REPORT

2024 Annual Groundwater Monitoring and Corrective Action Report

SCPA Surface Impoundment, Sioux Energy Center, St. Charles County, Missouri, USA

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Project Number: 23009-24

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EXECUTIVE SUMMARY AND STATUS OF THE SCPA GROUNDWATER MONITORING PROGRAM

This annual report was developed to meet the requirements of United States Environmental Protection Agency (USEPA) 40 CFR Part 257 “Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals From Electric Utilities; Final Rule” (the CCR Rule). The CCR Rule requires owners or operators of existing CCR units to produce an Annual Groundwater Monitoring and Corrective Action Report (Annual Report) each year (§ 257.90(e)). Ameren Missouri (Ameren) has determined that the SCPA Coal Combustion Residuals (CCR) Surface Impoundment at the Sioux Energy Center (SEC) is subject to the requirements of the CCR Rule. This Annual Report for the SCPA describes CCR Rule groundwater monitoring activities from January 1, 2024, through December 31, 2024, including verification results related to late 2023 sampling.

Throughout 2024, the SCPA has been in Corrective Action Monitoring with Detection and Assessment Monitoring continuing concurrently. Semi-annual groundwater sampling associated with Detection Monitoring has been ongoing since Detection Monitoring was initiated on October 17, 2017, as required by the CCR Rule. As a part of Detection Monitoring, statistical evaluations are completed after each sampling event to determine if there are any values at a Statistically Significant Increase (SSI) over background. SSIs have been determined for each sampling event and a summary of the SSIs is provided in **Table 1**.

The Assessment Monitoring program was established at the SCPA on April 15, 2018. Since that time, groundwater sampling and statistical evaluations have been completed semi-annually to determine if there are any values at a Statistically Significant Level (SSL) over the site-specific Groundwater Protection Standard (GWPS). On October 11, 2018, it was determined that molybdenum was present at an SSL. A summary of SSLs for the past year is provided in **Table 1**.

Table 1 - Summary of 2024 SCPA Sampling Events, Previous Year Verification, and Statistical Evaluation for Detection and Assessment Monitoring Well Network

Event Name	Type of Event and Sampling Dates	Laboratory Analytical Data Receipt	Parameters Collected	Verified SSIs	SSLs	SSI & SSL Determination Date
November 2023 Sampling Event	Detection and Assessment Monitoring, November 10-14, 2023	December 22, 2023	Appendix III, Detected Appendix IV (See Note 1), & Major Cations and Anions	**pH:** UMW-2D, UMW-3D **Boron:** UMW-1D, UMW-2D, UMW-3D, UMW-4D, UMW-5D, UMW-6D **Calcium:** UMW-2D, UMW-3D **Chloride:** UMW-1D, UMW-2D, UMW-3D, UMW-4D, UMW-5D **Fluoride:** UMW-2D **Sulfate:** UMW-1D, UMW-2D, UMW-3D, UMW-4D **TDS:** UMW-2D, UMW-3D, UMW-4D	**Molybdenum:** UMW-2D, UMW-3D, UMW-4D, UMW-5D	March 21, 2024
	Verification Sampling, February 7-8, 2024	February 23, 2024	Detected Appendix III parameters (See Note 2)			
May 2024 Sampling Event	Detection and Assessment Monitoring, May 28-31, 2024	June 26, 2024	Appendix III, Appendix IV, Major Cations and Anions, & selected MNA Parameters	**pH:** UMW-2D, UMW-3D **Boron** UMW-1D, UMW-2D, UMW-3D, UMW-4D, UMW-5D **Calcium:** UMW-2D, UMW-3D **Chloride:** UMW-1D, UMW-2D, UMW-3D, UMW-4D, UMW-5D **Fluoride:** UMW-2D **Sulfate:** UMW-1D, UMW-2D, UMW-3D, UMW-4D **TDS:** UMW-2D, UMW-3D, UMW-4D	**Molybdenum:** UMW-2D, UMW-3D, UMW-4D, UMW-5D	September 24, 2024
	No Verification Sampling was required. No new SSIs were observed in the May 2024 sampling event.					

Event Name	Type of Event and Sampling Dates	Laboratory Analytical Data Receipt	Parameters Collected	Verified SSIs	SSLs	SSI & SSL Determination Date
November 2024 Sampling Event	Detection and Assessment Monitoring, November 14-20, 2024	December 18, 2024	Appendix III, Detected Appendix IV (See Note 3), & Major Cations and Anions	To be determined after statistical analysis and Verification Sampling are completed in 2025.		

Notes:
1) Testing was completed for Appendix IV analytes that were detected above the Practical Quantitation Limit (PQL) during the May 2023 sampling event.
2) Only analytes/wells that were detected above the prediction limit and that had not already been verified were tested during Verification Sampling.
3) Testing was completed for Appendix IV analytes that were detected above the PQL during the May 2024 sampling event.
4) SSI – Statistically Significant Increase.
5) SSL – Statistically Significant Level.
6) TDS – Total Dissolved Solids.
7) MNA – Monitored Natural Attenuation.

On January 9, 2019, Ameren initiated its Corrective Measures Assessment (CMA) and posted the CMA report on May 20, 2019. A public meeting was held on May 31, 2019 and responses to public comments are posted on Ameren's CCR website. On August 30, 2019, Ameren published its "Remedy Selection Report – 40 CFR § 257.97 Rush Island, Labadie, Sioux and Meramec CCR Basins" (Remedy Selection Report) that identified source control through installation of a low permeability cover system, use of Monitored Natural Attenuation (MNA), and installation of Supplemental Corrective Measures as its chosen corrective action remedial plan. The Remedy Selection Report's remedial plan consists of two phases as follows:

1) Source control, stabilization and containment of CCR by installation of a low permeability geomembrane cap (a minimum 1 x 10^{-7} centimeters per second (cm/sec) versus 1 x 10^{-5} cm/sec required by the CCR Rule).

2) Once source control is achieved, monitor the natural attenuation of groundwater concentrations to address limited and localized CCR-related impacts. Ongoing monitoring and modelling evaluations will document that concentrations are decreasing as modelled. MNA occurs due to naturally occurring processes within the aquifer.

In January 2021, Ameren commenced Phase 1 of the corrective measures remedial plan by initiating closure at the SCPA. Capping and closure of the SCPA was fully completed in 2022 (closure certification on October 14, 2022). Therefore, the SCPA transitioned into the post-closure care requirements of the CCR Rule in October 2022. As outlined in §257.104 (Post-closure Care Requirements) of the CCR Rule, the monitoring system and programs must be maintained for at least 30 years. After 30 years, if the unit is in Detection Monitoring, the unit may cease groundwater sampling activities, otherwise post-closure care must continue until the unit can return to Detection Monitoring in accordance with section §257.95 (Assessment Monitoring Program).

