2023 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT

CCR LANDFILL
SIBLEY GENERATING STATION
SIBLEY, MISSOURI

Presented To:
Evergy Missouri West, Inc.

SCS ENGINEERS

27213169.23 | January 2024

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 2023 Annual Groundwater Monitoring and Corrective Action Report for the CCR Landfill at the Sibley 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 2023 Annual Groundwater Monitoring and Corrective Action Report for the CCR Landfill at the Sibley 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, 2024	NA	Original

Table of Contents

Section **Page**

Appendices

1 INTRODUCTION

This 2023 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 Missouri West, 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 2023 Annual Groundwater Monitoring and Corrective Action Report for the CCR Landfill at the Sibley 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, 2023), 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, 2023), the CCR Landfill was operating under an assessment monitoring program in compliance with § 257.95.

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

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

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

Monitoring Event	Monitoring Well	Constituent	ASD
Fall 2022	MW-505	Calcium	Not Performed
Fall 2022	MW-506	Chloride	Not Performed
Fall 2022	MW-506	Sulfate	Not Performed
Fall 2022	MW-510	Sulfate	Not Performed
Fall 2022	MW-512	Calcium	Not Performed

Monitoring Event	Monitoring Well	Constituent	ASD
Fall 2022	MW-512	Chloride	Not Performed
Fall 2022	MW-512	Sulfate	Not Performed
Fall 2022	MW-512	Total Dissolved Solids	Not Performed
Spring 2023	MW-505	Calcium	Not Performed
Spring 2023	MW-505	Total Dissolved Solids	Not Performed
Spring 2023	MW-510	Sulfate	Not Performed
Spring 2023	MW-512	Chloride	Not Performed
Spring 2023	MW-512	Sulfate	Not Performed
Spring 2023	MW-512	Total Dissolved Solids	Not Performed

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

The assessment monitoring program was initiated on June 16, 2023 and the initial assessment monitoring sampling event was performed on August 16, 2023.

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;

A statistically significant level above the groundwater protection standard was not identified.

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

Not applicable because a statistically significant level above the groundwater protection standard was not identified.

(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 2023.

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;

Detection and assessment monitoring were required to be conducted during the reporting period (2023). Detection monitoring groundwater samples collected in November 2022 and May 2023 were collected and analyzed for Appendix III detection monitoring constituents. Assessment monitoring groundwater samples collected in August 2023 were collected and analyzed for Appendix IV assessment monitoring constituents. Samples collected in November 2023 were collected and analyzed for Appendix III detection monitoring constituents and detected Appendix IV assessment monitoring constituents. Results of the sampling events are provided in **Appendix B, Table 1** (Appendix III Detection Monitoring and Required Appendix IV Assessment Monitoring Results), and **Table 2** (Groundwater Monitoring Field Measurements). These tables include the Fall 2022 first and second verification sample data collected and analyzed in 2023, the Spring 2023 semi-annual detection monitoring data, the initial Appendix IV assessment monitoring data (August 2023), and the first semi-annual assessment monitoring data (Fall 2023). The dates of sample collection and the monitoring program requiring the sample 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

The Sibley CCR Landfill transitioned to an assessment monitoring program within the allowed 90 days of the SSI. Notification of transition to an assessment monitoring program was provided June 16, 2023. The initial annual groundwater assessment monitoring event for the assessment monitoring program was conducted on August 16, 2023, and the first semi-annual assessment monitoring sampling event was conducted on November 15, 2023.

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 assessment monitoring.

Summary of Key Actions Completed.

a. completion of the 2022 Annual Groundwater Monitoring and Corrective Action Report,

b. completion of the Fall 2022 verification sampling and analyses per the certified statistical method,

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

d. completion of the Spring 2023 semiannual detection monitoring sampling and analysis event with subsequent verification sampling per the certified statistical method,

e. notification of transition the CCR Unit from a detection monitoring program to an assessment monitoring program,

f. completion of the initial assessment monitoring groundwater sampling and analysis event, and

g. initiation of the Fall 2023 semiannual assessment 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 (2024).

Completion of verification sampling and data analysis (if applicable), and the statistical evaluation of Fall 2023 assessment monitoring sampling and analysis event. Semiannual Spring and Fall 2024, and the Annual 2024 groundwater sampling and analysis. Completion of the statistical evaluation of the Spring assessment monitoring sampling and analysis event.

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.

A successful ASD for detection monitoring constituents was not completed within the allowable 90 days of the SSI determination.

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 no alternative monitoring frequency for assessment monitoring and certification was pursued.

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.

The concentrations of Appendix III and detected Appendix IV constituents from the assessment monitoring are provided in **Appendix B, Table 1 and Table 2**. The established groundwater protection standards (GWPSs) as applicable are provided in **Appendix B, Table 3**.

The GWPSs for Appendix IV constituents were set equal to the highest value of the MCL, concentrations specified by 40 CFR 257.95(h)(2), or background concentrations. The background concentrations for each of the Appendix IV constituents were determined following the prediction limit statistical procedures as specified in the "Statistical Method Certification by A Qualified Professional Engineer" dated October 12, 2017. The resulting GWPS for Appendix IV constituents are provided in **Table 3** in **Appendix B** along with the Appendix IV constituent background samples collected over nine sampling events between December 2015 and October 2017.

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 an assessment monitoring alternative source demonstration was not required.

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 an assessment of corrective measures was not required.

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 contains 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 C**):

  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 2023 – First verification sampling for the Fall 2022 detection monitoring event.
  - February 2023 – Second verification sampling for the Fall 2022 detection monitoring event.
  - May 2023 – Spring 2023 semiannual detection monitoring sampling event.
  - August 2023 – Initial assessment monitoring sampling event.
  - November 2023 - Fall 2023 semiannual assessment monitoring sampling event.

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

  Includes a 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 2023 included the following:

  - Fall 2022 semiannual detection monitoring statistical analyses.
  - Spring 2023 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 2023 semiannual detection monitoring sampling event.
  - **Figure 3** – Initial annual assessment monitoring sampling event
  - **Figure 4** – Fall 2023 semiannual assessment 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 Sibley 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 Missouri West, Inc., for specific application to the Sibley 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 2023)
Figure 3: Potentiometric Surface Map (August 2023)
Figure 4: Potentiometric Surface Map (November 2023)

LEGEND:

- 601 GROUNDWATER MONITORING SYSTEM WELLS
- UTILITY WASTE LANDFILL UNIT BOUNDARY
- 516 LANDFILL EXPANSION WELLS

NOTES:

1. HORIZONTAL & VERTICAL DATUM: URS PLANS FOR CONSTRUCTION, KCP&L SIBLEY GENERATING STATION, DESIGN FILE 165305111.00001, DATED JANUARY 2010.
2. GOOGLE EARTH IMAGE DATED JULY 2022.
3. BOUNDARY AND MONITORING WELL WELL LOCATIONS SHOWN ARE APPROXIMATE.

200 0 200 400

SCALE FEET

REV.	DATE
1	-

SHEET TITLE
SITE MAP
CCR LANDFILL
CCR GROUNDWATER MONITORING SYSTEM

PROJECT TITLE
2023 GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT

CLIENT
EVERGY MISSOURI WEST, INC.
SIBLEY GENERATING STATION
SIBLEY, MISSOURI

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

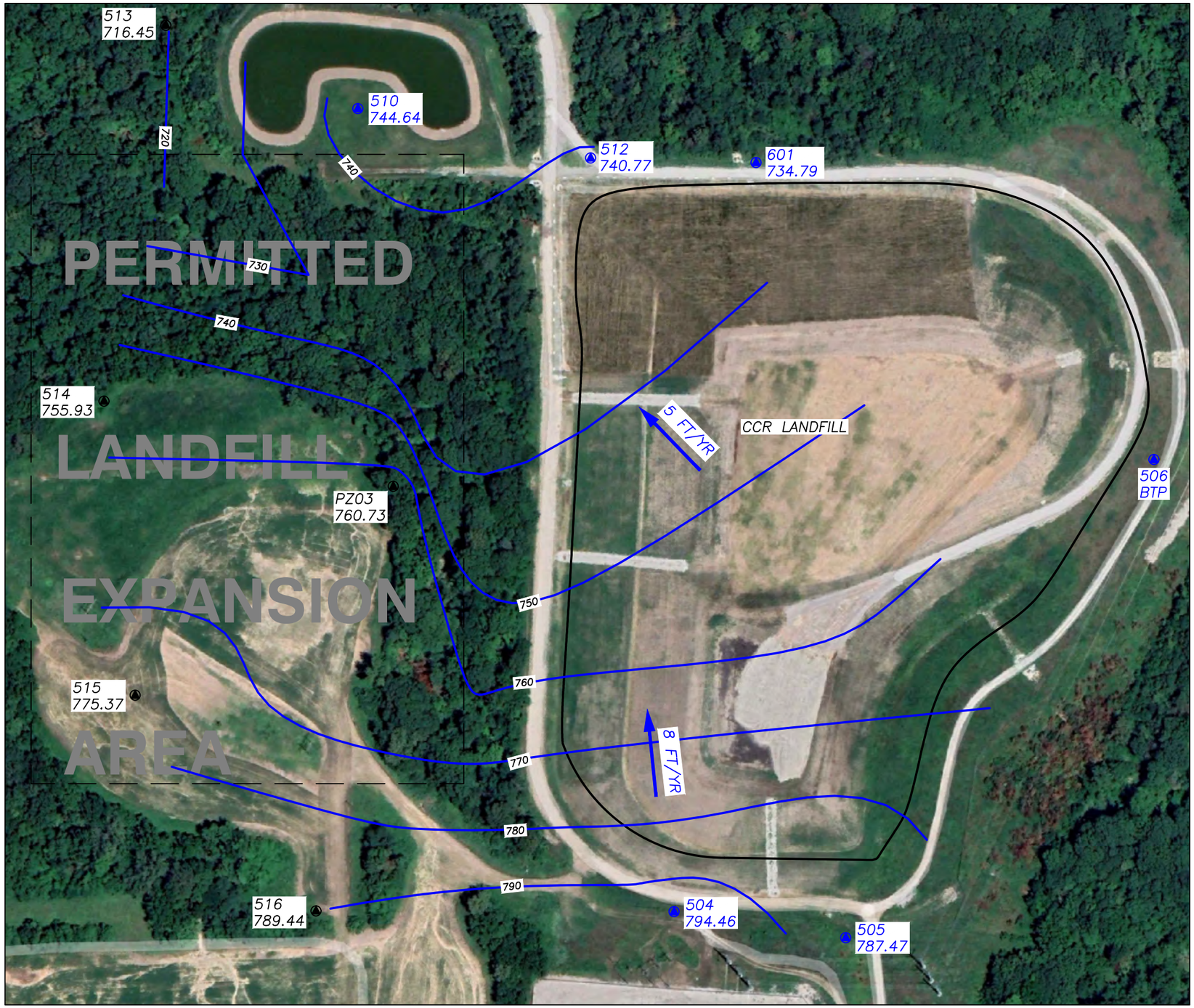
PROJ. NO. 27213167.20 | DSN. BY: MBJ | Q/A RVW BY: JRR
DSN. BY: TGW | CHK. BY: JRR | PROJ. MGR: JRF

CADD FILE:
SIBLEY POTENTIOMETRIC MAP NOV 2023 - 1.DWG

DATE:
1/22/24

FIGURE NO.
1

N:\KCPL - EVERGY\Projects\Groundwater\DWG\Sibley\2023\GW\Sibley Potentiometric Map Nov 2023 - 1.dwg Jan 22, 2024 - 8:52am Layout Name: 1 By: soh



LEGEND:

- 601 (734.79) — GROUNDWATER MONITORING SYSTEM WELLS (GROUNDWATER ELEVATION)
- UTILITY WASTE LANDFILL UNIT BOUNDARY
- PERMITTED LANDFILL EXPANSION AREA
- 65 FT/YR — GROUNDWATER FLOW DIRECTION AND CALCULATED AND CALCULATED GROUNDWATER FLOW RATE (FEET/YEAR)
- BTP — BELOW TOP OF PUMP
- 513 (716.45) — LANDFILL EXPANSION WELLS (GROUNDWATER ELEVATION)

NOTES:

1. HORIZONTAL & VERTICAL DATUM: URS PLANS FOR CONSTRUCTION, KCP&L SIBLEY GENERATING STATION, DESIGN FILE 16530511.00001, DATED JANUARY 2010
2. GOOGLE EARTH IMAGE DATED MAY 2023.
3. BOUNDARY AND MONITORING WELL LOCATIONS SHOWN ARE APPROXIMATE.
4. WATER LEVEL MEASUREMENTS COMPLETED ON MAY 18 & 22, 2023.

200 0 200 400
SCALE FEET

REV. | DATE
- | -
- | -

SHEET TITLE
POTENTIOMETRIC SURFACE MAP (MAY 2023) CCR LANDFILL

PROJECT TITLE
2023 GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT

CLIENT
EVERGY MISSOURI WEST, INC.
SIBLEY GENERATING STATION
SIBLEY, MISSOURI

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

PROJ. NO. 27213167.20
DSN. BY: ALR
DWN. BY: SJW
CHK. BY: JRR
QA RVW BY: JRR
PROJ. MGR. JRF

CADD FILE: SIBLEY POTENTIOMETRIC MAP MAY 2023.DWG

DATE: 1/22/24

FIGURE NO. 2

LEGEND:

601 (734.79)	GROUNDWATER MONITORING SYSTEM WELLS (GROUNDWATER ELEVATION)
	UTILITY WASTE LANDFILL UNIT BOUNDARY
	PERMITTED LANDFILL EXPANSION AREA
65 FT/YR	GROUNDWATER FLOW DIRECTION AND CALCULATED AND CALCULATED GROUNDWATER FLOW RATE (FEET/YEAR)
BTP	BELOW TOP OF PUMP
513 (716.45)	LANDFILL EXPANSION WELLS (GROUNDWATER ELEVATION)

NOTES:

1. HORIZONTAL & VERTICAL DATUM: URS PLANS FOR CONSTRUCTION, KCP&L SIBLEY GENERATING STATION, DESIGN FILE 16530511.00001, DATED JANUARY 2010
2. GOOGLE EARTH IMAGE DATED MAY 2023.
3. BOUNDARY AND MONITORING WELL LOCATIONS SHOWN ARE APPROXIMATE.
4. WATER LEVEL MEASUREMENTS COMPLETED ON AUGUST 16 2023.

200 0 200 400
SCALE FEET

REV.	DATE
-	-

SHEET TITLE: POTENTIOMETRIC SURFACE MAP (AUGUST 2023) CCR LANDFILL

PROJECT TITLE: 2023 GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT

CLIENT: EVERGY MISSOURI WEST, INC.
SIBLEY GENERATING STATION
SIBLEY, MISSOURI

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

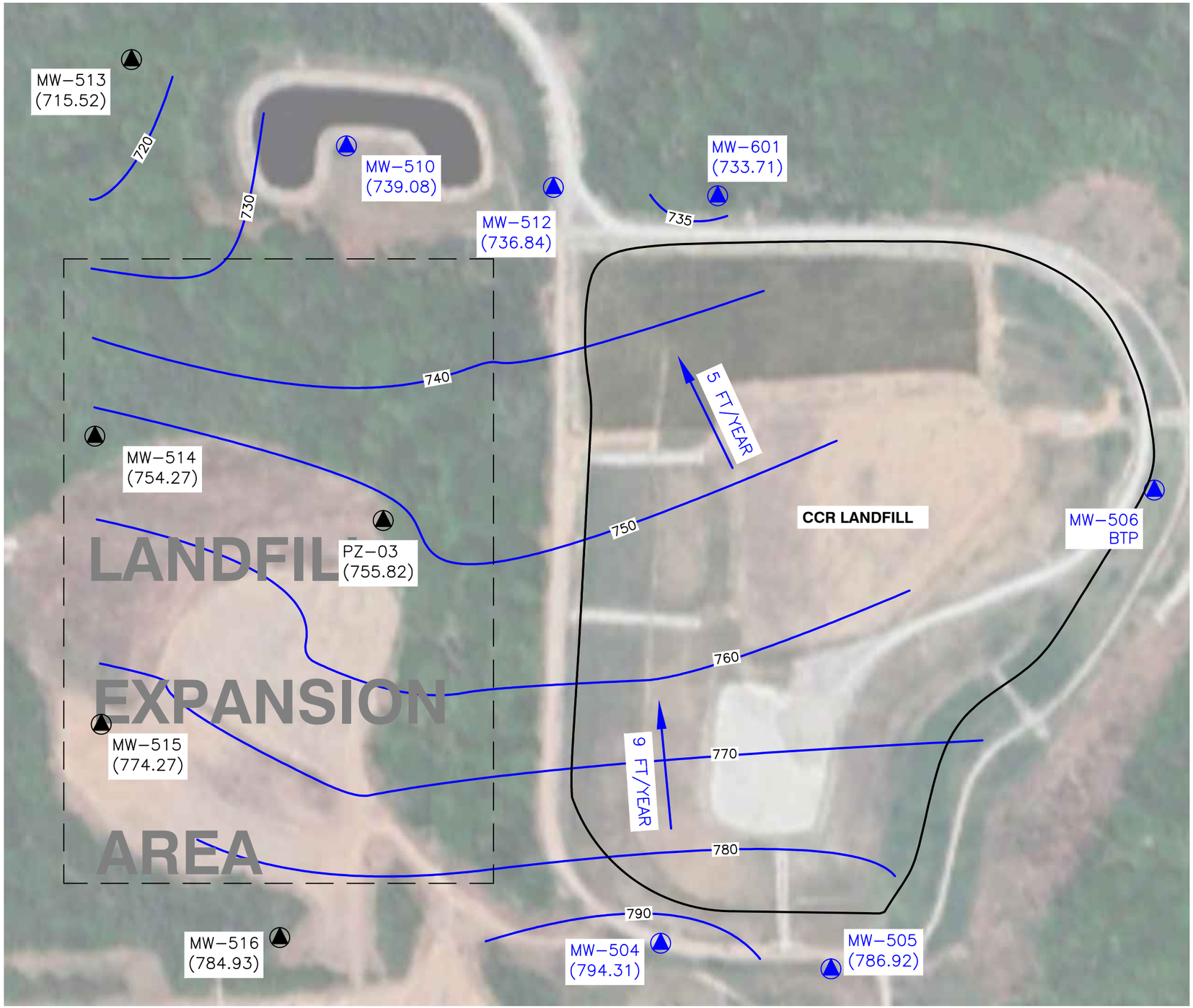
PROJ. NO. 27213167.20 | DSN. BY: MBJ | CHK. BY: JRR | Q/A RVW BY: JRR | PROJ. MGR: JRF
DSN. BY: TCW

CADD FILE: SIBLEY POTENTIOMETRIC MAP NOV 2023.DWG

DATE: 1/22/24

FIGURE NO. 3

N:\KCPL - EVERGY\Projects\Groundwater\DWG\Sibley\2023\GW\Sibley Potentiometric Map Nov 2023.dwg Jan 22, 2024 - 11:29am Layout Name: Fig 3 By: soh



LEGEND:

601 (734.79)	GROUNDWATER MONITORING SYSTEM WELLS (GROUNDWATER ELEVATION)
	UTILITY WASTE LANDFILL UNIT BOUNDARY
	PERMITTED LANDFILL EXPANSION AREA
65 FT/YR	*GROUNDWATER FLOW DIRECTION AND CALCULATED AND CALCULATED GROUNDWATER FLOW RATE (FEET/YEAR)*
MW–506 BTP	BELOW TOP OF PUMP
513 (716.45)	LANDFILL EXPANSION WELLS (GROUNDWATER ELEVATION)

NOTES:

1. HORIZONTAL & VERTICAL DATUM: URS PLANS FOR CONSTRUCTION, KCP&L SIBLEY GENERATING STATION, DESIGN FILE 16530511.00001, DATED JANUARY 2010
2. GOOGLE EARTH IMAGE DATED MAY 2023.
3. BOUNDARY AND MONITORING WELL LOCATIONS SHOWN ARE APPROXIMATE.
4. WATER LEVEL MEASUREMENTS COMPLETED ON NOVEMBER 15 AND 16 2023

200 0 200 400

SCALE *FEET*

REV.	DATE
-	-

SHEET TITLE
POTENTIOMETRIC SURFACE MAP (NOVEMBER 2023) UTILITY WASTE LANDFILL

PROJECT TITLE
2023 GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT

CLIENT
EVERGY MISSOURI WEST, INC.
SIBLEY GENERATING STATION
SIBLEY, MISSOURI

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

PROJ. NO. 27213167.20
DSN. BY: TGW
DWN. BY: MBJ
CHK. BY: JRR
Q/A RVW BY: JRR
PROJ. MGR: JRF

CADD FILE: SIBLEY LF GW NOVEMBER 2023.DWG

DATE: 1/17/24

FIGURE NO. **4**

T:\27213169.23\AutoCAD\Sibley LF GW November 2023.dwg Jan 22, 2024 - 8:23am Layout Name: 2-LANDFILL By: soh

APPENDIX B

TABLES

Table 1
CCR Landfill
Appendix III and Appendix IV Assessment Monitoring Results
Evergy Sibley Generating Station

Well Number	Sample Date	Appendix III Constituents							Appendix IV Constituents														
		Boron (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	pH (S.U.)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Cobalt (mg/L)	Fluoride (mg/L)	Lead (mg/L)	Lithium (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Selenium (mg/L)	Thallium (mg/L)	Radium Combined (pCi/L)
MW-504	5/18/2023	<0.200	29.4	1.04	0.181	6.92	27.7	168	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-504	8/16/2023	---	---	---	0.199	6.69	---	---	<0.00400	<0.00200	0.122	<0.00200	<0.00100	<0.0100	<0.00200	0.199	<0.00200	<0.0150	<0.000200	<0.00500	<0.00200	<0.00200	1.18
MW-504	11/15/2023	<0.200	29.1	<1.00	0.150	6.87	23.7	177	---	<0.00200	0.109	---	---	<0.0100	<0.00200	0.150	<0.00200	<0.0150	---	---	<0.00200	---	2.53
MW-505	1/11/2023	---	*35.8	---	---	**7.21	---	*134	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-505	2/10/2023	---	*32.8	---	---	**7.81	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-505	5/18/2023	<0.200	30.4	1.29	0.202	6.63	21.3	188	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-505	8/16/2023	---	---	---	0.245	6.78	---	---	<0.00400	<0.00200	0.140	<0.00200	<0.00100	<0.0100	<0.00200	0.245	<0.00200	<0.0150	<0.000200	<0.00500	0.00216	<0.00200	0.199 (J)
MW-505	11/15/2023	<0.200	30.1	<5.00	<0.750	7.01	<25.0	175	---	<0.00200	0.119	---	---	<0.0100	<0.00200	<0.750	<0.00200	<0.0150	---	---	0.00375	---	2.28
MW-506	1/11/2023	---	---	*8.42	---	**7.54	*90.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-506	2/10/2023	---	---	*8.63	---	**7.45	*94.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-506	5/18/2023	NS	NS	NS	NS	NS	NS	NS	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-506	8/16/2023	---	---	---	0.252	7.05	---	---	<0.00400	<0.00200	0.229	<0.00200	<0.00100	<0.0100	<0.00200	0.252	0.00410	<0.0150	<0.000200	<0.00500	0.0275	<0.00200	0.672 (J)
MW-506	11/15/2023	<0.200	93.2	8.67	0.248	7.20	91.7	457	---	<0.00200	0.225	---	---	<0.0100	<0.00200	0.248	<0.00200	<0.0150	---	---	0.0278	---	2.99
MW-510	1/11/2023	---	---	*3.49	---	**7.31	*18.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-510	2/10/2023	---	---	---	---	**6.97	*21.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-510	5/18/2023	---	---	---	---	**7.09	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-510	5/22/2023	<0.200	117	3.24	0.268	7.04	19.4	486	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-510	8/16/2023	---	---	---	0.304	6.85	---	---	<0.00400	<0.00200	0.374	<0.00200	<0.00100	<0.0100	<0.00200	0.304	<0.00200	<0.0150	<0.000200	<0.00500	0.00449	<0.00200	0.799
MW-510	11/15/2023	<0.200	115	7.79	0.248	7.04	24.6	482	---	<0.00200	0.373	---	---	<0.0100	<0.00200	0.248	<0.00200	<0.0150	---	---	0.00468	---	0.731
MW-512	1/11/2023	---	*110	*7.59	---	**7.37	*106	*503	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-512	2/10/2023	---	*114	*7.68	---	**6.94	*111	*519	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-512	5/18/2023	<0.200	110	7.05	0.284	7.27	103	507	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-512	8/16/2023	---	---	---	0.296	6.96	---	---	<0.00400	<0.00200	0.290	<0.00200	<0.00100	0.0121	<0.00200	0.296	<0.00200	<0.0150	<0.000200	<0.00500	0.00730	<0.00200	1.66
MW-512	11/15/2023	<0.200	95.4	6.06	0.242	7.04	108	374	---	<0.00200	0.249	---	---	0.0115	<0.00200	0.242	<0.00200	<0.0150	---	---	0.00731	---	3.22
MW-601	5/18/2023	<0.200	96.1	3.93	0.254	7.09	19.2	399	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-601	8/16/2023	---	---	---	0.212	6.81	---	---	<0.00400	<0.00200	0.331	<0.00200	<0.00100	<0.0100	<0.00200	0.212	<0.00200	<0.0150	<0.000200	<0.00500	0.00551	<0.00200	0.286 (J)
MW-601	11/15/2023	<0.200	113	5.93	0.235	6.98	106	522	---	<0.00200	0.249	---	---	0.0111	<0.00200	0.235	<0.00200	<0.0150	---	---	0.00732	---	0.763

* 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
B - Same analyte is found in the associated laboratory blank
--- Not Sampled
NS - Due to insufficient water for low-flow sampling, samples were not collected
(J) - Reported concentration is below the laboratory reported detection limit (RDL), however is above the MDL and is estimated.
(J-) - Based on the Stage II data quality review the sample result is potentially biased low.
H - Based on the Stage II data quality review the sample result is potentially biased low due to analyte analysis outside of methold hold time.

Table 2
CCR Landfill
Groundwater Monitoring Field Measurements
Evergy Sibley 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-504	5/18/2023	6.92	266	15.03	15.0	158	1.98	21.86	794.46
MW-504	8/16/2023	6.69	261	19.41	13.9	-27	0.22	21.35	794.97
MW-504	11/15/2023	6.87	281	15.60	0.0	151	0.92	22.01	794.31
MW-505	1/11/2023	**7.21	298	12.31	3.1	183	4.60	27.96	787.01
MW-505	2/10/2023	**7.81	571	11.57	10.9	227	4.83	25.68	789.29
MW-505	5/18/2023	6.63	253	14.60	15.2	189	6.49	27.50	787.47
MW-505	8/16/2023	6.78	315	19.95	11.6	122	4.02	25.61	789.36
MW-505	11/15/2023	7.01	291	14.85	0.0	197	5.93	28.05	786.92
MW-506	1/11/2023	**7.54	771	13.92	9.1	156	2.94	BTP	NA
MW-506	2/10/2023	**7.45	1450	2.13	24.7	138	6.22	BTP	NA
MW-506	5/18/2023	NS	NS	NS	NS	NS	NS	BTP	NA
MW-506	8/16/2023	7.05	656	25.98	7.8	105	3.92	BTP	NA
MW-506	11/15/2023	7.20	684	22.60	0.0	165	3.68	BTP	NA
MW-510	1/11/2023	**7.31	867	13.45	0.3	172	5.59	44.72	741.07
MW-510	2/10/2023	**6.97	849	11.35	3.9	140	2.54	44.23	741.56
MW-510	5/18/2023	**7.09	802	16.18	44.8	300	2.78	41.15	744.64
MW-510	5/22/2023	7.04	816	17.54	39.6	318	1.65	41.35	744.44
MW-510	8/16/2023	6.85	777	19.20	4.8	114	2.81	44.95	740.84
MW-510	11/15/2023	7.04	839	17.20	0.0	243	3.64	46.71	739.08
MW-512	1/11/2023	**7.37	862	14.48	4.0	169	3.50	31.84	738.29
MW-512	2/10/2023	**6.94	842	12.82	5.1	140	1.99	30.36	739.77
MW-512	5/18/2023	7.27	696	18.69	46.7	309	3.01	29.36	740.77
MW-512	8/16/2023	6.96	760	20.30	2.1	126	4.68	32.76	737.37
MW-512	11/15/2023	7.04	791	18.85	0.0	217	6.15	33.29	736.84
MW-601	5/18/2023	7.09	656	17.36	55.8	310	0.61	46.11	734.79
MW-601	8/16/2023	6.81	631	19.86	0.3	-11	1.24	46.89	734.01
MW-601	11/15/2023	6.98	671	18.27	0.0	116	0.00	47.19	733.71

* 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

BTP - Below Top of Pump

NS - Due to insufficient water for low-flow sampling, samples were not collected

Table 3
CCR Landfill
Appendix IV Background Data and Groundwater Protection Standards
Evergy Sibley Generating Station

