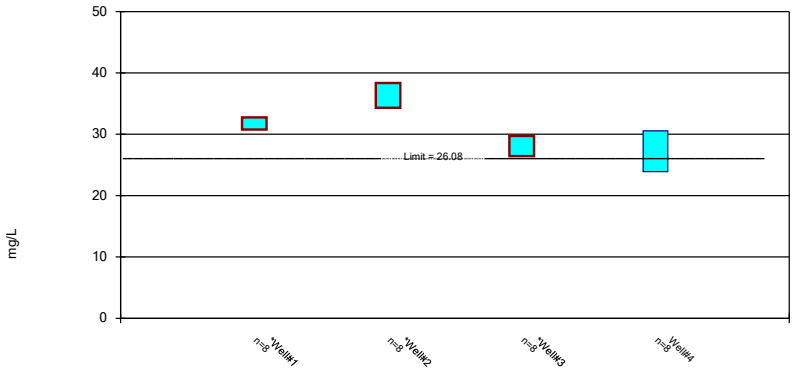
Compliance Limit is not exceeded.



Constituent: Lead Analysis Run 2/12/2024 4:16 PM View: 2023AWQR - Confidence Interval
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

Parametric Confidence Interval

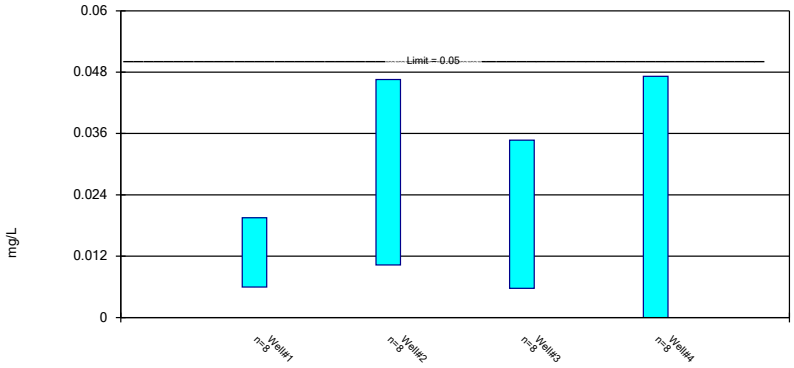
Compliance limit is exceeded.* Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Magnesium Analysis Run 2/12/2024 4:16 PM View: 2023AWQR - Confidence Interval
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

Parametric Confidence Interval

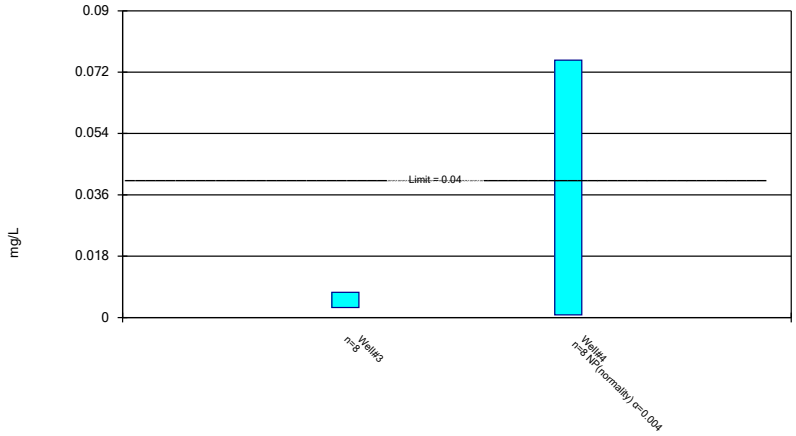
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Manganese Analysis Run 2/12/2024 4:16 PM View: 2023AWQR - Confidence Interval
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

Parametric and Non-Parametric (NP) Confidence Interval

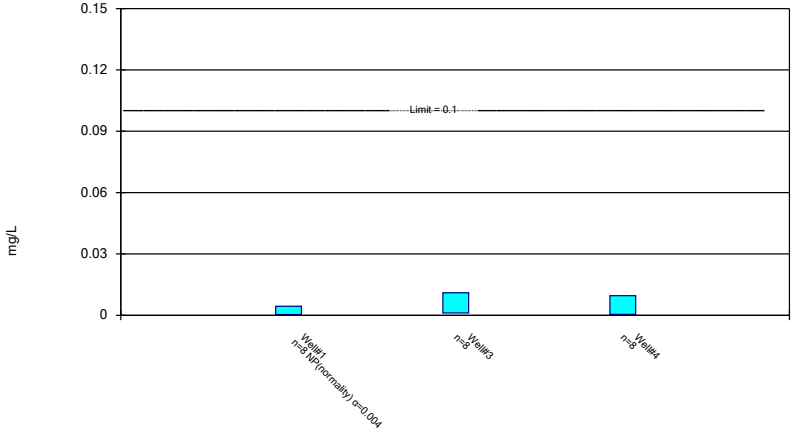
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Molybdenum Analysis Run 2/12/2024 4:16 PM View: 2023AWQR - Confidence Interval
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