Once the SCPA was certified closed, Phase 2 of the corrective measures remedial plan as outlined in the Remedy Selection Report began with the October 2022 Corrective Action Sampling event. The associated statistical analysis for this event was completed in February 2023. Since that time, groundwater sampling and statistical evaluations have been completed semi-annually to determine if any constituents within the Corrective Action Monitoring Well Network are statistically in exceedance of the GWPS. A summary of Corrective Action Monitoring activities and associated statistical results for this year is provided in **Table 2**.

Table 2 - Summary of 2024 SCPA Sampling Events and Statistical Evaluations for Corrective Action Monitoring Well Network

Event Name	Type of Event and Sampling Dates	Laboratory Analytical Data Receipt Date	Parameters Collected	Constituents Statistically Exceeding the GWPS as a Part of Corrective Action Statistical Evaluations	Date Exceedance of GWPS was determined	ASD Completion Date
November 2023 Sampling Event	Phase 2 – Corrective Action Sampling November 10-14, 2023	December 20, 2023	Appendix III, Detected Appendix IV (See Note 1), & Major Cations and Anions	**Cobalt*:** LMW-6S **Lithium*:** LMW-5S, TP-2D, TP-6S **Molybdenum:** LMW-1S, LMW-2S, LMW-5S, AM-1D, AM-1S, TP-5D, PZ-1S	March 19, 2024	June 14, 2024 (See Note 4)
May 2024 Sampling Event	Phase 2 – Corrective Action Sampling May 28-31, 2024	June 26, 2024	Appendix III, Appendix IV, Major Cations and Anions, & selected MNA parameters	**Cobalt*:** LMW-6S **Lithium*:** LMW-5S, TP-2D **Molybdenum:** LMW-2S, LMW-5S, AM-1D, AM-1S, TP-5D, PZ-1S	September 24, 2024	December 23, 2024 (See Note 4)
November 2024 Sampling Event	Phase 2 – Corrective Action Sampling November 14-20, 2024	December 19, 2024	Appendix III, Detected Appendix IV (See Note 2), & Major Cations and Anions	Statistical analysis to evaluate statistical exceedances of the GWPS was not completed in 2024. Results of the statistical evaluation will be included in the 2025 Annual Report.		

Notes:
1) Testing was completed for Appendix IV analytes that were detected above the PQL during the May 2023 sampling event.
2) Testing was completed for Appendix IV analytes that were detected above the PQL during the May 2024 sampling event.
3) MNA – Monitored Natural Attenuation.
4) * - Alternative Source Demonstrations (ASDs) were prepared for cobalt and lithium exceedances and conclude these statistical exceedances are not a result of impacts from the SCPA but appear to result from natural geochemical variability within the alluvial aquifer.

While there are exceedances of the GWPS using corrective action statistical analysis methods for cobalt, lithium, and molybdenum, variability in the initial groundwater results after closure of the SCPA is expected, especially at wells near the SCPA CCR unit. Concentrations of these constituents are expected to show decreases in concentration over time after stabilization occurs from closure and corrective measure remedial activities. Alternative Source Demonstration (ASDs) were completed for the cobalt and lithium exceedances, demonstrating that these exceedances are not a result of impacts from the SCPA but instead are the result of natural geochemical variability of groundwater within the alluvial aquifer at the site. Molybdenum remains as an exceedance for the SCPA Corrective Action Network; therefore, the unit remains in Corrective Action monitoring.

In 2024, WSP USA Inc. (WSP) and Rocksmith Geoengineering, LLC (Rocksmith) prepared an evaluation of monitored natural attenuation (MNA) for molybdenum in groundwater at the Sioux Energy Center. This report is available on Ameren's publicly available CCR website and the investigation demonstrated that natural processes, including adsorption and mineral precipitation, are effectively reducing molybdenum concentrations. Supplemental corrective measures, such as a groundwater treatment system implemented in 2023, have further supported these reductions.

Supplemental Corrective Measures

In addition to MNA as a Corrective Measure, Ameren has also initiated a supplemental corrective measure consisting of groundwater extraction, treatment, and re-injection using ex-situ treatment technologies with chemical precipitation and selective-ion exchange. The groundwater treatment system became fully operational in February 2023, and approximately 35 million gallons of water have been treated since that time. A Supplemental Remedy Selection Report for the SEC was published in July 2024 by Haley & Aldrich, Inc. on behalf of Ameren Missouri. The report details the progress of corrective measures implemented since the 2019 Remedy Selection

Report, including the completion of source control activities, ongoing natural attenuation processes, and the implementation of a groundwater treatment system. These corrective measures are effectively contributing to constituent mass reductions in groundwater near the SCPA and remain ongoing.

Overall, Corrective Action taken by Ameren has reduced concentrations of key CCR constituents by means of closure of the SCPA with an engineered geomembrane cover system, installation and operation of a groundwater treatment system, and MNA of impacts. In monitoring wells directly adjacent to the SCPA, average boron concentrations have decreased approximately 43%, and average molybdenum concentrations have decreased approximately 52% since 2020 (final year the SCPA was active). Groundwater monitoring and evaluations of monitoring results will continue, and progress will be tracked in future Annual Reports and statistical evaluations.

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1.0 INSTALLATION OR DECOMISSIONING OF MONITORING WELLS

There are currently two different networks used for monitoring the SCPA: the monitoring well network established under §257.91 for Detection and Assessment Monitoring and the network established under §257.98 for Corrective Action Monitoring as displayed in **Figure 1**. No new wells were installed or decommissioned in 2024. A summary of the well construction details for monitoring wells in both networks is provided in **Table 3**. Further details, including well construction diagrams for these wells, are provided in previous annual reports for the SCPA.

2.0 GROUNDWATER SAMPLING RESULTS AND DISCUSSION

The following sections discuss the sampling events completed for the SCPA CCR Unit in 2024. **Tables 4** and **5** provide a summary of the groundwater samples collected in 2024 including the number of samples, the date of the sample collection, and the monitoring program for which the samples were collected. **Appendix A** provides laboratory analytical data for CCR Rule sampling events conducted in 2024.

2.1 Detection Monitoring Program

A Detection Monitoring sampling event was completed November 10-14, 2023. The statistical analysis to evaluate for SSIs for the November 2023 event was not completed until 2024 and is included in this report. Detections above respective prediction limits for some Appendix III analytes triggered a verification sampling event, which was completed on February 7-8, 2024, and verified multiple new SSIs. **Table 6** summarizes the results and statistical analysis of the November 2023 Detection Monitoring event. Laboratory analytical data for the November 2023 Detection Monitoring event are provided in the 2023 Groundwater Monitoring and Corrective Action Annual Report for the SCPA.