Well Number	Sample Date	Appendix IV Constituents														
		Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Cobalt (mg/L)	Fluoride (mg/L)	Lead (mg/L)	Lithium (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Selenium (mg/L)	Thallium (mg/L)	Radium Combined (pCi/L)
MCL GWPS		**0.006**	**0.010**	**2**	**0.004**	**0.005**	**0.1**	**NA**	**4.0**	**0.015***	**NA**	**0.002**	**NA**	**0.05**	**0.002**	**5**
40 CFR 257.95(h) GWPS		**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**0.006**	**NA**	**NA**	**0.040**	**NA**	**0.100**	**NA**	**NA**	**NA**
MW-504	12/16/2015	<0.002	<0.002	0.117	<0.002	<0.001	<0.01	<0.01	0.168	<0.002	<0.015	<0.0002	<0.005	<0.002	<0.002	0.24
MW-504	2/18/2016	<0.002	<0.002	0.113	<0.002	<0.001	<0.01	<0.01	0.170	<0.002	<0.015	<0.0002	<0.005	0.00228	<0.002	0.108
MW-504	5/25/2016	<0.002	0.00211	0.106	<0.002	<0.001	<0.01	<0.01	0.188	<0.002	<0.015	<0.0002	<0.005	0.00239	<0.002	2.883
MW-504	8/23/2016	<0.002	<0.002	0.111	<0.002	<0.001	<0.01	<0.01	0.118	<0.002	<0.015	<0.0002	<0.005	0.00248	<0.002	0.957
MW-504	11/11/2016	<0.002	<0.002	0.121	<0.002	<0.001	<0.01	<0.01	0.171	<0.002	<0.015	<0.0002	<0.005	0.00268	<0.002	0.655
MW-504	2/8/2017	<0.002	<0.002	0.123	<0.002	<0.001	<0.01	<0.01	0.151	<0.002	<0.015	<0.0002	<0.005	0.00249	<0.002	0.499
MW-504	5/4/2017	<0.002	0.00202	0.110	<0.002	<0.001	<0.01	<0.01	0.157	<0.002	<0.015	<0.0002	<0.005	0.00311	<0.002	0.965
MW-504	8/1/2017	<0.002	<0.002	0.116	<0.002	<0.001	<0.01	<0.01	0.189	<0.002	<0.015	<0.0002	<0.005	0.00342	<0.002	1.08
MW-504	10/3/2017	<0.002	<0.002	0.121	<0.002	<0.001	<0.01	<0.01	0.117	<0.002	<0.015	<0.0002	<0.005	0.00307	<0.002	1.94
MW-504 PL/BG		**0.002**	**0.002**	**0.128**	**0.002**	**0.001**	**0.01**	**0.01**	**0.2168**	**0.002**	**0.015**	**0.0002**	**0.005**	**0.004072**	**0.002**	**2.963**
MW-504 GWPS		**0.006**	**0.010**	**2**	**0.004**	**0.005**	**0.1**	**0.006**	**4.0**	**0.015**	**0.040**	**0.002**	**0.100**	**0.05**	**0.002**	**5**
MW-504	5/18/2020	**<0.00400	**<0.00200	**0.126	**<0.00200	**<0.00100	**<0.0100	**<0.0100	**0.182	**<0.00500	**<0.0150	**<0.000200	**<0.00500	**0.00356	**<0.00200	**0.469
MW-504	8/16/2023	<0.00400	<0.00200	0.122	<0.00200	<0.00100	<0.0100	<0.00200	0.199	<0.00200	<0.0150	<0.000200	<0.00500	<0.00200	<0.00200	1.18
MW-504	11/15/2023	---	<0.00200	0.109	---	---	<0.0100	<0.00200	0.150	<0.00200	<0.0150	---	---	<0.00200	---	2.53
MW-505	12/16/2015	<0.002	<0.002	0.105	<0.002	<0.001	<0.01	<0.01	0.164	<0.002	<0.015	<0.0002	<0.005	0.00299	<0.002	0.153
MW-505	2/18/2016	<0.002	<0.002	0.0876	<0.002	<0.001	<0.01	<0.01	0.174	<0.002	<0.015	<0.0002	<0.005	0.00249	<0.002	0.915
MW-505	5/25/2016	<0.002	<0.002	0.0872	<0.002	<0.001	<0.01	<0.01	0.143	<0.002	<0.015	<0.0002	<0.005	0.00269	<0.002	0.427
MW-505	8/23/2016	<0.002	<0.002	0.0878	<0.002	<0.001	<0.01	<0.01	0.265	<0.002	<0.015	<0.0002	<0.005	0.00221	<0.002	0.388
MW-505	11/11/2016	<0.002	<0.002	0.0882	<0.002	<0.001	<0.01	<0.01	0.177	<0.002	<0.015	<0.0002	<0.005	0.00210	<0.002	1.17
MW-505	2/8/2017	<0.002	<0.002	0.0919	<0.002	<0.001	<0.01	<0.01	0.217	<0.002	<0.015	<0.0002	<0.005	0.00231	<0.002	0
MW-505	5/4/2017	<0.002	<0.002	0.0890	<0.002	<0.001	<0.01	<0.01	0.160	<0.002	<0.015	<0.0002	<0.005	0.00300	<0.002	0.292
MW-505	8/1/2017	<0.002	<0.002	0.0937	<0.002	<0.001	<0.01	<0.01	0.206	<0.002	<0.015	<0.0002	<0.005	0.00230	<0.002	0
MW-505	10/3/2017	<0.002	<0.002	0.101	<0.002	<0.001	<0.01	<0.01	0.124	<0.002	<0.015	<0.0002	<0.005	0.00244	<0.002	0.063
MW-505 PL/BG		**0.002**	**0.0211**	**0.1066**	**0.002**	**0.001**	**0.01**	**0.01**	**0.2744**	**0.002**	**0.015**	**0.0002**	**0.005**	**0.003218**	**0.002**	**1.283**
MW-505 GWPS		**0.006**	**0.010**	**2**	**0.004**	**0.005**	**0.1**	**0.006**	**4.0**	**0.015**	**0.040**	**0.002**	**0.100**	**0.05**	**0.002**	**5**
MW-505	5/18/2020	**<0.00400	**<0.00200	**0.105	**<0.00200	**<0.00100	**<0.0100	**<0.0100	**0.202	**<0.00500	**<0.0150	**<0.000200	**<0.00500	**0.00276	**<0.00200	**0.270
MW-505	8/16/2023	<0.00400	<0.00200	0.140	<0.00200	<0.00100	<0.0100	<0.00200	0.245	<0.00200	<0.0150	<0.000200	<0.00500	0.00216	<0.00200	0.199 (J)
MW-505	11/15/2023	---	<0.00200	0.119	---	---	<0.0100	<0.00200	<0.750	<0.00200	<0.0150	---	---	0.00375	---	2.28
MW-506	12/15/2015	<0.002	<0.002	0.252	<0.002	<0.001	<0.01	<0.01	0.296	<0.002	<0.015	<0.0002	<0.005	0.00743	<0.002	0.917
MW-506	2/18/2016	<0.002	<0.002	0.232	<0.002	<0.001	<0.01	<0.01	0.290	<0.002	<0.015	<0.0002	<0.005	0.00892	<0.002	0.517
MW-506	5/25/2016	<0.002	<0.002	0.237	<0.002	<0.001	<0.01	<0.01	0.324	<0.002	<0.015	<0.0002	<0.005	0.00895	<0.002	3.461
MW-506	8/23/2016	<0.002	<0.002	0.237	<0.002	<0.001	<0.01	<0.01	0.312	<0.002	<0.015	<0.0002	<0.005	0.00932	<0.002	0.997
MW-506	11/11/2016	<0.002	<0.002	0.250	<0.002	<0.001	<0.01	<0.01	0.298	<0.002	<0.015	<0.0002	<0.005	0.0107	<0.002	0.508
MW-506	2/8/2017	<0.002	<0.002	0.233	<0.002	<0.001	<0.01	<0.01	0.317	<0.002	<0.015	<0.0002	<0.005	0.0101	<0.002	0.177
MW-506	5/4/2017	<0.002	0.00392	0.319	<0.002	<0.001	0.0152	<0.01	0.338	0.00822	<0.015	<0.0002	<0.005	0.0116	<0.002	0.841
MW-506	8/4/2017	<0.002	<0.002	0.236	<0.002	<0.001	<0.01	<0.01	0.359	<0.002	<0.015	<0.0002	<0.005	0.0106	<0.002	0.480
MW-506	10/3/2017	<0.002	<0.002	0.250	<0.002	<0.001	<0.01	<0.01	0.182	<0.002	<0.015	<0.0002	<0.005	0.0115	<0.002	0.693
MW-506 PL/BG		**0.002**	**0.00392**	**0.319**	**0.002**	**0.001**	**0.0152**	**0.01**	**0.4113**	**0.00822**	**0.0154**	**0.0002**	**0.005**	**0.0129**	**0.002**	**3.164**
MW-506 GWPS		**0.006**	**0.010**	**2**	**0.004**	**0.005**	**0.1**	**0.006**	**4.0**	**0.015**	**0.040**	**0.002**	**0.100**	**0.05**	**0.002**	**5**
MW-506	5/18/2020	**<0.00400	**<0.00200	**0.221	**<0.00200	**<0.00100	**<0.0180	**<0.0180	**0.308	**<0.00500	**<0.0150	**<0.000200	**<0.00500	**0.0175	**<0.00200	**0.370
MW-506	8/16/2023	<0.00400	<0.00200	0.229	<0.00200	<0.00100	<0.0100	<0.00200	0.252	0.00410	<0.0150	<0.000200	<0.00500	0.0275	<0.00200	0.672 (J)
MW-506	11/15/2023	---	<0.00200	0.225	---	---	<0.0100	<0.00200	0.248	<0.00200	<0.0150	---	---	0.0278	---	2.99
MW-510	12/15/2015	<0.002	<0.002	0.356	<0.002	<0.001	<0.01	<0.01	0.296	<0.002	<0.015	<0.0002	<0.005	0.00338	<0.002	0.578
MW-510	2/18/2016	<0.002	<0.002	0.361	<0.002	<0.001	<0.01	<0.01	0.282	<0.002	<0.015	<0.0002	<0.005	0.00349	<0.002	0.197
MW-510	5/25/2016	<0.002	<0.002	0.365	<0.002	<0.001	<0.01	<0.01	0.273	<0.002	<0.015	<0.0002	<0.005	0.00333	<0.002	0.317
MW-510	8/23/2016	<0.002	<0.002	0.367	<0.002	<0.001	<0.01	<0.01	0.311	<0.002	<0.015	<0.0002	<0.005	0.00314	<0.002	0.848
MW-510	11/10/2016	<0.002	<0.002	0.373	<0.002	<0.001	<0.01	<0.01	0.296	<0.002	<0.015	<0.0002	<0.005	0.00407	<0.002	1.311
MW-510	2/8/2017	<0.002	<0.002	0.355	<0.002	<0.001	<0.01	<0.01	0.320	<0.002	<0.015	<0.0002	<0.005	0.00341	<0.002	0.344
MW-510	5/3/2017	<0.002	<0.002	0.353	<0.002	<0.001	<0.01	<0.01	0.290	<0.002	<0.015	<0.0002	<0.005	0.00361	<0.002	0.711
MW-510	8/1/2017	<0.002	<0.002	0.362	<0.002	<0.001	<0.01	<0.01	0.315	<0.002	<0.015	<0.0002	<0.005	0.00350	<0.002	0.862
MW-510	10/3/2017	<0.002	<0.002	0.393	<0.002	<0.001	<0.01	<0.01	0.271	<0.002	<0.015	<0.0002	<0.005	0.00490	<0.002	1.08
MW-510 PL/BG		**0.002**	**0.002**	**0.3919**	**0.002**	**0.001**	**0.01**	**0.01**	**0.3339**	**0.002**	**0.015**	**0.0002**	**0.005**	**0.004819**	**0.002**	**1.51**
MW-510 GWPS		**0.006**	**0.010**	**2**	**0.004**	**0.005**	**0.1**	**0.006**	**4.0**	**0.015**	**0.040**	**0.002**	**0.100**	**0.05**	**0.002**	**5**
MW-510	5/18/2020	**<0.00400	**<0.00200	**0.369	**<0.00200	**<0.00100	**<0.0100	**<0.0100	**0.293	**<0.00500	**<0.0150	**<0.000200	**<0.00500	**0.00201	**<0.00200	**0.198
MW-510	8/16/2023	<0.00400	<0.00200	0.374	<0.00200	<0.00100	<0.0100	<0.00200	0.304	<0.00200	<0.0150	<0.000200	<0.00500	0.00449	<0.00200	0.799
MW-510	11/15/2023	---	<0.00200	0.373	---	---	<0.0100	<0.00200	0.248	<0.00200	<0.0150	---	---	0.00468	---	0.731
MW-512	12/15/2015	<0.002	<0.002	0.371	<0.002	<0.001	0.0121	<0.01	0.281	<0.002	<0.015	<0.0002	<0.005	0.00436	<0.002	2.134
MW-512	2/18/2016	<0.002	<0.002	0.358	<0.002	<0.001	<0.01	<0.01	0.270	<0.002	<0.015	<0.0002	<0.005	0.00459	<0.002	1.541
MW-512	5/25/2016	<0.002	<0.002	0.361	<0.002	<0.001	<0.01	<0.01	0.308	<0.002	<0.015	<0.0002	<0.005	0.00421	<0.002	2.469
MW-512	8/23/2016	<0.002	<0.002	0.360	<0.002	<0.001	0.0111	<0.01	0.331	<0.002	<0.015	<0.0002	<0.005	0.00505	<0.002	0.529
MW-512	11/11/2016	<0.002	<0.002	0.374	<0.002	<0.001	0.0103	<0.01	0.282	<0.002	<0.015	<0.0002	<0.005	0.00495	<0.002	1.424
MW-512	2/8/2017	<0.002	<0.002	0.364	<0.002	<0.001	0.0105	<0.01	0.302	<0.002	<0.015	<0.0002	<0.005	0.00446	<0.002	1.41
MW-512	5/3/2017	<0.002	<0.002	0.391	<0.002	<0.001	0.0147	<0.01	0.277	<0.002	<0.015	<0.0002	<0.005	0.00517	<0.002	1.13
MW-512	8/1/2017	<0.002	<0.002	0.409	<0.002	<0.001	0.0134	<0.01	0.301	0.00273	<0.015	<0.0002	<0.005	0.00548	<0.002	1.31
MW-512	10/3/2017	<0.002	<0.002	0.419	<0.002	<0.001	0.0120	<0.01	0.172	<0.002	<0.015	<0.0002	<0.005	0.00475	<0.002	1.23
MW-512 PL/BG		**0.002**	**0.002**	**0.4281**	**0.002**	**0.001**	**0.02135**	**0.01**	**0.3788**	**0.00273**	**0.015**	**0.0002**	**0.005**	**0.005692**	**0.002**	**2.698**
MW-512 GWPS		**0.006**	**0.010**	**2**	**0.004**	**0.005**	**0.1**	**0.006**	**4.0**	**0.015**	**0.040**	**0.002**	**0.100**	**0.05**	**0.002**	**5**
MW-512	5/18/2020	**<0.00400	**<0.00200	**0.393	**<0.00200	**<0.00100	**0.0141	**<0.0100	**0.286	**<0.00500	**<0.0150	**<0.000200	**<0.00500	**0.00736	**<0.00200	**1.52
MW-512	8/16/2023	<0.00400	<0.00200	0.290	<0.00200	<0.00100	0.0121	<0.00200	0.296	<0.00200	<0.0150	<0.000200	<0.00500	0.00730	<0.00200	1.66
MW-512	11/15/2023	---	<0.00200	0.249	---	---	0.0115	<0.00200	0.242	<0.00200	<0.0150	---	---	0.00731	---	3.22
MW-601	12/15/2015	<0.002	<0.002	0.329	<0.002	<0.001	<0.01	<0.01	0.224	<0.002	<0.015	<0.0002	<0.005	0.00579	<0.002	0.874
MW-601	2/18/2016	<0.002	<0.002	0.326	<0.002	<0.001	<0.01	<0.01	0.214	<0.002	<0.015	<0.0002	<0.005	0.00677	<0.002	0.827
MW-601	5/26/2016	<0.002	<0.002	0.333	<0.002	<0.001	<0.01	<0.01	0.266	<0.002	0.0154	<0.0002	<0.005	0.00601	<0.002	1.482
MW-601	8/23/2016	<0.002	<0.002	0.331	<0.002	<0.001	<0.01	<0.01	0.275	<0.002	<0.015	<0.0002	<0.005	0.00602	<0.002	0.181
MW-601	11/11/2016	<0.002	<0.002	0.324	<0.002	<0.001	<0.01	<0.01	0.273	<0.002	<0.015	<0.0002	<0.005	0.00521	<0.002	1.297
MW-601	2/8/2017	<0.002	<0.002	0.331	<0.002	<0.001	<0.01	<0.01	0.260	<0.002	<0.015	<0.0002	<0.005	0.00482	<0.002	0.103
MW-601	5/3/2017	<0.002	<0.002	0.355	<0.002	<0.001	<0.01	<0.01	0.247	<0.002	<0.015	<0.0002	<0.005	0.00595	<0.002	1.14
MW-601	8/1/2017	<0.002	<0.002	0.345	<0.002	<0.001	<0.01	<0.01	0.257	<0.002	<0.015	<0.0002	<0.005	0.00500	<0.002	1.38
MW-601	10/3/2017	<0.002	<0.002	0.357	<0.002	<0.001	<0.01	<0.01	0.154	<0.002	<0.015	<0.0002	<0.005	0.00646	<0.002	0.718
MW-601 PL/BG		**0.002**	**0.002**	**0.364**	**0.002**	**0.001**	**0.01**	**0.01**	**0.3262**	**0.002**	**0.0154**	**0.0002**	**0.005**	**0.007219**	**0.002**	**1.979**
MW-601 GWPS		**0.006**	**0.010**	**2**	**0.004**	**0.005**	**0.1**	**0.006**	**4.0**	**0.015**	**0.040**	**0.002**	**0.100**	**0.05**	**0.002**	**5**
MW-601	5/18/2020	**<0.00400	**<0.00200	**0.331	**<0.00200	**<0.00100	**<0.0100	**<0.0100	**0.252	**<0.00500	**<0.0150	**<0.000200	**<0.00500	**0.00631	**<0.00200	**3.36
MW-601	8/16/2023	<0.00400	<0.00200	0.331	<0.00200	<0.00100	<0.0100	<0.00200	0.212	<0.00200	<0.0150	<0.000200	<0.00500	0.00551	<0.00200	0.286 (J)
MW-601	11/15/2023	---	<0.00200	0.249	---	---	0.0111	<0.00200	0.235	<0.00200	<0.0150	---	---	0.00732	---	0.763

* 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
B - Same analyte is found in the associated laboratory blank
--- Not Sampled
NS - Due to insufficient water for low-flow sampling, samples were not collected
(J) - Reported concentration is below the laboratory reported detection limit (RDL), however is above the MDL and is estimated.
(J-) - Based on the Stage II data quality review the sample result is potentially biased low.
H - Based on the Stage II data quality review the sample result is potentially biased low due to analyte analysis outside of methold hold time.

APPENDIX C

LABORATORY ANALYTICAL REPORTS

- January 2023 – First verification sampling for the Fall 2022 detection monitoring event.
- February 2023 – Second verification sampling for the Fall 2022 detection monitoring event.
- May 2023 – Spring 2023 semiannual detection monitoring sampling event.
- August 2023 – Initial assessment monitoring sampling event.
- November 2023 - Fall 2023 semiannual assessment monitoring sampling event.

ANALYTICAL REPORT

January 18, 2023

SCS Engineers - KS

Sample Delivery Group:	L1575611
Samples Received:	01/12/2023
Project Number:	27213169.22 - I
Description:	Evergy Sibley Gen Station 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-505 L1575611-01 GW

Collected by: Todd Mitchell | Collected date/time: 01/11/23 11:30 | Received date/time: 01/12/23 08:40

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1988368	1	01/13/23 12:52	01/16/23 09:11	TDW	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1989252	1	01/16/23 17:41	01/16/23 23:16	ABL	Mt. Juliet, TN

MW-506 L1575611-02 GW

Collected by: Todd Mitchell | Collected date/time: 01/11/23 12:20 | Received date/time: 01/12/23 08:40

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1988172	1	01/14/23 00:29	01/14/23 00:29	LBR	Mt. Juliet, TN

MW-510 L1575611-03 GW

Collected by: Todd Mitchell | Collected date/time: 01/11/23 11:40 | Received date/time: 01/12/23 08:40

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1988172	1	01/14/23 00:43	01/14/23 00:43	LBR	Mt. Juliet, TN

MW-512 L1575611-04 GW

Collected by: Todd Mitchell | Collected date/time: 01/11/23 12:20 | Received date/time: 01/12/23 08:40

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1988368	1	01/13/23 12:52	01/16/23 09:11	TDW	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1988172	1	01/13/23 20:49	01/13/23 20:49	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1989252	1	01/16/23 17:41	01/16/23 23:18	ABL	Mt. Juliet, TN

DUPLICATE 1 L1575611-05 GW

Collected by: Todd Mitchell | Collected date/time: 01/11/23 12:20 | Received date/time: 01/12/23 08:40

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1988368	1	01/13/23 12:52	01/16/23 09:11	TDW	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1988172	1	01/14/23 00:56	01/14/23 00:56	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1989252	1	01/16/23 17:41	01/16/23 23:26	ABL	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 ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	134000	J3	10000	1	01/16/2023 09:11	WG1988368

Metals (ICP) by Method 6010D

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Calcium	35800		1000	1	01/16/2023 23:16	WG1989252

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	8420		1000	1	01/14/2023 00:29	WG1988172
Sulfate	90800		5000	1	01/14/2023 00:29	WG1988172

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	3490		1000	1	01/14/2023 00:43	WG1988172
Sulfate	18800		5000	1	01/14/2023 00:43	WG1988172

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	503000		10000	1	01/16/2023 09:11	WG1988368

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	7590		1000	1	01/13/2023 20:49	WG1988172
Sulfate	106000		5000	1	01/13/2023 20:49	WG1988172

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Calcium	110000		1000	1	01/16/2023 23:18	WG1989252

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	516000		10000	1	01/16/2023 09:11	WG1988368

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	7570		1000	1	01/14/2023 00:56	WG1988172
Sulfate	105000		5000	1	01/14/2023 00:56	WG1988172

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Calcium	112000		1000	1	01/16/2023 23:26	WG1989252

Method Blank (MB)

(MB) R3881965-1 01/16/23 09:11

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

L1575611-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1575611-01 01/16/23 09:11 • (DUP) R3881965-3 01/16/23 09:11

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	134000	174000	1	26.0	J3	5

L1575932-15 Original Sample (OS) • Duplicate (DUP)

(OS) L1575932-15 01/16/23 09:11 • (DUP) R3881965-4 01/16/23 09:11

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	315000	311000	1	1.28		5

Laboratory Control Sample (LCS)

(LCS) R3881965-2 01/16/23 09:11

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800000	7640000	86.8	77.3-123	

Method Blank (MB)

(MB) R3881068-1 01/13/23 19:54

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

L1575611-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1575611-04 01/13/23 20:49 • (DUP) R3881068-3 01/13/23 21:02

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	7590	7580	1	0.116		15
Sulfate	106000	107000	1	0.0968		15

L1575570-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1575570-02 01/14/23 01:51 • (DUP) R3881068-6 01/14/23 02:05

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	125000	125000	1	0.0253		15
Sulfate	6960	6970	1	0.0732		15

Laboratory Control Sample (LCS)

(LCS) R3881068-2 01/13/23 20:07

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40000	40600	102	80.0-120	
Sulfate	40000	40700	102	80.0-120	

L1575611-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1575611-04 01/13/23 20:49 • (MS) R3881068-4 01/13/23 21:16 • (MSD) R3881068-5 01/13/23 21:30

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	7590	59000	60500	103	106	1	80.0-120			2.59	15
Sulfate	50000	106000	152000	157000	90.3	101	1	80.0-120			3.40	15

L1575570-02 Original Sample (OS) • Matrix Spike (MS)

(OS) L1575570-02 01/14/23 01:51 • (MS) R3881068-7 01/14/23 02:19

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	125000	170000	89.6	1	80.0-120	
Sulfate	50000	6960	54400	94.9	1	80.0-120	

Method Blank (MB)

(MB) R3881526-1 01/16/23 22:21

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) R3881526-2 01/16/23 22:23

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Calcium	10000	10100	101	80.0-120	

L1575842-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1575842-01 01/16/23 22:26 • (MS) R3881526-4 01/16/23 22:31 • (MSD) R3881526-5 01/16/23 22:34

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	45200	54400	54300	92.3	91.3	1	75.0-125			0.169	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
J3	The associated batch QC was outside the established quality control range for precision.

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 Sibley Gen Station GW 2022-23**

City/State Collected: Sibley / Mo

Please Circle: PT MT CT ET

Phone: **913-681-0030**

Client Project # **27213169.22 - 1**

Lab Project # **AQUAOPKS-SIBLEY**

Collected by (print): Todd Mitchell

Site/Facility ID #

P.O. #

Collected by (signature): Todd Mitchell

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

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Calcium - 6010 250mlHDPE-HNO3	Chloride, SO4 125mlHDPE-NoPres	TDS 1L-HDPE NoPres	Remarks	Sample # (lab only)
MW-505	G	GW	N/A	1/11/23	1130	2	X		X		-01
MW-506		GW			1220	1		X			-02
MW-510		GW			1140	1		X			-03
MW-512		GW			1220	3	X	X	X		-04
MW-512 MS/MSD		GW			1220	2	X	X			
DUPLICATE 1		GW			1220	3	X	X	X		-05

Chain of Custody Page ___ of ___

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 # 15756

D194

Acctnum: **AQUAOPKS**
Template: **T212739**
Prelogin: **P973700**
PM: **206 - Jeff Carr**
PB:

Shipped Via:

* 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 5634

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
Todd Mitchell	1/11/23	1546		
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 3.4 °C Bottles Received: 12
				If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 1-12 Time: 0840
				Hold:

Condition: NCF / OK

ANALYTICAL REPORT

February 16, 2023

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

SCS Engineers - KS

Sample Delivery Group:	L1584973
Samples Received:	02/11/2023
Project Number:	27213169.22 - I
Description:	Evergy Sibley Gen Station 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-505 L1584973-01 GW

Collected by: B. Coleman | Collected date/time: 02/10/23 11:00 | Received date/time: 02/11/23 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG2004896	1	02/13/23 14:21	02/14/23 01:34	ZSA	Mt. Juliet, TN

MW-506 L1584973-02 GW

Collected by: B. Coleman | Collected date/time: 02/10/23 10:00 | Received date/time: 02/11/23 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG2005365	1	02/14/23 00:38	02/14/23 00:38	GEB	Mt. Juliet, TN

MW-510 L1584973-03 GW

Collected by: B. Coleman | Collected date/time: 02/10/23 11:25 | Received date/time: 02/11/23 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG2005365	1	02/14/23 00:50	02/14/23 00:50	GEB	Mt. Juliet, TN

MW-512 L1584973-04 GW

Collected by: B. Coleman | Collected date/time: 02/10/23 12:20 | Received date/time: 02/11/23 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2005020	1	02/13/23 12:26	02/13/23 13:22	TDW	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2005365	1	02/14/23 01:03	02/14/23 01:03	GEB	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2004896	1	02/13/23 14:21	02/14/23 01:50	ZSA	Mt. Juliet, TN

DUPLICATE 1 L1584973-05 GW

Collected by: B. Coleman | Collected date/time: 02/10/23 12:20 | Received date/time: 02/11/23 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2005020	1	02/13/23 12:26	02/13/23 13:22	TDW	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2005365	1	02/14/23 02:07	02/14/23 02:07	GEB	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2004896	1	02/13/23 14:21	02/14/23 01:36	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	32800		1000	1	02/14/2023 01:34	WG2004896

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Chloride	8630		1000	1	02/14/2023 00:38	WG2005365
Sulfate	94000		5000	1	02/14/2023 00:38	WG2005365

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Sulfate	21000		5000	1	02/14/2023 00:50	WG2005365

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	02/13/2023 13:22	WG2005020

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	7680		1000	1	02/14/2023 01:03	WG2005365
Sulfate	111000		5000	1	02/14/2023 01:03	WG2005365

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Calcium	114000	V	1000	1	02/14/2023 01:50	WG2004896

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	494000		10000	1	02/13/2023 13:22	WG2005020

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	7520		1000	1	02/14/2023 02:07	WG2005365
Sulfate	110000		5000	1	02/14/2023 02:07	WG2005365

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Calcium	114000		1000	1	02/14/2023 01:36	WG2004896

Method Blank (MB)

(MB) R3891560-1 02/13/23 13:22

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

L1584496-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1584496-01 02/13/23 13:22 • (DUP) R3891560-3 02/13/23 13:22

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	1760000	1840000	1	4.73		5

L1584496-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1584496-02 02/13/23 13:22 • (DUP) R3891560-4 02/13/23 13:22

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	2030000	2500000	1	20.8	J3	5

Laboratory Control Sample (LCS)

(LCS) R3891560-2 02/13/23 13:22

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800000	7900000	89.8	77.3-123	

Method Blank (MB)

(MB) R3890620-1 02/13/23 20:43

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

L1584634-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1584634-04 02/13/23 22:42 • (DUP) R3890620-5 02/13/23 22:55

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	16000	15800	1	1.29		15
Sulfate	23400	23000	1	1.96		15

L1585088-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1585088-01 02/14/23 10:22 • (DUP) R3890620-8 02/14/23 10:35

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	45800	45700	1	0.233		15
Sulfate	50100	50300	1	0.453		15

Laboratory Control Sample (LCS)

(LCS) R3890620-2 02/13/23 20:56

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40000	39900	99.7	80.0-120	
Sulfate	40000	40100	100	80.0-120	

L1584216-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1584216-07 02/13/23 21:51 • (MS) R3890620-3 02/13/23 22:04 • (MSD) R3890620-4 02/13/23 22:17

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	31300	78300	76200	94.0	89.8	10	80.0-120			2.70	15
Sulfate	50000	1960000	1940000	1890000	0.000	0.000	10	80.0-120	V	V	2.57	15

L1584973-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1584973-04 02/14/23 01:03 • (MS) R3890620-6 02/14/23 01:16 • (MSD) R3890620-7 02/14/23 01:29

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	7680	57700	57200	100	99.1	1	80.0-120			0.793	15
Sulfate	50000	111000	154000	153000	87.1	84.6	1	80.0-120			0.816	15

Method Blank (MB)

(MB) R3890698-1 02/14/23 01:45

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) R3890698-2 02/14/23 01:47

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Calcium	10000	9540	95.4	80.0-120	

L1584973-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1584973-04 02/14/23 01:50 • (MS) R3890698-4 02/14/23 01:56 • (MSD) R3890698-5 02/14/23 01:58

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	114000	121000	121000	76.4	74.1	1	75.0-125		V	0.183	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
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 Sibley Gen Station GW 2022-23**

City/State Collected: Sibley, MO

Please Circle: PT MT CT ET

Phone: **913-681-0030**

Client Project # **27213169.22 - I**

Lab Project # **AQUAOPKS-SIBLEY**

Collected by (print): B. Coleman

Collected by (signature):

Immediately Packed on ice N ___ Y ___

Site/Facility ID #

P.O. #

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 - 6010 250mlHDPE-HNO3	Chloride, SO4 125mlHDPE-NoPres	SO4 125mlHDPE-NoPres	TDS 1L HDPE NoPres	Remarks	Sample # (lab only)
MW-505	G	GW	-	2-10-23	1150	1	X					-01
MW-506	G	GW	-		1000	1		X				-02
MW-510	G	GW	-		1125	1			X			-03
MW-512	G	GW	-		1220	3	X	X		X		-04
MW-512 MS/MSD	G	GW	-		1220	2	X	X				
DUPLICATE 1	G	GW	-		1220	3	X	X		X		-05

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 # 584973
J038

Acctnum: **AQUAOPKS**
Template: **T212739**
Prelogin: **P978600**
PM: **206 - Jeff Carr**
PB:
Shipped Via:

* 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 # 6094 5455 9250

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)
	2-10-23	1500	
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: 0.5 °C Bottles Received: 11

Date: 02/11/23 Time: 0843

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

ANALYTICAL REPORT

June 09, 2023

SCS Engineers - KS

Sample Delivery Group:	L1618658
Samples Received:	05/20/2023
Project Number:	27213169.23-A
Description:	Evergy - Sibley 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-504 L1618658-01 GW

Collected by: Matt Vander Putten | Collected date/time: 05/18/23 12:50 | Received date/time: 05/20/23 09:20

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2065855	1	05/24/23 19:41	05/24/23 21:36	AS	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2071979	1	06/06/23 02:13	06/06/23 02:13	GEB	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2064222	1	05/28/23 09:16	05/29/23 18:20	ZSA	Mt. Juliet, TN

MW-505 L1618658-02 GW

Collected by: Matt Vander Putten | Collected date/time: 05/18/23 12:10 | Received date/time: 05/20/23 09:20

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2065855	1	05/24/23 19:41	05/24/23 21:36	AS	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2071979	1	06/06/23 02:39	06/06/23 02:39	GEB	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2064222	1	05/28/23 09:16	05/29/23 18:22	ZSA	Mt. Juliet, TN

MW-512 L1618658-03 GW

Collected by: Matt Vander Putten | Collected date/time: 05/18/23 12:15 | Received date/time: 05/20/23 09:20

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2065855	1	05/24/23 19:41	05/24/23 21:36	AS	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2072468	1	06/06/23 20:02	06/06/23 20:02	GEB	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2064222	1	05/28/23 09:16	05/29/23 18:30	ZSA	Mt. Juliet, TN

MW-601 L1618658-04 GW

Collected by: Matt Vander Putten | Collected date/time: 05/18/23 11:20 | Received date/time: 05/20/23 09:20

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2065855	1	05/24/23 19:41	05/24/23 21:36	AS	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2072468	1	06/07/23 09:56	06/07/23 09:56	GEB	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2064222	1	05/28/23 09:16	05/29/23 17:30	ZSA	Mt. Juliet, TN

DUPLICATE L1618658-05 GW

Collected by: Matt Vander Putten | Collected date/time: 05/18/23 11:20 | Received date/time: 05/20/23 09:20

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2065855	1	05/24/23 19:41	05/24/23 21:36	AS	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2072468	1	06/07/23 10:46	06/07/23 10:46	GEB	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2065067	1	05/24/23 11:24	05/24/23 22:59	SPL	Mt. Juliet, TN

MW-510 L1618658-06 GW

Collected by: Matt Vander Putten | Collected date/time: 05/22/23 15:25 | Received date/time: 05/23/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2065893	1	05/25/23 09:40	05/25/23 11:02	AS	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2073212	1	06/08/23 03:12	06/08/23 03:12	GEB	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2066586	1	05/27/23 04:13	05/29/23 12:19	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	168000		10000	1	05/24/2023 21:36	WG2065855

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	1040	P1	1000	1	06/06/2023 02:13	WG2071979
Fluoride	181		150	1	06/06/2023 02:13	WG2071979
Sulfate	27700		5000	1	06/06/2023 02:13	WG2071979

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	ND		200	1	05/29/2023 18:20	WG2064222
Calcium	29400		1000	1	05/29/2023 18:20	WG2064222

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	188000		10000	1	05/24/2023 21:36	WG2065855

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	1290		1000	1	06/06/2023 02:39	WG2071979
Fluoride	202		150	1	06/06/2023 02:39	WG2071979
Sulfate	21300		5000	1	06/06/2023 02:39	WG2071979

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	ND		200	1	05/29/2023 18:22	WG2064222
Calcium	30400		1000	1	05/29/2023 18:22	WG2064222

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	507000		10000	1	05/24/2023 21:36	WG2065855

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	7050		1000	1	06/06/2023 20:02	WG2072468
Fluoride	284		150	1	06/06/2023 20:02	WG2072468
Sulfate	103000		5000	1	06/06/2023 20:02	WG2072468

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	ND		200	1	05/29/2023 18:30	WG2064222
Calcium	110000		1000	1	05/29/2023 18:30	WG2064222

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	399000		10000	1	05/24/2023 21:36	WG2065855

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	3930		1000	1	06/07/2023 09:56	WG2072468
Fluoride	254		150	1	06/07/2023 09:56	WG2072468
Sulfate	19200		5000	1	06/07/2023 09:56	WG2072468

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	ND		200	1	05/29/2023 17:30	WG2064222
Calcium	96100	V	1000	1	05/29/2023 17:30	WG2064222

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	396000		10000	1	05/24/2023 21:36	WG2065855

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	3660		1000	1	06/07/2023 10:46	WG2072468
Fluoride	253		150	1	06/07/2023 10:46	WG2072468
Sulfate	14000		5000	1	06/07/2023 10:46	WG2072468

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	ND		200	1	05/24/2023 22:59	WG2065067
Calcium	95900		1000	1	05/24/2023 22:59	WG2065067

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	486000		10000	1	05/25/2023 11:02	WG2065893

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	3240		1000	1	06/08/2023 03:12	WG2073212
Fluoride	268		150	1	06/08/2023 03:12	WG2073212
Sulfate	19400		5000	1	06/08/2023 03:12	WG2073212

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	ND		200	1	05/29/2023 12:19	WG2066586
Calcium	117000	O1	1000	1	05/29/2023 12:19	WG2066586

Method Blank (MB)

(MB) R3929986-1 05/24/23 21:36

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

L1618087-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1618087-06 05/24/23 21:36 • (DUP) R3929986-3 05/24/23 21:36

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	515000	517000	1	0.388		5

L1618087-13 Original Sample (OS) • Duplicate (DUP)

(OS) L1618087-13 05/24/23 21:36 • (DUP) R3929986-4 05/24/23 21:36

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	424000	436000	1	2.79		5

Laboratory Control Sample (LCS)

(LCS) R3929986-2 05/24/23 21:36

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800000	8530000	96.9	77.3-123	

Method Blank (MB)

(MB) R3929994-1 05/25/23 11:02

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

L1618007-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1618007-01 05/25/23 11:02 • (DUP) R3929994-3 05/25/23 11:02

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	180000	179000	1	0.557		5

L1618024-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1618024-01 05/25/23 11:02 • (DUP) R3929994-4 05/25/23 11:02

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	99000	100000	1	1.01		5

Laboratory Control Sample (LCS)

(LCS) R3929994-2 05/25/23 11:02

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800000	8550000	97.2	77.3-123	

Method Blank (MB)

(MB) R3933447-3 06/05/23 20:35

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

L1618658-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1618658-01 06/06/23 02:13 • (DUP) R3933447-7 06/06/23 02:26

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Chloride	1040	ND	1	30.9	P1	15
Fluoride	181	174	1	4.07		15
Sulfate	27700	26400	1	4.89		15

L1621271-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1621271-04 06/06/23 05:20 • (DUP) R3933447-8 06/06/23 05:34

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Chloride	4660	4480	1	3.89		15
Fluoride	ND	ND	1	13.4		15
Sulfate	51500	49100	1	4.66		15

Laboratory Control Sample (LCS)

(LCS) R3933447-4 06/05/23 20:48

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Chloride	40000	39000	97.6	80.0-120	
Fluoride	8000	8050	101	80.0-120	
Sulfate	40000	40300	101	80.0-120	

L1617144-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1617144-04 06/06/23 00:12 • (MS) R3933447-5 06/06/23 00:25 • (MSD) R3933447-6 06/06/23 00:39

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 %
Chloride	50000	ND	62500	61900	87.3	86.0	20	80.0-120			1.04	15
Fluoride	5000	ND	5360	5290	76.8	75.5	20	80.0-120	J6	J6	1.28	15
Sulfate	50000	2060000	2030000	2000000	0.000	0.000	20	80.0-120	V	V	1.38	15

L1621271-04 Original Sample (OS) • Matrix Spike (MS)

(OS) L1621271-04 06/06/23 05:20 • (MS) R3933447-9 06/06/23 05:47

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	4660	53900	98.4	1	80.0-120	
Fluoride	5000	ND	5050	99.3	1	80.0-120	
Sulfate	50000	51500	99900	96.8	1	80.0-120	

Method Blank (MB)

(MB) R3934286-1 06/06/23 19:37

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

L1618658-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1618658-04 06/07/23 09:56 • (DUP) R3934286-3 06/07/23 10:09

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	3930	3850	1	2.05		15
Fluoride	254	245	1	3.61		15
Sulfate	19200	18800	1	1.91		15

L1618676-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1618676-05 06/07/23 16:39 • (DUP) R3934286-6 06/07/23 16:51

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	7130	7210	1	1.12		15
Fluoride	197	196	1	0.458		15
Sulfate	44000	44200	1	0.462		15

Laboratory Control Sample (LCS)

(LCS) R3934286-2 06/06/23 19:49

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40000	39400	98.5	80.0-120	
Fluoride	8000	8190	102	80.0-120	
Sulfate	40000	40100	100	80.0-120	

L1618658-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1618658-04 06/07/23 09:56 • (MS) R3934286-4 06/07/23 10:21 • (MSD) R3934286-5 06/07/23 10:34

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	3930	53000	52400	98.1	97.0	1	80.0-120			1.10	15
Fluoride	5000	254	5310	5260	101	100	1	80.0-120			0.851	15
Sulfate	50000	19200	67000	66300	95.5	94.3	1	80.0-120			0.948	15

L1618676-05 Original Sample (OS) • Matrix Spike (MS)

(OS) L1618676-05 06/07/23 16:39 • (MS) R3934286-7 06/07/23 17:04

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	7130	55000	95.7	1	80.0-120	
Fluoride	5000	197	5160	99.2	1	80.0-120	
Sulfate	50000	44000	88800	89.8	1	80.0-120	

Method Blank (MB)

(MB) R3934559-1 06/07/23 11:17

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

L1618676-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1618676-06 06/07/23 16:14 • (DUP) R3934559-3 06/07/23 16:41

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	29400	29700	1	1.06		15
Fluoride	208	219	1	5.48		15

L1618676-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1618676-06 06/07/23 16:27 • (DUP) R3934559-4 06/07/23 16:54

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Sulfate	291000	287000	5	1.11		15

L1618658-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1618658-06 06/08/23 03:12 • (DUP) R3934559-7 06/08/23 03:25

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	3240	3140	1	3.11		15
Fluoride	268	294	1	9.27		15
Sulfate	19400	19600	1	1.16		15

Laboratory Control Sample (LCS)

(LCS) R3934559-2 06/07/23 11:30

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40000	38200	95.5	80.0-120	
Fluoride	8000	7460	93.3	80.0-120	
Sulfate	40000	37700	94.3	80.0-120	

L1618676-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1618676-06 06/07/23 16:14 • (MS) R3934559-5 06/07/23 17:08 • (MSD) R3934559-6 06/07/23 17:21

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	29400	75900	76400	93.1	93.9	1	80.0-120			0.548	15
Fluoride	5000	208	4720	4770	90.3	91.3	1	80.0-120			1.12	15
Sulfate	50000	287000	317000	319000	61.2	65.2	1	80.0-120	E V	E V	0.618	15

L1618658-06 Original Sample (OS) • Matrix Spike (MS)

(OS) L1618658-06 06/08/23 03:12 • (MS) R3934559-8 06/08/23 03:39

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50000	3240	50600	94.8	1	80.0-120	
Fluoride	5000	268	4730	89.3	1	80.0-120	
Sulfate	50000	19400	65400	92.1	1	80.0-120	

Method Blank (MB)

(MB) R3930333-1 05/29/23 17:25

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) R3930333-2 05/29/23 17:27

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Boron	1000	989	98.9	80.0-120	
Calcium	10000	9770	97.7	80.0-120	

L1618658-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1618658-04 05/29/23 17:30 • (MS) R3930333-4 05/29/23 17:35 • (MSD) R3930333-5 05/29/23 17:37

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	1030	1030	99.5	99.8	1	75.0-125			0.343	20
Calcium	10000	96100	102000	102000	63.5	62.7	1	75.0-125	V	V	0.0732	20

Method Blank (MB)

(MB) R3929113-1 05/24/23 22:33

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) R3929113-2 05/24/23 22:36

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Boron	1000	985	98.5	80.0-120	
Calcium	10000	9820	98.2	80.0-120	

L1618733-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1618733-01 05/24/23 22:39 • (MS) R3929113-4 05/24/23 22:45 • (MSD) R3929113-5 05/24/23 22:47

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	1050	2090	2090	104	103	1	75.0-125			0.344	20
Calcium	10000	192000	203000	203000	116	115	1	75.0-125			0.0399	20

Method Blank (MB)

(MB) R3930308-1 05/29/23 12:14

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) R3930308-2 05/29/23 12:17

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Boron	1000	990	99.0	80.0-120	
Calcium	10000	9800	98.0	80.0-120	

L1618658-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1618658-06 05/29/23 12:19 • (MS) R3930308-4 05/29/23 12:25 • (MSD) R3930308-5 05/29/23 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 %
Boron	1000	ND	1030	1030	100	99.9	1	75.0-125			0.496	20
Calcium	10000	117000	125000	125000	80.0	81.5	1	75.0-125			0.117	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).
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.
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.