Parametric and Non-Parametric (NP) Confidence Interval

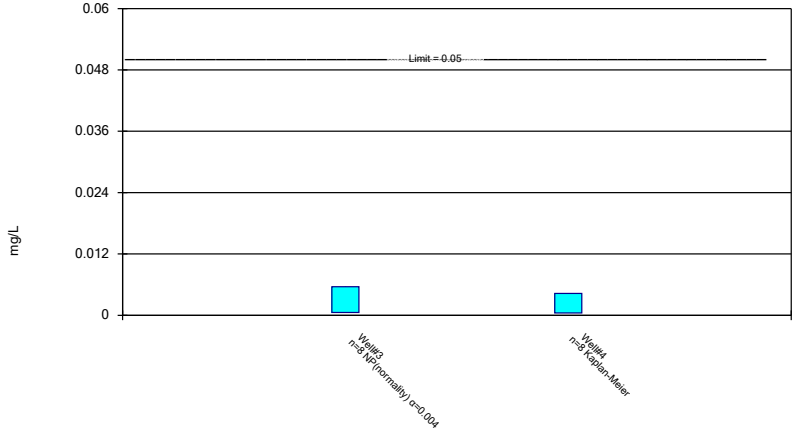
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Nickel Analysis Run 2/12/2024 4:16 PM View: 2023AWQR - Confidence Interval
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

Parametric and Non-Parametric (NP) Confidence Interval

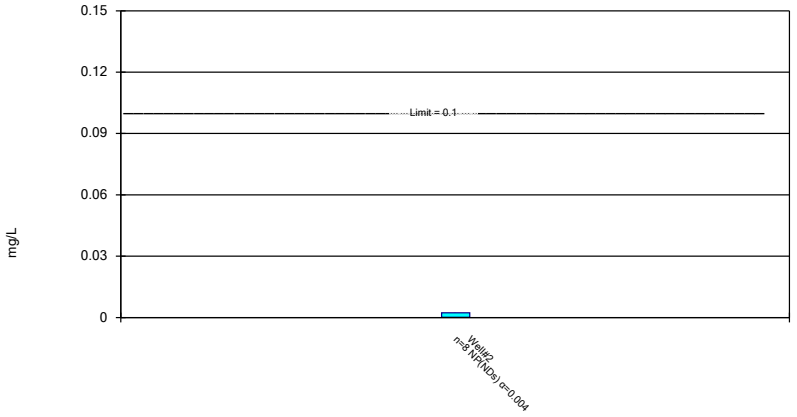
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Selenium Analysis Run 2/12/2024 4:16 PM View: 2023AWQR - Confidence Interval
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

Non-Parametric Confidence Interval

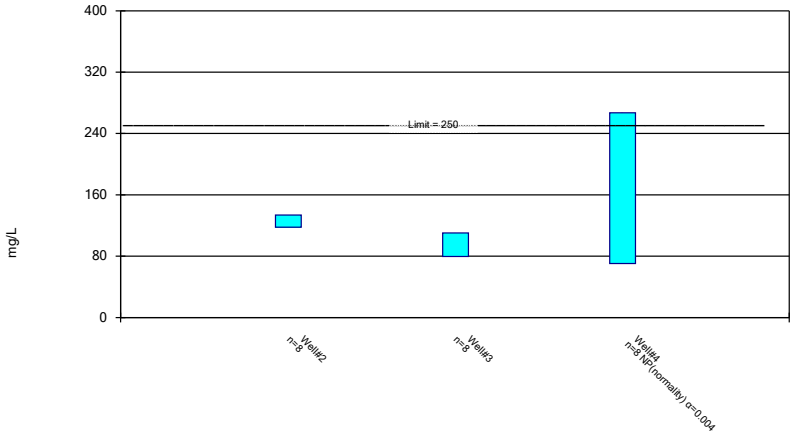
Compliance Limit is not exceeded.