Detection Monitoring samples were collected May 28-31, 2024, and testing was completed for all Appendix III analytes, as well as major cations and anions. There were no new initial exceedances for the May 2024 event, therefore, no verification sampling was necessary. **Table 7** summarizes the results and statistical analysis of the May 2024 Detection Monitoring event.

A Detection Monitoring sampling event was completed November 14-20, 2024, and testing was performed for all Appendix III analytes, as well as major cations and anions. The statistical analysis to evaluate for SSIs in the November 2024 data was not completed in 2024 and the results will be provided in the 2025 Annual Report. **Table 8** summarizes the results of the November 2024 Detection Monitoring event.

2.2 Assessment Monitoring Program

An Assessment Monitoring sampling event was completed November 10-14, 2023, and testing was completed for Appendix IV parameters detected above the Practical Quantitation Limit (PQL) during the previous sampling event from either the Assessment or Corrective Action Groundwater Monitoring Well Networks, as well as major cations and anions. **Table 9** summarizes the results of the November 2023 Assessment Monitoring event. Laboratory analytical data for this event are provided in the 2023 Annual Report. The statistical evaluation for this event was completed in 2024 and is included in this report. The statistical evaluation for this event and a table that displays the site-specific GWPSs are provided in **Appendix B** and determined there were no new SSLs. The SSLs for the SCPA continue to be:

- Molybdenum at UMW-2D, UMW-3D, UMW-4D, and UMW-5D

An Assessment Monitoring sampling event was completed from May 28-31, 2024 and testing was completed for all Appendix IV analytes, major cations and anions, and other selected MNA parameters. **Table 10** summarizes the results of the May 2024 Assessment Monitoring event. The statistical evaluation for this event and a table that displays the site-specific GWPS are provided in **Appendix C** and determined that there were no new SSLs, and the molybdenum SSLs listed above remain.

An Assessment Monitoring sampling event was completed November 14-20, 2024, and testing was completed for Appendix IV analytes that were detected above the PQL during the May 2024 sampling event from either the Assessment or Corrective Action Groundwater Monitoring Well Networks as well as major cations and anions. **Table 11** summarizes the results of the November 2024 Assessment monitoring event. However, statistical analysis to evaluate SSLs associated with this sampling event was not completed in 2024. Results of the statistical evaluation will be included in the 2025 Annual Report.

2.3 Corrective Action Monitoring Program

A Corrective Action sampling event was completed November 10-14, 2023, and testing was completed for all Appendix III analytes, Appendix IV analytes that were detected above the PQL during the previous sampling event from either the Assessment or Corrective Action Groundwater Monitoring Well Networks, and major cations and anions. A summary of the November 2023 Corrective Action sampling event results is provided in **Table 12** and the results of the statistical evaluation for this event are provided in **Appendix D**. Based on this evaluation, the following constituents at corresponding wells displayed statistical exceedances of the GWPS using Corrective Action statistical methods[1]:

- Cobalt at LMW-6S
- Lithium at LMW-5S, TP-2D, and TP-6S
- Molybdenum at LMW-1S, LMW-2S, LMW-5S, AM-1D, AM-1S, TP-5D, and PZ-1S

A Corrective Action sampling event was completed on May 28-31, 2024. Testing was completed for all Appendix III and IV analytes, major cations and anions, and other selected MNA parameters. A summary of the May 2024 Corrective Action sampling results is provided in **Table 13**, and results of the statistical evaluation for this event are provided in **Appendix E**. Based on the statistical evaluation, as of the May 2024 sampling event, Molybdenum at LMW-1S and lithium at TP-6S are no longer statistical exceedances of the GWPS using Corrective Action statistical methods. Other exceedances remained the same as those identified following the November 2023 Corrective Action sampling event, and they are listed as follows:

- Cobalt at LMW-6S
- Lithium at LMW-5S and TP-2D
- Molybdenum at LMW-2S, LMW-5S, AM-1D, AM-1S, TP-5D, and PZ-1S

As stated in the Corrective Action GMP, if the statistical evaluation determines that a constituent exceeds the GWPS that was not identified as an SSL in Assessment Monitoring, the data should be evaluated to determine the source of the exceedance. Cobalt and lithium have not historically been identified as an SSL in Assessment Monitoring and a review of the data determined that the statistical exceedances at wells LMW-6S (cobalt) as well as LMW-5S, TP-2D, and TP-6S (lithium) are not caused by the SCPA CCR unit. Therefore, Alternative Source Demonstrations (ASDs) were completed following the November 2023 and May 2024 sampling events for these cobalt and lithium exceedances, and are provided in **Appendix F** and **Appendix G**. These ASDs conclude that the statistical exceedances for cobalt and lithium at these wells are not a result of impacts from the SCPA but appear to result from natural geochemical variability within the alluvial aquifer.

A Corrective Action sampling event was completed on November 14-20, 2024, and testing was completed for Appendix III analytes, Appendix IV analytes that were detected above the PQL during the May 2024 sampling event from either the Assessment or Corrective Action Groundwater Monitoring Well Networks, as well as major cations and anions. **Table 14** summarizes the results of the November 2024 Corrective Action event. The

[1] The statistical testing method used to evaluate the Corrective Action monitoring results is the confidence interval method, which is the same method used during Assessment Monitoring, except the null hypothesis for the confidence intervals is reversed. For Corrective Action, the Unified Guidance states that the appropriate null hypothesis is that the groundwater population (mean) exceeds the Groundwater Protection Standard (GWPS) for those constituents that exceed the GWPS under Assessment Monitoring program. Therefore, in Corrective Action the Upper Confidence Limit (UCL) is compared to the GWPS instead of the Lower Confidence Limit (LCL) [as used during Assessment Monitoring].