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;jrockhold@scsengine**

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

City/State Collected: 5:bh MO

Please Circle: PT MT CT ET

Phone: **913-681-0030**

Client Project # **27213169.23-A**

Lab Project # **AQUAOPKS-SIBLEY**

Collected by (print): Matt VanderPutten

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

Analysis / Container / Preservative

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-504	Grab	GW	NA	3/18/23	1250	3	X	X	X		-01
MW-505		GW			1210	3	X	X	X		-02
MW-506		GW			*	3	X	X	X		
MW-510		GW			1255	3	X	X	X		
MW-512		GW			1215	3	X	X	X		-03
MW-601		GW			1120	3	X	X	X		
MS/MSD		GW			1120	3	X	X	X		-04
DUPLICATE		GW			1120	3	X	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 # 5016 1230 9197

Chain of Custody Page ___ of ___

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 # 161658
E026

Acctnum: **AQUAOPKS**
Template: **T136014**
Prelogin: **P999242**
PM: **206 - Jeff Carr**
PB:

Shipped Via: **FedEX Ground**

Sample Receipt Checklist
COC Seal Present/Intact: __NP X Y __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: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
Matt VanderPutten	5/19/23	10000		
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 5.5 °C Bottles Received: 15 NSA 5.5+0=5.5
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) FW	Date: 5/20/23 Time: 9:20

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

05/20-NCF-L1618658-AQUAOPKS PM

R5

Time estimate: oh **Time spent:** oh

Members

Paul Minnich (responsible) JC Jeff Carr

Due on *24 May 2023 5:00 PM* for target *Done*

- [ ] Parameter(s) past holding time
- [ ] Temperature not in range
- [ ] Improper container type
- [ ] pH not in range
- [x] Insufficient sample volume
- [ ] Sample is biphasic
- [ ] Vials received with headspace
- [ ] Broken container
- [ ] Sufficient sample remains
- [ ] If broken container: Insufficient packing material around container
- [ ] If broken container: Insufficient packing material inside cooler
- [ ] If broken container: Improper handling by carrier:_____
- [ ] If broken container: Sample was frozen
- [ ] If broken container: Container lid not intact
- [ ] Client informed by Call
- [ ] Client informed by Email
- [ ] Client informed by Voicemail
- [ ] Date/Time:_____
- [ ] PM initials:_____
- [ ] Client Contact:_____

Comments

Paul Minnich *20 May 2023 8:47 PM*

Missing samples MW-510 and DUPLICATE

Jeff Carr *22 May 2023 8:29 AM*

client informed.

Troy Dunlap *22 May 2023 11:28 AM*

Done.

Jeff Carr *22 May 2023 1:09 PM*

Client want to analyze the MS/MSD bottles as the DUPLICATE. they are the same sample. Please relabel.

1618658

Troy Dunlap *22 May 2023 1:44 PM*

Are we still going to run MW-601 for MS/MSD?

Jeff Carr *22 May 2023 1:59 PM*

if we have sufficient volume. you can leave the comment.

Troy Dunlap *22 May 2023 2:04 PM*

Done.

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**

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

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

Please Circle: PT MT CT ET

Phone: **913-681-0030**

Client Project # **27213169.23-A**

Lab Project # **AQUAOPKS-SIBLEY**

Collected by (print): **Britta Coleman**

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**

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	Pres Chk	Anions (Cld, F, SO4) 125mlHDPE-NoPres	B, Ca - 6010 250mlHDPE-HNO3	TDS 250mlHDPE-NoPres	Remarks	Sample # (lab only)
MW-510	Grab	GW	NA	5/22/23	1525	3		X	X	X		-06

Chain of Custody Page 1 of 1

Pace
PEOPLE ADVANCING SCIENCE

12065 Lebanon Rd Mount Juliet, TN 37122
Phone: 615-758-5858 Alt: 800-767-5859

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

L1618658

SDG # ~~L1619236~~ 1037

Acctnum: **AQUAOPKS**
Template: **T136014**
Prelogin: **P999242**
PM: **206 - Jeff Carr**
PB:

Shipped Via:

* Matrix:
S - 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 # 5882 7565 0864

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: 5/22/23	Time: 1800	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 3.5 °C Bottles Received: NSA7 3.54 0=3.5
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) FW	Date: 5/23/23 Time: 9:00

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

ANALYTICAL REPORT

August 29, 2023

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

SCS Engineers - KS

Sample Delivery Group:	L1647426
Samples Received:	08/17/2023
Project Number:	27213169.23 - I
Description:	Evergy - Sibley Gen Station GW 2023-24

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-504 L1647426-01 GW

Collected by: Matt Vander Putten | Collected date/time: 08/16/23 15:10 | Received date/time: 08/17/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG2117206	1	08/20/23 00:08	08/20/23 00:08	GEB	Mt. Juliet, TN
Mercury by Method 7470A	WG2116686	1	08/23/23 10:59	08/24/23 00:39	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2117774	1	08/23/23 20:27	08/27/23 12:16	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2117784	1	08/23/23 11:21	08/23/23 18:29	LD	Mt. Juliet, TN

MW-505 L1647426-02 GW

Collected by: Matt Vander Putten | Collected date/time: 08/16/23 16:00 | Received date/time: 08/17/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG2117272	1	08/19/23 21:22	08/19/23 21:22	GEB	Mt. Juliet, TN
Mercury by Method 7470A	WG2116686	1	08/23/23 10:59	08/24/23 00:41	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2117774	1	08/23/23 20:27	08/27/23 12:19	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2117784	1	08/23/23 11:21	08/23/23 18:32	LD	Mt. Juliet, TN

MW-506 L1647426-03 GW

Collected by: Matt Vander Putten | Collected date/time: 08/16/23 12:50 | Received date/time: 08/17/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG2117272	1	08/19/23 21:35	08/19/23 21:35	GEB	Mt. Juliet, TN
Mercury by Method 7470A	WG2116686	1	08/23/23 10:59	08/24/23 00:44	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2117774	1	08/23/23 20:27	08/27/23 12:27	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2117784	1	08/23/23 11:21	08/23/23 17:54	LD	Mt. Juliet, TN

MW-510 L1647426-04 GW

Collected by: Matt Vander Putten | Collected date/time: 08/16/23 14:05 | Received date/time: 08/17/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG2117272	1	08/19/23 21:47	08/19/23 21:47	GEB	Mt. Juliet, TN
Mercury by Method 7470A	WG2116686	1	08/23/23 10:59	08/24/23 00:46	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2117774	1	08/23/23 20:27	08/27/23 12:30	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2117784	1	08/23/23 11:21	08/23/23 17:58	LD	Mt. Juliet, TN

MW-512 L1647426-05 GW

Collected by: Matt Vander Putten | Collected date/time: 08/16/23 10:15 | Received date/time: 08/17/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG2117272	1	08/19/23 22:00	08/19/23 22:00	GEB	Mt. Juliet, TN
Mercury by Method 7470A	WG2116686	1	08/23/23 10:59	08/24/23 00:49	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2117774	1	08/23/23 20:27	08/27/23 12:33	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2117784	1	08/23/23 11:21	08/23/23 18:01	LD	Mt. Juliet, TN

MW-601 L1647426-06 GW

Collected by: Matt Vander Putten | Collected date/time: 08/16/23 11:10 | Received date/time: 08/17/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG2117272	1	08/19/23 20:31	08/19/23 20:31	GEB	Mt. Juliet, TN
Mercury by Method 7470A	WG2116686	1	08/23/23 10:59	08/23/23 23:45	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2117774	1	08/23/23 20:27	08/27/23 11:28	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2117784	1	08/23/23 11:47	08/23/23 18:51	LD	Mt. Juliet, TN

DUPLICATE L1647426-07 GW

Collected by	Collected date/time	Received date/time
Matt Vander Putten	08/16/23 11:10	08/17/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG2117272	1	08/19/23 22:38	08/19/23 22:38	GEB	Mt. Juliet, TN
Mercury by Method 7470A	WG2116686	1	08/23/23 10:59	08/24/23 00:51	NDL	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2117774	1	08/23/23 20:27	08/27/23 12:35	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2117784	1	08/23/23 11:21	08/23/23 18:04	LD	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	
Fluoride	199		150	1	08/20/2023 00:08	WG2117206

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	08/24/2023 00:39	WG2116686

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	122		5.00	1	08/27/2023 12:16	WG2117774
Chromium	ND		10.0	1	08/27/2023 12:16	WG2117774
Lithium	ND		15.0	1	08/27/2023 12:16	WG2117774
Molybdenum	ND		5.00	1	08/27/2023 12:16	WG2117774

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		4.00	1	08/23/2023 18:29	WG2117784
Arsenic	ND		2.00	1	08/23/2023 18:29	WG2117784
Beryllium	ND		2.00	1	08/23/2023 18:29	WG2117784
Cadmium	ND		1.00	1	08/23/2023 18:29	WG2117784
Cobalt	ND		2.00	1	08/23/2023 18:29	WG2117784
Lead	ND		2.00	1	08/23/2023 18:29	WG2117784
Selenium	ND		2.00	1	08/23/2023 18:29	WG2117784
Thallium	ND		2.00	1	08/23/2023 18:29	WG2117784

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Fluoride	245		150	1	08/19/2023 21:22	WG2117272

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	08/24/2023 00:41	WG2116686

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	140		5.00	1	08/27/2023 12:19	WG2117774
Chromium	ND		10.0	1	08/27/2023 12:19	WG2117774
Lithium	ND		15.0	1	08/27/2023 12:19	WG2117774
Molybdenum	ND		5.00	1	08/27/2023 12:19	WG2117774

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		4.00	1	08/23/2023 18:32	WG2117784
Arsenic	ND		2.00	1	08/23/2023 18:32	WG2117784
Beryllium	ND		2.00	1	08/23/2023 18:32	WG2117784
Cadmium	ND		1.00	1	08/23/2023 18:32	WG2117784
Cobalt	ND		2.00	1	08/23/2023 18:32	WG2117784
Lead	ND		2.00	1	08/23/2023 18:32	WG2117784
Selenium	2.16		2.00	1	08/23/2023 18:32	WG2117784
Thallium	ND		2.00	1	08/23/2023 18:32	WG2117784

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Fluoride	252		150	1	08/19/2023 21:35	WG2117272

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	08/24/2023 00:44	WG2116686

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	229		5.00	1	08/27/2023 12:27	WG2117774
Chromium	ND		10.0	1	08/27/2023 12:27	WG2117774
Lithium	ND		15.0	1	08/27/2023 12:27	WG2117774
Molybdenum	ND		5.00	1	08/27/2023 12:27	WG2117774

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		4.00	1	08/23/2023 17:54	WG2117784
Arsenic	ND		2.00	1	08/23/2023 17:54	WG2117784
Beryllium	ND		2.00	1	08/23/2023 17:54	WG2117784
Cadmium	ND		1.00	1	08/23/2023 17:54	WG2117784
Cobalt	ND		2.00	1	08/23/2023 17:54	WG2117784
Lead	4.10		2.00	1	08/23/2023 17:54	WG2117784
Selenium	27.5		2.00	1	08/23/2023 17:54	WG2117784
Thallium	ND		2.00	1	08/23/2023 17:54	WG2117784

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Fluoride	304		150	1	08/19/2023 21:47	WG2117272

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	08/24/2023 00:46	WG2116686

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	374		5.00	1	08/27/2023 12:30	WG2117774
Chromium	ND		10.0	1	08/27/2023 12:30	WG2117774
Lithium	ND		15.0	1	08/27/2023 12:30	WG2117774
Molybdenum	ND		5.00	1	08/27/2023 12:30	WG2117774

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		4.00	1	08/23/2023 17:58	WG2117784
Arsenic	ND		2.00	1	08/23/2023 17:58	WG2117784
Beryllium	ND		2.00	1	08/23/2023 17:58	WG2117784
Cadmium	ND		1.00	1	08/23/2023 17:58	WG2117784
Cobalt	ND		2.00	1	08/23/2023 17:58	WG2117784
Lead	ND		2.00	1	08/23/2023 17:58	WG2117784
Selenium	4.49		2.00	1	08/23/2023 17:58	WG2117784
Thallium	ND		2.00	1	08/23/2023 17:58	WG2117784

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Fluoride	296		150	1	08/19/2023 22:00	WG2117272

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	08/24/2023 00:49	WG2116686

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	290		5.00	1	08/27/2023 12:33	WG2117774
Chromium	12.1		10.0	1	08/27/2023 12:33	WG2117774
Lithium	ND		15.0	1	08/27/2023 12:33	WG2117774
Molybdenum	ND		5.00	1	08/27/2023 12:33	WG2117774

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		4.00	1	08/23/2023 18:01	WG2117784
Arsenic	ND		2.00	1	08/23/2023 18:01	WG2117784
Beryllium	ND		2.00	1	08/23/2023 18:01	WG2117784
Cadmium	ND		1.00	1	08/23/2023 18:01	WG2117784
Cobalt	ND		2.00	1	08/23/2023 18:01	WG2117784
Lead	ND		2.00	1	08/23/2023 18:01	WG2117784
Selenium	7.30		2.00	1	08/23/2023 18:01	WG2117784
Thallium	ND		2.00	1	08/23/2023 18:01	WG2117784

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Fluoride	212		150	1	08/19/2023 20:31	WG2117272

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	08/23/2023 23:45	WG2116686

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	331		5.00	1	08/27/2023 11:28	WG2117774
Chromium	ND		10.0	1	08/27/2023 11:28	WG2117774
Lithium	ND		15.0	1	08/27/2023 11:28	WG2117774
Molybdenum	ND		5.00	1	08/27/2023 11:28	WG2117774

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		4.00	1	08/23/2023 18:51	WG2117784
Arsenic	ND		2.00	1	08/23/2023 18:51	WG2117784
Beryllium	ND		2.00	1	08/23/2023 18:51	WG2117784
Cadmium	ND		1.00	1	08/23/2023 18:51	WG2117784
Cobalt	ND		2.00	1	08/23/2023 18:51	WG2117784
Lead	ND		2.00	1	08/23/2023 18:51	WG2117784
Selenium	5.51		2.00	1	08/23/2023 18:51	WG2117784
Thallium	ND		2.00	1	08/23/2023 18:51	WG2117784

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Fluoride	259		150	1	08/19/2023 22:38	WG2117272

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Mercury	ND		0.200	1	08/24/2023 00:51	WG2116686

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	344		5.00	1	08/27/2023 12:35	WG2117774
Chromium	ND		10.0	1	08/27/2023 12:35	WG2117774
Lithium	ND		15.0	1	08/27/2023 12:35	WG2117774
Molybdenum	ND		5.00	1	08/27/2023 12:35	WG2117774

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Antimony	ND		4.00	1	08/23/2023 18:04	WG2117784
Arsenic	ND		2.00	1	08/23/2023 18:04	WG2117784
Beryllium	ND		2.00	1	08/23/2023 18:04	WG2117784
Cadmium	ND		1.00	1	08/23/2023 18:04	WG2117784
Cobalt	ND		2.00	1	08/23/2023 18:04	WG2117784
Lead	3.75		2.00	1	08/23/2023 18:04	WG2117784
Selenium	5.83		2.00	1	08/23/2023 18:04	WG2117784
Thallium	ND		2.00	1	08/23/2023 18:04	WG2117784

Method Blank (MB)

(MB) R3963707-3 08/19/23 10:08

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Fluoride	U		64.0	150

L1647161-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1647161-01 08/19/23 14:16 • (DUP) R3963707-5 08/19/23 14:33

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Fluoride	ND	ND	1	4.22		15

L1647426-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1647426-01 08/20/23 00:08 • (DUP) R3963707-8 08/20/23 00:25

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Fluoride	199	200	1	0.502		15

Laboratory Control Sample (LCS)

(LCS) R3963707-4 08/19/23 10:25

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Fluoride	8000	7940	99.2	80.0-120	

L1647161-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1647161-01 08/19/23 14:16 • (MS) R3963707-6 08/19/23 14:50 • (MSD) R3963707-7 08/19/23 15:07

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 %
Fluoride	5000	ND	5050	5040	99.2	98.9	1	80.0-120			0.291	15

L1647426-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1647426-01 08/20/23 00:08 • (MS) R3963707-9 08/20/23 00:42

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Fluoride	5000	199	5290	102	1	80.0-120	

Method Blank (MB)

(MB) R3963013-1 08/19/23 20:05

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Fluoride	U		64.0	150

L1647426-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1647426-06 08/19/23 20:31 • (DUP) R3963013-3 08/19/23 20:44

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Fluoride	212	231	1	8.52		15

L1647699-14 Original Sample (OS) • Duplicate (DUP)

(OS) L1647699-14 08/20/23 01:36 • (DUP) R3963013-6 08/20/23 01:49

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Fluoride	ND	ND	1	0.000		15

Laboratory Control Sample (LCS)

(LCS) R3963013-2 08/19/23 20:18

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Fluoride	8000	7970	99.7	80.0-120	

L1647426-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1647426-06 08/19/23 20:31 • (MS) R3963013-4 08/19/23 20:56 • (MSD) R3963013-5 08/19/23 21:09

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 %
Fluoride	5000	212	5100	5240	97.7	100	1	80.0-120			2.74	15

L1647699-14 Original Sample (OS) • Matrix Spike (MS)

(OS) L1647699-14 08/20/23 01:36 • (MS) R3963013-7 08/20/23 02:02

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Fluoride	5000	ND	4900	98.1	1	80.0-120	

QUALITY CONTROL SUMMARY

L1647426-01,02,03,04,05,06,07

Method Blank (MB)

(MB) R3964772-1 08/23/23 23:40

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Mercury	U		0.100	0.200

Laboratory Control Sample (LCS)

(LCS) R3964772-2 08/23/23 23:42

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Mercury	3.00	2.67	89.0	80.0-120	

L1647426-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1647426-06 08/23/23 23:45 • (MS) R3964772-3 08/23/23 23:47 • (MSD) R3964772-4 08/23/23 23:50

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 %
Mercury	3.00	ND	2.77	2.80	92.2	93.2	1	75.0-125			1.12	20

Method Blank (MB)

(MB) R3965994-1 08/27/23 11:23

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Barium	U		0.736	5.00
Chromium	U		1.40	10.0
Lithium	U		4.85	15.0
Molybdenum	U		1.16	5.00

Laboratory Control Sample (LCS)

(LCS) R3965994-2 08/27/23 11:25

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Barium	1000	1020	102	80.0-120	
Chromium	1000	985	98.5	80.0-120	
Lithium	1000	976	97.6	80.0-120	
Molybdenum	1000	1000	100	80.0-120	

L1647426-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1647426-06 08/27/23 11:28 • (MS) R3965994-4 08/27/23 11:33 • (MSD) R3965994-5 08/27/23 11:36

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 %
Barium	1000	331	1320	1320	98.8	98.8	1	75.0-125			0.0203	20
Chromium	1000	ND	969	972	96.9	97.2	1	75.0-125			0.332	20
Lithium	1000	ND	983	987	97.1	97.6	1	75.0-125			0.483	20
Molybdenum	1000	ND	1010	1010	100	101	1	75.0-125			0.722	20

QUALITY CONTROL SUMMARY

L1647426-01,02,03,04,05,06,07

Method Blank (MB)

(MB) R3964685-1 08/23/23 18:44

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Antimony	U		1.03	4.00
Arsenic	U		0.180	2.00
Beryllium	U		0.190	2.00
Cadmium	U		0.150	1.00
Cobalt	U		0.0596	2.00
Lead	U		0.849	2.00
Selenium	U		0.300	2.00
Thallium	U		0.121	2.00

Laboratory Control Sample (LCS)

(LCS) R3964685-2 08/23/23 18:48

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Antimony	50.0	48.6	97.2	80.0-120	
Arsenic	50.0	51.0	102	80.0-120	
Beryllium	50.0	47.7	95.3	80.0-120	
Cadmium	50.0	52.0	104	80.0-120	
Cobalt	50.0	51.0	102	80.0-120	
Lead	50.0	49.8	99.6	80.0-120	
Selenium	50.0	51.8	104	80.0-120	
Thallium	50.0	47.9	95.9	80.0-120	

L1647426-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1647426-06 08/23/23 18:51 • (MS) R3964685-4 08/23/23 18:58 • (MSD) R3964685-5 08/23/23 19:01

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 %
Antimony	50.0	ND	49.5	49.9	98.9	99.8	1	75.0-125			0.873	20
Arsenic	50.0	ND	53.6	51.3	106	102	1	75.0-125			4.46	20
Beryllium	50.0	ND	50.0	50.3	100	101	1	75.0-125			0.625	20
Cadmium	50.0	ND	53.4	53.8	106	107	1	75.0-125			0.783	20
Cobalt	50.0	ND	52.1	50.6	104	100	1	75.0-125			2.99	20
Lead	50.0	ND	50.1	50.7	100	101	1	75.0-125			1.10	20
Selenium	50.0	5.51	62.0	58.8	113	107	1	75.0-125			5.22	20
Thallium	50.0	ND	48.6	48.9	96.7	97.3	1	75.0-125			0.599	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

The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

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;jrockhold@scsengine

Project Description:
Evergy - Sibley Gen Station GW 2023-24

City/State Collected: Sibley MO

Please Circle: PT MT (CT) ET

Phone: **913-681-0030**

Client Project #
27213169.23 - I

Lab Project #
AQUAOPKS-SIBLEY

Collected by (print):
Matt VanderPutten

Site/Facility ID #

P.O. #

Collected by (signature):
Matt VanderPutten

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	FLUORIDE 125mlHDPE-NoPres	Metals 250mlHDPE-HNO3							Remarks	Sample # (lab only)
MW-504	Grab	GW	NA	8/16/23	1610	2	X	X								-01
MW-505		GW			1600	2	X	X								-02
MW-506		GW			1250	2	X	X								-03
MW-510		GW			1405	2	X	X								-04
MW-512		GW			1015	2	X	X								-05
MW-601		GW			1110	2	X	X								-06
DUPLICATE		GW			1110	2	X	X								-07
MS		GW			1110	2	X	X								
MSD		GW			1110	2	X	X								-06

Analysis / Container / Preservative

Chain of Custody Page ___ of ___

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 # 164742
F045
8/17

Acctnum: **AQUAOPKS**
Template: **T208637**
Prelogin: **P1015848**
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: CCR Appendix IV Constituents

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking # 6481 5470 3403

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
Matt VanderPutten	8/16/23	1700			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 6.6 °C Bottles Received: 18	
				0.8+0=0.8	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 8/17/23 Time: 0900	Hold: Condition: NCF / OK
			Alexa Mitchell		

ANALYTICAL REPORT

September 15, 2023

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

SCS Engineers - KS

Sample Delivery Group:	L1647231
Samples Received:	08/17/2023
Project Number:	27213169.23 - I
Description:	Evergy Sibley Gen Station GW 2023-24

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-504 L1647231-01 Non-Potable Water

Collected by: Matt Vander Patton | Collected date/time: 08/16/23 15:10 | Received date/time: 08/17/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2118702	1	08/22/23 12:26	08/31/23 16:50	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2118002	1	08/21/23 15:18	08/31/23 16:50	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2118002	1	08/21/23 15:18	08/25/23 16:07	RGT	Mt. Juliet, TN

MW-505 L1647231-02 Non-Potable Water

Collected by: Matt Vander Patton | Collected date/time: 08/16/23 16:00 | Received date/time: 08/17/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2118702	1	08/22/23 12:26	08/31/23 16:50	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2118641	1	08/22/23 13:55	08/31/23 16:50	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2118641	1	08/22/23 13:55	08/29/23 11:37	RGT	Mt. Juliet, TN

MW-506 L1647231-03 Non-Potable Water

Collected by: Matt Vander Patton | Collected date/time: 08/16/23 12:50 | Received date/time: 08/17/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2118702	1	08/22/23 12:26	08/31/23 16:50	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2118002	1	08/21/23 15:18	08/31/23 16:50	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2118002	1	08/21/23 15:18	08/25/23 16:07	RGT	Mt. Juliet, TN

MW-510 L1647231-04 Non-Potable Water

Collected by: Matt Vander Patton | Collected date/time: 08/16/23 14:05 | Received date/time: 08/17/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2118702	1	08/22/23 12:26	08/31/23 16:50	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2118641	1	08/22/23 13:55	08/31/23 16:50	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2118641	1	08/22/23 13:55	08/29/23 11:37	RGT	Mt. Juliet, TN

MW-512 L1647231-05 Non-Potable Water

Collected by: Matt Vander Patton | Collected date/time: 08/16/23 10:15 | Received date/time: 08/17/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2118702	1	08/22/23 12:26	08/31/23 16:50	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2118641	1	08/22/23 13:55	08/31/23 16:50	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2118641	1	08/22/23 13:55	08/29/23 11:37	RGT	Mt. Juliet, TN

MW-601 L1647231-06 Non-Potable Water

Collected by: Matt Vander Patton | Collected date/time: 08/16/23 11:10 | Received date/time: 08/17/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2118702	1	08/22/23 12:26	08/31/23 16:50	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2118641	1	08/22/23 13:55	08/31/23 16:50	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2118641	1	08/22/23 13:55	08/29/23 11:37	RGT	Mt. Juliet, TN

DUPLICATE L1647231-07 Non-Potable Water

Collected by: Matt Vander Patton
Collected date/time: 08/16/23 11:10
Received date/time: 08/17/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2118702	1	08/22/23 12:26	08/31/23 16:50	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2118641	1	08/22/23 13:55	08/31/23 16:50	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2118641	1	08/22/23 13:55	08/29/23 11:37	RGT	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 radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. 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

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.366	J	0.222	0.401	08/31/2023 16:50	WG2118702
(T) Barium	*113*			*30.0-143*	*08/31/2023 16:50*	WG2118702
(T) Yttrium	*97.6*			*30.0-136*	*08/31/2023 16:50*	WG2118702

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	1.18		0.426	0.475	08/31/2023 16:50	WG2118002

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.811		0.363	0.255	08/25/2023 16:07	WG2118002
(T) Barium-133	*103*			*30.0-143*	*08/25/2023 16:07*	WG2118002

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.0439	U	0.201	0.374	08/31/2023 16:50	WG2118702
(T) Barium	*101*			*30.0-143*	*08/31/2023 16:50*	WG2118702
(T) Yttrium	*108*			*30.0-136*	*08/31/2023 16:50*	WG2118702

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.199	J	0.263	0.436	08/31/2023 16:50	WG2118641

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.155	J	0.170	0.224	08/29/2023 11:37	WG2118641
(T) Barium-133	*102*			*30.0-143*	*08/29/2023 11:37*	WG2118641

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.672		0.258	0.456	08/31/2023 16:50	WG2118702
(T) Barium	*104*			*30.0-143*	*08/31/2023 16:50*	WG2118702
(T) Yttrium	*75.0*			*30.0-136*	*08/31/2023 16:50*	WG2118702

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.672	J	0.328	0.704	08/31/2023 16:50	WG2118002

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	-0.197	U	0.203	0.537	08/25/2023 16:07	WG2118002
(T) Barium-133	*68.6*			*30.0-143*	*08/25/2023 16:07*	WG2118002

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.270	J	0.202	0.368	08/31/2023 16:50	WG2118702
(T) Barium	*106*			*30.0-143*	*08/31/2023 16:50*	WG2118702
(T) Yttrium	*98.6*			*30.0-136*	*08/31/2023 16:50*	WG2118702

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.799		0.353	0.434	08/31/2023 16:50	WG2118641

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.528		0.290	0.231	08/29/2023 11:37	WG2118641
(T) Barium-133	*89.9*			*30.0-143*	*08/29/2023 11:37*	WG2118641

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.417	J	0.238	0.430	08/31/2023 16:50	WG2118702
(T) Barium	*102*			*30.0-143*	*08/31/2023 16:50*	WG2118702
(T) Yttrium	*84.2*			*30.0-136*	*08/31/2023 16:50*	WG2118702

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	1.66		0.508	0.519	08/31/2023 16:50	WG2118641

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	1.24		0.449	0.290	08/29/2023 11:37	WG2118641
(T) Barium-133	*98.4*			*30.0-143*	*08/29/2023 11:37*	WG2118641

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.232	U	0.348	0.641	08/31/2023 16:50	WG2118702
(T) Barium	*113*			*30.0-143*	*08/31/2023 16:50*	WG2118702
(T) Yttrium	*86.0*			*30.0-136*	*08/31/2023 16:50*	WG2118702

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.286	U	0.399	0.733	08/31/2023 16:50	WG2118641

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.0545	U	0.195	0.356	08/29/2023 11:37	WG2118641
(T) Barium-133	*82.8*			*30.0-143*	*08/29/2023 11:37*	WG2118641

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

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-228	0.385		0.210	0.379	08/31/2023 16:50	WG2118702
(T) Barium	*107*			*30.0-143*	*08/31/2023 16:50*	WG2118702
(T) Yttrium	*109*			*30.0-136*	*08/31/2023 16:50*	WG2118702

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.509		0.268	0.450	08/31/2023 16:50	WG2118641

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
RADIUM-226	0.125	J	0.167	0.242	08/29/2023 11:37	WG2118641
(T) Barium-133	*97.0*			*30.0-143*	*08/29/2023 11:37*	WG2118641

Method Blank (MB)

(MB) R3973359-1 08/31/23 16:50

Analyte	MB Result pCi/l	MB Qualifier	MB Uncertainty + / - pCi/l	MB MDA pCi/l
Radium-228	0.343	J	0.294	0.535
(T) Barium	*133*		*133*	
(T) Yttrium	*57.3*		*57.3*	

L1647551-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1647551-08 08/31/23 16:50 • (DUP) R3973359-5 08/31/23 16:50

Analyte	Original Result pCi/l	Original Uncertainty + / -	Original MDA pCi/l	DUP Result pCi/l	DUP Uncertainty + / -	DUP MDA pCi/l	Dilution	DUP RPD %	DUP RER	DUP Qualifier	DUP RPD Limits %	DUP RER Limit
Radium-228	8.74	0.656	0.983	8.07	0.495	0.983	1	8.02	0.820		20	3
(T) Barium	*72.9*			*143*	*143*							
(T) Yttrium	*93.6*			*79.7*	*79.7*							

Laboratory Control Sample (LCS)

(LCS) R3973359-2 08/31/23 16:50

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-228	5.00	5.02	100	80.0-120	
(T) Barium			*118*		
(T) Yttrium			*91.1*		

L1647231-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1647231-06 08/31/23 16:50 • (MS) R3973359-3 08/31/23 16:50 • (MSD) R3973359-4 08/31/23 16:50

Analyte	Spike Amount pCi/l	Original Result pCi/l	MS Result pCi/l	MSD Result pCi/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	MS RER	RPD Limits %
Radium-228	16.7	0.232	16.3	17.6	96.5	104	1	70.0-130			7.14		20
(T) Barium		*113*			*107*	*132*							
(T) Yttrium		*86.0*			*112*	*97.8*							

Method Blank (MB)

(MB) R3971708-5 08/26/23 13:00

Analyte	MB Result	MB Qualifier	MB Uncertainty	MB MDA
	pCi/l		+ / -	pCi/l
Radium-226	0.0143	U	0.0594	0.103
(T) Barium-133	*53.1*		*53.1*	

L1647231-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1647231-03 08/25/23 16:07 • (DUP) R3971708-4 08/25/23 16:07

Analyte	Original Result	Original Uncertainty	Original MDA	DUP Result	DUP Uncertainty	DUP MDA	Dilution	DUP RPD	DUP RER	DUP Qualifier	DUP RPD Limits	DUP RER Limit
	pCi/l	+ / -	pCi/l	pCi/l	+ / -	pCi/l		%			%	
Radium-226	-0.197	0.203	0.537	0.131	0.209	0.537	1	200	1.12	J	20	3
(T) Barium-133	*68.6*			*61.7*	*61.7*							

Laboratory Control Sample (LCS)

(LCS) R3971708-1 08/25/23 16:07

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	pCi/l	pCi/l	%	%	
Radium-226	5.01	5.59	112	80.0-120	
(T) Barium-133			*79.1*		

L1646247-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1646247-01 08/25/23 16:07 • (MS) R3971708-2 08/25/23 16:07 • (MSD) R3971708-3 08/25/23 16:07

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	MS RER	RPD Limits
	pCi/l	pCi/l	pCi/l	pCi/l	%	%		%			%		%
Radium-226	20.0	2.00	26.8	25.8	124	119	1	75.0-125			4.11		20
(T) Barium-133		*75.4*			*72.0*	*56.4*							

Method Blank (MB)

(MB) R3972797-1 08/29/23 11:37

Analyte	MB Result	MB Qualifier	MB Uncertainty	MB MDA
	pCi/l		+ / -	pCi/l
Radium-226	-0.0251	U	0.0295	0.0811
(T) Barium-133	*96.3*		*96.3*	

L1647101-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1647101-03 08/29/23 11:37 • (DUP) R3972797-5 08/29/23 11:37

Analyte	Original Result	Original Uncertainty	Original MDA	DUP Result	DUP Uncertainty	DUP MDA	Dilution	DUP RPD	DUP RER	DUP Qualifier	DUP RPD Limits	DUP RER Limit
	pCi/l	+ / -	pCi/l	pCi/l	+ / -	pCi/l		%			%	
Radium-226	0.177	0.164	0.195	0.335	0.265	0.195	1	61.7	0.508		20	3
(T) Barium-133	*97.4*			*93.3*	*93.3*							

Laboratory Control Sample (LCS)

(LCS) R3972797-2 08/29/23 11:37

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	pCi/l	pCi/l	%	%	
Radium-226	5.01	5.04	101	80.0-120	
(T) Barium-133			*98.5*		

L1647231-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1647231-06 08/29/23 11:37 • (MS) R3972797-3 08/29/23 11:37 • (MSD) R3972797-4 08/29/23 11:37

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	MS RER	RPD Limits
	pCi/l	pCi/l	pCi/l	pCi/l	%	%		%			%		%
Radium-226	20.0	0.0545	17.2	18.2	85.7	90.8	1	75.0-125			5.70		20
(T) Barium-133		*82.8*			*99.5*	*101*							

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

MDA	Minimum Detectable Activity.
Rec.	Recovery.
RER	Replicate Error Ratio.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(T)	Tracer - A radioisotope of known concentration added to a solution of chemically equivalent radioisotopes at a known concentration to assist in monitoring the yield of the chemical separation.
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.
U	Below Detectable Limits: Indicates that the analyte was not detected.

