2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT

CCR LANDFILL
IATAN GENERATING STATION
PLATTE COUNTY, MISSOURI

Presented To:
Evergy Metro, Inc.

SCS ENGINEERS

27213167.22 | January 2023

8575 W 110th Street, Suite 100
Overland Park, Kansas 66210
913-681-0030

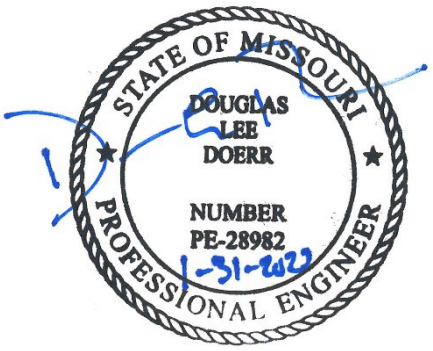
CERTIFICATIONS

I, John R. Rockhold, being a qualified groundwater scientist and Registered Geologist in the State of Missouri, do hereby certify that the 2022 Annual Groundwater Monitoring and Corrective Action Report for the CCR Landfill at the Iatan Generating Station was prepared by me or under my direct supervision and fulfills the requirements of 40 CFR 257.90(e).

John R. Rockhold, R.G.

SCS Engineers

I, Douglas L. Doerr, being a qualified licensed Professional Engineer in the State of Missouri, do hereby certify that the 2022 Annual Groundwater Monitoring and Corrective Action Report for the CCR Landfill at the Iatan Generating Station was prepared by me or under my direct supervision and fulfills the requirements of 40 CFR 257.90(e).



Douglas L. Doerr, P.E.

SCS Engineers

Revision Number	Revision Date	Revision Sections	Summary of Revisions
0	January 31, 2023	NA	Original

Table of Contents

Appendices

1 INTRODUCTION

This 2022 Annual Groundwater Monitoring and Corrective Action Report was prepared to support compliance with the groundwater monitoring requirements of the "Coal Combustion Residuals (CCR) Final Rule" (Rule) published by the United States Environmental Protection Agency (USEPA) in the *Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule*, dated April 17, 2015 (USEPA, 2015), and subsequent revisions. Specifically, this report was prepared for Evergy Metro, Inc. (Evergy) to fulfill the requirements of 40 CFR 257.90 (e). The applicable sections of the Rule are provided below in *italics*, followed by applicable information relative to the 2022 Annual Groundwater Monitoring and Corrective Action Report for the CCR Landfill at the Iatan Generating Station.

1.1 § 257.90(e)(6) SUMMARY

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

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

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

At the start of the current annual reporting period, (January 1, 2022), the CCR Landfill was operating under a detection monitoring program in compliance with § 257.94.

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

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

At the end of the current annual reporting period, (December 31, 2022), the CCR Landfill was operating under a detection monitoring program in compliance with § 257.94.

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

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

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

Monitoring Event	Monitoring Well	Constituent	ASD
Fall 2021	MW-8	Calcium	Successful
Fall 2021	MW-8	Chloride	Successful
Fall 2021	MW-8	Total Dissolved Solids	Successful
Fall 2021	MW-8	Sulfate	Successful
Spring 2022	MW-1	Sulfate	Successful

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

Not applicable because an assessment monitoring program was not initiated.

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

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

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

Not applicable because there was no assessment monitoring conducted.

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

Not applicable because there was no assessment of corrective measures initiated for the CCR Unit.

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

Not applicable because there was no assessment of corrective measures initiated for the CCR Unit.

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

Not applicable because there was no assessment of corrective measures initiated for the CCR Unit.

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

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

Not applicable because corrective measures are not required.

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

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

Not applicable because corrective measures are not required.

2 § 257.90(E) ANNUAL REPORT REQUIREMENTS

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

2.1 § 257.90(E)(1) SITE MAP

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

A site map with an aerial image showing the CCR Landfill and all background (or upgradient) and downgradient monitoring wells with identification numbers for the CCR Landfill groundwater monitoring program is provided as **Figure 1** in **Appendix A**.

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

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

No new monitoring wells were installed and no wells were decommissioned as part of the CCR groundwater monitoring program for the CCR Landfill in 2022.

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

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

Only detection monitoring was required to be conducted during the reporting period (2022). Samples collected in 2022 were collected and analyzed for Appendix III detection monitoring constituents. Results of the sampling events are provided in **Appendix B**, **Table 1** (Appendix III Detection Monitoring Results), and **Table 2** (Detection Monitoring Field Measurements). These tables include Fall 2021 semiannual detection monitoring event verification sample data collected and analyzed in 2022; Spring 2022 semiannual detection monitoring data, verification sample data; and, the initial Fall 2022 semiannual detection monitoring data. The dates of sample collection are also provided in these tables.

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

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

There was no transition between monitoring programs in 2022. Only detection monitoring was conducted in 2022.

2.5 § 257.90(e)(5) OTHER REQUIREMENTS

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

A summary of potentially required information and the corresponding section of the Rule is provided in the following sections. In addition, the information, if applicable, is provided.

2.5.1 § 257.90(e) Program Status

Status of Groundwater Monitoring and Corrective Action Program.

The groundwater monitoring and corrective action program is in detection monitoring.

Summary of Key Actions Completed.

a. completion of the Fall 2021 verification sampling and analyses per the certified statistical method,

b. completion of the statistical evaluation of the Fall 2021 semiannual detection monitoring sampling and analysis event per the certified statistical method,

c. completion of the 2021 Annual Groundwater Monitoring and Corrective Action Report,

d. completion of a successful alternative source demonstration for the Fall 2021 semiannual detection monitoring sampling and analysis event,

e. completion of the Spring 2022 semiannual detection monitoring sampling and analysis event with subsequent verification sampling per the certified statistical method,

f. completion of the statistical evaluation of the Spring 2022 semiannual detection monitoring sampling and analysis event per the certified statistical method, and

g. initiation of the Fall 2022 semiannual detection monitoring sampling and analysis event.

h. completion of a successful alternative source demonstration for the Spring 2022 semiannual detection monitoring sampling and analysis event,

Description of Any Problems Encountered.

No noteworthy problems were encountered.

Discussion of Actions to Resolve the Problems.

Not applicable because no noteworthy problems were encountered.

Projection of Key Activities for the Upcoming Year (2023).

Completion of verification sampling and data analysis, and the statistical evaluation of Fall 2022 detection monitoring sampling and analysis event; and, if required, alternative source demonstration(s). Semiannual Spring and Fall 2023 groundwater sampling and analysis. Completion of the statistical evaluation of the Spring 2023 detection monitoring sampling and analysis event; and, if required, alternative source demonstration(s).

2.5.2 § 257.94(d)(3) Demonstration for Alternative Detection Monitoring Frequency

The owner or operator must obtain a certification from a qualified professional engineer or approval from the Participating State Director or approval from EPA where EPA is the permitting authority stating that the demonstration for an alternative groundwater sampling and analysis frequency meets the requirements of this section. The owner or operator must include the demonstration providing the basis for the alternative monitoring frequency and the certification by a qualified professional engineer or the approval from the Participating State Director or approval from EPA where EPA is the permitting authority in the annual groundwater monitoring and corrective action report required by § 257.90(e).

Not applicable because no alternative monitoring frequency for detection monitoring and certification was pursued.

2.5.3 § 257.94(e)(2) Detection Monitoring Alternate Source Demonstration

Demonstration that a source other than the CCR unit caused the statistically significant increase (SSI) over background levels for a constituent or that the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. In addition, certification of the demonstration is to be included in the annual report.

The following demonstration reports are included as **Appendix C**:

CCR Groundwater Monitoring Alternative Source Demonstration Report November 2021 Groundwater Monitoring Event, CCR Landfill, Iatan Generating Station (May 2022).

CCR Groundwater Monitoring Alternative Source Demonstration Report May 2022 Groundwater Monitoring Event, CCR Landfill, Iatan Generating Station (December 2022).

2.5.4 § 257.95(c)(3) Demonstration for Alternative Assessment Monitoring Frequency

The owner or operator must obtain a certification from a qualified professional engineer or approval from the Participating State Director or approval from EPA where EPA is the permitting authority stating that the demonstration for an alternative groundwater sampling and analysis frequency meets the requirements of this section. The owner or operator must include the demonstration providing the basis for the alternative monitoring frequency and the certification by a qualified professional engineer or the approval from the Participating State Director or the approval from EPA where EPA is the permitting authority in the annual groundwater monitoring and corrective action report required by § 257.90(e).

Not applicable because there was no assessment monitoring conducted.

2.5.5 § 257.95(d)(3) Assessment Monitoring Concentrations and Groundwater Protection Standards

Include the concentrations of Appendix III and detected Appendix IV constituents from the assessment monitoring, the established background concentrations, and the established groundwater protection standards.

Not applicable because there was no assessment monitoring conducted.

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

Demonstrate that a source other than the CCR unit caused the contamination, or that the statistically significant increase resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. Any such demonstration must be supported by a report that includes the factual or evidentiary basis for any conclusions and must be certified to be accurate by a qualified professional engineer. If a successful demonstration is made, the owner or operator must continue monitoring in accordance with the assessment monitoring program pursuant to this section, and may return to detection monitoring if the constituents in appendices III and IV to this part are at or below background as specified in paragraph (e) of this section. The owner or operator must also include the demonstration in the annual groundwater monitoring and corrective action report required by § 257.90(e), in addition to the certification by a qualified professional engineer or the approval from the Participating State Director or approval from EPA where EPA is the permitting authority.

Not applicable because there was no assessment monitoring conducted.

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

Within 90 days of finding that any constituent listed in appendix IV to this part has been detected at a statistically significant level exceeding the groundwater protection standard defined under § 257.95(h), or immediately upon detection of a release from a CCR unit, the owner or operator must initiate an assessment of corrective measures to prevent further releases, to remediate any releases and to restore affected area to original conditions. The assessment of corrective measures must be completed within 90 days, unless the owner or operator demonstrates the need for additional time to complete the assessment of corrective measures due to site-specific conditions or circumstances. The owner or operator must obtain a certification from a qualified professional engineer attesting that

the demonstration is accurate. The 90-day deadline to complete the assessment of corrective measures may be extended for no longer than 60 days. The owner or operator must also include the demonstration in the annual groundwater monitoring and corrective action report required by § 257.90(e), in addition to the certification by a qualified professional engineer or the approval from the Participating State Director or approval from EPA where EPA is the permitting authority.

Not applicable because there was no assessment monitoring conducted.

2.6 § 257.90(e)(6) OVERVIEW SUMMARY

A section at the beginning of the annual report that provides an overview of the current status of groundwater monitoring and corrective action programs for the CCR unit.

§ 257.90(e)(6) is addressed in Section 1.1 of this report.

3 SUPPLEMENTAL INFORMATION AND DATA

In addition to the requirements listed in 40 CFR 257.90(e), supplemental information has been included in this section in recognition of comments received by Evergy from the USEPA on January 11, 2022. The USEPA indicated in their comments that the GWMCA Report contain the following:

- Results of laboratory analysis of groundwater or other environmental media samples for 40 CFR 257 Appendix III and Appendix IV constituents or other constituents, such as those supporting characterization of site conditions that may ultimately affect a remedy.
- Required statistical analysis performed on laboratory analysis results; and
- Calculated groundwater flow rate and direction.

This information is not specifically referred to in 40 CFR 257.90(e) for inclusion in the GWMCA Reports; however, it is routinely collected, determined and maintained in Evergy's files and is being provided with in this GWMCA report. This supplemental information and data are provided as specified below:

- Laboratory Analytical Reports (**Appendix D**):

  Includes laboratory data packages with supporting information such as case narrative, sample and method summary, analytical results, quality control, and chain-of-custody documentation. The laboratory data packages for the following sampling events are provided:

  - January 2022 – First verification sampling for the Fall 2021 detection monitoring event.
  - March 2022 – Second verification sampling for the Fall 2021 detection monitoring event.
  - May 2022 – Spring 2022 semiannual detection monitoring sampling event.
  - July 2022 – First verification sampling for the Spring 2022 detection monitoring sampling event.
  - August 2022 - Second verification sampling for Spring 2022 detection monitoring sampling event.
  - November 2022 - Fall 2022 semiannual detection monitoring sampling event.

- Statistical Analyses (**Appendix E**):

  Includes summary of statistical results, prediction limit plots, prediction limit background data, detection sample results, first and second verification re-sample results (when applicable), extra sample results for pH (collected as part of the approved sampling procedures), input parameters, and a Prediction Limit summary table. Statistical analyses completed in 2022 included the following:

  - Fall 2021 semiannual detection monitoring statistical analyses.
  - Spring 2022 semiannual detection monitoring statistical analyses.

- Groundwater Potentiometric Surface Maps (**Appendix A**):

  Includes revised groundwater potentiometric surface maps with the measured groundwater elevations at each well and the generalized groundwater flow direction and the calculated groundwater flow rate. Maps for the following sampling events are provided:

  - Figure 2 - Spring 2022 semiannual detection monitoring sampling event.
  - Figure 3 - Fall 2022 semiannual detection monitoring sampling event.

4 GENERAL COMMENTS

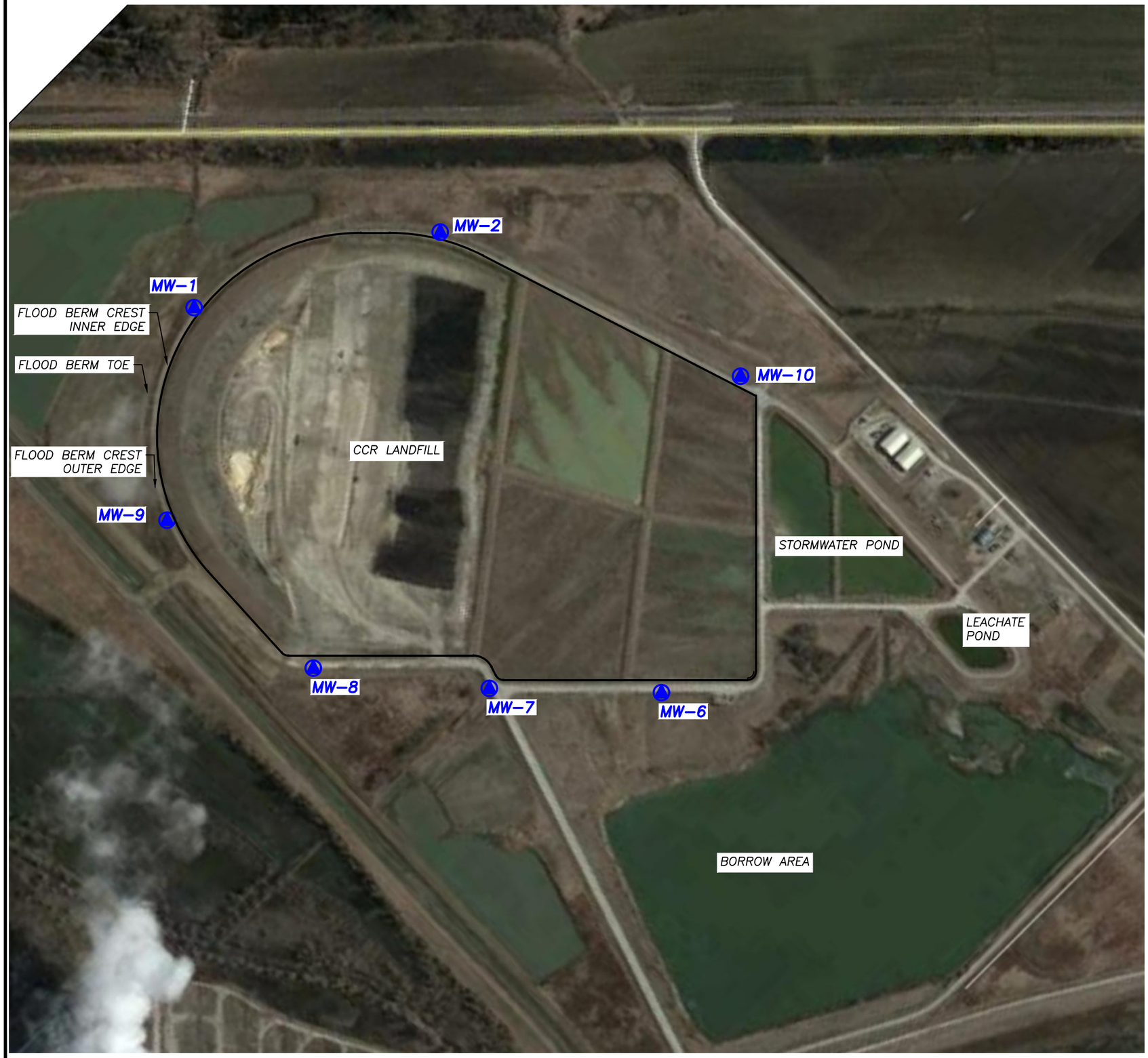
This report has been prepared and reviewed under the direction of a qualified groundwater scientist and qualified professional engineer. The information contained in this report is a reflection of the conditions encountered at the Iatan Generating Station at the time of fieldwork. This report includes a review and compilation of the required information and does not reflect any variations of the subsurface, which may occur between sampling locations. Actual subsurface conditions may vary and the extent of such variations may not become evident without further investigation.

Conclusions drawn by others from the result of this work should recognize the limitation of the methods used. Please note that SCS Engineers does not warrant the work of regulatory agencies or other third parties supplying information used in the assimilation of this report. This report is prepared in accordance with generally accepted environmental engineering and geological practices, within the constraints of the client's directives. It is intended for the exclusive use of Evergy Metro, Inc. for specific application to the Iatan Generating Station CCR Landfill. No warranties, express or implied, are intended or made.

APPENDIX A

FIGURES

Figure 1: Site Map
Figure 2: Potentiometric Surface Map (May 2022)
Figure 3: Potentiometric Surface Map (November 2022)

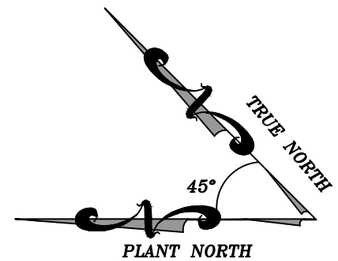


LEGEND

- CCR UNIT BOUNDARY (APPROXIMATE LIMITS)
- MW–704 (869.52) CCR GROUNDWATER MONITORING SYSTEM WELLS (GROUNDWATER ELEVATION)
- –875– GROUNDWATER POTENTIOMETRIC SURFACE ELEVATIONS

NOTES:

1. HORIZONTAL DATUM: MISSOURI STATE PLANE COORDINATE SYSTEM WEST ZONE (NAD 83)
2. VERTICAL DATUM: NAVD 88
3. GOOGLE EARTH IMAGE DATED MARCH 27, 2017
4. APPROXIMATE BOUNDARY LOCATION PROVIDED BY BURNS & MCDONNELL
5. MONITORING WELL LOCATIONS PROVIDED BY SHAFFER, KLINE, & WARREN



500 0 500 1000

SCALE FEET

REV.	DATE	CK. BY
0	-	-
1	-	-
2	-	-
3	-	-
4	-	-
5	-	-
6	-	-

SHEET TITLE: SITE MAP CCR LANDFILL CCR GROUNDWATER MONITORING SYSTEM

PROJECT TITLE: 2022 GROUNDWATER MONITORING AND CORRECTION ACTION REPORT

CLIENT: EVERGY METRO, INC. IATAN GENERATING STATION IATAN, MISSOURI

SCS ENGINEERS
8575 W. 110th St. Ste. 100
Overland Park, Kansas 66210
PH: (913) 681-0030 FAX: (913) 681-0012

PROJ. NO.	DWN. BY:	Q/A REVIEW BY:
27213167.20	SJW	JRR
DSN. BY:	CHK. BY:	PROJ. MGR
SJW	JRR	JRR

CADD FILE: IATAN LF CCR BASE 2021.DWG

DATE: 1/20/2023

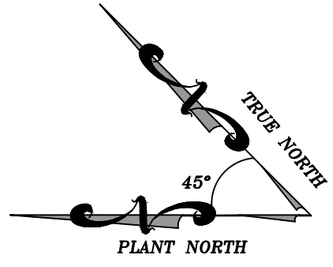
FIGURE NO. 1

LEGEND

- CCR UNIT BOUNDARY (APPROXIMATE LIMITS)
- MW–704 (869.52) — CCR GROUNDWATER MONITORING SYSTEM WELLS (GROUNDWATER ELEVATION)
- –875– — GROUNDWATER POTENTIOMETRIC SURFACE ELEVATIONS
- 16 FT/YR — DIRECTION OF GROUNDWATER FLOW AND CALCULATED GROUNDWATER FLOW RATE (FEET/YEAR)

NOTES:

1. HORIZONTAL DATUM: MISSOURI STATE PLANE COORDINATE SYSTEM WEST ZONE (NAD 83)
2. VERTICAL DATUM: NAVD 88
3. GOOGLE EARTH IMAGE DATED FEBRUARY 20, 2020
4. APPROXIMATE BOUNDARY LOCATION PROVIDED BY BURNS & MCDONNELL
5. MONITORING WELL LOCATIONS PROVIDED BY SHAFFER, KLINE, & WARREN
6. WATER LEVEL MEASUREMENTS COMPLETED ON MAY 11, 2022



500 0 500 1000
SCALE FEET

REV.	DATE	CK. BY
1	–	–
2	–	–
3	–	–
4	–	–
5	–	–
6	–	–

SHEET TITLE: POTENTIOMETRIC SURFACE MAP (MAY 2022) CCR LANDFILL

PROJECT TITLE: 2022 GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT

CLIENT: EVERGY METRO, INC.
IATAN GENERATING STATION
IATAN, MISSOURI

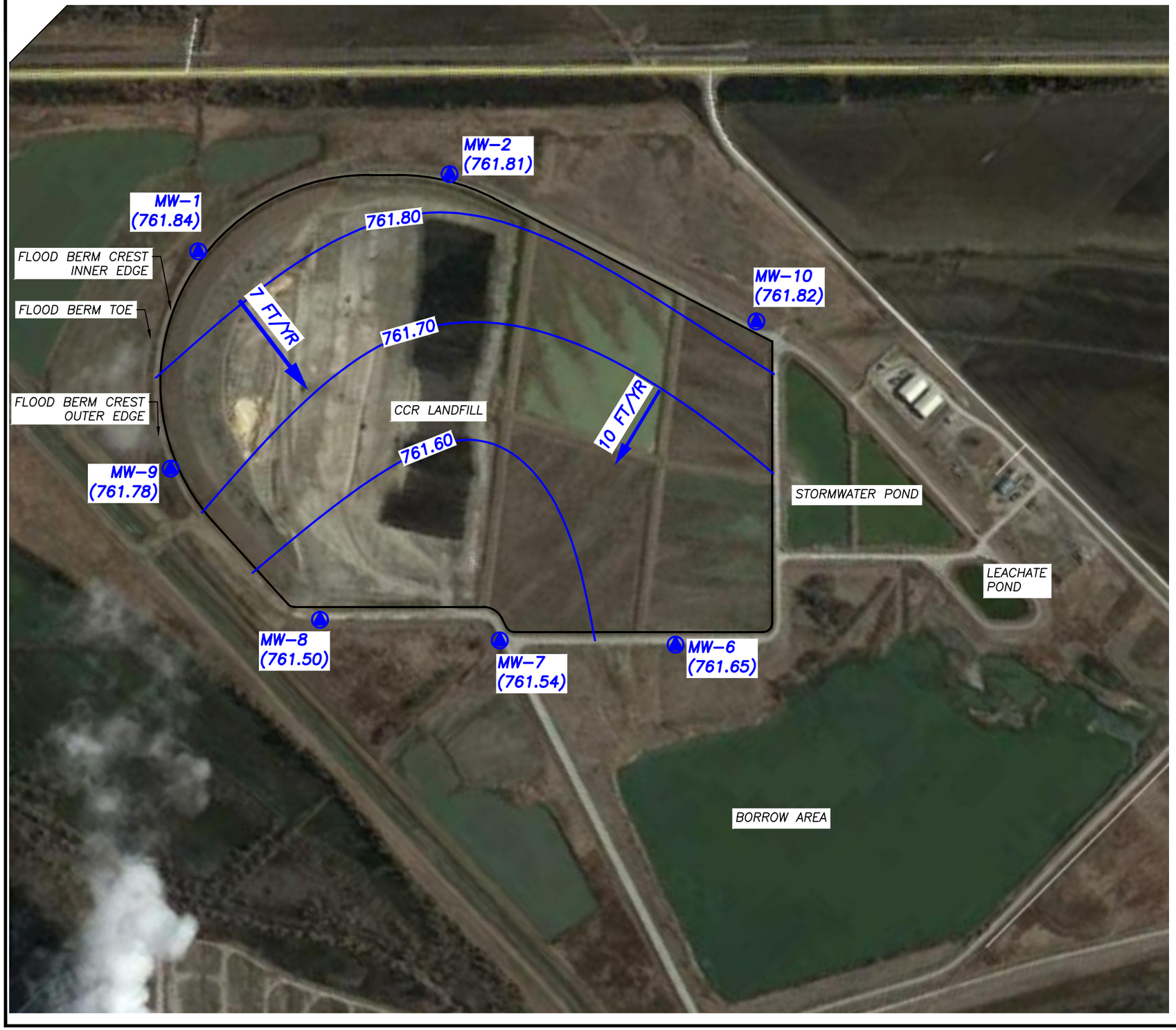
SCS ENGINEERS
8575 W. 110th St, Ste. 100
Overland Park, Kansas 66210
PH: (913) 681-0030 FAX: (913) 681-0012

PROJ. NO. 27213167.21 | DSN. BY: ALR | CHK. BY: JRR | QA/A RVW BY: JRR | PROJ. MGR: JRR | DSN. BY: TGW

CADD FILE: IATAN LF FIG 2 MAY 2022.DWG

DATE: 1/20/2023

FIGURE NO. 2

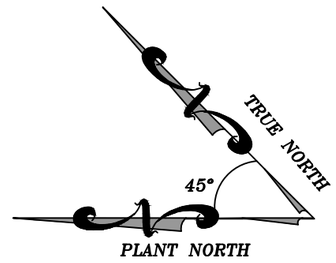


LEGEND

- CCR UNIT BOUNDARY (APPROXIMATE LIMITS)
- MW–704 (869.52) — CCR GROUNDWATER MONITORING SYSTEM WELLS (GROUNDWATER ELEVATION)
- –875– — GROUNDWATER POTENTIOMETRIC SURFACE ELEVATIONS
- 16 FT/YR — DIRECTION OF GROUNDWATER FLOW AND CALCULATED GROUNDWATER FLOW RATE (FEET/YEAR)

NOTES:

1. HORIZONTAL DATUM: MISSOURI STATE PLANE COORDINATE SYSTEM WEST ZONE (NAD 83)
2. VERTICAL DATUM: NAVD 88
3. GOOGLE EARTH IMAGE DATED FEBRUARY 20, 2020
4. APPROXIMATE BOUNDARY LOCATION PROVIDED BY BURNS & MCDONNELL
5. MONITORING WELL LOCATIONS PROVIDED BY SHAFFER, KLINE, & WARREN
6. WATER LEVEL MEASUREMENTS COMPLETED ON NOVEMBER 7, 2022



500 0 500 1000
SCALE FEET

REV.	DATE	CK. BY
0	-	-
1	-	-
2	-	-
3	-	-
4	-	-
5	-	-

SHEET TITLE: POTENTIOMETRIC SURFACE MAP (NOVEMBER 2022) CCR LANDFILL

PROJECT TITLE: 2022 GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT

CLIENT: EVERGY METRO, INC.
IATAN GENERATING STATION
IATAN, MISSOURI

SCS ENGINEERS
8575 W. 110th St, Ste. 100
Overland Park, Kansas 66210
PH. (913) 681-0030 FAX. (913) 681-0012

PROJ. NO. 27213167.21 | DSN. BY: TCW | DWN. BY: ALR | CHK. BY: JRR | QA/A RVW BY: JRR | PROJ. MGR: JRR

CADD FILE: IATAN LF FIG 2 NOVEMBER 2022.DWG

DATE: 1/20/2023

FIGURE NO. 3

N:\KCPL\Projects\Groundwater\DWG\Iatan\2022\November 2022\Iatan LF Fig 2 November 2022.dwg Jan 22, 2023 - 6:30pm Layout Name: Fig 2-CCR By: swyly

APPENDIX B

TABLES

Table 1
CCR Landfill
Appendix III Detection Monitoring Results
Evergy Iatan Generating Station

Well Number	Sample Date	Appendix III Constituents						
		Boron (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	pH (S.U.)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)
MW-1	01/25/22	---	*145	---	---	**6.86	---	*511
MW-1	03/01/22	---	*138	---	---	**6.89	---	---
MW-1	05/11/22	<0.200	148	6.54	0.276	6.83	41.8	587
MW-1	07/14/22	---	*148	---	---	**7.25	*40.7	*564
MW-1	08/16/22	---	*141	---	---	**6.91	*40.6	*519
MW-1	11/07/22	<0.200	141	6.01	0.316	6.97	36.8	402
MW-2	05/11/22	<0.200	164	7.07	0.359	6.82	109	622
MW-2	11/07/22	<0.200	150	6.07	0.357	6.92	105	587
MW-6	01/25/22	---	---	*1.94	---	**7.08	---	---
MW-6	05/11/22	<0.200	171	2.26	0.305	7.50	39.7	604
MW-6	07/14/22	---	*149	*2.19	---	*7.29	---	*548
MW-6	08/16/22	---	---	*1.44	---	**6.80	---	---
MW-6	11/07/22	<0.200	134	1.49	0.338	7.36	24.8	492
MW-7	05/11/22	<0.200	130	1.59	0.337	7.43	40.9	475
MW-7	11/07/22	<0.200	127	1.84	0.335	7.27	39.9	451
MW-8	01/25/22	---	*171	*12.2	---	**7.21	*77.4	*594
MW-8	03/01/22	---	*162	*10.1	---	**7.10	*73.3	*569
MW-8	05/11/22	<0.200	155	5.74	0.363	7.14	58.5	562
MW-8	11/07/22	<0.200	150	4.74	0.342	7.12	45.9	530
MW-9	05/11/22	<0.200	105	<1.00	0.401	6.88	17.1	412
MW-9	11/07/22	<0.200	145	1.51	0.371	6.98	13.8	594
MW-10	05/11/22	<0.200	122	16.5	0.576	6.91	35.2	563
MW-10	11/07/22	<0.200	167	15.5	0.532	6.82	85.8	1040

* Verification Sample obtained per certified statistical method and Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance, March 2009.

**Extra Sample for Quality Control Validation or per Standard Sampling Procedure

mg/L - miligrams per liter

pCi/L - picocuries per liter

S.U. - Standard Units

--- Not Sampled

Table 2
CCR Landfill
Detection Monitoring Field Measurements
Evergy Iatan Generating Station

Well Number	Sample Date	pH (S.U.)	Specific Conductivity (µS)	Temperature (°C)	Turbidity (NTU)	ORP (mV)	DO (mg/L)	Water Level (ft btoc)	Groundwater Elevation (ft NGVD)
MW-1	01/25/22	**6.86	935	13.39	0.0	-129	0.02	24.30	764.39
MW-1	03/01/22	**6.89	974	14	7.9	-135	0.98	25.30	763.39
MW-1	05/11/22	6.83	920	16.00	0.0	-123	0.00	24.95	763.74
MW-1	07/14/22	**7.25	857	18.70	0.0	-82	0.00	24.50	764.19
MW-1	08/16/22	**6.91	970	16.29	3.1	-108	0.00	25.40	763.29
MW-1	11/07/22	6.97	930	14.72	0.0	-133	0.32	26.85	761.84
MW-2	05/11/22	6.82	977	16.53	3.7	-114	0.00	26.03	763.58
MW-2	11/07/22	6.92	981	15.27	17.2	-120	0.85	27.80	761.81
MW-6	01/25/22	**7.08	944	13.65	0.0	-126	0.00	26.30	763.35
MW-6	05/11/22	7.50	2490	23.08	0.0	-191	0.00	27.39	762.26
MW-6	07/14/22	*7.29	905	16.45	0.0	-109	0.00	26.38	763.27
MW-6	08/16/22	**6.80	911	16.12	13.6	-123	0.00	26.96	762.69
MW-6	11/07/22	7.36	970	15.46	0.0	-33	0.00	28.00	761.65
MW-7	05/11/22	7.43	359	22.97	0.0	-125	0.00	27.10	762.55
MW-7	11/07/22	7.27	872	14.96	1.1	-14	0.00	28.11	761.54
MW-8	01/25/22	**7.21	1020	13.51	0.0	-29	0.00	26.43	763.28
MW-8	03/01/22	**7.10	1040	15.12	4.9	-103	0.00	27.05	762.66
MW-8	05/11/22	7.14	856	20.41	0.0	-96	0.00	26.75	762.96
MW-8	11/07/22	7.12	894	15.13	0.0	-110	0.00	28.21	761.50
MW-9	05/11/22	6.88	703	16.09	16.4	-134	0.00	26.37	763.53
MW-9	11/07/22	6.98	960	14.98	42.0	-121	3.94	28.12	761.78
MW-10	05/11/22	6.91	805	22.72	0.0	-88	0.00	26.21	763.25
MW-10	11/07/22	6.82	1230	14.72	0.0	-106	0.15	27.64	761.82

* Verification Sample obtained per certified statistical method and Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance, March 2009.
**Extra Sample for Quality Control Validation or per Standard Sampling Procedure
S.U. - Standard Units
µS - microsiemens
°C - Degrees Celsius
ft btoc - Feet Below Top of Casing
ft NGVD - National Geodetic Vertical Datum (NAVD 88)
NTU - Nephelometric Turbidity Unit

APPENDIX C

ALTERNATIVE SOURCE DEMONSTRATIONS

C.1 CCR Groundwater Monitoring Alternative Source Demonstration Report November 2021 Groundwater Monitoring Event, CCR Landfill, Iatan Generating Station (May 2022)

C.2 CCR Groundwater Monitoring Alternative Source Demonstration Report May 2022 Groundwater Monitoring Event, CCR Landfill, Iatan Generating Station (December 2022)

APPENDIX C.1

CCR Groundwater Monitoring Alternative Source Demonstration Report November 2021
Groundwater Monitoring Event, CCR Landfill, Iatan Generating Station (May 2022)

CCR GROUNDWATER MONITORING
ALTERNATIVE SOURCE DEMONSTRATION REPORT
NOVEMBER 2021 GROUNDWATER MONITORING EVENT

CCR LANDFILL

Iatan Generating Station
Evergy Metro, Inc.
Platte County, Missouri

SCS ENGINEERS

May 2022
File No. 27213167.22

8575 W. 110th Suite 100
Overland Park, KS 66210
913-749-0700

CERTIFICATIONS

I, John R. Rockhold, being a qualified groundwater scientist and Registered Geologist in the State of Missouri, do hereby certify the accuracy of the information in the CCR Groundwater Monitoring Alternative Source Demonstration Report for the CCR Landfill at the Iatan Generating Station. The Alternative Source Demonstration was prepared by me or under my direct supervision in accordance with generally accepted hydrogeological practices and the local standard of care.

John R. Rockhold, R.G.

SCS Engineers

I, Douglas L. Doerr, being a qualified licensed Professional Engineer in the State of Missouri, do hereby certify the accuracy of the information in the CCR Groundwater Monitoring Alternative Source Demonstration Report for the CCR Landfill at the Iatan Generating Station. The Alternative Source Demonstration was prepared by me or under my direct supervision in accordance with generally accepted engineering practices and the local standard of care.

Douglas L. Doerr, P.E.

SCS Engineers

Table of Contents

Section **Page**

Appendices

1 REGULATORY FRAMEWORK

Certain owners or operators of Coal Combustion Residuals (CCR) units are required to complete groundwater monitoring activities to evaluate whether a release from the unit has occurred. Included in the activities is the completion of a statistical analysis of the groundwater quality data as prescribed in § 257.93(h) of the CCR Final Rule. If the initial analysis indicates a statistically significant increase (SSI) over background levels, the owner or operator may perform an alternative source demonstration (ASD). In accordance with § 257.94(e)(2), the owner or operator of the CCR unit may demonstrate that a source other than the CCR unit caused the SSI over background levels for a constituent, or that the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. The owner or operator must complete the written demonstration within 90 days of detecting a SSI over background levels to include obtaining a certification from a qualified professional engineer verifying the accuracy of the information in the report. If a successful demonstration is completed within the 90-day period, the owner or operator of the CCR unit may continue with a detection monitoring program under § 257.94. If a successful demonstration is not completed within the 90-day period, the owner or operator of the CCR unit must initiate an assessment monitoring program as required under § 257.95. The owner or operator must also include the demonstration in the annual groundwater monitoring and corrective action report required by § 257.90(e), in addition to the certification by a qualified professional engineer.

2 STATISTICAL RESULTS

Statistical analysis of monitoring data from the groundwater monitoring system for the CCR Landfill at the Iatan Generating Station has been completed in substantial compliance with the "Statistical Method Certification by A Qualified Professional Engineer" dated October 12, 2017. Groundwater samples were collected on November 17, 2021. Review and validation of the results from the November 2021 Detection Monitoring Event was completed on January 6, 2022, which constitutes completion and finalization of detection monitoring laboratory analyses. Statistical analysis was then conducted to determine whether there was a statistically significant increase (SSI) over background values for each constituent listed in Appendix III to Part 257-Constituents for Detection Monitoring. Two rounds of verification sampling were conducted for certain constituents on January 25, 2022 and March 1, 2022.

The completed statistical evaluation identified four Appendix III constituents above the prediction limits established for monitoring well MW-8.

Monitoring Well Constituents	*UPL	Observation November 17, 2021	1st Verification January 25, 2022	2nd Verification March 1, 2022
MW-8				
Calcium	158.5	178	171	162
Chloride	8.265	14.4	12.2	10.1
Total Dissolved Solids	548.8	640	594	569
Sulfate	69.33	91	77.4	73.3

*UPL – Upper Prediction Limit

Determination: A statistical evaluation was completed for all Appendix III detection monitoring constituents in accordance with the certified statistical method. The statistical evaluation identified SSIs above background prediction limits for calcium, chloride, total dissolved solids (TDS) and sulfate at monitoring well MW-8.

3 ALTERNATIVE SOURCE DEMONSTRATION

An Alternative Source Demonstration (ASD) is a means to provide supporting lines of evidence that something other than a release from a regulated CCR unit caused an SSI. For the above identified SSI for the CCR Landfill at the Iatan Generating Station, there are multiple lines of supporting evidence to indicate the above SSIs were not caused by a release from the CCR Landfill. Select multiple lines of supporting evidence are described as follows.

3.1 BOX AND WHISKERS PLOTS

A commonly accepted method to demonstrate and visualize the distribution of data in a given data set is to construct box and whiskers plots. The basic box plotted graphically locates the median, 25th and 75th percentiles of the data set; the "whiskers" extend to the minimum and maximum values of the data set. The range between the ends of a box plot represents the Interquartile Range, which can be used as an estimate of spread or variability. The mean is denoted by a "+".

When comparing multiple wells or well groups, box plots for each well can be lined up on the same axis to roughly compare the variability in each well. This may be used as an exploratory screening for the test of homogeneity of variance across multiple wells.

Box and whiskers plots for all of the groundwater monitoring system wells were prepared to allow comparison of the calcium, chloride, TDS, and sulfate concentrations between MW-8 and the other monitoring wells both upgradient and downgradient. The calcium, chloride, TDS, and sulfate box and whiskers plot for MW-8 indicates the calcium, chloride, TDS, and sulfate concentrations at MW-8 are within or below the concentration ranges for the other wells including typically upgradient well MW-2. This demonstrates that a source other than the CCR Landfill caused the SSI over background levels, or that the SSI resulted from natural variation in groundwater quality. Box and whisker plots are provided in **Appendix A**.

3.2 PIPER DIAGRAM PLOTS

Piper diagrams are a form of tri-linear diagram, and a widely-accepted method to provide a visual representation of the ion concentration of groundwater. Piper diagrams portray water compositions and facilitate the interpretation and presentation of chemical analyses. They may be used to visually compare the chemical composition of water quality across wells, and aid in determining whether the waters are similar or dis-similar, and can over time indicate whether the waters are mixing.

A piper diagram has two triangular plots on the right and left side of a 4-sided center field. The three major cations are plotted in the left triangle and anions in the right. Each of the three cation/anion variables, in milliequivalents, is divided by the sum of the three values, to produce a percent of total cation/anions. These percentages determine the location of the associated symbol. The data points in the center field are located by extending the points in the lower triangles to the point of intersection. In order for a piper diagram to be produced, the selected data file must contain the following constituents: Sodium (Na), Potassium (K), Calcium (Ca), Magnesium (Mg), Chloride (Cl), Sulfate (SO_4), Carbonate (CO_3), and Bicarbonate (HCO_3).

A piper diagram generated for MW-8 and leachate is provided in **Appendix B** along with analytical results. The piper diagram indicates the groundwater from monitoring well MW-8 does not plot near where the leachate plots and is not trending toward the leachate over time. This analysis indicates that the groundwater from MW-8 does not exhibit the same geochemical characteristics as the leachate. The groundwater and the leachate plot in different hydrochemical facies indicating there is no mixing of the two types of water (groundwater and leachate). This demonstrates that a source other than the CCR Landfill caused the SSI over background levels or that the SSI resulted from natural variation in groundwater quality.

3.3 TIME SERIES PLOTS

Time series plots provide a graphical method to view changes in data at a particular well (monitoring point) or wells over time. Time series plots display the variability in concentration levels over time and can be used to indicate possible outliers or data errors (i.e. "spikes"). More than one well can be compared on the same plot to look for differences between wells. Non-detect data is plotted as censored data at one-half of the laboratory reporting limit. Time series plots can also be used to examine the data for trends.

The time series plots for calcium, chloride, TDS and sulfate at monitoring well MW-8 were compared to the time series plot for these constituents at the other monitoring wells both upgradient and downgradient. The calcium, chloride, TDS and sulfate time series plot for MW-8 indicates the calcium, chloride, TDS and sulfate concentrations at MW-8 are within or below the concentration ranges for the other wells including typically upgradient well MW-2. This demonstrates that a source other than the CCR Landfill caused the SSI over background levels, or that the SSI resulted from natural variation in groundwater quality. Time series plots are provided in **Appendix C**.

4 CONCLUSION

Our opinion is that a sufficient body of evidence is available and presented above to demonstrate that a source other than the CCR Landfill caused the SSIs over background levels, or that the SSIs resulted from natural variation in groundwater quality. Based on the successful ASD, the owner or operator of the CCR Landfill may continue with the detection monitoring program under § 257.94.

5 GENERAL COMMENTS

This report has been prepared and reviewed under the direction of a qualified groundwater scientist and qualified professional engineer. Please note that SCS Engineers does not warrant the work of regulatory agencies or other third parties supplying information used in the assimilation of this report. This report is prepared in accordance with generally accepted environmental engineering and geological practices, within the constraints of the client's directives. It is intended for the exclusive use of Evergy Metro, Inc. for specific application to the Iatan Generating Station. No warranties, express or implied, are intended or made.

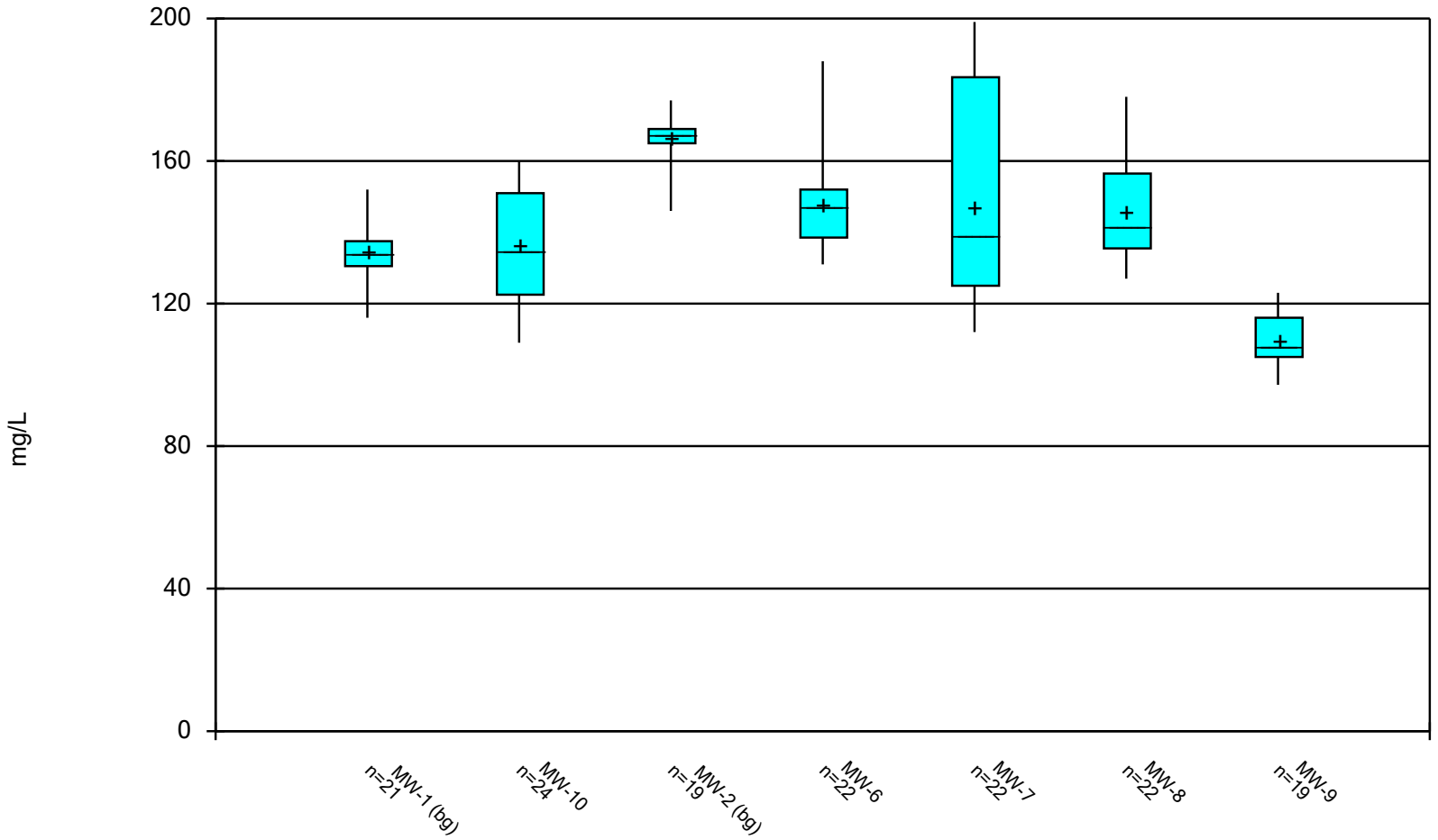
The signatures of the certifying registered geologist and professional engineer on this document represents that to the best of their knowledge, information, and belief in the exercise of their professional judgement in accordance with the standard of practice, it is their professional opinions that the

aforementioned information is accurate as of the date of such signatures. Any opinion or decisions by them are made on the basis of their experience, qualifications, and professional judgement and are not to be construed as warranties or guaranties. In addition, opinions relating to regulatory, environmental, geologic, geochemical and geotechnical conditions interpretations or other estimates are based on available data, and actual conditions may vary from those encountered at the times and locations where data are obtained, despite the use of due care.