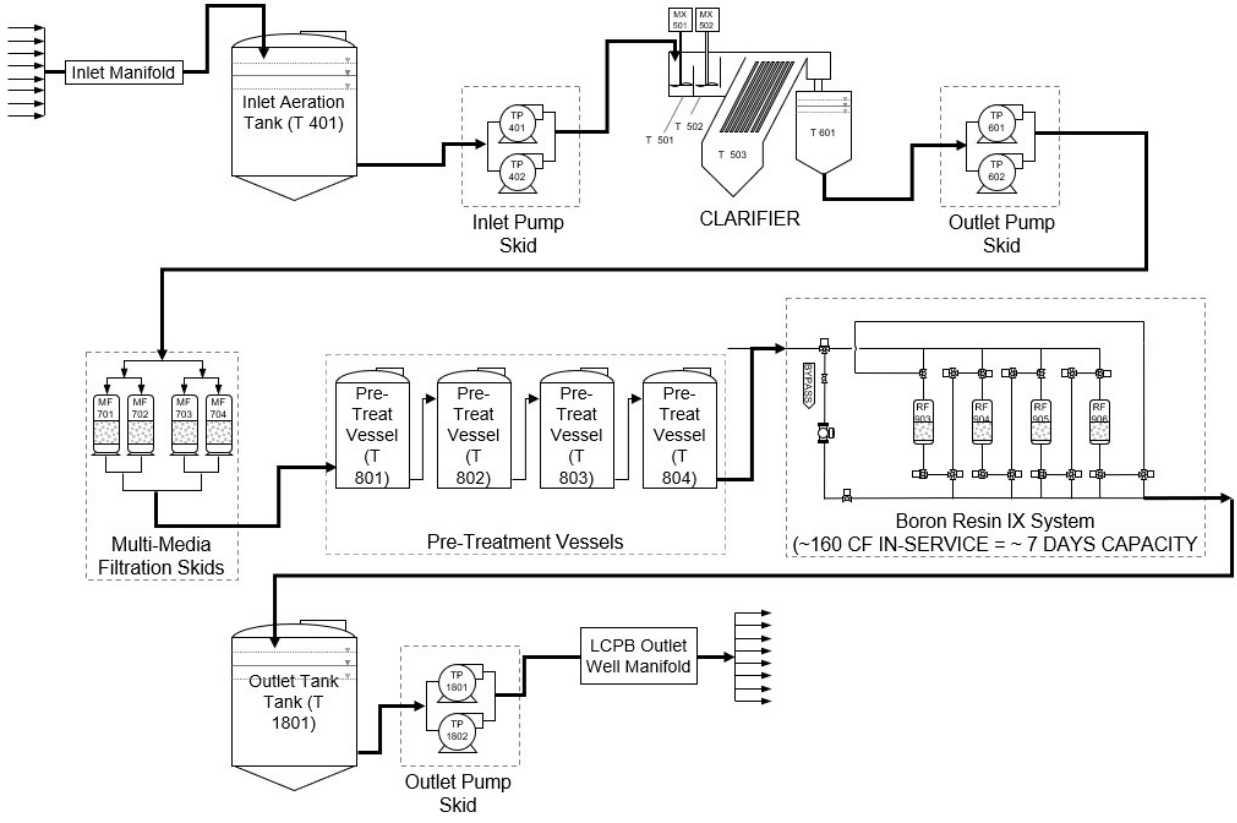
statistical analysis to evaluate exceedances of the GWPS was not completed in 2024. Results of the statistical evaluation will be included in the 2025 Annual Report.

2.4 Supplemental Corrective Measures

As outlined in Ameren's Remedy Selection Report, once source control is achieved, Ameren will monitor natural attenuation of groundwater and complete supplemental corrective measures using groundwater treatment. In 2021, Ameren began implementing the supplemental corrective measure for CCR groundwater compliance using ex-situ treatment technologies of chemical precipitation and selective-ion exchange by completing a pilot study at the Rush Island Energy Center. The results of this groundwater treatment pilot study displayed significant reductions in key CCR indicator concentrations. Due to the success, Ameren expanded this technology to the Sioux Energy Center and operation of the treatment system began in February 2023. After a period of optimization, the system achieved target runtime and flowrate beginning in September 2023 and was operational throughout 2024.

The groundwater treatment system was developed to successfully capture the CCR impacted groundwater from the SCPA, treat the water by removing contaminants, and return treated water to the same hydrogeologic horizon. The process used for this treatment is illustrated in **Figure 2** below.

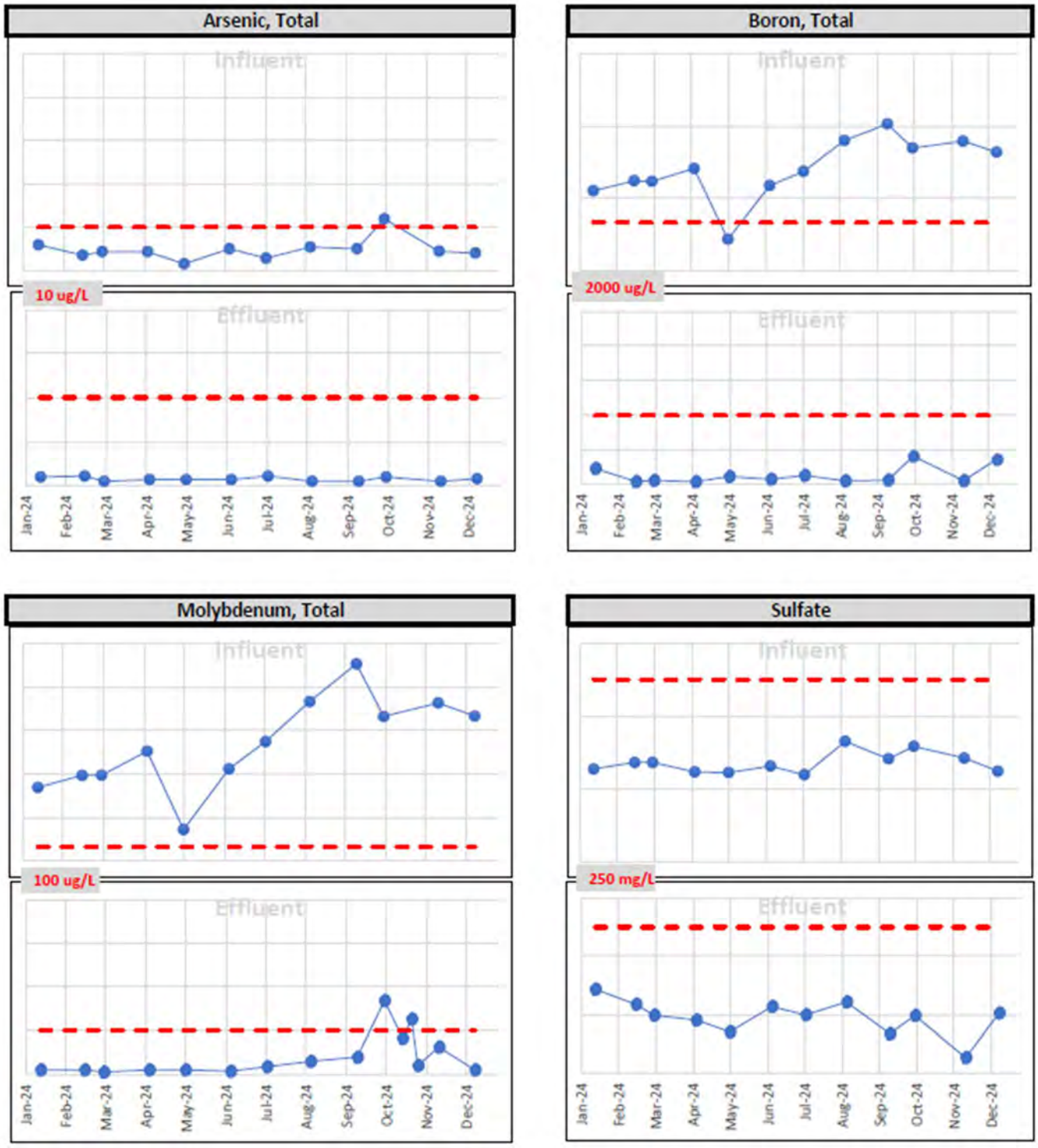
Figure 2: CCR Impacted Groundwater Treatment Process