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;jrockhold@scsengine**

Project Description: **Evergy Sibley Gen Station GW 2023-24**

City/State Collected: **Sibley MO**

Please Circle: PT MT (CT) ET

Phone: **913-681-0030**

Client Project # **27213169.23 - I**

Lab Project # **AQUAOPKS-SIBLEY**

Collected by (print): **Matt VanderPutten**

Site/Facility ID #

P.O. #

Collected by (signature): **Matt VanderPutten**

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	RA-226, RA-228 1L-HDPE-Add HNO3									
MW-504	Grab	NPW	NA	8/16/23	1510	2	X									-01
MW-505		NPW			1600	2	X									-02
MW-506		NPW			1250	2	X									-03
MW-510		NPW			1405	2	X									-04
MW-512		NPW			1015	2	X									-05
MW-601		NPW			1110	2	X									-06
DUPLICATE		NPW			1110	2	X									-07
MS		NPW			1110	2	X									
MSD		NPW			1110	2	X									

Analysis / Container / Preservative

Chain of Custody Page ___ of ___

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 # L1647231

F027

Acctnum: **AQUAOPKS**
Template: **T198905**
Prelogin: **P1015846**
PM: **206 - Jeff Carr**
PB:

Shipped Via: **FedEX Ground**

Remarks | Sample # (lab only)

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

Remarks: RA 226/228 - Report separately and combined.

pH _____ Temp _____
Flow _____ Other _____

Samples returned via: __ UPS __ FedEx __ Courier _____

Tracking # PH-10BDH4321 TRC-2144141 CR6-20221V PH-10BDH4321 TRC-2144141 CR6-20221V

Trip Blank Received: Yes / No HCL / MeoH TBR

Temp 26-010 °C Bottles Received: 18

Sample Receipt Checklist
COC Seal Present/Intact: __NP X Y __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: X 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)
Matt VanderPutten	8/16/23	1700	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) (19) Christopher Mallinger

If preservation required by Login: Date/Time

Hold:

Date: 8/17/23 Time: 0900

Condition: NCF / OK

ANALYTICAL REPORT

December 02, 2023

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

SCS Engineers - KS

Sample Delivery Group:	L1680137
Samples Received:	11/20/2023
Project Number:	27213169.23 - OPT 1
Description:	Evergy Sibley Gen Station GW 2023-24

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-504 L1680137-01 GW

Collected by: Jason R Franks | Collected date/time: 11/15/23 16:15 | Received date/time: 11/20/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG2176329	1	11/29/23 10:21	11/29/23 15:53	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2176344	1	11/29/23 07:35	12/01/23 14:46	JPD	Mt. Juliet, TN

MW-505 L1680137-02 GW

Collected by: Jason R Franks | Collected date/time: 11/15/23 16:45 | Received date/time: 11/20/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG2176329	1	11/29/23 10:21	11/29/23 15:56	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2176344	1	11/29/23 07:35	12/01/23 14:50	JPD	Mt. Juliet, TN

MW-506 L1680137-03 GW

Collected by: Jason R Franks | Collected date/time: 11/15/23 14:45 | Received date/time: 11/20/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG2176329	1	11/29/23 10:21	11/29/23 15:58	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2176344	1	11/29/23 07:35	12/01/23 14:53	JPD	Mt. Juliet, TN

MW-510 L1680137-04 GW

Collected by: Jason R Franks | Collected date/time: 11/15/23 11:40 | Received date/time: 11/20/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG2176329	1	11/29/23 10:21	11/29/23 16:06	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2176344	1	11/29/23 07:35	12/01/23 14:56	JPD	Mt. Juliet, TN

MW-512 L1680137-05 GW

Collected by: Jason R Franks | Collected date/time: 11/15/23 12:30 | Received date/time: 11/20/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG2176329	1	11/29/23 10:21	11/29/23 15:40	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2176344	1	11/29/23 07:35	12/01/23 13:27	JPD	Mt. Juliet, TN

MW-601 L1680137-06 GW

Collected by: Jason R Franks | Collected date/time: 11/15/23 14:00 | Received date/time: 11/20/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG2176329	1	11/29/23 10:21	11/29/23 16:09	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2176344	1	11/29/23 07:35	12/01/23 14:59	JPD	Mt. Juliet, TN

DUPLICATE L1680137-07 GW

Collected by: Jason R Franks | Collected date/time: 11/15/23 12:30 | Received date/time: 11/20/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010D	WG2176329	1	11/29/23 10:21	11/29/23 16:12	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 6020B	WG2176344	1	11/29/23 07:35	12/01/23 15:03	JPD	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	
Barium	109		5.00	1	11/29/2023 15:53	WG2176329
Chromium	ND		10.0	1	11/29/2023 15:53	WG2176329
Lithium	ND		15.0	1	11/29/2023 15:53	WG2176329

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Arsenic	ND		2.00	1	12/01/2023 14:46	WG2176344
Cobalt	ND		2.00	1	12/01/2023 14:46	WG2176344
Lead	ND		2.00	1	12/01/2023 14:46	WG2176344
Selenium	ND		2.00	1	12/01/2023 14:46	WG2176344

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	119		5.00	1	11/29/2023 15:56	WG2176329
Chromium	ND		10.0	1	11/29/2023 15:56	WG2176329
Lithium	ND		15.0	1	11/29/2023 15:56	WG2176329

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Arsenic	ND		2.00	1	12/01/2023 14:50	WG2176344
Cobalt	ND		2.00	1	12/01/2023 14:50	WG2176344
Lead	ND		2.00	1	12/01/2023 14:50	WG2176344
Selenium	3.75		2.00	1	12/01/2023 14:50	WG2176344

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	225		5.00	1	11/29/2023 15:58	WG2176329
Chromium	ND		10.0	1	11/29/2023 15:58	WG2176329
Lithium	ND		15.0	1	11/29/2023 15:58	WG2176329

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Arsenic	ND		2.00	1	12/01/2023 14:53	WG2176344
Cobalt	ND		2.00	1	12/01/2023 14:53	WG2176344
Lead	ND		2.00	1	12/01/2023 14:53	WG2176344
Selenium	27.8		2.00	1	12/01/2023 14:53	WG2176344

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	373		5.00	1	11/29/2023 16:06	WG2176329
Chromium	ND		10.0	1	11/29/2023 16:06	WG2176329
Lithium	ND		15.0	1	11/29/2023 16:06	WG2176329

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Arsenic	ND		2.00	1	12/01/2023 14:56	WG2176344
Cobalt	ND		2.00	1	12/01/2023 14:56	WG2176344
Lead	ND		2.00	1	12/01/2023 14:56	WG2176344
Selenium	4.68		2.00	1	12/01/2023 14:56	WG2176344

Metals (ICP) by Method 6010D

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Barium	249	Q1	5.00	1	11/29/2023 15:40	WG2176329
Chromium	11.5		10.0	1	11/29/2023 15:40	WG2176329
Lithium	ND		15.0	1	11/29/2023 15:40	WG2176329

Metals (ICPMS) by Method 6020B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Arsenic	ND		2.00	1	12/01/2023 13:27	WG2176344
Cobalt	ND		2.00	1	12/01/2023 13:27	WG2176344
Lead	ND		2.00	1	12/01/2023 13:27	WG2176344
Selenium	7.31		2.00	1	12/01/2023 13:27	WG2176344

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	249		5.00	1	11/29/2023 16:09	WG2176329
Chromium	11.1		10.0	1	11/29/2023 16:09	WG2176329
Lithium	ND		15.0	1	11/29/2023 16:09	WG2176329

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Arsenic	ND		2.00	1	12/01/2023 14:59	WG2176344
Cobalt	ND		2.00	1	12/01/2023 14:59	WG2176344
Lead	ND		2.00	1	12/01/2023 14:59	WG2176344
Selenium	7.32		2.00	1	12/01/2023 14:59	WG2176344

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Barium	246		5.00	1	11/29/2023 16:12	WG2176329
Chromium	10.5		10.0	1	11/29/2023 16:12	WG2176329
Lithium	ND		15.0	1	11/29/2023 16:12	WG2176329

Metals (ICPMS) by Method 6020B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Arsenic	ND		2.00	1	12/01/2023 15:03	WG2176344
Cobalt	ND		2.00	1	12/01/2023 15:03	WG2176344
Lead	ND		2.00	1	12/01/2023 15:03	WG2176344
Selenium	7.23		2.00	1	12/01/2023 15:03	WG2176344

QUALITY CONTROL SUMMARY

L1680137-01,02,03,04,05,06,07

Method Blank (MB)

(MB) R4006112-1 11/29/23 15:35

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Barium	U		0.736	5.00
Chromium	U		1.40	10.0
Lithium	U		4.85	15.0

Laboratory Control Sample (LCS)

(LCS) R4006112-2 11/29/23 15:37

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Barium	1000	1020	102	80.0-120	
Chromium	1000	1060	106	80.0-120	
Lithium	1000	1020	102	80.0-120	

L1680137-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1680137-05 11/29/23 15:40 • (MS) R4006112-4 11/29/23 15:45 • (MSD) R4006112-5 11/29/23 15:47

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 %
Barium	1000	249	1260	1240	101	99.4	1	75.0-125			1.43	20
Chromium	1000	11.5	1060	1040	105	103	1	75.0-125			1.85	20
Lithium	1000	ND	1050	1030	105	103	1	75.0-125			2.07	20

Method Blank (MB)

(MB) R4007171-1 12/01/23 13:20

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Arsenic	U		0.180	2.00
Cobalt	U		0.0596	2.00
Lead	U		0.849	2.00
Selenium	U		0.300	2.00

Laboratory Control Sample (LCS)

(LCS) R4007171-2 12/01/23 13:24

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	50.0	53.9	108	80.0-120	
Cobalt	50.0	55.3	111	80.0-120	
Lead	50.0	54.2	108	80.0-120	
Selenium	50.0	53.3	107	80.0-120	

L1680137-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1680137-05 12/01/23 13:27 • (MS) R4007171-4 12/01/23 13:34 • (MSD) R4007171-5 12/01/23 13:37

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 %
Arsenic	50.0	ND	53.6	53.6	106	106	1	75.0-125			0.00676	20
Cobalt	50.0	ND	52.4	51.7	105	103	1	75.0-125			1.44	20
Lead	50.0	ND	53.6	51.9	107	104	1	75.0-125			3.28	20
Selenium	50.0	7.31	60.6	60.3	107	106	1	75.0-125			0.470	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
O1	The analyte failed the method required serial dilution test and/or subsequent post-spike criteria. These failures indicate matrix interference.

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.

Page 2 of 2

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;jrockhold@scsengine**

Project Description: **Evergy Sibley Gen Station GW 2023-24**

City/State Collected:

Please Circle: PT MT (CT) ET

Phone: **913-681-0030**

Client Project # **27213169.23 - OPT 1**

Lab Project # **AQUAOPKS-SIBLEY**

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

Analysis / Container / Preservative

Pres Chk

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Metals * 250mlHDPE-HNO3	Remarks	Sample # (lab only)
MW-504	GRAB	GW	—	11/15/23	1615	1	X		-01
MW-505		GW	—		1645	1	X		-02
MW-506		GW	—		1445	1	X		-03
MW-510		GW	—		1140	1	X		-04
MW-512		GW	—		1230	1	X		-05
MW-601		GW	—		1400	1	X		-06
5I2MS/MSD		GW	—		1230	1	X		
DUPLICATE		GW	—		1230	1	X		-07

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 # L1680137

Table #

Acctnum: **AQUAOPKS**
Template: **T240710**
Prelogin: **P1033750**
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: * Ba,Cr,Li-6010, As,Co,Pb,Se-6020

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking #

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
	11/17/23	1600			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 4.5 °C Bottles Received: 5C	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) Christopher J. Gallin	Date: 11/20/23 Time: 0900	Hold: Condition: NCF / OK

ANALYTICAL REPORT

December 22, 2023

SCS Engineers - KS

Sample Delivery Group:	L1679701
Samples Received:	11/18/2023
Project Number:	27213169.23 - OPT 1
Description:	Evergy Sibley Gen Station GW 2023-24

Report To:

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

Entire Report Reviewed By:

John Hawkins
Project Manager

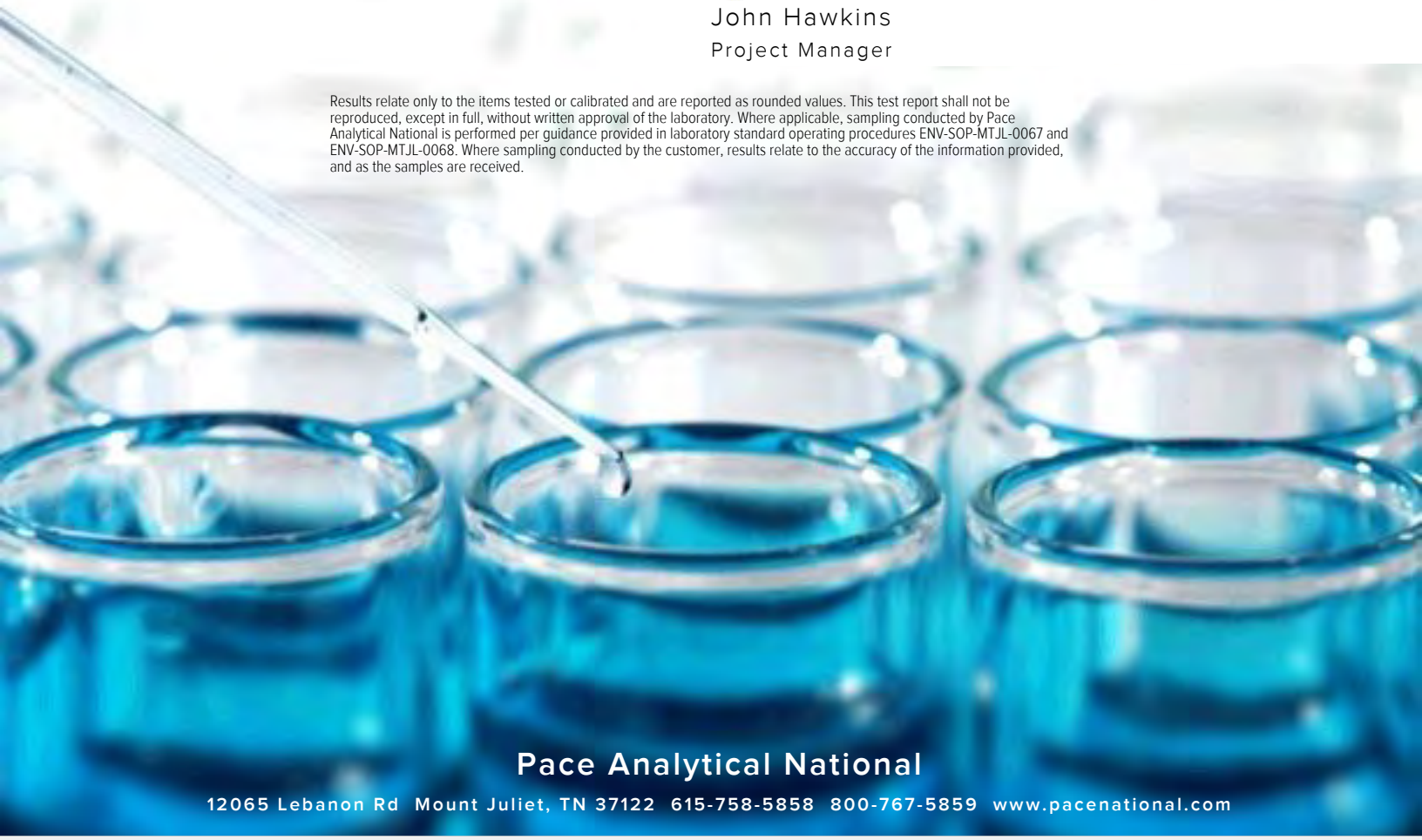


TABLE OF CONTENTS

MW-504 L1679701-01 Non-Potable Water

Collected by: Jason R Franks | Collected date/time: 11/15/23 16:15 | Received date/time: 11/18/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2185764	1	12/08/23 14:24	12/12/23 21:22	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2186894	1	12/12/23 11:39	12/13/23 18:51	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2186894	1	12/12/23 11:39	12/13/23 18:51	RGT	Mt. Juliet, TN

MW-505 L1679701-02 Non-Potable Water

Collected by: Jason R Franks | Collected date/time: 11/15/23 16:45 | Received date/time: 11/18/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2185764	1	12/08/23 14:24	12/12/23 21:22	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2186894	1	12/12/23 11:39	12/13/23 18:51	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2186894	1	12/12/23 11:39	12/13/23 18:51	RGT	Mt. Juliet, TN

MW-506 L1679701-03 Non-Potable Water

Collected by: Jason R Franks | Collected date/time: 11/15/23 14:45 | Received date/time: 11/18/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2185764	1	12/08/23 14:24	12/12/23 21:22	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2186894	1	12/12/23 11:39	12/13/23 18:51	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2186894	1	12/12/23 11:39	12/13/23 18:51	RGT	Mt. Juliet, TN

MW-510 L1679701-04 Non-Potable Water

Collected by: Jason R Franks | Collected date/time: 11/15/23 11:40 | Received date/time: 11/18/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2187194	1	12/11/23 17:40	12/14/23 21:51	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2186894	1	12/12/23 11:39	12/14/23 21:51	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2186894	1	12/12/23 11:39	12/13/23 18:51	RGT	Mt. Juliet, TN

MW-512 L1679701-05 Non-Potable Water

Collected by: Jason R Franks | Collected date/time: 11/15/23 12:30 | Received date/time: 11/18/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2185764	1	12/08/23 14:24	12/12/23 21:22	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2186894	1	12/12/23 11:39	12/13/23 18:51	DDD	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2186894	1	12/12/23 11:39	12/13/23 18:51	RGT	Mt. Juliet, TN

MW-601 L1679701-06 Non-Potable Water

Collected by: Jason R Franks | Collected date/time: 11/15/23 14:00 | Received date/time: 11/18/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2187194	1	12/11/23 17:40	12/14/23 21:51	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2186894	1	12/12/23 11:39	12/14/23 21:51	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2186894	1	12/12/23 11:39	12/13/23 18:51	RGT	Mt. Juliet, TN

DUPLICATE L1679701-07 Non-Potable Water

Collected by: Jason R Franks
Collected date/time: 11/15/23 12:30
Received date/time: 11/18/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 904/9320	WG2187194	1	12/11/23 17:40	12/14/23 21:51	DDD	Mt. Juliet, TN
Radiochemistry by Method Calculation	WG2187519	1	12/14/23 07:42	12/15/23 14:19	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2187519	1	12/14/23 07:42	12/15/23 14:19	RGT	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 radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. 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.

John Hawkins
Project Manager

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-228	2.53		0.261		0.386		12/12/2023 21:22	WG2185764
(T) Barium	*112*					*30.0-143*	*12/12/2023 21:22*	WG2185764
(T) Yttrium	*111*					*30.0-136*	*12/12/2023 21:22*	WG2185764

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	2.53		0.279	0.451	12/13/2023 18:51	WG2186894

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.000	U	0.0977	0.0354	0.233	0.170	12/13/2023 18:51	WG2186894
(T) Barium-133	*91.7*					*30.0-143*	*12/13/2023 18:51*	WG2186894

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	2.18		0.230		0.334		12/12/2023 21:22	WG2185764
(T) Barium	*105*					*30.0-143*	*12/12/2023 21:22*	WG2185764
(T) Yttrium	*105*					*30.0-136*	*12/12/2023 21:22*	WG2185764

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	2.28		0.291	0.439	12/13/2023 18:51	WG2186894

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.102	U	0.179	0.0724	0.285	0.202	12/13/2023 18:51	WG2186894
(T) Barium-133	*89.0*					*30.0-143*	*12/13/2023 18:51*	WG2186894

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-228	2.71		0.241		0.338		12/12/2023 21:22	WG2185764
(T) Barium	*106*					*30.0-143*	*12/12/2023 21:22*	WG2185764
(T) Yttrium	*115*					*30.0-136*	*12/12/2023 21:22*	WG2185764

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	2.99		0.372	0.502	12/13/2023 18:51	WG2186894

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.279	J	0.283	0.115	0.371	0.243	12/13/2023 18:51	WG2186894
(T) Barium-133	*88.6*					*30.0-143*	*12/13/2023 18:51*	WG2186894

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

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.440	J	0.276		0.515		12/14/2023 21:51	WG2187194
(T) Barium	*91.1*					*30.0-143*	*12/14/2023 21:51*	WG2187194
(T) Yttrium	*110*					*30.0-136*	*12/14/2023 21:51*	WG2187194

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.731		0.390	0.619	12/14/2023 21:51	WG2186894

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.291	J	0.276	0.0968	0.343	0.240	12/13/2023 18:51	WG2186894
(T) Barium-133	*73.6*					*30.0-143*	*12/13/2023 18:51*	WG2186894

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

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	2.92		0.348		0.527		12/12/2023 21:22	WG2185764
(T) Barium	*111*					*30.0-143*	*12/12/2023 21:22*	WG2185764
(T) Yttrium	*113*					*30.0-136*	*12/12/2023 21:22*	WG2185764

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	3.22		0.459	0.659	12/13/2023 18:51	WG2186894

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.297	J	0.300	0.128	0.395	0.258	12/13/2023 18:51	WG2186894
(T) Barium-133	*92.8*					*30.0-143*	*12/13/2023 18:51*	WG2186894

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-228	0.686		0.299		0.551		12/14/2023 21:51	WG2187194
(T) Barium	*92.5*					*30.0-143*	*12/14/2023 21:51*	WG2187194
(T) Yttrium	*106*					*30.0-136*	*12/14/2023 21:51*	WG2187194

Radiochemistry by Method Calculation

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
Combined Radium	0.763		0.346	0.620	12/14/2023 21:51	WG2186894

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.0773	U	0.174	0.0707	0.284	0.190	12/13/2023 18:51	WG2186894
(T) Barium-133	*93.4*					*30.0-143*	*12/13/2023 18:51*	WG2186894

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

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	0.634		0.311		0.576		12/14/2023 21:51	WG2187194
(T) Barium	*89.0*					*30.0-143*	*12/14/2023 21:51*	WG2187194
(T) Yttrium	*112*					*30.0-136*	*12/14/2023 21:51*	WG2187194

Radiochemistry by Method Calculation

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
Combined Radium	0.977		0.397	0.611	12/15/2023 14:19	WG2187519

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	0.343		0.247	0.0944	0.203	0.167	12/15/2023 14:19	WG2187519
(T) Barium-133	*75.2*					*30.0-143*	*12/15/2023 14:19*	WG2187519

Method Blank (MB)

(MB) R4014443-1 12/12/23 21:22

Analyte	MB Result	MB Qualifier	MB 2 sigma CE	MB MDA	MB Lc
	pCi/l		+ / -	pCi/l	pCi/l
Radium-228	0.954		0.167	0.270	
(T) Barium	*120*		*120*		
(T) Yttrium	*125*		*125*		

L1679097-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1679097-01 12/12/23 21:22 • (DUP) R4014443-5 12/12/23 21:22

Analyte	Original Result	Original 2 sigma CE	Original MDA	Original Lc	DUP Result	DUP 2 sigma CE	DUP MDA	DUP Lc	DUP RPD	DUP RER	DUP Qualifier	DUP RPD Limits	DUP RER Limit
	pCi/l	+ / -	pCi/l	pCi/l	pCi/l	+ / -	pCi/l	pCi/l	%			%	
Radium-228	3.42	0.402	0.620		2.79	0.397	0.631		20.5	1.13		20	3
(T) Barium	*109*				*105*	*105*							
(T) Yttrium	*109*				*110*	*110*							

Laboratory Control Sample (LCS)

(LCS) R4014443-2 12/12/23 21:22

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	pCi/l	pCi/l	%	%	
Radium-228	5.00	5.23	105	80.0-120	
(T) Barium			*112*		
(T) Yttrium			*112*		

L1679701-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1679701-05 12/12/23 21:22 • (MS) R4014443-3 12/12/23 21:22 • (MSD) R4014443-4 12/12/23 21:22

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	MS RER	RPD Limits
	pCi/l	pCi/l	pCi/l	pCi/l	%	%		%			%		%
Radium-228	16.7	2.92	16.7	17.3	82.5	86.2	1	70.0-130			3.64		20
(T) Barium		*111*			*108*	*105*							
(T) Yttrium		*113*			*122*	*107*							

Method Blank (MB)

(MB) R4014457-1 12/14/23 21:51

Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l
Radium-228	-0.231	U	0.146	0.290	
(T) Barium	*96.5*		*96.5*		
(T) Yttrium	*111*		*111*		

L1679743-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1679743-01 12/14/23 21:51 • (DUP) R4014457-5 12/14/23 21:51

Analyte	Original Result pCi/l	Original 2 sigma CE + / -	Original MDA pCi/l	Original Lc pCi/l	DUP Result pCi/l	DUP 2 sigma CE + / -	DUP MDA pCi/l	DUP Lc pCi/l	DUP RPD %	DUP RER	DUP Qualifier	DUP RPD Limits %	DUP RER Limit
Radium-228	5.56	0.323	0.463		5.15	0.421	0.663		7.66	0.773		20	3
(T) Barium	*98.2*				*106*	*106*							
(T) Yttrium	*99.8*				*110*	*110*							

Laboratory Control Sample (LCS)

(LCS) R4014457-2 12/14/23 21:51

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-228	5.00	4.02	80.4	80.0-120	
(T) Barium			*77.1*		
(T) Yttrium			*112*		

L1679702-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1679702-06 12/14/23 21:51 • (MS) R4014457-3 12/14/23 21:51 • (MSD) R4014457-4 12/14/23 21:51

Analyte	Spike Amount pCi/l	Original Result pCi/l	MS Result pCi/l	MSD Result pCi/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	MS RER	RPD Limits %
Radium-228	10.0	0.379	8.57	8.19	81.9	78.1	1	70.0-130			4.55		20
(T) Barium		*104*			*96.2*	*93.2*							
(T) Yttrium		*113*			*99.4*	*105*							

Method Blank (MB)

(MB) R4014500-1 12/13/23 18:51

Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l
Radium-226	-0.0192	U	0.0446	0.106	0.0710
(T) Barium-133	*70.5*		*70.5*		

L1678594-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1678594-07 12/13/23 18:51 • (DUP) R4014500-5 12/13/23 18:51

Analyte	Original Result pCi/l	Original 2 sigma CE + / -	Original MDA pCi/l	Original Lc pCi/l	DUP Result pCi/l	DUP 2 sigma CE + / -	DUP MDA pCi/l	DUP Lc pCi/l	DUP RPD %	DUP RER	DUP Qualifier	DUP RPD Limits %	DUP RER Limit
Radium-226	0.759	0.382	0.295	0.215	0.269	0.237	0.270	0.200	95.4	1.09	J	20	3
(T) Barium-133	*69.9*				*82.5*	*82.5*							

Laboratory Control Sample (LCS)

(LCS) R4014500-2 12/13/23 18:51

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-226	5.00	4.67	93.4	80.0-120	
(T) Barium-133			*74.4*		

L1679701-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1679701-05 12/13/23 18:51 • (MS) R4014500-3 12/13/23 18:51 • (MSD) R4014500-4 12/13/23 18:51

Analyte	Spike Amount pCi/l	Original Result pCi/l	MS Result pCi/l	MSD Result pCi/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	MS RER	RPD Limits %
Radium-226	20.0	0.297	20.8	21.0	102	104	1	75.0-125			1.97		20
(T) Barium-133		*92.8*			*80.5*	*80.2*							

Method Blank (MB)

(MB) R4014464-1 12/15/23 14:19

Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l
Radium-226	0.0216	U	0.0363	0.0598	0.0485
(T) Barium-133	*60.2*		*60.2*		

L1679743-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1679743-05 12/15/23 14:19 • (DUP) R4014464-5 12/15/23 14:19

Analyte	Original Result pCi/l	Original 2 sigma CE + / -	Original MDA pCi/l	Original Lc pCi/l	DUP Result pCi/l	DUP 2 sigma CE + / -	DUP MDA pCi/l	DUP Lc pCi/l	DUP RPD %	DUP RER	DUP Qualifier	DUP RPD Limits %	DUP RER Limit
Radium-226	0.277	0.257	0.266	0.219	0.886	0.444	0.313	0.238	105	1.19		20	3
(T) Barium-133	*60.1*				*63.0*	*63.0*							

Laboratory Control Sample (LCS)

(LCS) R4014464-2 12/15/23 14:19

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-226	5.00	5.56	111	80.0-120	
(T) Barium-133			*62.0*		

L1679702-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1679702-06 12/15/23 14:19 • (MS) R4014464-3 12/15/23 14:19 • (MSD) R4014464-4 12/15/23 14:19

Analyte	Spike Amount pCi/l	Original Result pCi/l	MS Result pCi/l	MSD Result pCi/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	MS RER	RPD Limits %
Radium-226	20.0	0.238	21.7	20.6	108	102	1	75.0-125			5.34		20
(T) Barium-133		*69.4*			*57.2*	*72.4*							

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

MDA	Minimum Detectable Activity.
Rec.	Recovery.
RER	Replicate Error Ratio.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(T)	Tracer - A radioisotope of known concentration added to a solution of chemically equivalent radioisotopes at a known concentration to assist in monitoring the yield of the chemical separation.
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.
U	Below Detectable Limits: Indicates that the analyte was not detected.

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;jrockhold@scsengine**

Project Description: **Evergy Sibley Gen Station GW 2023-24**

City/State Collected:

Please Circle: PT MT (CT) ET

Phone: **913-681-0030**

Client Project # **27213169.23 - OPT 1**

Lab Project # **AQUAOPKS-SIBLEY**

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

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 # B128

Table

Acctnum: **AQUAOPKS**

Template: **T198905**

Prelogin: **P1033702**

PM: **206 - Jeff Carr**

PB:

Shipped Via: **FedEX Ground**

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	RA-226, RA-228 1L-HDPE-Add HNO3	Remarks	Sample # (lab only)
MW-504	Grab	NPW	—	11/15/23	1615	2	X		-01
MW-505		NPW	—		1645	2	X		-02
MW-506		NPW	—		1445	2	X		-03
MW-510		NPW	—		1140	2	X		-04
MW-512		NPW	—		1230	2	X		-05
MW-601		NPW	—		1400	2	X		-06
DUPLICATE		NPW	—		1230	2	X		-07
512 MS		NPW	—		1230	2	X		-05
512 MSD		NPW	—		1230	2	X		-05

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

Remarks: RA 226/228 - Report separately and combined.

pH ____ Temp ____

Flow ____ Other ____

Samples returned via:
__ UPS __ FedEx __ Courier ____

Tracking # 6481 5470 4833

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
	11/17/23	1600		
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 1.8 °C 13.7+2=17.7 Bottles Received: 18
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 11.18.23 Time: 9:00

If pre... PH-10BDH4321 TRC-2352362 ...e/Time
CR6-20221V

Hold:

Condition: NCF / (OK)

ANALYTICAL REPORT

December 28, 2023

Revised Report

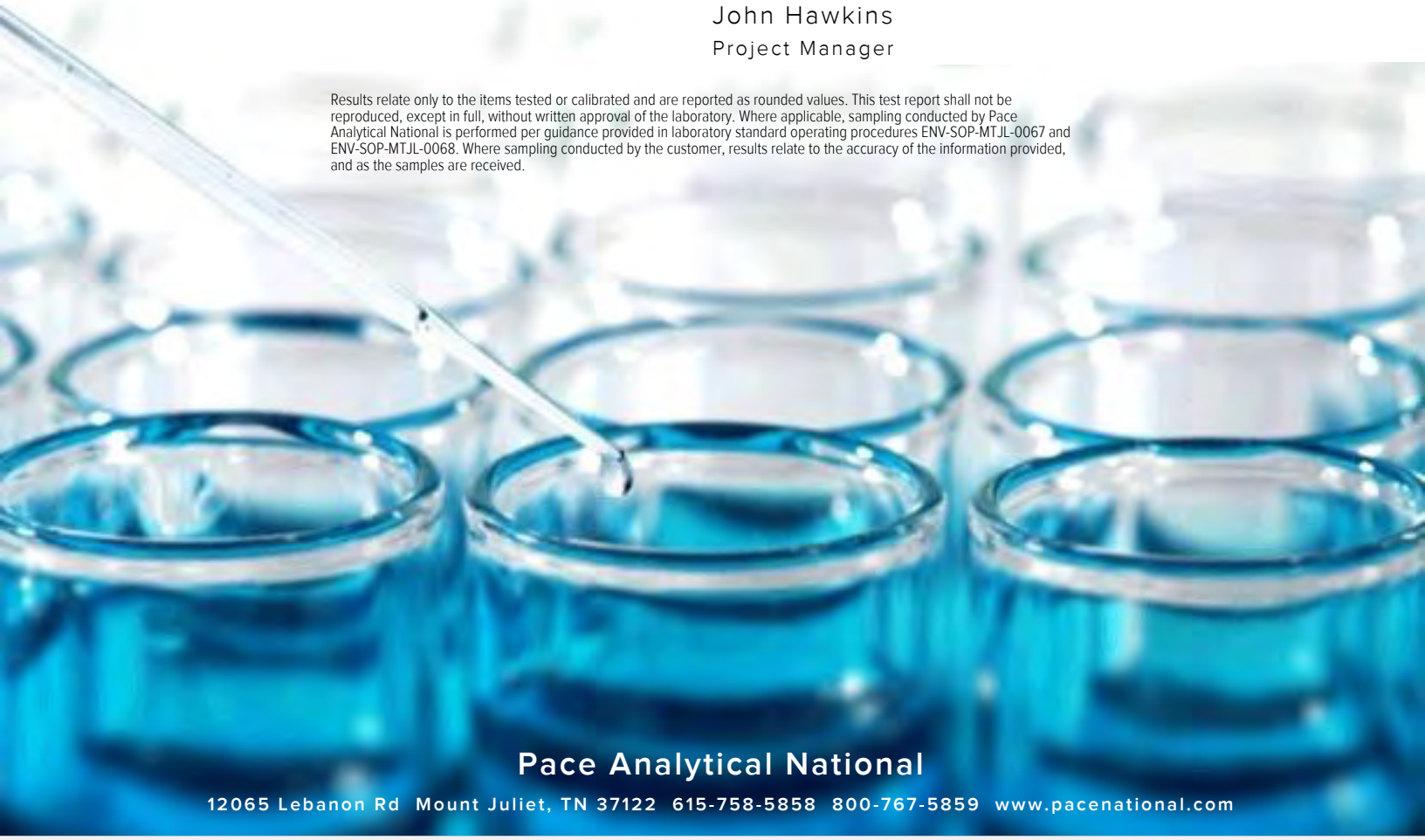
SCS Engineers - KS

Sample Delivery Group:	L1680134
Samples Received:	11/20/2023
Project Number:	27213169.23-A
Description:	Evergy Sibley Gen Station GW 2023-24

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

Entire Report Reviewed By:

John Hawkins
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-504 L1680134-01 GW

Collected by: Jason R Franks | Collected date/time: 11/15/23 16:15 | Received date/time: 11/20/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2175782	1	11/21/23 19:30	11/22/23 15:07	JAC	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2180061	1	11/30/23 20:42	11/30/23 20:42	GEB	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2176153	1	11/25/23 13:39	11/25/23 23:17	DJS	Mt. Juliet, TN

MW-505 L1680134-02 GW

Collected by: Jason R Franks | Collected date/time: 11/15/23 16:45 | Received date/time: 11/20/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2179179	1	11/29/23 12:50	11/29/23 14:01	JAC	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2180061	5	11/30/23 20:58	11/30/23 20:58	ASM	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2176153	1	11/25/23 13:39	11/25/23 23:45	DJS	Mt. Juliet, TN

MW-506 L1680134-03 GW

Collected by: Jason R Franks | Collected date/time: 11/15/23 14:45 | Received date/time: 11/20/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2176109	1	11/22/23 17:06	11/22/23 20:21	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2180061	1	11/30/23 21:13	11/30/23 21:13	GEB	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2176153	1	11/25/23 13:39	11/25/23 23:47	DJS	Mt. Juliet, TN

MW-510 L1680134-04 GW

Collected by: Jason R Franks | Collected date/time: 11/15/23 11:40 | Received date/time: 11/20/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2175782	1	11/21/23 19:30	11/22/23 15:07	JAC	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2180061	1	11/30/23 22:17	11/30/23 22:17	GEB	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2176153	1	11/25/23 13:39	11/25/23 23:50	DJS	Mt. Juliet, TN

MW-512 L1680134-05 GW

Collected by: Jason R Franks | Collected date/time: 11/15/23 12:30 | Received date/time: 11/20/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2175782	1	11/21/23 19:30	11/22/23 15:07	JAC	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2180061	1	11/30/23 22:49	11/30/23 22:49	GEB	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2176153	1	11/25/23 13:39	11/25/23 23:53	DJS	Mt. Juliet, TN

MW-601 L1680134-06 GW

Collected by: Jason R Franks | Collected date/time: 11/15/23 14:00 | Received date/time: 11/20/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2175782	1	11/21/23 19:30	11/22/23 15:07	JAC	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2180061	1	11/30/23 23:53	11/30/23 23:53	GEB	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2176153	1	11/25/23 13:39	11/25/23 23:55	DJS	Mt. Juliet, TN

DUPLICATE L1680134-07 GW

Collected by: Jason R Franks
Collected date/time: 11/15/23 12:30
Received date/time: 11/20/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2175782	1	11/21/23 19:30	11/22/23 15:07	JAC	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG2180061	1	12/01/23 00:24	12/01/23 00:24	GEB	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG2176153	1	11/25/23 13:39	11/25/23 23:58	DJS	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.

John Hawkins
Project Manager

Report Revision History

Level II Report - Version 1: 12/04/23 08:19

Project Narrative

L1680134-02: Fluoride could not be re-analyzed at a 1X due to insufficient volume.