Appendix A

Box and Whiskers Plots

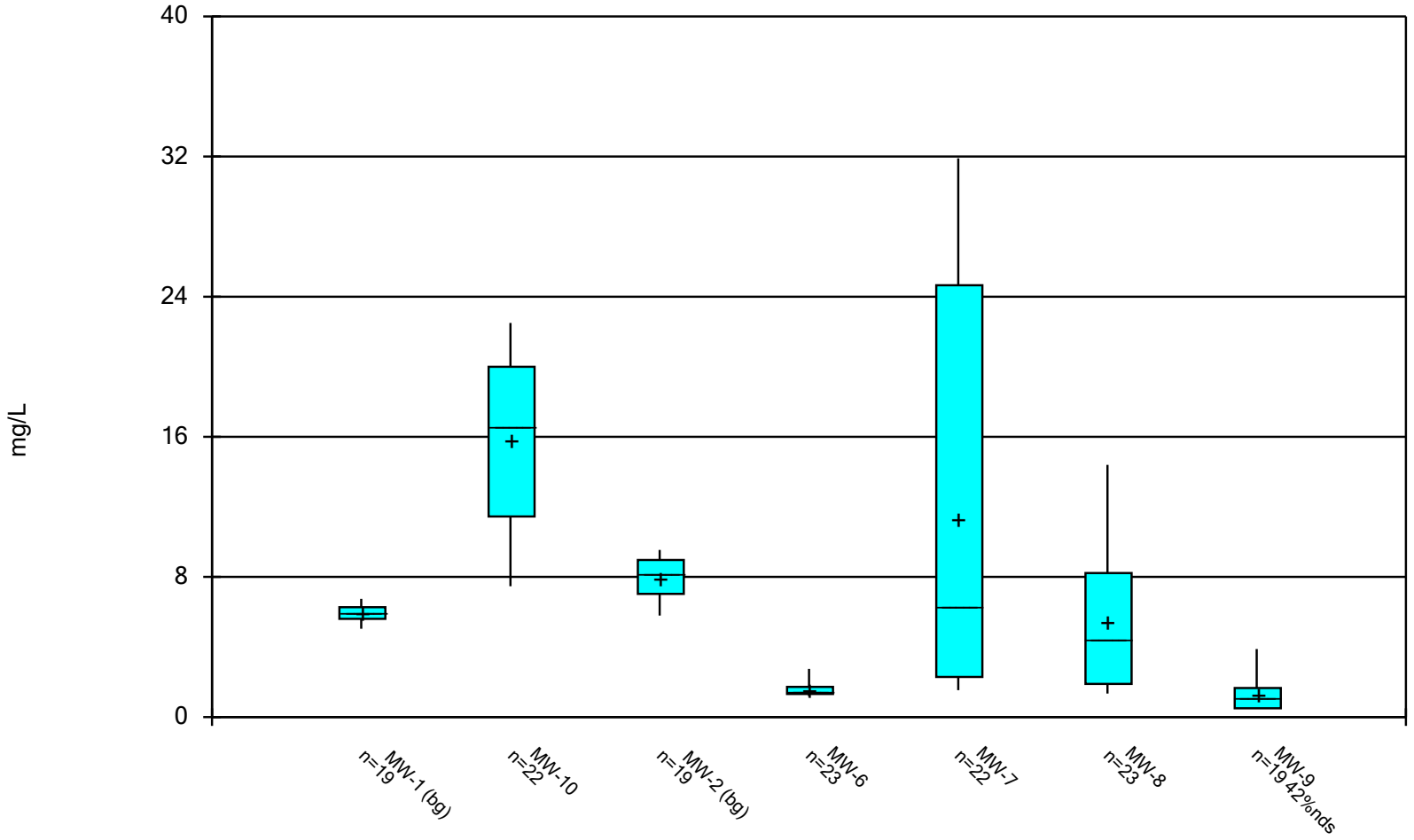
Box & Whiskers Plot



Constituent: Calcium Analysis Run 5/17/2022 11:55 AM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

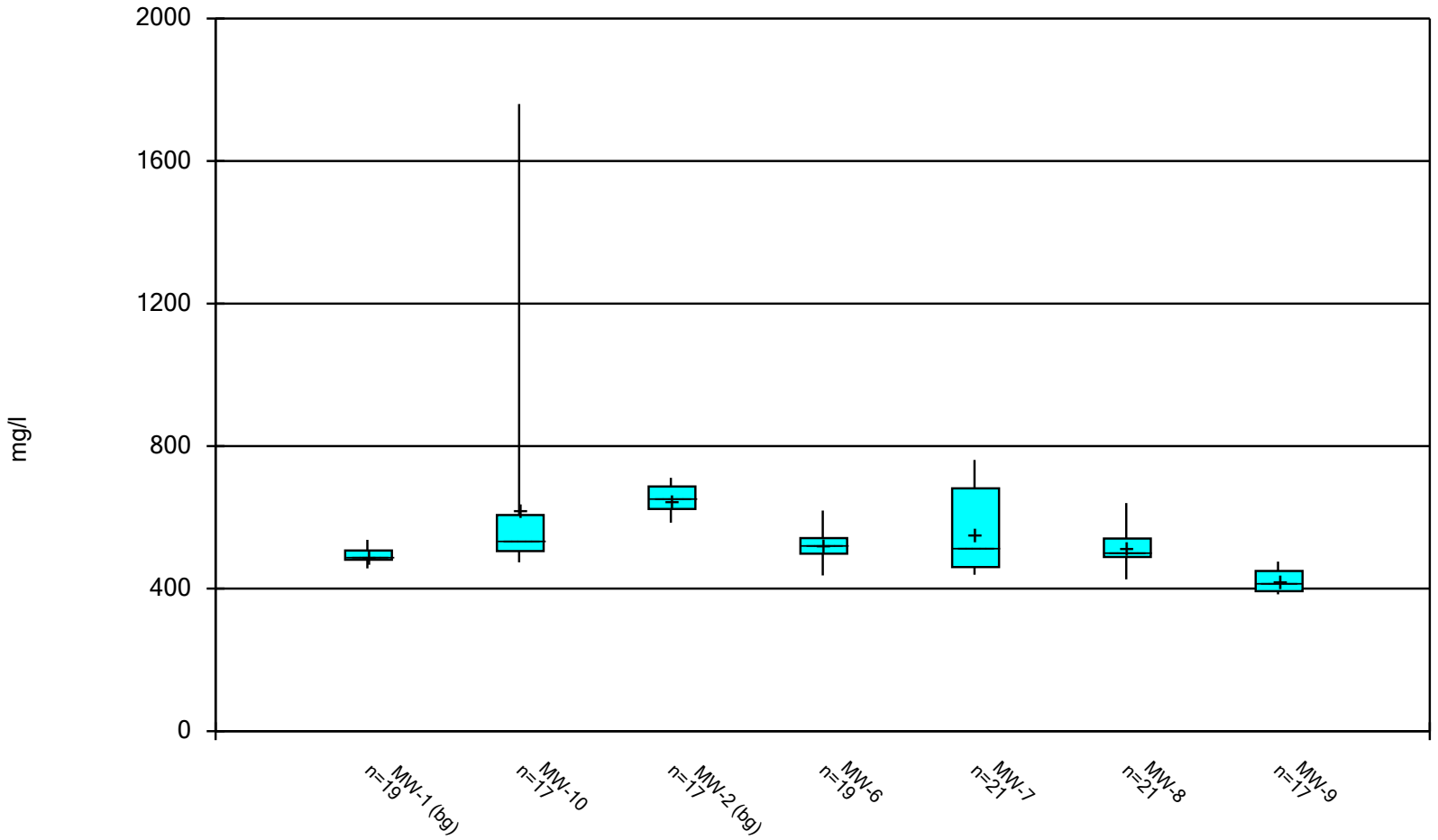
Box & Whiskers Plot



Constituent: Chloride Analysis Run 5/17/2022 11:55 AM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

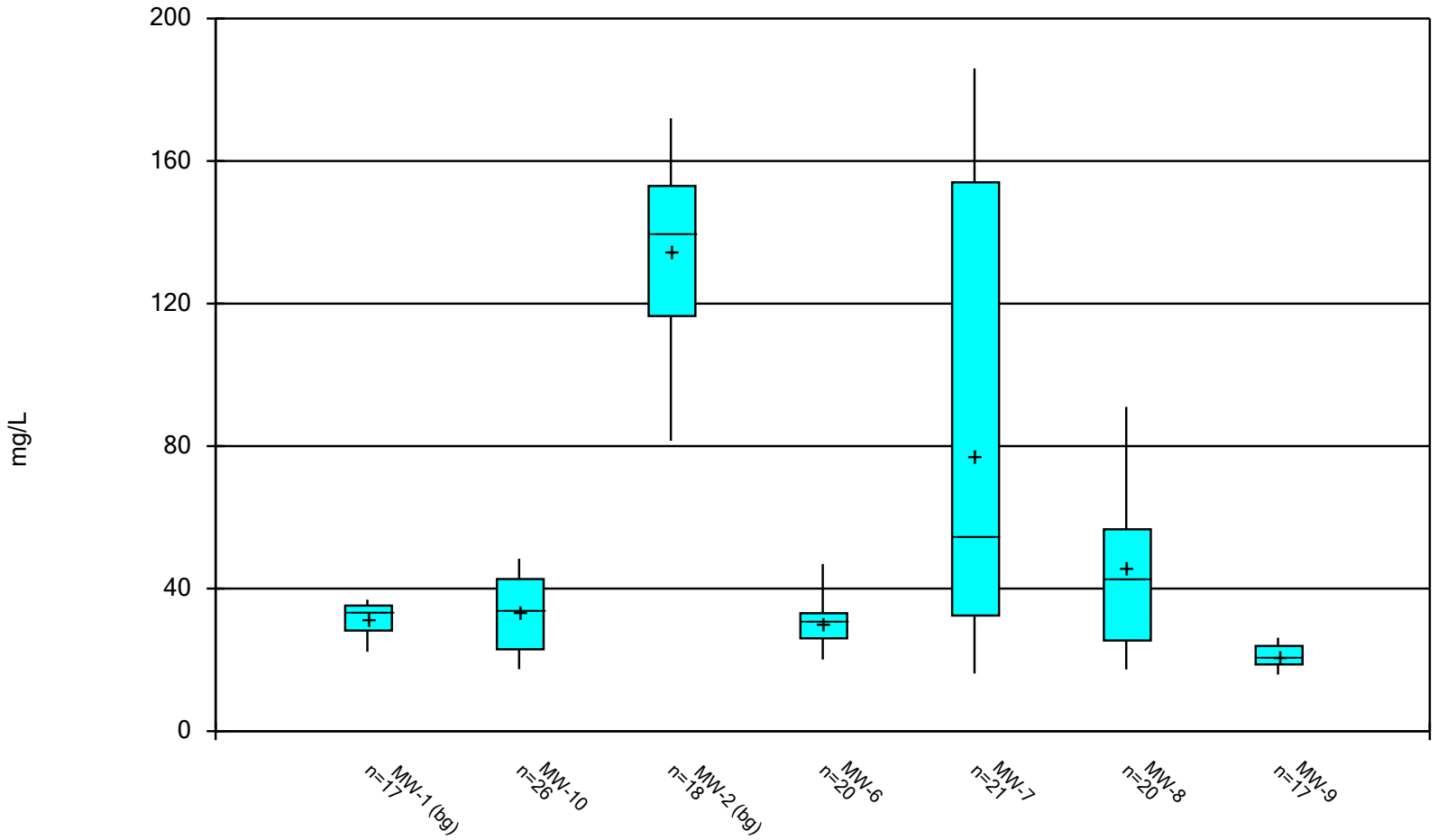
Box & Whiskers Plot



Constituent: Dissolved Solids Analysis Run 5/17/2022 11:56 AM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Box & Whiskers Plot



Constituent: Sulfate Analysis Run 5/17/2022 11:56 AM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Box & Whiskers Plot

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr Printed 5/17/2022, 11:58 AM

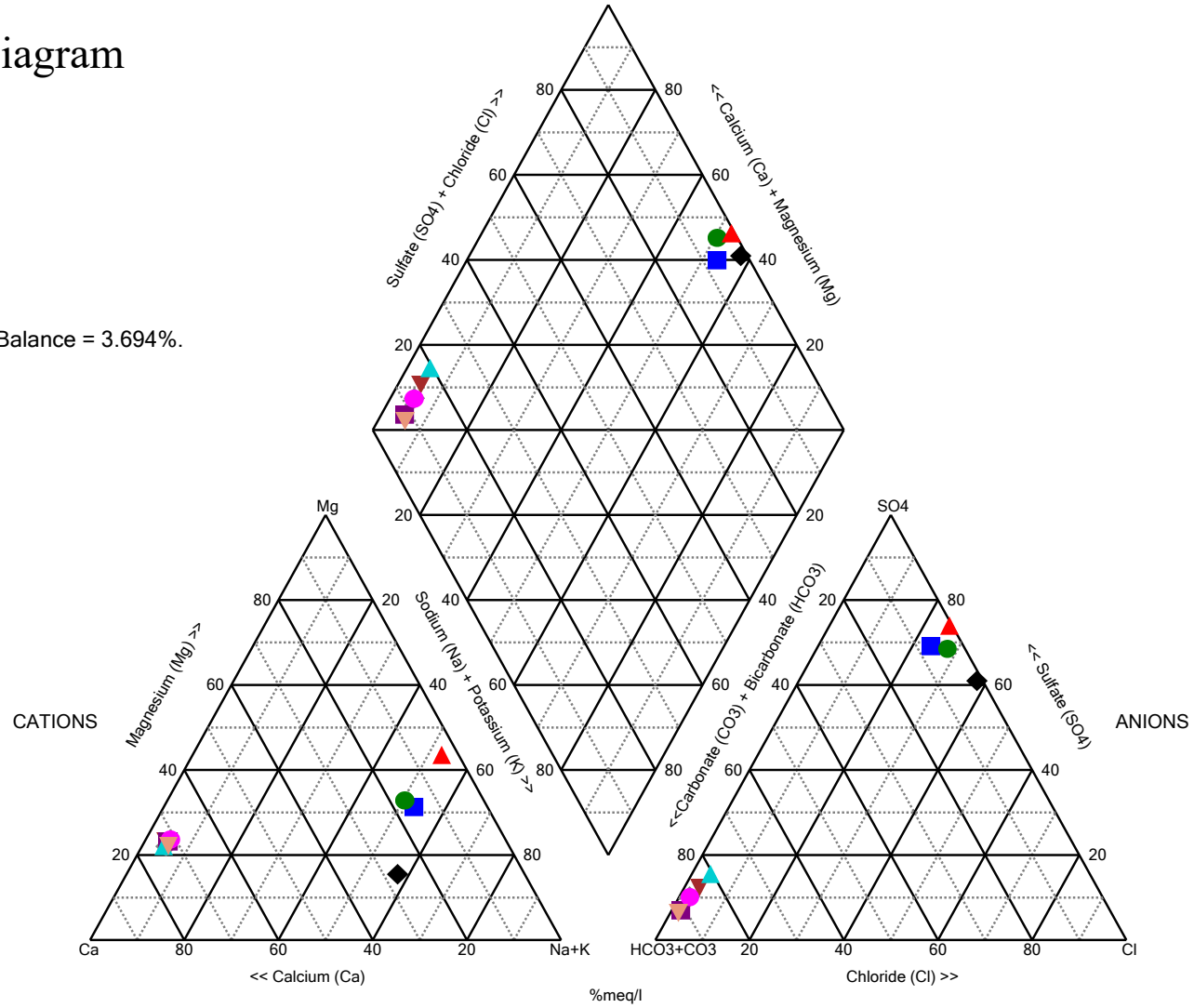
Constituent	Well	N	Mean	Std. Dev.	Std. Err.	Median	Min.	Max.	%NDs
Calcium (mg/L)	MW-1 (bg)	21	134.7	7.358	1.606	134	116	152	0
Calcium (mg/L)	MW-10	24	136.3	16.33	3.333	134.5	109	160	0
Calcium (mg/L)	MW-2 (bg)	19	166.3	6.147	1.41	167	146	177	0
Calcium (mg/L)	MW-6	22	148	12.18	2.597	147	131	188	0
Calcium (mg/L)	MW-7	22	147.5	27.18	5.795	139	112	199	0
Calcium (mg/L)	MW-8	22	146	14.04	2.993	141.5	127	178	0
Calcium (mg/L)	MW-9	19	109.8	7.729	1.773	108	97.2	123	0
Chloride (mg/L)	MW-1 (bg)	19	5.949	0.4733	0.1086	5.95	5.04	6.75	0
Chloride (mg/L)	MW-10	22	15.81	4.565	0.9733	16.6	7.47	22.5	0
Chloride (mg/L)	MW-2 (bg)	19	7.987	1.109	0.2544	8.24	5.79	9.54	0
Chloride (mg/L)	MW-6	23	1.607	0.3728	0.07774	1.49	1.2	2.75	0
Chloride (mg/L)	MW-7	22	11.36	10.83	2.309	6.335	1.54	31.9	0
Chloride (mg/L)	MW-8	23	5.42	3.85	0.8027	4.44	1.34	14.4	0
Chloride (mg/L)	MW-9	19	1.271	0.9994	0.2293	1.07	0.5	3.88	42.11
Dissolved Solids (mg/l)	MW-1 (bg)	19	493.6	19.43	4.457	493	457	537	0
Dissolved Solids (mg/l)	MW-10	17	619.6	299.8	72.71	534	474	1760	0
Dissolved Solids (mg/l)	MW-2 (bg)	17	650	38.24	9.275	651	585	711	0
Dissolved Solids (mg/l)	MW-6	19	520.1	38.18	8.76	522	437	619	0
Dissolved Solids (mg/l)	MW-7	21	554.2	114.8	25.05	513	439	761	0
Dissolved Solids (mg/l)	MW-8	21	514.4	50.56	11.03	505	426	640	0
Dissolved Solids (mg/l)	MW-9	17	422.7	32.63	7.913	415	384	476	0
Sulfate (mg/L)	MW-1 (bg)	17	31.82	4.248	1.03	33.2	22.3	36.9	0
Sulfate (mg/L)	MW-10	26	33.15	10.6	2.078	34.1	17.4	48.4	0
Sulfate (mg/L)	MW-2 (bg)	18	134.8	23.36	5.507	139.5	81.5	172	0
Sulfate (mg/L)	MW-6	20	30.05	6.77	1.514	31.15	20.1	46.9	0
Sulfate (mg/L)	MW-7	21	77.13	59.88	13.07	54.4	16.2	186	0
Sulfate (mg/L)	MW-8	20	46.05	21.64	4.838	42.9	17.3	91	0
Sulfate (mg/L)	MW-9	17	21.21	3.195	0.7749	21.1	15.9	26.2	0

Appendix B

Piper Diagram Plots and Analytical Results

Piper Diagram

Cation-Anion Balance = 3.694%.



LEACHATE 11/4/2019
LEACHATE 11/9/2016
LEACHATE 2/3/2017
LEACHATE 8/18/2016
MW-8 1/10/2019
MW-8 11/4/2019
MW-8 11/9/2016
MW-8 2/3/2017
MW-8 3/1/2022
MW-8 8/18/2016

Analysis Run 5/17/2022 12:46 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Piper Diagram

Analysis Run 5/17/2022 12:47 PM View: CCR LF III

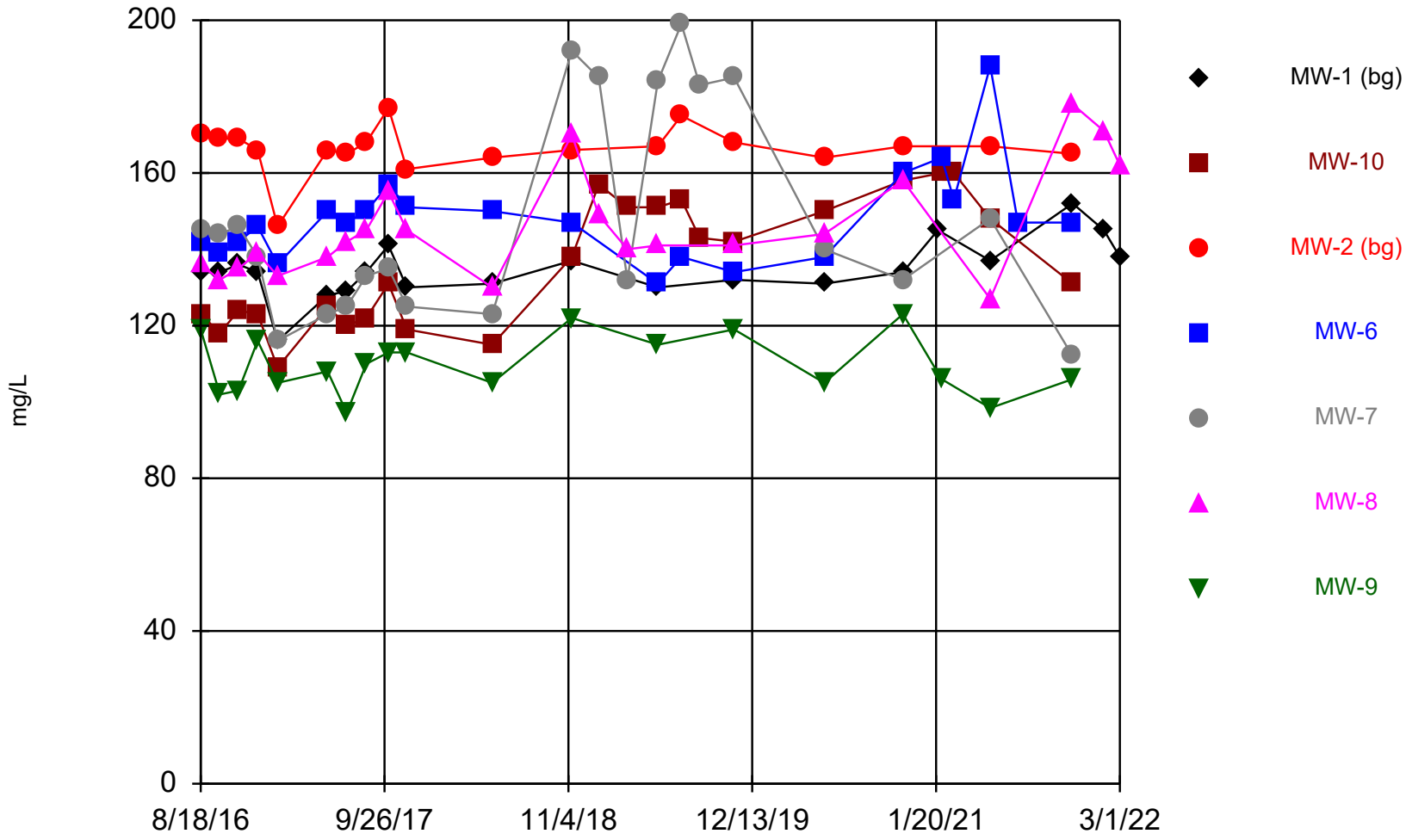
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Totals (ppm)	Na	K	Ca	Mg	Cl	SO4	HCO3	CO3
MW-8 8/18/2016	7.42	8.13	136	24.8	1.5	23.3	429	10
MW-8 11/9/2016	6.83	7.11	135	25.9	1.76	23.8	382	10
MW-8 2/3/2017	7.02	7.88	133	26.7	4.02	39.6	421	10
MW-8 1/10/2019	6.9	7.56	149	28.4	5.63	48.4	407	10
MW-8 11/4/2019	6.56	7.3	141	25.7	3.99	37.6	406	10
MW-8 3/1/2022	7.04	8.31	162	29.5	10.1	73.3	476	10
LEACHATE 8/18/2016	9250	689	573	4240	6990	28000	644	10
LEACHATE 11/9/2016	1230	90.7	334	398	876	3460	480	10
LEACHATE 2/3/2017	1880	121	560	671	1760	6070	505	10
LEACHATE 11/4/2019	1110	51.7	460	163	2340	5230	206	10

Appendix C

Time Series Plots

Time Series



Constituent: Calcium Analysis Run 5/17/2022 12:19 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Time Series

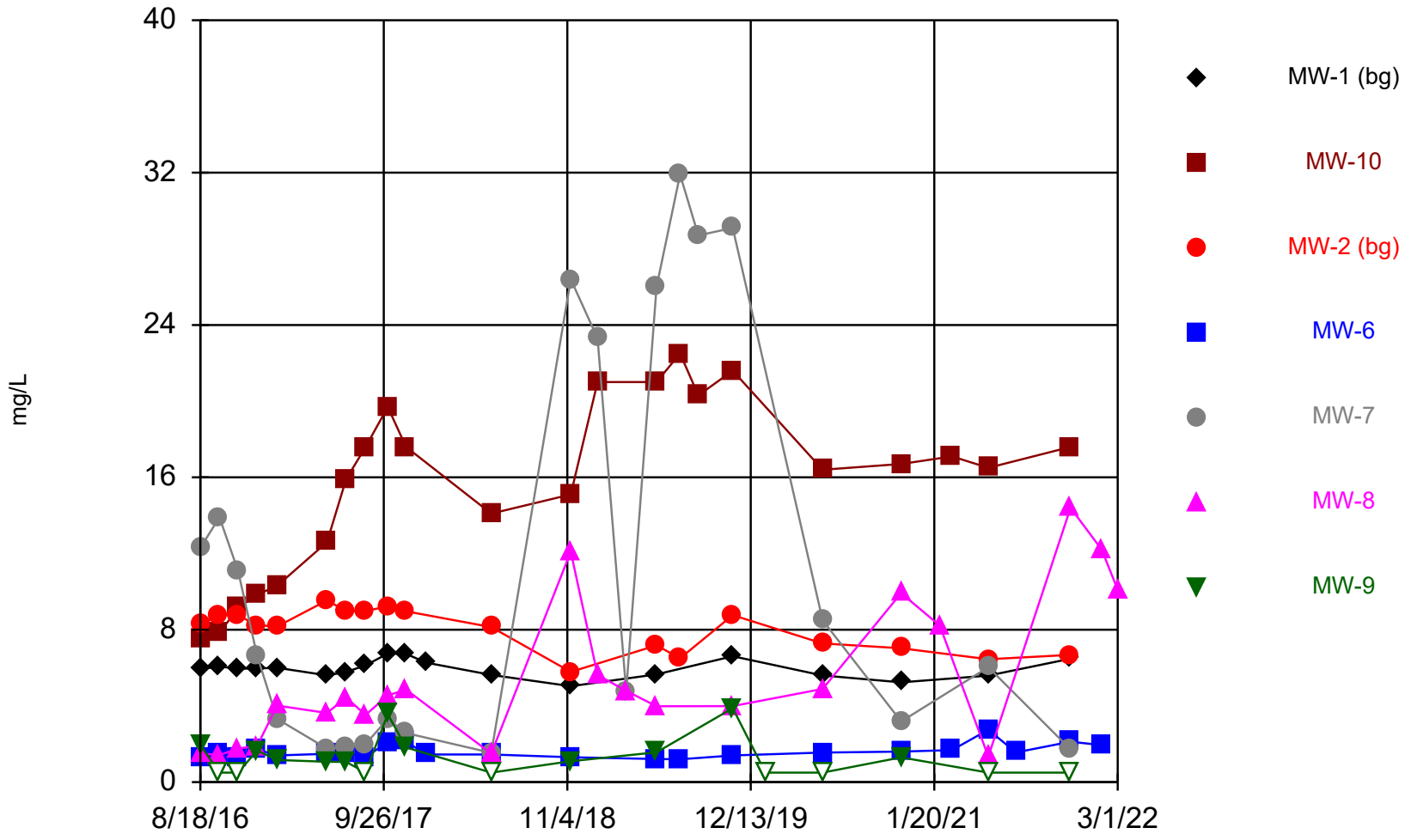
Constituent: Calcium (mg/L) Analysis Run 5/17/2022 12:22 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-1 (bg)	MW-10	MW-2 (bg)	MW-6	MW-7	MW-8	MW-9
8/18/2016	134	123	170	142	145	136	119
9/29/2016	134	118	169	139	144	132	102
11/9/2016	136	124	169	142	146	135	103
12/21/2016	134	123	166	146	138	139	116
2/3/2017	116	109	146	136	116	133	105
5/24/2017	128	125	166	150	123	138	108
7/5/2017	129	120	165	147	125	142	97.2
8/17/2017	134	122	168	150	133	145	110
10/5/2017	141	131	177	157	135	155	113
11/14/2017	130	119	161	151	125	145	113
5/21/2018	131	115	164	150	123	130	105
11/12/2018	137	138	166	147	192	170	122
1/10/2019		157			185	149	
3/14/2019		151			132	140	
5/20/2019	130	151	167	131	184	141	115
7/11/2019		153	175	138	199		
8/20/2019		143			183		
11/4/2019	132	142	168	134	185	141	119
5/20/2020	131	150	164	138	140	144	105
11/9/2020	134	158 (V)	167	160	132	158	123
1/25/2021	145						
2/2/2021		160		164			106
3/1/2021		160		153			
5/20/2021	137	148	167	188	148	127	98.4
7/20/2021				147			
11/17/2021	152	131	165	147	112	178	106
1/25/2022	145					171	
3/1/2022	138					162	

Sanitas™ v.9.6.32 Sanitas software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Time Series



Constituent: Chloride Analysis Run 5/17/2022 12:19 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

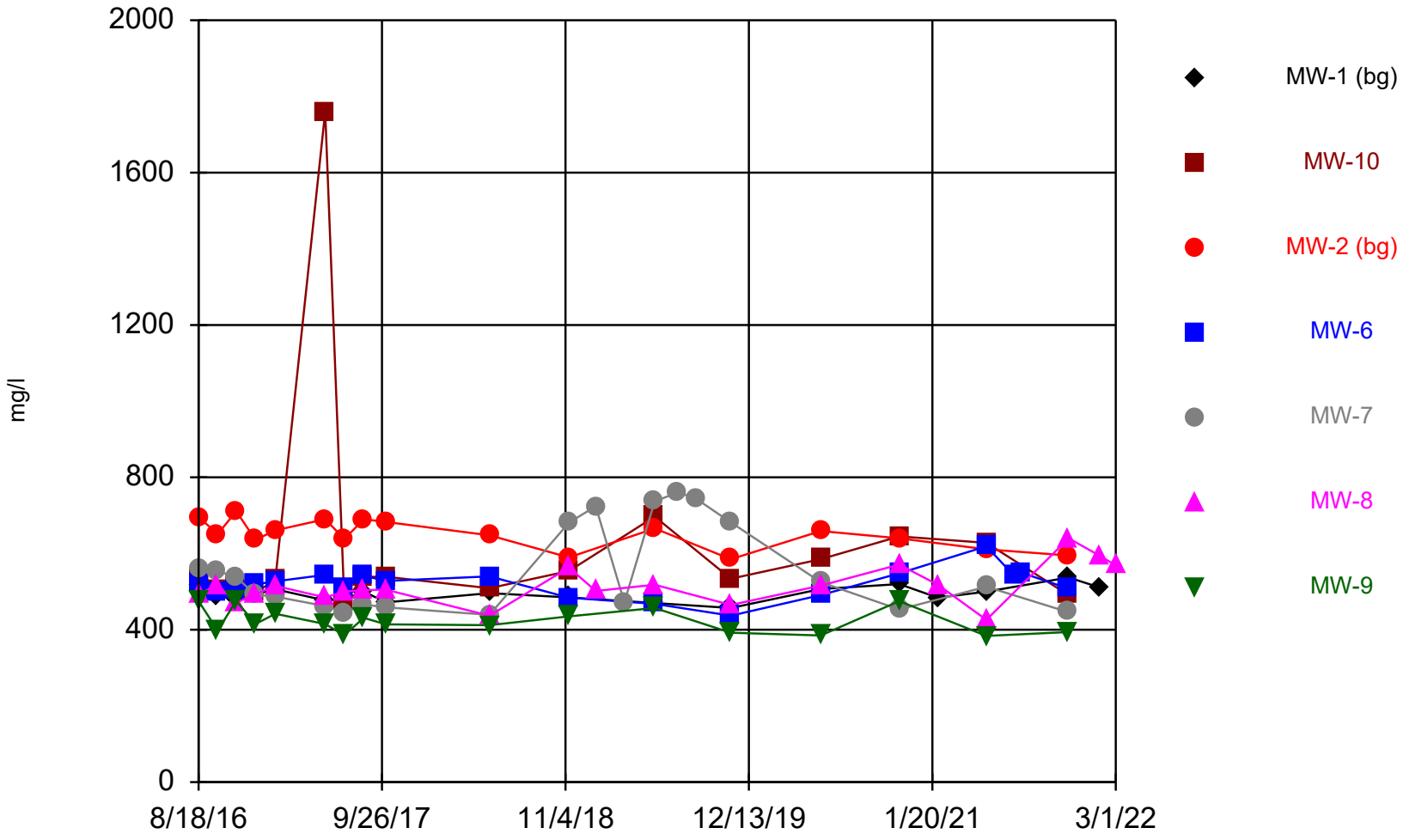
Time Series

Constituent: Chloride (mg/L) Analysis Run 5/17/2022 12:22 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-1 (bg)	MW-10	MW-2 (bg)	MW-6	MW-7	MW-8	MW-9
8/18/2016	5.93	7.47	8.26	1.31	12.3	1.5	1.95
9/29/2016	6.07	7.83	8.79	1.46	13.9	1.42	<1
11/9/2016	5.95	9.15	8.76	1.29	11.1	1.76	<1
12/21/2016	5.97	9.84	8.24	1.72	6.64	1.89	1.66
2/3/2017	6	10.3	8.17	1.4	3.32	4.02	1.16
5/24/2017	5.61	12.6	9.54	1.49	1.76	3.63	1.07
7/5/2017	5.78	15.9	8.99	1.54	1.81	4.44	1.06
8/17/2017	6.13	17.6	8.98	1.32	2	3.53	<1
10/5/2017	6.75	19.7	9.23	2.09	3.32	4.55	3.57
11/14/2017	6.73	17.6	8.97	2.12	2.58	4.86	1.82
12/29/2017	6.27			1.45			
5/21/2018	5.63	14.1	8.14	1.45	1.54	1.5	<1
11/12/2018	5.04	15.1	5.79	1.31	26.4	12.1	1.1
1/10/2019		21			23.3	5.63	
3/14/2019					4.77	4.79	
5/20/2019	5.66	21	7.18	1.21	26	3.98	1.57
7/11/2019		22.5	6.5	1.2	31.9		
8/20/2019		20.3			28.7		
11/4/2019	6.61	21.6	8.77	1.4	29.1	3.99	3.88
1/15/2020							<1
5/20/2020	5.6	16.4	7.28	1.55	8.49	4.89	<1
11/9/2020	5.24	16.7	7.03	1.6	3.18	9.92	1.3 (B)
2/2/2021						8.22	
3/1/2021		17.1		1.68			
5/20/2021	5.59	16.5	6.45	2.75	6.03	1.34	<1
7/20/2021				1.56			
11/17/2021	6.48	17.6	6.68	2.12	1.72	14.4	<1
1/25/2022				1.94		12.2	
3/1/2022						10.1	

Time Series



Constituent: Dissolved Solids Analysis Run 5/17/2022 12:19 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

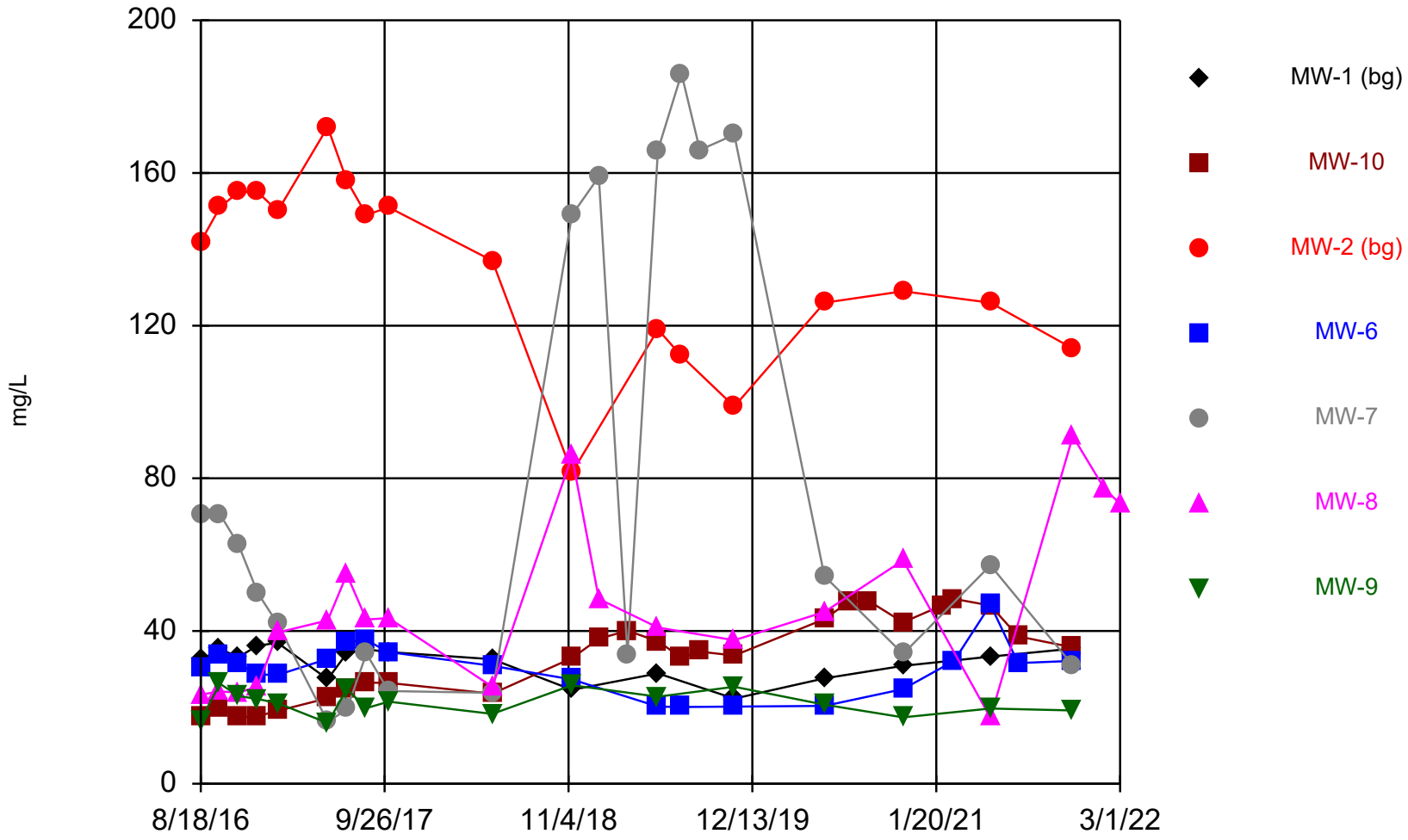
Time Series

Constituent: Dissolved Solids (mg/l) Analysis Run 5/17/2022 12:22 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-1 (bg)	MW-10	MW-2 (bg)	MW-6	MW-7	MW-8	MW-9
8/18/2016	513	532	696	522	560	494	475
9/29/2016	486	502	651	498	554	517	398
11/9/2016	484	516	711	506	538	471	476
12/21/2016	493	497	636	519	492	493	415
2/3/2017	506	531	661	527	487	515	442
5/24/2017	477	1760	690	544	462	485	415
7/5/2017	481	474	638	508	445	500	386
8/17/2017	500	539	690	542	466	504	431
10/5/2017	472	539	683	528	459	505	414
5/21/2018	496	509	648	540	439	437	412
11/12/2018	485	554	590	484	681	563	435
1/10/2019					724	502	
3/14/2019					472		
5/20/2019	470	697	666	468	737	518	457
7/11/2019					761		
8/20/2019					743		
11/4/2019	457	534	585	437	682	465	392
5/20/2020	507	585	659	491	525	516	385
11/9/2020	520	645	640	548	453	571	475
2/2/2021	484					518	
5/20/2021	500	628	611	619	513	426	384
7/20/2021				542			
8/4/2021				550			
11/17/2021	537	491	595	508	446	640	394
1/25/2022	511					594	
3/1/2022						569	

Time Series



Constituent: Sulfate Analysis Run 5/17/2022 12:19 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Time Series

Constituent: Sulfate (mg/L) Analysis Run 5/17/2022 12:22 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-1 (bg)	MW-10	MW-2 (bg)	MW-6	MW-7	MW-8	MW-9
8/18/2016	32.4	17.8	142	30.2	70.2	23.3	16.7
9/29/2016	35.3	19.7	151	33.5	70.6	24.2	26.2
11/9/2016	33.2	17.4	155	31.4	62.6	23.8	23
12/21/2016	36.2	17.7	155	28.6	50	25.5	22.2
2/3/2017	36.9	19.1	150	28.5	41.9	39.6	21.1
5/24/2017	27.4	22.4	172	32.7	16.2	42.8	15.9
7/5/2017	34.2	24.7	158	37.2	19.5	54.8	24.8
8/17/2017	35.2	26.5	149	37.6	34.1	43	19.8
10/5/2017	34.5	26.4	151	34.5	24.3	43.4	21.5
5/21/2018	32.6	23.6	137	30.9	23.8	25.4	18.3
11/12/2018	24.6	32.9	81.5	27.3	149	85.8	25.8
1/10/2019		38			159	48.4	
3/14/2019		40.1			33.9		
5/20/2019	28.9	37.3	119	20.2	166	40.9	22.8
7/11/2019		33	112	20.1	186		
8/20/2019		34.6			166		
11/4/2019	22.3	33.6	98.8	20.2	170	37.6	25.4
5/20/2020	27.6	43.1	126	20.4	54.4	45	20.7
7/13/2020		47.7					
8/25/2020		47.9					
11/9/2020	30.9	42.3	129	24.8	34	58.5	17.4
2/2/2021		46.7					
3/1/2021		48.4		32.2			
5/20/2021	33.3	46.7	126	46.9	57.2	17.3	19.7
7/20/2021		38.6		31.6			
11/17/2021	35.4	35.7	114	32.2	31	91	19.2
1/25/2022						77.4	
3/1/2022						73.3	

APPENDIX C.2

CCR Groundwater Monitoring Alternative Source Demonstration Report May 2022
Groundwater Monitoring Event, CCR Landfill, Iatan Generating Station
(December 2022)

CCR GROUNDWATER MONITORING ALTERNATIVE SOURCE DEMONSTRATION REPORT MAY 2022 GROUNDWATER MONITORING EVENT

CCR LANDFILL

Iatan Generating Station
Evergy Metro, Inc.
Platte County, Missouri

SCS ENGINEERS

December 2022
File No. 27213167.22

8575 W. 110th Suite 100
Overland Park, KS 66210
913-749-0700

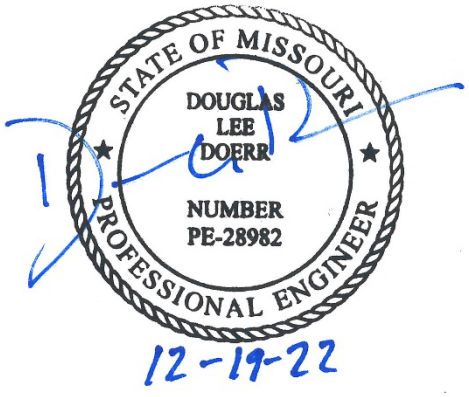
CERTIFICATIONS

I, John R. Rockhold, being a qualified groundwater scientist and Registered Geologist in the State of Missouri, do hereby certify the accuracy of the information in the CCR Groundwater Monitoring Alternative Source Demonstration Report for the CCR Landfill at the Iatan Generating Station. The Alternative Source Demonstration was prepared by me or under my direct supervision in accordance with generally accepted hydrogeological practices and the local standard of care.

John R. Rockhold, R.G.

SCS Engineers

I, Douglas L. Doerr, being a qualified licensed Professional Engineer in the State of Missouri, do hereby certify the accuracy of the information in the CCR Groundwater Monitoring Alternative Source Demonstration Report for the CCR Landfill at the Iatan Generating Station. The Alternative Source Demonstration was prepared by me or under my direct supervision in accordance with generally accepted engineering practices and the local standard of care.



Douglas L. Doerr, P.E.

SCS Engineers

Table of Contents

Section **Page**

Appendices

1 REGULATORY FRAMEWORK

Certain owners or operators of Coal Combustion Residuals (CCR) units are required to complete groundwater monitoring activities to evaluate whether a release from the unit has occurred. Included in the activities is the completion of a statistical analysis of the groundwater quality data as prescribed in § 257.93(h) of the CCR Final Rule. If the initial analysis indicates a statistically significant increase (SSI) over background levels, the owner or operator may perform an alternative source demonstration (ASD). In accordance with § 257.94(e)(2), the owner or operator of the CCR unit may demonstrate that a source other than the CCR unit caused the SSI over background levels for a constituent, or that the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. The owner or operator must complete the written demonstration within 90 days of detecting a SSI over background levels to include obtaining a certification from a qualified professional engineer verifying the accuracy of the information in the report. If a successful demonstration is completed within the 90-day period, the owner or operator of the CCR unit may continue with a detection monitoring program under § 257.94. If a successful demonstration is not completed within the 90-day period, the owner or operator of the CCR unit must initiate an assessment monitoring program as required under § 257.95. The owner or operator must also include the demonstration in the annual groundwater monitoring and corrective action report required by § 257.90(e), in addition to the certification by a qualified professional engineer.

2 STATISTICAL RESULTS

Statistical analysis of monitoring data from the groundwater monitoring system for the CCR Landfill at the Iatan Generating Station has been completed in substantial compliance with the "Statistical Method Certification by A Qualified Professional Engineer" dated October 12, 2017. Groundwater samples were collected on May 11, 2022. Review and validation of the results from the May 2022 Detection Monitoring Event was completed on July 1, 2022, which constitutes completion and finalization of detection monitoring laboratory analyses. Statistical analysis was then conducted to determine whether there was a statistically significant increase (SSI) over background values for each constituent listed in Appendix III to Part 257-Constituents for Detection Monitoring. Two rounds of verification sampling were conducted for certain constituents on July 14, 2022 and August 17, 2022.

The completed statistical evaluation identified one Appendix III constituent above its prediction limit established for monitoring well MW-1.

Monitoring Well Constituents	*UPL	Observation May 11, 2022	1st Verification July 14, 2022	2nd Verification August 17, 2022
MW-1				
Sulfate	39.35	41.8	40.7	40.6

*UPL – Upper Prediction Limit

Determination: A statistical evaluation was completed for all Appendix III detection monitoring constituents in accordance with the certified statistical method. The statistical evaluation identified an SSI above the background prediction limit for sulfate at monitoring well MW-1.