The process is constructed to minimize waste generation and operate independently of other facilities onsite.

Figure 3 on the following page shows the influent and effluent data from the SCPA groundwater treatment collected over the period of system optimization through initial full-scale system operation. Displayed data are for key CCR constituents in groundwater downgradient of the impoundment. The figure illustrates that, after a few months of optimization, the system effluent concentrations have consistently been below the discharge standards for groundwater (indicated in red). These discharge standards meet drinking water action levels for the applicable constituents.

Figure 3: SCPA Groundwater Treatment System Influent and Effluent Concentrations – 2024



2.5 Evaluation of Corrective Measures

Ameren commenced Phase 1 of the corrective action remedial plan by initiating closure of the SCPA in January 2021. Closure was completed on October 14, 2022. The November 2024 groundwater sampling event represents

the fifth event since closure of the SCPA was completed, and the fourth sampling event since the implementation of the full groundwater treatment system.

In order to document the effectiveness of the Corrective Action Remedies (corrective measures), an evaluation of the key site CCR indicators was completed. **Figures 4** and **5** (below) display the average concentrations for boron and molybdenum in the monitoring wells directly adjacent to the SCPA. While there is variability in individual well results, the average annual concentrations of boron and molybdenum at the site are decreasing as follows:

- Boron – Average concentrations in the monitoring wells downgradient of the SCPA have decreased approximately 43% since 2020.
- Molybdenum – Average concentrations in the monitoring wells downgradient of the SCPA have decreased approximately 52% since 2020.

Figure 4 - Average Boron Concentrations

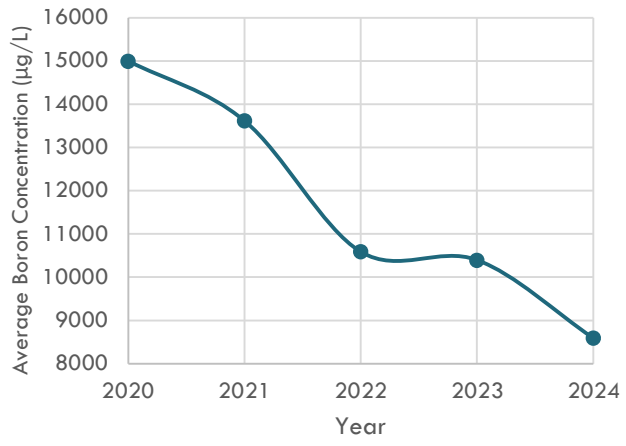
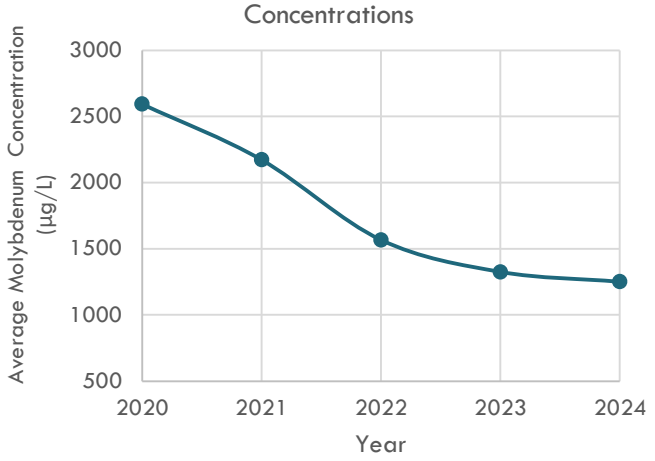


Figure 5 - Average Molybdenum Concentrations



As displayed by these figures, corrective measures taken by Ameren, including the closure of the SCPA with an engineered geomembrane cover system, installation and operation of a groundwater treatment system, and MNA have been effective in reducing concentrations of these constituents, which is further detailed in the Supplemental Remedy Selection Report published by Haley & Aldrich in July 2024. Groundwater monitoring and evaluation of monitoring results will continue, and progress will be tracked in future Annual Reports and statistical evaluations.

2.6 Groundwater Elevation, Flow Rate and Direction

To meet the requirements of §257.93(c), water level measurements were taken at all monitoring wells prior to the start of groundwater purging and sampling. Static water levels were measured within a 24-hour period in each monitoring well using an electronic water level indicator.

Groundwater elevations were used to generate potentiometric surface maps included in **Appendix H**. As shown on the potentiometric surface maps, groundwater flow direction within the uppermost aquifer is dynamic and influenced by seasonal changes in the water level in the adjacent Mississippi and Missouri Rivers, which affect water levels, gradients and flow directions in these water bodies. Groundwater in the alluvial aquifer will generally flow from the higher of the two rivers toward the lower elevation river. Water flows into and out of the alluvial aquifer as a result of fluctuating river water levels that produce “bank recharge” and “bank discharge” conditions. At this facility, groundwater can flow north and south toward the Mississippi and Missouri Rivers, depending on river levels.

Groundwater flow direction and hydraulic gradient at the SEC were estimated for the alluvial aquifer wells using commercially available software to evaluate data since 2016. Results indicate that groundwater flow direction at the SEC is variable due to fluctuating river levels but has most often flowed from north to south. The overall net

groundwater flow direction in the alluvial aquifer at the SEC was south-southeast in 2024 as a result of river levels in the Missouri and Mississippi Rivers. From 2016 through 2022, horizontal gradients have ranged from 0.00006 to 0.001 feet/foot with an estimated net annual groundwater movement of approximately four feet per year in the prevailing downgradient direction. From July 2022 to February 2024, due to relatively low Missouri River levels, there was a more prevalent southward flow direction at a rate of approximately 43 feet per year. Based on water levels collected beginning in May 2024 throughout the rest of the year, groundwater flow varied north and south with a net eastward direction, averaging approximately 7 feet per year.