Constituent: Silver Analysis Run 2/12/2024 4:16 PM View: 2023AWQR - Confidence Interval
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

Parametric and Non-Parametric (NP) Confidence Interval

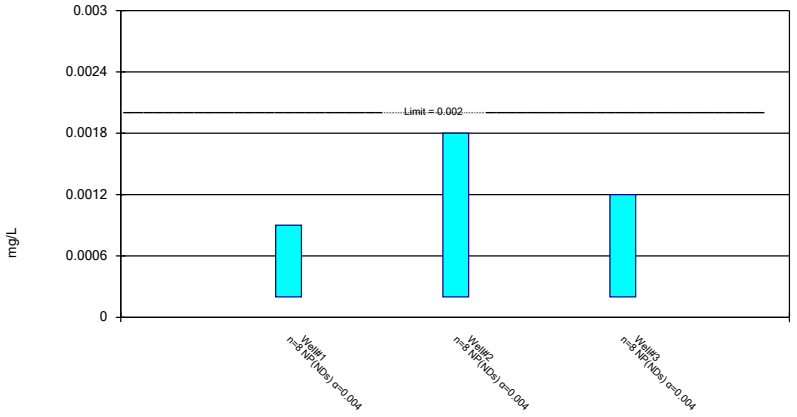
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Sulfate Analysis Run 2/12/2024 4:16 PM View: 2023AWQR - Confidence Interval
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

Non-Parametric Confidence Interval

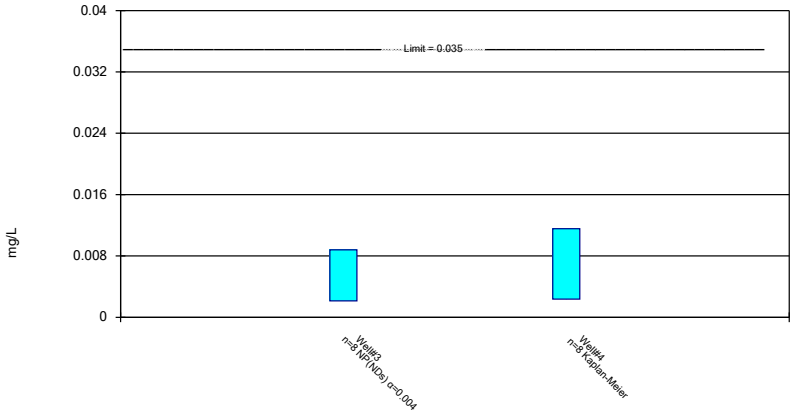
Compliance Limit is not exceeded.



Constituent: Thallium Analysis Run 2/12/2024 4:16 PM View: 2023AWQR - Confidence Interval
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

Parametric and Non-Parametric (NP) Confidence Interval

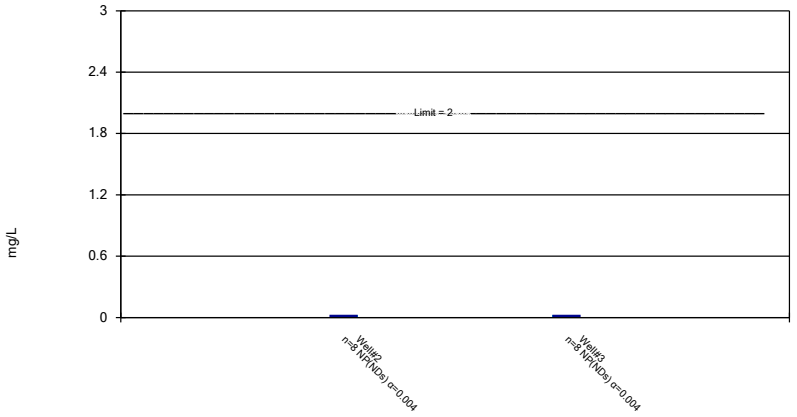
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Vanadium Analysis Run 2/12/2024 4:16 PM View: 2023AWQR - Confidence Interval
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

Non-Parametric Confidence Interval

Compliance Limit is not exceeded.



Constituent: Zinc Analysis Run 2/12/2024 4:16 PM View: 2023AWQR - Confidence Interval

BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

Attachment E

Theil-Sen Trend Line and Confidence Bands Summary Table and Graphs

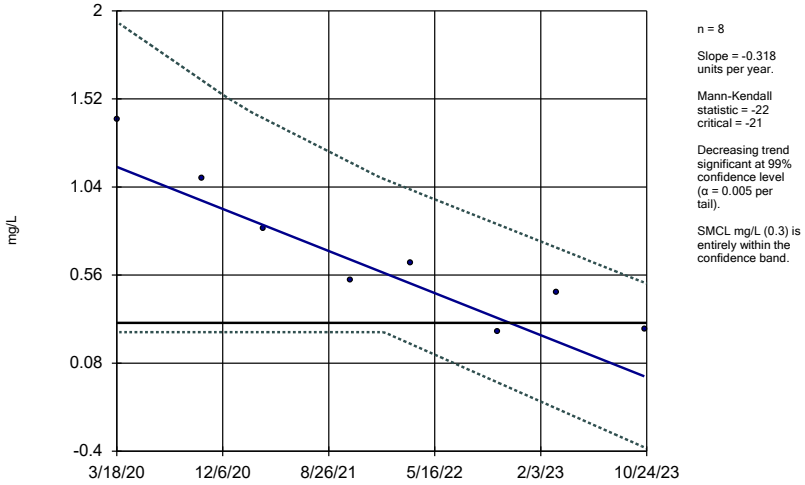
Theil Sen/Trend Test

BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR Printed 12/22/2023, 9:39 AM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Alpha	Method
Iron (mg/L)	**Well#1**	**-0.318**	**-22**	**-21**	**Yes**	**8**	**0**	**0.01**	**NP**
Sulfate (mg/L)	**Well#1**	**11.77**	**26**	**21**	**Yes**	**8**	**0**	**0.01**	**NP**