3 ALTERNATIVE SOURCE DEMONSTRATION

An Alternative Source Demonstration (ASD) is a means to provide supporting lines of evidence that something other than a release from a regulated CCR unit caused an SSI. For the above identified SSI for the CCR Landfill at the Iatan Generating Station, there are multiple lines of supporting evidence to indicate the above SSIs were not caused by a release from the CCR Landfill. Select multiple lines of supporting evidence are described as follows.

3.1 BOX AND WHISKERS PLOTS

A commonly accepted method to demonstrate and visualize the distribution of data in a given data set is to construct box and whiskers plots. The basic box plotted graphically locates the median, 25th and 75th percentiles of the data set; the "whiskers" extend to the minimum and maximum values of the data set. The range between the ends of a box plot represents the Interquartile Range, which can be used as an estimate of spread or variability. The mean is denoted by a "+".

When comparing multiple wells or well groups, box plots for each well can be lined up on the same axis to roughly compare the variability in each well. This may be used as an exploratory screening for the test of homogeneity of variance across multiple wells.

Box and whiskers plots for all of the groundwater monitoring system wells were prepared to allow comparison of the sulfate concentrations between MW-1 and the other monitoring wells both upgradient and downgradient. The sulfate box and whiskers plot for MW-1 indicates the sulfate concentrations at MW-1 are within or below the concentration ranges for the other wells including typically upgradient well MW-2. This demonstrates that a source other than the CCR Landfill caused the SSI over background levels, or that the SSI resulted from natural variation in groundwater quality. Box and whisker plots are provided in **Appendix A**.

3.2 PIPER DIAGRAM PLOTS

Piper diagrams are a form of tri-linear diagram, and a widely-accepted method to provide a visual representation of the ion concentration of groundwater. Piper diagrams portray water compositions and facilitate the interpretation and presentation of chemical analyses. They may be used to visually compare the chemical composition of water quality across wells, and aid in determining whether the waters are similar or dis-similar, and can over time indicate whether the waters are mixing.

A piper diagram has two triangular plots on the right and left side of a 4-sided center field. The three major cations are plotted in the left triangle and anions in the right. Each of the three cation/anion variables, in milliequivalents, is divided by the sum of the three values, to produce a percent of total cation/anions. These percentages determine the location of the associated symbol. The data points in the center field are located by extending the points in the lower triangles to the point of intersection. In order for a piper diagram to be produced, the selected data file must contain the following constituents: Sodium (Na), Potassium (K), Calcium (Ca), Magnesium (Mg), Chloride (Cl), Sulfate (SO_4), Carbonate (CO_3), and Bicarbonate (HCO_3).

A piper diagram generated for MW-1 and leachate is provided in **Appendix B** along with analytical results. The piper diagram indicates the groundwater from monitoring well MW-1 does not plot near where the

leachate plots and is not trending toward the leachate over time. This analysis indicates that the groundwater from MW-1 does not exhibit the same geochemical characteristics as the leachate. The groundwater and the leachate plot in different hydrochemical facies indicating there is no mixing of the two types of water (groundwater and leachate). This demonstrates that a source other than the CCR Landfill caused the SSI over background levels or that the SSI resulted from natural variation in groundwater quality.

3.3 TIME SERIES PLOTS

Time series plots provide a graphical method to view changes in data at a particular well (monitoring point) or wells over time. Time series plots display the variability in concentration levels over time and can be used to indicate possible outliers or data errors (i.e. "spikes"). More than one well can be compared on the same plot to look for differences between wells. Non-detect data is plotted as censored data at one-half of the laboratory reporting limit. Time series plots can also be used to examine the data for trends.

The time series plots for sulfate at monitoring well MW-1 were compared to the time series plot for sulfate at the other monitoring wells both upgradient and downgradient. The sulfate time series plot for MW-1 indicates the sulfate concentrations at MW-1 are within or below the concentration ranges for the other wells including typically upgradient well MW-2. This demonstrates that a source other than the CCR Landfill caused the SSI over background levels, or that the SSI resulted from natural variation in groundwater quality. Time series plots are provided in **Appendix C**.

4 CONCLUSION

Our opinion is that a sufficient body of evidence is available and presented above to demonstrate that a source other than the CCR Landfill caused the SSI over background levels, or that the SSI resulted from natural variation in groundwater quality. Based on the successful ASD, the owner or operator of the CCR Landfill may continue with the detection monitoring program under § 257.94.

5 GENERAL COMMENTS

This report has been prepared and reviewed under the direction of a qualified groundwater scientist and qualified professional engineer. Please note that SCS Engineers does not warrant the work of regulatory agencies or other third parties supplying information used in the assimilation of this report. This report is prepared in accordance with generally accepted environmental engineering and geological practices, within the constraints of the client's directives. It is intended for the exclusive use of Evergy Metro, Inc. for specific application to the Iatan Generating Station. No warranties, express or implied, are intended or made.

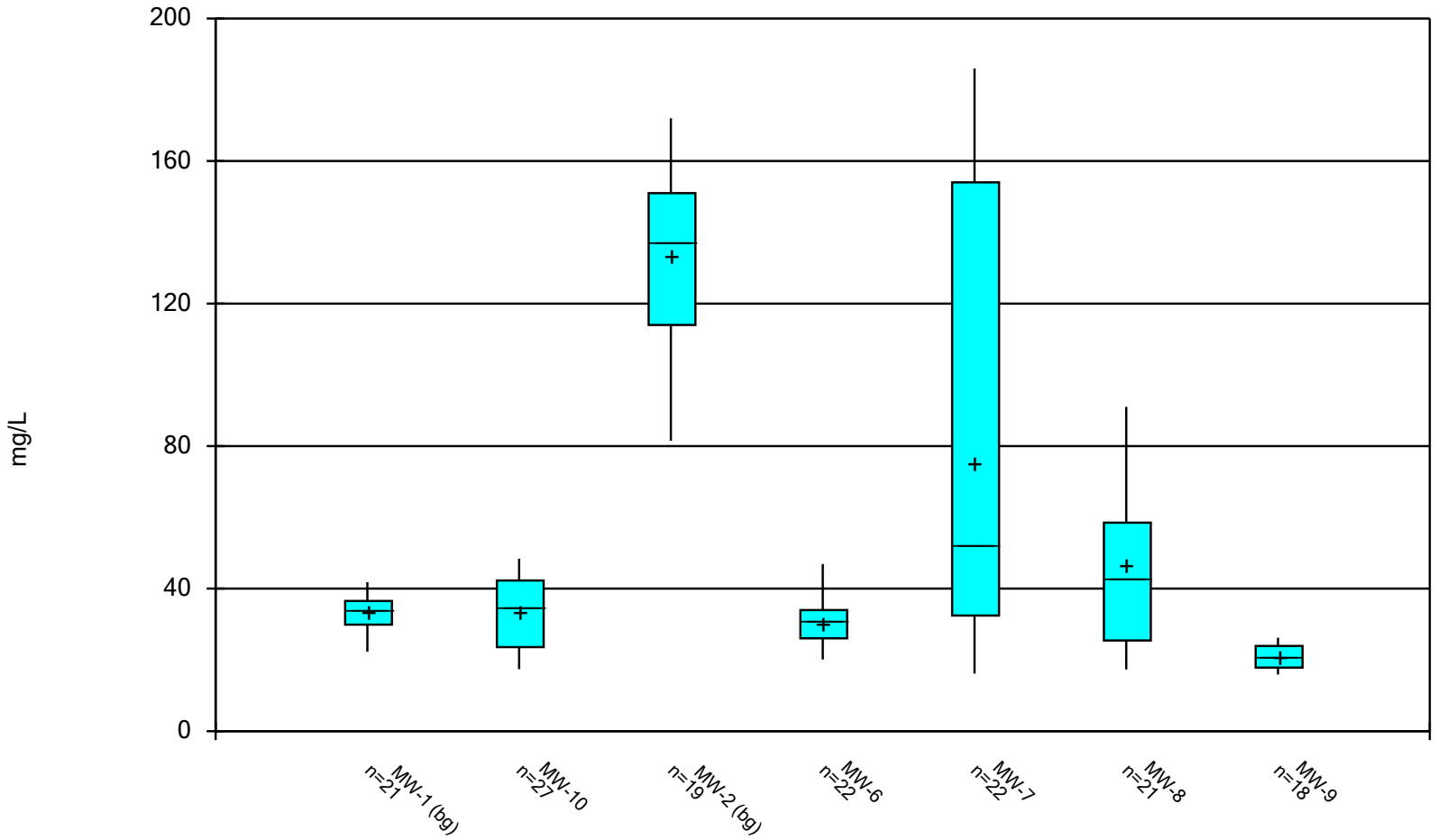
The signatures of the certifying registered geologist and professional engineer on this document represents that to the best of their knowledge, information, and belief in the exercise of their professional judgement in accordance with the standard of practice, it is their professional opinions that the aforementioned information is accurate as of the date of such signatures. Any opinion or decisions by them are made on the basis of their experience, qualifications, and professional judgement and are not to be construed as warranties or guaranties. In addition, opinions relating to regulatory, environmental,

geologic, geochemical and geotechnical conditions interpretations or other estimates are based on available data, and actual conditions may vary from those encountered at the times and locations where data are obtained, despite the use of due care.

Appendix A

Box and Whiskers Plots

Box & Whiskers Plot



Constituent: Sulfate Analysis Run 11/26/2022 10:04 AM View: CCR LF A3

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr - Copy

Box & Whiskers Plot

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr - Copy Printed 11/26/2022, 10:05 AM

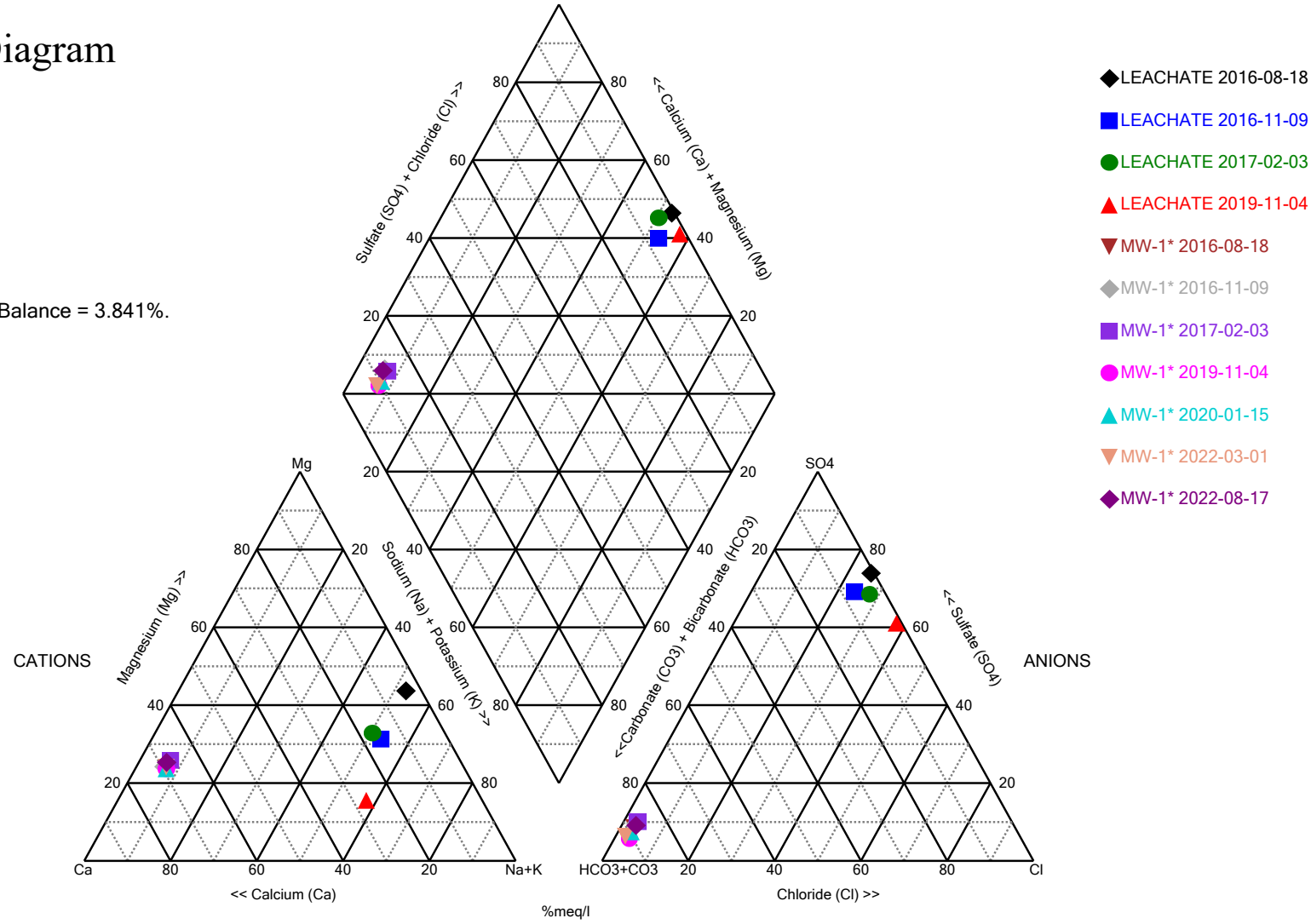
Constituent	Well	N	Mean	Std. Dev.	Std. Err.	Median	Min.	Max.	%NDs
Sulfate (mg/L)	MW-1 (bg)	21	33.54	5.264	1.149	34.2	22.3	41.8	0
Sulfate (mg/L)	MW-10	27	33.23	10.4	2.001	34.6	17.4	48.4	0
Sulfate (mg/L)	MW-2 (bg)	19	133.4	23.46	5.383	137	81.5	172	0
Sulfate (mg/L)	MW-6	22	30.51	6.759	1.441	31.15	20.1	46.9	0
Sulfate (mg/L)	MW-7	22	75.48	58.94	12.57	52.2	16.2	186	0
Sulfate (mg/L)	MW-8	21	46.64	21.26	4.64	43	17.3	91	0
Sulfate (mg/L)	MW-9	18	20.98	3.247	0.7653	20.9	15.9	26.2	0

Appendix B

Piper Diagram Plots and Analytical Results

Piper Diagram

Cation-Anion Balance = 3.841%.



Analysis Run 11/26/2022 10:18 AM View: CCR LF A3

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr - Copy

Piper Diagram

Analysis Run 11/26/2022 10:19 AM View: CCR LF A3

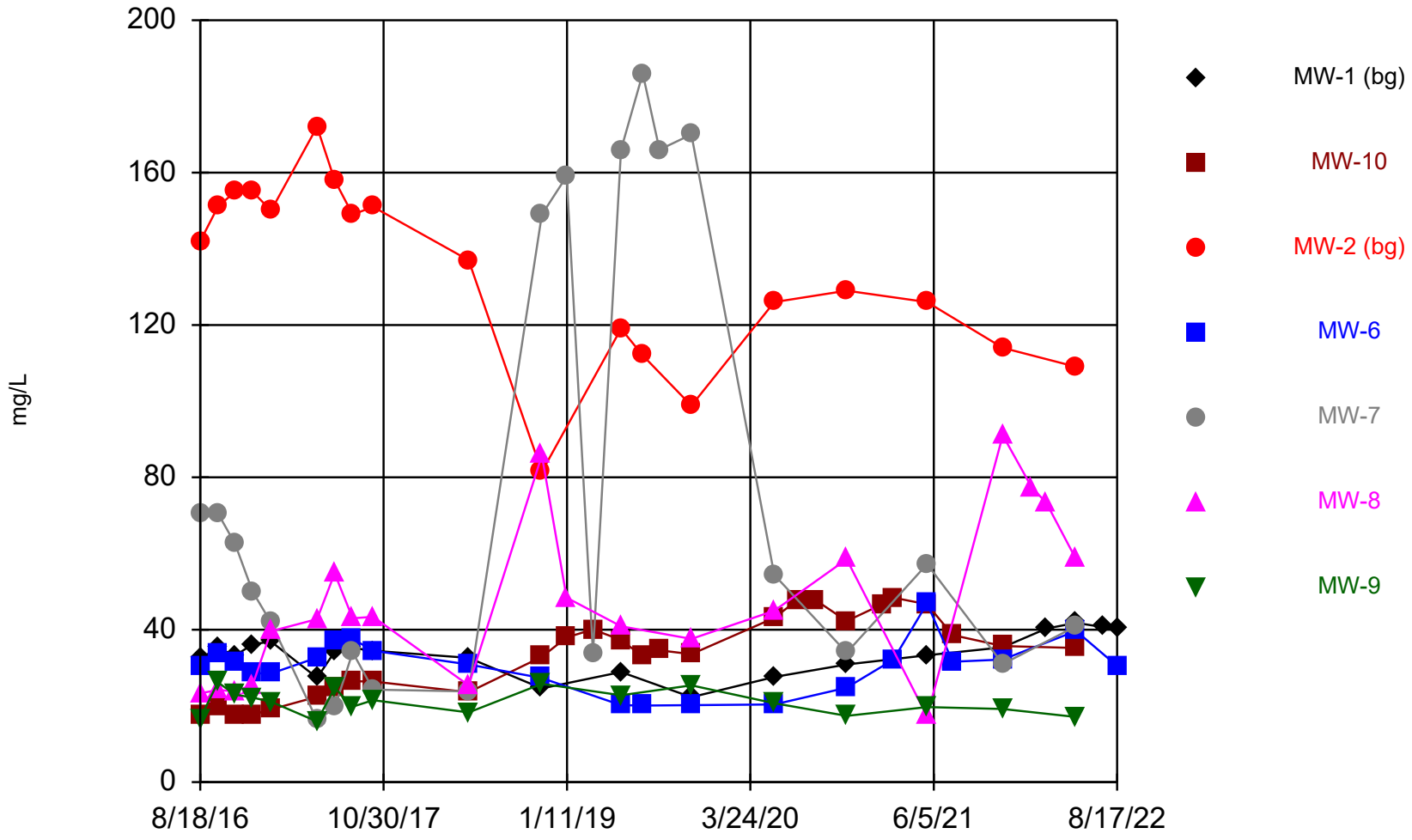
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr - Copy

Totals (ppm)	Na	K	Ca	Mg	Cl	SO4	HCO3	CO3
MW-1* 2016-08-18	11.7	6.56	134	27.4	5.93	32.4	436	10
MW-1* 2016-11-09	11.1	6	136	28.4	5.95	33.2	383	10
MW-1* 2017-02-03	11	5.93	116	26.8	6	36.9	394	10
MW-1* 2019-11-04	11.8	6.49	132	27	6.61	22.3	420	10
MW-1* 2020-01-15	11.6	6.17	129	26.7	5.32	27.3	406	10
MW-1* 2022-03-01	11.7	6.64	138	29.2	6.01	40.3	742	10
MW-1* 2022-08-17	11.3	7.46	141	31.6	6.38	40.6	480	10
LEACHATE 2016-08-18	9250	689	573	4240	6990	28000	644	10
LEACHATE 2016-11-09	1230	90.7	334	398	876	3460	480	10
LEACHATE 2017-02-03	1880	121	560	671	1760	6070	505	10
LEACHATE 2019-11-04	1110	51.7	460	163	2340	5230	206	10

Appendix C

Time Series Plots

Time Series



Constituent: Sulfate Analysis Run 11/26/2022 10:06 AM View: CCR LF A3

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr - Copy

Time Series

Constituent: Sulfate (mg/L) Analysis Run 11/26/2022 10:07 AM View: CCR LF A3

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr - Copy

	MW-1 (bg)	MW-10	MW-2 (bg)	MW-6	MW-7	MW-8	MW-9
8/18/2016	32.4	17.8	142	30.2	70.2	23.3	16.7
9/29/2016	35.3	19.7	151	33.5	70.6	24.2	26.2
11/9/2016	33.2	17.4	155	31.4	62.6	23.8	23
12/21/2016	36.2	17.7	155	28.6	50	25.5	22.2
2/3/2017	36.9	19.1	150	28.5	41.9	39.6	21.1
5/24/2017	27.4	22.4	172	32.7	16.2	42.8	15.9
7/5/2017	34.2	24.7	158	37.2	19.5	54.8	24.8
8/17/2017	35.2	26.5	149	37.6	34.1	43	19.8
10/5/2017	34.5	26.4	151	34.5	24.3	43.4	21.5
5/21/2018	32.6	23.6	137	30.9	23.8	25.4	18.3
11/12/2018	24.6	32.9	81.5	27.3	149	85.8	25.8
1/10/2019		38			159	48.4	
3/14/2019		40.1			33.9		
5/20/2019	28.9	37.3	119	20.2	166	40.9	22.8
7/11/2019		33	112	20.1	186		
8/20/2019		34.6			166		
11/4/2019	22.3	33.6	98.8	20.2	170	37.6	25.4
5/20/2020	27.6	43.1	126	20.4	54.4	45	20.7
7/13/2020		47.7					
8/25/2020		47.9					
11/9/2020	30.9	42.3	129	24.8	34	58.5	17.4
2/2/2021		46.7					
3/1/2021		48.4		32.2			
5/20/2021	33.3	46.7	126	46.9	57.2	17.3	19.7
7/20/2021		38.6		31.6			
11/17/2021	35.4	35.7	114	32.2	31	91	19.2
1/25/2022						77.4	
3/1/2022	40.3					73.3	
5/11/2022	41.8	35.2	109	39.7	40.9	58.5	17.1
7/14/2022	40.7						
8/17/2022	40.6			30.5			

APPENDIX D

LABORATORY ANALYTICAL REPORTS

- January 2022 – First verification sampling for the Fall 2021 detection monitoring event.
- March 2022 – Second verification sampling for the Fall 2021 detection monitoring event.
- May 2022 – Spring 2022 semiannual detection monitoring sampling event.
- July 2022 – First verification sampling for the Spring 2022 detection monitoring sampling event.
- August 2022 - Second verification sampling for Spring 2022 detection monitoring sampling event.
- November 2022 - Fall 2022 semiannual detection monitoring sampling event.

ANALYTICAL REPORT

February 03, 2022

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

SCS Engineers - KS

Sample Delivery Group:	L1455133
Samples Received:	01/26/2022
Project Number:	27213167.21 - L
Description:	KCP&L Iatan Generating Station

Report To: Jason Franks
8575 W. 110th Street
Overland Park, KS 66210

Entire Report Reviewed By:

Jeff Carr
Project Manager

Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

MW-6 L1455133-01 GW

Collected by: Jason R Franks | Collected date/time: 01/25/22 11:35 | Received date/time: 01/26/22 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1809245	1	01/27/22 22:43	01/27/22 22:43	LBR	Mt. Juliet, TN

MW-8 L1455133-02 GW

Collected by: Jason R Franks | Collected date/time: 01/25/22 14:00 | Received date/time: 01/26/22 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1809051	1	01/27/22 15:03	01/27/22 17:32	BRG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1809245	1	01/27/22 22:56	01/27/22 22:56	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1811040	1	02/01/22 23:17	02/02/22 16:31	KMG	Mt. Juliet, TN

DUPLICATE L1455133-03 GW

Collected by: Jason R Franks | Collected date/time: 01/25/22 10:40 | Received date/time: 01/26/22 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1809075	1	01/27/22 17:35	01/27/22 18:26	BRG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1809245	1	01/27/22 23:35	01/27/22 23:35	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1811040	1	02/01/22 23:17	02/02/22 17:24	KMG	Mt. Juliet, TN

MW-1 L1455133-04 GW

Collected by: Jason R Franks | Collected date/time: 01/25/22 10:05 | Received date/time: 01/26/22 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1809075	1	01/27/22 17:35	01/27/22 18:26	BRG	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1811040	1	02/01/22 23:17	02/02/22 17:27	KMG	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Jeff Carr
Project Manager

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	1940		1000	1	01/27/2022 22:43	WG1809245

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	594000		10000	1	01/27/2022 17:32	WG1809051

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	12200		1000	1	01/27/2022 22:56	WG1809245
Sulfate	77400		5000	1	01/27/2022 22:56	WG1809245

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Calcium	171000		1000	1	02/02/2022 16:31	WG1811040

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	590000		10000	1	01/27/2022 18:26	WG1809075

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	12300		1000	1	01/27/2022 23:35	WG1809245
Sulfate	78200		5000	1	01/27/2022 23:35	WG1809245

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Calcium	171000		1000	1	02/02/2022 17:24	WG1811040

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	511000		10000	1	01/27/2022 18:26	WG1809075

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Calcium	145000		1000	1	02/02/2022 17:27	WG1811040

Method Blank (MB)

(MB) R3754915-1 01/27/22 17:32

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Dissolved Solids	U		10000	10000

L1454492-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1454492-04 01/27/22 17:32 • (DUP) R3754915-3 01/27/22 17:32

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	478000	499000	1	4.30		5

L1454492-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1454492-05 01/27/22 17:32 • (DUP) R3754915-4 01/27/22 17:32

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	672000	688000	1	2.35		5

Laboratory Control Sample (LCS)

(LCS) R3754915-2 01/27/22 17:32

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	2460000	2220000	90.2	77.4-123	

QUALITY CONTROL SUMMARY

L1455133-03,04

Method Blank (MB)

(MB) R3754910-1 01/27/22 18:26

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Dissolved Solids	U		10000	10000

L1454864-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1454864-01 01/27/22 18:26 • (DUP) R3754910-3 01/27/22 18:26

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	724000	721000	1	0.369		5

Laboratory Control Sample (LCS)

(LCS) R3754910-2 01/27/22 18:26

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	2460000	2330000	94.7	77.4-123	

Method Blank (MB)

(MB) R3754584-1 01/27/22 19:56

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Chloride	U		379	1000
Sulfate	U		594	5000

L1454498-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1454498-02 01/27/22 20:22 • (DUP) R3754584-3 01/27/22 20:35

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	8110	8130	5	0.270		15
Sulfate	109000	111000	5	2.44		15

L1455400-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1455400-01 01/28/22 02:47 • (DUP) R3754584-6 01/28/22 03:00

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	3110	3150	1	1.08		15
Sulfate	28900	29400	1	1.71		15

Laboratory Control Sample (LCS)

(LCS) R3754584-2 01/27/22 20:09

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40000	40200	101	80.0-120	
Sulfate	40000	40700	102	80.0-120	

L1455133-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1455133-02 01/27/22 22:56 • (MS) R3754584-4 01/27/22 23:09 • (MSD) R3754584-5 01/27/22 23:22

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	12200	67300	65800	110	107	1	80.0-120			2.22	15
Sulfate	50000	77400	130000	127000	106	99.3	1	80.0-120	E	E	2.56	15

L1455400-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1455400-01 01/28/22 02:47 • (MS) R3754584-7 01/28/22 03:38

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	3110	54900	104	1	80.0-120	
Sulfate	50000	28900	78900	99.9	1	80.0-120	

Method Blank (MB)

(MB) R3756335-1 02/02/22 16:25

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Calcium	U		79.3	1000

Laboratory Control Sample (LCS)

(LCS) R3756335-2 02/02/22 16:28

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Calcium	10000	9310	93.1	80.0-120	

L1455133-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1455133-02 02/02/22 16:31 • (MS) R3756335-4 02/02/22 16:36 • (MSD) R3756335-5 02/02/22 16:39

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Calcium	10000	171000	178000	179000	78.5	81.6	1	75.0-125			0.173	20

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Company Name/Address:
SCS Engineers - KS

8575 W. 110th Street
Overland Park, KS 66210

Billing Information:
Accounts Payable
8575 W. 110th Street
Overland Park, KS 66210

Pres Chk

Analysis / Container / Preservative

Chain of Custody Page 1 of 1

Pace
PEOPLE ADVANCING SCIENCE

MT JULIET, TN

12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

Report to:
Jason Franks

Email To:
jfranks@scsengineers.com;jay.martin@evergy.c

Project Description:
KCP&L Iatan Generating Station

City/State Collected: WESTON MO

Please Circle: PT MT CT ET

Phone: **913-681-0030**

Client Project #
27213167.21 - L

Lab Project #
AQUAOPKS-IATAN

SDG # L1455133

Tab C053

Collected by (print):
JASON R. FRANKS

Site/Facility ID #

P.O. #

Collected by (signature):

Quote #

Acctnum: **AQUAOPKS**

Template:**T152916**

Prelogin: **P900446**

PM: **206 - Jeff Carr**

PB:

Shipped Via:

Immediately Packed on Ice N ___ Y ___

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Date Results Needed

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Ca - 6010 250mlHDPE-HNO3	Chloride 125mlHDPE-NoPres	Chloride, SO4 125mlHDPE-NoPres	TDS 250mlHDPE-NoPres	Remarks	Sample # (lab only)
MW-6	GRAB	GW	-	01/25/22	1135	1		X				-01
MW-8		GW	-		1040	3	X		X	X		-02
DUPLICATE		GW	-		1040	3	X		X	X		-03
MW-8 MS/MSD		GW	-		1040	3	X		X			-02
MW-1		GW	-		1005	2	X			X		-04

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other _____

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking # 5300 4291 1358

Sample Receipt Checklist

COC Seal Present/Intact:	NP	Y N
COC Signed/Accurate:		Y N
Bottles arrive intact:		Y N
Correct bottles used:		Y N
Sufficient volume sent:		Y N
If Applicable		
VOA Zero Headspace:		Y N
Preservation Correct/Checked:		Y N
RAD Screen <0.5 mR/hr:		Y N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	If preservation required by Login: Date/Time
	01/25/22	1400			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 3.5 °C Bottles Received: 10	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 1/26/22 Time: 915	Hold: / Condition: NCF / OK

ANALYTICAL REPORT

March 10, 2022

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

SCS Engineers - KS

Sample Delivery Group:	L1466975
Samples Received:	03/02/2022
Project Number:	27213167.21 - L
Description:	KCP&L Iatan Generating Station

Report To: Jason Franks
8575 W. 110th Street
Overland Park, KS 66210

Entire Report Reviewed By:

Jeff Carr
Project Manager

Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

SAMPLE SUMMARY

MW-1 L1466975-01 GW

Collected by: Jason R Franks
Collected date/time: 03/01/22 10:45
Received date/time: 03/02/22 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG1826656	1	03/03/22 22:56	03/05/22 20:55	ZSA	Mt. Juliet, TN

MW-8 L1466975-02 GW

Collected by: Jason R Franks
Collected date/time: 03/01/22 11:25
Received date/time: 03/02/22 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1828689	1	03/07/22 17:31	03/07/22 18:35	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1827131	1	03/03/22 22:23	03/03/22 22:23	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1826688	1	03/06/22 23:25	03/07/22 13:09	ZSA	Mt. Juliet, TN

DUPLICATE L1466975-03 GW

Collected by: Jason R Franks
Collected date/time: 03/01/22 11:25
Received date/time: 03/02/22 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1828689	1	03/07/22 17:31	03/07/22 18:35	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1827131	1	03/03/22 23:07	03/03/22 23:07	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1826656	1	03/03/22 22:56	03/05/22 20:58	ZSA	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Jeff Carr
Project Manager

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Calcium	138000		1000	1	03/05/2022 20:55	WG1826656

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	569000		10000	1	03/07/2022 18:35	WG1828689

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	10100		1000	1	03/03/2022 22:23	WG1827131
Sulfate	73300	J6	5000	1	03/03/2022 22:23	WG1827131

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Calcium	162000	O1	1000	1	03/07/2022 13:09	WG1826688

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	568000		10000	1	03/07/2022 18:35	WG1828689

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	9960		1000	1	03/03/2022 23:07	WG1827131
Sulfate	73200		5000	1	03/03/2022 23:07	WG1827131

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Calcium	161000		1000	1	03/05/2022 20:58	WG1826656

Method Blank (MB)

(MB) R3768379-1 03/07/22 18:35

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Dissolved Solids	U		10000	10000

L1466017-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1466017-01 03/07/22 18:35 • (DUP) R3768379-3 03/07/22 18:35

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	1660000	1820000	1	9.36	J3	5

L1467307-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1467307-01 03/07/22 18:35 • (DUP) R3768379-4 03/07/22 18:35

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	114000000	123000000	1	7.66	J3	5

Laboratory Control Sample (LCS)

(LCS) R3768379-2 03/07/22 18:35

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800000	8160000	92.7	77.4-123	

QUALITY CONTROL SUMMARY

L1466975-02,03

Method Blank (MB)

(MB) R3766742-1 03/03/22 20:58

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Chloride	U		379	1000
Sulfate	U		594	5000

L1467430-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1467430-01 03/03/22 23:37 • (DUP) R3766742-5 03/04/22 00:22

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Chloride	9540	9480	1	0.632		15
Sulfate	5330	5050	1	5.36		15

L1467430-15 Original Sample (OS) • Duplicate (DUP)

(OS) L1467430-15 03/04/22 04:21 • (DUP) R3766742-6 03/04/22 04:35

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Chloride	12600	12600	1	0.450		15
Sulfate	ND	ND	1	2.28		15

Laboratory Control Sample (LCS)

(LCS) R3766742-2 03/03/22 21:13

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Chloride	40000	41900	105	80.0-120	
Sulfate	40000	41600	104	80.0-120	

L1466975-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1466975-02 03/03/22 22:23 • (MS) R3766742-3 03/03/22 22:38 • (MSD) R3766742-4 03/03/22 22:53

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Chloride	50000	10100	56900	56400	93.7	92.7	1	80.0-120			0.905	15
Sulfate	50000	73300	114000	111000	80.6	75.7	1	80.0-120	E	E J6	2.17	15

L1467430-15 Original Sample (OS) • Matrix Spike (MS)

(OS) L1467430-15 03/04/22 04:21 • (MS) R3766742-7 03/04/22 04:50

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	12600	62300	99.4	1	80.0-120	
Sulfate	50000	ND	49100	90.7	1	80.0-120	

Method Blank (MB)

(MB) R3766773-1 03/05/22 19:38

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Calcium	U		79.3	1000

Laboratory Control Sample (LCS)

(LCS) R3766773-2 03/05/22 19:40

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Calcium	10000	9740	97.4	80.0-120	

L1466889-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1466889-06 03/05/22 19:43 • (MS) R3766773-4 03/05/22 19:49 • (MSD) R3766773-5 03/05/22 19:51

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Calcium	10000	91700	99100	99300	74.5	76.4	1	75.0-125	V		0.196	20

Method Blank (MB)

(MB) R3767307-1 03/07/22 13:04

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Calcium	U		79.3	1000

Laboratory Control Sample (LCS)

(LCS) R3767307-2 03/07/22 13:07

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Calcium	10000	9530	95.3	80.0-120	

L1466975-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1466975-02 03/07/22 13:09 • (MS) R3767307-4 03/07/22 13:14 • (MSD) R3767307-5 03/07/22 13:17

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Calcium	10000	162000	170000	171000	76.6	86.1	1	75.0-125			0.554	20

L1466979-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1466979-01 03/07/22 13:20 • (MS) R3767307-6 03/07/22 13:22 • (MSD) R3767307-7 03/07/22 13:25

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Calcium	10000	483000	484000	484000	4.57	5.48	1	75.0-125	V	V	0.0189	20

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J3	The associated batch QC was outside the established quality control range for precision.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
O1	The analyte failed the method required serial dilution test and/or subsequent post-spike criteria. These failures indicate matrix interference.
V	The sample concentration is too high to evaluate accurate spike recoveries.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Company Name/Address:
SCS Engineers - KS
8575 W. 110th Street
Overland Park, KS 66210

Billing Information:
Accounts Payable
8575 W. 110th Street
Overland Park, KS 66210

Pres Chk

Chain of Custody Page 1 of 1

Pace
PEOPLE ADVANCING SCIENCE
MT JULIET, TN
12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

Report to: Jason Franks

Email To: jfranks@scsengineers.com;jay.martin@evergy.c

Project Description: KCP&L Iatan Generating Station
City/State Collected: Weston, MO
Please Circle: PT MT CT ET

Phone: 913-681-0030
Client Project # 27213167.21 - L
Lab Project # AQUAOPKS-IATAN

SDG # 1966975
E039

Collected by (print): Jason R. Franks
Site/Facility ID #
P.O. #

Collected by (signature): [signature]
Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #
Date Results Needed

Acctnum: AQUAOPKS
Template: T152916
Prelogin: P908194
PM: 206 - Jeff Carr
PB:
Shipped Via:

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Ca - 6010 250mlHDPE-HNO3	Chloride, SO4 125mlHDPE-NoPres	TDS 250mlHDPE-NoPres	Remarks	Sample # (lab only)
MW-1	Grab	GW	—	03/01/22	1045	1	X				-01
MW-8	↓	GW	—	03/01/22	1125	3	X	X	X		-02
DUPLICATE	↓	GW	—	03/01/22	1125	3	X	X	X		-03
MW-8 MS/MSD	↓	GW	—	03/01/22	1125	2	X	X			

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other ______

Remarks:

pH ______ Temp ______
Flow ______ Other ______

Samples returned via:
__ UPS __ FedEx __ Courier ______

Tracking # 5300 4294 3695

Sample Receipt Checklist
COC Seal Present/Intact: NP _Y _N
COC Signed/Accurate: ✓Y _N
Bottles arrive intact: ✓Y _N
Correct bottles used: ✓Y _N
Sufficient volume sent: ✓Y _N
If Applicable
VOA Zero Headspace: _Y _N
Preservation Correct/Checked: _Y _N
RAD Screen <0.5 mR/hr: ✓Y _N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No (HCL / MeoH, TBR)
[signature]	03/01/22	1600		Ø
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: NSA2°C 4.7±0=4.7; Bottles Received: 9
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) [signature]	Date: 03/02/22 Time: 0915

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

ANALYTICAL REPORT

March 08, 2022

SCS Engineers - KS

Sample Delivery Group:	L1466977
Samples Received:	03/02/2022
Project Number:	27213167.21 - L
Description:	Evergy Iatan Generating Station

Report To: Jason Franks
8575 W. 110th Street
Overland Park, KS 66210

Entire Report Reviewed By:

Jeff Carr
Project Manager

Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

MW-1 L1466977-01 GW

Collected by: Jason R Franks
Collected date/time: 03/01/22 10:45
Received date/time: 03/02/22 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1828038	1	03/06/22 04:44	03/06/22 04:44	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1826668	1	03/03/22 17:25	03/03/22 17:25	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1826678	1	03/07/22 00:02	03/07/22 18:30	ZSA	Mt. Juliet, TN

MW-8 L1466977-02 GW

Collected by: Jason R Franks
Collected date/time: 03/01/22 11:25
Received date/time: 03/02/22 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1828038	1	03/06/22 04:47	03/06/22 04:47	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1826678	1	03/07/22 00:02	03/07/22 18:33	ZSA	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Jeff Carr
Project Manager

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity,Bicarbonate	472000		20000	1	03/06/2022 04:44	WG1828038
Alkalinity,Carbonate	ND		20000	1	03/06/2022 04:44	WG1828038

Sample Narrative:

L1466977-01 WG1828038: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	6010		1000	1	03/03/2022 17:25	WG1826668
Sulfate	40300		5000	1	03/03/2022 17:25	WG1826668

Metals (ICP) by Method 6010D

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Magnesium	29200		1000	1	03/07/2022 18:30	WG1826678
Potassium	6640		2000	1	03/07/2022 18:30	WG1826678
Sodium	11700		3000	1	03/07/2022 18:30	WG1826678

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity,Bicarbonate	476000		20000	1	03/06/2022 04:47	WG1828038
Alkalinity,Carbonate	ND		20000	1	03/06/2022 04:47	WG1828038

Sample Narrative:

L1466977-02 WG1828038: Endpoint pH 4.5 Headspace

Metals (ICP) by Method 6010D

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Magnesium	29500		1000	1	03/07/2022 18:33	WG1826678
Potassium	8310		2000	1	03/07/2022 18:33	WG1826678
Sodium	7040	B	3000	1	03/07/2022 18:33	WG1826678

Method Blank (MB)

(MB) R3766782-2 03/06/22 03:16

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Alkalinity,Bicarbonate	U		8450	20000
Alkalinity,Carbonate	U		8450	20000

Sample Narrative:

BLANK: Endpoint pH 4.5

L1466889-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1466889-06 03/06/22 03:46 • (DUP) R3766782-4 03/06/22 03:50

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity,Bicarbonate	832000	845000	1	1.53		20
Alkalinity,Carbonate	ND	ND	1	0.000		20

Sample Narrative:

OS: Endpoint pH 4.5 Headspace

DUP: Endpoint pH 4.5

L1466979-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1466979-01 03/06/22 04:51 • (DUP) R3766782-6 03/06/22 04:54

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity,Bicarbonate	111000	112000	1	0.851		20
Alkalinity,Carbonate	ND	ND	1	0.000		20

Sample Narrative:

OS: Endpoint pH 4.5 Headspace

DUP: Endpoint pH 4.5

Method Blank (MB)

(MB) R3766741-1 03/03/22 09:53

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Chloride	399	J	379	1000
Sulfate	U		594	5000

L1466230-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1466230-01 03/03/22 11:42 • (DUP) R3766741-3 03/03/22 11:57

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	1600	1600	1	0.0750		15
Sulfate	ND	ND	1	0.000		15

L1466889-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1466889-05 03/03/22 15:26 • (DUP) R3766741-6 03/03/22 15:41

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	337000	337000	1	0.0773	E	15
Sulfate	20000	20100	1	0.613		15

Laboratory Control Sample (LCS)

(LCS) R3766741-2 03/03/22 10:08

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40000	40200	100	80.0-120	
Sulfate	40000	40200	101	80.0-120	

L1466230-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1466230-01 03/03/22 11:42 • (MS) R3766741-4 03/03/22 12:12 • (MSD) R3766741-5 03/03/22 12:27

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	1600	52800	52800	102	102	1	80.0-120			0.0673	15
Sulfate	50000	ND	52500	52500	102	102	1	80.0-120			0.106	15

L1466889-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1466889-06 03/03/22 15:55 • (MS) R3766741-7 03/03/22 16:10 • (MSD) R3766741-8 03/03/22 16:55

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	624000	647000	655000	46.2	60.7	20	80.0-120	V	V	1.11	15
Sulfate	50000	727000	745000	746000	35.7	36.8	20	80.0-120	V	V	0.0685	15

L1466981-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1466981-01 03/03/22 17:40 • (MS) R3766741-9 03/03/22 17:55 • (MSD) R3766741-10 03/03/22 18:10

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	17200	66400	65600	98.3	96.8	5	80.0-120			1.18	15
Sulfate	50000	2070000	2030000	2030000	0.000	0.000	5	80.0-120	E V	E V	0.0438	15

QUALITY CONTROL SUMMARY

L1466977-01,02

Method Blank (MB)

(MB) R3767313-1 03/07/22 18:14

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Magnesium	U		85.3	1000
Potassium	U		261	2000
Sodium	1060	J	504	3000

Laboratory Control Sample (LCS)

(LCS) R3767313-2 03/07/22 18:17

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Magnesium	10000	9430	94.3	80.0-120	
Potassium	10000	9710	97.1	80.0-120	
Sodium	10000	10500	105	80.0-120	

L1466902-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1466902-03 03/07/22 18:20 • (MS) R3767313-4 03/07/22 18:25 • (MSD) R3767313-5 03/07/22 18:28

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Magnesium	10000	286000	290000	290000	46.9	38.2	1	75.0-125	V	V	0.300	20
Potassium	10000	7840	17800	18000	100	102	1	75.0-125			1.06	20
Sodium	10000	121000	130000	129000	87.0	78.6	1	75.0-125			0.648	20

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
B	The same analyte is found in the associated blank.
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
V	The sample concentration is too high to evaluate accurate spike recoveries.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Company Name/Address:
SCS Engineers - KS

8575 W. 110th Street
Overland Park, KS 66210

Billing Information:
Accounts Payable
8575 W. 110th Street
Overland Park, KS 66210

Pres Chk

Report to:
Jason Franks

Email To:
jfranks@scsengineers.com;jay.martin@evergy.c

Project Description:
Evergy Iatan Generating Station

City/State Collected: WESTON, MO

Please Circle: PT MT (CT) ET

Phone: **913-681-0030**

Client Project #
27213167.21 - L

Lab Project #
AQUAOPKS-IATAN

Collected by (print): JASON R FRANKS

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y ___

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

No. of Cntrs

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	ALKBI, ALKCA 125mlHDPE-NoPres	K, Mg, Na - 6010 250mlHDPE-HNO3	SO4, Chloride - 9056 125mlHDPE-NoPres							Remarks	Sample # (lab only)
MW-1	GRAB	GW	—	3/1/22	1045	3	X	X	X								-01
MW-8	GRAB	GW	—	3/1/22	1125	2	X	X									-02

Chain of Custody Page 1 of 1

Pace
PEOPLE ADVANCING SCIENCE

MT JULIET, TN

12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG # 1466977
E038

Acctnum: **AQUAOPKS**
Template: **T204381**
Prelogin: **P908196**
PM: **206 - Jeff Carr**
PB:

Shipped Via: **FedEX Ground**

* Matrix:
SS - Soil **AIR** - Air **F** - Filter
GW - Groundwater **B** - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking # 5300 4294 3695

Sample Receipt Checklist

COC Seal Present/Intact:	NP	Y N
COC Signed/Accurate:		Y N
Bottles arrive intact:		Y N
Correct bottles used:		Y N
Sufficient volume sent:		Y N
If Applicable		
VOA Zero Headspace:		Y N
Preservation Correct/Checked:		Y N
RAD Screen <0.5 mR/hr:		Y N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Jason R Franks	03/01/22	1600	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)

Trip Blank Received: Yes / (No)
HCL / MeoH
TBR

Temp: NSIEC 4.7+0=4.7 Bottles Received: 5

Date: 03/02/22 Time: 0915

If preservation required by Login: Date/Time

Hold:

Condition: NCF / (OK)

ANALYTICAL REPORT

June 06, 2022

SCS Engineers - KS

Sample Delivery Group:	L1494644
Samples Received:	05/12/2022
Project Number:	27213167.22-A
Description:	Evergy - Iatan Generating Station

Report To: Jason Franks
8575 W. 110th Street
Overland Park, KS 66210

Entire Report Reviewed By:

Jeff Carr
Project Manager

Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

MW-1 L1494644-01 GW

Collected by: B. Coleman | Collected date/time: 05/11/22 11:20 | Received date/time: 05/12/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1865761	1	05/18/22 12:23	05/18/22 15:52	SJF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1874224	1	06/05/22 23:20	06/05/22 23:20	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1865752	1	05/19/22 13:37	05/20/22 22:33	ZSA	Mt. Juliet, TN

MW-2 L1494644-02 GW

Collected by: B. Coleman | Collected date/time: 05/11/22 11:55 | Received date/time: 05/12/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1865756	1	05/18/22 12:21	05/18/22 17:16	SJF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1873160	1	06/04/22 01:18	06/04/22 01:18	LBR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1873160	10	06/04/22 01:34	06/04/22 01:34	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1865752	1	05/19/22 13:37	05/20/22 22:36	ZSA	Mt. Juliet, TN

MW-6 L1494644-03 GW

Collected by: B. Coleman | Collected date/time: 05/11/22 11:35 | Received date/time: 05/12/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1865756	1	05/18/22 12:21	05/18/22 17:16	SJF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1873160	1	06/04/22 01:50	06/04/22 01:50	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1865752	1	05/19/22 13:37	05/20/22 22:38	ZSA	Mt. Juliet, TN