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	177000		10000	1	11/22/2023 15:07	WG2175782

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	ND		1000	1	11/30/2023 20:42	WG2180061
Fluoride	150		150	1	11/30/2023 20:42	WG2180061
Sulfate	23700		5000	1	11/30/2023 20:42	WG2180061

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	ND		200	1	11/25/2023 23:17	WG2176153
Calcium	29100		1000	1	11/25/2023 23:17	WG2176153

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	175000	Q	10000	1	11/29/2023 14:01	WG2179179

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	ND		5000	5	11/30/2023 20:58	WG2180061
Fluoride	ND		750	5	11/30/2023 20:58	WG2180061
Sulfate	ND		25000	5	11/30/2023 20:58	WG2180061

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	ND		200	1	11/25/2023 23:45	WG2176153
Calcium	30100		1000	1	11/25/2023 23:45	WG2176153

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	457000		10000	1	11/22/2023 20:21	WG2176109

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	8670		1000	1	11/30/2023 21:13	WG2180061
Fluoride	248		150	1	11/30/2023 21:13	WG2180061
Sulfate	91700		5000	1	11/30/2023 21:13	WG2180061

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	ND		200	1	11/25/2023 23:47	WG2176153
Calcium	93200		1000	1	11/25/2023 23:47	WG2176153

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	482000		10000	1	11/22/2023 15:07	WG2175782

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	7790		1000	1	11/30/2023 22:17	WG2180061
Fluoride	248	P1	150	1	11/30/2023 22:17	WG2180061
Sulfate	24600		5000	1	11/30/2023 22:17	WG2180061

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	ND		200	1	11/25/2023 23:50	WG2176153
Calcium	115000		1000	1	11/25/2023 23:50	WG2176153

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	374000		10000	1	11/22/2023 15:07	WG2175782

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	6060		1000	1	11/30/2023 22:49	WG2180061
Fluoride	242		150	1	11/30/2023 22:49	WG2180061
Sulfate	108000	J6	5000	1	11/30/2023 22:49	WG2180061

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	ND		200	1	11/25/2023 23:53	WG2176153
Calcium	95400		1000	1	11/25/2023 23:53	WG2176153

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Dissolved Solids	522000		10000	1	11/22/2023 15:07	WG2175782

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	5930		1000	1	11/30/2023 23:53	WG2180061
Fluoride	235		150	1	11/30/2023 23:53	WG2180061
Sulfate	106000		5000	1	11/30/2023 23:53	WG2180061

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	ND		200	1	11/25/2023 23:55	WG2176153
Calcium	113000		1000	1	11/25/2023 23:55	WG2176153

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	11/22/2023 15:07	WG2175782

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Chloride	6100		1000	1	12/01/2023 00:24	WG2180061
Fluoride	241		150	1	12/01/2023 00:24	WG2180061
Sulfate	109000		5000	1	12/01/2023 00:24	WG2180061

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Boron	ND		200	1	11/25/2023 23:58	WG2176153
Calcium	115000		1000	1	11/25/2023 23:58	WG2176153

Method Blank (MB)

(MB) R4004041-1 11/22/23 15:07

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

L1678568-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1678568-01 11/22/23 15:07 • (DUP) R4004041-3 11/22/23 15:07

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	1950000	2160000	1	9.99	J3	5

L1680134-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1680134-01 11/22/23 15:07 • (DUP) R4004041-4 11/22/23 15:07

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	177000	179000	1	1.12		5

Laboratory Control Sample (LCS)

(LCS) R4004041-2 11/22/23 15:07

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Dissolved Solids	8800000	8250000	93.8	85.0-115	

Method Blank (MB)

(MB) R4004039-1 11/22/23 20:21

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

L1678027-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1678027-01 11/22/23 20:21 • (DUP) R4004039-3 11/22/23 20:21

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Dissolved Solids	2280000	2420000	1	5.96	J3	5

L1678638-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1678638-06 11/22/23 20:21 • (DUP) R4004039-4 11/22/23 20:21

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Dissolved Solids	2320000	2260000	1	2.84		5

Laboratory Control Sample (LCS)

(LCS) R4004039-2 11/22/23 20:21

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Dissolved Solids	8800000	8510000	96.7	85.0-115	

Method Blank (MB)

(MB) R4007483-1 11/29/23 14:01

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

L1681959-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1681959-01 11/29/23 14:01 • (DUP) R4007483-3 11/29/23 14:01

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Dissolved Solids	392000	395000	1	0.762		5

L1682011-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1682011-01 11/29/23 14:01 • (DUP) R4007483-4 11/29/23 14:01

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	ug/l	ug/l		%		%
Dissolved Solids	386000	406000	1	5.05	J3	5

Laboratory Control Sample (LCS)

(LCS) R4007483-2 11/29/23 14:01

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
Dissolved Solids	8800000	9380000	107	85.0-115	

Method Blank (MB)

(MB) R4006971-1 11/30/23 10:33

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

L1680086-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1680086-04 11/30/23 16:59 • (DUP) R4006971-3 11/30/23 17:15

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	651000	651000	1	0.0876	E	15
Fluoride	ND	ND	1	0.000		15
Sulfate	50000	50800	1	1.62		15

L1680134-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1680134-04 11/30/23 22:17 • (DUP) R4006971-5 11/30/23 22:33

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	7790	7720	1	0.940		15
Fluoride	248	290	1	15.7	P1	15
Sulfate	24600	24800	1	0.637		15

Laboratory Control Sample (LCS)

(LCS) R4006971-2 11/30/23 10:49

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chloride	40000	40800	102	80.0-120	
Fluoride	8000	8410	105	80.0-120	
Sulfate	40000	38900	97.2	80.0-120	

L1680086-04 Original Sample (OS) • Matrix Spike (MS)

(OS) L1680086-04 11/30/23 16:59 • (MS) R4006971-4 11/30/23 17:31

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	40000	651000	557000	0.000	1	80.0-120	E V
Fluoride	8000	ND	7440	92.9	1	80.0-120	
Sulfate	40000	50000	79900	74.9	1	80.0-120	J6

Sample Narrative:

MS: Spike failue due to matrix interference

L1680134-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1680134-05 11/30/23 22:49 • (MS) R4006971-6 11/30/23 23:05 • (MSD) R4006971-7 11/30/23 23:21

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	40000	6060	43800	42600	94.2	91.2	1	80.0-120			2.77	15
Fluoride	8000	242	7890	7710	95.6	93.4	1	80.0-120			2.32	15
Sulfate	40000	108000	45900	44800	0.000	0.000	1	80.0-120	J6	J6	2.40	15

Method Blank (MB)

(MB) R4004203-1 11/25/23 23:12

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) R4004203-2 11/25/23 23:15

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Boron	1000	943	94.3	80.0-120	
Calcium	10000	9550	95.5	80.0-120	

L1680134-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1680134-01 11/25/23 23:17 • (MS) R4004203-4 11/25/23 23:23 • (MSD) R4004203-5 11/25/23 23:25

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	968	982	92.1	93.5	1	75.0-125			1.44	20
Calcium	10000	29100	38300	38600	92.4	95.7	1	75.0-125			0.863	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.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.
Q	Sample was prepared and/or analyzed past holding time as defined in the method. Concentrations should be considered minimum values.
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;jrockhold@scsengine

Project Description:
Evergy Sibley Gen Station GW 2023-24

City/State Collected:

Please Circle: PT MT CT ET

Phone: **913-681-0030**

Client Project #
27213169.23-A

Lab Project #
AQUAOPKS-SIBLEY

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

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
MW-504	GRAB	GW	—	11/15/23	1615	3	X	X	X
MW-505		GW	—		1645	3	X	X	X
MW-506		GW	—		1445	3	X	X	X
MW-510		GW	—		1140	3	X	X	X
MW-512		GW	—		1230	3	X	X	X
MW-601		GW	—		1400	3	X	X	X
512 MS/MSD		GW	—		1230	3	X	X	X
DUPLICATE		GW	—		1230	3	X	X	X

Analysis / Container / Preservative

Chain of Custody Page 1 of 2

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 # L1680134

F104

Acctnum: **AQUAOPKS**
Template: **T136014**
Prelogin: **P1033696**
PM: **206 - Jeff Carr**
PB:

Shipped Via: **FedEX Ground**

Remarks	Sample # (lab only)
	-01
	-02
	-03
	-04
	-05
	-06
	-07

* 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 # 684183439834

PH-10BDH4321 TRC-235236?
CR6-20221V
PH-10BDH4321 TRC-235236?
CR6-20221V

Trip Blank Received: Yes / No
HCL / MeOH
TBR

Temp: DFA8 °C 4.5↑0 Bottles Received: 32

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

Sample Receipt Checklist
COC Seal Present/Intact: __NP X 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: X Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
	11/17/23	1600	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)
			Christopher R. Gallen (14)

Date: 11/20/23 Time: 0900

APPENDIX D

STATISTICAL ANALYSES

D.1 Fall 2022 Semiannual Detection Monitoring Statistical Analyses

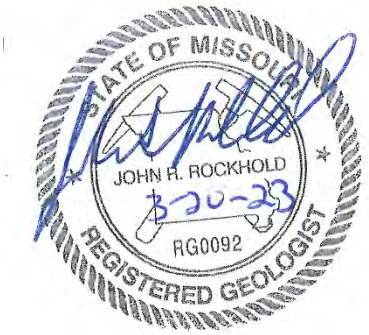
D.2 Spring 2023 Semiannual Detection Monitoring Statistical Analyses

Appendix D.1

Fall 2022 Semiannual Detection Monitoring Statistical Analyses

MEMORANDUM

March 20, 2023



To: Sibley Generating Station
33200 E Johnson Road
Sibley, Missouri 64088
Evergy Missouri West, Inc.

From: SCS Engineers
John Rockhold, P.G.
Douglas Doerr, P.E.,

RE: Determination of Statistically Significant Increases - CCR Landfill
Fall 2022 Semiannual Detection Monitoring 40 CFR 257.94

Statistical analysis of monitoring data from the groundwater monitoring system for the CCR Landfill at the Sibley Generating Station has been completed in substantial compliance with the "Statistical Method Certification by A Qualified Professional Engineer" dated October 12, 2017. Detection monitoring groundwater samples were collected on November 10, 2022. Review and validation of the results from the November 2022 Detection Monitoring Event was completed on December 20, 2022, which constitutes completion and finalization of detection monitoring laboratory analyses. A 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 11, 2023, and February 10, 2023.

The completed statistical evaluation identified four Appendix III constituents above their prediction limits.

Monitoring Well Constituent	*UPL	Observation November 10, 2022	1st Verification January 11, 2023	2nd Verification February 10, 2023
MW-505				
Calcium	29.31	32.9	35.8	32.8
MW-506				
Chloride	7.578	9.81	8.42	8.63/8.54**
Sulfate	76.83	96.8	90.8	94.0
MW-510				
Sulfate	18.59	19.7	18.8	21.0
MW-512				
Calcium	111.3	118	110/112**	114/114**
Chloride	5.094	9.69	7.59/7.57**	7.68/7.52**
Total Dissolved Solids	466.4	510	503/516**	519/494**
Sulfate	44.8	115	106/105**	111/110**

*UPL – Upper Prediction Limit
**Duplicate Sample Result

Determination: A statistical evaluation was completed for all Appendix III detection monitoring constituents in accordance with the certified statistical method. The statistical evaluation identified eight SSIs above the background prediction limits. These include calcium at MW-505; chloride and sulfate at MW-506; sulfate at MW-510; and calcium, chloride, sulfate, and total dissolved solids at MW-512.

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

Sibley Generating Station
Determination of Statistically Significant Increases
CCR Landfill
March 20, 2023

ATTACHMENT 1

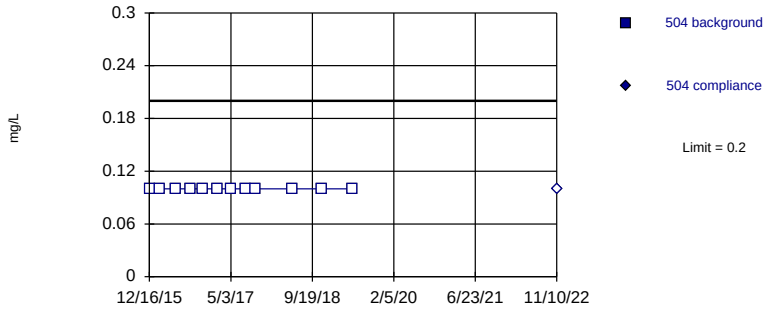
Sanitas™ Output

Sanitas™ v.9.6.36 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.

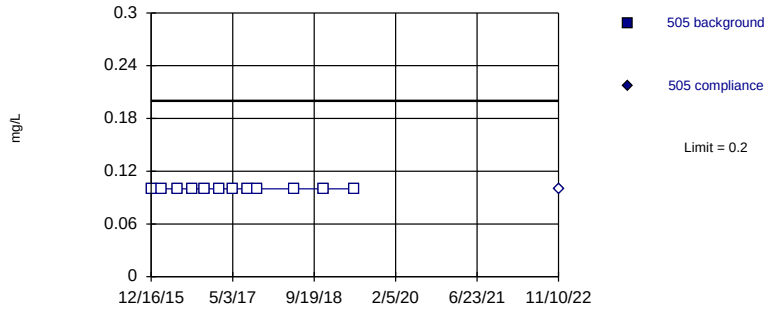
Constituent: Boron Analysis Run 3/10/2023 12:33 PM View: LF III
Sibley Generating Station UWL Client: SCS Engineers Data: Sibley

Sanitas™ v.9.6.36 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.

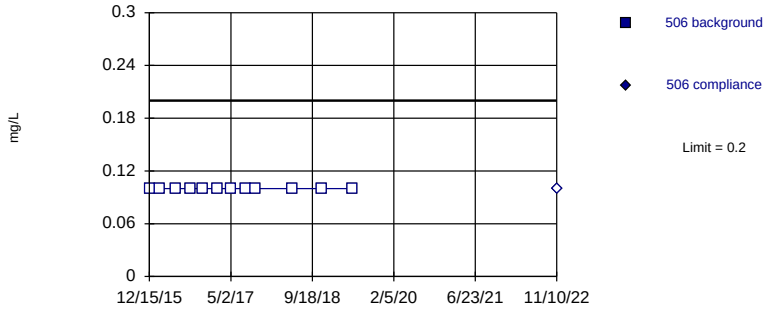
Constituent: Boron Analysis Run 3/10/2023 12:33 PM View: LF III
Sibley Generating Station UWL Client: SCS Engineers Data: Sibley

Sanitas™ v.9.6.36 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.

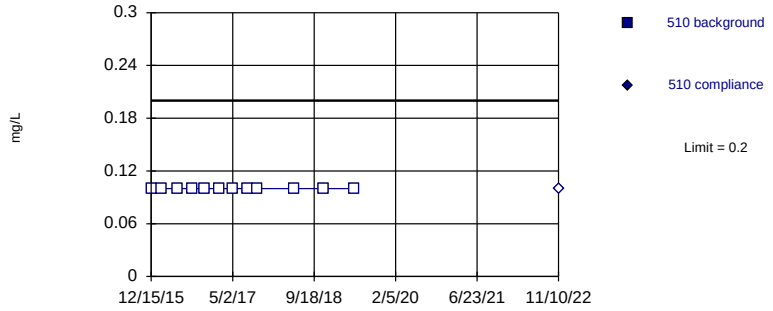
Constituent: Boron Analysis Run 3/10/2023 12:33 PM View: LF III
Sibley Generating Station UWL Client: SCS Engineers Data: Sibley

Sanitas™ v.9.6.36 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 3/10/2023 12:33 PM View: LF III
Sibley Generating Station UWL Client: SCS Engineers Data: Sibley

Prediction Limit

Constituent: Boron Analysis Run 3/10/2023 12:37 PM View: LF III

Sibley Generating Station UWL Client: SCS Engineers Data: Sibley

	504	504	505	505	506	506	510	510
12/15/2015					<0.2		<0.2	
12/16/2015	<0.2		<0.2					
2/18/2016	<0.2		<0.2		<0.2		<0.2	
5/25/2016	<0.2		<0.2		<0.2		<0.2	
8/23/2016	<0.2		<0.2		<0.2		<0.2	
11/10/2016							<0.2	
11/11/2016	<0.2		<0.2		<0.2			
2/8/2017	<0.2		<0.2		<0.2		<0.2	
5/3/2017							<0.2	
5/4/2017	<0.2		<0.2		<0.2			
8/1/2017	<0.2		<0.2				<0.2	
8/4/2017					<0.2			
10/3/2017	<0.2		<0.2		<0.2		<0.2	
5/17/2018	<0.2		<0.2		<0.2		<0.2	
11/15/2018	<0.2		<0.2		<0.2		<0.2	
5/22/2019	<0.2		<0.2		<0.2		<0.2	
11/10/2022		<0.2		<0.2		<0.2		<0.2

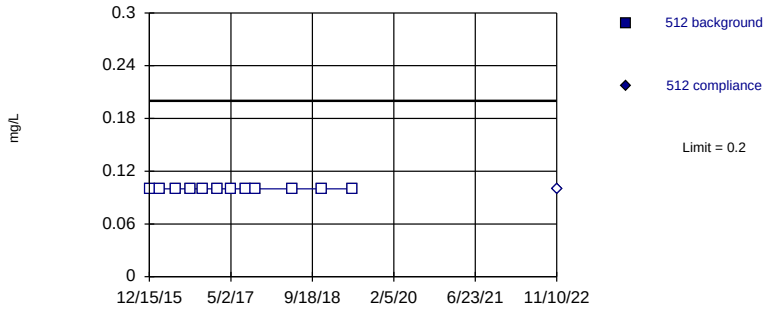
ND substitution: RL/2.

Sanitas™ v.9.6.36 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.

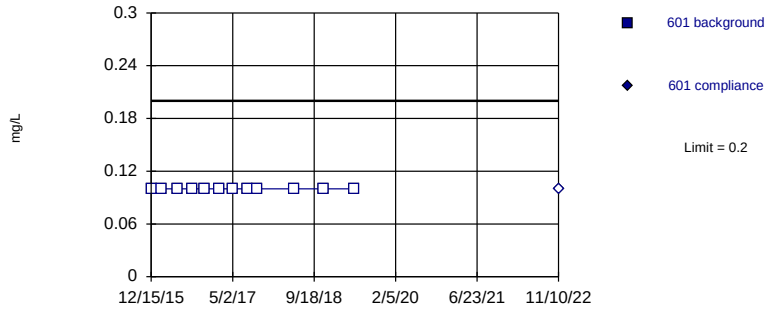
Constituent: Boron Analysis Run 3/10/2023 12:33 PM View: LF III
Sibley Generating Station UWL Client: SCS Engineers Data: Sibley

Sanitas™ v.9.6.36 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.

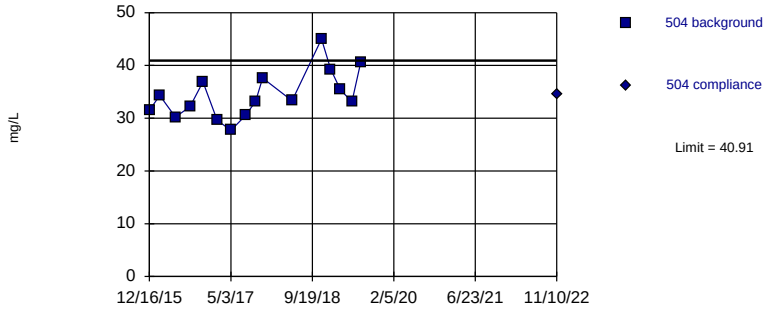
Constituent: Boron Analysis Run 3/10/2023 12:33 PM View: LF III
Sibley Generating Station UWL Client: SCS Engineers Data: Sibley

Sanitas™ v.9.6.36 Software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=34.4, Std. Dev.=4.551, n=16. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9536, critical = 0.844. Kappa = 1.43 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

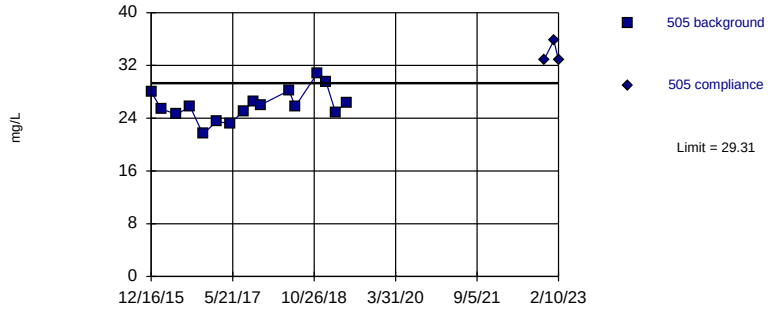
Constituent: Calcium Analysis Run 3/10/2023 12:33 PM View: LF III
Sibley Generating Station UWL Client: SCS Engineers Data: Sibley

Sanitas™ v.9.6.36 Software licensed to SCS Engineers. UG

Exceeds Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=25.96, Std. Dev.=2.346, n=16. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9775, critical = 0.844. Kappa = 1.43 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Calcium Analysis Run 3/10/2023 12:33 PM View: LF III
Sibley Generating Station UWL Client: SCS Engineers Data: Sibley

Prediction Limit

Constituent: Boron, Calcium Analysis Run 3/10/2023 12:37 PM View: LF III

Sibley Generating Station UWL Client: SCS Engineers Data: Sibley

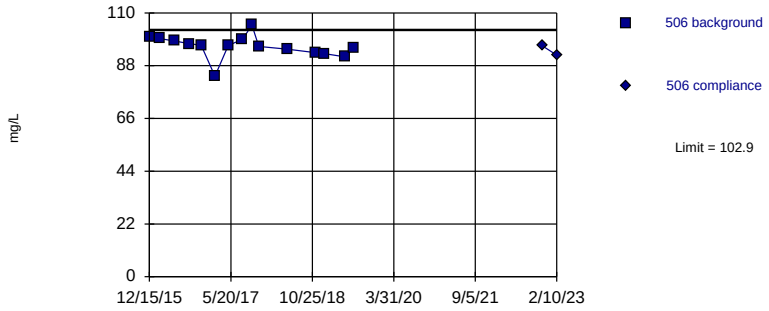
	512	512	601	601	504	504	505	505	
12/15/2015	<0.2		<0.2						
12/16/2015					31.5		28		
2/18/2016	<0.2		<0.2		34.3		25.4		
5/25/2016	<0.2				30.2		24.6		
5/26/2016			<0.2						
8/23/2016	<0.2		<0.2		32.2		25.7		
11/11/2016	<0.2		<0.2		36.9		21.6		
2/8/2017	<0.2		<0.2		29.6		23.5		
5/3/2017	<0.2		<0.2						
5/4/2017					27.7		23.2		
8/1/2017	<0.2		<0.2		30.5		25.1		
10/3/2017	<0.2		<0.2		33.2		26.6		
11/16/2017					37.6		26		
5/17/2018	<0.2		<0.2		33.3		28.2		
6/27/2018							25.8		
11/15/2018	<0.2		<0.2		45		30.8		
1/11/2019					39.3		29.5		
3/12/2019					35.4		24.9		
5/22/2019	<0.2		<0.2		33.1		26.4		
7/16/2019					40.6				
11/10/2022		<0.2		<0.2		34.6		32.9	
1/11/2023								35.8	1st verification
2/10/2023								32.8	2nd verification

ND substitution: RL/2.

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=95.97, Std. Dev.=4.734, n=15. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9252, critical = 0.835. Kappa = 1.458 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Calcium Analysis Run 3/10/2023 12:33 PM View: LF III

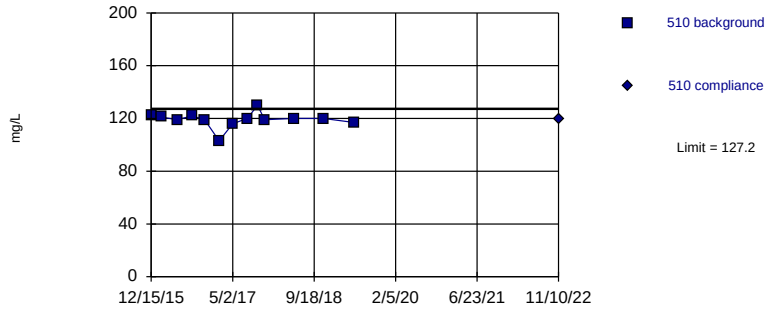
Sibley Generating Station UWL Client: SCS Engineers Data: Sibley

Sanitas™ v.9.6.36 Software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on cube transformation): Mean=1699613, Std. Dev.=238011, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8274, critical = 0.814. Kappa = 1.514 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Calcium Analysis Run 3/10/2023 12:33 PM View: LF III

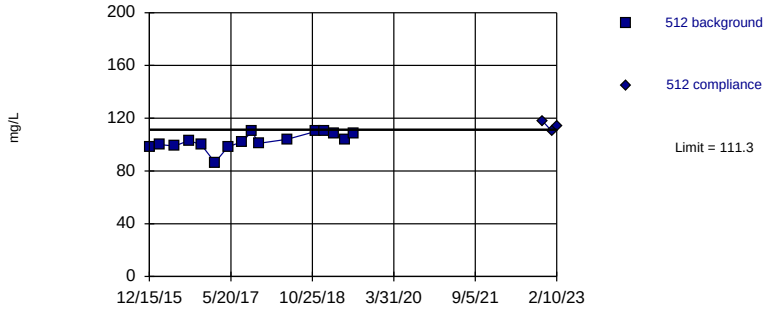
Sibley Generating Station UWL Client: SCS Engineers Data: Sibley

Sanitas™ v.9.6.36 Software licensed to SCS Engineers. UG

Exceeds Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=102.6, Std. Dev.=6.094, n=16. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.892, critical = 0.844. Kappa = 1.43 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Calcium Analysis Run 3/10/2023 12:33 PM View: LF III

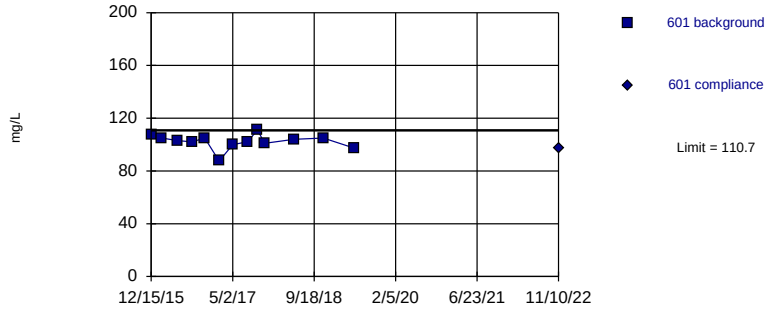
Sibley Generating Station UWL Client: SCS Engineers Data: Sibley

Sanitas™ v.9.6.36 Software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=102.3, Std. Dev.=5.577, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8789, critical = 0.814. Kappa = 1.514 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Calcium Analysis Run 3/10/2023 12:33 PM View: LF III

Sibley Generating Station UWL Client: SCS Engineers Data: Sibley

Prediction Limit

Constituent: Calcium Analysis Run 3/10/2023 12:37 PM View: LF III

Sibley Generating Station UWL Client: SCS Engineers Data: Sibley

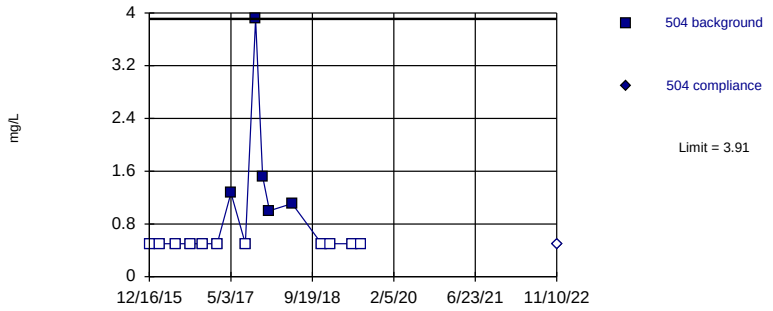
	506	506	510	510	512	512	601	601
12/15/2015	100		122		98.1		107	
2/18/2016	99.3		121		100		105	
5/25/2016	98.3		119		98.9			
5/26/2016							103	
8/23/2016	97.2		122		103		102	
11/10/2016			119					
11/11/2016	96.5				100		105	
2/8/2017	83.6		103		86.4		87.5	
5/3/2017			116		98.4		100	
5/4/2017	96.4							
8/1/2017			120		102		102	
8/4/2017	99							
10/3/2017	105		130		110		111	
11/16/2017	96		119		101		101	
5/17/2018	94.9		120		104		104	
11/15/2018	93.4		120		110		105	
1/11/2019	93				110			
3/12/2019					108			
5/22/2019	91.7		117		104		97.4	
7/16/2019	95.3				108			
11/10/2022		96.2		120		118		97.4
1/11/2023						110	1st verification	
2/10/2023		92.4	extra sample			114	2nd verification	

Sanitas™ v.9.6.36 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%. Limit is highest of 16 background values. 68.75% NDs. 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.

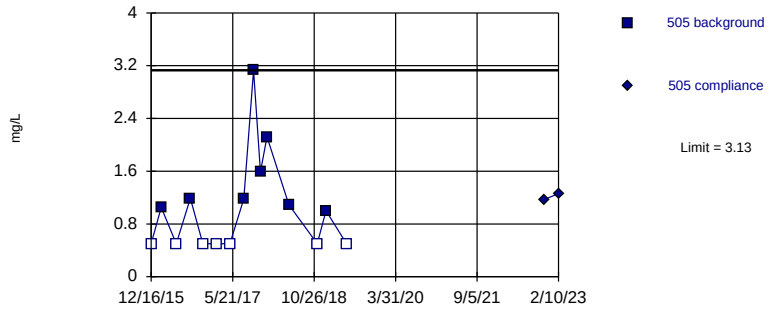
Constituent: Chloride Analysis Run 3/10/2023 12:33 PM View: LF III
Sibley Generating Station UWL Client: SCS Engineers Data: Sibley

Sanitas™ v.9.6.36 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 the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 15 background values. 46.67% NDs. Well-constituent pair annual alpha = 0.002624. Individual comparison alpha = 0.001313 (1 of 3). Seasonality was not detected with 95% confidence.

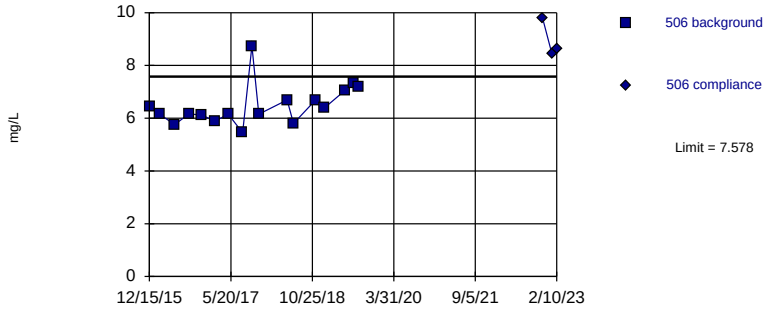
Constituent: Chloride Analysis Run 3/10/2023 12:33 PM View: LF III
Sibley Generating Station UWL Client: SCS Engineers Data: Sibley

Sanitas™ v.9.6.36 Software licensed to SCS Engineers. UG

Exceeds Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=6.479, Std. Dev.=0.7774, n=17. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8712, critical = 0.851. Kappa = 1.413 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

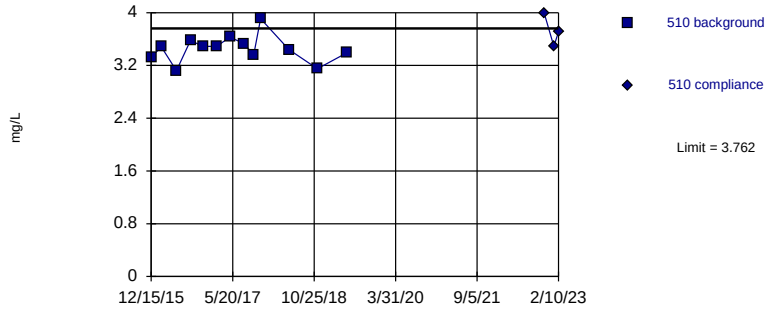
Constituent: Chloride Analysis Run 3/10/2023 12:33 PM View: LF III
Sibley Generating Station UWL Client: SCS Engineers Data: Sibley

Sanitas™ v.9.6.36 Software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=3.454, Std. Dev.=0.2034, n=13. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9481, critical = 0.814. Kappa = 1.514 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Chloride Analysis Run 3/10/2023 12:33 PM View: LF III
Sibley Generating Station UWL Client: SCS Engineers Data: Sibley

Prediction Limit

Constituent: Chloride Analysis Run 3/10/2023 12:37 PM View: LF III

Sibley Generating Station UWL Client: SCS Engineers Data: Sibley

	504	504	505	505	506	506	510	510
12/15/2015					6.45		3.33	
12/16/2015	<1		<1					
2/18/2016	<1		1.05		6.15		3.48	
5/25/2016	<1		<1		5.76		3.12	
8/23/2016	<1		1.19		6.16		3.58	
11/10/2016							3.49	
11/11/2016	<1		<1		6.13			
2/8/2017	<1		<1		5.89		3.49	
5/3/2017							3.63	
5/4/2017	1.27		<1		6.15			
8/1/2017	<1		1.18				3.53	
8/4/2017					5.45			
10/3/2017	3.91		3.13		8.74		3.36	
11/16/2017	1.52		1.59		6.15		3.91	
12/28/2017	1		2.12					
5/17/2018	1.11		1.09		6.69		3.44	
6/27/2018					5.8			
11/15/2018	<1		<1		6.69		3.15	
1/11/2019	<1		1		6.39			
5/22/2019	<1		<1		7.05		3.39	
7/16/2019	<1				7.33			
8/21/2019					7.17			
11/10/2022		<1		1.17		9.81		3.99
1/11/2023						8.42	1st verification	3.49
2/10/2023				1.26 extra sample		8.63	2nd verification	3.71

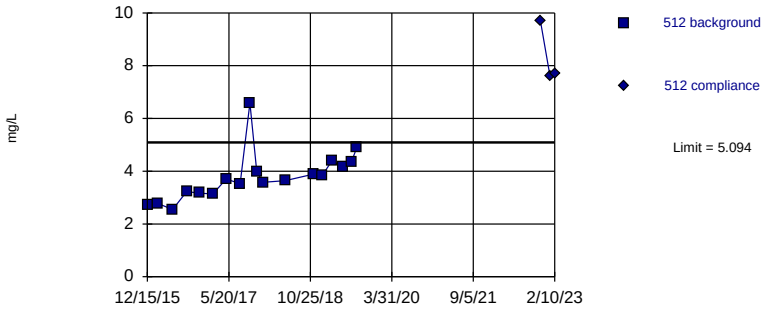
1st verification
extra sample

ND substitution: RL/2.