Sen's Slope and 99% Confidence Band

Well#1



n = 8

Slope = -0.318 units per year.

Mann-Kendall statistic = -22 critical = -21

Decreasing trend significant at 99% confidence level (α = 0.005 per tail).

SMCL mg/L (0.3) is entirely within the confidence band.

Constituent: Iron Analysis Run 12/22/2023 9:38 AM View: 2023AWQR - Theil Sen

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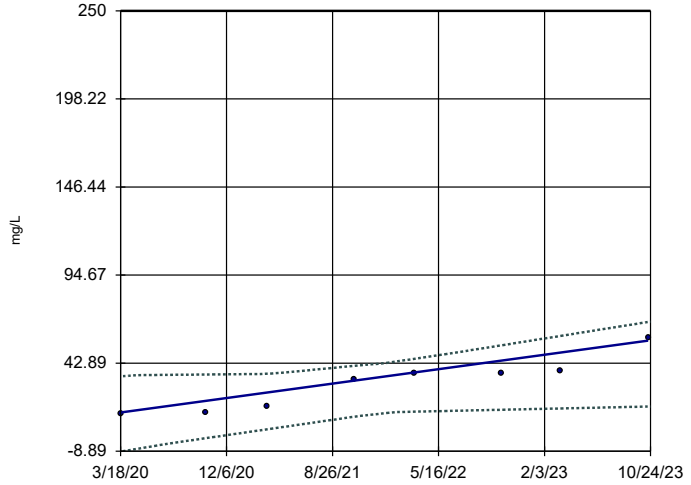
Sen's Slope and 99% Confidence Band

Well#1



n = 8

Slope = 11.77 units per year.

Mann-Kendall statistic = 26 critical = 21

Increasing trend significant at 99% confidence level (α = 0.005 per tail).

Confidence band is below SMCL mg/L (250).

Constituent: Sulfate Analysis Run 12/22/2023 9:38 AM View: 2023AWQR - Theil Sen

BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR-AM 2023AWQR

Appendix E
Mann-Kendall Output (α = 0.20)

Monitoring Well	Constituent Name	Calculated Statistic		
		Decreasing Trend	Stable Trend	Increasing Trend
Well#1	Aluminum		-8	
	Arsenic		-8	
	Barium		-10	
	Chloride			15
	Copper		6	
	Fluoride		6	
	Formaldehyde		-11	
	Iron	-22		
	Lead		2	
	Magnesium		-9	
	Manganese	-14		
	Nickel		2	
	Phenols, total			13
	Sulfate			26
	Thallium		5	
Well#2	Aluminum		-2	
	Arsenic		11	
	Barium		10	
	Chloride		-9	
	Chromium		0	
	Copper		8	
	Fluoride		7	
	Formaldehyde		-3	
	Iron	-14		
	Lead		-5	
	Magnesium			16
	Manganese		-10	
	Phenols, total		6	
	Silver		6	
	Sulfate	-21		
	Thallium		7	
	Zinc		1	
Well#3	Aluminum		2	
	Arsenic		0	
	Barium		3	
	Chloride		-6	
	Chloroform		-3	
	Chromium		1	
	Copper		6	
	Fluoride		-2	
	Formaldehyde		-3	
	Iron		-12	
	Lead		3	
	Magnesium		-2	
	Manganese		-10	
	Molybdenum		-9	
	Nickel	-18		
	Phenols, total		7	
	Selenium		2	
	Sulfate		9	
	Thallium		3	
	Vanadium		9	
	Zinc		-1	

Monitoring Well	Constituent Name	Calculated Statistic		
		Decreasing Trend	Stable Trend	Increasing Trend
Well#4	Aluminum		1	
	Arsenic		2	
	Barium		12	
	Boron		-7	
	Chloride		10	
	Chromium		8	
	Copper		4	
	Fluoride		5	
	Iron		4	
	Lead			13
	Magnesium		-4	
	Manganese		10	
	Molybdenum		4	
	Nickel		12	
	Phenols, total		7	
	Selenium		0	
	Sulfate		10	
	Vanadium		8	