MW-7 L1494644-04 GW

Collected by: B. Coleman | Collected date/time: 05/11/22 12:05 | Received date/time: 05/12/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1865756	1	05/18/22 12:21	05/18/22 17:16	SJF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1873160	1	06/04/22 02:21	06/04/22 02:21	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1865754	1	05/19/22 12:58	05/22/22 20:44	CCE	Mt. Juliet, TN

MW-8 L1494644-05 GW

Collected by: B. Coleman | Collected date/time: 05/11/22 10:20 | Received date/time: 05/12/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1865761	1	05/18/22 12:23	05/18/22 15:52	SJF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1873160	1	06/04/22 03:57	06/04/22 03:57	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1865752	1	05/19/22 13:37	05/20/22 22:47	ZSA	Mt. Juliet, TN

DUPLICATE L1494644-06 GW

Collected by: B. Coleman | Collected date/time: 05/11/22 00:00 | Received date/time: 05/12/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1865756	1	05/18/22 12:21	05/18/22 17:16	SJF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1873160	1	06/04/22 04:29	06/04/22 04:29	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1865752	1	05/19/22 13:37	05/20/22 22:49	ZSA	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Jeff Carr
Project Manager

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	587000		10000	1	05/18/2022 15:52	WG1865761

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	6540		1000	1	06/05/2022 23:20	WG1874224
Fluoride	276		150	1	06/05/2022 23:20	WG1874224
Sulfate	41800		5000	1	06/05/2022 23:20	WG1874224

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	ND		200	1	05/20/2022 22:33	WG1865752
Calcium	148000		1000	1	05/20/2022 22:33	WG1865752

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	622000		10000	1	05/18/2022 17:16	WG1865756

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	7070		1000	1	06/04/2022 01:18	WG1873160
Fluoride	359		150	1	06/04/2022 01:18	WG1873160
Sulfate	109000		50000	10	06/04/2022 01:34	WG1873160

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	ND		200	1	05/20/2022 22:36	WG1865752
Calcium	164000		1000	1	05/20/2022 22:36	WG1865752

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	604000		10000	1	05/18/2022 17:16	WG1865756

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	2260		1000	1	06/04/2022 01:50	WG1873160
Fluoride	305		150	1	06/04/2022 01:50	WG1873160
Sulfate	39700		5000	1	06/04/2022 01:50	WG1873160

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	ND		200	1	05/20/2022 22:38	WG1865752
Calcium	171000		1000	1	05/20/2022 22:38	WG1865752

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	475000		10000	1	05/18/2022 17:16	WG1865756

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	1590		1000	1	06/04/2022 02:21	WG1873160
Fluoride	337		150	1	06/04/2022 02:21	WG1873160
Sulfate	40900		5000	1	06/04/2022 02:21	WG1873160

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	ND		200	1	05/22/2022 20:44	WG1865754
Calcium	130000	V	1000	1	05/22/2022 20:44	WG1865754

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	562000		10000	1	05/18/2022 15:52	WG1865761

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	5740		1000	1	06/04/2022 03:57	WG1873160
Fluoride	363		150	1	06/04/2022 03:57	WG1873160
Sulfate	58500		5000	1	06/04/2022 03:57	WG1873160

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	ND		200	1	05/20/2022 22:47	WG1865752
Calcium	155000		1000	1	05/20/2022 22:47	WG1865752

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	473000		10000	1	05/18/2022 17:16	WG1865756

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	1620		1000	1	06/04/2022 04:29	WG1873160
Fluoride	344		150	1	06/04/2022 04:29	WG1873160
Sulfate	36900		5000	1	06/04/2022 04:29	WG1873160

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	ND		200	1	05/20/2022 22:49	WG1865752
Calcium	132000		1000	1	05/20/2022 22:49	WG1865752

Method Blank (MB)

(MB) R3794498-1 05/18/22 17:16

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Dissolved Solids	U		10000	10000

L1493525-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1493525-01 05/18/22 17:16 • (DUP) R3794498-3 05/18/22 17:16

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	1110000	1090000	1	1.63		5

L1493848-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1493848-01 05/18/22 17:16 • (DUP) R3794498-4 05/18/22 17:16

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	572000	587000	1	2.53		5

Laboratory Control Sample (LCS)

(LCS) R3794498-2 05/18/22 17:16

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	2460000	2460000	100	81.7-118	

QUALITY CONTROL SUMMARY

L1494644-01,05

Method Blank (MB)

(MB) R3794502-1 05/18/22 15:52

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Dissolved Solids	U		10000	10000

L1493721-12 Original Sample (OS) • Duplicate (DUP)

(OS) L1493721-12 05/18/22 15:52 • (DUP) R3794502-3 05/18/22 15:52

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	804000	800000	1	0.499		5

L1493848-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1493848-02 05/18/22 15:52 • (DUP) R3794502-4 05/18/22 15:52

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	684000	704000	1	2.88		5

Laboratory Control Sample (LCS)

(LCS) R3794502-2 05/18/22 15:52

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	2460000	2490000	101	81.7-118	

Method Blank (MB)

(MB) R3799928-1 06/03/22 10:55

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Chloride	U		379	1000
Fluoride	U		64.0	150
Sulfate	U		594	5000

L1492568-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1492568-01 06/03/22 22:07 • (DUP) R3799928-4 06/03/22 22:23

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	42900	42900	1	0.0424		15
Fluoride	556	554	1	0.415		15
Sulfate	38600	38700	1	0.271		15

L1493211-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1493211-02 06/04/22 00:46 • (DUP) R3799928-5 06/04/22 01:02

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	161000	163000	1	0.695	E	15
Fluoride	ND	ND	1	0.241		15
Sulfate	ND	ND	1	200	P1	15

Laboratory Control Sample (LCS)

(LCS) R3799928-2 06/03/22 11:11

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40000	40100	100	80.0-120	
Fluoride	8000	8130	102	80.0-120	
Sulfate	40000	40100	100	80.0-120	

L1492547-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1492547-01 06/03/22 21:35 • (MS) R3799928-3 06/03/22 21:51

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	67000	117000	99.9	1	80.0-120	E
Fluoride	5000	566	5190	92.6	1	80.0-120	
Sulfate	50000	7860	61700	108	1	80.0-120	

L1494644-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1494644-04 06/04/22 02:21 • (MS) R3799928-6 06/04/22 02:37 • (MSD) R3799928-7 06/04/22 02:53

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	1590	53900	57600	105	112	1	80.0-120			6.52	15
Fluoride	5000	337	5570	5920	105	112	1	80.0-120			6.07	15
Sulfate	50000	40900	91200	94600	101	107	1	80.0-120			3.64	15

Method Blank (MB)

(MB) R3799964-1 06/05/22 18:18

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Chloride	U		379	1000
Fluoride	U		64.0	150
Sulfate	U		594	5000

L1492552-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1492552-01 06/05/22 19:36 • (DUP) R3799964-3 06/05/22 19:51

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	29200	29200	1	0.159		15
Fluoride	644	608	1	5.75		15
Sulfate	30100	30000	1	0.131		15

L1493992-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1493992-08 06/06/22 04:12 • (DUP) R3799964-8 06/06/22 04:28

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	92000	91800	1	0.231		15
Fluoride	ND	ND	1	0.0987		15
Sulfate	ND	ND	1	0.000		15

Laboratory Control Sample (LCS)

(LCS) R3799964-2 06/05/22 18:33

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40000	40800	102	80.0-120	
Fluoride	8000	8420	105	80.0-120	
Sulfate	40000	40200	101	80.0-120	

L1493528-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1493528-01 06/05/22 20:07 • (MS) R3799964-4 06/05/22 20:22 • (MSD) R3799964-5 06/05/22 20:38

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	249000	289000	290000	79.2	80.7	1	80.0-120	E V	E	0.245	15
Fluoride	5000	241	5600	5650	107	108	1	80.0-120			0.983	15
Sulfate	50000	91000	ND	ND	0.000	0.000	1	80.0-120	J6	J6	0.000	15

L1493533-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1493533-01 06/06/22 00:52 • (MS) R3799964-6 06/06/22 01:07 • (MSD) R3799964-7 06/06/22 01:23

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	107000	155000	155000	95.4	95.4	1	80.0-120	E	E	0.0105	15
Fluoride	5000	180	5490	5500	106	106	1	80.0-120			0.129	15
Sulfate	50000	53700	97400	97900	87.3	88.3	1	80.0-120			0.490	15

QUALITY CONTROL SUMMARY

L1494644-01,02,03,05,06

Method Blank (MB)

(MB) R3794637-1 05/20/22 21:41

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Boron	U		20.0	200
Calcium	U		79.3	1000

Laboratory Control Sample (LCS)

(LCS) R3794637-2 05/20/22 21:44

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Boron	1000	1010	101	80.0-120	
Calcium	10000	10000	100	80.0-120	

L1494636-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1494636-07 05/20/22 21:46 • (MS) R3794637-4 05/20/22 21:51 • (MSD) R3794637-5 05/20/22 21:54

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Boron	1000	ND	1100	1100	101	101	1	75.0-125			0.148	20
Calcium	10000	134000	141000	141000	63.0	63.1	1	75.0-125	V	V	0.00469	20

Method Blank (MB)

(MB) R3794806-8 05/22/22 20:29

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Boron	U		20.0	200
Calcium	84.7	J	79.3	1000

Laboratory Control Sample (LCS)

(LCS) R3794806-9 05/22/22 20:31

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Boron	1000	886	88.6	80.0-120	
Calcium	10000	9250	92.5	80.0-120	

L1494643-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1494643-02 05/22/22 20:34 • (MS) R3794806-11 05/22/22 20:39 • (MSD) R3794806-12 05/22/22 20:41

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Boron	1000	ND	1040	1020	92.9	90.3	1	75.0-125			2.49	20
Calcium	10000	122000	129000	130000	77.1	84.0	1	75.0-125			0.534	20

L1494644-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1494644-04 05/22/22 20:44 • (MS) R3794806-13 05/22/22 20:47 • (MSD) R3794806-14 05/22/22 20:49

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Boron	1000	ND	1010	1010	92.3	92.3	1	75.0-125			0.0278	20
Calcium	10000	130000	135000	137000	56.3	68.6	1	75.0-125	V	V	0.909	20

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.
V	The sample concentration is too high to evaluate accurate spike recoveries.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

Company Name/Address:
SCS Engineers - KS
8575 W. 110th Street
Overland Park, KS 66210

Billing Information:
Accounts Payable
8575 W. 110th Street
Overland Park, KS 66210

Pres Chk

Report to: **Jason Franks**

Email To: **jfranks@scsengineers.com;jay.martin@evergy.c**

Project Description: **Evergy - Iatan Generating Station**

City/State Collected: Iatan, MO

Please Circle: PT MT CT ET

Phone: **913-681-0030**

Client Project # **27213167.22-A**

Lab Project # **AQUAOPKS-IATAN**

Collected by (print): B. Coleman

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y ___

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed: STD

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Anions (Cld, F, SO4) 125mlHDPE-NoPres	B, Ca - 6010 250mlHDPE-HNO3	TDS 250mlHDPE-NoPres	Remarks	Sample # (lab only)
MW-1	Grab	GW	-	5/11/22	1120	3	X	X	X		-01
MW-2		GW			1155	3	X	X	X		-02
MW-6		GW			1135	3	X	X	X		-03
MW-7		GW			1205	3	X	X	X		-04
MW-8		GW			1020	3	X	X	X		-05
MS/MSD		GW			1210	3	X	X	X		-04
DUPLICATE		GW			~~1015~~	3	X	X	X		-06

Chain of Custody

Pace
PEOPLE ADVANCING SCIENCE

MT JULIET, TN
12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG # L1494644

M060

Acctnum: **AQUAOPKS**
Template: **T136059**
Prelogin: **P922346**
PM: **206 - Jeff Carr**
PB:
Shipped Via: **FedEX Ground**

* Matrix:
SS - Soil **AIR** - Air **F** - Filter
GW - Groundwater **B** - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via: __ UPS __ FedEx __ Courier _____

Tracking # 5671 5374 6620

Sample Receipt Checklist
COC Seal Present/Intact: NP Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N
RAD Screen <0.5 mR/hr: Y N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
	5/11/22	1430		
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 2.7 +0=2.7 °C Bottles Received: 21
				If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 5/12/22 Time: 0930
				Hold: Condition: NCF / OK

ANALYTICAL REPORT

June 03, 2022

SCS Engineers - KS

Sample Delivery Group:	L1494643
Samples Received:	05/12/2022
Project Number:	27213167.22-A
Description:	Evergy - Iatan Generating Station

Report To: Jason Franks
8575 W. 110th Street
Overland Park, KS 66210

Entire Report Reviewed By:

Jeff Carr
Project Manager

Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

MW-9 L1494643-01 GW

Collected by: B. Coleman
Collected date/time: 05/11/22 10:55
Received date/time: 05/12/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1865756	1	05/18/22 12:21	05/18/22 17:16	SJF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1873141	1	06/02/22 17:51	06/02/22 17:51	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1865752	1	05/19/22 13:37	05/20/22 22:30	ZSA	Mt. Juliet, TN

MW-10 L1494643-02 GW

Collected by: B. Coleman
Collected date/time: 05/11/22 12:25
Received date/time: 05/12/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1865761	1	05/18/22 12:23	05/18/22 15:52	SJF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1873141	1	06/02/22 10:58	06/02/22 10:58	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1865754	1	05/19/22 12:58	05/22/22 20:34	CCE	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Jeff Carr
Project Manager

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	412000		10000	1	05/18/2022 17:16	WG1865756

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	ND		1000	1	06/02/2022 17:51	WG1873141
Fluoride	401		150	1	06/02/2022 17:51	WG1873141
Sulfate	17100		5000	1	06/02/2022 17:51	WG1873141

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	ND		200	1	05/20/2022 22:30	WG1865752
Calcium	105000		1000	1	05/20/2022 22:30	WG1865752

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	563000		10000	1	05/18/2022 15:52	WG1865761

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	16500		1000	1	06/02/2022 10:58	WG1873141
Fluoride	576		150	1	06/02/2022 10:58	WG1873141
Sulfate	35200		5000	1	06/02/2022 10:58	WG1873141

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	ND		200	1	05/22/2022 20:34	WG1865754
Calcium	122000	O1	1000	1	05/22/2022 20:34	WG1865754

Method Blank (MB)

(MB) R3794498-1 05/18/22 17:16

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Dissolved Solids	U		10000	10000

L1493525-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1493525-01 05/18/22 17:16 • (DUP) R3794498-3 05/18/22 17:16

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	1110000	1090000	1	1.63		5

L1493848-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1493848-01 05/18/22 17:16 • (DUP) R3794498-4 05/18/22 17:16

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	572000	587000	1	2.53		5

Laboratory Control Sample (LCS)

(LCS) R3794498-2 05/18/22 17:16

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	2460000	2460000	100	81.7-118	

Method Blank (MB)

(MB) R3794502-1 05/18/22 15:52

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Dissolved Solids	U		10000	10000

L1493721-12 Original Sample (OS) • Duplicate (DUP)

(OS) L1493721-12 05/18/22 15:52 • (DUP) R3794502-3 05/18/22 15:52

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	804000	800000	1	0.499		5

L1493848-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1493848-02 05/18/22 15:52 • (DUP) R3794502-4 05/18/22 15:52

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	684000	704000	1	2.88		5

Laboratory Control Sample (LCS)

(LCS) R3794502-2 05/18/22 15:52

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	2460000	2490000	101	81.7-118	

Method Blank (MB)

(MB) R3799168-1 06/02/22 09:26

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Chloride	U		379	1000
Fluoride	U		64.0	150
Sulfate	U		594	5000

L1494643-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1494643-02 06/02/22 10:58 • (DUP) R3799168-3 06/02/22 11:13

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	16500	16500	1	0.102		15
Fluoride	576	573	1	0.505		15
Sulfate	35200	35200	1	0.0645		15

Laboratory Control Sample (LCS)

(LCS) R3799168-2 06/02/22 09:42

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40000	40100	100	80.0-120	
Fluoride	8000	8160	102	80.0-120	
Sulfate	40000	40300	101	80.0-120	

L1494643-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1494643-02 06/02/22 10:58 • (MS) R3799168-4 06/02/22 11:29 • (MSD) R3799168-5 06/02/22 11:45

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	16500	67400	67100	102	101	1	80.0-120			0.385	15
Fluoride	5000	576	5650	5620	102	101	1	80.0-120			0.520	15
Sulfate	50000	35200	85600	85300	101	100	1	80.0-120			0.319	15

L1493530-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1493530-01 06/02/22 20:30 • (MS) R3799168-7 06/02/22 20:46 • (MSD) R3799168-8 06/02/22 21:02

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	295000	337000	335000	83.2	80.4	5	80.0-120			0.426	15
Fluoride	5000	ND	4920	4860	90.7	89.6	5	80.0-120			1.18	15

L1493530-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1493530-01 06/02/22 20:30 • (MS) R3799168-7 06/02/22 20:46 • (MSD) R3799168-8 06/02/22 21:02

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Sulfate	50000	147000	193000	193000	93.1	93.0	5	80.0-120			0.0280	15

Method Blank (MB)

(MB) R3794637-1 05/20/22 21:41

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Boron	U		20.0	200
Calcium	U		79.3	1000

Laboratory Control Sample (LCS)

(LCS) R3794637-2 05/20/22 21:44

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Boron	1000	1010	101	80.0-120	
Calcium	10000	10000	100	80.0-120	

L1494636-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1494636-07 05/20/22 21:46 • (MS) R3794637-4 05/20/22 21:51 • (MSD) R3794637-5 05/20/22 21:54

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Boron	1000	ND	1100	1100	101	101	1	75.0-125			0.148	20
Calcium	10000	134000	141000	141000	63.0	63.1	1	75.0-125	V	V	0.00469	20

Method Blank (MB)

(MB) R3794806-8 05/22/22 20:29

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Boron	U		20.0	200
Calcium	84.7	J	79.3	1000

Laboratory Control Sample (LCS)

(LCS) R3794806-9 05/22/22 20:31

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Boron	1000	886	88.6	80.0-120	
Calcium	10000	9250	92.5	80.0-120	

L1494643-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1494643-02 05/22/22 20:34 • (MS) R3794806-11 05/22/22 20:39 • (MSD) R3794806-12 05/22/22 20:41

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Boron	1000	ND	1040	1020	92.9	90.3	1	75.0-125			2.49	20
Calcium	10000	122000	129000	130000	77.1	84.0	1	75.0-125			0.534	20

L1494644-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1494644-04 05/22/22 20:44 • (MS) R3794806-13 05/22/22 20:47 • (MSD) R3794806-14 05/22/22 20:49

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Boron	1000	ND	1010	1010	92.3	92.3	1	75.0-125			0.0278	20
Calcium	10000	130000	135000	137000	56.3	68.6	1	75.0-125	V	V	0.909	20

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
O1	The analyte failed the method required serial dilution test and/or subsequent post-spike criteria. These failures indicate matrix interference.
V	The sample concentration is too high to evaluate accurate spike recoveries.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Chain of Custody Page 3 of 5

Pace
PEOPLE ADVANCING SCIENCE

MT JULIET, TN

12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

M059
L1494643

Acctnum: **AQUAOPKS**
Template: **T166691**
Prelogin: **P922347**
PM: **206 - Jeff Carr**
PB:
Shipped Via: **FedEX Ground**

Company Name/Address:	Billing Information:	Pres Chk
SCS Engineers - KS **8575 W. 110th Street** **Overland Park, KS 66210**	**Accounts Payable** **8575 W. 110th Street** **Overland Park, KS 66210**	

Report to:	Email To:
Jason Franks	**jfranks@scsengineers.com;jay.martin@evergy.c**

Project Description:	City/State Collected:	Please Circle:
Evergy - Iatan Generating Station	Iatan, MO	PT MT CT ET

Phone: **913-681-0030**	Client Project # **27213167.22-A**	Lab Project # **AQUAOPKS-IATAN**
Collected by (print): B. Coleman	Site/Facility ID #	P.O. #
Collected by (signature):	***Rush?*** (Lab MUST Be Notified) ___ Same Day ___ Five Day ___ Next Day ___ 5 Day (Rad Only) ___ Two Day ___ 10 Day (Rad Only) ___ Three Day	**Quote #**
Immediately Packed on Ice N ___ Y ___	Date Results Needed: 5 D	

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Anions (Cld, F, SO4) 125mlHDPE-NoPres	B, Ca - 6010 250mlHDPE-HNO3	TDS 250mlHDPE-NoPres	Remarks	Sample # (lab only)
MW-9	Grab	GW	-	5/11/22	1055	3	X	X	X		-01
MW-10	Grab	GW	-	5/11/22	1225	3	X	X	X		-02

* Matrix:
SS - Soil **AIR** - Air **F** - Filter
GW - Groundwater **B** - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking # 5671 5374 6620

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
	5/11/22	1430	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)
			Matt

Trip Blank Received: Yes / (No)
HCL / MeoH
TBR

Temp: 2.7 2.7 °C Bottles Received: 6

Date: 5/12/22 Time: 0930

If preservation required by Login: Date/Time

Hold:

Condition: NCF / (OK)

Sample Receipt Checklist

COC Seal Present/Intact:	NP	Y N
COC Signed/Accurate:		Y N
Bottles arrive intact:		Y N
Correct bottles used:		Y N
Sufficient volume sent:		Y N
If Applicable		
VOA Zero Headspace:		Y N
Preservation Correct/Checked:		Y N
RAD Screen <0.5 mR/hr:		Y N

ANALYTICAL REPORT

August 03, 2022

SCS Engineers - KS

Sample Delivery Group:	L1515735
Samples Received:	07/16/2022
Project Number:	27213167.22-H
Description:	Evergy Iatan Gen Station LF GW 2022-23

Report To: Jason Franks
8575 W. 110th Street
Overland Park, KS 66210

Entire Report Reviewed By:

Jeff Carr
Project Manager

Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

MW-1 L1515735-01 GW

Collected by: Whit Martin | Collected date/time: 07/14/22 16:20 | Received date/time: 07/16/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1898659	1	07/21/22 14:22	07/21/22 15:56	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1899306	1	07/22/22 18:21	07/22/22 18:21	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1900539	1	08/01/22 06:27	08/03/22 02:43	JDG	Mt. Juliet, TN

DUPLICATE 1 L1515735-02 GW

Collected by: Whit Martin | Collected date/time: 07/14/22 16:20 | Received date/time: 07/16/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1898659	1	07/21/22 14:22	07/21/22 15:56	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1899306	1	07/22/22 20:22	07/22/22 20:22	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1900533	1	08/01/22 09:42	08/02/22 15:26	KMG	Mt. Juliet, TN

MW-6 L1515735-03 GW

Collected by: Whit Martin | Collected date/time: 07/14/22 17:20 | Received date/time: 07/16/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1898659	1	07/21/22 14:22	07/21/22 15:56	MMF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1899306	1	07/22/22 20:36	07/22/22 20:36	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1900537	1	07/29/22 09:40	08/01/22 10:06	CCE	Mt. Juliet, TN

DUPLICATE 2 L1515735-04 GW

Collected by: Whit Martin | Collected date/time: 07/14/22 17:20 | Received date/time: 07/16/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1899306	1	07/22/22 21:29	07/22/22 21:29	LBR	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Jeff Carr
Project Manager

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	564000		10000	1	07/21/2022 15:56	WG1898659

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Sulfate	40700		5000	1	07/22/2022 18:21	WG1899306

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Calcium	148000	V	1000	1	08/03/2022 02:43	WG1900539

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	558000		10000	1	07/21/2022 15:56	WG1898659

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Sulfate	41900		5000	1	07/22/2022 20:22	WG1899306

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Calcium	147000		1000	1	08/02/2022 15:26	WG1900533

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	548000		10000	1	07/21/2022 15:56	WG1898659

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	2190		1000	1	07/22/2022 20:36	WG1899306

Metals (ICP) by Method 6010D

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Calcium	149000	O1	1000	1	08/01/2022 10:06	WG1900537

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	2210		1000	1	07/22/2022 21:29	WG1899306

QUALITY CONTROL SUMMARY

L1515735-01,02,03

Method Blank (MB)

(MB) R3819886-1 07/21/22 15:56

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Dissolved Solids	U		10000	10000

L1515001-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1515001-01 07/21/22 15:56 • (DUP) R3819886-3 07/21/22 15:56

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	866000	890000	1	2.73		5

L1515001-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1515001-02 07/21/22 15:56 • (DUP) R3819886-4 07/21/22 15:56

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	902000	870000	1	3.61		5

Laboratory Control Sample (LCS)

(LCS) R3819886-2 07/21/22 15:56

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800000	8490000	96.5	77.3-123	

Method Blank (MB)

(MB) R3818538-1 07/22/22 09:48

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Chloride	U		379	1000
Sulfate	U		594	5000

L1515735-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1515735-01 07/22/22 18:21 • (DUP) R3818538-3 07/22/22 18:35

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	6500	6330	1	2.65		15
Sulfate	40700	40100	1	1.57		15

L1515735-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1515735-03 07/22/22 20:36 • (DUP) R3818538-6 07/22/22 20:49

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	2190	2090	1	4.78		15
Sulfate	35800	34500	1	3.77		15

Laboratory Control Sample (LCS)

(LCS) R3818538-2 07/22/22 10:01

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40000	40000	99.9	80.0-120	
Sulfate	40000	40300	101	80.0-120	

L1515735-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1515735-01 07/22/22 18:21 • (MS) R3818538-4 07/22/22 18:48 • (MSD) R3818538-5 07/22/22 19:02

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	6500	57100	57300	101	102	1	80.0-120			0.268	15
Sulfate	50000	40700	90600	90900	99.8	100	1	80.0-120			0.311	15

L1515735-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1515735-03 07/22/22 20:36 • (MS) R3818538-7 07/22/22 21:02 • (MSD) R3818538-8 07/22/22 21:16

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	2190	52700	52800	101	101	1	80.0-120			0.266	15
Sulfate	50000	35800	85000	85200	98.4	98.8	1	80.0-120			0.259	15

Method Blank (MB)

(MB) R3821914-1 08/02/22 14:46

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Calcium	U		79.3	1000

Laboratory Control Sample (LCS)

(LCS) R3821914-2 08/02/22 14:49

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Calcium	10000	9520	95.2	80.0-120	

L1515678-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1515678-01 08/02/22 14:51 • (MS) R3821914-4 08/02/22 14:57 • (MSD) R3821914-5 08/02/22 14:59

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Calcium	10000	35000	44800	44900	97.4	98.4	1	75.0-125			0.222	20

Method Blank (MB)

(MB) R3821344-1 08/01/22 10:00

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Calcium	U		79.3	1000

Laboratory Control Sample (LCS)

(LCS) R3821344-2 08/01/22 10:03

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Calcium	10000	9850	98.5	80.0-120	

L1515735-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1515735-03 08/01/22 10:06 • (MS) R3821344-4 08/01/22 10:11 • (MSD) R3821344-5 08/01/22 10:14

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Calcium	10000	149000	159000	159000	95.9	93.9	1	75.0-125			0.121	20

L1516115-15 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1516115-15 08/01/22 10:17 • (MS) R3821344-6 08/01/22 10:19 • (MSD) R3821344-7 08/01/22 10:22

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Calcium	10000	81900	90600	91200	87.5	92.9	1	75.0-125			0.595	20

Method Blank (MB)

(MB) R3821942-1 08/03/22 02:26

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Calcium	U		79.3	1000

Laboratory Control Sample (LCS)

(LCS) R3821942-2 08/03/22 02:29

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Calcium	10000	9850	98.5	80.0-120	

L1515703-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1515703-03 08/03/22 02:32 • (MS) R3821942-4 08/03/22 02:37 • (MSD) R3821942-5 08/03/22 02:40

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Calcium	10000	171000	178000	179000	73.8	81.1	1	75.0-125	V		0.408	20

L1515735-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1515735-01 08/03/22 02:43 • (MS) R3821942-6 08/03/22 02:46 • (MSD) R3821942-7 08/03/22 02:48

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Calcium	10000	148000	155000	155000	75.9	74.6	1	75.0-125		V	0.0874	20

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
O1	The analyte failed the method required serial dilution test and/or subsequent post-spike criteria. These failures indicate matrix interference.
V	The sample concentration is too high to evaluate accurate spike recoveries.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Company Name/Address:
SCS Engineers - KS

8575 W. 110th Street
Overland Park, KS 66210

Billing Information:
Accounts Payable
8575 W. 110th Street
Overland Park, KS 66210

Pres Chk

Report to: **Jason Franks**

Email To: **jfranks@scsengineers.com;jay.martin@evergy.c**

Project Description: **Evergy Iatan Gen Station LF GW 2022-23**

City/State Collected: **Weston, MO**

Please Circle: PT MT CT ET

Phone: **913-681-0030**

Client Project # **27213167.22-H**

Lab Project # **AQUAOPKS-IATAN**

Collected by (print): **Whit Martin**

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed: Std

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Calcium 250mlHDPE-HNO3	Chloride 125mlHDPE-NoPres	Sulfate 125mlHDPE-NoPres	TDS 1L-HDPE NoPres	Remarks	Sample # (lab only)
MW-1	Grab	GW		7/14/22	1620	3	X		X	X		-01
MW-1 MS/MSD	Grab	GW		7/14/22	1620	3	X		X	X		
DUPLICATE 1	Grab	GW		7/14/22	1620	3	X		X	X		-02
MW-6	Grab	GW		7/14/22	1720	3	X	X		X		-03
MW-6 MS/MSD	Grab	GW		7/14/22	1720	3	X	X		X		
DUPLICATE 2	Grab	GW		7/14/22	1720	1		X				-04

Analysis / Container / Preservative

Chain of Custody Page 1 of 1

Pace
PEOPLE ADVANCING SCIENCE

MT JULIET, TN

12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG # 1515735

L-074

Acctnum: **AQUAOPKS**
Template: **T212760**
Prelogin: **P937533**
PM: **206 - Jeff Carr**
PB:

Shipped Via: **FedEX Ground**

* Matrix:
SS - Soil **AIR** - Air **F** - Filter
GW - Groundwater **B** - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Samples returned via: __ UPS __ FedEx __ Courier _____

Tracking # 5340 4284 7485

Sample Receipt Checklist

COC Seal Present/Intact:	NP	Y N
COC Signed/Accurate:		Y N
Bottles arrive intact:		Y N
Correct bottles used:		Y N
Sufficient volume sent:		Y N
If Applicable		
VOA Zero Headspace:		Y N
Preservation Correct/Checked:		Y N
RAD Screen <0.5 mR/hr:		Y N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	If preservation required by Login: Date/Time
Whit Martin	7/15/22	1230			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 0.2 °C Bottles Received: 16	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 7/16/22 Time: 9:00	Hold: Condition: NCF / OK

ANALYTICAL REPORT

September 01, 2022

SCS Engineers - KS

Sample Delivery Group:	L1526534
Samples Received:	08/18/2022
Project Number:	27213167.22-H
Description:	Evergy Iatan Gen Station LF GW 2022-23

Report To: Jason Franks
8575 W. 110th Street
Overland Park, KS 66210

Entire Report Reviewed By:

Jeff Carr
Project Manager

Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

MW-1 L1526534-01 GW

Collected by: A Thompson | Collected date/time: 08/17/22 16:50 | Received date/time: 08/18/22 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1915617	1	08/24/22 16:23	08/24/22 17:53	SLP	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1913232	1	08/19/22 20:14	08/19/22 20:14	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1914432	1	08/24/22 09:21	08/25/22 15:02	KMG	Mt. Juliet, TN

DUPLICATE 1 L1526534-02 GW

Collected by: A Thompson | Collected date/time: 08/17/22 16:55 | Received date/time: 08/18/22 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1915196	1	08/23/22 14:47	08/23/22 17:41	SLP	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1913232	1	08/19/22 20:56	08/19/22 20:56	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1914432	1	08/24/22 09:21	08/25/22 15:18	KMG	Mt. Juliet, TN

MW-6 L1526534-03 GW

Collected by: A Thompson | Collected date/time: 08/17/22 15:30 | Received date/time: 08/18/22 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1913232	1	08/19/22 21:09	08/19/22 21:09	LBR	Mt. Juliet, TN

DUPLICATE 2 L1526534-04 GW

Collected by: A Thompson | Collected date/time: 08/17/22 15:35 | Received date/time: 08/18/22 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1913232	1	08/19/22 22:18	08/19/22 22:18	LBR	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Jeff Carr
Project Manager

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	519000		10000	1	08/24/2022 17:53	WG1915617

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Sulfate	40600		5000	1	08/19/2022 20:14	WG1913232

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Calcium	141000		1000	1	08/25/2022 15:02	WG1914432

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	547000		10000	1	08/23/2022 17:41	WG1915196

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Sulfate	38800		5000	1	08/19/2022 20:56	WG1913232

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Calcium	141000		1000	1	08/25/2022 15:18	WG1914432

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	1440	J5	1000	1	08/19/2022 21:09	WG1913232

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	1520		1000	1	08/19/2022 22:18	WG1913232

Method Blank (MB)

(MB) R3831112-1 08/23/22 17:41

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Dissolved Solids	U		10000	10000

L1526251-11 Original Sample (OS) • Duplicate (DUP)

(OS) L1526251-11 08/23/22 17:41 • (DUP) R3831112-3 08/23/22 17:41

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	320000	317000	1	0.942		5

L1526534-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1526534-02 08/23/22 17:41 • (DUP) R3831112-4 08/23/22 17:41

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	547000	543000	1	0.734		5

Laboratory Control Sample (LCS)

(LCS) R3831112-2 08/23/22 17:41

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800000	8450000	96.0	77.3-123	

Method Blank (MB)

(MB) R3832790-1 08/24/22 17:53

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Dissolved Solids	U		10000	10000

L1526551-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1526551-01 08/24/22 17:53 • (DUP) R3832790-3 08/24/22 17:53

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	852000	838000	1	1.66		5

L1526551-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1526551-02 08/24/22 17:53 • (DUP) R3832790-4 08/24/22 17:53

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	1160000	1150000	1	0.433		5

Laboratory Control Sample (LCS)

(LCS) R3832790-2 08/24/22 17:53

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800000	8390000	95.3	77.3-123	

Method Blank (MB)

(MB) R3829904-1 08/19/22 17:56

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Chloride	U		379	1000
Sulfate	U		594	5000

L1526529-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1526529-02 08/19/22 19:46 • (DUP) R3829904-3 08/19/22 20:00

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Chloride	1480	1460	1	1.47		15
Sulfate	30500	29500	1	3.34		15

Laboratory Control Sample (LCS)

(LCS) R3829904-2 08/19/22 18:10

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Chloride	40000	39300	98.3	80.0-120	
Sulfate	40000	39600	99.0	80.0-120	

L1526534-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1526534-01 08/19/22 20:14 • (MS) R3829904-4 08/19/22 20:28 • (MSD) R3829904-5 08/19/22 20:42

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Chloride	50000	6300	56300	57600	99.9	103	1	80.0-120			2.28	15
Sulfate	50000	40600	88300	90200	95.3	99.1	1	80.0-120			2.11	15

L1526534-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1526534-03 08/19/22 21:09 • (MS) R3829904-7 08/19/22 21:23 • (MSD) R3829904-8 08/19/22 22:04

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Chloride	50000	1440	63000	63900	123	125	1	80.0-120	J5	J5	1.35	15
Sulfate	50000	29800	90900	91900	122	124	1	80.0-120	J5	J5	1.09	15

Method Blank (MB)

(MB) R3830662-1 08/25/22 14:57

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Calcium	U		79.3	1000

Laboratory Control Sample (LCS)

(LCS) R3830662-2 08/25/22 15:00

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Calcium	10000	9710	97.1	80.0-120	

L1526534-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1526534-01 08/25/22 15:02 • (MS) R3830662-4 08/25/22 15:08 • (MSD) R3830662-5 08/25/22 15:10

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Calcium	10000	141000	148000	148000	64.1	70.2	1	75.0-125	V	V	0.412	20

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.
V	The sample concentration is too high to evaluate accurate spike recoveries.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Company Name/Address:
SCS Engineers - KS
8575 W. 110th Street
Overland Park, KS 66210

Billing Information:
Accounts Payable
8575 W. 110th Street
Overland Park, KS 66210

Report to: **Jason Franks**

Email To: **jfranks@scsengineers.com;jay.martin@evergy.c**

Project Description: **Evergy Iatan Gen Station LF GW 2022-23**

City/State Collected:

Please Circle: PT MT CT ET

Phone: **913-681-0030**

Client Project # **27213167.22-H**

Lab Project # **AQUAOPKS-IATAN**

Collected by (print): A Thompson

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y ✓

Rush? (Lab MUST be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Calcium 250mlHDPE-HNO3	Chloride 125mlHDPE-NoPres	Sulfate 125mlHDPE-NoPres	TDS 1L-HDPE NoPres	Pres Chk 22	Remarks	Sample # (lab only)
MW-1		GW			1650	3	X		X	X			-01
MW-1 MS/MSD		GW			1700	2	X		X				
DUPLICATE 1		GW			1655	3	X		X	X			-02
MW-6		GW			1530	1		X					-03
MW-6 MS/MSD		GW			1540	3	X	X		X			
DUPLICATE 2		GW			1535	1		X					-04

Chain of Custody Page 1 of 1

Pace
PEOPLE ADVANCING SCIENCE

MT JULIET, TN
12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG # 1526534
J126

Acctnum: **AQUAOPKS**
Template: **T212760**
Prelogin: **P943618**
PM: **206 - Jeff Carr**
PB:

Shipped Via: **FedEX Ground**

* Matrix:
SS - Soil **AIR** - Air **F** - Filter
GW - Groundwater **B** - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS ✓ FedEx __ Courier _____

Tracking # 5719 6180 7320

Sample Receipt Checklist
COC Seal Present/Intact: ✓NP __Y __N
COC Signed/Accurate: ✓Y __N
Bottles arrive intact: ✓Y __N
Correct bottles used: ✓Y __N
Sufficient volume sent: ✓Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: ✓Y __N
RAD Screen <0.5 mR/hr: ✓Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	If preservation required by Login: Date/Time
[signature]	8/16/22	1720			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 5.6 °C 5.6-0.0=5.6 Bottles Received: 13	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) Hawa Mwechiwa	Date: 08.17.22 Time: 08:45	Hold: Condition: NCF / OK

ANALYTICAL REPORT

August 29, 2022

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

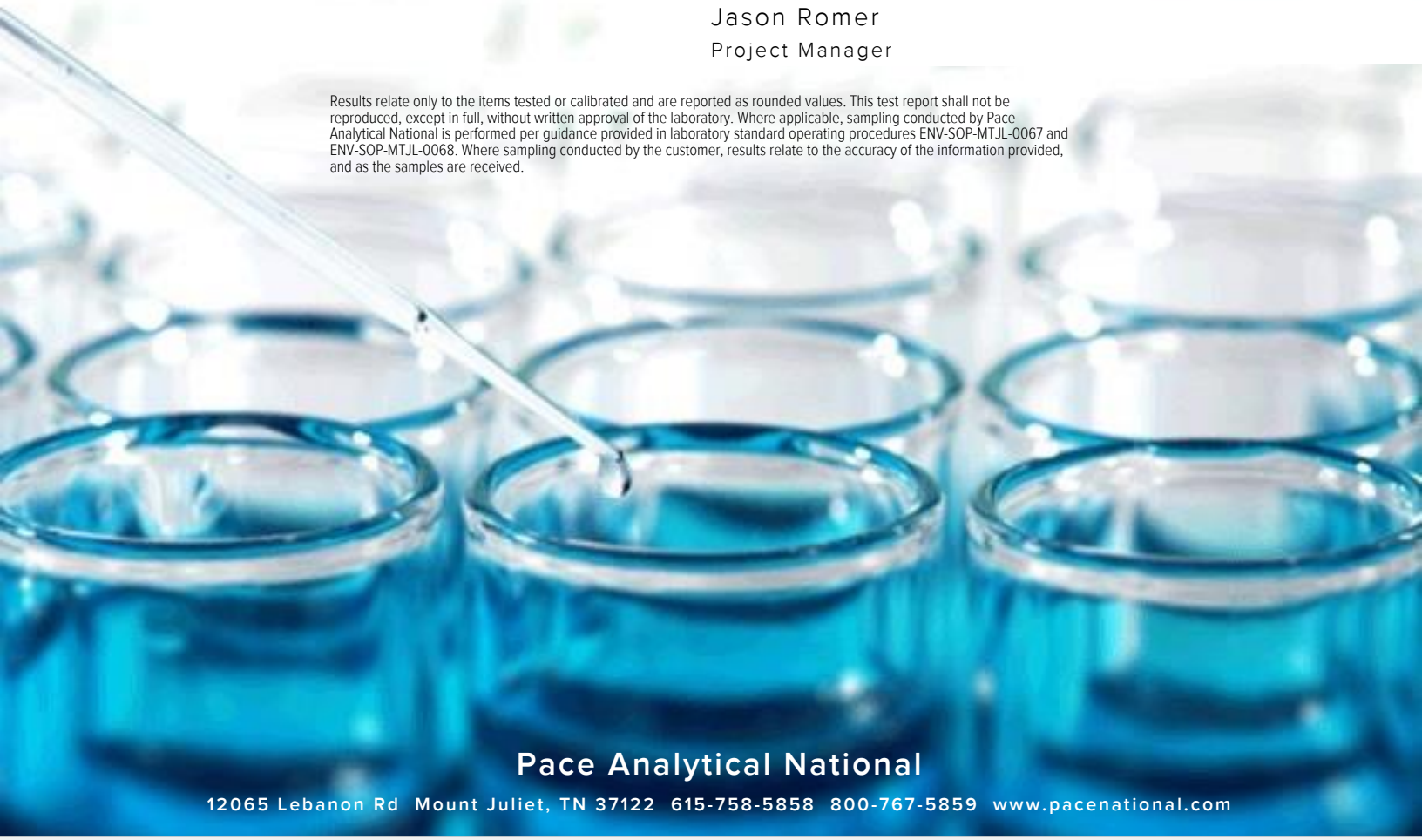
SCS Engineers - KS

Sample Delivery Group:	L1526529
Samples Received:	08/18/2022
Project Number:	27213167.21 - H
Description:	Evergy Iatan Gen Station LF GW 2022-23

Report To: Jason Franks
8575 W. 110th Street
Overland Park, KS 66210

Entire Report Reviewed By:

Jason Romer
Project Manager



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

MW-1 L1526529-01 GW

Collected by: A Thompson
Collected date/time: 08/17/22 16:30
Received date/time: 08/18/22 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1917622	1	08/28/22 09:42	08/28/22 09:42	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1913232	1	08/19/22 19:32	08/19/22 19:32	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1914432	1	08/24/22 09:21	08/25/22 15:13	KMG	Mt. Juliet, TN

MW-6 L1526529-02 GW

Collected by: A Thompson
Collected date/time: 08/17/22 00:00
Received date/time: 08/18/22 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1917622	1	08/28/22 09:46	08/28/22 09:46	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1913232	1	08/19/22 19:46	08/19/22 19:46	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1914432	1	08/24/22 09:21	08/25/22 15:15	KMG	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Jason Romer
Project Manager

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity,Bicarbonate	480000		20000	1	08/28/2022 09:42	WG1917622
Alkalinity,Carbonate	ND		20000	1	08/28/2022 09:42	WG1917622

Sample Narrative:

L1526529-01 WG1917622: Endpoint pH 4.5 headspace

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	6380		1000	1	08/19/2022 19:32	WG1913232
Sulfate	41200		5000	1	08/19/2022 19:32	WG1913232

Metals (ICP) by Method 6010D

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Magnesium	31600		1000	1	08/25/2022 15:13	WG1914432
Potassium	7460		2000	1	08/25/2022 15:13	WG1914432
Sodium	11300		3000	1	08/25/2022 15:13	WG1914432

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Alkalinity,Bicarbonate	502000		20000	1	08/28/2022 09:46	WG1917622
Alkalinity,Carbonate	ND		20000	1	08/28/2022 09:46	WG1917622

Sample Narrative:

L1526529-02 WG1917622: Endpoint pH 4.5

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Sulfate	30500		5000	1	08/19/2022 19:46	WG1913232

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Calcium	136000		1000	1	08/25/2022 15:15	WG1914432
Magnesium	32700		1000	1	08/25/2022 15:15	WG1914432
Potassium	5470		2000	1	08/25/2022 15:15	WG1914432
Sodium	6490		3000	1	08/25/2022 15:15	WG1914432

Method Blank (MB)

(MB) R3831263-2 08/28/22 09:16

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Alkalinity,Bicarbonate	U		8450	20000
Alkalinity,Carbonate	U		8450	20000

Sample Narrative:

BLANK: Endpoint pH 4.5

L1526251-11 Original Sample (OS) • Duplicate (DUP)

(OS) L1526251-11 08/28/22 09:24 • (DUP) R3831263-3 08/28/22 09:28

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity,Bicarbonate	349000	350000	1	0.197		20
Alkalinity,Carbonate	ND	ND	1	0.000		20

Sample Narrative:

OS: Endpoint pH 4.5 headspace

DUP: Endpoint pH 4.5

L1526678-10 Original Sample (OS) • Duplicate (DUP)

(OS) L1526678-10 08/28/22 11:08 • (DUP) R3831263-4 08/28/22 11:12

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity,Bicarbonate	255000	259000	1	1.46		20
Alkalinity,Carbonate	ND	ND	1	0.000		20

Sample Narrative:

OS: Endpoint pH 4.5 headspace

DUP: Endpoint pH 4.5

Method Blank (MB)

(MB) R3829904-1 08/19/22 17:56

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Chloride	U		379	1000
Sulfate	U		594	5000

L1526529-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1526529-02 08/19/22 19:46 • (DUP) R3829904-3 08/19/22 20:00

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	1480	1460	1	1.47		15
Sulfate	30500	29500	1	3.34		15

Laboratory Control Sample (LCS)

(LCS) R3829904-2 08/19/22 18:10

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40000	39300	98.3	80.0-120	
Sulfate	40000	39600	99.0	80.0-120	

L1526534-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1526534-01 08/19/22 20:14 • (MS) R3829904-4 08/19/22 20:28 • (MSD) R3829904-5 08/19/22 20:42

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	6300	56300	57600	99.9	103	1	80.0-120			2.28	15
Sulfate	50000	40600	88300	90200	95.3	99.1	1	80.0-120			2.11	15

L1526534-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1526534-03 08/19/22 21:09 • (MS) R3829904-7 08/19/22 21:23 • (MSD) R3829904-8 08/19/22 22:04

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	1440	63000	63900	123	125	1	80.0-120	J5	J5	1.35	15
Sulfate	50000	29800	90900	91900	122	124	1	80.0-120	J5	J5	1.09	15

Method Blank (MB)

(MB) R3830662-1 08/25/22 14:57

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Calcium	U		79.3	1000
Magnesium	U		85.3	1000
Potassium	526	J	261	2000
Sodium	U		504	3000

Laboratory Control Sample (LCS)

(LCS) R3830662-2 08/25/22 15:00

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Calcium	10000	9710	97.1	80.0-120	
Magnesium	10000	10100	101	80.0-120	
Potassium	10000	10400	104	80.0-120	
Sodium	10000	9610	96.1	80.0-120	