2.7 Sampling Issues

No notable sampling issues were encountered at the SCPA in 2024.

3.0 ACTIVITIES PLANNED FOR 2025

Detection and Assessment Monitoring are scheduled to continue on a semi-annual basis in the second and fourth quarters of 2025. Statistical analysis of the November 2024 Detection and Assessment Monitoring data will be completed in 2025 and will be included in the 2025 Annual Report. As outlined in the Statistical Analysis plan for the site, updates to the statistical limits should be completed once four to eight new sample results are available. After the first semiannual sampling event in 2025, there will be at least 4 new results for each Appendix III parameter. Therefore, background updates are planned to be completed in 2025.

As part of Phase 2 of the Remedy Selection Report's corrective measures remedial plan, Corrective Action Monitoring is scheduled to continue on a semi-annual basis in the second and fourth quarters of 2025. Statistical analysis of the November 2024 Corrective Action Monitoring data will be completed in 2025 and will be included in the 2025 Annual Report. Monitoring and statistical evaluation of the corrective measures will be completed in accordance with the corrective measures remedial plan discussed in the Remedy Selection Report.

Evaluation of the effectiveness of Corrective Action and Corrective Measures (groundwater treatment) on CCR constituent concentrations in groundwater will continue in 2025 and be included in the 2025 Annual Report.

Tables

Table 3
Summary of Well Construction Details
SCPA Surface Impoundment
Sioux Energy Center, St. Charles County, MO

Monitoring Well ID	Installation Date	Location		Top of Casing Elevation	Ground Surface Elevation	Top of Screen Elevation	Base of Well	Total Depth
		Northing[1]	Easting[1]	(FT MSL)[2]	(FT MSL)[2]	(FT MSL)[2]	(FT MSL)[2]	(FT BGS)[3]
CCR RULE COMPLIANCE NETWORK								
UMW-1D*	12/15/2015	1121321.4	879420.3	444.95	445.4	383.9	373.7	71.7
UMW-2D	12/17/2015	1120266.7	878981.6	433.86	431.7	386.6	376.4	55.4
UMW-3D	12/16/2015	1120570.4	878251.1	431.67	430.1	384.3	374.1	56.0
UMW-4D	12/16/2015	1121077.9	877859.9	423.52	421.7	380.7	370.5	51.2
UMW-5D	12/17/2015	1121815.0	877799.1	446.66	444.8	384.8	374.6	70.2
UMW-6D	12/18/2015	1122312.0	878639.5	447.02	444.9	384.1	373.9	71.0
BMW-1D	12/8/2015	1121713.6	876740.9	428.28	426.0	383.1	372.9	53.2
BMW-3D	11/8/2016	1121798.8	875798.3	426.41	424.2	381.8	371.6	52.6
CORRECTIVE ACTION MONITORING WELL NETWORK								
LMW-1S*	12/15/2015	1121320.4	879427.6	445.07	445.4	414.8	404.6	40.8
LMW-2S	12/16/2015	1120332.8	879283.7	447.16	445.2	414.7	404.5	40.8
LMW-4S	12/8/2015	1119226.6	879561.5	429.40	427.3	412.4	402.2	25.1
LMW-5S	12/14/2015	1119250.6	880348.6	447.36	445.5	410.1	399.9	45.6
LMW-6S	12/14/2015	1119782.0	880867.8	446.00	444.1	414.1	403.9	40.2
BMW-1S	12/8/2015	1121709.2	876755.6	427.77	426.0	412.0	401.8	24.2
BMW-3S	11/8/2016	1121792.9	875809.5	426.69	424.1	410.2	400.0	24.2
UMW-7S (AM-1S)	7/11/2018	1122151.7	877672.3	425.56	423.3	408.5	398.2	25.1
UMW-7D (AM-1D)	7/11/2018	1122156.7	877672.7	425.47	423.5	378.7	368.4	55.1
PZ-1S	6/17/2018	1121157.5	877799.8	423.94	422.1	402.4	391.7	30.5
PZ-9D	6/19/2018	1119526.8	881125.3	434.30	432.4	377.2	366.5	65.9
UG-3	12/16/2007	1118608.5	880519.4	429.71	427.1	410.0	399.7	27.4
TP-2D	7/9/2018	1123221.1	881698.8	429.26	426.7	347.3	342.2	84.4
TP-3D	7/9/2018	1120614.0	882877.1	434.82	432.1	356.1	351.0	81.1
TP-4D	7/8/2018	1118472.8	882589.0	428.72	426.4	349.3	344.2	82.2
TP-5D**	7/6/2018	1118812.3	879517.5	429.13	429.3	352.5	347.4	81.9
TP-6S	7/11/2018	1119284.6	876381.5	428.07	426.1	408.1	403.0	23.0
TP-6D	7/11/2018	1119284.6	876381.5	428.06	426.1	345.6	340.5	85.6
TP-8D	7/14/2018	1114533.1	881307.7	431.30	428.8	351.7	346.6	82.3

Notes:

1) Horizontal Datum: State Plane Coordinates NAD83 (2000) Missouri East Zone feet.

2) FT MSL - Feet above mean sea level.

3) FT BGS - Feet below ground surface.

4) Vertical Datum: NAVD88 feet.

5) *UMW-1D and LMW-1S were modified on 04/29/2020.

6) **TP-5D was modified on 3/26/2021.

Created By: GTM
Checked By: JSI
Reviewed By: MNH

Table 4
Summary of Detection and Assessment Groundwater Network Sampling Dates
SCPA Surface Impoundment
Sioux Energy Center, St. Charles County, MO

Groundwater Monitoring Wells	Date of Sample Collection			
	February 2024 Verification Sampling	May 2024 Sampling Event	November 2024 Sampling Event	Total Number of Samples
CCR Rule Compliance Monitoring Well Network				
BMW-1D	-	5/28/2024	11/20/2024	2
BMW-3D	-	5/28/2024	11/20/2024	2
UMW-1D	2/8/2024	5/31/2024	11/14/2024	3
UMW-2D	2/8/2024	5/30/2024	11/18/2024	3
UMW-3D	-	5/30/2024	11/18/2024	2
UMW-4D	-	5/30/2024	11/18/2024	2
UMW-5D	2/7/2024	5/30/2024	11/18/2024	3
UMW-6D	-	5/30/2024	11/18/2024	2
Assessment or Detection Monitoring	Detection	Assessment/ Detection	Assessment/ Detection	NA

Notes:

1.) Detection Monitoring results provided in Tables 6-8.

2.) Verification Sampling results provided in Tables 6-7.