Exceeds Limit

Prediction Limit

Intrawell Parametric



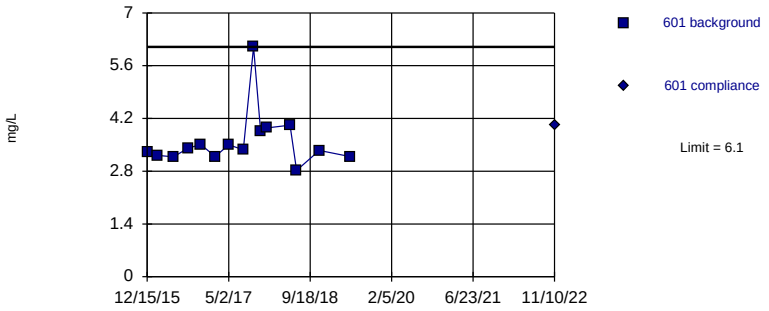
Background Data Summary: Mean=3.786, Std. Dev.=0.9366, n=18. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8846, critical = 0.858. Kappa = 1.396 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Chloride Analysis Run 3/10/2023 12:33 PM View: LF III
Sibley Generating Station UWL Client: SCS Engineers Data: Sibley

Within Limit

Prediction Limit

Intrawell Non-parametric



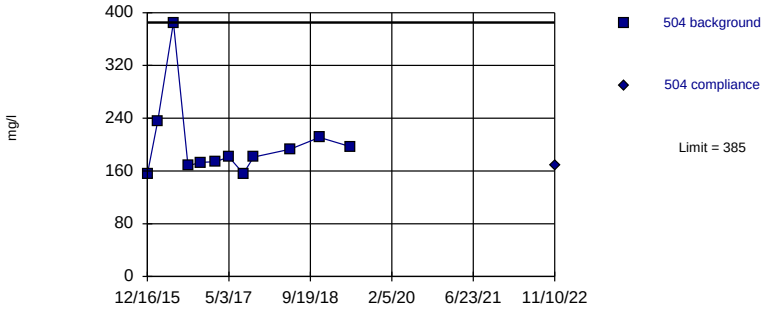
Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 15 background values. Well-constituent pair annual alpha = 0.002624. Individual comparison alpha = 0.001313 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Chloride Analysis Run 3/10/2023 12:33 PM View: LF III
Sibley Generating Station UWL Client: SCS Engineers Data: Sibley

Within Limit

Prediction Limit

Intrawell Non-parametric



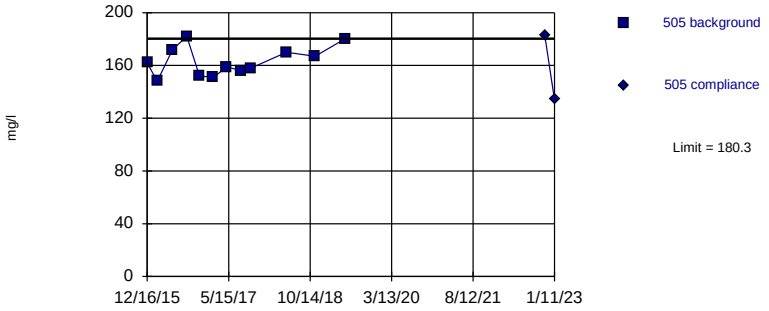
Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 12 background values. Well-constituent pair annual alpha = 0.004342. Individual comparison alpha = 0.002173 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Dissolved Solids Analysis Run 3/10/2023 12:33 PM View: LF III
Sibley Generating Station UWL Client: SCS Engineers Data: Sibley

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=163.1, Std. Dev.=11.19, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9461, critical = 0.805. Kappa = 1.542 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Dissolved Solids Analysis Run 3/10/2023 12:33 PM View: LF III
Sibley Generating Station UWL Client: SCS Engineers Data: Sibley

Prediction Limit

Constituent: Chloride, Dissolved Solids Analysis Run 3/10/2023 12:37 PM View: LF III

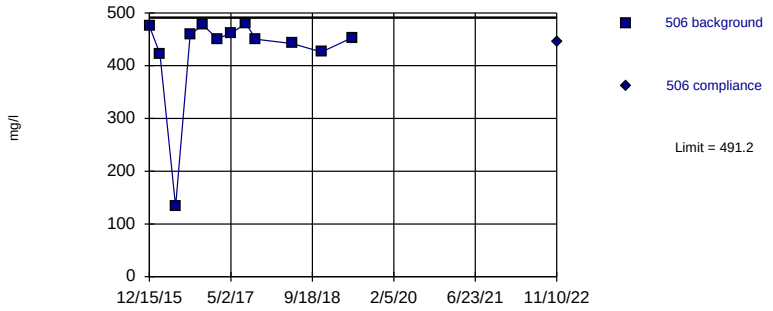
Sibley Generating Station UWL Client: SCS Engineers Data: Sibley

	512	512		601	601	504	504	505	505
12/15/2015	2.72			3.3					
12/16/2015						155		162	
2/18/2016	2.78			3.22		236		148	
5/25/2016	2.55					385		172	
5/26/2016				3.18					
8/23/2016	3.23			3.41		168		182	
11/11/2016	3.17			3.51		173		152	
2/8/2017	3.14			3.19		174		151	
5/3/2017	3.7			3.5					
5/4/2017						181		159	
8/1/2017	3.53			3.37		156		156	
10/3/2017	6.59			6.1		181		158	
11/16/2017	3.97			3.87					
12/28/2017	3.58			3.95					
5/17/2018	3.64			4.02		193		170	
6/27/2018				2.82					
11/15/2018	3.89			3.35		211		167	
1/11/2019	3.85								
3/12/2019	4.38								
5/22/2019	4.17			3.19		197		180	
7/16/2019	4.35								
8/21/2019	4.91								
11/10/2022		9.69			4.03		168		183
1/11/2023		7.59	1st verification						134
2/10/2023		7.68	2nd verification						

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on x^5 transformation): Mean=1.8e13, Std. Dev.=6.8e12, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8456, critical = 0.805. Kappa = 1.542 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Dissolved Solids Analysis Run 3/10/2023 12:33 PM View: LF III

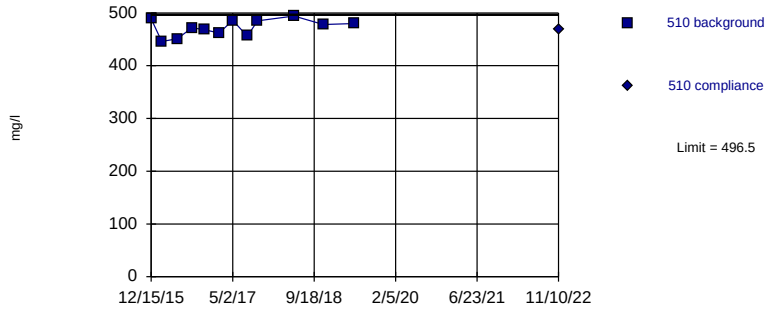
Sibley Generating Station UWL Client: SCS Engineers Data: Sibley

Sanitas™ v.9.6.36 Software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=472.3, Std. Dev.=15.74, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.95, critical = 0.805. Kappa = 1.542 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Dissolved Solids Analysis Run 3/10/2023 12:33 PM View: LF III

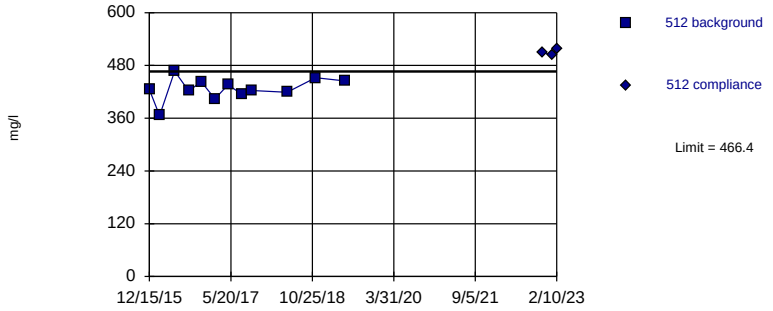
Sibley Generating Station UWL Client: SCS Engineers Data: Sibley

Sanitas™ v.9.6.36 Software licensed to SCS Engineers. UG

Exceeds Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=426.3, Std. Dev.=25.95, n=12. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9454, critical = 0.805. Kappa = 1.542 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Dissolved Solids Analysis Run 3/10/2023 12:33 PM View: LF III

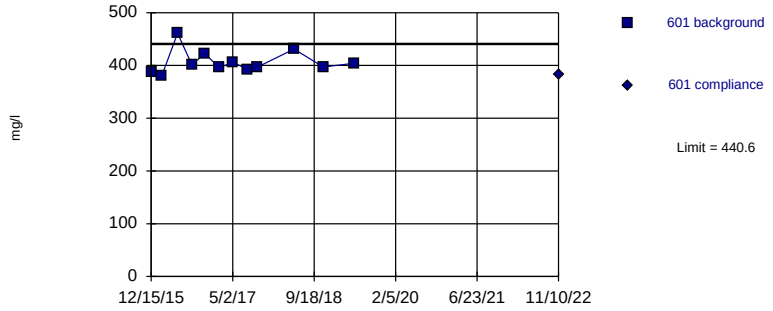
Sibley Generating Station UWL Client: SCS Engineers Data: Sibley

Sanitas™ v.9.6.36 Software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=406.3, Std. Dev.=22.23, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8601, critical = 0.805. Kappa = 1.542 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Dissolved Solids Analysis Run 3/10/2023 12:33 PM View: LF III

Sibley Generating Station UWL Client: SCS Engineers Data: Sibley

Prediction Limit

Constituent: Dissolved Solids Analysis Run 3/10/2023 12:37 PM View: LF III

Sibley Generating Station UWL Client: SCS Engineers Data: Sibley

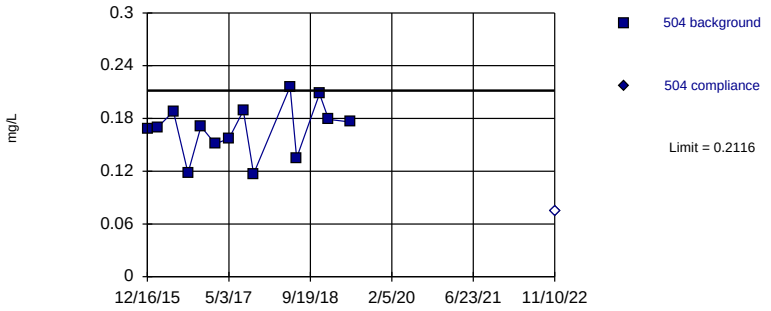
	506	506	510	510	512	512	601	601
12/15/2015	475		489		425		387	
2/18/2016	423		446		366		380	
5/25/2016	133		451		467			
5/26/2016							461	
8/23/2016	459		472		422		401	
11/10/2016			468					
11/11/2016	477				443		423	
2/8/2017	451		462		404		396	
5/3/2017			486		436		406	
5/4/2017	462							
8/1/2017			456		414		393	
8/4/2017	480							
10/3/2017	450		485		423		397	
5/17/2018	442		494		419		431	
11/15/2018	426		478		452		397	
5/22/2019	453		480		445		404	
11/10/2022		446		468		510		383
1/11/2023						503	1st verification	
2/10/2023						519	2nd verification	

Sanitas™ v.9.6.36 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.1674, Std. Dev.=0.02979, n=14. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.958, critical = 0.825. Kappa = 1.486 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

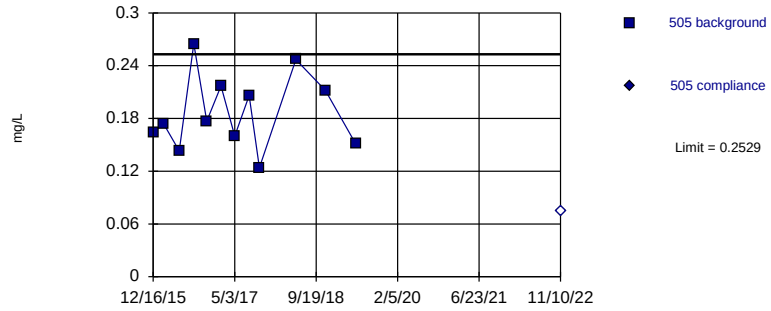
Constituent: Fluoride Analysis Run 3/10/2023 12:33 PM View: LF III
Sibley Generating Station UWL Client: SCS Engineers Data: Sibley

Sanitas™ v.9.6.36 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.1867, Std. Dev.=0.04296, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9585, critical = 0.805. Kappa = 1.542 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

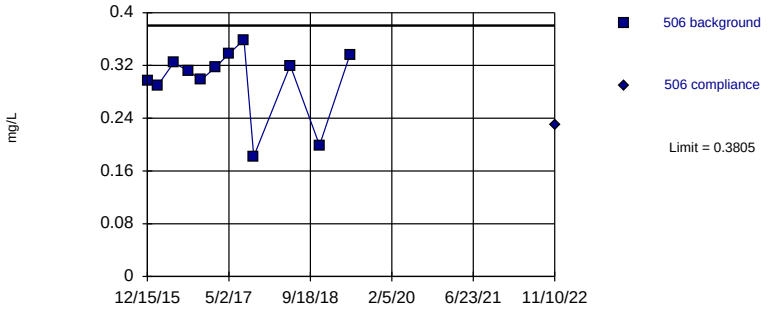
Constituent: Fluoride Analysis Run 3/10/2023 12:33 PM View: LF III
Sibley Generating Station UWL Client: SCS Engineers Data: Sibley

Sanitas™ v.9.6.36 Software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.2976, Std. Dev.=0.05377, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8104, critical = 0.805. Kappa = 1.542 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

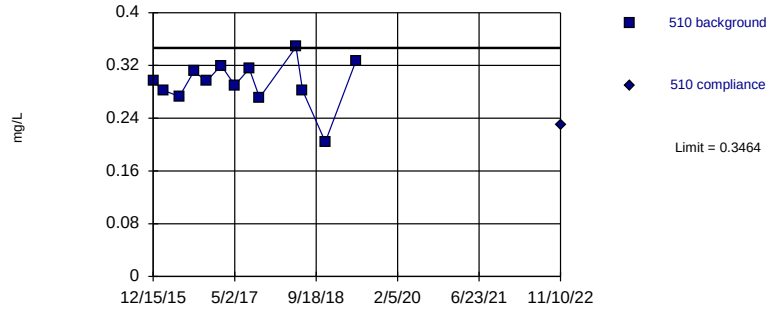
Constituent: Fluoride Analysis Run 3/10/2023 12:33 PM View: LF III
Sibley Generating Station UWL Client: SCS Engineers Data: Sibley

Sanitas™ v.9.6.36 Software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.2934, Std. Dev.=0.03503, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9129, critical = 0.814. Kappa = 1.514 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Fluoride Analysis Run 3/10/2023 12:33 PM View: LF III
Sibley Generating Station UWL Client: SCS Engineers Data: Sibley

Prediction Limit

Constituent: Fluoride Analysis Run 3/10/2023 12:37 PM View: LF III

Sibley Generating Station UWL Client: SCS Engineers Data: Sibley

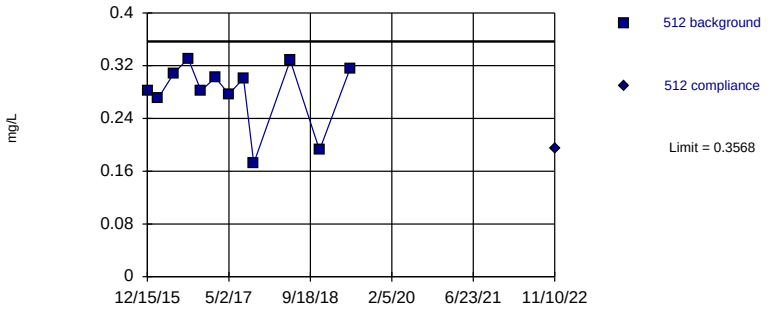
	504	504	505	505	506	506	510	510
12/15/2015					0.296		0.296	
12/16/2015	0.168		0.164					
2/18/2016	0.17		0.174		0.29		0.282	
5/25/2016	0.188		0.143		0.324		0.273	
8/23/2016	0.118		0.265		0.312		0.311	
11/10/2016							0.296	
11/11/2016	0.171		0.177		0.298			
2/8/2017	0.151		0.217		0.317		0.32	
5/3/2017							0.29	
5/4/2017	0.157		0.16		0.338			
8/1/2017	0.189		0.206				0.315	
8/4/2017					0.359			
10/3/2017	0.117		0.124		0.182		0.271	
5/17/2018	0.216		0.247		0.32		0.348	
6/27/2018	0.135						0.282	
11/15/2018	0.208		0.212		0.199		0.204	
1/11/2019	0.179							
5/22/2019	0.176		0.151		0.336		0.326	
11/10/2022		<0.15		<0.15		0.229		0.229

ND substitution: RL/2.

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.2799, Std. Dev.=0.04987, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8252, critical = 0.805. Kappa = 1.542 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

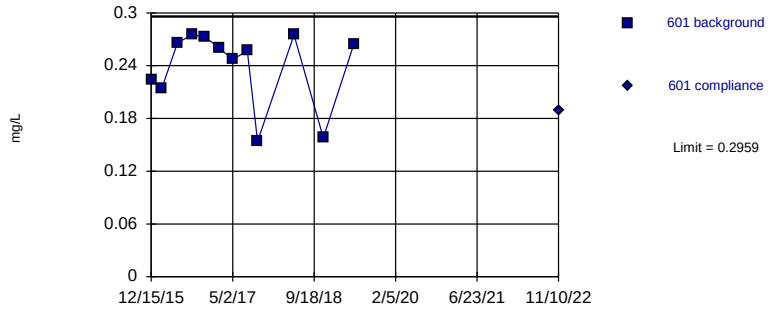
Constituent: Fluoride Analysis Run 3/10/2023 12:33 PM View: LF III
Sibley Generating Station UWL Client: SCS Engineers Data: Sibley

Sanitas™ v.9.6.36 Software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on square transformation): Mean=0.0588, Std. Dev.=0.01866, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8225, critical = 0.805. Kappa = 1.542 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

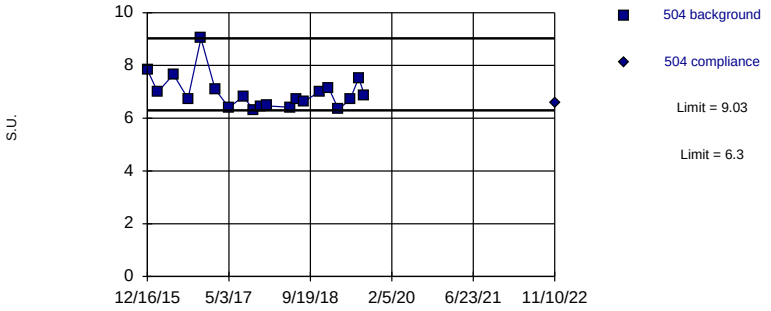
Constituent: Fluoride Analysis Run 3/10/2023 12:33 PM View: LF III
Sibley Generating Station UWL Client: SCS Engineers Data: Sibley

Sanitas™ v.9.6.36 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 20 background values. Well-constituent pair annual alpha = 0.00225. Individual comparison alpha = 0.001125 (1 of 3). Seasonality was not detected with 95% confidence.

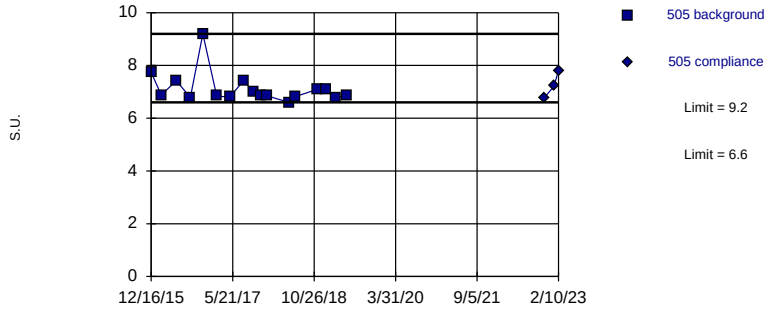
Constituent: pH Analysis Run 3/10/2023 12:33 PM View: LF III
Sibley Generating Station UWL Client: SCS Engineers Data: Sibley

Sanitas™ v.9.6.36 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 17 background values. Well-constituent pair annual alpha = 0.003639. Individual comparison alpha = 0.00182 (1 of 3). Seasonality was not detected with 95% confidence.

Constituent: pH Analysis Run 3/10/2023 12:33 PM View: LF III
Sibley Generating Station UWL Client: SCS Engineers Data: Sibley

Prediction Limit

Constituent: Fluoride, pH Analysis Run 3/10/2023 12:37 PM View: LF III

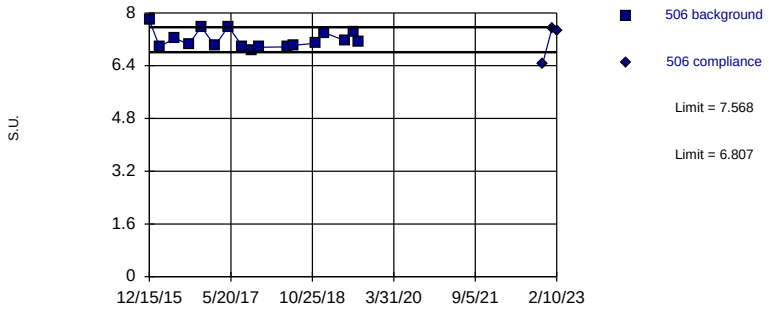
Sibley Generating Station UWL Client: SCS Engineers Data: Sibley

	512	512	601	601	504	504	505	505	
12/15/2015	0.281		0.224						
12/16/2015					7.83		7.74		
2/18/2016	0.27		0.214		6.99		6.88		
5/25/2016	0.308				7.66		7.42		
5/26/2016			0.266						
8/23/2016	0.331		0.275		6.74		6.79		
11/11/2016	0.282		0.273		9.03		9.2		
2/8/2017	0.302		0.26		7.09		6.84		
5/3/2017	0.277		0.247						
5/4/2017					6.4		6.8		
8/1/2017	0.301		0.257		6.83		7.44		
10/3/2017	0.172		0.154		6.3		6.98		
11/16/2017					6.45		6.84		
12/28/2017					6.47		6.85		
5/17/2018	0.328		0.275		6.41		6.6		
6/27/2018					6.7		6.82		
8/8/2018					6.62				
11/15/2018	0.192		0.158		7.01		7.09		
1/11/2019					7.15		7.08		
3/12/2019					6.34		6.78		
5/22/2019	0.315		0.264		6.7		6.85		
7/16/2019					7.53				
8/21/2019					6.85				
11/10/2022		0.195		0.189		6.58		6.77	
1/11/2023								7.21	extra sample
2/10/2023								7.81	extra sample

Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.188, Std. Dev.=0.2694, n=17. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8664, critical = 0.851. Kappa = 1.413 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

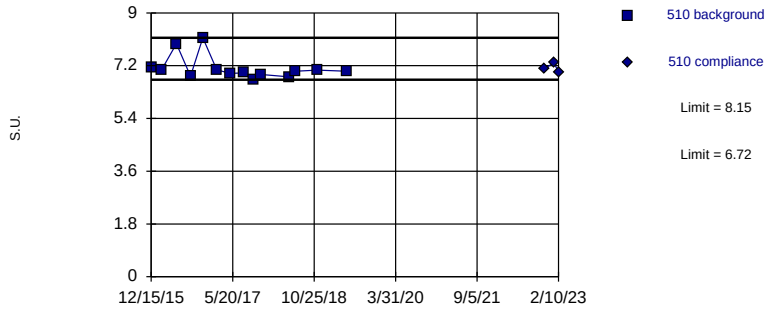
Constituent: pH Analysis Run 3/10/2023 12:33 PM View: LF III

Sibley Generating Station UWL Client: SCS Engineers Data: Sibley

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 14 background values. Well-constituent pair annual alpha = 0.006393. Individual comparison alpha = 0.003199 (1 of 3). Seasonality was not detected with 95% confidence.

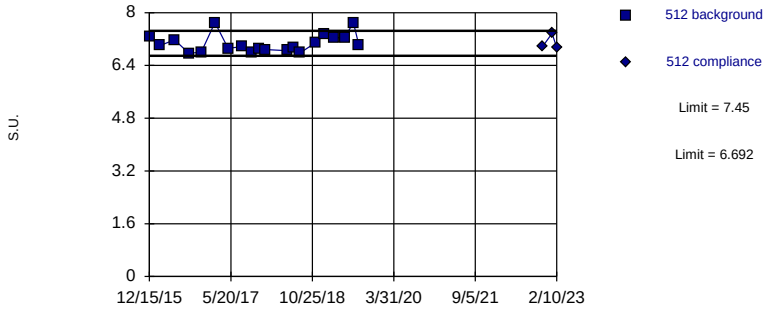
Constituent: pH Analysis Run 3/10/2023 12:33 PM View: LF III

Sibley Generating Station UWL Client: SCS Engineers Data: Sibley

Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.071, Std. Dev.=0.2785, n=20. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8734, critical = 0.868. Kappa = 1.362 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

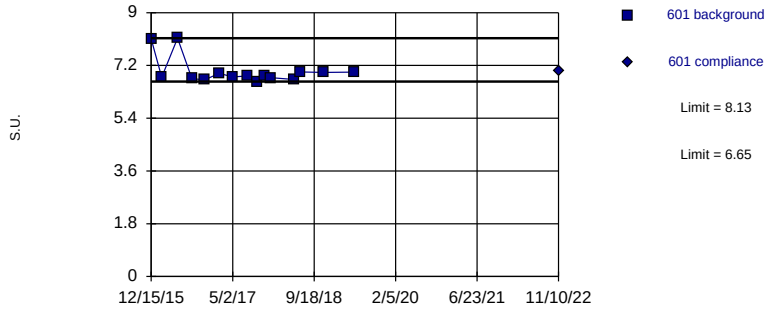
Constituent: pH Analysis Run 3/10/2023 12:33 PM View: LF III

Sibley Generating Station UWL Client: SCS Engineers Data: Sibley

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 3/10/2023 12:33 PM View: LF III

Sibley Generating Station UWL Client: SCS Engineers Data: Sibley

Prediction Limit

Constituent: pH Analysis Run 3/10/2023 12:37 PM View: LF III

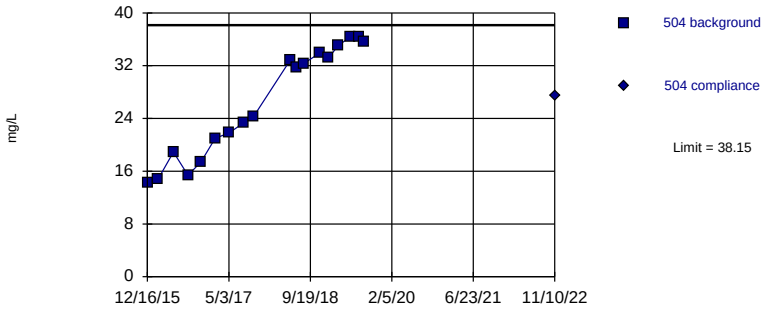
Sibley Generating Station UWL Client: SCS Engineers Data: Sibley

	506	506	510	510	512	512	601	601
12/15/2015	7.78		7.14		7.29		8.11	
2/18/2016	6.97		7.05		7		6.8	
5/25/2016	7.24		7.95		7.18			
5/26/2016							8.13	
8/23/2016	7.04		6.84		6.77		6.75	
11/10/2016			8.15					
11/11/2016	7.58				6.8		6.71	
2/8/2017	7		7.06		7.7		6.93	
5/3/2017			6.94		6.92			
5/4/2017	7.59						6.81	
8/1/2017			6.95		6.97		6.84	
8/4/2017	6.98							
10/3/2017	6.88		6.72		6.79		6.65	
11/16/2017	6.96		6.9		6.92		6.84	
12/28/2017					6.88		6.78	
5/17/2018	6.97		6.82		6.85		6.72	
6/27/2018	7.02		7.01		6.95		6.98	
8/8/2018					6.78			
11/15/2018	7.08		7.05		7.09		6.96	
1/11/2019	7.4				7.34			
3/12/2019					7.23			
5/22/2019	7.16		7.01		7.25		6.97	
7/16/2019	7.43				7.7			
8/21/2019	7.11				7.01			
11/10/2022		6.44		7.08		6.97		7.02
1/11/2023		7.54 extra sample		7.31 extra sample		7.37 extra sample		
2/10/2023		7.45 extra sample		6.97 extra sample		6.94 extra sample		

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=26.58, Std. Dev.=8.293, n=18. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8677, critical = 0.858. Kappa = 1.396 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Sulfate Analysis Run 3/10/2023 12:33 PM View: LF III

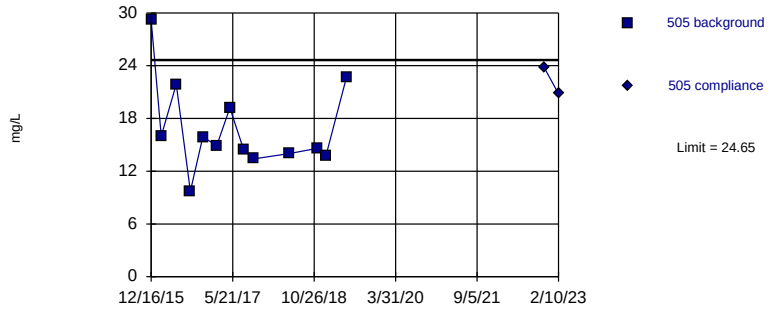
Sibley Generating Station UWL Client: SCS Engineers Data: Sibley

Sanitas™ v.9.6.36 Software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=16.9, Std. Dev.=5.117, n=13. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8783, critical = 0.814. Kappa = 1.514 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Sulfate Analysis Run 3/10/2023 12:33 PM View: LF III

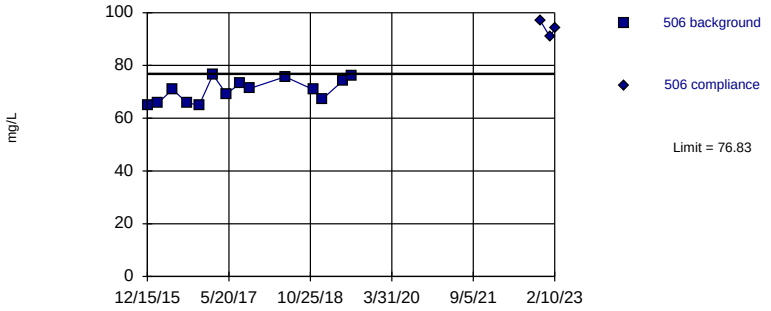
Sibley Generating Station UWL Client: SCS Engineers Data: Sibley

Sanitas™ v.9.6.36 Software licensed to SCS Engineers. UG

Exceeds Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=70.47, Std. Dev.=4.276, n=14. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9125, critical = 0.825. Kappa = 1.486 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Sulfate Analysis Run 3/10/2023 12:33 PM View: LF III

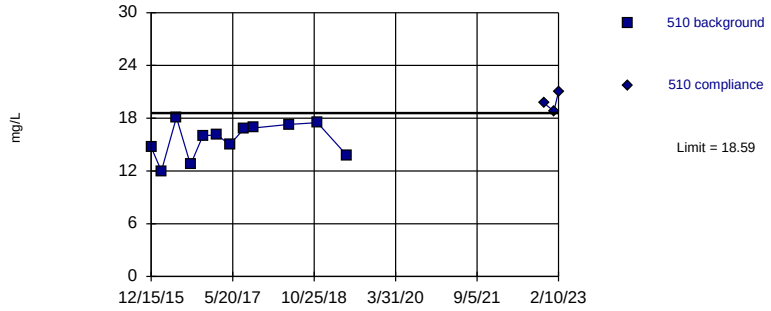
Sibley Generating Station UWL Client: SCS Engineers Data: Sibley

Sanitas™ v.9.6.36 Software licensed to SCS Engineers. UG

Exceeds Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=15.58, Std. Dev.=1.955, n=12. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9362, critical = 0.805. Kappa = 1.542 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Sulfate Analysis Run 3/10/2023 12:33 PM View: LF III

Sibley Generating Station UWL Client: SCS Engineers Data: Sibley

Prediction Limit

Constituent: Sulfate Analysis Run 3/10/2023 12:37 PM View: LF III

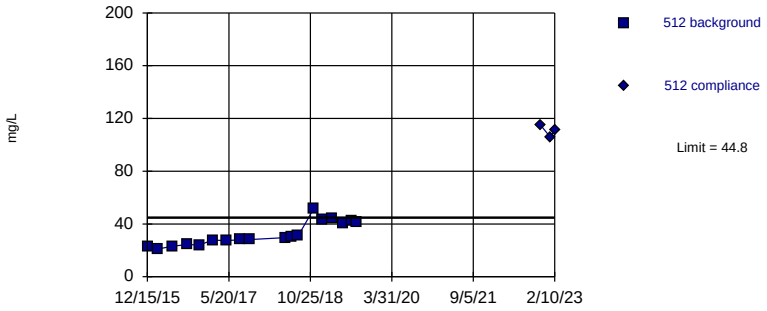
Sibley Generating Station UWL Client: SCS Engineers Data: Sibley

	504	504	505	505	506	506	510	510
12/15/2015					64.8		14.7	
12/16/2015	14.3		29.2					
2/18/2016	14.7		16		65.6		12	
5/25/2016	18.9		21.9		71		18.1	
8/23/2016	15.4		9.73		65.8		12.7	
11/10/2016							16	
11/11/2016	17.4		15.9		65			
2/8/2017	21		14.9		76.5		16.1	
5/3/2017							15	
5/4/2017	21.8		19.2		69.2			
8/1/2017	23.3		14.4				16.8	
8/4/2017					73.3			
10/3/2017	24.3		13.4		71.3		16.9	
5/17/2018	32.8		14		75.7		17.3	
6/27/2018	31.8							
8/8/2018	32.3							
11/15/2018	33.9		14.6		70.8		17.5	
1/11/2019	33.2		13.8		67.3			
3/12/2019	35.1							
5/22/2019	36.3		22.7		74.2		13.8	
7/16/2019	36.3				76.1			
8/21/2019	35.6							
11/10/2022		27.4		23.8		96.8		19.7
1/11/2023						90.8 1st Verification		18.8 1st Verification
2/10/2023				20.8 Extra Sample		94 2nd Verificatioin		21 2nd Verification

Exceeds Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=32.21, Std. Dev.=9.019, n=18. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8926, critical = 0.858. Kappa = 1.396 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Sulfate Analysis Run 3/10/2023 12:33 PM View: LF III

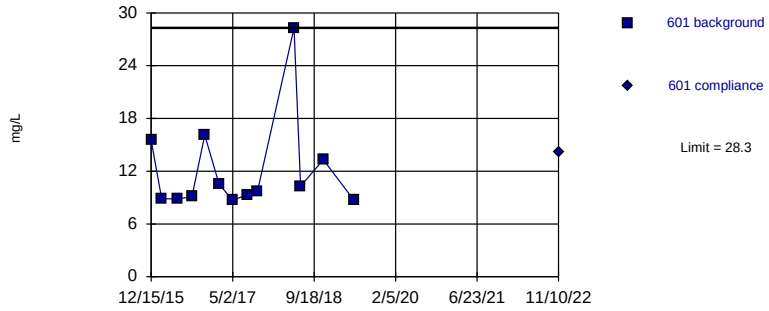
Sibley Generating Station UWL Client: SCS Engineers Data: Sibley

Sanitas™ v.9.6.36 Software licensed to SCS Engineers. UG

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 13 background values. Well-constituent pair annual alpha = 0.003769. Individual comparison alpha = 0.001886 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Sulfate Analysis Run 3/10/2023 12:33 PM View: LF III

Sibley Generating Station UWL Client: SCS Engineers Data: Sibley

Prediction Limit

Constituent: Sulfate Analysis Run 3/10/2023 12:37 PM View: LF III

Sibley Generating Station UWL Client: SCS Engineers Data: Sibley

	512	512	601	601	
12/15/2015	23		15.5		
2/18/2016	21		8.87		
5/25/2016	23.1				
5/26/2016			8.85		
8/23/2016	24.4		9.11		
11/11/2016	24		16.1		
2/8/2017	27.8		10.5		
5/3/2017	27.3		8.71		
8/1/2017	28.1		9.33		
10/3/2017	28.2		9.76		
5/17/2018	29.6		28.3		
6/27/2018	30.3		10.3		
8/8/2018	30.9				
11/15/2018	51.4		13.3		
1/11/2019	43.3				
3/12/2019	44.2				
5/22/2019	40.1		8.74		
7/16/2019	42.1				
8/21/2019	41				
11/10/2022		115		14.2	
1/11/2023		106	1st Verification		
2/10/2023		111	2nd Verificatioin		

Prediction Limit

Sibley Generating Station UWL Client: SCS Engineers Data: Sibley Printed 3/10/2023, 12:37 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
Boron (mg/L)	504	0.2	n/a	11/10/2022	0.1ND	No	12	100	n/a	0.002173	NP Intra (NDs) 1 of 3
Boron (mg/L)	505	0.2	n/a	11/10/2022	0.1ND	No	12	100	n/a	0.002173	NP Intra (NDs) 1 of 3
Boron (mg/L)	506	0.2	n/a	11/10/2022	0.1ND	No	12	100	n/a	0.002173	NP Intra (NDs) 1 of 3
Boron (mg/L)	510	0.2	n/a	11/10/2022	0.1ND	No	12	100	n/a	0.002173	NP Intra (NDs) 1 of 3
Boron (mg/L)	512	0.2	n/a	11/10/2022	0.1ND	No	12	100	n/a	0.002173	NP Intra (NDs) 1 of 3
Boron (mg/L)	601	0.2	n/a	11/10/2022	0.1ND	No	12	100	n/a	0.002173	NP Intra (NDs) 1 of 3
Calcium (mg/L)	504	40.91	n/a	11/10/2022	34.6	No	16	0	No	0.00188	Param Intra 1 of 3
Calcium (mg/L)	**505**	**29.31**	**n/a**	**2/10/2023**	**32.8**	**Yes**	**16**	**0**	**No**	**0.00188**	**Param Intra 1 of 3**
Calcium (mg/L)	506	102.9	n/a	2/10/2023	92.4	No	15	0	No	0.00188	Param Intra 1 of 3
Calcium (mg/L)	510	127.2	n/a	11/10/2022	120	No	13	0	x^3	0.00188	Param Intra 1 of 3
Calcium (mg/L)	**512**	**111.3**	**n/a**	**2/10/2023**	**114**	**Yes**	**16**	**0**	**No**	**0.00188**	**Param Intra 1 of 3**
Calcium (mg/L)	601	110.7	n/a	11/10/2022	97.4	No	13	0	No	0.00188	Param Intra 1 of 3
Chloride (mg/L)	504	3.91	n/a	11/10/2022	0.5ND	No	16	68.75	n/a	0.001026	NP Intra (NDs) 1 of 3
Chloride (mg/L)	505	3.13	n/a	2/10/2023	1.26	No	15	46.67	n/a	0.001313	NP Intra (normality) ...
Chloride (mg/L)	**506**	**7.578**	**n/a**	**2/10/2023**	**8.63**	**Yes**	**17**	**0**	**No**	**0.00188**	**Param Intra 1 of 3**
Chloride (mg/L)	510	3.762	n/a	2/10/2023	3.71	No	13	0	No	0.00188	Param Intra 1 of 3
Chloride (mg/L)	**512**	**5.094**	**n/a**	**2/10/2023**	**7.68**	**Yes**	**18**	**0**	**No**	**0.00188**	**Param Intra 1 of 3**
Chloride (mg/L)	601	6.1	n/a	11/10/2022	4.03	No	15	0	n/a	0.001313	NP Intra (normality) ...
Dissolved Solids (mg/l)	504	385	n/a	11/10/2022	168	No	12	0	n/a	0.002173	NP Intra (normality) ...
Dissolved Solids (mg/l)	505	180.3	n/a	1/11/2023	134	No	12	0	No	0.00188	Param Intra 1 of 3
Dissolved Solids (mg/l)	506	491.2	n/a	11/10/2022	446	No	12	0	x^5	0.00188	Param Intra 1 of 3
Dissolved Solids (mg/l)	510	496.5	n/a	11/10/2022	468	No	12	0	No	0.00188	Param Intra 1 of 3
Dissolved Solids (mg/l)	**512**	**466.4**	**n/a**	**2/10/2023**	**519**	**Yes**	**12**	**0**	**No**	**0.00188**	**Param Intra 1 of 3**
Dissolved Solids (mg/l)	601	440.6	n/a	11/10/2022	383	No	12	0	No	0.00188	Param Intra 1 of 3
Fluoride (mg/L)	504	0.2116	n/a	11/10/2022	0.075ND	No	14	0	No	0.00188	Param Intra 1 of 3
Fluoride (mg/L)	505	0.2529	n/a	11/10/2022	0.075ND	No	12	0	No	0.00188	Param Intra 1 of 3
Fluoride (mg/L)	506	0.3805	n/a	11/10/2022	0.229	No	12	0	No	0.00188	Param Intra 1 of 3
Fluoride (mg/L)	510	0.3464	n/a	11/10/2022	0.229	No	13	0	No	0.00188	Param Intra 1 of 3
Fluoride (mg/L)	512	0.3568	n/a	11/10/2022	0.195	No	12	0	No	0.00188	Param Intra 1 of 3
Fluoride (mg/L)	601	0.2959	n/a	11/10/2022	0.189	No	12	0	x^2	0.00188	Param Intra 1 of 3
pH (S.U.)	504	9.03	6.3	11/10/2022	6.58	No	20	0	n/a	0.001125	NP Intra (normality) ...
pH (S.U.)	505	9.2	6.6	2/10/2023	7.81	No	17	0	n/a	0.00182	NP Intra (normality) ...
pH (S.U.)	506	7.568	6.807	2/10/2023	7.45	No	17	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	510	8.15	6.72	2/10/2023	6.97	No	14	0	n/a	0.003199	NP Intra (normality) ...
pH (S.U.)	512	7.45	6.692	2/10/2023	6.94	No	20	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	601	8.13	6.65	11/10/2022	7.02	No	15	0	n/a	0.002625	NP Intra (normality) ...
Sulfate (mg/L)	504	38.15	n/a	11/10/2022	27.4	No	18	0	No	0.00188	Param Intra 1 of 3
Sulfate (mg/L)	505	24.65	n/a	2/10/2023	20.8	No	13	0	No	0.00188	Param Intra 1 of 3
Sulfate (mg/L)	**506**	**76.83**	**n/a**	**2/10/2023**	**94**	**Yes**	**14**	**0**	**No**	**0.00188**	**Param Intra 1 of 3**
Sulfate (mg/L)	**510**	**18.59**	**n/a**	**2/10/2023**	**21**	**Yes**	**12**	**0**	**No**	**0.00188**	**Param Intra 1 of 3**
Sulfate (mg/L)	**512**	**44.8**	**n/a**	**2/10/2023**	**111**	**Yes**	**18**	**0**	**No**	**0.00188**	**Param Intra 1 of 3**
Sulfate (mg/L)	601	28.3	n/a	11/10/2022	14.2	No	13	0	n/a	0.001886	NP Intra (normality) ...