L1526534-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1526534-01 08/25/22 15:02 • (MS) R3830662-4 08/25/22 15:08 • (MSD) R3830662-5 08/25/22 15:10

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Calcium	10000	141000	148000	148000	64.1	70.2	1	75.0-125	V	V	0.412	20
Magnesium	10000	31800	40800	40900	90.2	91.0	1	75.0-125			0.203	20
Potassium	10000	7410	16900	17200	95.0	97.9	1	75.0-125			1.73	20
Sodium	10000	11400	20400	20500	90.5	91.1	1	75.0-125			0.265	20

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.
V	The sample concentration is too high to evaluate accurate spike recoveries.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Company Name/Address:
SCS Engineers - KS
8575 W. 110th Street
Overland Park, KS 66210

Billing Information:
Accounts Payable
8575 W. 110th Street
Overland Park, KS 66210

Pres Chk

Report to: Jason Franks

Email To: jfranks@scsengineers.com;jay.martin@evergy.c

Project Description: Evergy Iatan Gen Station LF GW 2022-23

City/State Collected:

Please Circle: PT MT CT ET

Phone: 913-681-0030

Client Project # 27213167.21 - H

Lab Project # AQUAOPKS-IATAN

Collected by (print): A Thomps

Site/Facility ID #

P.O. #

Collected by (signature):

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Immediately Packed on Ice N ___ Y ✓

Chain of Custody Page 1 of 1

Pace® PEOPLE ADVANCING SCIENCE

MT JULIET, TN
12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG # L1526329
J127

Acctnum: AQUAOPKS
Template: T204381
Prelogin: P943622
PM: 206 - Jeff Carr
PB:
Shipped Via: FedEX Ground

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	ALKBI, ALKCA 125mlHDPE-NoPres	Ca, K, Mg, Na - 6010 250mlHDPE-HNO3 (<2)	Chloride - 9056 125mlHDPE-NoPres	K, Mg, Na - 6010 250mlHDPE-HNO3 (<2)	Sulfate - 9056 125mlHDPE-NoPres	Remarks	Sample # (lab only)
MW-1		GW		8/17/22	1650	3	X		X	X			-01
MW-6		GW				3	X	X			X		-02

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_________

Remarks:

pH _______ Temp _______
Flow _______ Other _______

Samples returned via: __ UPS ✓ FedEx __ Courier

Tracking # 5719 6180 7320

Sample Receipt Checklist
COC Seal Present/Intact: ✓NP _Y _N
COC Signed/Accurate: ✓Y _N
Bottles arrive intact: ✓Y _N
Correct bottles used: ✓Y _N
Sufficient volume sent: ✓Y _N
If Applicable
VOA Zero Headspace: _Y _N
Preservation Correct/Checked: ✓Y _N
RAD Screen <0.5 mR/hr: ✓Y _N

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / (No) HCL / MeoH TBR	
[signature]	8/16	1938			
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C 5.6+0=5.6 / Bottles Received: 6	If preservation required by Login: Date/Time
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature) Hawa Mwechina	Date: 08.17.22 / Time: 08:45	Hold: / Condition: NCF / (OK)

ANALYTICAL REPORT

November 22, 2022

SCS Engineers - KS

Sample Delivery Group:	L1555228
Samples Received:	11/08/2022
Project Number:	27213167.22-A
Description:	Evergy Iatan Gen Station LF GW 2022-23

Report To: Jason Franks
8575 W. 110th Street
Overland Park, KS 66210

Entire Report Reviewed By:

Jeff Carr
Project Manager

Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

MW-1 L1555228-01 GW

Collected by: B. Coleman | Collected date/time: 11/07/22 12:00 | Received date/time: 11/08/22 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1958137	1	11/14/22 09:05	11/14/22 11:32	DTM	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1957434	1	11/11/22 03:18	11/11/22 03:18	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1959138	1	11/17/22 11:17	11/17/22 22:55	CCE	Mt. Juliet, TN

MW-2 L1555228-02 GW

Collected by: B. Coleman | Collected date/time: 11/07/22 11:10 | Received date/time: 11/08/22 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1958137	1	11/14/22 09:05	11/14/22 11:32	DTM	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1957434	1	11/11/22 03:31	11/11/22 03:31	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1959138	1	11/17/22 11:17	11/17/22 22:58	CCE	Mt. Juliet, TN

MW-6 L1555228-03 GW

Collected by: B. Coleman | Collected date/time: 11/07/22 11:55 | Received date/time: 11/08/22 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1958137	1	11/14/22 09:05	11/14/22 11:32	DTM	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1957434	1	11/11/22 03:43	11/11/22 03:43	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1959138	1	11/17/22 11:17	11/17/22 23:01	CCE	Mt. Juliet, TN

MW-7 L1555228-04 GW

Collected by: B. Coleman | Collected date/time: 11/07/22 12:20 | Received date/time: 11/08/22 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1958137	1	11/14/22 09:05	11/14/22 11:32	DTM	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1958318	1	11/11/22 19:09	11/11/22 19:09	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1961840	1	11/20/22 23:15	11/21/22 08:51	ABL	Mt. Juliet, TN

MW-8 L1555228-05 GW

Collected by: B. Coleman | Collected date/time: 11/07/22 13:20 | Received date/time: 11/08/22 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1958137	1	11/14/22 09:05	11/14/22 11:32	DTM	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1958318	1	11/11/22 20:10	11/11/22 20:10	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1959138	1	11/17/22 11:17	11/17/22 23:09	CCE	Mt. Juliet, TN

DUPLICATE L1555228-06 GW

Collected by: B. Coleman | Collected date/time: 11/07/22 00:00 | Received date/time: 11/08/22 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1958022	1	11/14/22 10:08	11/14/22 13:19	AS	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1958318	1	11/11/22 20:25	11/11/22 20:25	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1959138	1	11/17/22 11:17	11/17/22 23:12	CCE	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Jeff Carr
Project Manager

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	402000		10000	1	11/14/2022 11:32	WG1958137

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	6010		1000	1	11/11/2022 03:18	WG1957434
Fluoride	316		150	1	11/11/2022 03:18	WG1957434
Sulfate	36800		5000	1	11/11/2022 03:18	WG1957434

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	ND		200	1	11/17/2022 22:55	WG1959138
Calcium	141000		1000	1	11/17/2022 22:55	WG1959138

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	587000		10000	1	11/14/2022 11:32	WG1958137

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	6070		1000	1	11/11/2022 03:31	WG1957434
Fluoride	357		150	1	11/11/2022 03:31	WG1957434
Sulfate	105000		5000	1	11/11/2022 03:31	WG1957434

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	ND		200	1	11/17/2022 22:58	WG1959138
Calcium	150000		1000	1	11/17/2022 22:58	WG1959138

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	492000		10000	1	11/14/2022 11:32	WG1958137

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	1490		1000	1	11/11/2022 03:43	WG1957434
Fluoride	338		150	1	11/11/2022 03:43	WG1957434
Sulfate	24800		5000	1	11/11/2022 03:43	WG1957434

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	ND		200	1	11/17/2022 23:01	WG1959138
Calcium	134000		1000	1	11/17/2022 23:01	WG1959138

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	451000		10000	1	11/14/2022 11:32	WG1958137

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	1840		1000	1	11/11/2022 19:09	WG1958318
Fluoride	335		150	1	11/11/2022 19:09	WG1958318
Sulfate	39900		5000	1	11/11/2022 19:09	WG1958318

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	ND		200	1	11/21/2022 08:51	WG1961840
Calcium	127000	O1 V	1000	1	11/21/2022 08:51	WG1961840

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	530000		10000	1	11/14/2022 11:32	WG1958137

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	4740		1000	1	11/11/2022 20:10	WG1958318
Fluoride	342		150	1	11/11/2022 20:10	WG1958318
Sulfate	45900		5000	1	11/11/2022 20:10	WG1958318

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	ND		200	1	11/17/2022 23:09	WG1959138
Calcium	150000		1000	1	11/17/2022 23:09	WG1959138

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	358000		10000	1	11/14/2022 13:19	WG1958022

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	1810		1000	1	11/11/2022 20:25	WG1958318
Fluoride	353		150	1	11/11/2022 20:25	WG1958318
Sulfate	39900		5000	1	11/11/2022 20:25	WG1958318

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	ND		200	1	11/17/2022 23:12	WG1959138
Calcium	128000		1000	1	11/17/2022 23:12	WG1959138

Method Blank (MB)

(MB) R3863816-1 11/14/22 13:19

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Dissolved Solids	U		10000	10000

L1555223-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1555223-06 11/14/22 13:19 • (DUP) R3863816-3 11/14/22 13:19

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	521000	519000	1	0.385		5

L1555228-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1555228-06 11/14/22 13:19 • (DUP) R3863816-4 11/14/22 13:19

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	358000	367000	1	2.48		5

Laboratory Control Sample (LCS)

(LCS) R3863816-2 11/14/22 13:19

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800000	8450000	96.0	77.3-123	

Method Blank (MB)

(MB) R3862492-1 11/14/22 11:32

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Dissolved Solids	14000		10000	10000

L1555228-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1555228-04 11/14/22 11:32 • (DUP) R3862492-3 11/14/22 11:32

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	451000	473000	1	4.76		5

L1555228-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1555228-05 11/14/22 11:32 • (DUP) R3862492-4 11/14/22 11:32

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	530000	540000	1	1.87		5

Laboratory Control Sample (LCS)

(LCS) R3862492-2 11/14/22 11:32

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800000	9190000	104	77.3-123	

Method Blank (MB)

(MB) R3860191-1 11/10/22 21:21

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Chloride	U		379	1000
Fluoride	U		64.0	150
Sulfate	U		594	5000

L1555223-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1555223-01 11/10/22 23:54 • (DUP) R3860191-3 11/11/22 00:07

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Chloride	50300	50300	1	0.0388		15
Fluoride	262	263	1	0.572		15
Sulfate	19900	19800	1	0.272		15

L1555227-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1555227-02 11/11/22 02:40 • (DUP) R3860191-6 11/11/22 02:52

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Chloride	17400	17300	1	0.505		15
Sulfate	73600	73700	1	0.0904		15

Laboratory Control Sample (LCS)

(LCS) R3860191-2 11/10/22 21:34

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Chloride	40000	39100	97.6	80.0-120	
Fluoride	8000	8370	105	80.0-120	
Sulfate	40000	39000	97.6	80.0-120	

L1555223-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1555223-01 11/10/22 23:54 • (MS) R3860191-4 11/11/22 00:20 • (MSD) R3860191-5 11/11/22 00:32

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Chloride	50000	50300	99700	99900	98.9	99.2	1	80.0-120			0.125	15
Fluoride	5000	262	5360	5370	102	102	1	80.0-120			0.214	15

L1555223-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1555223-01 11/10/22 23:54 • (MS) R3860191-4 11/11/22 00:20 • (MSD) R3860191-5 11/11/22 00:32

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Sulfate	50000	19900	70000	70200	100	101	1	80.0-120			0.185	15

L1555227-02 Original Sample (OS) • Matrix Spike (MS)

(OS) L1555227-02 11/11/22 02:40 • (MS) R3860191-7 11/11/22 03:05

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	17400	68600	102	1	80.0-120	
Sulfate	50000	73600	124000	101	1	80.0-120	

Method Blank (MB)

(MB) R3860346-1 11/11/22 12:39

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Chloride	U		379	1000
Fluoride	U		64.0	150
Sulfate	U		594	5000

L1555228-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1555228-04 11/11/22 19:09 • (DUP) R3860346-3 11/11/22 19:24

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	1840	1800	1	2.06		15
Fluoride	335	318	1	4.93		15
Sulfate	39900	39400	1	1.18		15

L1555565-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1555565-03 11/11/22 21:12 • (DUP) R3860346-6 11/11/22 21:27

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	46700	46700	1	0.0777		15
Fluoride	452	458	1	1.21		15
Sulfate	184000	185000	1	0.488		15

Laboratory Control Sample (LCS)

(LCS) R3860346-2 11/11/22 12:55

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40000	38300	95.8	80.0-120	
Fluoride	8000	7960	99.5	80.0-120	
Sulfate	40000	39500	98.7	80.0-120	

L1555228-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1555228-04 11/11/22 19:09 • (MS) R3860346-4 11/11/22 19:39 • (MSD) R3860346-5 11/11/22 19:54

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	1840	49500	49700	95.3	95.7	1	80.0-120			0.389	15
Fluoride	5000	335	5200	5160	97.4	96.4	1	80.0-120			0.886	15
Sulfate	50000	39900	90700	89200	102	98.6	1	80.0-120			1.65	15

L1555565-03 Original Sample (OS) • Matrix Spike (MS)

(OS) L1555565-03 11/11/22 21:12 • (MS) R3860346-7 11/11/22 22:13

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	46700	93300	93.2	1	80.0-120	
Fluoride	5000	452	5160	94.1	1	80.0-120	
Sulfate	50000	184000	226000	85.0	1	80.0-120	E

Method Blank (MB)

(MB) R3862515-1 11/17/22 22:02

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Boron	U		20.0	200
Calcium	U		79.3	1000

Laboratory Control Sample (LCS)

(LCS) R3862515-2 11/17/22 22:04

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Boron	1000	983	98.3	80.0-120	
Calcium	10000	9910	99.1	80.0-120	

L1555046-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1555046-07 11/17/22 22:07 • (MS) R3862515-4 11/17/22 22:13 • (MSD) R3862515-5 11/17/22 22:15

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Boron	1000	ND	1080	1070	98.8	97.9	1	75.0-125			0.843	20
Calcium	10000	131000	137000	137000	59.1	59.8	1	75.0-125	V	V	0.0523	20

Method Blank (MB)

(MB) R3863416-1 11/21/22 08:46

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Boron	U		20.0	200
Calcium	143	J	79.3	1000

Laboratory Control Sample (LCS)

(LCS) R3863416-2 11/21/22 08:48

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Boron	1000	953	95.3	80.0-120	
Calcium	10000	9670	96.7	80.0-120	

L1555228-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1555228-04 11/21/22 08:51 • (MS) R3863416-4 11/21/22 08:56 • (MSD) R3863416-5 11/21/22 08:58

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Boron	1000	ND	1020	1030	91.7	92.2	1	75.0-125			0.460	20
Calcium	10000	127000	133000	132000	63.1	56.3	1	75.0-125	V	V	0.514	20

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
O1	The analyte failed the method required serial dilution test and/or subsequent post-spike criteria. These failures indicate matrix interference.
V	The sample concentration is too high to evaluate accurate spike recoveries.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Company Name/Address:
SCS Engineers - KS
8575 W. 110th Street
Overland Park, KS 66210

Billing Information:
Accounts Payable
8575 W. 110th Street
Overland Park, KS 66210

Pres Chk

Report to: **Jason Franks**

Email To: **jfranks@scsengineers.com;jay.martin@evergy.c**

Project Description: **Evergy Iatan Gen Station LF GW 2022-23**

City/State Collected: **Weston, MO**

Please Circle: PT MT CT ET

Phone: **913-681-0030**

Client Project # **27213167.22-A**

Lab Project # **AQUAOPKS-IATAN**

Collected by (print): **B. Martin**

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y ___

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed: STD

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Anions (Cld, F, SO4) 125mlHDPE-NoPres	B, Ca - 6010 250mlHDPE-HNO3	TDS 250mlHDPE-NoPres	Remarks	Sample # (lab only)
MW-1	G	GW	—	11-7-22	1200	3	X	X	X		-01
MW-2		GW			1110	3	X	X	X		-02
MW-6		GW			1155	3	X	X	X		-03
MW-7		GW			1220	3	X	X	X		-04
MW-8		GW			1327	3	X	X	X		-05
MS/MSD MW-7		GW			—	3	X	X	X		-04
DUPLICATE		GW			—	3	X	X	X		-06

Analysis / Container / Preservative

Chain of Custody Page 1 of 1

Pace
PEOPLE ADVANCING SCIENCE

MT JULIET, TN
12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG # L1555228

J058

Acctnum: AQUAOPKS

Template: T136059

Prelogin: P958813

PM: 206 - Jeff Carr

PB:

Shipped Via: FedEX Ground

* Matrix:
SS - Soil **AIR** - Air **F** - Filter
GW - Groundwater **B** - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Samples returned via: __ UPS __ FedEx __ Courier _____

Tracking # 0221 6094 5455 7865

Sample Receipt Checklist

COC Seal Present/Intact:	NP	Y N
COC Signed/Accurate:		Y N
Bottles arrive intact:		Y N
Correct bottles used:		Y N
Sufficient volume sent:		Y N
If Applicable		
VOA Zero Headspace:		Y N
Preservation Correct/Checked:		Y N
RAD Screen <0.5 mR/hr:		Y N

Relinquished by : (Signature)	Date: 11-7-22	Time: 1600	Received by: (Signature)	Trip Blank Received: Yes / No; HCL / MeoH; TBR
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 2.2-2.2 °C; Bottles Received: 21; If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 11/8/22; Time: 0945; Hold: ; Condition: NCF / OK

ANALYTICAL REPORT

November 19, 2022

1 Cp
2 Tc
3 Ss
4 Cn
5 Sr
6 Qc
7 Gl
8 Al
9 Sc

SCS Engineers - KS

Sample Delivery Group:	L1555225
Samples Received:	11/08/2022
Project Number:	27213167.22-A
Description:	Evergy Iatan Gen Station LF GW 2022-23

Report To: Jason Franks
8575 W. 110th Street
Overland Park, KS 66210

Entire Report Reviewed By:

Jeff Carr
Project Manager

Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

MW-9 L1555225-01 GW

Collected by: B. Coleman
Collected date/time: 11/07/22 12:50
Received date/time: 11/08/22 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1959410	1	11/14/22 13:42	11/14/22 15:23	DTM	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1956825	1	11/11/22 00:24	11/11/22 00:24	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1959138	1	11/17/22 11:17	11/17/22 22:50	CCE	Mt. Juliet, TN

MW-10 L1555225-02 GW

Collected by: B. Coleman
Collected date/time: 11/07/22 10:35
Received date/time: 11/08/22 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1959410	1	11/14/22 13:42	11/14/22 15:23	DTM	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1956825	1	11/11/22 00:40	11/11/22 00:40	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1959138	1	11/17/22 11:17	11/17/22 22:52	CCE	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Jeff Carr
Project Manager

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	594000		10000	1	11/14/2022 15:23	WG1959410

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	1510		1000	1	11/11/2022 00:24	WG1956825
Fluoride	371		150	1	11/11/2022 00:24	WG1956825
Sulfate	13800		5000	1	11/11/2022 00:24	WG1956825

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	ND		200	1	11/17/2022 22:50	WG1959138
Calcium	145000		1000	1	11/17/2022 22:50	WG1959138

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	1040000	J3	13300	1	11/14/2022 15:23	WG1959410

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	15500		1000	1	11/11/2022 00:40	WG1956825
Fluoride	532		150	1	11/11/2022 00:40	WG1956825
Sulfate	85800		5000	1	11/11/2022 00:40	WG1956825

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	ND		200	1	11/17/2022 22:52	WG1959138
Calcium	167000		1000	1	11/17/2022 22:52	WG1959138

Method Blank (MB)

(MB) R3862956-1 11/14/22 15:23

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Dissolved Solids	U		10000	10000

L1555225-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1555225-01 11/14/22 15:23 • (DUP) R3862956-3 11/14/22 15:23

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	594000	589000	1	0.845		5

L1555225-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1555225-02 11/14/22 15:23 • (DUP) R3862956-4 11/14/22 15:23

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	1040000	768000	1	29.8	J3	5

Laboratory Control Sample (LCS)

(LCS) R3862956-2 11/14/22 15:23

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800000	8690000	98.8	77.3-123	

QUALITY CONTROL SUMMARY

L1555225-01,02

Method Blank (MB)

(MB) R3860179-1 11/10/22 16:29

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Chloride	U		379	1000
Fluoride	U		64.0	150
Sulfate	U		594	5000

L1554540-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1554540-01 11/10/22 17:03 • (DUP) R3860179-3 11/10/22 17:19

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	4910	4990	1	1.69		15
Fluoride	ND	ND	1	0.000		15
Sulfate	ND	ND	1	2.31		15

L1554540-15 Original Sample (OS) • Duplicate (DUP)

(OS) L1554540-15 11/10/22 21:56 • (DUP) R3860179-6 11/10/22 22:42

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	12400	12500	1	1.00		15
Fluoride	ND	ND	1	5.86		15
Sulfate	ND	ND	1	0.597		15

Laboratory Control Sample (LCS)

(LCS) R3860179-2 11/10/22 16:44

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40000	39100	97.9	80.0-120	
Fluoride	8000	8320	104	80.0-120	
Sulfate	40000	39800	99.6	80.0-120	

L1554540-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1554540-01 11/10/22 17:03 • (MS) R3860179-4 11/10/22 17:34 • (MSD) R3860179-5 11/10/22 17:50

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50000	4910	54200	54500	98.7	99.2	1	80.0-120			0.468	15
Fluoride	5000	ND	5040	4950	101	99.0	1	80.0-120			1.76	15
Sulfate	50000	ND	49400	50600	96.6	99.0	1	80.0-120			2.35	15

L1554540-15 Original Sample (OS) • Matrix Spike (MS)

(OS) L1554540-15 11/10/22 21:56 • (MS) R3860179-7 11/10/22 22:58

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	12400	62400	100	1	80.0-120	
Fluoride	5000	ND	4890	96.3	1	80.0-120	
Sulfate	50000	ND	50800	97.4	1	80.0-120	

Method Blank (MB)

(MB) R3862515-1 11/17/22 22:02

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
Boron	U		20.0	200
Calcium	U		79.3	1000

Laboratory Control Sample (LCS)

(LCS) R3862515-2 11/17/22 22:04

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Boron	1000	983	98.3	80.0-120	
Calcium	10000	9910	99.1	80.0-120	

L1555046-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1555046-07 11/17/22 22:07 • (MS) R3862515-4 11/17/22 22:13 • (MSD) R3862515-5 11/17/22 22:15

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
Boron	1000	ND	1080	1070	98.8	97.9	1	75.0-125			0.843	20
Calcium	10000	131000	137000	137000	59.1	59.8	1	75.0-125	V	V	0.0523	20

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J3	The associated batch QC was outside the established quality control range for precision.
V	The sample concentration is too high to evaluate accurate spike recoveries.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

Company Name/Address:
SCS Engineers - KS

8575 W. 110th Street
Overland Park, KS 66210

Billing Information:
Accounts Payable
8575 W. 110th Street
Overland Park, KS 66210

Pres Chk

Report to:
Jason Franks

Email To:
jfranks@scsengineers.com;jay.martin@evergy.c

Project Description:
Evergy Iatan Gen Station LF GW 2022-23

City/State Collected: Weston, MO

Please Circle: PT MT CT ET

Phone: **913-681-0030**

Client Project #
27213167.22-A

Lab Project #
AQUAOPKS-IATAN

Collected by (print):
D. Lehmann

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N ____ Y ____

Rush? (Lab MUST Be Notified)
____ Same Day ____ Five Day
____ Next Day ____ 5 Day (Rad Only)
____ Two Day ____ 10 Day (Rad Only)
____ Three Day

Quote #

Date Results Needed: STD

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Anions (Cld, F, SO4) 125mlHDPE-NoPres	B, Ca - 6010 250mlHDPE-HNO3	TDS 250mlHDPE-NoPres	Remarks	Sample # (lab only)
MW-9	G	GW	-	11-7-22	1250	3	X	X	X		-01
MW-10	G	GW	-	↓	1035	3	X	X	X		-02

Analysis / Container / Preservative

Chain of Custody Page 1 of 1

Pace
PEOPLE ADVANCING SCIENCE

MT JULIET, TN

12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG # L1555225
J059

Acctnum: **AQUAOPKS**
Template: **T166691**
Prelogin: **P958815**
PM: **206 - Jeff Carr**
PB:

Shipped Via: **FedEX Ground**

* Matrix:
SS - Soil **AIR** - Air **F** - Filter
GW - Groundwater **B** - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking # 0221 6094 5455 7865

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y X N
COC Signed/Accurate: X Y __N
Bottles arrive intact: X Y __N
Correct bottles used: X Y __N
Sufficient volume sent: X Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: X Y __N
RAD Screen <0.5 mR/hr: X Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	If preservation required by Login: Date/Time
	11-7-22	1400			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 2.2+0.2 °C Bottles Received: 6	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 11/8/22 Time: 0945	Hold: Condition: NCF / OK

APPENDIX E

STATISTICAL ANALYSES

E.1 Fall 2021 Semiannual Detection Monitoring Statistical Analyses

E.2 Spring 2022 Semiannual Detection Monitoring Statistical Analyses

Appendix E.1

Fall 2021 Semiannual Detection Monitoring Statistical Analyses

MEMORANDUM

April 1, 2022

To: Iatan Generating Station
20250 State Route 45 N
Platte County, Missouri
Evergy Metro, Inc.

From: SCS Engineers

RE: Determination of Statistically Significant Increases - CCR Landfill
Fall 2021 Semiannual Detection Monitoring 40 CFR 257.94

Statistical analysis of monitoring data from the groundwater monitoring system for the CCR Landfill at the Iatan Generating Station has been completed in substantial compliance with the "Statistical Method Certification by A Qualified Professional Engineer" dated October 12, 2017. Groundwater samples were collected on November 17, 2021. Review and validation of the results from the November 2021 Detection Monitoring Event was completed on January 6, 2022, which constitutes completion and finalization of detection monitoring laboratory analyses. Statistical analysis was then conducted to determine whether there was a statistically significant increase (SSI) over background values for each constituent listed in Appendix III to Part 257-Constituents for Detection Monitoring. Two rounds of verification sampling were conducted for certain constituents on January 25, 2022 and March 1, 2022.

The completed statistical evaluation identified four Appendix III constituents above the prediction limits established for monitoring well MW-8.

Monitoring Well Constituents	*UPL	Observation November 17, 2021	1st Verification January 25, 2022	2nd Verification March 1, 2022
MW-8				
Calcium	158.5	178	171	162
Chloride	8.265	14.4	12.2	10.1
Total Dissolved Solids	548.8	640	594	569
Sulfate	69.33	91	77.4	73.3

*UPL – Upper Prediction Limit

Determination: A statistical evaluation was completed for all Appendix III detection monitoring constituents in accordance with the certified statistical method. The statistical evaluation identified SSIs above background prediction limits for calcium, chloride, total dissolved solids and sulfate at monitoring well MW-8.

Attached to this memorandum are the following backup information:

Attachment 1: Sanitas™ Output:
Statistical evaluation output from Sanitas™ for the prediction limit analysis. This includes prediction limit plots, prediction limit background data, detection sample results,

1st verification re-sample results (when applicable), 2nd verification re-sample results (when applicable), extra sample results for pH because pH is collected as part of the sampling procedure, and a Prediction Limit summary table. Output documentation includes the analytical data used for the statistical analyses.

Attachment 2: Sanitas™ Configuration Settings:

Screen shots of the applicable Sanitas™ configuration settings for the statistical prediction limit analysis. This includes data configuration, output configuration, prediction limit configuration and other tests configuration.

Revision Number	Revision Date	Attachment Revised	Summary of Revisions

Iatan Generating Station
Determination of Statistically Significant Increases
CCR Landfill
April 1, 2022

ATTACHMENT 1

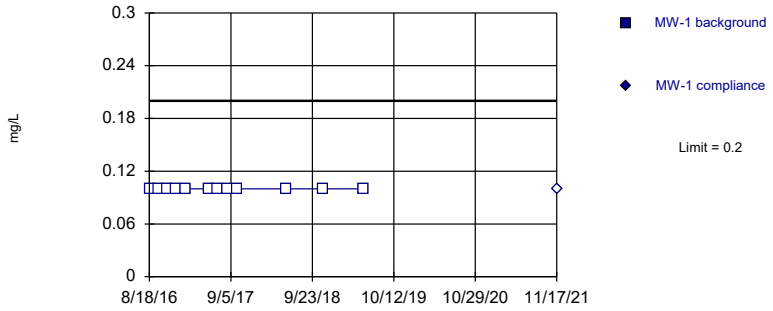
Sanitas™ Output

Sanitas™ v.9.6.32 Sanitas software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 12) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.004342. Individual comparison alpha = 0.002173 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

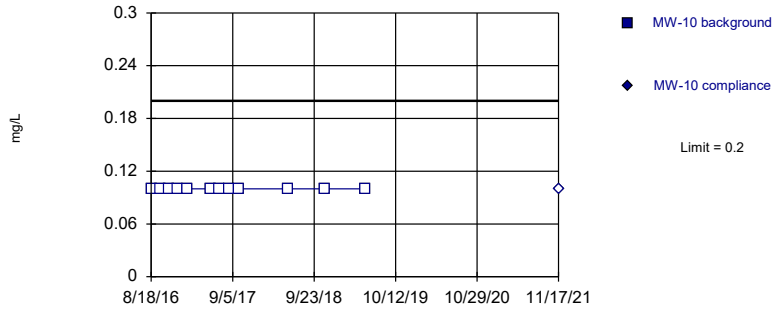
Constituent: Boron Analysis Run 3/30/2022 10:57 AM View: CCR LF III
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.32 Sanitas software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 12) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.004342. Individual comparison alpha = 0.002173 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

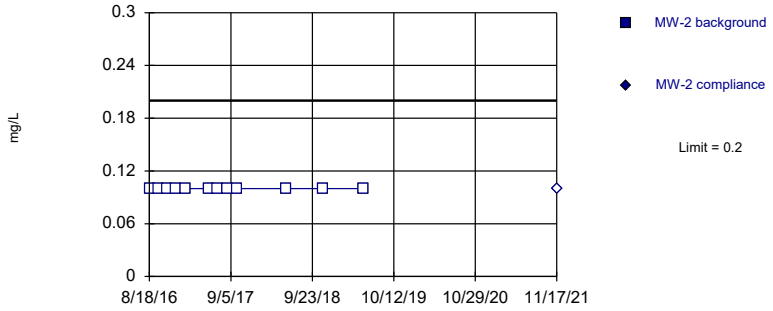
Constituent: Boron Analysis Run 3/30/2022 10:57 AM View: CCR LF III
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.32 Sanitas software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 12) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.004342. Individual comparison alpha = 0.002173 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

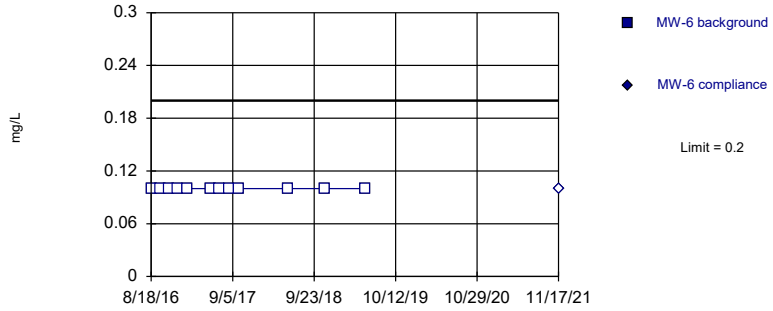
Constituent: Boron Analysis Run 3/30/2022 10:57 AM View: CCR LF III
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.32 Sanitas software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 12) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.004342. Individual comparison alpha = 0.002173 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Boron Analysis Run 3/30/2022 10:57 AM View: CCR LF III
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Prediction Limit

Constituent: Boron Analysis Run 3/30/2022 11:06 AM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

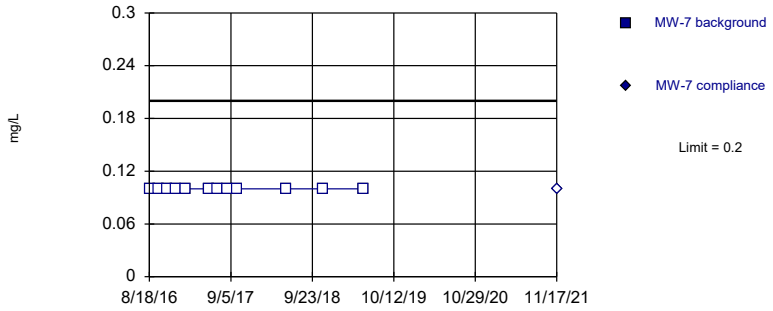
	MW-1	MW-1	MW-10	MW-10	MW-2	MW-2	MW-6	MW-6
8/18/2016	<0.2		<0.2		<0.2		<0.2	
9/29/2016	<0.2		<0.2		<0.2		<0.2	
11/9/2016	<0.2		<0.2		<0.2		<0.2	
12/21/2016	<0.2		<0.2		<0.2		<0.2	
2/3/2017	<0.2		<0.2		<0.2		<0.2	
5/24/2017	<0.2		<0.2		<0.2		<0.2	
7/5/2017	<0.2		<0.2		<0.2		<0.2	
8/17/2017	<0.2		<0.2		<0.2		<0.2	
10/5/2017	<0.2		<0.2		<0.2		<0.2	
5/21/2018	<0.2		<0.2		<0.2		<0.2	
11/12/2018	<0.2		<0.2		<0.2		<0.2	
5/20/2019	<0.2		<0.2		<0.2		<0.2	
11/17/2021		<0.2		<0.2		<0.2		<0.2

Sanitas™ v.9.6.32 Sanitas software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 12) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.004342. Individual comparison alpha = 0.002173 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Boron Analysis Run 3/30/2022 10:57 AM View: CCR LF III

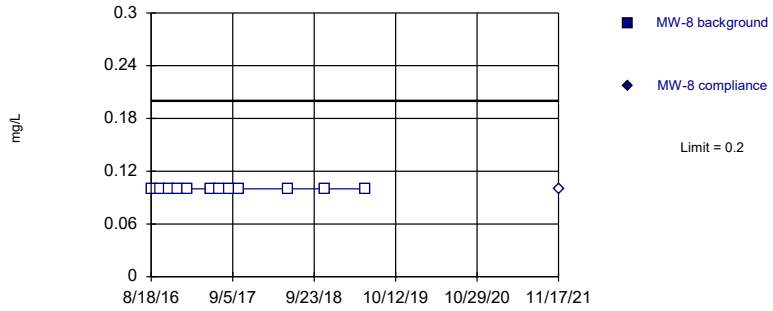
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.32 Sanitas software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 12) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.004342. Individual comparison alpha = 0.002173 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Boron Analysis Run 3/30/2022 10:57 AM View: CCR LF III

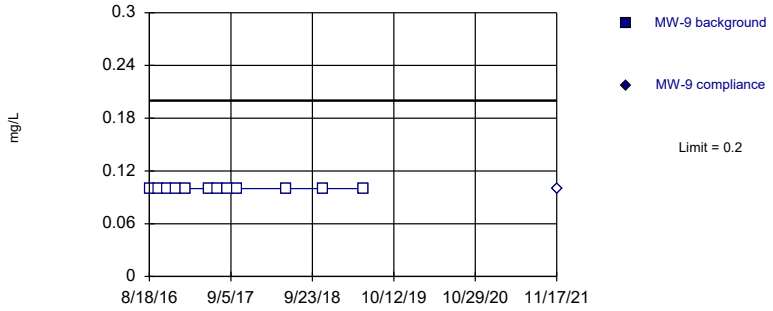
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.32 Sanitas software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 12) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.004342. Individual comparison alpha = 0.002173 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Boron Analysis Run 3/30/2022 10:57 AM View: CCR LF III

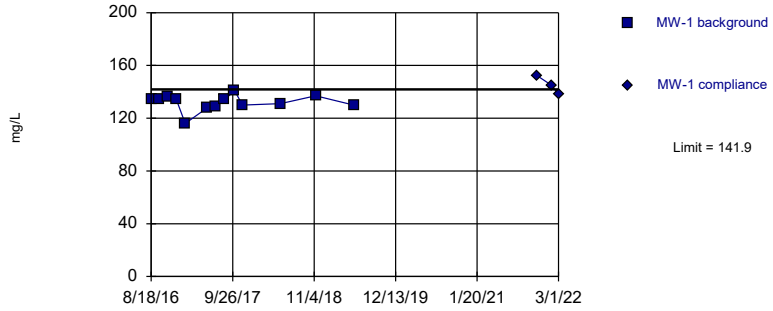
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.32 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=131.8, Std. Dev.=5.97, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8766, critical = 0.814. Kappa = 1.682 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Calcium Analysis Run 3/30/2022 10:57 AM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Prediction Limit

Constituent: Boron, Calcium Analysis Run 3/30/2022 11:06 AM View: CCR LF III

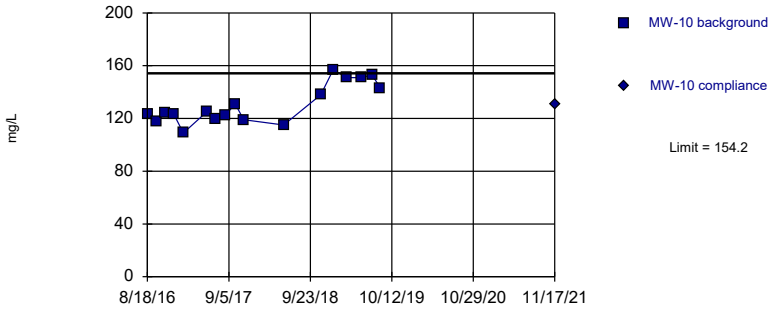
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-7	MW-7	MW-8	MW-8	MW-9	MW-9	MW-1	MW-1	
8/18/2016	<0.2		<0.2		<0.2		134		
9/29/2016	<0.2		<0.2		<0.2		134		
11/9/2016	<0.2		<0.2		<0.2		136		
12/21/2016	<0.2		<0.2		<0.2		134		
2/3/2017	<0.2		<0.2		<0.2		116		
5/24/2017	<0.2		<0.2		<0.2		128		
7/5/2017	<0.2		<0.2		<0.2		129		
8/17/2017	<0.2		<0.2		<0.2		134		
10/5/2017	<0.2		<0.2		<0.2		141		
11/14/2017							130		
5/21/2018	<0.2		<0.2		<0.2		131		
11/12/2018	<0.2		<0.2		<0.2		137		
5/20/2019	<0.2		<0.2		<0.2		130		
11/17/2021		<0.2		<0.2		<0.2		152	
1/25/2022								145	1st Verification
3/1/2022								138	2nd Verification

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=130.7, Std. Dev.=15.04, n=17. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8963, critical = 0.851. Kappa = 1.561 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Calcium Analysis Run 3/30/2022 10:58 AM View: CCR LF III

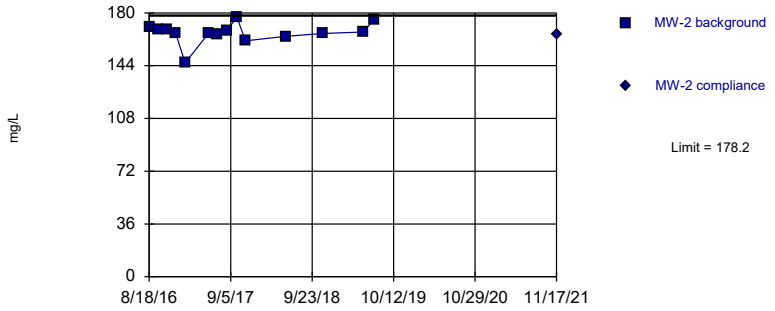
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.32 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=166.4, Std. Dev.=7.175, n=14. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8366, critical = 0.825. Kappa = 1.648 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Calcium Analysis Run 3/30/2022 10:58 AM View: CCR LF III

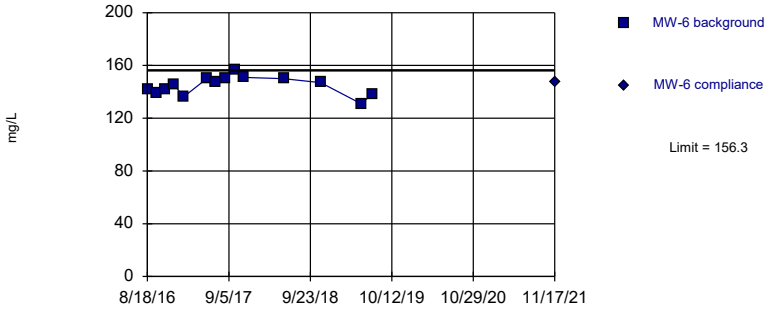
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.32 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=144.7, Std. Dev.=7.032, n=14. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9678, critical = 0.825. Kappa = 1.648 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Calcium Analysis Run 3/30/2022 10:58 AM View: CCR LF III

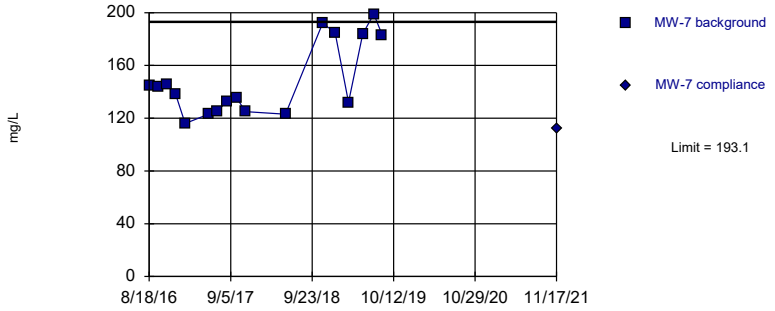
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.32 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on square root transformation): Mean=12.15, Std. Dev.=1.12, n=17. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8573, critical = 0.851. Kappa = 1.561 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Calcium Analysis Run 3/30/2022 10:58 AM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Prediction Limit

Constituent: Calcium Analysis Run 3/30/2022 11:06 AM View: CCR LF III

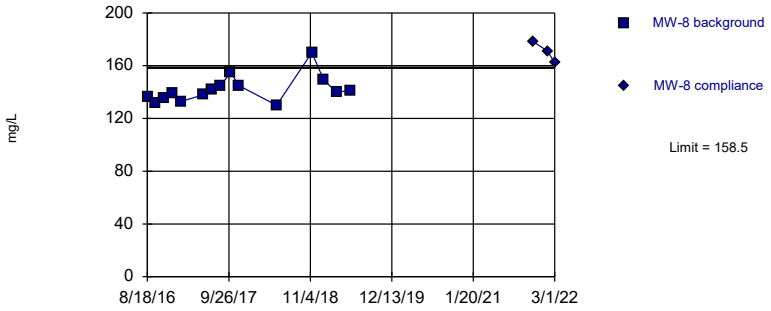
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-10	MW-10	MW-2	MW-2	MW-6	MW-6	MW-7	MW-7
8/18/2016	123		170		142		145	
9/29/2016	118		169		139		144	
11/9/2016	124		169		142		146	
12/21/2016	123		166		146		138	
2/3/2017	109		146		136		116	
5/24/2017	125		166		150		123	
7/5/2017	120		165		147		125	
8/17/2017	122		168		150		133	
10/5/2017	131		177		157		135	
11/14/2017	119		161		151		125	
5/21/2018	115		164		150		123	
11/12/2018	138		166		147		192	
1/10/2019	157						185	
3/14/2019	151						132	
5/20/2019	151		167		131		184	
7/11/2019	153		175		138		199	
8/20/2019	143						183	
11/17/2021		131		165		147		112

Exceeds Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=142, Std. Dev.=10.21, n=15. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8744, critical = 0.835. Kappa = 1.615 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

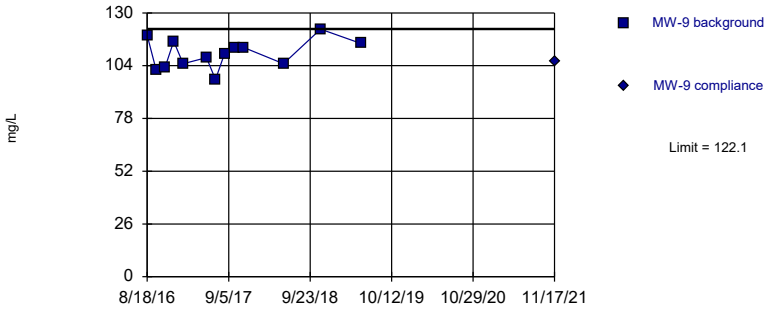
Constituent: Calcium Analysis Run 3/30/2022 10:58 AM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=109.9, Std. Dev.=7.272, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9797, critical = 0.814. Kappa = 1.682 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

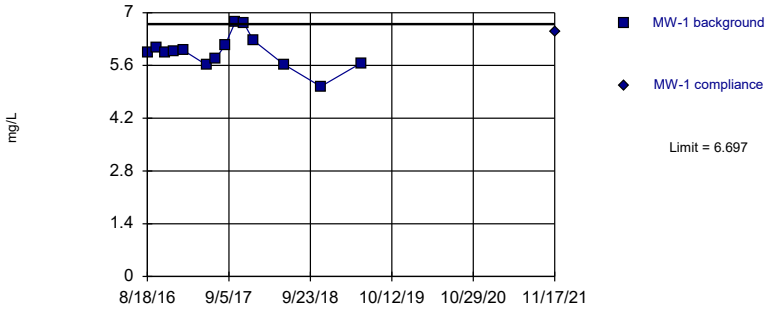
Constituent: Calcium Analysis Run 3/30/2022 10:58 AM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=5.966, Std. Dev.=0.4435, n=14. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9436, critical = 0.825. Kappa = 1.648 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

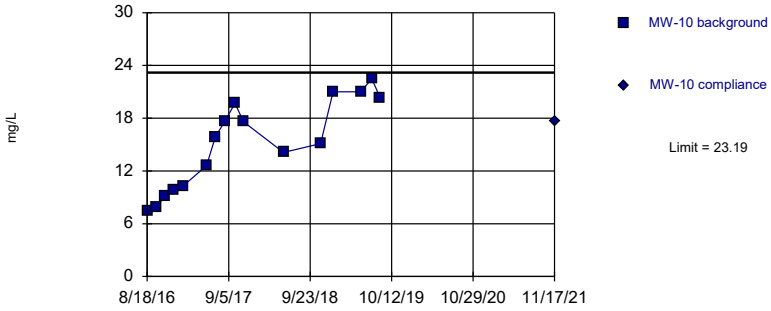
Constituent: Chloride Analysis Run 3/30/2022 10:58 AM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=15.12, Std. Dev.=5.1, n=16. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9286, critical = 0.844. Kappa = 1.581 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Chloride Analysis Run 3/30/2022 10:58 AM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Prediction Limit