3.) Assessment Monitoring results provided in Tables 9-11.

4.) "-" No sample collected.

5.) NA - Not Applicable.

Created by: GTM
Checked by: JTR
Reviewed by: MNH

Table 5
Summary of Corrective Action Groundwater Network Sampling Dates
SCPA Surface Impoundment
Sioux Energy Center, St. Charles County, MO

Groundwater Monitoring Wells	Date of Sample Collection		
	May 2024 Sampling Event	November 2024 Sampling Event	Total Number of Samples
Corrective Action Monitoring Well Network			
LMW-1S	5/31/2024	11/14/2024	2
LMW-2S	5/28/2024	11/19/2024	2
LMW-4S	5/29/2024	11/19/2024	2
LMW-5S	5/31/2024	11/15/2024	2
LMW-6S	5/31/2024	11/15/2024	2
AM-1S (UMW-7S)	5/29/2024	11/19/2024	2
AM-1D (UMW-7D)	5/29/2024	11/19/2024	2
PZ-1S	5/30/2024	11/18/2024	2
PZ-9D	5/31/2024	11/18/2024	2
UG-3	5/28/2024	11/14/2024	2
TP-2D	5/31/2024	11/20/2024	2
TP-3D	5/31/2024	11/20/2024	2
TP-4D	5/29/2024	11/20/2024	2
TP-5D	5/28/2024	11/14/2024	2
TP-6S	5/28/2024	11/14/2024	2
TP-6D	5/28/2024	11/14/2024	2
TP-8D	5/29/2024	11/18/2024	2
BMW-1S	5/28/2024	11/20/2024	2
BMW-3S	5/28/2024	11/20/2024	2
Event Type	Corrective Action	Corrective Action	NA

Notes:

1.) Corrective Action sampling results provided in Tables 12-14.

2.) NA - Not Applicable.

Created by: GTM
Checked by: JTR
Reviewed by: MNH

Table 6
November 2023 Detection Monitoring Results
SCPA Surface Impoundment
Sioux Energy Center, St. Charles County, MO

			BACKGROUND		GROUNDWATER MONITORING WELLS					
ANALYTE	UNITS	PREDICTION LIMITS	BMW-1D	BMW-3D	UMW-1D	UMW-2D	UMW-3D	UMW-4D	UMW-5D	UMW-6D
November 2023 Detection Monitoring Event										
DATE	NA	NA	11/10/2023	11/10/2023	11/14/2023	11/10/2023	11/10/2023	11/10/2023	11/10/2023	11/10/2023
pH	SU	6.722-7.464	7.23	7.06	7.36	8.46	8.29	7.42	7.51	7.10
BORON, TOTAL	µg/L	240	140	65.0 J	720	19,600	31,900	16,600	6,220	411
CALCIUM, TOTAL	µg/L	144,073	125,000	116,000	78,500	162,000	279,000	136,000	78,700	109,000
CHLORIDE, TOTAL	mg/L	11.46	10.0	11.4	28.8	24.9	14.9	27.3	23.8 J	4.0
FLUORIDE, TOTAL	mg/L	0.44	ND	ND	ND	0.73 J	0.23 J	0.21 J	0.15 J	ND
SULFATE, TOTAL	mg/L	52.4	19.7	28.0 J	72.1	365	758	293	1.9	30.4 J
TOTAL DISSOLVED SOLIDS	mg/L	518.4	438	437	372	789 J	1,440	753	345	421
February 2024 Verification Sampling Event										
DATE	NA	NA			2/8/2024	2/8/2024			2/7/2024	
pH	SU	6.722-7.464							7.21	
BORON, TOTAL	µg/L	240								
CALCIUM, TOTAL	µg/L	144,073								
CHLORIDE, TOTAL	mg/L	11.46			44.3					
FLUORIDE, TOTAL	mg/L	0.44				2.6 J				
SULFATE, TOTAL	mg/L	52.4			72.6					
TOTAL DISSOLVED SOLIDS	mg/L	518.4								

NOTES:
1. Unit Abbreviations: µg/L - micrograms per liter, mg/L - milligrams per liter, SU - standard units.
2. J - Result is an estimated value.
3. NA - Not applicable.
4. Prediction limits calculated using Sanitas Software.
5. Values highlighted in yellow indicate a Statistically Significant Increase (SSI).
6. Values highlighted in green indicate an initial exceedance above the prediction limit that was not confirmed by Verification Sampling (not an SSI).
7. ND - Constituent was analyzed but was not detected above the Method Detection Limit (MDL) or the adjusted Practical Quantitation Limit (PQL) based on data validation and is considered a non-detect. Values displayed as ND.
8. Only analytes/wells that were detected above the prediction limit and that had not already been verified were tested during Verification Sampling.

Prepared By: GTM
Checked By: ANT
Reviewed By: JSI

Table 7
May 2024 Detection Monitoring Results
SCPA Surface Impoundment
Sioux Energy Center, St. Charles County, MO

			BACKGROUND		GROUNDWATER MONITORING WELLS					
ANALYTE	UNITS	PREDICTION LIMITS	BMW-1D	BMW-3D	UMW-1D	UMW-2D	UMW-3D	UMW-4D	UMW-5D	UMW-6D
May 2024 Detection Monitoring Event										
DATE	NA	NA	5/28/2024	5/28/2024	5/31/2024	5/30/2024	5/30/2024	5/30/2024	5/30/2024	5/30/2024
pH	SU	6.722-7.464	7.10	7.04	7.40	8.08	8.04	7.24	7.23	6.81
BORON, TOTAL	µg/L	240	117	64.1 J	586	11,200	32,800	13,700 J	6,040	204
CALCIUM, TOTAL	µg/L	144,073	122,000	112,000	91,900	171,000	234,000	114,000 J	84,000	105,000
CHLORIDE, TOTAL	mg/L	11.46	10.1 J	10.4	48.7	23.8	17.5	34.5	44.3	ND
FLUORIDE, TOTAL	mg/L	0.44	ND	ND	0.13 J	1.10	ND	0.42	0.34	ND
SULFATE, TOTAL	mg/L	52.4	25.0 J	18.9	73.1	356	784	249	10.8	37.7 J
TOTAL DISSOLVED SOLIDS	mg/L	518.4	431	431	423	749	1,200	594	422	404

NOTES:
1. Unit Abbreviations: µg/L - micrograms per liter, mg/L - milligrams per liter, SU - standard units.
2. J - Result is an estimated value.
3. NA - Not applicable.
4. Prediction limits calculated using Sanitas Software.
5. Values highlighted in yellow indicate a Statistically Significant Increase (SSI).
6. ND - Constituent was analyzed but was not detected above the Method Detection Limit (MDL) or the adjusted Practical Quantitation Limit (PQL) based on data validation and is considered a non-detect. Values displayed as ND.
7. There were no new initial exceedances from the May 2024 Detection Monitoring event, therefore no Verification Sampling was conducted.