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...
- [x] Show Deselected Data on Time Series Lighter
- [ ] Show Deselected Data on all Data Pages Light

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 Aitchison's 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: 4

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 D.2

Spring 2023 Semiannual Detection Monitoring Statistical Analyses

MEMORANDUM

September 28, 2023

To: Sibley Generating Station
33200 E Johnson Road
Sibley, Missouri 64088
Evergy Missouri West, Inc.

From: SCS Engineers
John Rockhold, P.G.
Douglas Doerr, P.E.,

RE: Determination of Statistically Significant Increases - CCR Landfill
May 2023 Semiannual Detection Monitoring 40 CFR 257.94

Statistical analysis of monitoring data from the groundwater monitoring system for the CCR Landfill at the Sibley Generating Station has been completed in substantial compliance with the "Statistical Method Certification by A Qualified Professional Engineer" dated October 12, 2017. Detection monitoring groundwater samples were collected on May 18 and May 22, 2023. Review and validation of the results from the May 2023 Detection Monitoring Event was completed on June 30, 2023, which constitutes completion and finalization of detection monitoring laboratory analyses. A 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. Monitoring well MW-506 did not contain sufficient water for sample collection during the May 2023 sampling event.

The completed statistical evaluation identified four Appendix III constituents above their prediction limits.

Monitoring Well Constituent	*UPL	Observation May 18, 2023
MW-505		
Calcium	29.31	30.4
Total Dissolved Solids	180.3	188
MW-510		
Sulfate	18.59	19.4
MW-512		
Chloride	5.094	7.05
Total Dissolved Solids	466.4	507
Sulfate	44.8	103

*UPL – Upper Prediction Limit
**Duplicate Sample Result

Determination: A statistical evaluation was completed for all Appendix III detection monitoring constituents in accordance with the certified statistical method. The statistical evaluation identified

six SSIs above the background prediction limits. These include calcium and total dissolved solids at MW-505; sulfate at MW-510; and chloride, sulfate, and total dissolved solids at MW-512.

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

Sibley Generating Station
Determination of Statistically Significant Increases
CCR Landfill
September 28, 2023

ATTACHMENT 1

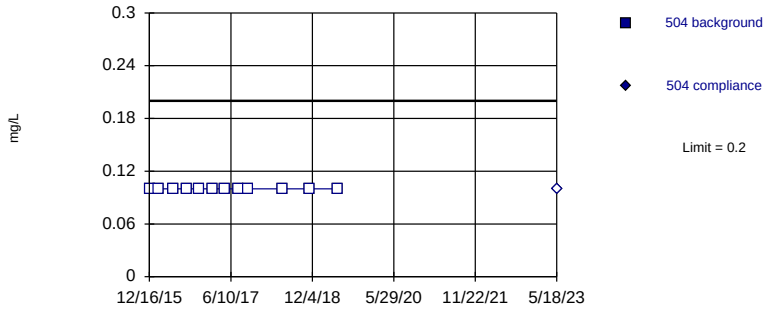
Sanitas™ Output

Sanitas™ v.10.0.06 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.

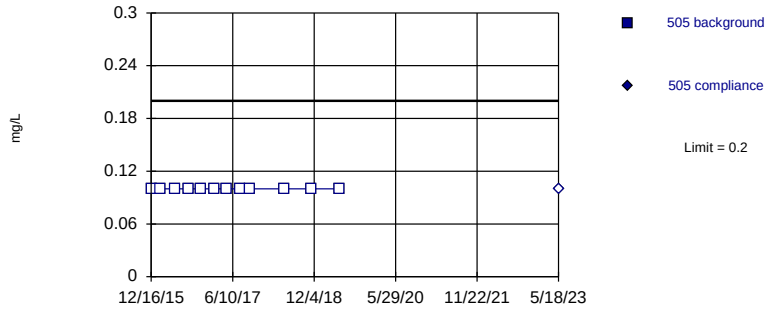
Constituent: Boron Analysis Run 9/11/2023 11:56 AM View: LF A3
Sibley Generating Station UWL Client: SCS Engineers Data: Sibley v10

Sanitas™ v.10.0.06 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



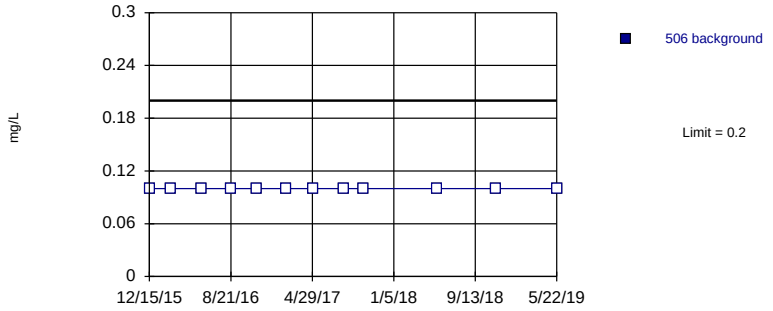
Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. All background values (n = 12) were censored; limit is most recent reporting limit. Well-constituent pair annual alpha = 0.004342. Individual comparison alpha = 0.002173 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Boron Analysis Run 9/11/2023 11:56 AM View: LF A3
Sibley Generating Station UWL Client: SCS Engineers Data: Sibley v10

Sanitas™ v.10.0.06 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Prediction Limit

Intrawell Non-parametric, 506



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). Assumes 1 future value. Insufficient data to test for seasonality: data were not deseasonalized.

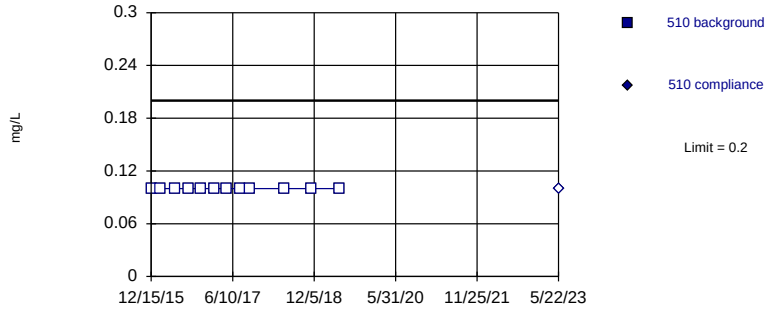
Constituent: Boron Analysis Run 9/11/2023 11:56 AM View: LF A3
Sibley Generating Station UWL Client: SCS Engineers Data: Sibley v10

Sanitas™ v.10.0.06 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 9/11/2023 11:56 AM View: LF A3
Sibley Generating Station UWL Client: SCS Engineers Data: Sibley v10

Prediction Limit

Constituent: Boron Analysis Run 9/11/2023 11:59 AM View: LF A3

Sibley Generating Station UWL Client: SCS Engineers Data: Sibley v10

	504	504	505	505	506	510	510
12/15/2015					<0.2	<0.2	
12/16/2015	<0.2		<0.2				
2/18/2016	<0.2		<0.2		<0.2	<0.2	
5/25/2016	<0.2		<0.2		<0.2	<0.2	
8/23/2016	<0.2		<0.2		<0.2	<0.2	
11/10/2016						<0.2	
11/11/2016	<0.2		<0.2		<0.2		
2/8/2017	<0.2		<0.2		<0.2	<0.2	
5/3/2017						<0.2	
5/4/2017	<0.2		<0.2		<0.2		
8/1/2017	<0.2		<0.2			<0.2	
8/4/2017					<0.2		
10/3/2017	<0.2		<0.2		<0.2	<0.2	
5/17/2018	<0.2		<0.2		<0.2	<0.2	
11/15/2018	<0.2		<0.2		<0.2	<0.2	
5/22/2019	<0.2		<0.2		<0.2	<0.2	
5/18/2023		<0.2		<0.2			
5/22/2023							<0.2

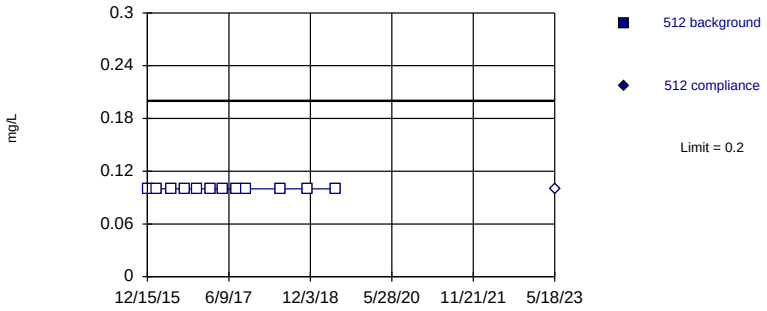
ND substitution: RL/2.

Sanitas™ v.10.0.06 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.

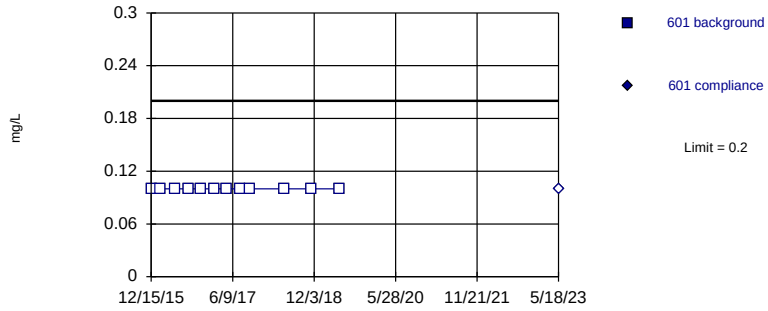
Constituent: Boron Analysis Run 9/11/2023 11:56 AM View: LF A3
Sibley Generating Station UWL Client: SCS Engineers Data: Sibley v10

Sanitas™ v.10.0.06 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.

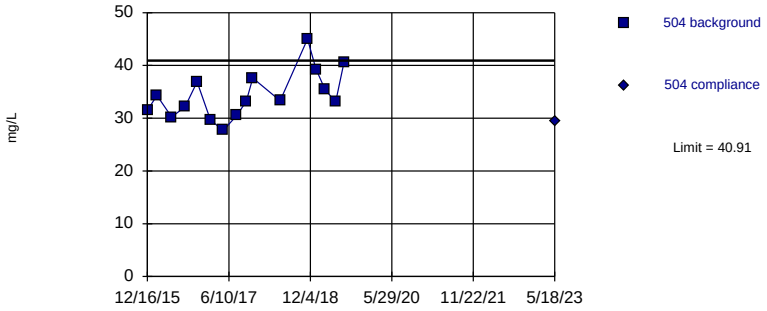
Constituent: Boron Analysis Run 9/11/2023 11:56 AM View: LF A3
Sibley Generating Station UWL Client: SCS Engineers Data: Sibley v10

Sanitas™ v.10.0.06 Software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=34.4, Std. Dev.=4.551, n=16. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9536, critical = 0.844. Kappa = 1.43 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

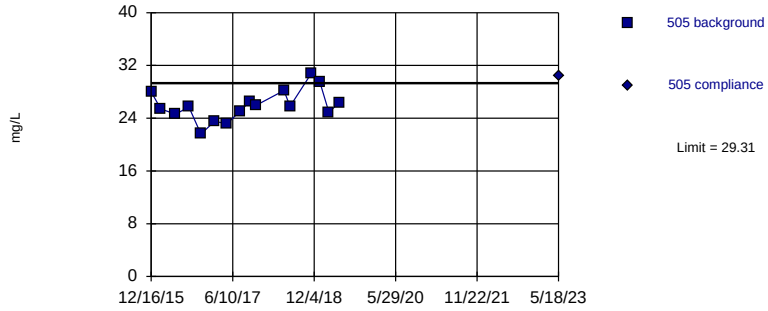
Constituent: Calcium Analysis Run 9/11/2023 11:56 AM View: LF A3
Sibley Generating Station UWL Client: SCS Engineers Data: Sibley v10

Sanitas™ v.10.0.06 Software licensed to SCS Engineers. UG

Exceeds Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=25.96, Std. Dev.=2.346, n=16. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9775, critical = 0.844. Kappa = 1.43 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Calcium Analysis Run 9/11/2023 11:56 AM View: LF A3
Sibley Generating Station UWL Client: SCS Engineers Data: Sibley v10

Prediction Limit

Constituent: Boron, Calcium Analysis Run 9/11/2023 11:59 AM View: LF A3

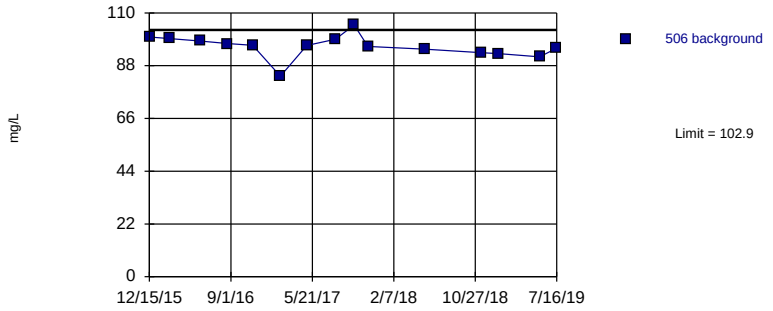
Sibley Generating Station UWL Client: SCS Engineers Data: Sibley v10

	512	512	601	601	504	504	505	505
12/15/2015	<0.2		<0.2					
12/16/2015					31.5		28	
2/18/2016	<0.2		<0.2		34.3		25.4	
5/25/2016	<0.2				30.2		24.6	
5/26/2016			<0.2					
8/23/2016	<0.2		<0.2		32.2		25.7	
11/11/2016	<0.2		<0.2		36.9		21.6	
2/8/2017	<0.2		<0.2		29.6		23.5	
5/3/2017	<0.2		<0.2					
5/4/2017					27.7		23.2	
8/1/2017	<0.2		<0.2		30.5		25.1	
10/3/2017	<0.2		<0.2		33.2		26.6	
11/16/2017					37.6		26	
5/17/2018	<0.2		<0.2		33.3		28.2	
6/27/2018							25.8	
11/15/2018	<0.2		<0.2		45		30.8	
1/11/2019					39.3		29.5	
3/12/2019					35.4		24.9	
5/22/2019	<0.2		<0.2		33.1		26.4	
7/16/2019					40.6			
5/18/2023		<0.2		<0.2		29.4		30.4

ND substitution: RL/2.

Prediction Limit

Intrawell Parametric, 506



Background Data Summary: Mean=95.97, Std. Dev.=4.734, n=15. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9252, critical = 0.835. Kappa = 1.458 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188. Assumes 1 future value.

Constituent: Calcium Analysis Run 9/11/2023 11:56 AM View: LF A3

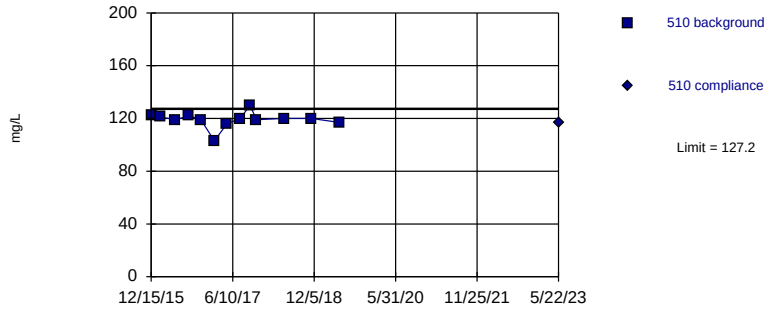
Sibley Generating Station UWL Client: SCS Engineers Data: Sibley v10

Sanitas™ v.10.0.06 Software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on cube transformation): Mean=1699613, Std. Dev.=238011, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8274, critical = 0.814. Kappa = 1.514 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Calcium Analysis Run 9/11/2023 11:56 AM View: LF A3

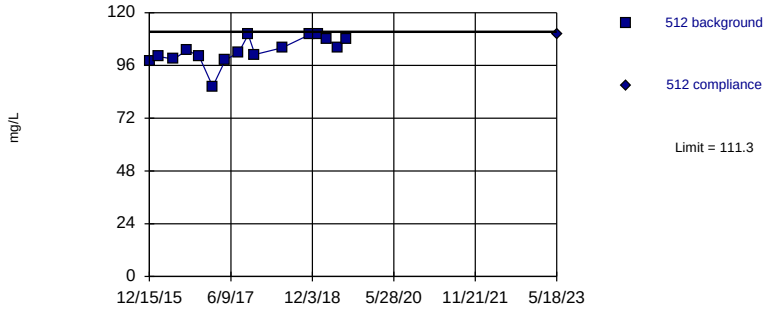
Sibley Generating Station UWL Client: SCS Engineers Data: Sibley v10

Sanitas™ v.10.0.06 Software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=102.6, Std. Dev.=6.094, n=16. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.892, critical = 0.844. Kappa = 1.43 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Calcium Analysis Run 9/11/2023 11:56 AM View: LF A3

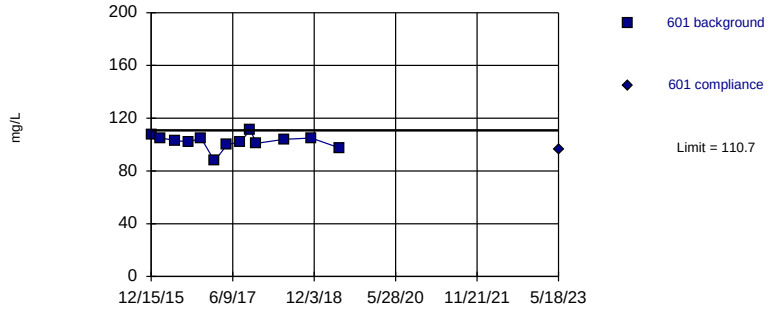
Sibley Generating Station UWL Client: SCS Engineers Data: Sibley v10

Sanitas™ v.10.0.06 Software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=102.3, Std. Dev.=5.577, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8789, critical = 0.814. Kappa = 1.514 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Calcium Analysis Run 9/11/2023 11:56 AM View: LF A3

Sibley Generating Station UWL Client: SCS Engineers Data: Sibley v10

Prediction Limit

Constituent: Calcium Analysis Run 9/11/2023 11:59 AM View: LF A3

Sibley Generating Station UWL Client: SCS Engineers Data: Sibley v10

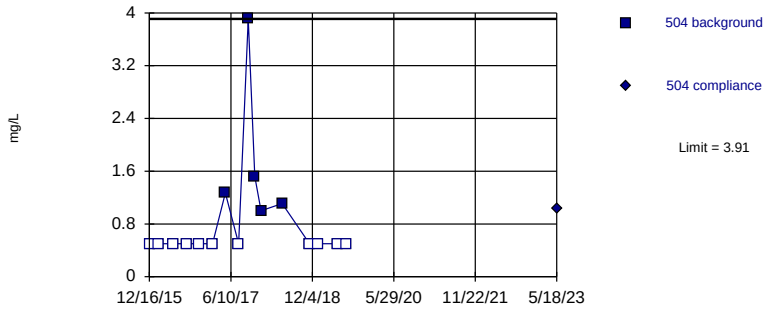
	506	510	510	512	512	601	601
12/15/2015	100	122		98.1		107	
2/18/2016	99.3	121		100		105	
5/25/2016	98.3	119		98.9			
5/26/2016						103	
8/23/2016	97.2	122		103		102	
11/10/2016		119					
11/11/2016	96.5			100		105	
2/8/2017	83.6	103		86.4		87.5	
5/3/2017		116		98.4		100	
5/4/2017	96.4						
8/1/2017		120		102		102	
8/4/2017	99						
10/3/2017	105	130		110		111	
11/16/2017	96	119		101		101	
5/17/2018	94.9	120		104		104	
11/15/2018	93.4	120		110		105	
1/11/2019	93			110			
3/12/2019				108			
5/22/2019	91.7	117		104		97.4	
7/16/2019	95.3			108			
5/18/2023					110		96.1
5/22/2023			117				

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%. Limit is highest of 16 background values. 68.75% NDs. 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: Chloride Analysis Run 9/11/2023 11:56 AM View: LF A3

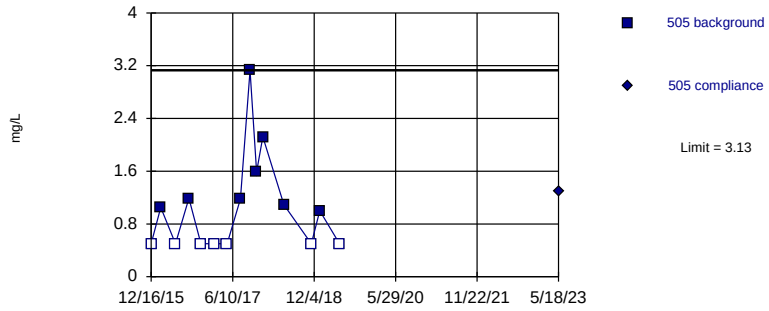
Sibley Generating Station UWL Client: SCS Engineers Data: Sibley v10

Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



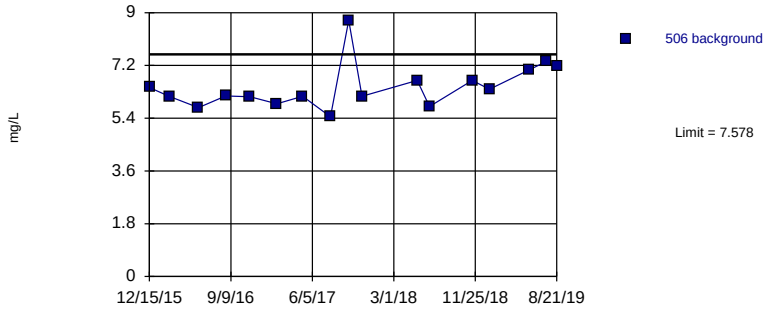
Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 15 background values. 46.67% NDs. Well-constituent pair annual alpha = 0.002624. Individual comparison alpha = 0.001313 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Chloride Analysis Run 9/11/2023 11:56 AM View: LF A3

Sibley Generating Station UWL Client: SCS Engineers Data: Sibley v10

Prediction Limit

Intrawell Parametric, 506



Background Data Summary: Mean=6.479, Std. Dev.=0.7774, n=17. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8712, critical = 0.851. Kappa = 1.413 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188. Assumes 1 future value.

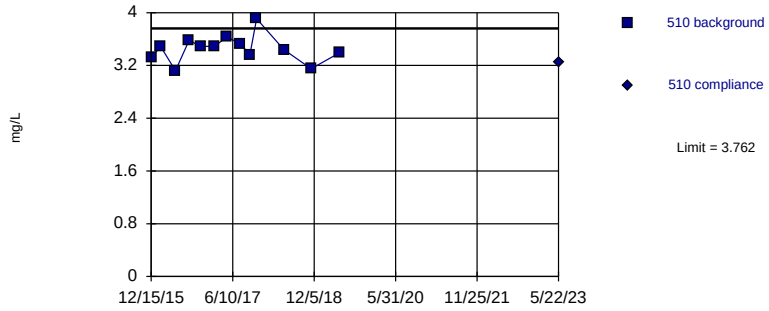
Constituent: Chloride Analysis Run 9/11/2023 11:56 AM View: LF A3

Sibley Generating Station UWL Client: SCS Engineers Data: Sibley v10

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=3.454, Std. Dev.=0.2034, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9481, critical = 0.814. Kappa = 1.514 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Chloride Analysis Run 9/11/2023 11:56 AM View: LF A3

Sibley Generating Station UWL Client: SCS Engineers Data: Sibley v10

Prediction Limit

Constituent: Chloride Analysis Run 9/11/2023 11:59 AM View: LF A3

Sibley Generating Station UWL Client: SCS Engineers Data: Sibley v10

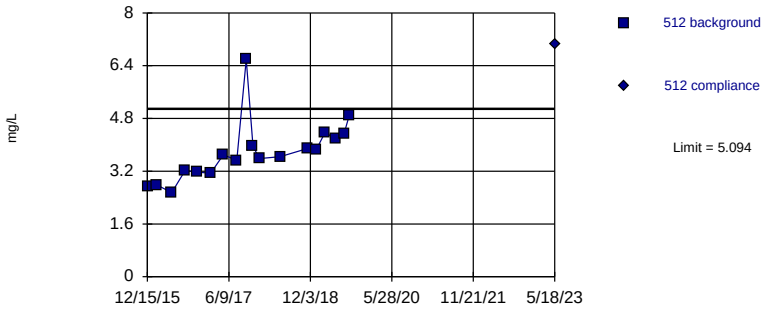
	504	504	505	505	506	510	510
12/15/2015					6.45	3.33	
12/16/2015	<1		<1				
2/18/2016	<1		1.05		6.15	3.48	
5/25/2016	<1		<1		5.76	3.12	
8/23/2016	<1		1.19		6.16	3.58	
11/10/2016						3.49	
11/11/2016	<1		<1		6.13		
2/8/2017	<1		<1		5.89	3.49	
5/3/2017						3.63	
5/4/2017	1.27		<1		6.15		
8/1/2017	<1		1.18			3.53	
8/4/2017					5.45		
10/3/2017	3.91		3.13		8.74	3.36	
11/16/2017	1.52		1.59		6.15	3.91	
12/28/2017	1		2.12				
5/17/2018	1.11		1.09		6.69	3.44	
6/27/2018					5.8		
11/15/2018	<1		<1		6.69	3.15	
1/11/2019	<1		1		6.39		
5/22/2019	<1		<1		7.05	3.39	
7/16/2019	<1				7.33		
8/21/2019					7.17		
5/18/2023		1.04		1.29			
5/22/2023							3.24

ND substitution: RL/2.

Exceeds Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=3.786, Std. Dev.=0.9366, n=18. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8846, critical = 0.858. Kappa = 1.396 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

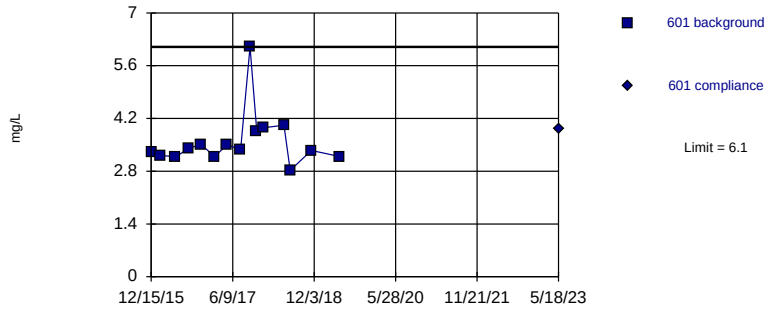
Constituent: Chloride Analysis Run 9/11/2023 11:56 AM View: LF A3

Sibley Generating Station UWL Client: SCS Engineers Data: Sibley v10

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 15 background values. Well-constituent pair annual alpha = 0.002624. Individual comparison alpha = 0.001313 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

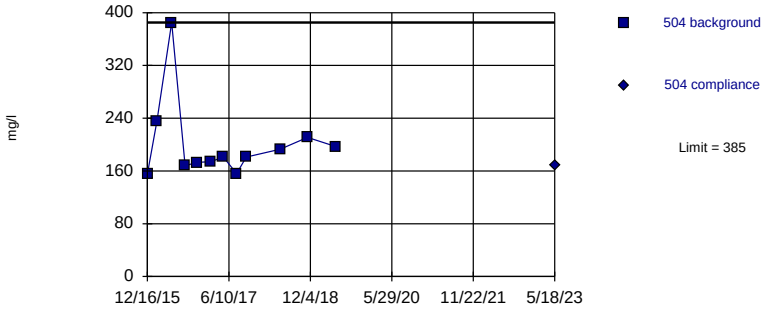
Constituent: Chloride Analysis Run 9/11/2023 11:56 AM View: LF A3

Sibley Generating Station UWL Client: SCS Engineers Data: Sibley v10

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.

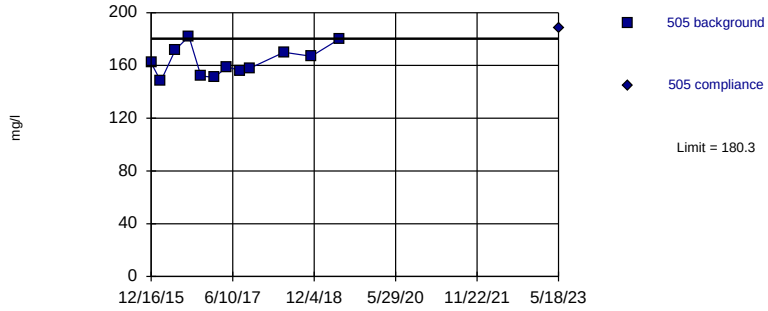
Constituent: Dissolved Solids Analysis Run 9/11/2023 11:56 AM View: LF A3

Sibley Generating Station UWL Client: SCS Engineers Data: Sibley v10

Exceeds Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=163.1, Std. Dev.=11.19, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9461, critical = 0.805. Kappa = 1.542 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Dissolved Solids Analysis Run 9/11/2023 11:56 AM View: LF A3

Sibley Generating Station UWL Client: SCS Engineers Data: Sibley v10

Prediction Limit

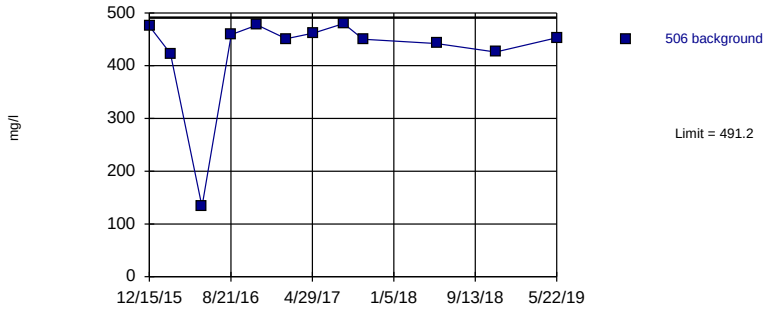
Constituent: Chloride, Dissolved Solids Analysis Run 9/11/2023 11:59 AM View: LF A3

Sibley Generating Station UWL Client: SCS Engineers Data: Sibley v10

	512	512	601	601	504	504	505	505
12/15/2015	2.72		3.3					
12/16/2015					155		162	
2/18/2016	2.78		3.22		236		148	
5/25/2016	2.55				385		172	
5/26/2016			3.18					
8/23/2016	3.23		3.41		168		182	
11/11/2016	3.17		3.51		173		152	
2/8/2017	3.14		3.19		174		151	
5/3/2017	3.7		3.5					
5/4/2017					181		159	
8/1/2017	3.53		3.37		156		156	
10/3/2017	6.59		6.1		181		158	
11/16/2017	3.97		3.87					
12/28/2017	3.58		3.95					
5/17/2018	3.64		4.02		193		170	
6/27/2018			2.82					
11/15/2018	3.89		3.35		211		167	
1/11/2019	3.85							
3/12/2019	4.38							
5/22/2019	4.17		3.19		197		180	
7/16/2019	4.35							
8/21/2019	4.91							
5/18/2023		7.05		3.93		168		188

Prediction Limit

Intrawell Parametric, 506



Background Data Summary (based on x^5 transformation): Mean=1.8e13, Std. Dev.=6.8e12, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8456, critical = 0.805. Kappa = 1.542 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188. Assumes 1 future value.