Constituent: Calcium, Chloride Analysis Run 3/30/2022 11:06 AM View: CCR LF III

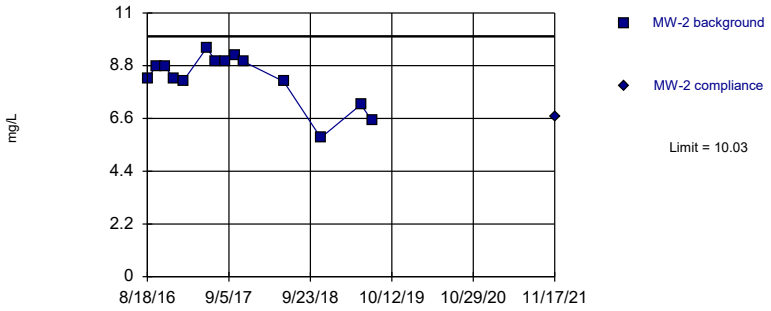
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-8	MW-8		MW-9	MW-9	MW-1	MW-1	MW-10	MW-10
8/18/2016	136			119		5.93		7.47	
9/29/2016	132			102		6.07		7.83	
11/9/2016	135			103		5.95		9.15	
12/21/2016	139			116		5.97		9.84	
2/3/2017	133			105		6		10.3	
5/24/2017	138			108		5.61		12.6	
7/5/2017	142			97.2		5.78		15.9	
8/17/2017	145			110		6.13		17.6	
10/5/2017	155			113		6.75		19.7	
11/14/2017	145			113		6.73		17.6	
12/29/2017						6.27			
5/21/2018	130			105		5.63		14.1	
11/12/2018	170			122		5.04		15.1	
1/10/2019	149							21	
3/14/2019	140								
5/20/2019	141			115		5.66		21	
7/11/2019								22.5	
8/20/2019								20.3	
11/17/2021		178			106		6.48		17.6
1/25/2022		171	1st Verification						
3/1/2022		162	2nd Verification						

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=8.253, Std. Dev.=1.076, n=14. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8719, critical = 0.825. Kappa = 1.648 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Chloride Analysis Run 3/30/2022 10:58 AM View: CCR LF III

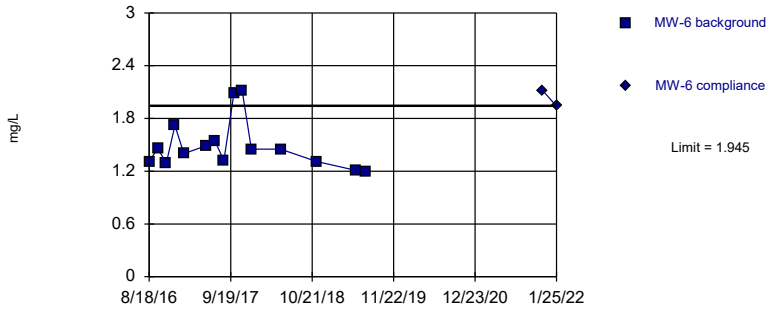
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.32 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on square root transformation): Mean=1.216, Std. Dev.=0.1104, n=15. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8387, critical = 0.835. Kappa = 1.615 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Chloride Analysis Run 3/30/2022 10:58 AM View: CCR LF III

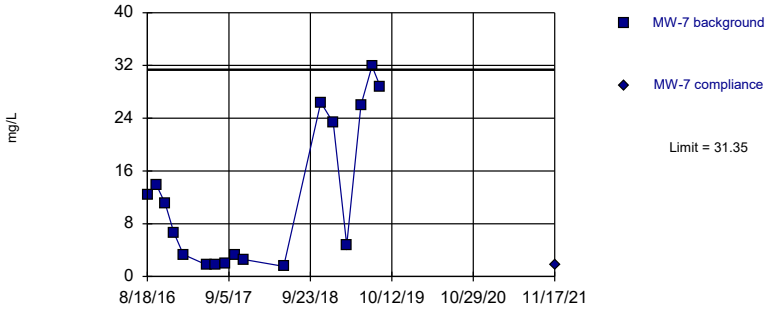
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.32 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on square root transformation): Mean=3.057, Std. Dev.=1.629, n=17. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8683, critical = 0.851. Kappa = 1.561 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Chloride Analysis Run 3/30/2022 10:58 AM View: CCR LF III

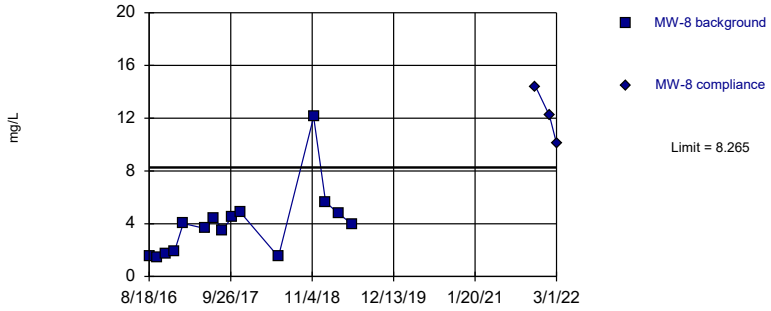
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.32 Sanitas software licensed to SCS Engineers. UG

Exceeds Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on square root transformation): Mean=1.907, Std. Dev.=0.5992, n=15. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8695, critical = 0.835. Kappa = 1.615 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Chloride Analysis Run 3/30/2022 10:58 AM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Prediction Limit

Constituent: Chloride Analysis Run 3/30/2022 11:06 AM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

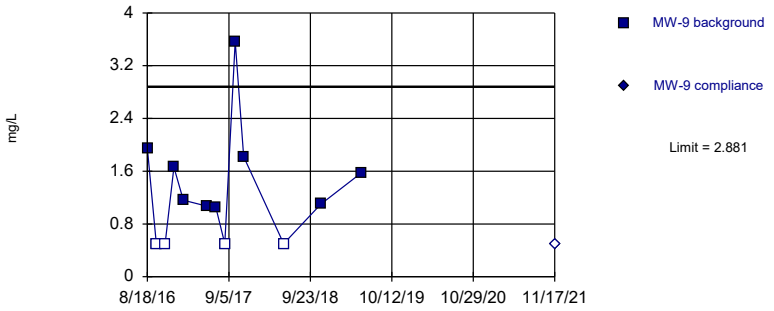
	MW-2	MW-2	MW-6	MW-6	MW-7	MW-7	MW-8	MW-8
8/18/2016	8.26		1.31		12.3		1.5	
9/29/2016	8.79		1.46		13.9		1.42	
11/9/2016	8.76		1.29		11.1		1.76	
12/21/2016	8.24		1.72		6.64		1.89	
2/3/2017	8.17		1.4		3.32		4.02	
5/24/2017	9.54		1.49		1.76		3.63	
7/5/2017	8.99		1.54		1.81		4.44	
8/17/2017	8.98		1.32		2		3.53	
10/5/2017	9.23		2.09		3.32		4.55	
11/14/2017	8.97		2.12		2.58		4.86	
12/29/2017			1.45					
5/21/2018	8.14		1.45		1.54		1.5	
11/12/2018	5.79		1.31		26.4		12.1	
1/10/2019					23.3		5.63	
3/14/2019					4.77		4.79	
5/20/2019	7.18		1.21		26		3.98	
7/11/2019	6.5		1.2		31.9			
8/20/2019					28.7			
11/17/2021		6.68		2.12		1.72		14.4
1/25/2022				1.94 1st Verification				12.2 1st Verification
3/1/2022								10.1 2nd Verification

Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (after Aitchison`s Adjustment): Mean=1.151, Std. Dev.=1.028, n=13, 30.77% NDs. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8333, critical = 0.814. Kappa = 1.682 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

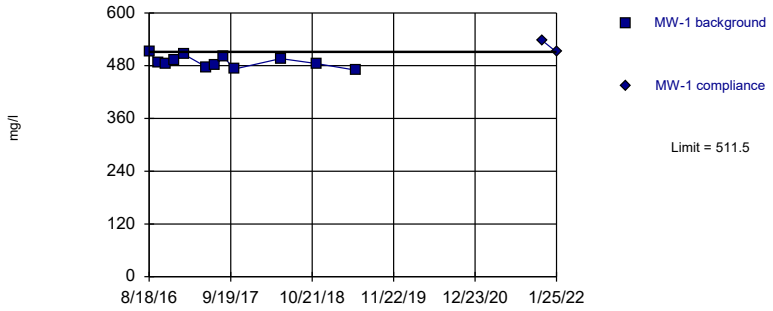
Constituent: Chloride Analysis Run 3/30/2022 10:58 AM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=488.6, Std. Dev.=13.34, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9663, critical = 0.805. Kappa = 1.716 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

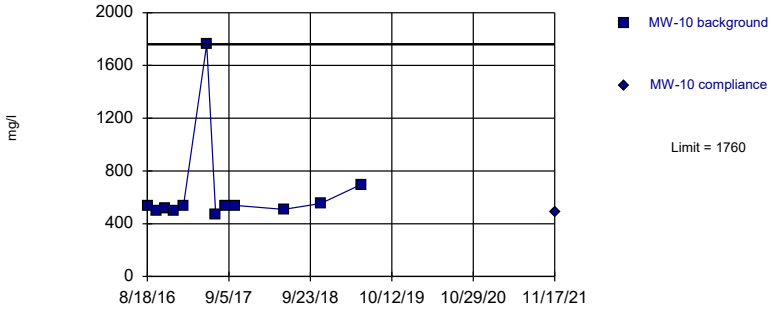
Constituent: Dissolved Solids Analysis Run 3/30/2022 10:58 AM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 12 background values. Well-constituent pair annual alpha = 0.004342. Individual comparison alpha = 0.002173 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

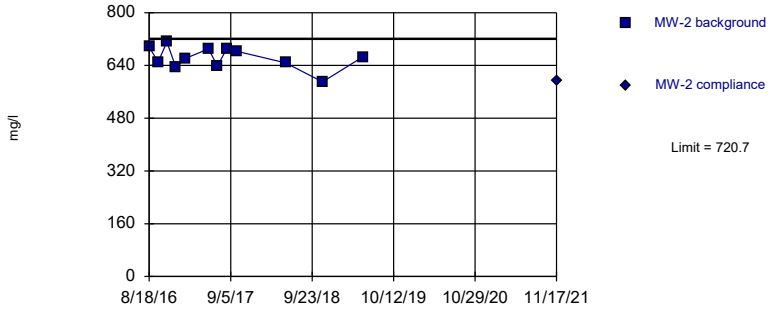
Constituent: Dissolved Solids Analysis Run 3/30/2022 10:58 AM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=663.3, Std. Dev.=33.46, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9501, critical = 0.805. Kappa = 1.716 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Dissolved Solids Analysis Run 3/30/2022 10:58 AM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Prediction Limit

Constituent: Chloride, Dissolved Solids Analysis Run 3/30/2022 11:06 AM View: CCR LF III

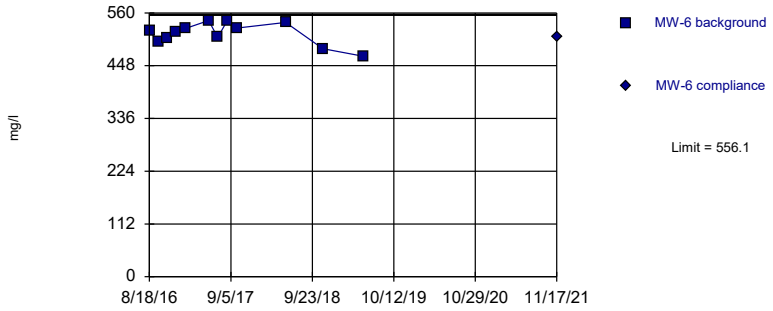
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-9	MW-9	MW-1	MW-1	MW-10	MW-10	MW-2	MW-2
8/18/2016	1.95		513		532		696	
9/29/2016	<1		486		502		651	
11/9/2016	<1		484		516		711	
12/21/2016	1.66		493		497		636	
2/3/2017	1.16		506		531		661	
5/24/2017	1.07		477		1760		690	
7/5/2017	1.06		481		474		638	
8/17/2017	<1		500		539		690	
10/5/2017	3.57		472		539		683	
11/14/2017	1.82							
5/21/2018	<1		496		509		648	
11/12/2018	1.1		485		554		590	
5/20/2019	1.57		470		697		666	
11/17/2021		<1		537		491		595
1/25/2022				511 1st Verification				

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=515.5, Std. Dev.=23.66, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9399, critical = 0.805. Kappa = 1.716 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

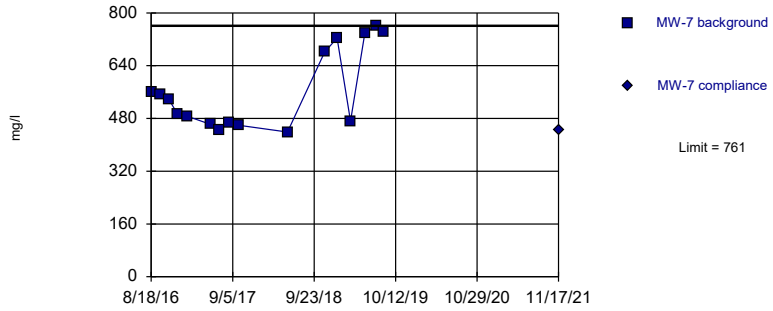
Constituent: Dissolved Solids Analysis Run 3/30/2022 10:58 AM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 16 background values. Well-constituent pair annual alpha = 0.002051. Individual comparison alpha = 0.001026 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

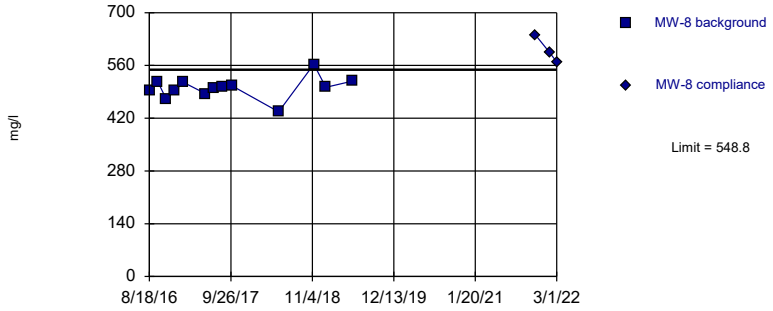
Constituent: Dissolved Solids Analysis Run 3/30/2022 10:58 AM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Exceeds Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=500.3, Std. Dev.=28.83, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9252, critical = 0.814. Kappa = 1.682 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

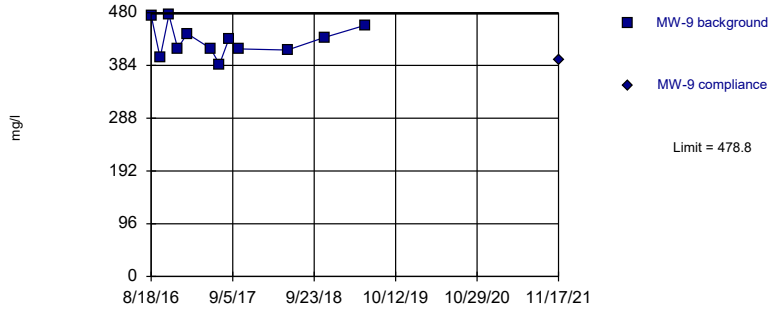
Constituent: Dissolved Solids Analysis Run 3/30/2022 10:58 AM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=429.7, Std. Dev.=28.65, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9417, critical = 0.805. Kappa = 1.716 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Dissolved Solids Analysis Run 3/30/2022 10:58 AM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Prediction Limit

Constituent: Dissolved Solids Analysis Run 3/30/2022 11:06 AM View: CCR LF III

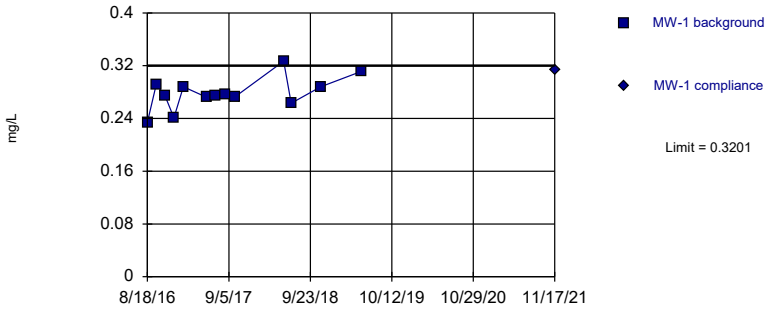
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-6	MW-6	MW-7	MW-7	MW-8	MW-8	MW-9	MW-9
8/18/2016	522		560		494		475	
9/29/2016	498		554		517		398	
11/9/2016	506		538		471		476	
12/21/2016	519		492		493		415	
2/3/2017	527		487		515		442	
5/24/2017	544		462		485		415	
7/5/2017	508		445		500		386	
8/17/2017	542		466		504		431	
10/5/2017	528		459		505		414	
5/21/2018	540		439		437		412	
11/12/2018	484		681		563		435	
1/10/2019			724		502			
3/14/2019			472					
5/20/2019	468		737		518		457	
7/11/2019			761					
8/20/2019			743					
11/17/2021		508		446		640		394
1/25/2022						594	1st Verification	
3/1/2022						569	2nd Verification	

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.278, Std. Dev.=0.02501, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9534, critical = 0.814. Kappa = 1.682 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Fluoride Analysis Run 3/30/2022 10:58 AM View: CCR LF III

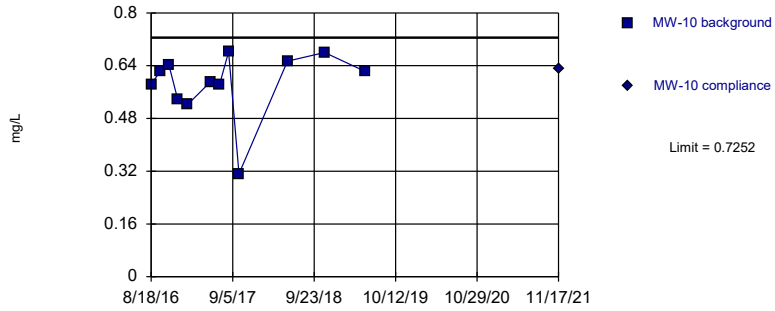
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.32 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on square transformation): Mean=0.3525, Std. Dev.=0.1011, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8795, critical = 0.805. Kappa = 1.716 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Fluoride Analysis Run 3/30/2022 10:58 AM View: CCR LF III

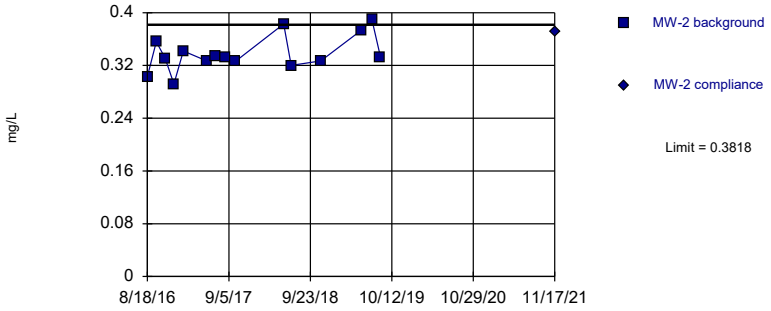
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.32 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.3379, Std. Dev.=0.02721, n=15. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9262, critical = 0.835. Kappa = 1.615 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Fluoride Analysis Run 3/30/2022 10:58 AM View: CCR LF III

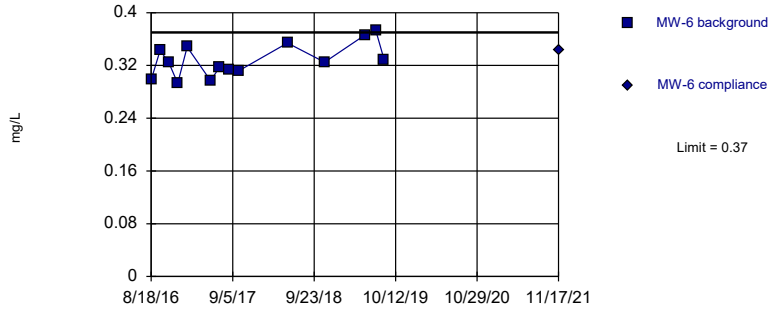
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.32 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.3279, Std. Dev.=0.02554, n=14. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9487, critical = 0.825. Kappa = 1.648 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Fluoride Analysis Run 3/30/2022 10:58 AM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Prediction Limit

Constituent: Fluoride Analysis Run 3/30/2022 11:06 AM View: CCR LF III

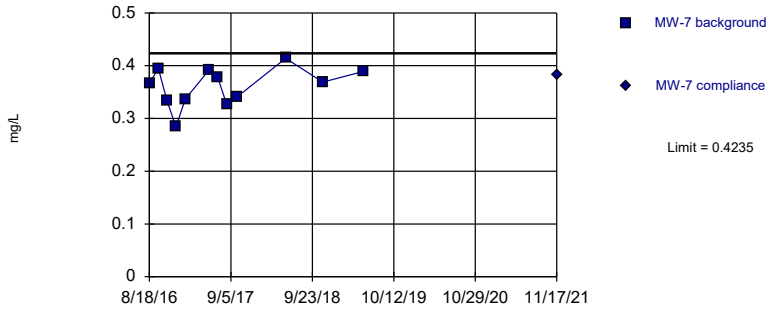
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-1	MW-1	MW-10	MW-10	MW-2	MW-2	MW-6	MW-6
8/18/2016	0.234		0.584		0.303		0.298	
9/29/2016	0.292		0.622		0.356		0.343	
11/9/2016	0.274		0.642		0.331		0.324	
12/21/2016	0.241		0.538		0.292		0.293	
2/3/2017	0.288		0.521		0.342		0.348	
5/24/2017	0.272		0.591		0.327		0.297	
7/5/2017	0.275		0.582		0.334		0.317	
8/17/2017	0.276		0.682		0.332		0.313	
10/5/2017	0.273		0.312		0.326		0.312	
5/21/2018	0.327		0.654		0.383		0.354	
6/26/2018	0.263				0.32			
11/12/2018	0.288		0.68		0.327		0.325	
5/20/2019	0.311		0.623		0.373		0.366	
7/11/2019					0.389		0.373	
8/20/2019					0.333		0.328	
11/17/2021		0.314		0.629		0.371		0.344

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.3603, Std. Dev.=0.03685, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9559, critical = 0.805. Kappa = 1.716 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

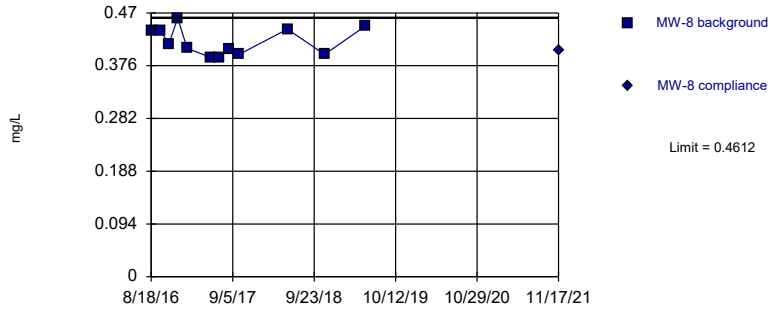
Constituent: Fluoride Analysis Run 3/30/2022 10:58 AM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.4189, Std. Dev.=0.02467, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8902, critical = 0.805. Kappa = 1.716 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

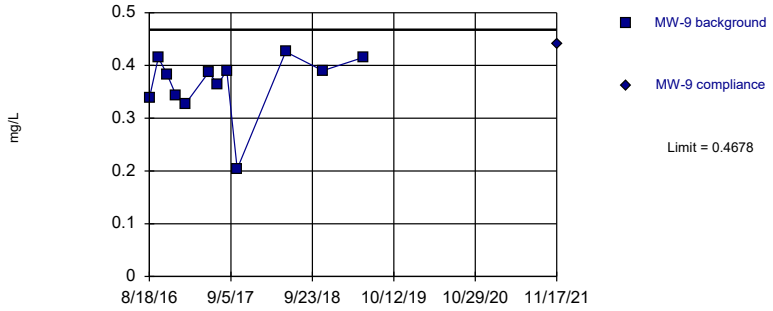
Constituent: Fluoride Analysis Run 3/30/2022 10:58 AM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.3653, Std. Dev.=0.05978, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8122, critical = 0.805. Kappa = 1.716 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

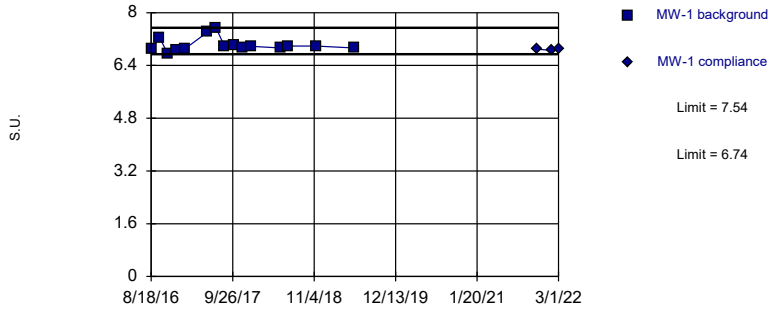
Constituent: Fluoride Analysis Run 3/30/2022 10:58 AM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Within Limits

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limits are highest and lowest of 15 background values. Well-constituent pair annual alpha = 0.005248. Individual comparison alpha = 0.002625 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: pH Analysis Run 3/30/2022 10:58 AM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Prediction Limit

Constituent: Fluoride, pH Analysis Run 3/30/2022 11:06 AM View: CCR LF III

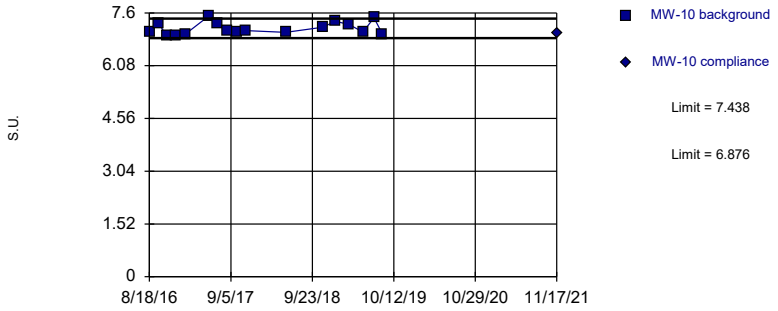
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-7	MW-7	MW-8	MW-8	MW-9	MW-9	MW-1	MW-1	
8/18/2016	0.366		0.438		0.338		6.89		
9/29/2016	0.395		0.439		0.415		7.24		
11/9/2016	0.333		0.415		0.383		6.74		
12/21/2016	0.284		0.461		0.344		6.86		
2/3/2017	0.337		0.407		0.327		6.91		
5/24/2017	0.391		0.391		0.387		7.41		
7/5/2017	0.378		0.391		0.364		7.54		
8/17/2017	0.326		0.406		0.39		6.98		
10/5/2017	0.341		0.396		0.204		7.03		
11/14/2017							6.93		
12/29/2017							6.98		
5/21/2018	0.414		0.441		0.426		6.93		
6/26/2018							6.99		
11/12/2018	0.369		0.396		0.39		6.99		
5/20/2019	0.389		0.446		0.415		6.93		
11/17/2021		0.383		0.404		0.44		6.89	
1/25/2022								6.86	Extra Sample
3/1/2022								6.89	Extra Sample

Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.157, Std. Dev.=0.18, n=17. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9096, critical = 0.851. Kappa = 1.561 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: pH Analysis Run 3/30/2022 10:58 AM View: CCR LF III

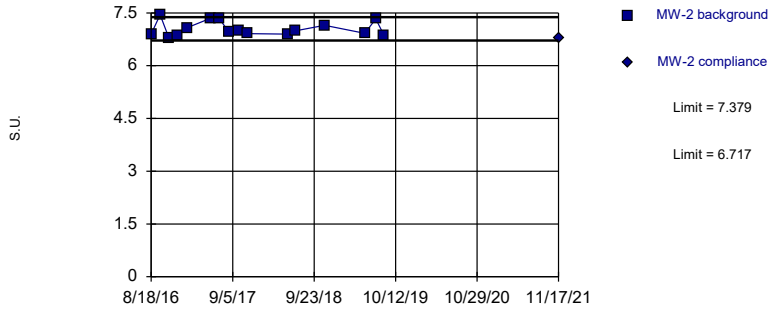
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.32 Sanitas software licensed to SCS Engineers. UG

Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.048, Std. Dev.=0.2096, n=16. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8784, critical = 0.844. Kappa = 1.581 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: pH Analysis Run 3/30/2022 10:58 AM View: CCR LF III

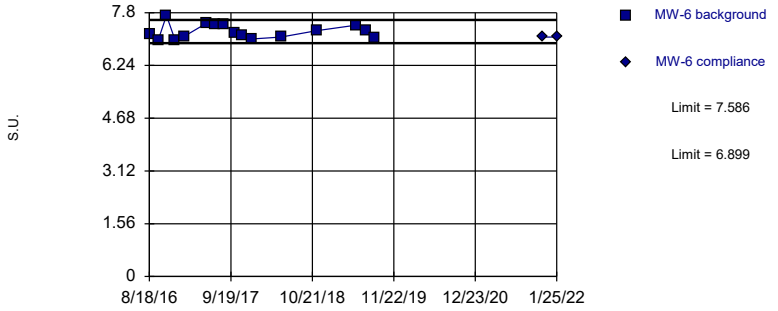
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.32 Sanitas software licensed to SCS Engineers. UG

Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.243, Std. Dev.=0.2171, n=16. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9298, critical = 0.844. Kappa = 1.581 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: pH Analysis Run 3/30/2022 10:58 AM View: CCR LF III

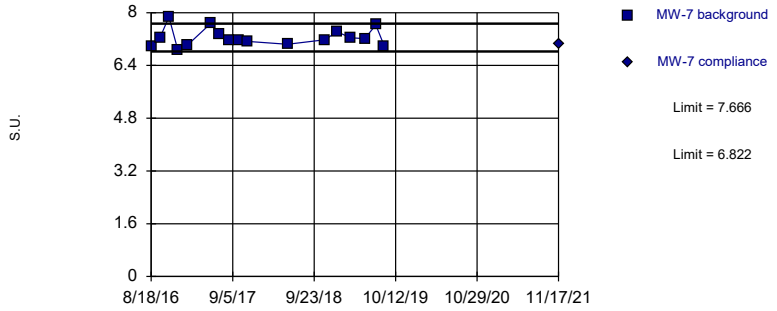
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.32 Sanitas software licensed to SCS Engineers. UG

Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.244, Std. Dev.=0.2706, n=17. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.916, critical = 0.851. Kappa = 1.561 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: pH Analysis Run 3/30/2022 10:58 AM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Prediction Limit

Constituent: pH Analysis Run 3/30/2022 11:06 AM View: CCR LF III

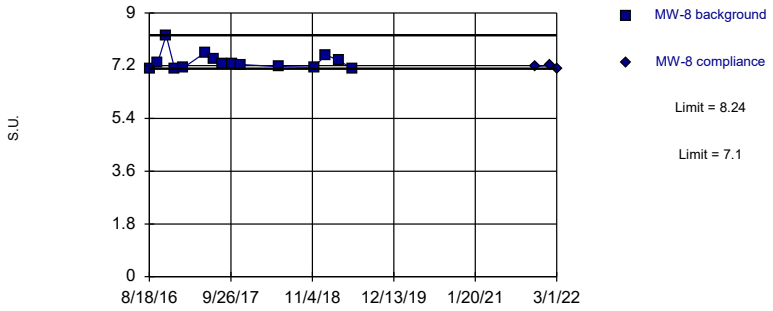
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-10	MW-10	MW-2	MW-2	MW-6	MW-6	MW-7	MW-7
8/18/2016	7.06		6.9		7.18		6.97	
9/29/2016	7.31		7.45		6.97		7.25	
11/9/2016	6.93		6.79		7.72		7.87	
12/21/2016	6.96		6.85		6.99		6.88	
2/3/2017	6.99		7.08		7.1		7.01	
5/24/2017	7.51		7.35		7.49		7.67	
7/5/2017	7.31		7.33		7.46		7.36	
8/17/2017	7.1		6.97		7.47		7.15	
10/5/2017	7.05		7		7.2		7.15	
11/14/2017	7.09		6.91		7.14		7.13	
12/29/2017					7.02			
5/21/2018	7.04		6.9		7.08		7.04	
6/26/2018			6.99					
11/12/2018	7.19		7.15		7.27		7.18	
1/10/2019	7.36						7.42	
3/14/2019	7.27						7.24	
5/20/2019	7.05		6.92		7.43		7.21	
7/11/2019	7.46		7.33		7.29		7.63	
8/20/2019	6.99		6.85		7.07		6.99	
11/17/2021		7.01		6.8		7.08		7.05
1/25/2022						7.08	Extra Sample	

Within Limits

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limits are highest and lowest of 15 background values. Well-constituent pair annual alpha = 0.005248. Individual comparison alpha = 0.002625 (1 of 3). Seasonality was not detected with 95% confidence.

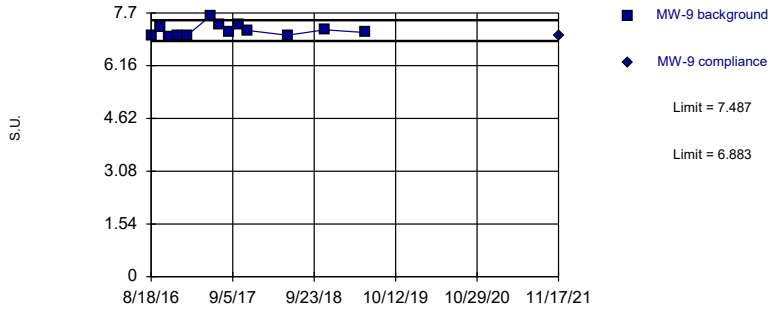
Constituent: pH Analysis Run 3/30/2022 10:58 AM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.185, Std. Dev.=0.1795, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.895, critical = 0.814. Kappa = 1.682 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

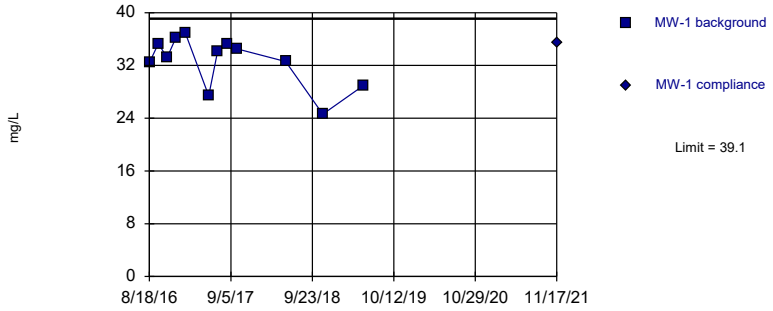
Constituent: pH Analysis Run 3/30/2022 10:58 AM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=32.62, Std. Dev.=3.775, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8898, critical = 0.805. Kappa = 1.716 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

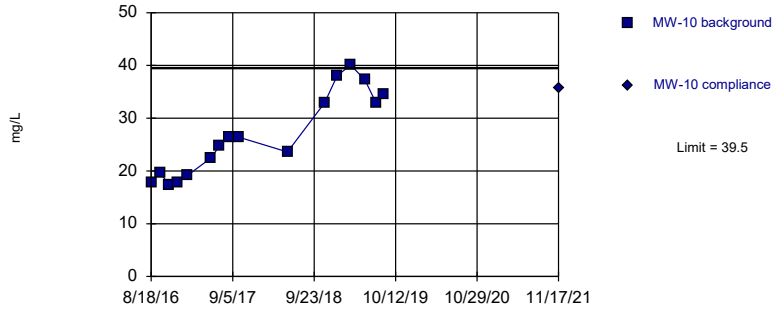
Constituent: Sulfate Analysis Run 3/30/2022 10:58 AM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=26.95, Std. Dev.=7.937, n=16. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9063, critical = 0.844. Kappa = 1.581 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Sulfate Analysis Run 3/30/2022 10:58 AM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Prediction Limit

Constituent: pH, Sulfate Analysis Run 3/30/2022 11:06 AM View: CCR LF III

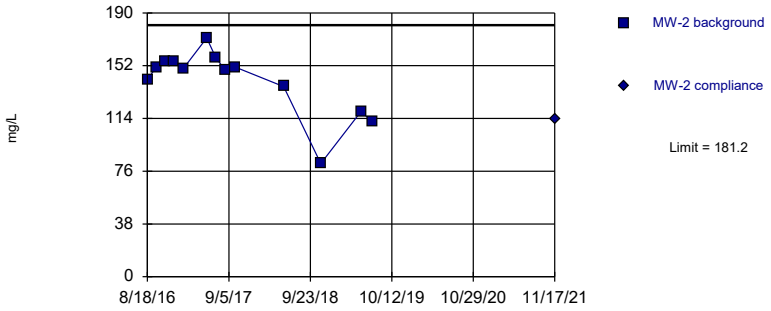
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-8	MW-8	MW-9	MW-9	MW-1	MW-1	MW-10	MW-10
8/18/2016	7.1		7.02		32.4		17.8	
9/29/2016	7.32		7.28		35.3		19.7	
11/9/2016	8.24		6.99		33.2		17.4	
12/21/2016	7.1		7.02		36.2		17.7	
2/3/2017	7.13		7.05		36.9		19.1	
5/24/2017	7.66		7.61		27.4		22.4	
7/5/2017	7.44		7.37		34.2		24.7	
8/17/2017	7.27		7.13		35.2		26.5	
10/5/2017	7.25		7.35		34.5		26.4	
11/14/2017	7.24		7.19					
5/21/2018	7.17		7.05		32.6		23.6	
11/12/2018	7.15		7.21		24.6		32.9	
1/10/2019	7.57						38	
3/14/2019	7.38						40.1	
5/20/2019	7.11		7.13		28.9		37.3	
7/11/2019							33	
8/20/2019							34.6	
11/17/2021		7.17		7.04		35.4		35.7
1/25/2022		7.21 Extra Sample						
3/1/2022		7.1 Extra Sample						

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=141, Std. Dev.=23.93, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8552, critical = 0.814. Kappa = 1.682 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

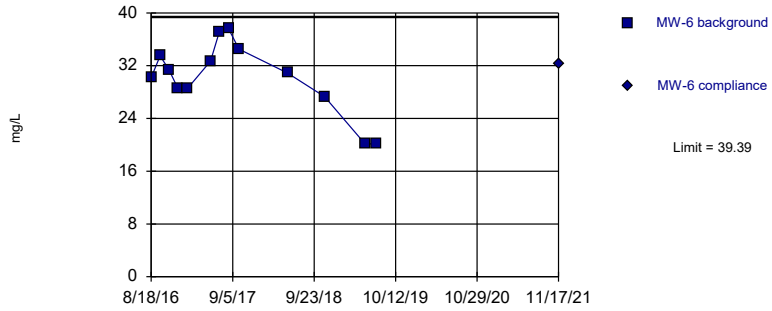
Constituent: Sulfate Analysis Run 3/30/2022 10:58 AM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=30.21, Std. Dev.=5.456, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9209, critical = 0.814. Kappa = 1.682 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

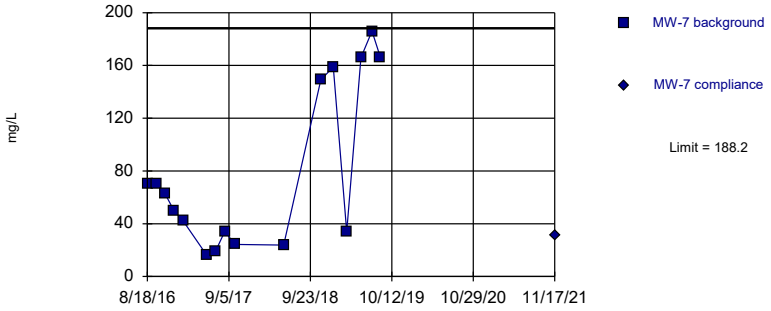
Constituent: Sulfate Analysis Run 3/30/2022 10:59 AM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on square root transformation): Mean=8.273, Std. Dev.=3.445, n=16. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8729, critical = 0.844. Kappa = 1.581 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

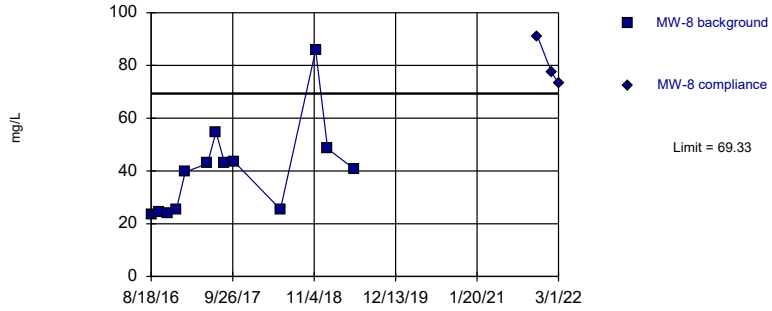
Constituent: Sulfate Analysis Run 3/30/2022 10:59 AM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Exceeds Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=40.07, Std. Dev.=17.39, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8273, critical = 0.814. Kappa = 1.682 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Sulfate Analysis Run 3/30/2022 10:59 AM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Prediction Limit

Constituent: Sulfate Analysis Run 3/30/2022 11:06 AM View: CCR LF III

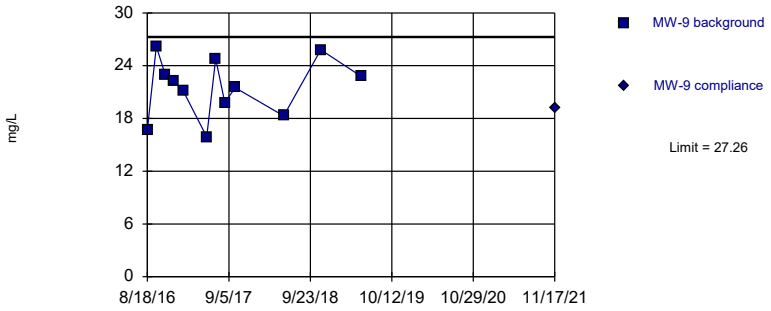
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-2	MW-2	MW-6	MW-6	MW-7	MW-7	MW-8	MW-8	
8/18/2016	142		30.2		70.2		23.3		
9/29/2016	151		33.5		70.6		24.2		
11/9/2016	155		31.4		62.6		23.8		
12/21/2016	155		28.6		50		25.5		
2/3/2017	150		28.5		41.9		39.6		
5/24/2017	172		32.7		16.2		42.8		
7/5/2017	158		37.2		19.5		54.8		
8/17/2017	149		37.6		34.1		43		
10/5/2017	151		34.5		24.3		43.4		
5/21/2018	137		30.9		23.8		25.4		
11/12/2018	81.5		27.3		149		85.8		
1/10/2019					159		48.4		
3/14/2019					33.9				
5/20/2019	119		20.2		166		40.9		
7/11/2019	112		20.1		186				
8/20/2019					166				
11/17/2021		114		32.2		31		91	
1/25/2022								77.4	1st Verification
3/1/2022								73.3	1st Verification

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=21.51, Std. Dev.=3.352, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9571, critical = 0.805. Kappa = 1.716 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Sulfate Analysis Run 3/30/2022 10:59 AM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Prediction Limit

Constituent: Sulfate Analysis Run 3/30/2022 11:06 AM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-9	MW-9
8/18/2016	16.7	
9/29/2016	26.2	
11/9/2016	23	
12/21/2016	22.2	
2/3/2017	21.1	
5/24/2017	15.9	
7/5/2017	24.8	
8/17/2017	19.8	
10/5/2017	21.5	
5/21/2018	18.3	
11/12/2018	25.8	
5/20/2019	22.8	
11/17/2021		19.2

Prediction Limit

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr Printed 3/30/2022, 11:06 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
Boron (mg/L)	MW-1	0.2	n/a	11/17/2021	0.1ND	No	12	100	n/a	0.002173	NP Intra (NDs) 1 of 3
Boron (mg/L)	MW-10	0.2	n/a	11/17/2021	0.1ND	No	12	100	n/a	0.002173	NP Intra (NDs) 1 of 3
Boron (mg/L)	MW-2	0.2	n/a	11/17/2021	0.1ND	No	12	100	n/a	0.002173	NP Intra (NDs) 1 of 3
Boron (mg/L)	MW-6	0.2	n/a	11/17/2021	0.1ND	No	12	100	n/a	0.002173	NP Intra (NDs) 1 of 3
Boron (mg/L)	MW-7	0.2	n/a	11/17/2021	0.1ND	No	12	100	n/a	0.002173	NP Intra (NDs) 1 of 3
Boron (mg/L)	MW-8	0.2	n/a	11/17/2021	0.1ND	No	12	100	n/a	0.002173	NP Intra (NDs) 1 of 3
Boron (mg/L)	MW-9	0.2	n/a	11/17/2021	0.1ND	No	12	100	n/a	0.002173	NP Intra (NDs) 1 of 3
Calcium (mg/L)	MW-1	141.9	n/a	3/1/2022	138	No	13	0	No	0.001075	Param Intra 1 of 3
Calcium (mg/L)	MW-10	154.2	n/a	11/17/2021	131	No	17	0	No	0.001075	Param Intra 1 of 3
Calcium (mg/L)	MW-2	178.2	n/a	11/17/2021	165	No	14	0	No	0.001075	Param Intra 1 of 3
Calcium (mg/L)	MW-6	156.3	n/a	11/17/2021	147	No	14	0	No	0.001075	Param Intra 1 of 3
Calcium (mg/L)	MW-7	193.1	n/a	11/17/2021	112	No	17	0	sqrt(x)	0.001075	Param Intra 1 of 3
Calcium (mg/L)	**MW-8**	**158.5**	**n/a**	**3/1/2022**	**162**	**Yes**	**15**	**0**	**No**	**0.001075**	**Param Intra 1 of 3**
Calcium (mg/L)	MW-9	122.1	n/a	11/17/2021	106	No	13	0	No	0.001075	Param Intra 1 of 3
Chloride (mg/L)	MW-1	6.697	n/a	11/17/2021	6.48	No	14	0	No	0.001075	Param Intra 1 of 3
Chloride (mg/L)	MW-10	23.19	n/a	11/17/2021	17.6	No	16	0	No	0.001075	Param Intra 1 of 3
Chloride (mg/L)	MW-2	10.03	n/a	11/17/2021	6.68	No	14	0	No	0.001075	Param Intra 1 of 3
Chloride (mg/L)	MW-6	1.945	n/a	1/25/2022	1.94	No	15	0	sqrt(x)	0.001075	Param Intra 1 of 3
Chloride (mg/L)	MW-7	31.35	n/a	11/17/2021	1.72	No	17	0	sqrt(x)	0.001075	Param Intra 1 of 3
Chloride (mg/L)	**MW-8**	**8.265**	**n/a**	**3/1/2022**	**10.1**	**Yes**	**15**	**0**	**sqrt(x)**	**0.001075**	**Param Intra 1 of 3**
Chloride (mg/L)	MW-9	2.881	n/a	11/17/2021	0.5ND	No	13	30.77	No	0.001075	Param Intra 1 of 3
Dissolved Solids (mg/l)	MW-1	511.5	n/a	1/25/2022	511	No	12	0	No	0.001075	Param Intra 1 of 3
Dissolved Solids (mg/l)	MW-10	1760	n/a	11/17/2021	491	No	12	0	n/a	0.002173	NP Intra (normality) ...
Dissolved Solids (mg/l)	MW-2	720.7	n/a	11/17/2021	595	No	12	0	No	0.001075	Param Intra 1 of 3
Dissolved Solids (mg/l)	MW-6	556.1	n/a	11/17/2021	508	No	12	0	No	0.001075	Param Intra 1 of 3
Dissolved Solids (mg/l)	MW-7	761	n/a	11/17/2021	446	No	16	0	n/a	0.001026	NP Intra (normality) ...
Dissolved Solids (mg/l)	**MW-8**	**548.8**	**n/a**	**3/1/2022**	**569**	**Yes**	**13**	**0**	**No**	**0.001075**	**Param Intra 1 of 3**
Dissolved Solids (mg/l)	MW-9	478.8	n/a	11/17/2021	394	No	12	0	No	0.001075	Param Intra 1 of 3
Fluoride (mg/L)	MW-1	0.3201	n/a	11/17/2021	0.314	No	13	0	No	0.001075	Param Intra 1 of 3
Fluoride (mg/L)	MW-10	0.7252	n/a	11/17/2021	0.629	No	12	0	x^2	0.001075	Param Intra 1 of 3
Fluoride (mg/L)	MW-2	0.3818	n/a	11/17/2021	0.371	No	15	0	No	0.001075	Param Intra 1 of 3
Fluoride (mg/L)	MW-6	0.37	n/a	11/17/2021	0.344	No	14	0	No	0.001075	Param Intra 1 of 3
Fluoride (mg/L)	MW-7	0.4235	n/a	11/17/2021	0.383	No	12	0	No	0.001075	Param Intra 1 of 3
Fluoride (mg/L)	MW-8	0.4612	n/a	11/17/2021	0.404	No	12	0	No	0.001075	Param Intra 1 of 3
Fluoride (mg/L)	MW-9	0.4678	n/a	11/17/2021	0.44	No	12	0	No	0.001075	Param Intra 1 of 3
pH (S.U.)	MW-1	7.54	6.74	3/1/2022	6.89	No	15	0	n/a	0.002625	NP Intra (normality) ...
pH (S.U.)	MW-10	7.438	6.876	11/17/2021	7.01	No	17	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	MW-2	7.379	6.717	11/17/2021	6.8	No	16	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	MW-6	7.586	6.899	1/25/2022	7.08	No	16	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	MW-7	7.666	6.822	11/17/2021	7.05	No	17	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	MW-8	8.24	7.1	3/1/2022	7.1	No	15	0	n/a	0.002625	NP Intra (normality) ...
pH (S.U.)	MW-9	7.487	6.883	11/17/2021	7.04	No	13	0	No	0.000...	Param Intra 1 of 3
Sulfate (mg/L)	MW-1	39.1	n/a	11/17/2021	35.4	No	12	0	No	0.001075	Param Intra 1 of 3
Sulfate (mg/L)	MW-10	39.5	n/a	11/17/2021	35.7	No	16	0	No	0.001075	Param Intra 1 of 3
Sulfate (mg/L)	MW-2	181.2	n/a	11/17/2021	114	No	13	0	No	0.001075	Param Intra 1 of 3
Sulfate (mg/L)	MW-6	39.39	n/a	11/17/2021	32.2	No	13	0	No	0.001075	Param Intra 1 of 3
Sulfate (mg/L)	MW-7	188.2	n/a	11/17/2021	31	No	16	0	sqrt(x)	0.001075	Param Intra 1 of 3
Sulfate (mg/L)	**MW-8**	**69.33**	**n/a**	**3/1/2022**	**73.3**	**Yes**	**13**	**0**	**No**	**0.001075**	**Param Intra 1 of 3**
Sulfate (mg/L)	MW-9	27.26	n/a	11/17/2021	19.2	No	12	0	No	0.001075	Param Intra 1 of 3

ATTACHMENT 2

Sanitas™ Configuration Settings

Data | Output | Trend Test | Control Cht | Prediction Lim | Tolerance Lim | Conf/Tol Int | ANOVA | Welchs | Other Tests

Exclude data flags: i

Data Reading Options

- (•) Individual Observations
- ( ) Mean of Each: ( ) Month
- ( ) Median of Each: ( ) Season

Non-Detect / Trace Handling...