Constituent: Dissolved Solids Analysis Run 9/11/2023 11:56 AM View: LF A3

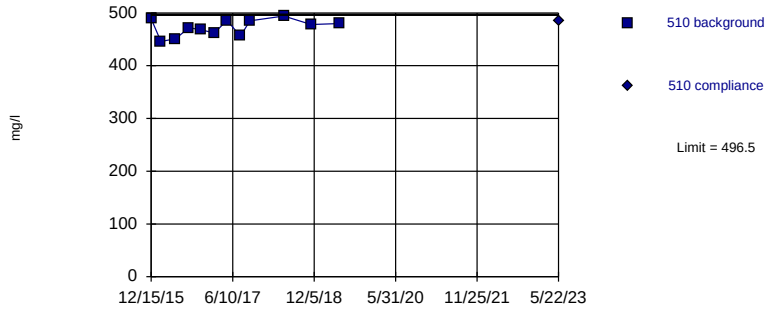
Sibley Generating Station UWL Client: SCS Engineers Data: Sibley v10

Sanitas™ v.10.0.06 Software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=472.3, Std. Dev.=15.74, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.95, critical = 0.805. Kappa = 1.542 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Dissolved Solids Analysis Run 9/11/2023 11:56 AM View: LF A3

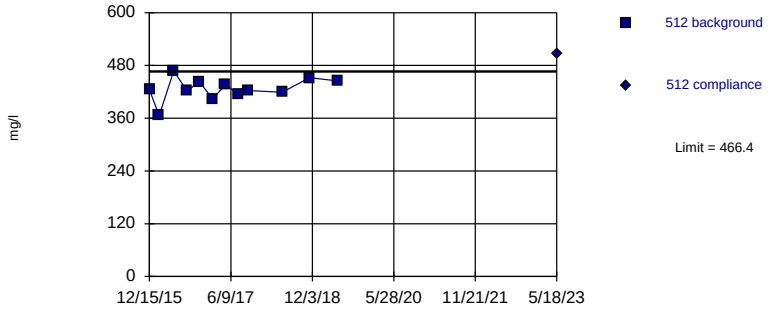
Sibley Generating Station UWL Client: SCS Engineers Data: Sibley v10

Sanitas™ v.10.0.06 Software licensed to SCS Engineers. UG

Exceeds Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=426.3, Std. Dev.=25.95, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9454, critical = 0.805. Kappa = 1.542 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Dissolved Solids Analysis Run 9/11/2023 11:56 AM View: LF A3

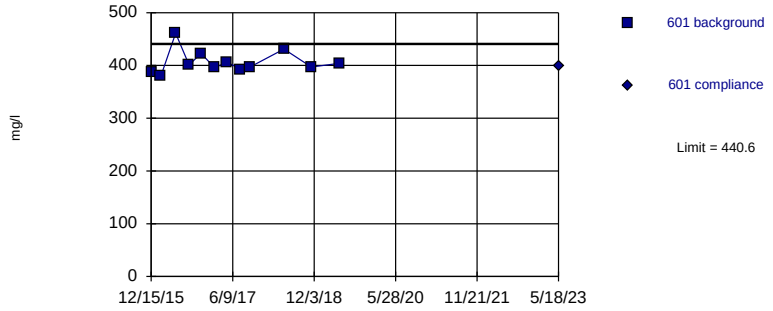
Sibley Generating Station UWL Client: SCS Engineers Data: Sibley v10

Sanitas™ v.10.0.06 Software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=406.3, Std. Dev.=22.23, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8601, critical = 0.805. Kappa = 1.542 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Dissolved Solids Analysis Run 9/11/2023 11:56 AM View: LF A3

Sibley Generating Station UWL Client: SCS Engineers Data: Sibley v10

Prediction Limit

Constituent: Dissolved Solids Analysis Run 9/11/2023 11:59 AM View: LF A3

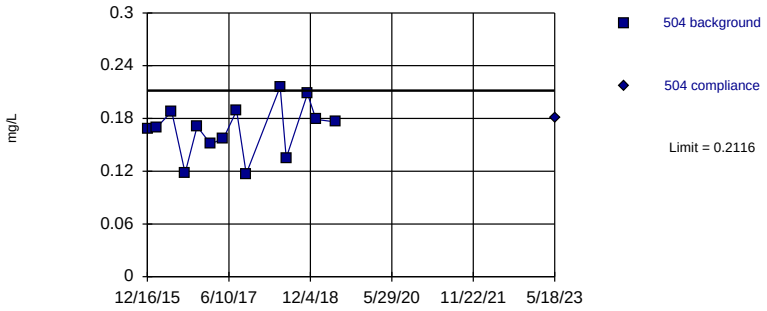
Sibley Generating Station UWL Client: SCS Engineers Data: Sibley v10

	506	510	510	512	512	601	601
12/15/2015	475	489		425		387	
2/18/2016	423	446		366		380	
5/25/2016	133	451		467			
5/26/2016						461	
8/23/2016	459	472		422		401	
11/10/2016		468					
11/11/2016	477			443		423	
2/8/2017	451	462		404		396	
5/3/2017		486		436		406	
5/4/2017	462						
8/1/2017		456		414		393	
8/4/2017	480						
10/3/2017	450	485		423		397	
5/17/2018	442	494		419		431	
11/15/2018	426	478		452		397	
5/22/2019	453	480		445		404	
5/18/2023					507		399
5/22/2023			486				

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.1674, Std. Dev.=0.02979, n=14. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.958, critical = 0.825. Kappa = 1.486 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Fluoride Analysis Run 9/11/2023 11:56 AM View: LF A3

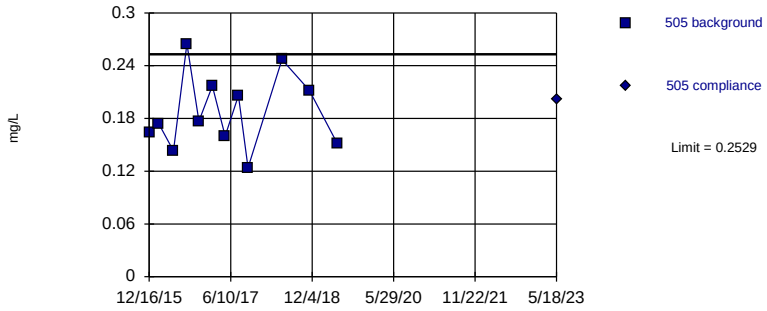
Sibley Generating Station UWL Client: SCS Engineers Data: Sibley v10

Sanitas™ v.10.0.06 Software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.1867, Std. Dev.=0.04296, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9585, critical = 0.805. Kappa = 1.542 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

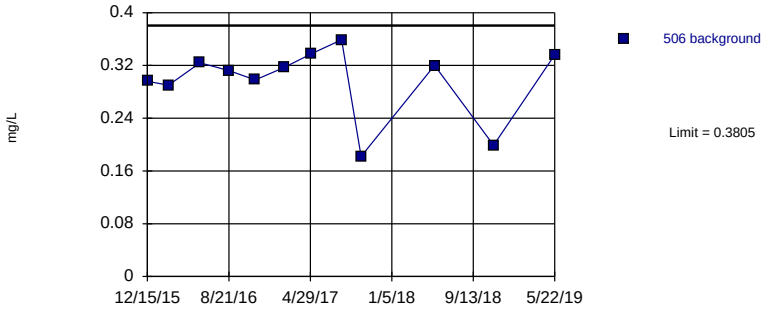
Constituent: Fluoride Analysis Run 9/11/2023 11:56 AM View: LF A3

Sibley Generating Station UWL Client: SCS Engineers Data: Sibley v10

Sanitas™ v.10.0.06 Software licensed to SCS Engineers. UG

Prediction Limit

Intrawell Parametric, 506



Background Data Summary: Mean=0.2976, Std. Dev.=0.05377, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8104, critical = 0.805. Kappa = 1.542 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188. Assumes 1 future value.

Constituent: Fluoride Analysis Run 9/11/2023 11:56 AM View: LF A3

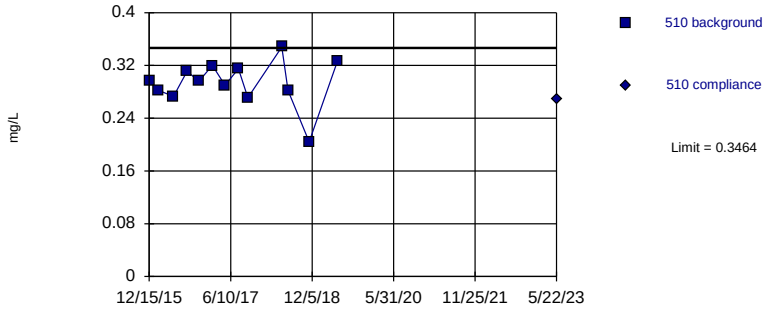
Sibley Generating Station UWL Client: SCS Engineers Data: Sibley v10

Sanitas™ v.10.0.06 Software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.2934, Std. Dev.=0.03503, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9129, critical = 0.814. Kappa = 1.514 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Fluoride Analysis Run 9/11/2023 11:56 AM View: LF A3

Sibley Generating Station UWL Client: SCS Engineers Data: Sibley v10

Prediction Limit

Constituent: Fluoride Analysis Run 9/11/2023 11:59 AM View: LF A3

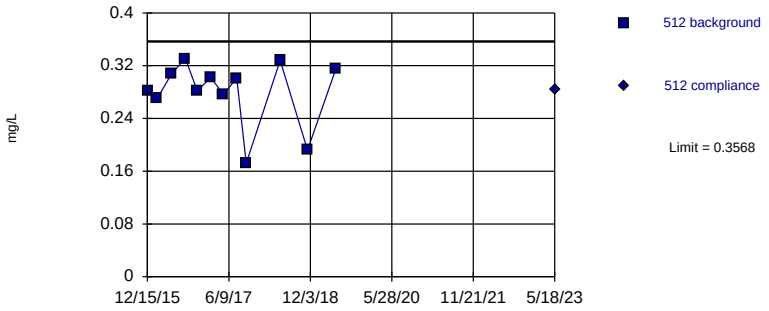
Sibley Generating Station UWL Client: SCS Engineers Data: Sibley v10

	504	504	505	505	506	510	510
12/15/2015					0.296	0.296	
12/16/2015	0.168		0.164				
2/18/2016	0.17		0.174		0.29	0.282	
5/25/2016	0.188		0.143		0.324	0.273	
8/23/2016	0.118		0.265		0.312	0.311	
11/10/2016						0.296	
11/11/2016	0.171		0.177		0.298		
2/8/2017	0.151		0.217		0.317	0.32	
5/3/2017						0.29	
5/4/2017	0.157		0.16		0.338		
8/1/2017	0.189		0.206			0.315	
8/4/2017					0.359		
10/3/2017	0.117		0.124		0.182	0.271	
5/17/2018	0.216		0.247		0.32	0.348	
6/27/2018	0.135					0.282	
11/15/2018	0.208		0.212		0.199	0.204	
1/11/2019	0.179						
5/22/2019	0.176		0.151		0.336	0.326	
5/18/2023		0.181		0.202			
5/22/2023							0.268

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.2799, Std. Dev.=0.04987, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8252, critical = 0.805. Kappa = 1.542 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

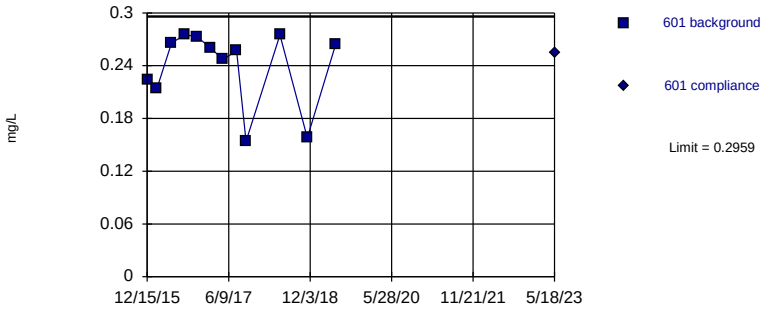
Constituent: Fluoride Analysis Run 9/11/2023 11:56 AM View: LF A3

Sibley Generating Station UWL Client: SCS Engineers Data: Sibley v10

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on square transformation): Mean=0.0588, Std. Dev.=0.01866, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8225, critical = 0.805. Kappa = 1.542 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

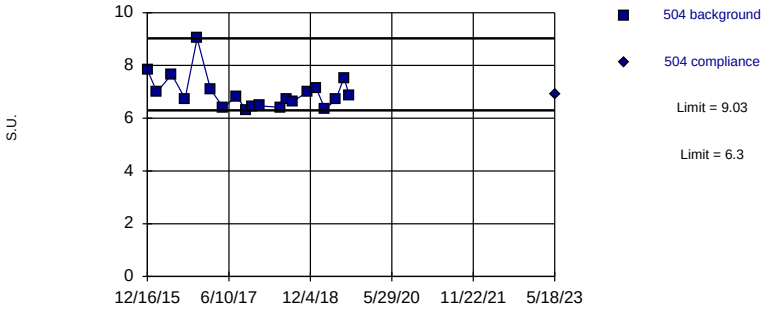
Constituent: Fluoride Analysis Run 9/11/2023 11:56 AM View: LF A3

Sibley Generating Station UWL Client: SCS Engineers Data: Sibley v10

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 20 background values. Well-constituent pair annual alpha = 0.00225. Individual comparison alpha = 0.001125 (1 of 3). Seasonality was not detected with 95% confidence.

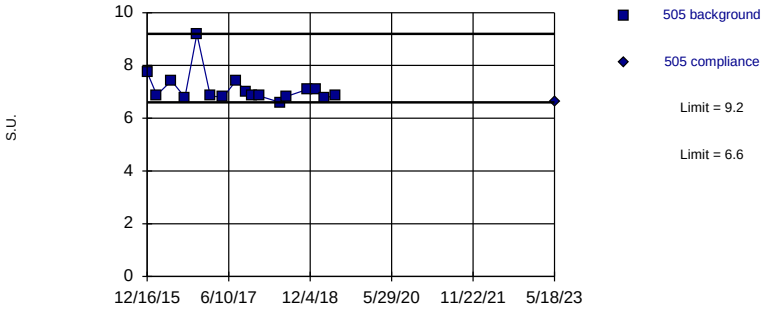
Constituent: pH Analysis Run 9/11/2023 11:56 AM View: LF A3

Sibley Generating Station UWL Client: SCS Engineers Data: Sibley v10

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 17 background values. Well-constituent pair annual alpha = 0.003639. Individual comparison alpha = 0.00182 (1 of 3). Seasonality was not detected with 95% confidence.

Constituent: pH Analysis Run 9/11/2023 11:56 AM View: LF A3

Sibley Generating Station UWL Client: SCS Engineers Data: Sibley v10

Prediction Limit

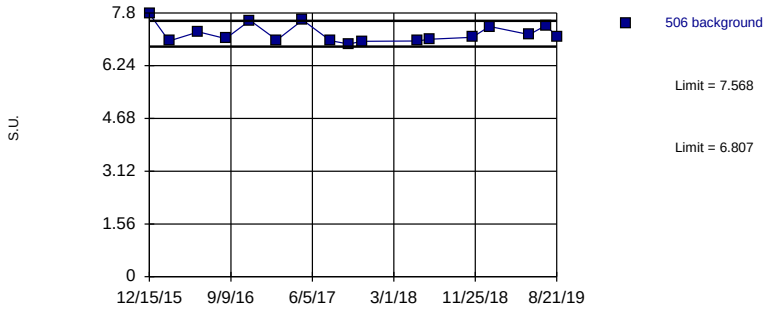
Constituent: Fluoride, pH Analysis Run 9/11/2023 11:59 AM View: LF A3

Sibley Generating Station UWL Client: SCS Engineers Data: Sibley v10

	512	512	601	601	504	504	505	505
12/15/2015	0.281		0.224					
12/16/2015					7.83		7.74	
2/18/2016	0.27		0.214		6.99		6.88	
5/25/2016	0.308				7.66		7.42	
5/26/2016			0.266					
8/23/2016	0.331		0.275		6.74		6.79	
11/11/2016	0.282		0.273		9.03		9.2	
2/8/2017	0.302		0.26		7.09		6.84	
5/3/2017	0.277		0.247					
5/4/2017					6.4		6.8	
8/1/2017	0.301		0.257		6.83		7.44	
10/3/2017	0.172		0.154		6.3		6.98	
11/16/2017					6.45		6.84	
12/28/2017					6.47		6.85	
5/17/2018	0.328		0.275		6.41		6.6	
6/27/2018					6.7		6.82	
8/8/2018					6.62			
11/15/2018	0.192		0.158		7.01		7.09	
1/11/2019					7.15		7.08	
3/12/2019					6.34		6.78	
5/22/2019	0.315		0.264		6.7		6.85	
7/16/2019					7.53			
8/21/2019					6.85			
5/18/2023		0.284		0.254		6.92		6.63

Prediction Limit

Intrawell Parametric, 506



Background Data Summary: Mean=7.188, Std. Dev.=0.2694, n=17. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8664, critical = 0.851. Kappa = 1.413 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188. Assumes 1 future value.

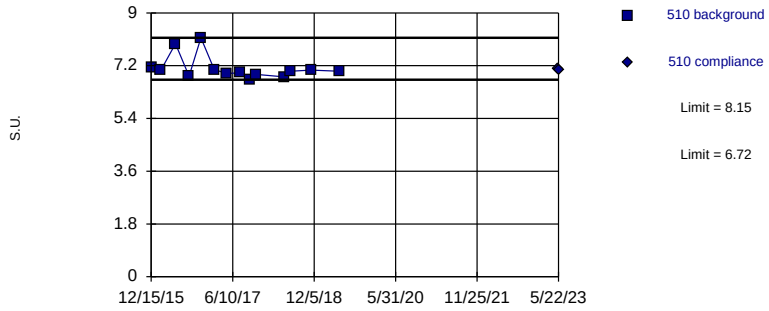
Constituent: pH Analysis Run 9/11/2023 11:57 AM View: LF A3

Sibley Generating Station UWL Client: SCS Engineers Data: Sibley v10

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 14 background values. Well-constituent pair annual alpha = 0.006393. Individual comparison alpha = 0.003199 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

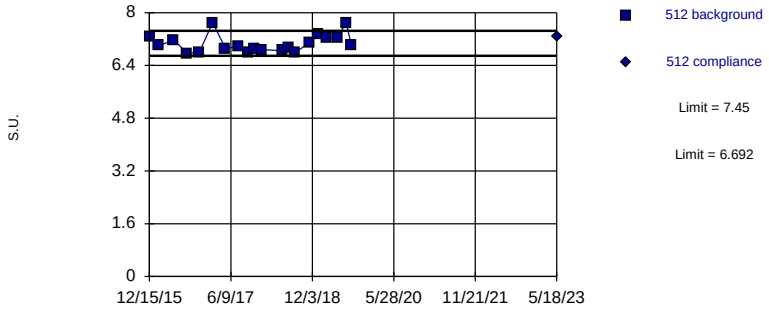
Constituent: pH Analysis Run 9/11/2023 11:57 AM View: LF A3

Sibley Generating Station UWL Client: SCS Engineers Data: Sibley v10

Within Limits

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=7.071, Std. Dev.=0.2785, n=20. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8734, critical = 0.868. Kappa = 1.362 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

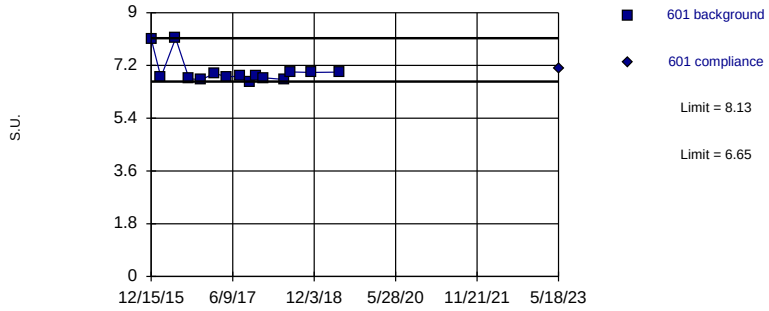
Constituent: pH Analysis Run 9/11/2023 11:57 AM View: LF A3

Sibley Generating Station UWL Client: SCS Engineers Data: Sibley v10

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 9/11/2023 11:57 AM View: LF A3

Sibley Generating Station UWL Client: SCS Engineers Data: Sibley v10

Prediction Limit

Constituent: pH Analysis Run 9/11/2023 11:59 AM View: LF A3

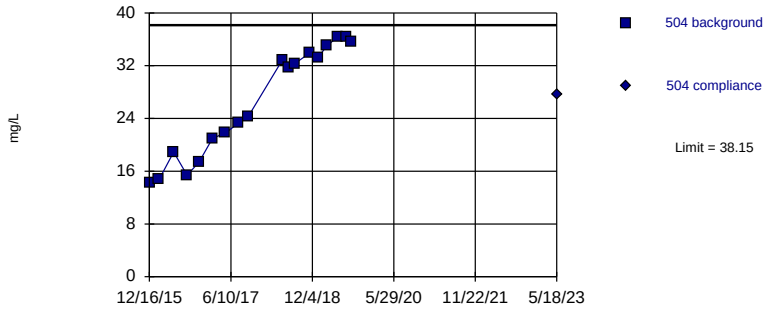
Sibley Generating Station UWL Client: SCS Engineers Data: Sibley v10

	506	510	510	512	512	601	601
12/15/2015	7.78	7.14		7.29		8.11	
2/18/2016	6.97	7.05		7		6.8	
5/25/2016	7.24	7.95		7.18			
5/26/2016						8.13	
8/23/2016	7.04	6.84		6.77		6.75	
11/10/2016		8.15					
11/11/2016	7.58			6.8		6.71	
2/8/2017	7	7.06		7.7		6.93	
5/3/2017		6.94		6.92			
5/4/2017	7.59					6.81	
8/1/2017		6.95		6.97		6.84	
8/4/2017	6.98						
10/3/2017	6.88	6.72		6.79		6.65	
11/16/2017	6.96	6.9		6.92		6.84	
12/28/2017				6.88		6.78	
5/17/2018	6.97	6.82		6.85		6.72	
6/27/2018	7.02	7.01		6.95		6.98	
8/8/2018				6.78			
11/15/2018	7.08	7.05		7.09		6.96	
1/11/2019	7.4			7.34			
3/12/2019				7.23			
5/22/2019	7.16	7.01		7.25		6.97	
7/16/2019	7.43			7.7			
8/21/2019	7.11			7.01			
5/18/2023			7.09		7.27		7.09
5/22/2023			7.04				

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=26.58, Std. Dev.=8.293, n=18. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8677, critical = 0.858. Kappa = 1.396 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

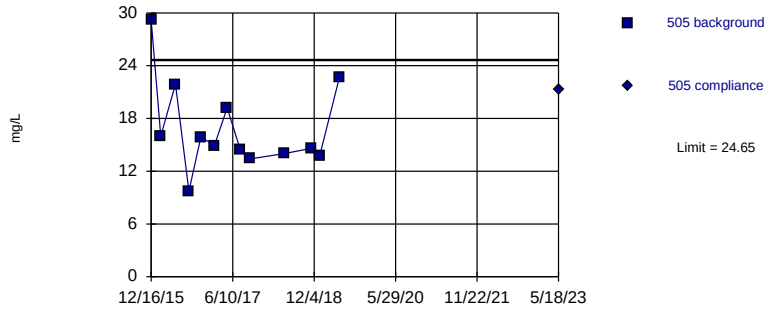
Constituent: Sulfate Analysis Run 9/11/2023 11:57 AM View: LF A3

Sibley Generating Station UWL Client: SCS Engineers Data: Sibley v10

Within Limit

Prediction Limit

Intrawell Parametric



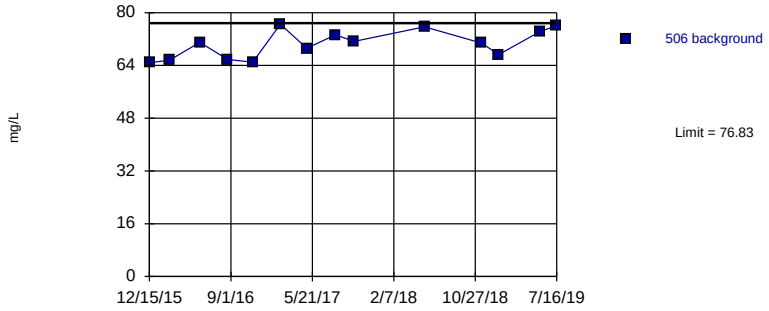
Background Data Summary: Mean=16.9, Std. Dev.=5.117, n=13. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8783, critical = 0.814. Kappa = 1.514 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Sulfate Analysis Run 9/11/2023 11:57 AM View: LF A3

Sibley Generating Station UWL Client: SCS Engineers Data: Sibley v10

Prediction Limit

Intrawell Parametric, 506



Background Data Summary: Mean=70.47, Std. Dev.=4.276, n=14. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9125, critical = 0.825. Kappa = 1.486 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188. Assumes 1 future value.

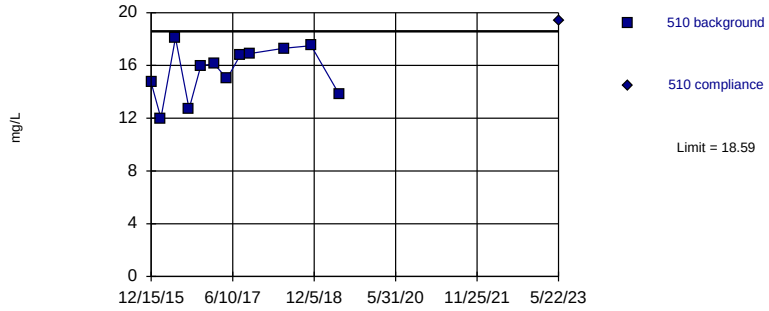
Constituent: Sulfate Analysis Run 9/11/2023 11:57 AM View: LF A3

Sibley Generating Station UWL Client: SCS Engineers Data: Sibley v10

Exceeds Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=15.58, Std. Dev.=1.955, n=12. Insufficient data to test for seasonality: data were not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9362, critical = 0.805. Kappa = 1.542 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Sulfate Analysis Run 9/11/2023 11:57 AM View: LF A3

Sibley Generating Station UWL Client: SCS Engineers Data: Sibley v10

Prediction Limit

Constituent: Sulfate Analysis Run 9/11/2023 11:59 AM View: LF A3

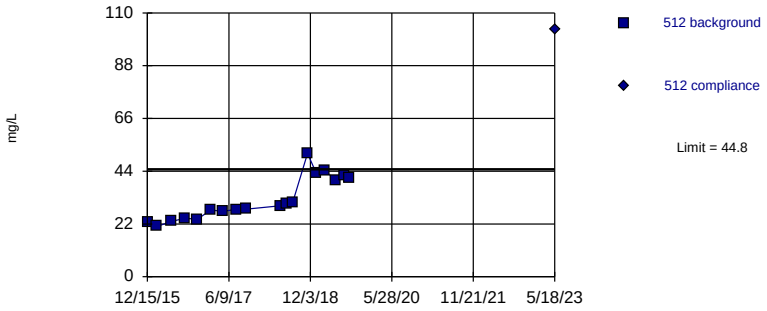
Sibley Generating Station UWL Client: SCS Engineers Data: Sibley v10

	504	504	505	505	506	510	510
12/15/2015					64.8	14.7	
12/16/2015	14.3		29.2				
2/18/2016	14.7		16		65.6	12	
5/25/2016	18.9		21.9		71	18.1	
8/23/2016	15.4		9.73		65.8	12.7	
11/10/2016						16	
11/11/2016	17.4		15.9		65		
2/8/2017	21		14.9		76.5	16.1	
5/3/2017						15	
5/4/2017	21.8		19.2		69.2		
8/1/2017	23.3		14.4			16.8	
8/4/2017					73.3		
10/3/2017	24.3		13.4		71.3	16.9	
5/17/2018	32.8		14		75.7	17.3	
6/27/2018	31.8						
8/8/2018	32.3						
11/15/2018	33.9		14.6		70.8	17.5	
1/11/2019	33.2		13.8		67.3		
3/12/2019	35.1						
5/22/2019	36.3		22.7		74.2	13.8	
7/16/2019	36.3				76.1		
8/21/2019	35.6						
5/18/2023		27.7		21.3			
5/22/2023							19.4

Exceeds Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=32.21, Std. Dev.=9.019, n=18. Seasonality was not detected with 95% confidence. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8926, critical = 0.858. Kappa = 1.396 (c=7, w=4, 1 of 3, event alpha = 0.05132). Report alpha = 0.00188.

Constituent: Sulfate Analysis Run 9/11/2023 11:57 AM View: LF A3

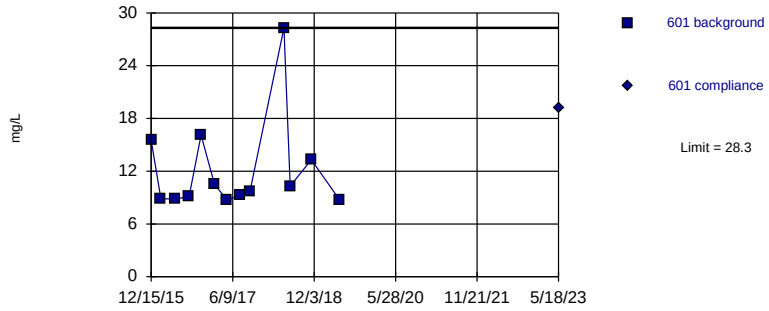
Sibley Generating Station UWL Client: SCS Engineers Data: Sibley v10

Sanitas™ v.10.0.06 Software licensed to SCS Engineers. UG

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 13 background values. Well-constituent pair annual alpha = 0.003769. Individual comparison alpha = 0.001886 (1 of 3). Insufficient data to test for seasonality: data were not deseasonalized.

Constituent: Sulfate Analysis Run 9/11/2023 11:57 AM View: LF A3

Sibley Generating Station UWL Client: SCS Engineers Data: Sibley v10

Prediction Limit

Constituent: Sulfate Analysis Run 9/11/2023 11:59 AM View: LF A3

Sibley Generating Station UWL Client: SCS Engineers Data: Sibley v10

	512	512	601	601
12/15/2015	23		15.5	
2/18/2016	21		8.87	
5/25/2016	23.1			
5/26/2016			8.85	
8/23/2016	24.4		9.11	
11/11/2016	24		16.1	
2/8/2017	27.8		10.5	
5/3/2017	27.3		8.71	
8/1/2017	28.1		9.33	
10/3/2017	28.2		9.76	
5/17/2018	29.6		28.3	
6/27/2018	30.3		10.3	
8/8/2018	30.9			
11/15/2018	51.4		13.3	
1/11/2019	43.3			
3/12/2019	44.2			
5/22/2019	40.1		8.74	
7/16/2019	42.1			
8/21/2019	41			
5/18/2023		103		19.2

Prediction Limit

Sibley Generating Station UWL Client: SCS Engineers Data: Sibley v10 Printed 9/11/2023, 11:59 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
Boron (mg/L)	504	0.2	n/a	5/18/2023	0.1ND	No	12	100	n/a	0.002173	NP Intra (NDs) 1 of 3
Boron (mg/L)	505	0.2	n/a	5/18/2023	0.1ND	No	12	100	n/a	0.002173	NP Intra (NDs) 1 of 3
Boron (mg/L)	506	0.2	n/a	n/a	1 future	n/a	12	100	n/a	0.002173	NP Intra (NDs) 1 of 3
Boron (mg/L)	510	0.2	n/a	5/22/2023	0.1ND	No	12	100	n/a	0.002173	NP Intra (NDs) 1 of 3
Boron (mg/L)	512	0.2	n/a	5/18/2023	0.1ND	No	12	100	n/a	0.002173	NP Intra (NDs) 1 of 3
Boron (mg/L)	601	0.2	n/a	5/18/2023	0.1ND	No	12	100	n/a	0.002173	NP Intra (NDs) 1 of 3
Calcium (mg/L)	504	40.91	n/a	5/18/2023	29.4	No	16	0	No	0.00188	Param Intra 1 of 3
Calcium (mg/L)	**505**	**29.31**	**n/a**	**5/18/2023**	**30.4**	**Yes**	**16**	**0**	**No**	**0.00188**	**Param Intra 1 of 3**
Calcium (mg/L)	506	102.9	n/a	n/a	1 future	n/a	15	0	No	0.00188	Param Intra 1 of 3
Calcium (mg/L)	510	127.2	n/a	5/22/2023	117	No	13	0	x^3	0.00188	Param Intra 1 of 3
Calcium (mg/L)	512	111.3	n/a	5/18/2023	110	No	16	0	No	0.00188	Param Intra 1 of 3
Calcium (mg/L)	601	110.7	n/a	5/18/2023	96.1	No	13	0	No	0.00188	Param Intra 1 of 3
Chloride (mg/L)	504	3.91	n/a	5/18/2023	1.04	No	16	68.75	n/a	0.001026	NP Intra (NDs) 1 of 3
Chloride (mg/L)	505	3.13	n/a	5/18/2023	1.29	No	15	46.67	n/a	0.001313	NP Intra (normality) ...
Chloride (mg/L)	506	7.578	n/a	n/a	1 future	n/a	17	0	No	0.00188	Param Intra 1 of 3
Chloride (mg/L)	510	3.762	n/a	5/22/2023	3.24	No	13	0	No	0.00188	Param Intra 1 of 3
Chloride (mg/L)	**512**	**5.094**	**n/a**	**5/18/2023**	**7.05**	**Yes**	**18**	**0**	**No**	**0.00188**	**Param Intra 1 of 3**
Chloride (mg/L)	601	6.1	n/a	5/18/2023	3.93	No	15	0	n/a	0.001313	NP Intra (normality) ...
Dissolved Solids (mg/l)	504	385	n/a	5/18/2023	168	No	12	0	n/a	0.002173	NP Intra (normality) ...
Dissolved Solids (mg/l)	**505**	**180.3**	**n/a**	**5/18/2023**	**188**	**Yes**	**12**	**0**	**No**	**0.00188**	**Param Intra 1 of 3**
Dissolved Solids (mg/l)	506	491.2	n/a	n/a	1 future	n/a	12	0	x^5	0.00188	Param Intra 1 of 3
Dissolved Solids (mg/l)	510	496.5	n/a	5/22/2023	486	No	12	0	No	0.00188	Param Intra 1 of 3
Dissolved Solids (mg/l)	**512**	**466.4**	**n/a**	**5/18/2023**	**507**	**Yes**	**12**	**0**	**No**	**0.00188**	**Param Intra 1 of 3**
Dissolved Solids (mg/l)	601	440.6	n/a	5/18/2023	399	No	12	0	No	0.00188	Param Intra 1 of 3
Fluoride (mg/L)	504	0.2116	n/a	5/18/2023	0.181	No	14	0	No	0.00188	Param Intra 1 of 3
Fluoride (mg/L)	505	0.2529	n/a	5/18/2023	0.202	No	12	0	No	0.00188	Param Intra 1 of 3
Fluoride (mg/L)	506	0.3805	n/a	n/a	1 future	n/a	12	0	No	0.00188	Param Intra 1 of 3
Fluoride (mg/L)	510	0.3464	n/a	5/22/2023	0.268	No	13	0	No	0.00188	Param Intra 1 of 3
Fluoride (mg/L)	512	0.3568	n/a	5/18/2023	0.284	No	12	0	No	0.00188	Param Intra 1 of 3
Fluoride (mg/L)	601	0.2959	n/a	5/18/2023	0.254	No	12	0	x^2	0.00188	Param Intra 1 of 3
pH (S.U.)	504	9.03	6.3	5/18/2023	6.92	No	20	0	n/a	0.001125	NP Intra (normality) ...
pH (S.U.)	505	9.2	6.6	5/18/2023	6.63	No	17	0	n/a	0.00182	NP Intra (normality) ...
pH (S.U.)	506	7.568	6.807	n/a	1 future	n/a	17	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	510	8.15	6.72	5/22/2023	7.04	No	14	0	n/a	0.003199	NP Intra (normality) ...
pH (S.U.)	512	7.45	6.692	5/18/2023	7.27	No	20	0	No	0.000...	Param Intra 1 of 3
pH (S.U.)	601	8.13	6.65	5/18/2023	7.09	No	15	0	n/a	0.002625	NP Intra (normality) ...
Sulfate (mg/L)	504	38.15	n/a	5/18/2023	27.7	No	18	0	No	0.00188	Param Intra 1 of 3
Sulfate (mg/L)	505	24.65	n/a	5/18/2023	21.3	No	13	0	No	0.00188	Param Intra 1 of 3
Sulfate (mg/L)	506	76.83	n/a	n/a	1 future	n/a	14	0	No	0.00188	Param Intra 1 of 3
Sulfate (mg/L)	**510**	**18.59**	**n/a**	**5/22/2023**	**19.4**	**Yes**	**12**	**0**	**No**	**0.00188**	**Param Intra 1 of 3**
Sulfate (mg/L)	**512**	**44.8**	**n/a**	**5/18/2023**	**103**	**Yes**	**18**	**0**	**No**	**0.00188**	**Param Intra 1 of 3**
Sulfate (mg/L)	601	28.3	n/a	5/18/2023	19.2	No	13	0	n/a	0.001886	NP Intra (normality) ...

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...
- [x] Show Deselected Data on Time Series Lighter
- [ ] Show Deselected Data on all Data Pages Light

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 Aitchison's 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: 4

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)