Setup Seasons...

[ ] Automatically Process Resamples...

Data | Output | Trend Test | Control Cht | Prediction Lim | Tolerance Lim | Conf/Tol Int | ANOVA | Welchs | Other Tests

- [ ] Black and White Output
- [x] Four Plots Per Page
  - [x] Always Combine Data Pages...
  - [x] Include Tick Marks on Data Page
  - [ ] Use Constituent Name for Graph Title
- [ ] Draw Border Around Text Reports and Data Pages
- [x] Enlarge/Reduce Fonts (Graphs): 100%
- [x] Enlarge/Reduce Fonts (Data/Text Reports): 100%
- [x] Wide Margins (on reports without explicit setting)
- [ ] Use CAS# (Not Const. Name)
- [ ] Truncate File Names to 20 Characters
- [ ] Include Limit Lines when found in Database...
- [ ] Show Deselected Data on Time Series Lighter
- [ ] Show Deselected Data on all Data Pages Lighter

Setup Symbols and Colors...

- [x] Prompt to Overwrite/Append Summary Tables
- [ ] Round Limits to 2 Sig. Digits (when not set in data file)
- [ ] User-Set Scale
- [x] Indicate Background Data
- [ ] Show Exact Dates
- [ ] Thick Plot Lines

Zoom Factor: 200%

Output Decimal Precision

- ( ) Less Precision
- (•) Normal Precision
- ( ) More Precision

- [x] Store Print Jobs in Multiple Constituent Mode

Store All Print Jobs...

Printer: Adobe PDF

Printers...

Data | Output | Trend Test | Control Cht | Prediction Lim | Tolerance Lim | Conf/Tol Int | ANOVA | Welchs | Other Tests

☐ Use Modified Alpha... 0.02

☑ Test Residuals For Normality (Parametric test only) using Shapiro-Wilk/Francia at Alpha = 0.01

☐ Continue Parametric if Unable to Normalize

Transformation (Parametric test only)

- ◉ Use Ladder of Powers
- ○ Natural Log or No Transformation
- ○ Never Transform
- ○ Use Specific Transformation:

☐ Use Best W Statistic

☐ Plot Transformed Values

Use Non-Parametric Test (Sen's Slope/Mann-Kendall) when Non-Detects Percent > 75

☐ Include 95. % Confidence Interval around Trend Line

☐ Automatically Remove Outliers (Parametric test only)

Note: there is no "Always Use Non-Parametric" checkbox on this tab because, for consistency with prior versions, Sen's Slope / Mann-Kendall (the non-parametric alternative) is available as a report in its own right, under Analysis->Intrawell->Trend.

Data | Output | Trend Test | Control Cht | **Prediction Lim** | Tolerance Lim | Conf/Tol Int | ANOVA | Welchs | Other Tests

☑ Test for Normality using Shapiro-Wilk/Francia at Alpha = 0.01

☑ Use Non-Parametric Test when Non-Detects Percent > 50

Use Aitchison's Adjustment when Non-Detects Percent > 15

☐ Optional Further Refinement: Use _____ when NDs % > 50

☐ Use Poisson Prediction Limit when Non-Detects Percent > 90

Transformation

- ◉ Use Ladder of Powers
- ○ Natural Log or No Transformation
- ○ Never Transform
- ○ Use Specific Transformation: Natural Log

☐ Use Best W Statistic

☐ Plot Transformed Values

Deseasonalize (Intra- and InterWell)

- ◉ If Seasonality Is Detected
- ○ If Seasonality Is Detected Or Insufficient to Test
- ○ Always (When Sufficient Data)
- ○ Never

☐ Always Use Non-Parametric

Facility α

Statistical Evaluations per Year: 2

Constituents Analyzed: 7

Downgradient (Compliance) Wells: 7

Sampling Plan

Comparing Individual Observations

○ 1 of 1 ○ 1 of 2 ◉ 1 of 3 ○ 1 of 4

○ 2 of 4 ("Modified California")

IntraWell Other

☐ Stop if Background Trend Detected at Alpha = 0.05

☑ Plot Background Data

Override Standard Deviation: _____

Override DF: _____ Override Kappa: _____

☐ Automatically Remove Background Outliers

☐ 2-Tailed Test Mode...

☑ Show Deselected Data Lighter

Non-Parametric Limit = Highest Background Value

Non-Parametric Limit when 100% Non-Detects:

- ○ Highest/Second Highest Background Value
- ◉ Most Recent PQL if available, or MDL
- ○ Most Recent Background Value (subst. method)

Data | Output | Trend Test | Control Cht | Prediction Lim | Tolerance Lim | Conf/Tol Int | ANOVA | Welchs | Other Tests

Rank Von Neumann, Wilcoxon Rank Sum / Mann-Whitney

- [ ] Use Modified Alpha...
- [ ] 2-Tailed Test Mode...
- [ ] Combine Background Wells on Mann-Whitney...

Outlier Tests

- ( ) EPA 1989 Outlier Screening (fixed alpha of 0.05)
- (•) Dixon's at α= 0.05 or if n > 22 Rosner's at α= 0.01 [x] Use EPA Screening to establish Suspected Outliers
- ( ) Tukey's Outlier Screening, with IQR Multiplier = 3.0 [ ] Use Ladder of Powers to achieve Best W Stat
- [x] Test For Normality using Shapiro-Wilk/Francia at Alpha = 0.1
  - (•) Stop if Non-Normal
  - ( ) Continue with Parametric Test if Non-Normal
  - ( ) Tukey's if Non-Normal, with IQR Multiplier = 3.0 [ ] Use Ladder of Powers to achieve Best W Stat
- [x] No Outlier If Less Than 3.0 Times Median
- [ ] Apply Rules found in Ohio Guidance Document 0715
- [ ] Combine Background Wells on the Outlier Report...

Piper, Stiff Diagram

- [ ] Combine Wells
- [ ] Combine Dates
- (•) Use Default Constituent Names
- ( ) Use Constituent Definition File Edit
- [x] Label Constituents
- [x] Label Axes
- [x] Note Cation-Anion Balance (Piper only)

APPENDIX E.2

Spring 2022 Semiannual Detection Monitoring Statistical Analyses

MEMORANDUM

September 28, 2022

To: Iatan Generating Station
20250 State Route 45 N
Platte County, Missouri
Evergy Metro, Inc.

From: SCS Engineers

RE: Determination of Statistically Significant Increase - CCR Landfill
Spring 2022 Semiannual Detection Monitoring 40 CFR 257.94

Statistical analysis of monitoring data from the groundwater monitoring system for the CCR Landfill at the Iatan Generating Station has been completed in substantial compliance with the "Statistical Method Certification by A Qualified Professional Engineer" dated October 12, 2017. Groundwater samples were collected on May 11, 2022. Review and validation of the results from the May 2022 Detection Monitoring Event was completed on July 1, 2022, which constitutes completion and finalization of detection monitoring laboratory analyses. Statistical analysis was then conducted to determine whether there was a statistically significant increase (SSI) over background values for each constituent listed in Appendix III to Part 257-Constituents for Detection Monitoring. Two rounds of verification sampling were conducted for certain constituents on July 14, 2022 and August 17, 2022.

The completed statistical evaluation identified one Appendix III constituent above its prediction limit established for monitoring well MW-1.

Monitoring Well Constituents	*UPL	Observation May 11, 2022	1st Verification July 14, 2022	2nd Verification August 17, 2022
MW-1				
Sulfate	39.35	41.8	40.7	40.6

*UPL – Upper Prediction Limit

Determination: A statistical evaluation was completed for all Appendix III detection monitoring constituents in accordance with the certified statistical method. The statistical evaluation identified an SSI above the background prediction limit for sulfate at monitoring well MW-1.

Attached to this memorandum are the following backup information:

Attachment 1: Sanitas™ Output:

Statistical evaluation output from Sanitas™ for the prediction limit analysis. This includes prediction limit plots, prediction limit background data, detection sample results, 1st verification re-sample results (when applicable), 2nd verification re-sample results (when applicable), extra sample results for pH because pH is collected as part of the

sampling procedure, and a Prediction Limit summary table. Output documentation includes the analytical data used for the statistical analyses.

Attachment 2: Sanitas™ Configuration Settings:

Screen shots of the applicable Sanitas™ configuration settings for the statistical prediction limit analysis. This includes data configuration, output configuration, prediction limit configuration and other tests configuration.

Revision Number	Revision Date	Attachment Revised	Summary of Revisions

ATTACHMENT 1

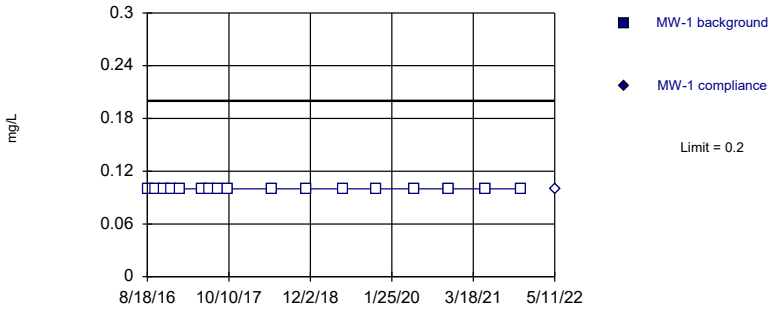
Sanitas™ Output

Sanitas™ v.9.6.35 Sanitas software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 17) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.00182. Individual comparison alpha = 0.0009102 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Boron Analysis Run 9/8/2022 12:20 PM View: CCR LF III

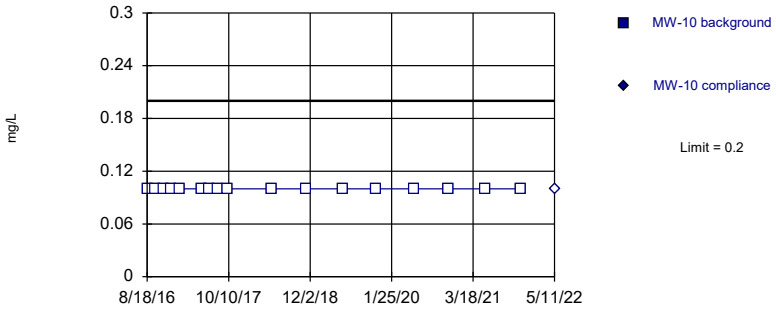
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.35 Sanitas software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 17) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.00182. Individual comparison alpha = 0.0009102 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Boron Analysis Run 9/8/2022 12:20 PM View: CCR LF III

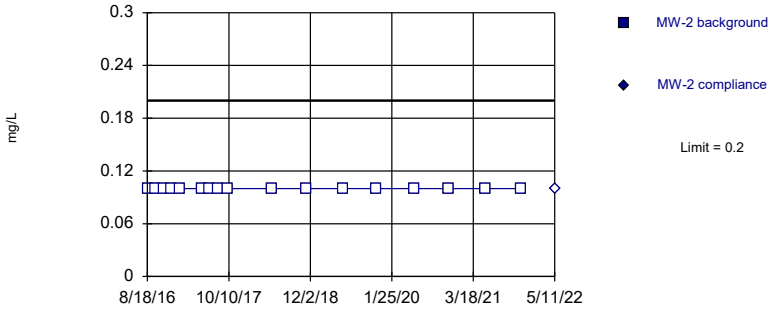
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.35 Sanitas software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 17) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.00182. Individual comparison alpha = 0.0009102 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Boron Analysis Run 9/8/2022 12:20 PM View: CCR LF III

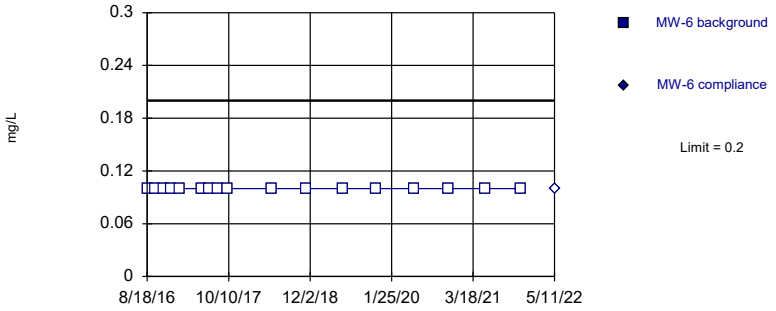
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.35 Sanitas software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 17) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.00182. Individual comparison alpha = 0.0009102 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Boron Analysis Run 9/8/2022 12:20 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Prediction Limit

Constituent: Boron Analysis Run 9/8/2022 12:23 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

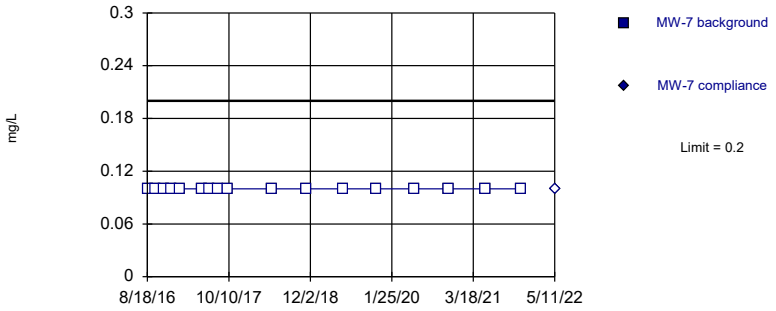
	MW-1	MW-1	MW-10	MW-10	MW-2	MW-2	MW-6	MW-6
8/18/2016	<0.2		<0.2		<0.2		<0.2	
9/29/2016	<0.2		<0.2		<0.2		<0.2	
11/9/2016	<0.2		<0.2		<0.2		<0.2	
12/21/2016	<0.2		<0.2		<0.2		<0.2	
2/3/2017	<0.2		<0.2		<0.2		<0.2	
5/24/2017	<0.2		<0.2		<0.2		<0.2	
7/5/2017	<0.2		<0.2		<0.2		<0.2	
8/17/2017	<0.2		<0.2		<0.2		<0.2	
10/5/2017	<0.2		<0.2		<0.2		<0.2	
5/21/2018	<0.2		<0.2		<0.2		<0.2	
11/12/2018	<0.2		<0.2		<0.2		<0.2	
5/20/2019	<0.2		<0.2		<0.2		<0.2	
11/4/2019	<0.2		<0.2		<0.2		<0.2	
5/20/2020	<0.2		<0.2		<0.2		<0.2	
11/9/2020	<0.2		<0.2		<0.2		<0.2	
5/20/2021	<0.2		<0.2		<0.2		<0.2	
11/17/2021	<0.2		<0.2		<0.2		<0.2	
5/11/2022		<0.2		<0.2		<0.2		<0.2

Sanitas™ v.9.6.35 Sanitas software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 17) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.00182. Individual comparison alpha = 0.0009102 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

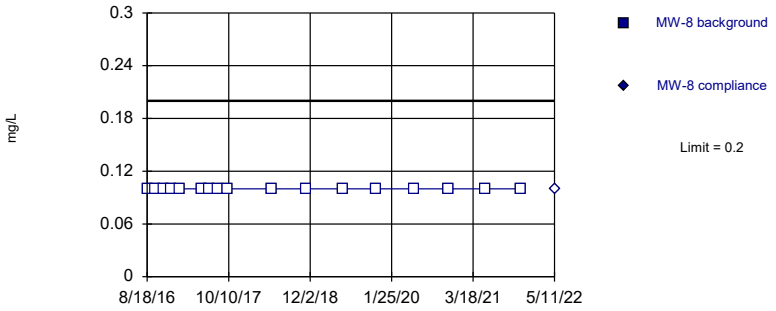
Constituent: Boron Analysis Run 9/8/2022 12:20 PM View: CCR LF III
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.35 Sanitas software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 17) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.00182. Individual comparison alpha = 0.0009102 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

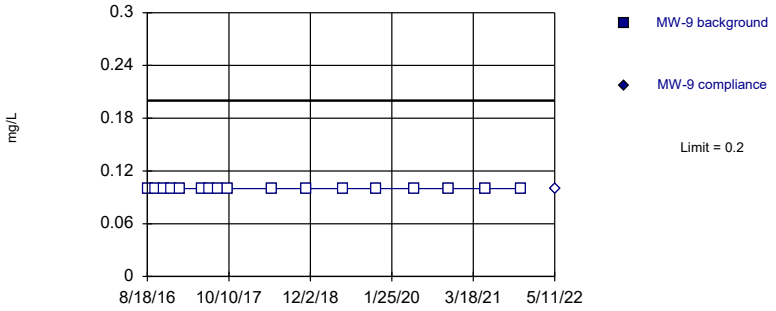
Constituent: Boron Analysis Run 9/8/2022 12:20 PM View: CCR LF III
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.35 Sanitas software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 17) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.00182. Individual comparison alpha = 0.0009102 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

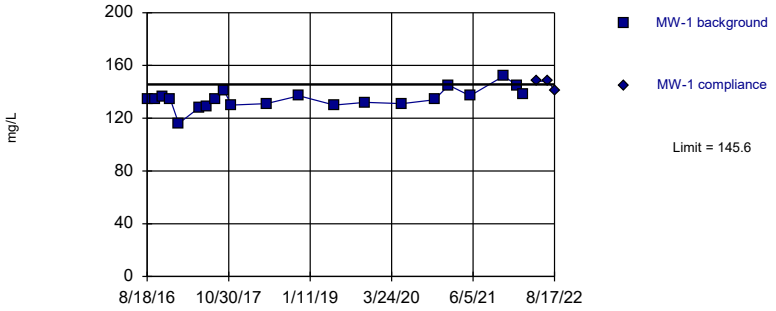
Constituent: Boron Analysis Run 9/8/2022 12:20 PM View: CCR LF III
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.35 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=134.7, Std. Dev.=7.358, n=21. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9334, critical = 0.873. Kappa = 1.491 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Calcium Analysis Run 9/8/2022 12:20 PM View: CCR LF III
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Prediction Limit

Constituent: Boron, Calcium Analysis Run 9/8/2022 12:23 PM View: CCR LF III

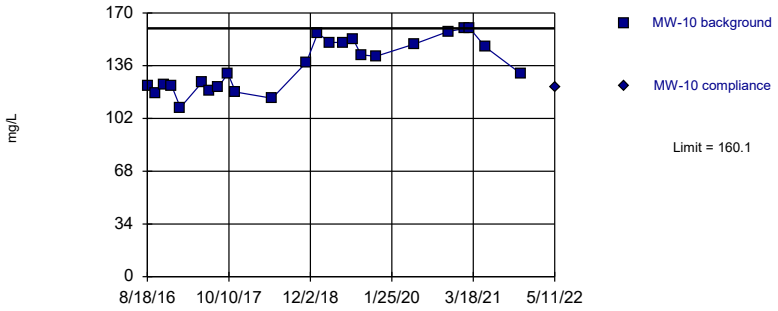
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-7	MW-7	MW-8	MW-8	MW-9	MW-9	MW-1	MW-1	
8/18/2016	<0.2		<0.2		<0.2		134		
9/29/2016	<0.2		<0.2		<0.2		134		
11/9/2016	<0.2		<0.2		<0.2		136		
12/21/2016	<0.2		<0.2		<0.2		134		
2/3/2017	<0.2		<0.2		<0.2		116		
5/24/2017	<0.2		<0.2		<0.2		128		
7/5/2017	<0.2		<0.2		<0.2		129		
8/17/2017	<0.2		<0.2		<0.2		134		
10/5/2017	<0.2		<0.2		<0.2		141		
11/14/2017							130		
5/21/2018	<0.2		<0.2		<0.2		131		
11/12/2018	<0.2		<0.2		<0.2		137		
5/20/2019	<0.2		<0.2		<0.2		130		
11/4/2019	<0.2		<0.2		<0.2		132		
5/20/2020	<0.2		<0.2		<0.2		131		
11/9/2020	<0.2		<0.2		<0.2		134		
1/25/2021							145		
5/20/2021	<0.2		<0.2		<0.2		137		
11/17/2021	<0.2		<0.2		<0.2		152		
1/25/2022							145		
3/1/2022							138		
5/11/2022		<0.2		<0.2		<0.2		148	
7/14/2022								148	1st Verification
8/17/2022								141	2nd Verification

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=136.3, Std. Dev.=16.33, n=24. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.917, critical = 0.884. Kappa = 1.459 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Calcium Analysis Run 9/8/2022 12:20 PM View: CCR LF III

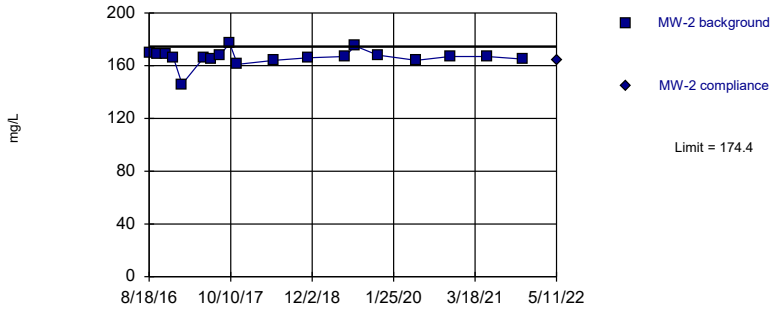
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.35 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on x^5 transformation): Mean=1.3e11, Std. Dev.=2.1e10, n=19. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8654, critical = 0.863. Kappa = 1.522 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Calcium Analysis Run 9/8/2022 12:20 PM View: CCR LF III

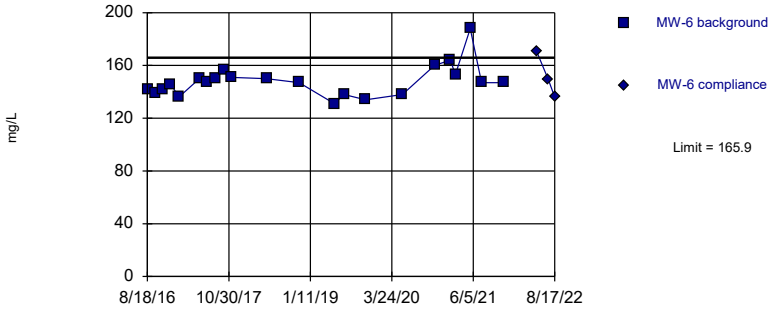
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.35 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on square root transformation): Mean=12.16, Std. Dev.=0.4875, n=22. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8903, critical = 0.878. Kappa = 1.48 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Calcium Analysis Run 9/8/2022 12:20 PM View: CCR LF III

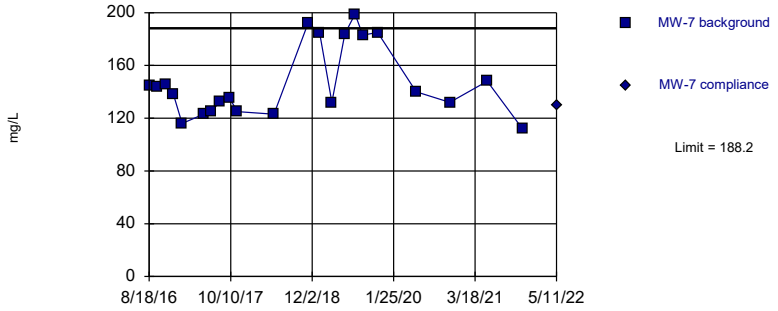
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.35 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on square root transformation): Mean=12.1, Std. Dev.=1.094, n=22. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8824, critical = 0.878. Kappa = 1.48 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Calcium Analysis Run 9/8/2022 12:20 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Prediction Limit

Constituent: Calcium Analysis Run 9/8/2022 12:23 PM View: CCR LF III

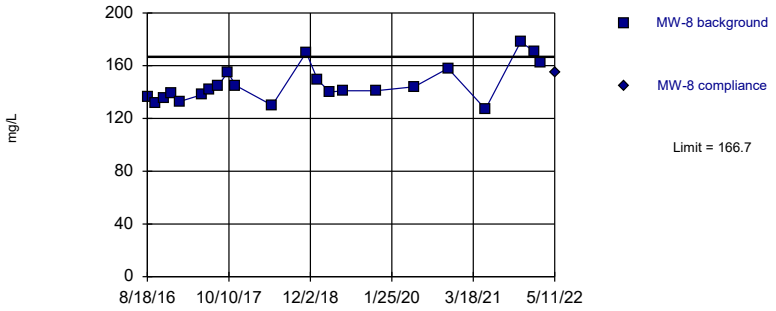
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-10	MW-10	MW-2	MW-2	MW-6	MW-6	MW-7	MW-7
8/18/2016	123		170		142		145	
9/29/2016	118		169		139		144	
11/9/2016	124		169		142		146	
12/21/2016	123		166		146		138	
2/3/2017	109		146		136		116	
5/24/2017	125		166		150		123	
7/5/2017	120		165		147		125	
8/17/2017	122		168		150		133	
10/5/2017	131		177		157		135	
11/14/2017	119		161		151		125	
5/21/2018	115		164		150		123	
11/12/2018	138		166		147		192	
1/10/2019	157						185	
3/14/2019	151						132	
5/20/2019	151		167		131		184	
7/11/2019	153		175		138		199	
8/20/2019	143						183	
11/4/2019	142		168		134		185	
5/20/2020	150		164		138		140	
11/9/2020	158 (V)		167		160		132	
2/2/2021	160				164			
3/1/2021	160				153			
5/20/2021	148		167		188		148	
7/20/2021					147			
11/17/2021	131		165		147		112	
5/11/2022		122		164		171		130
7/14/2022						149	1st Verification	
8/17/2022						136	Extra Sample	

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=146, Std. Dev.=14.04, n=22. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9085, critical = 0.878. Kappa = 1.48 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Calcium Analysis Run 9/8/2022 12:20 PM View: CCR LF III

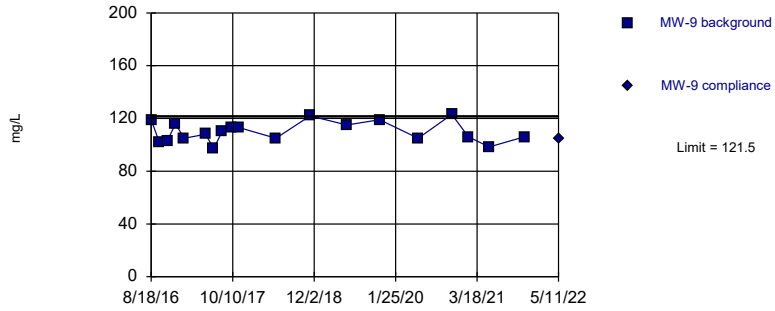
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.35 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=109.8, Std. Dev.=7.729, n=19. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9553, critical = 0.863. Kappa = 1.522 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Calcium Analysis Run 9/8/2022 12:20 PM View: CCR LF III

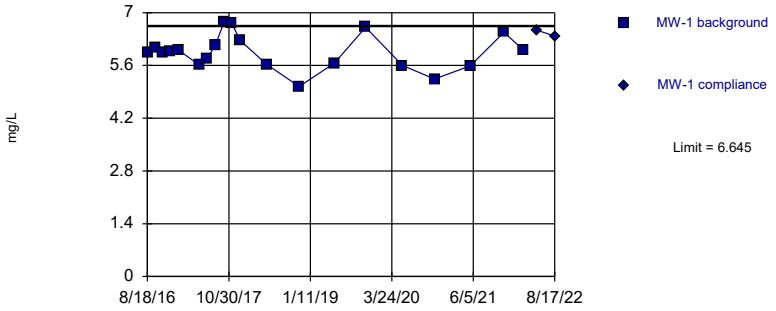
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.35 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=5.953, Std. Dev.=0.4609, n=20. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9636, critical = 0.868. Kappa = 1.502 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Chloride Analysis Run 9/8/2022 12:20 PM View: CCR LF III

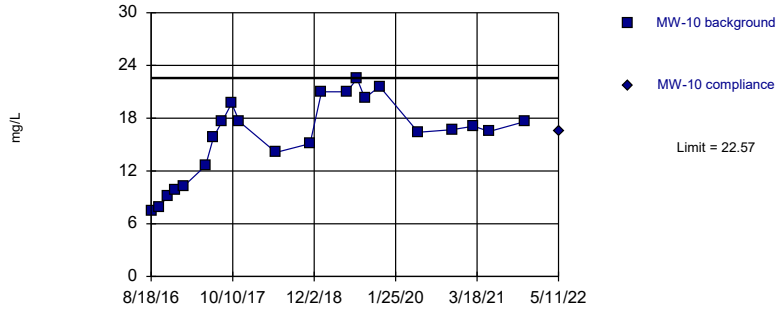
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.35 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=15.81, Std. Dev.=4.565, n=22. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9335, critical = 0.878. Kappa = 1.48 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Chloride Analysis Run 9/8/2022 12:20 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Prediction Limit

Constituent: Calcium, Chloride Analysis Run 9/8/2022 12:23 PM View: CCR LF III

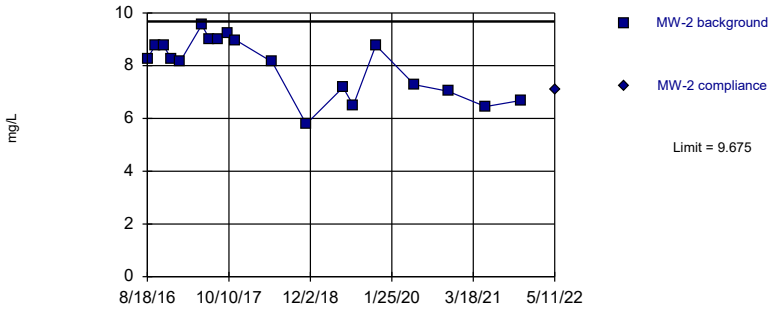
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-8	MW-8	MW-9	MW-9	MW-1	MW-1	MW-10	MW-10
8/18/2016	136		119		5.93		7.47	
9/29/2016	132		102		6.07		7.83	
11/9/2016	135		103		5.95		9.15	
12/21/2016	139		116		5.97		9.84	
2/3/2017	133		105		6		10.3	
5/24/2017	138		108		5.61		12.6	
7/5/2017	142		97.2		5.78		15.9	
8/17/2017	145		110		6.13		17.6	
10/5/2017	155		113		6.75		19.7	
11/14/2017	145		113		6.73		17.6	
12/29/2017					6.27			
5/21/2018	130		105		5.63		14.1	
11/12/2018	170		122		5.04		15.1	
1/10/2019	149						21	
3/14/2019	140							
5/20/2019	141		115		5.66		21	
7/11/2019							22.5	
8/20/2019							20.3	
11/4/2019	141		119		6.61		21.6	
5/20/2020	144		105		5.6		16.4	
11/9/2020	158		123		5.24		16.7	
2/2/2021			106					
3/1/2021							17.1	
5/20/2021	127		98.4		5.59		16.5	
11/17/2021	178		106		6.48		17.6	
1/25/2022	171							
3/1/2022	162				6.01			
5/11/2022		155		105		6.54		16.5
8/17/2022						6.38 Extra Sample		

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.987, Std. Dev.=1.109, n=19. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9208, critical = 0.863. Kappa = 1.522 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Chloride Analysis Run 9/8/2022 12:20 PM View: CCR LF III

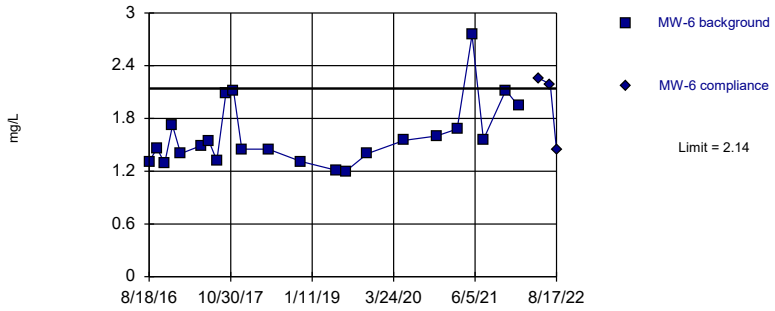
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.35 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on cube root transformation): Mean=1.165, Std. Dev.=0.08384, n=23. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8898, critical = 0.881. Kappa = 1.47 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Chloride Analysis Run 9/8/2022 12:20 PM View: CCR LF III

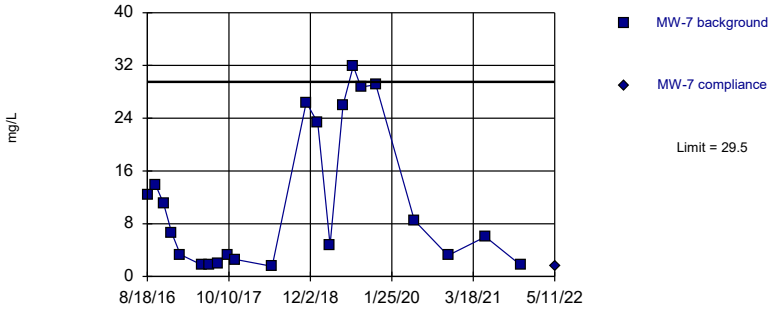
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.35 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on cube root transformation): Mean=2.015, Std. Dev.=0.7258, n=22. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8816, critical = 0.878. Kappa = 1.48 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Chloride Analysis Run 9/8/2022 12:20 PM View: CCR LF III

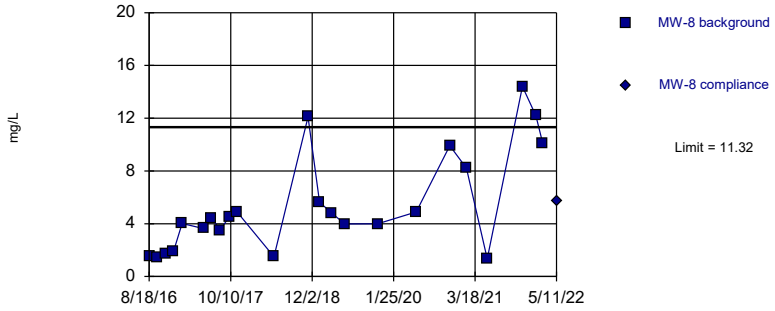
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.35 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on square root transformation): Mean=2.194, Std. Dev.=0.7965, n=23. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9151, critical = 0.881. Kappa = 1.47 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Chloride Analysis Run 9/8/2022 12:20 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Prediction Limit

Constituent: Chloride Analysis Run 9/8/2022 12:23 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

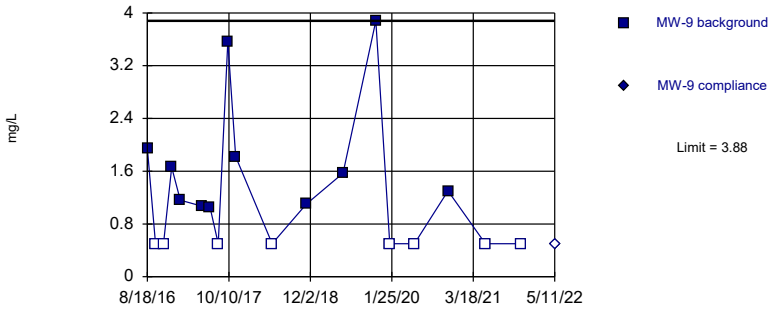
	MW-2	MW-2	MW-6	MW-6	MW-7	MW-7	MW-8	MW-8
8/18/2016	8.26		1.31		12.3		1.5	
9/29/2016	8.79		1.46		13.9		1.42	
11/9/2016	8.76		1.29		11.1		1.76	
12/21/2016	8.24		1.72		6.64		1.89	
2/3/2017	8.17		1.4		3.32		4.02	
5/24/2017	9.54		1.49		1.76		3.63	
7/5/2017	8.99		1.54		1.81		4.44	
8/17/2017	8.98		1.32		2		3.53	
10/5/2017	9.23		2.09		3.32		4.55	
11/14/2017	8.97		2.12		2.58		4.86	
12/29/2017			1.45					
5/21/2018	8.14		1.45		1.54		1.5	
11/12/2018	5.79		1.31		26.4		12.1	
1/10/2019					23.3		5.63	
3/14/2019					4.77		4.79	
5/20/2019	7.18		1.21		26		3.98	
7/11/2019	6.5		1.2		31.9			
8/20/2019					28.7			
11/4/2019	8.77		1.4		29.1		3.99	
5/20/2020	7.28		1.55		8.49		4.89	
11/9/2020	7.03		1.6		3.18		9.92	
2/2/2021							8.22	
3/1/2021			1.68					
5/20/2021	6.45		2.75		6.03		1.34	
7/20/2021			1.56					
11/17/2021	6.68		2.12		1.72		14.4	
1/25/2022			1.94				12.2	
3/1/2022							10.1	
5/11/2022		7.07		2.26		1.59		5.74
7/14/2022				2.19 1st Verification				
8/17/2022				1.44 2nd Verification				

Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 19 background values. 42.11% NDs. Well-constituent pair annual alpha = 0.001357. Individual comparison alpha = 0.0006785 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

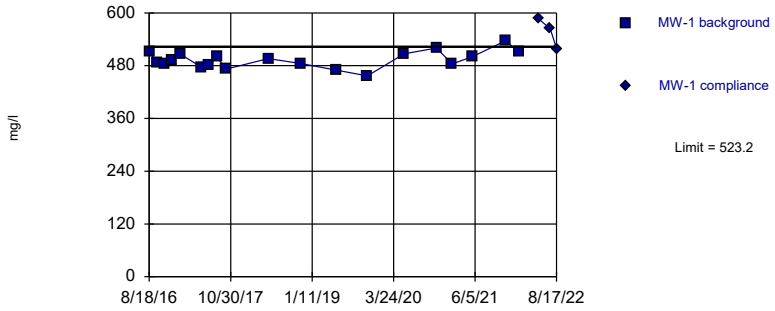
Constituent: Chloride Analysis Run 9/8/2022 12:20 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=493.6, Std. Dev.=19.43, n=19. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9872, critical = 0.863. Kappa = 1.522 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

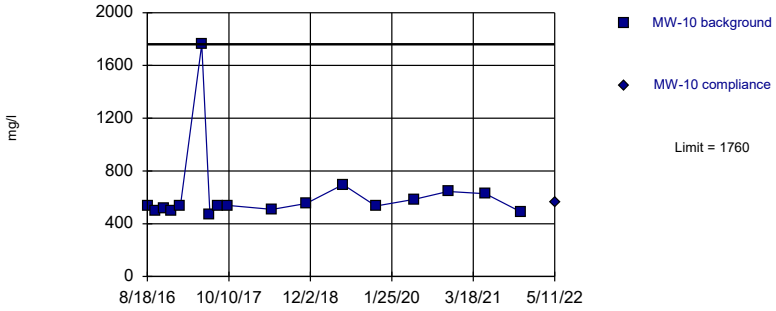
Constituent: Dissolved Solids Analysis Run 9/8/2022 12:20 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 17 background values. Well-constituent pair annual alpha = 0.00182. Individual comparison alpha = 0.0009102 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

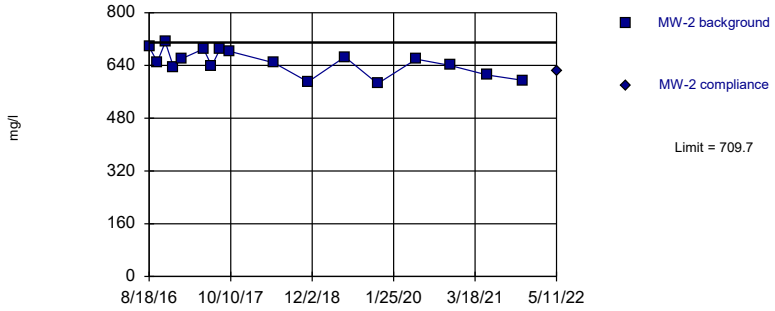
Constituent: Dissolved Solids Analysis Run 9/8/2022 12:20 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=650, Std. Dev.=38.24, n=17. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9527, critical = 0.851. Kappa = 1.561 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Dissolved Solids Analysis Run 9/8/2022 12:20 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Prediction Limit

Constituent: Chloride, Dissolved Solids Analysis Run 9/8/2022 12:23 PM View: CCR LF III

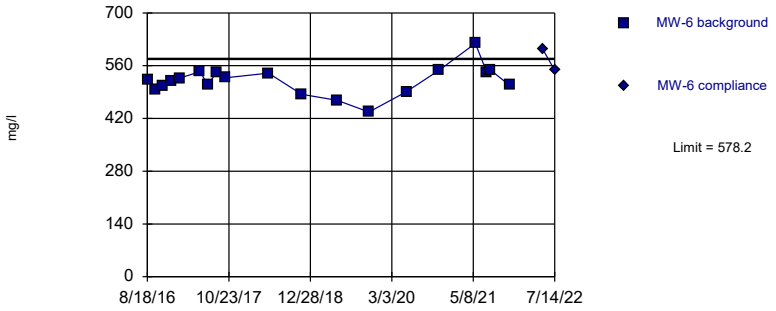
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-9	MW-9	MW-1	MW-1	MW-10	MW-10	MW-2	MW-2
8/18/2016	1.95		513		532		696	
9/29/2016	<1		486		502		651	
11/9/2016	<1		484		516		711	
12/21/2016	1.66		493		497		636	
2/3/2017	1.16		506		531		661	
5/24/2017	1.07		477		1760		690	
7/5/2017	1.06		481		474		638	
8/17/2017	<1		500		539		690	
10/5/2017	3.57		472		539		683	
11/14/2017	1.82							
5/21/2018	<1		496		509		648	
11/12/2018	1.1		485		554		590	
5/20/2019	1.57		470		697		666	
11/4/2019	3.88		457		534		585	
1/15/2020	<1							
5/20/2020	<1		507		585		659	
11/9/2020	1.3 (B)		520		645		640	
2/2/2021			484					
5/20/2021	<1		500		628		611	
11/17/2021	<1		537		491		595	
1/25/2022			511					
5/11/2022		<1		587		563		622
7/14/2022				564	1st Verification			
8/17/2022				519	2nd Verification			

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=520.1, Std. Dev.=38.18, n=19. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9459, critical = 0.863. Kappa = 1.522 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

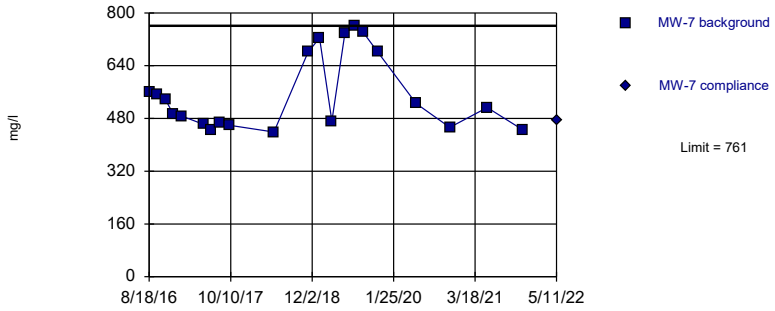
Constituent: Dissolved Solids Analysis Run 9/8/2022 12:20 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 21 background values. Well-constituent pair annual alpha = 0.001022. Individual comparison alpha = 0.000511 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

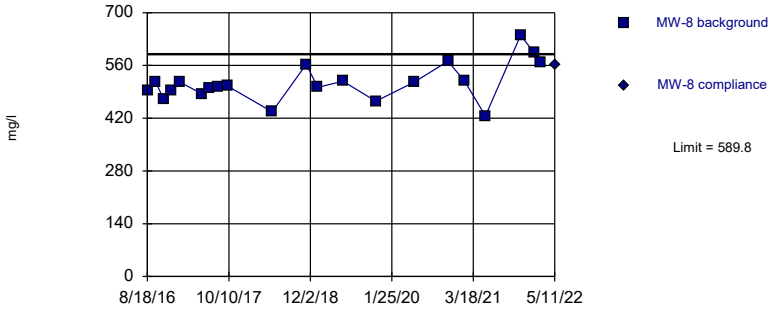
Constituent: Dissolved Solids Analysis Run 9/8/2022 12:21 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=514.4, Std. Dev.=50.56, n=21. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9426, critical = 0.873. Kappa = 1.491 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

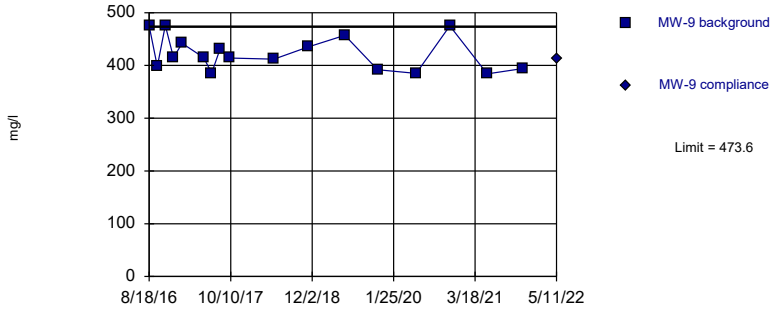
Constituent: Dissolved Solids Analysis Run 9/8/2022 12:21 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=422.7, Std. Dev.=32.63, n=17. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8959, critical = 0.851. Kappa = 1.561 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Dissolved Solids Analysis Run 9/8/2022 12:21 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Prediction Limit

Constituent: Dissolved Solids Analysis Run 9/8/2022 12:23 PM View: CCR LF III

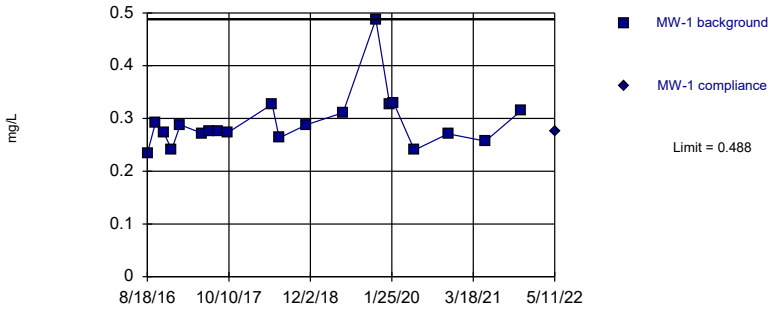
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-6	MW-6	MW-7	MW-7	MW-8	MW-8	MW-9	MW-9
8/18/2016	522		560		494		475	
9/29/2016	498		554		517		398	
11/9/2016	506		538		471		476	
12/21/2016	519		492		493		415	
2/3/2017	527		487		515		442	
5/24/2017	544		462		485		415	
7/5/2017	508		445		500		386	
8/17/2017	542		466		504		431	
10/5/2017	528		459		505		414	
5/21/2018	540		439		437		412	
11/12/2018	484		681		563		435	
1/10/2019			724		502			
3/14/2019			472					
5/20/2019	468		737		518		457	
7/11/2019			761					
8/20/2019			743					
11/4/2019	437		682		465		392	
5/20/2020	491		525		516		385	
11/9/2020	548		453		571		475	
2/2/2021					518			
5/20/2021	619		513		426		384	
7/20/2021	542							
8/4/2021	550							
11/17/2021	508		446		640		394	
1/25/2022					594			
3/1/2022					569			
5/11/2022		604		475		562		412
7/14/2022		548 1st Verification						

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 20 background values. Well-constituent pair annual alpha = 0.001125. Individual comparison alpha = 0.0005627 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

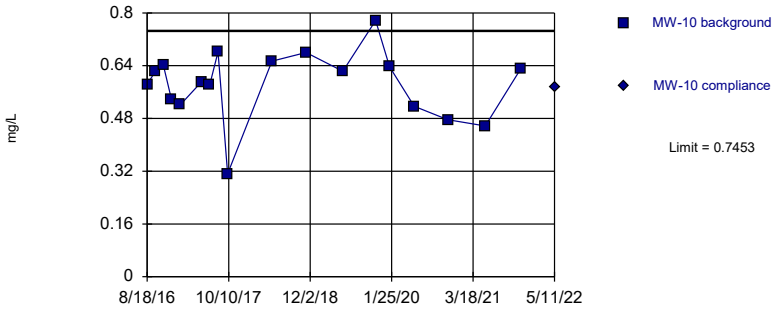
Constituent: Fluoride Analysis Run 9/8/2022 12:21 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.5847, Std. Dev.=0.1042, n=18. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9454, critical = 0.858. Kappa = 1.541 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

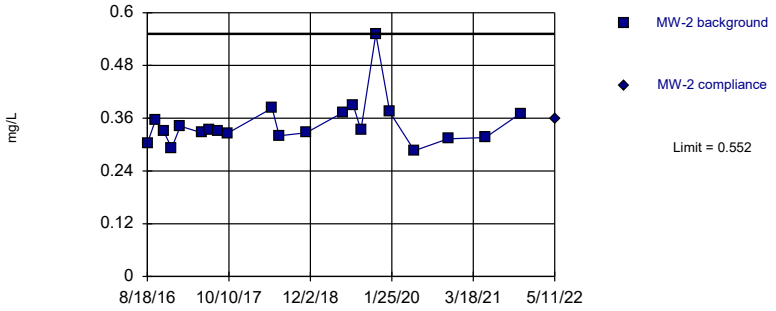
Constituent: Fluoride Analysis Run 9/8/2022 12:21 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 21 background values. Well-constituent pair annual alpha = 0.001022. Individual comparison alpha = 0.000511 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

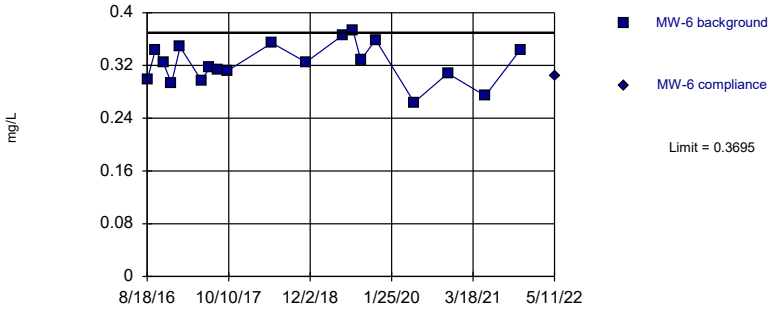
Constituent: Fluoride Analysis Run 9/8/2022 12:21 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.3232, Std. Dev.=0.03043, n=19. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9771, critical = 0.863. Kappa = 1.522 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Fluoride Analysis Run 9/8/2022 12:21 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Prediction Limit

Constituent: Fluoride Analysis Run 9/8/2022 12:23 PM View: CCR LF III

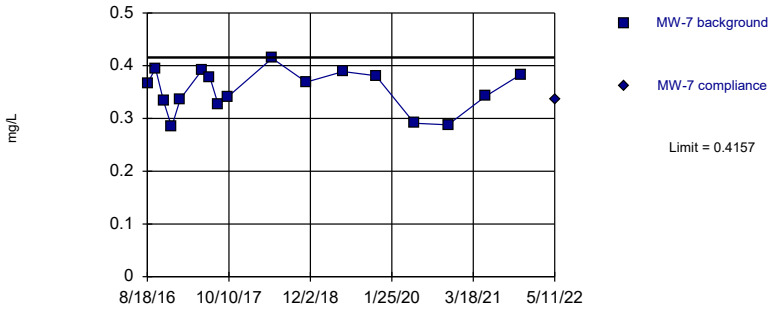
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-1	MW-1	MW-10	MW-10	MW-2	MW-2	MW-6	MW-6
8/18/2016	0.234		0.584		0.303		0.298	
9/29/2016	0.292		0.622		0.356		0.343	
11/9/2016	0.274		0.642		0.331		0.324	
12/21/2016	0.241		0.538		0.292		0.293	
2/3/2017	0.288		0.521		0.342		0.348	
5/24/2017	0.272		0.591		0.327		0.297	
7/5/2017	0.275		0.582		0.334		0.317	
8/17/2017	0.276		0.682		0.332		0.313	
10/5/2017	0.273		0.312		0.326		0.312	
5/21/2018	0.327		0.654		0.383		0.354	
6/26/2018	0.263				0.32			
11/12/2018	0.288		0.68		0.327		0.325	
5/20/2019	0.311		0.623		0.373		0.366	
7/11/2019					0.389		0.373	
8/20/2019					0.333		0.328	
11/4/2019	0.488		0.777		0.552		0.359	
1/15/2020	0.326		0.637		0.374			
2/4/2020	0.329							
5/20/2020	0.24		0.517		0.286		0.264	
11/9/2020	0.271		0.476		0.313		0.308	
5/20/2021	0.257		0.457		0.316		0.274	
11/17/2021	0.314		0.629		0.371		0.344	
5/11/2022		0.276		0.576		0.359		0.305

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.3534, Std. Dev.=0.03987, n=17. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9285, critical = 0.851. Kappa = 1.561 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Fluoride Analysis Run 9/8/2022 12:21 PM View: CCR LF III

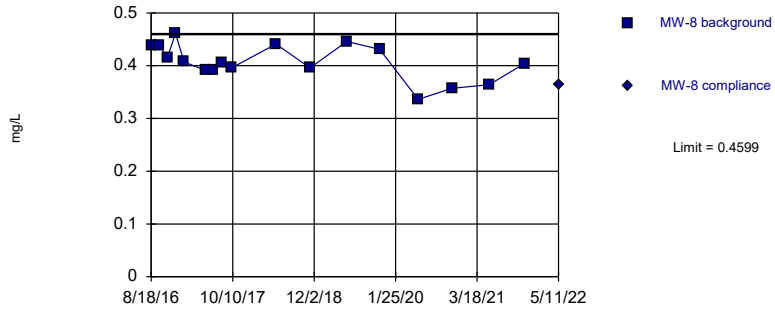
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.35 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.407, Std. Dev.=0.03389, n=17. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9608, critical = 0.851. Kappa = 1.561 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Fluoride Analysis Run 9/8/2022 12:21 PM View: CCR LF III

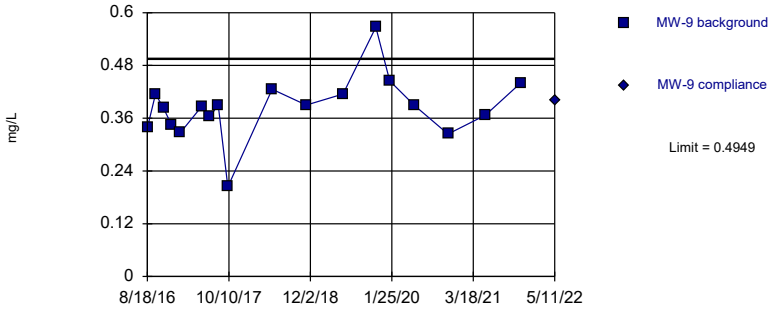
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.35 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.3842, Std. Dev.=0.07186, n=18. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9128, critical = 0.858. Kappa = 1.541 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Fluoride Analysis Run 9/8/2022 12:21 PM View: CCR LF III

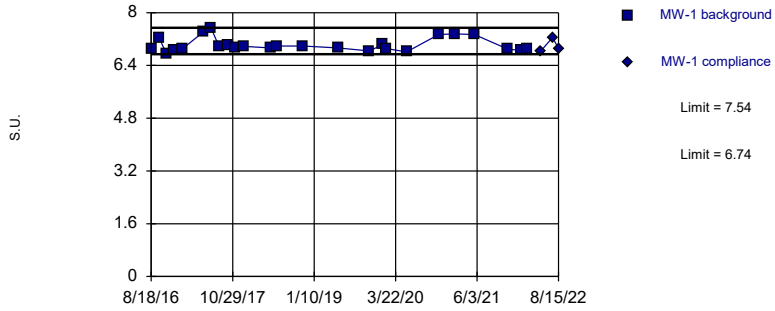
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.35 Sanitas software licensed to SCS Engineers. UG

Within Limits

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limits are highest and lowest of 25 background values. Well-constituent pair annual alpha = 0.001218. Individual comparison alpha = 0.0006092 (1 of 3). Seasonality was not detected with 95% confidence.

Constituent: pH Analysis Run 9/8/2022 12:21 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Prediction Limit

Constituent: Fluoride, pH Analysis Run 9/8/2022 12:23 PM View: CCR LF III

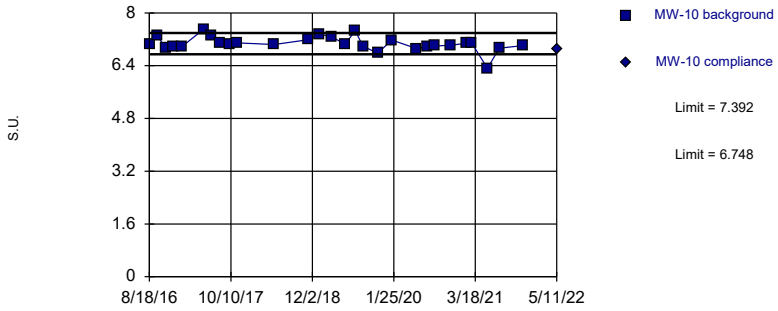
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-7	MW-7	MW-8	MW-8	MW-9	MW-9	MW-1	MW-1	
8/18/2016	0.366		0.438		0.338		6.89		
9/29/2016	0.395		0.439		0.415		7.24		
11/9/2016	0.333		0.415		0.383		6.74		
12/21/2016	0.284		0.461		0.344		6.86		
2/3/2017	0.337		0.407		0.327		6.91		
5/24/2017	0.391		0.391		0.387		7.41		
7/5/2017	0.378		0.391		0.364		7.54		
8/17/2017	0.326		0.406		0.39		6.98		
10/5/2017	0.341		0.396		0.204		7.03		
11/14/2017							6.93		
12/29/2017							6.98		
5/21/2018	0.414		0.441		0.426		6.93		
6/26/2018							6.99		
11/12/2018	0.369		0.396		0.39		6.99		
5/20/2019	0.389		0.446		0.415		6.93		
11/4/2019	0.381		0.431		0.567		6.84		
1/15/2020					0.445		7.04		
2/4/2020							6.91		
5/20/2020	0.291		0.336		0.389		6.81		
11/9/2020	0.288		0.357		0.324		7.34		
2/2/2021							7.36		
5/20/2021	0.342		0.364		0.367		7.34		
11/17/2021	0.383		0.404		0.44		6.89		
1/25/2022							6.86		
3/1/2022							6.89		
5/11/2022		0.337		0.363		0.401		6.83	
7/14/2022								7.25	Extra Sample
8/15/2022								6.91	Extra Sample

Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.07, Std. Dev.=0.2253, n=28. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8976, critical = 0.896. Kappa = 1.428 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: pH Analysis Run 9/8/2022 12:21 PM View: CCR LF III

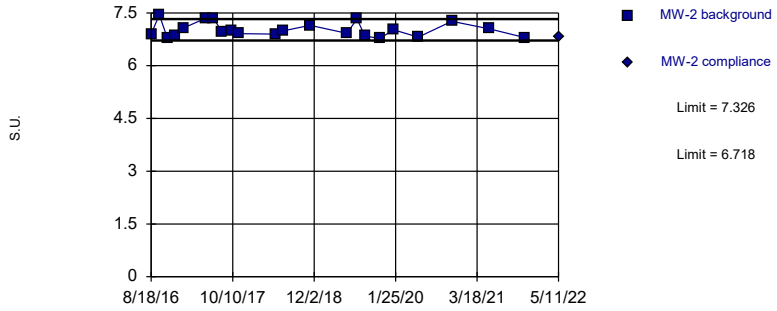
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.35 Sanitas software licensed to SCS Engineers. UG

Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.022, Std. Dev.=0.2053, n=22. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9056, critical = 0.878. Kappa = 1.48 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: pH Analysis Run 9/8/2022 12:21 PM View: CCR LF III

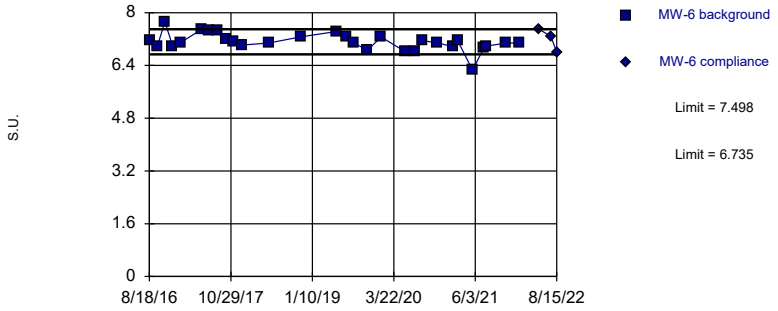
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.35 Sanitas software licensed to SCS Engineers. UG

Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.117, Std. Dev.=0.2681, n=29. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9337, critical = 0.898. Kappa = 1.422 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: pH Analysis Run 9/8/2022 12:21 PM View: CCR LF III

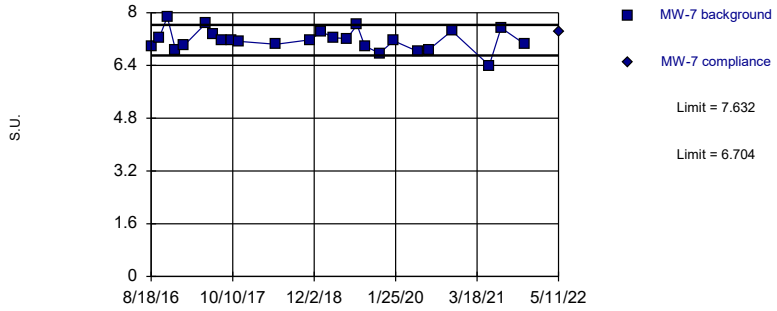
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.35 Sanitas software licensed to SCS Engineers. UG

Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.168, Std. Dev.=0.3202, n=25. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9819, critical = 0.888. Kappa = 1.448 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: pH Analysis Run 9/8/2022 12:21 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Prediction Limit

Constituent: pH Analysis Run 9/8/2022 12:23 PM View: CCR LF III

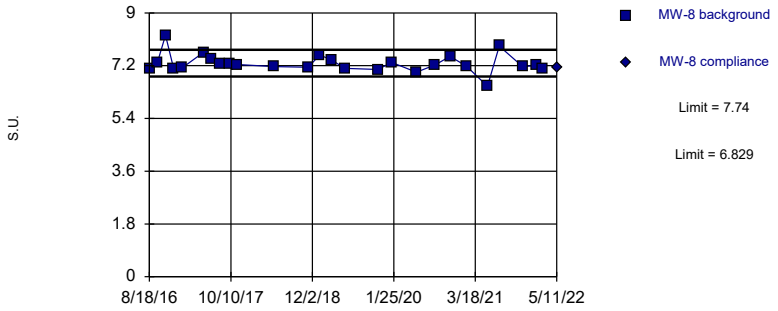
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-10	MW-10	MW-2	MW-2	MW-6	MW-6	MW-7	MW-7
8/18/2016	7.06		6.9		7.18		6.97	
9/29/2016	7.31		7.45		6.97		7.25	
11/9/2016	6.93		6.79		7.72		7.87	
12/21/2016	6.96		6.85		6.99		6.88	
2/3/2017	6.99		7.08		7.1		7.01	
5/24/2017	7.51		7.35		7.49		7.67	
7/5/2017	7.31		7.33		7.46		7.36	
8/17/2017	7.1		6.97		7.47		7.15	
10/5/2017	7.05		7		7.2		7.15	
11/14/2017	7.09		6.91		7.14		7.13	
12/29/2017					7.02			
5/21/2018	7.04		6.9		7.08		7.04	
6/26/2018			6.99					
11/12/2018	7.19		7.15		7.27		7.18	
1/10/2019	7.36						7.42	
3/14/2019	7.27						7.24	
5/20/2019	7.05		6.92		7.43		7.21	
7/11/2019	7.46		7.33		7.29		7.63	
8/20/2019	6.99		6.85		7.07		6.99	
11/4/2019	6.78		6.77		6.87		6.77	
1/15/2020	7.18		7.02		7.26		7.15	
5/20/2020	6.92		6.81		6.83		6.82	
7/13/2020	6.96				6.84		6.87	
8/25/2020	7				7.15			
11/9/2020	7.02		7.26		7.09		7.45	
2/2/2021	7.08				6.97			
3/1/2021	7.08				7.15			
5/20/2021	6.32		7.05		6.26		6.4	
7/20/2021	6.93				6.93		7.54	
8/4/2021					6.99			
11/17/2021	7.01		6.8		7.08		7.05	
1/25/2022					7.08			
5/11/2022		6.91		6.82		7.5		7.43
7/14/2022						7.29 Extra Sample		
8/15/2022						6.8 Extra Sample		

Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary (based on cube root transformation): Mean=1.938, Std. Dev.=0.02805, n=26. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.891, critical = 0.891. Kappa = 1.441 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: pH Analysis Run 9/8/2022 12:21 PM View: CCR LF III

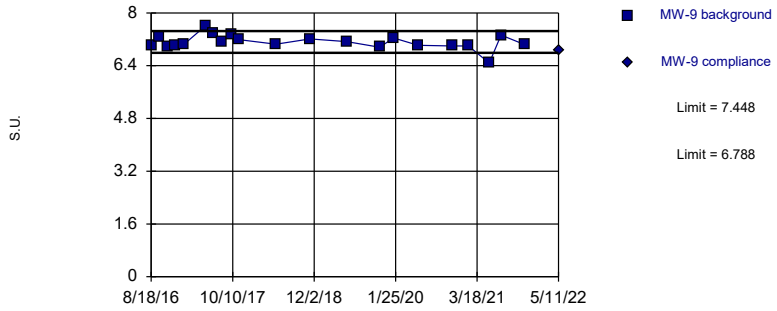
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.35 Sanitas software licensed to SCS Engineers. UG

Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.118, Std. Dev.=0.2213, n=21. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8993, critical = 0.873. Kappa = 1.491 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: pH Analysis Run 9/8/2022 12:21 PM View: CCR LF III

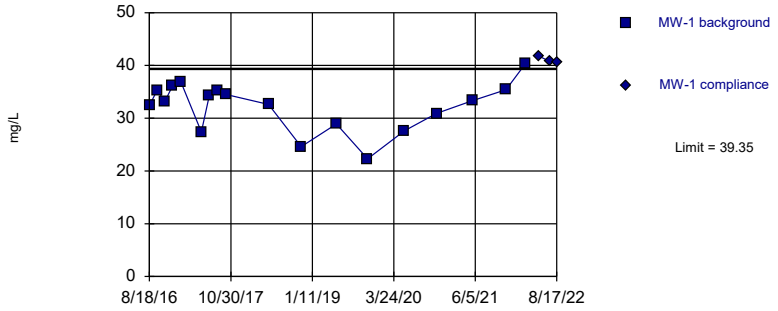
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.35 Sanitas software licensed to SCS Engineers. UG

Exceeds Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=32.29, Std. Dev.=4.58, n=18. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9504, critical = 0.858. Kappa = 1.541 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Sulfate Analysis Run 9/8/2022 12:21 PM View: CCR LF III

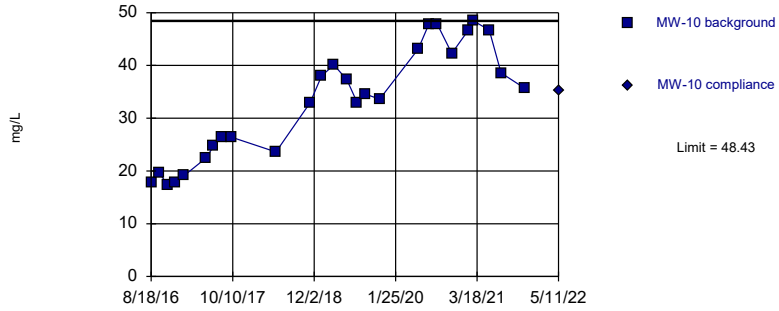
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.35 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=33.15, Std. Dev.=10.6, n=26. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9201, critical = 0.891. Kappa = 1.441 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Sulfate Analysis Run 9/8/2022 12:21 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Prediction Limit

Constituent: pH, Sulfate Analysis Run 9/8/2022 12:23 PM View: CCR LF III

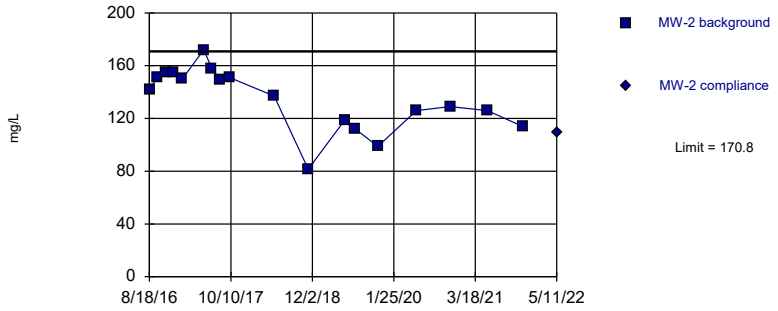
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-8	MW-8	MW-9	MW-9	MW-1	MW-1	MW-10	MW-10
8/18/2016	7.1		7.02		32.4		17.8	
9/29/2016	7.32		7.28		35.3		19.7	
11/9/2016	8.24		6.99		33.2		17.4	
12/21/2016	7.1		7.02		36.2		17.7	
2/3/2017	7.13		7.05		36.9		19.1	
5/24/2017	7.66		7.61		27.4		22.4	
7/5/2017	7.44		7.37		34.2		24.7	
8/17/2017	7.27		7.13		35.2		26.5	
10/5/2017	7.25		7.35		34.5		26.4	
11/14/2017	7.24		7.19					
5/21/2018	7.17		7.05		32.6		23.6	
11/12/2018	7.15		7.21		24.6		32.9	
1/10/2019	7.57						38	
3/14/2019	7.38						40.1	
5/20/2019	7.11		7.13		28.9		37.3	
7/11/2019							33	
8/20/2019							34.6	
11/4/2019	7.07		6.96		22.3		33.6	
1/15/2020	7.31		7.24					
5/20/2020	6.98		7.02		27.6		43.1	
7/13/2020							47.7	
8/25/2020	7.23						47.9	
11/9/2020	7.52		7		30.9		42.3	
2/2/2021	7.18		7				46.7	
3/1/2021							48.4	
5/20/2021	6.5		6.48		33.3		46.7	
7/20/2021	7.87		7.33				38.6	
11/17/2021	7.17		7.04		35.4		35.7	
1/25/2022	7.21							
3/1/2022	7.1				40.3			
5/11/2022		7.14		6.88		41.8		35.2
7/14/2022						40.7	1st Verification	
8/17/2022						40.6	2nd Verification	

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=134.8, Std. Dev.=23.36, n=18. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9505, critical = 0.858. Kappa = 1.541 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Sulfate Analysis Run 9/8/2022 12:21 PM View: CCR LF III

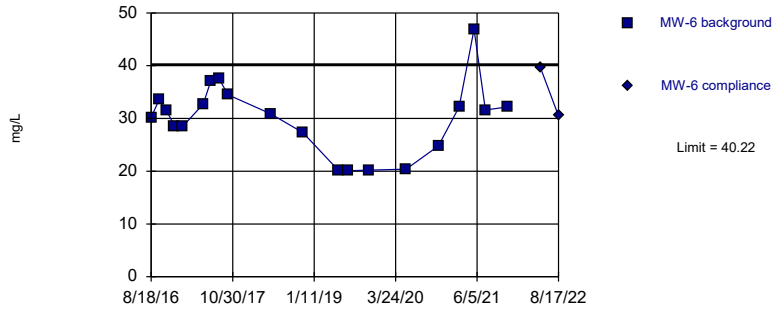
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.35 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=30.05, Std. Dev.=6.77, n=20. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9301, critical = 0.868. Kappa = 1.502 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Sulfate Analysis Run 9/8/2022 12:21 PM View: CCR LF III

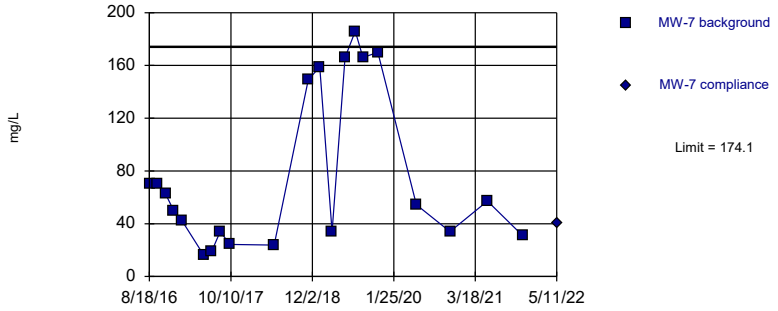
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.35 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on cube root transformation): Mean=3.992, Std. Dev.=1.067, n=21. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8863, critical = 0.873. Kappa = 1.491 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Sulfate Analysis Run 9/8/2022 12:21 PM View: CCR LF III

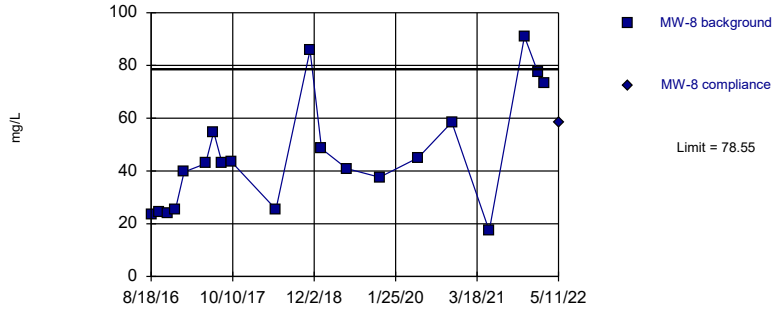
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Sanitas™ v.9.6.35 Sanitas software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=46.05, Std. Dev.=21.64, n=20. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9109, critical = 0.868. Kappa = 1.502 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Sulfate Analysis Run 9/8/2022 12:21 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Prediction Limit

Constituent: Sulfate Analysis Run 9/8/2022 12:23 PM View: CCR LF III

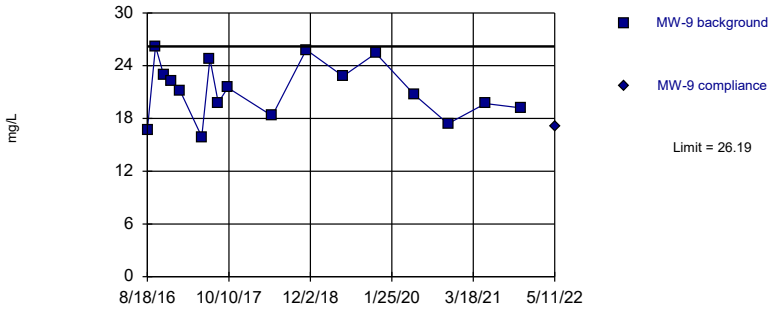
Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-2	MW-2	MW-6	MW-6	MW-7	MW-7	MW-8	MW-8
8/18/2016	142		30.2		70.2		23.3	
9/29/2016	151		33.5		70.6		24.2	
11/9/2016	155		31.4		62.6		23.8	
12/21/2016	155		28.6		50		25.5	
2/3/2017	150		28.5		41.9		39.6	
5/24/2017	172		32.7		16.2		42.8	
7/5/2017	158		37.2		19.5		54.8	
8/17/2017	149		37.6		34.1		43	
10/5/2017	151		34.5		24.3		43.4	
5/21/2018	137		30.9		23.8		25.4	
11/12/2018	81.5		27.3		149		85.8	
1/10/2019					159		48.4	
3/14/2019					33.9			
5/20/2019	119		20.2		166		40.9	
7/11/2019	112		20.1		186			
8/20/2019					166			
11/4/2019	98.8		20.2		170		37.6	
5/20/2020	126		20.4		54.4		45	
11/9/2020	129		24.8		34		58.5	
3/1/2021			32.2					
5/20/2021	126		46.9		57.2		17.3	
7/20/2021			31.6					
11/17/2021	114		32.2		31		91	
1/25/2022							77.4	
3/1/2022							73.3	
5/11/2022		109		39.7		40.9		58.5
8/17/2022				30.5 Extra Sample				

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=21.21, Std. Dev.=3.195, n=17. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9637, critical = 0.851. Kappa = 1.561 (c=7, w=7, 1 of 3, event alpha = 0.05132). Report alpha = 0.001075.

Constituent: Sulfate Analysis Run 9/8/2022 12:21 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

Prediction Limit

Constituent: Sulfate Analysis Run 9/8/2022 12:23 PM View: CCR LF III

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr

	MW-9	MW-9
8/18/2016	16.7	
9/29/2016	26.2	
11/9/2016	23	
12/21/2016	22.2	
2/3/2017	21.1	
5/24/2017	15.9	
7/5/2017	24.8	
8/17/2017	19.8	
10/5/2017	21.5	
5/21/2018	18.3	
11/12/2018	25.8	
5/20/2019	22.8	
11/4/2019	25.4	
5/20/2020	20.7	
11/9/2020	17.4	
5/20/2021	19.7	
11/17/2021	19.2	
5/11/2022		17.1

Prediction Limit

Iatan Utility Waste LF Client: SCS Engineers Data: Iatan jrr Printed 9/8/2022, 12:23 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
Boron (mg/L)	MW-1	0.2	n/a	5/11/2022	0.1ND	No	17	100	n/a	0.000...	NP Intra (NDs) 1 of 3
Boron (mg/L)	MW-10	0.2	n/a	5/11/2022	0.1ND	No	17	100	n/a	0.000...	NP Intra (NDs) 1 of 3
Boron (mg/L)	MW-2	0.2	n/a	5/11/2022	0.1ND	No	17	100	n/a	0.000...	NP Intra (NDs) 1 of 3
Boron (mg/L)	MW-6	0.2	n/a	5/11/2022	0.1ND	No	17	100	n/a	0.000...	NP Intra (NDs) 1 of 3
Boron (mg/L)	MW-7	0.2	n/a	5/11/2022	0.1ND	No	17	100	n/a	0.000...	NP Intra (NDs) 1 of 3
Boron (mg/L)	MW-8	0.2	n/a	5/11/2022	0.1ND	No	17	100	n/a	0.000...	NP Intra (NDs) 1 of 3
Boron (mg/L)	MW-9	0.2	n/a	5/11/2022	0.1ND	No	17	100	n/a	0.000...	NP Intra (NDs) 1 of 3
Calcium (mg/L)	MW-1	145.6	n/a	8/17/2022	141	No	21	0	No	0.001075	Param Intra 1 of 3
Calcium (mg/L)	MW-10	160.1	n/a	5/11/2022	122	No	24	0	No	0.001075	Param Intra 1 of 3
Calcium (mg/L)	MW-2	174.4	n/a	5/11/2022	164	No	19	0	x^5	0.001075	Param Intra 1 of 3
Calcium (mg/L)	MW-6	165.9	n/a	8/17/2022	136	No	22	0	sqrt(x)	0.001075	Param Intra 1 of 3
Calcium (mg/L)	MW-7	188.2	n/a	5/11/2022	130	No	22	0	sqrt(x)	0.001075	Param Intra 1 of 3
Calcium (mg/L)	MW-8	166.7	n/a	5/11/2022	155	No	22	0	No	0.001075	Param Intra 1 of 3
Calcium (mg/L)	MW-9	121.5	n/a	5/11/2022	105	No	19	0	No	0.001075	Param Intra 1 of 3
Chloride (mg/L)	MW-1	6.645	n/a	8/17/2022	6.38	No	20	0	No	0.001075	Param Intra 1 of 3
Chloride (mg/L)	MW-10	22.57	n/a	5/11/2022	16.5	No	22	0	No	0.001075	Param Intra 1 of 3
Chloride (mg/L)	MW-2	9.675	n/a	5/11/2022	7.07	No	19	0	No	0.001075	Param Intra 1 of 3
Chloride (mg/L)	MW-6	2.14	n/a	8/17/2022	1.44	No	23	0	x^(1/3)	0.001075	Param Intra 1 of 3
Chloride (mg/L)	MW-7	29.5	n/a	5/11/2022	1.59	No	22	0	x^(1/3)	0.001075	Param Intra 1 of 3
Chloride (mg/L)	MW-8	11.32	n/a	5/11/2022	5.74	No	23	0	sqrt(x)	0.001075	Param Intra 1 of 3
Chloride (mg/L)	MW-9	3.88	n/a	5/11/2022	0.5ND	No	19	42.11	n/a	0.000...	NP Intra (normality) ...
Dissolved Solids (mg/l)	MW-1	523.2	n/a	8/17/2022	519	No	19	0	No	0.001075	Param Intra 1 of 3
Dissolved Solids (mg/l)	MW-10	1760	n/a	5/11/2022	563	No	17	0	n/a	0.000...	NP Intra (normality) ...
Dissolved Solids (mg/l)	MW-2	709.7	n/a	5/11/2022	622	No	17	0	No	0.001075	Param Intra 1 of 3
Dissolved Solids (mg/l)	MW-6	578.2	n/a	7/14/2022	548	No	19	0	No	0.001075	Param Intra 1 of 3
Dissolved Solids (mg/l)	MW-7	761	n/a	5/11/2022	475	No	21	0	n/a	0.000511	NP Intra (normality) ...
Dissolved Solids (mg/l)	MW-8	589.8	n/a	5/11/2022	562	No	21	0	No	0.001075	Param Intra 1 of 3
Dissolved Solids (mg/l)	MW-9	473.6	n/a	5/11/2022	412	No	17	0	No	0.001075	Param Intra 1 of 3
Fluoride (mg/L)	MW-1	0.488	n/a	5/11/2022	0.276	No	20	0	n/a	0.000...	NP Intra (normality) ...
Fluoride (mg/L)	MW-10	0.7453	n/a	5/11/2022	0.576	No	18	0	No	0.001075	Param Intra 1 of 3
Fluoride (mg/L)	MW-2	0.552	n/a	5/11/2022	0.359	No	21	0	n/a	0.000511	NP Intra (normality) ...
Fluoride (mg/L)	MW-6	0.3695	n/a	5/11/2022	0.305	No	19	0	No	0.001075	Param Intra 1 of 3
Fluoride (mg/L)	MW-7	0.4157	n/a	5/11/2022	0.337	No	17	0	No	0.001075	Param Intra 1 of 3
Fluoride (mg/L)	MW-8	0.4599	n/a	5/11/2022	0.363	No	17	0	No	0.001075	Param Intra 1 of 3
Fluoride (mg/L)	MW-9	0.4949	n/a	5/11/2022	0.401	No	18	0	No	0.001075	Param Intra 1 of 3
pH (S.U.)	MW-1	7.54	6.74	8/15/2022	6.91	No	25	0	n/a	0.000...	NP Intra (normality) ...
pH (S.U.)	MW-10	7.392	6.748	5/11/2022	6.91	No	28	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	MW-2	7.326	6.718	5/11/2022	6.82	No	22	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	MW-6	7.498	6.735	8/15/2022	6.8	No	29	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	MW-7	7.632	6.704	5/11/2022	7.43	No	25	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	MW-8	7.74	6.829	5/11/2022	7.14	No	26	0	x^(1/3)	0.000...	Param Intra 1 of 3
pH (S.U.)	MW-9	7.448	6.788	5/11/2022	6.88	No	21	0	No	0.000...	Param Intra 1 of 3
Sulfate (mg/L)	**MW-1**	**39.35**	**n/a**	**8/17/2022**	**40.6**	**Yes**	**18**	**0**	**No**	**0.001075**	**Param Intra 1 of 3**
Sulfate (mg/L)	MW-10	48.43	n/a	5/11/2022	35.2	No	26	0	No	0.001075	Param Intra 1 of 3
Sulfate (mg/L)	MW-2	170.8	n/a	5/11/2022	109	No	18	0	No	0.001075	Param Intra 1 of 3
Sulfate (mg/L)	MW-6	40.22	n/a	8/17/2022	30.5	No	20	0	No	0.001075	Param Intra 1 of 3
Sulfate (mg/L)	MW-7	174.1	n/a	5/11/2022	40.9	No	21	0	x^(1/3)	0.001075	Param Intra 1 of 3
Sulfate (mg/L)	MW-8	78.55	n/a	5/11/2022	58.5	No	20	0	No	0.001075	Param Intra 1 of 3
Sulfate (mg/L)	MW-9	26.19	n/a	5/11/2022	17.1	No	17	0	No	0.001075	Param Intra 1 of 3

ATTACHMENT 2

Sanitas™ Configuration Settings

Data | Output | Trend Test | Control Cht | Prediction Lim | Tolerance Lim | Conf/Tol Int | ANOVA | Welchs | Other Tests

Exclude data flags: i

Data Reading Options

- (•) Individual Observations
- ( ) Mean of Each: ( ) Month
- ( ) Median of Each: ( ) Season

Non-Detect / Trace Handling...

Setup Seasons...

[ ] Automatically Process Resamples...

Data | Output | Trend Test | Control Cht | Prediction Lim | Tolerance Lim | Conf/Tol Int | ANOVA | Welchs | Other Tests

- [ ] Black and White Output
- [x] Four Plots Per Page
  - [x] Always Combine Data Pages...
  - [x] Include Tick Marks on Data Page
- [ ] Use Constituent Name for Graph Title
- [ ] Draw Border Around Text Reports and Data Pages
- [x] Enlarge/Reduce Fonts (Graphs): 100%
- [x] Enlarge/Reduce Fonts (Data/Text Reports): 100%
- [x] Wide Margins (on reports without explicit setting)
- [ ] Use CAS# (Not Const. Name)
- [ ] Truncate File Names to 20 Characters
- [ ] Include Limit Lines when found in Database...
- [ ] Show Deselected Data on Time Series Lighter
- [ ] Show Deselected Data on all Data Pages Lighter

Setup Symbols and Colors...

- [x] Prompt to Overwrite/Append Summary Tables
- [ ] Round Limits to 2 Sig. Digits (when not set in data file)
- [ ] User-Set Scale
- [x] Indicate Background Data
- [ ] Show Exact Dates
- [ ] Thick Plot Lines

Zoom Factor: 200%

Output Decimal Precision

- ( ) Less Precision
- (•) Normal Precision
- ( ) More Precision

- [x] Store Print Jobs in Multiple Constituent Mode

Store All Print Jobs...

Printer: Adobe PDF

Printers...

Data | Output | Trend Test | Control Cht | Prediction Lim | Tolerance Lim | Conf/Tol Int | ANOVA | Welchs | Other Tests

☐ Use Modified Alpha... 0.02

☑ Test Residuals For Normality (Parametric test only) using Shapiro-Wilk/Francia at Alpha = 0.01

☐ Continue Parametric if Unable to Normalize

Transformation (Parametric test only)

- ◉ Use Ladder of Powers
- ○ Natural Log or No Transformation
- ○ Never Transform
- ○ Use Specific Transformation:

☐ Use Best W Statistic

☐ Plot Transformed Values

Use Non-Parametric Test (Sen's Slope/Mann-Kendall) when Non-Detects Percent > 75

☐ Include 95. % Confidence Interval around Trend Line

☐ Automatically Remove Outliers (Parametric test only)

Note: there is no "Always Use Non-Parametric" checkbox on this tab because, for consistency with prior versions, Sen's Slope / Mann-Kendall (the non-parametric alternative) is available as a report in its own right, under Analysis->Intrawell->Trend.

Data | Output | Trend Test | Control Cht | **Prediction Lim** | Tolerance Lim | Conf/Tol Int | ANOVA | Welchs | Other Tests

☑ Test for Normality using Shapiro-Wilk/Francia at Alpha = 0.01

☑ Use Non-Parametric Test when Non-Detects Percent > 50

Use Aitchison's Adjustment when Non-Detects Percent > 15

☐ Optional Further Refinement: Use _____ when NDs % > 50

☐ Use Poisson Prediction Limit when Non-Detects Percent > 90

Transformation

- ◉ Use Ladder of Powers
- ○ Natural Log or No Transformation
- ○ Never Transform
- ○ Use Specific Transformation: Natural Log

☐ Use Best W Statistic

☐ Plot Transformed Values

Deseasonalize (Intra- and InterWell)

- ◉ If Seasonality Is Detected
- ○ If Seasonality Is Detected Or Insufficient to Test
- ○ Always (When Sufficient Data)
- ○ Never

☐ Always Use Non-Parametric

Facility α

Statistical Evaluations per Year: 2

Constituents Analyzed: 7

Downgradient (Compliance) Wells: 7

Sampling Plan

Comparing Individual Observations

○ 1 of 1 ○ 1 of 2 ◉ 1 of 3 ○ 1 of 4

○ 2 of 4 ("Modified California")

IntraWell Other

☐ Stop if Background Trend Detected at Alpha = 0.05

☑ Plot Background Data

Override Standard Deviation: _____

Override DF: _____ Override Kappa: _____

☐ Automatically Remove Background Outliers

☐ 2-Tailed Test Mode...

☑ Show Deselected Data Lighter

Non-Parametric Limit = Highest Background Value

Non-Parametric Limit when 100% Non-Detects:

- ○ Highest/Second Highest Background Value
- ◉ Most Recent PQL if available, or MDL
- ○ Most Recent Background Value (subst. method)

Data | Output | Trend Test | Control Cht | Prediction Lim | Tolerance Lim | Conf/Tol Int | ANOVA | Welchs | Other Tests

Rank Von Neumann, Wilcoxon Rank Sum / Mann-Whitney

- [ ] Use Modified Alpha...
- [ ] 2-Tailed Test Mode...
- [ ] Combine Background Wells on Mann-Whitney...

Outlier Tests

- ( ) EPA 1989 Outlier Screening (fixed alpha of 0.05)
- (•) Dixon's at α= 0.05 or if n > 22 Rosner's at α= 0.01 [x] Use EPA Screening to establish Suspected Outliers
- ( ) Tukey's Outlier Screening, with IQR Multiplier = 3.0 [ ] Use Ladder of Powers to achieve Best W Stat
- [x] Test For Normality using Shapiro-Wilk/Francia at Alpha = 0.1
  - (•) Stop if Non-Normal
  - ( ) Continue with Parametric Test if Non-Normal
  - ( ) Tukey's if Non-Normal, with IQR Multiplier = 3.0 [ ] Use Ladder of Powers to achieve Best W Stat
- [x] No Outlier If Less Than 3.0 Times Median
- [ ] Apply Rules found in Ohio Guidance Document 0715
- [ ] Combine Background Wells on the Outlier Report...

Piper, Stiff Diagram

- [ ] Combine Wells
- [ ] Combine Dates
- (•) Use Default Constituent Names
- ( ) Use Constituent Definition File Edit
- [x] Label Constituents
- [x] Label Axes
- [x] Note Cation-Anion Balance (Piper only)