Prepared By: JTA
Checked By: JTR
Reviewed By: MNH

Table 8
November 2024 Detection Monitoring Results
SCPA Surface Impoundment
Sioux Energy Center, St. Charles County, MO

		BACKGROUND		GROUNDWATER MONITORING WELLS					
ANALYTE	UNITS	BMW-1D	BMW-3D	UMW-1D	UMW-2D	UMW-3D	UMW-4D	UMW-5D	UMW-6D
November 2024 Detection Monitoring Event									
DATE	NA	11/20/2024	11/20/2024	11/14/2024	11/18/2024	11/18/2024	11/18/2024	11/19/2024	11/18/2024
pH	SU	6.94	6.83	7.43	8.17	8.06	7.34	7.09	6.65
BORON, TOTAL	µg/L	116	58.4 J	548	12,000	32,400	1,210	5,000	162
CALCIUM, TOTAL	µg/L	122,000	111,000	121,000	151,000	225,000	135,000	76,600	98,000 J
CHLORIDE, TOTAL	mg/L	11.6	12.6 J	161 J	23.3	18.4	30.9	32.0	5.6
FLUORIDE, TOTAL	mg/L	ND	ND	0.47 J	1.0	0.38	0.55	0.29	ND
SULFATE, TOTAL	mg/L	23.3	19.7	67.8 J	286	808	223	1.7	33.6
TOTAL DISSOLVED SOLIDS	mg/L	463	436	591	703	1,240	614	371	414

NOTES:
1. Unit Abbreviations: µg/L - micrograms per liter, mg/L - milligrams per liter, SU - standard units.
2. J - Result is an estimated value.
3. NA - Not applicable.
4. ND - Constituent was analyzed but was not detected above the Method Detection Limit (MDL) or the adjusted Practical Quantitation Limit (PQL) based on data validation and is considered a non-detect. Values displayed as ND.

Prepared By: GTM
Checked By: JTR
Reviewed By: MNH

Table 9
November 2023 Assessment Monitoring Results
SCPA Surface Impoundment
Sioux Energy Center, St. Charles County, MO

		BACKGROUND		GROUNDWATER MONITORING WELLS					
ANALYTE	UNITS	BMW-1D	BMW-3D	UMW-1D	UMW-2D	UMW-3D	UMW-4D	UMW-5D	UMW-6D
FIELD PARAMETERS									
DATE	NA	11/10/2023	11/10/2023	11/14/2023	11/10/2023	11/10/2023	11/10/2023	11/10/2023	11/10/2023
DISSOLVED OXYGEN	mg/L	0.21	0.27	0.49	0.31	0.29	0.24	0.40	0.36
pH	SU	7.23	7.06	7.36	8.46	8.29	7.42	7.51	7.10
REDOX POTENTIAL	mV	-27.2	181.7	112.8	-95.7	-151.8	-61.0	-113.1	-88.4
SPECIFIC CONDUCTIVITY	mS/cm	0.698	0.670	0.617	0.910	1.457	0.919	0.528	0.594
TURBIDITY	NTU	4.97	2.18	3.81	0.34	0.43	2.12	1.11	1.20
APPENDIX IV PARAMETERS									
ARSENIC, TOTAL	µg/L	0.34 J	0.18 J	1.7	3.0	1.2	0.38 J	0.35 J	0.41 J
BARIUM, TOTAL	µg/L	331	703	152	59.0	76.5	47.0	410	156
CADMIUM, TOTAL	µg/L	ND	ND	ND	0.55	1.0	1.3	0.080 J	ND
CHROMIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
COBALT, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
FLUORIDE, TOTAL	mg/L	ND	ND	ND	0.73 J	0.23 J	0.21 J	0.15 J	ND
LITHIUM, TOTAL	µg/L	13.9	22.2	17.7	28.6	21.9	34.9	21.9	17.7
MOLYBDENUM, TOTAL	µg/L	1.1 J	ND	66.4	1,700	3,070	3,990	191	37.2
RADIUM [226 + 228]	pCi/L	ND	ND	ND	ND	ND	ND	1.370	ND
SELENIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND

NOTES
1. Unit Abbreviations: µg/L - micrograms per liter, mg/L - milligrams per liter, SU - standard units, pCi/L - picocuries per liter, mV - millivolts, mS/cm - millisiemens per centimeter, and NTU - nephelometric turbidity units.
2. J - Result is an estimated value.
3. NA - Not Applicable.
4. ND - Constituent was analyzed but was not detected above the Method Detection Limit (MDL) or the adjusted Practical Quantitation Limit (PQL) based on data validation and is considered a non-detect. Values displayed as ND.
5. Radium [226 + 228] is reported as the sum of the Radium 226 and the Radium 228 activity concentrations unless the sum of the Radium 226 and Radium 228 Minimum Detectable Concentrations (MDC) is higher in which case it is displayed as ND.

Prepared By: GTM
Checked By: ANT
Reviewed By: MNH

Table 10
May 2024 Assessment Monitoring Results
SCPA Surface Impoundment
Sioux Energy Center, St. Charles County, MO

		BACKGROUND		GROUNDWATER MONITORING WELLS					
ANALYTE	UNITS	BMW-1D	BMW-3D	UMW-1D	UMW-2D	UMW-3D	UMW-4D	UMW-5D	UMW-6D
FIELD PARAMETERS									
DATE	NA	5/28/2024	5/28/2024	5/31/2024	5/30/2024	5/30/2024	5/30/2024	5/30/2024	5/30/2024
DISSOLVED OXYGEN	mg/L	0.39	0.66	0.40	0.36	0.31	0.15	0.23	0.43
pH	SU	7.10	7.04	7.40	8.08	8.04	7.24	7.23	6.81
REDOX POTENTIAL	mV	-117.7	-102.5	-77.8	-116.3	-163.8	-126.2	-121.3	-70.8
SPECIFIC CONDUCTIVITY	mS/cm	0.855	0.812	0.734	1.045	1.501	0.906	0.663	0.703
TURBIDITY	NTU	4.23	0.84	1.11	2.12	0.56	4.32	0.50	1.13
APPENDIX IV PARAMETERS									
ANTIMONY, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
ARSENIC, TOTAL	µg/L	0.23 J	ND	2.0	3.1	0.95 J	0.32 J	0.30 J	0.41 J
BARIUM, TOTAL	µg/L	355	669	185	61.5	62.9	45.0	453	148
BERYLLIUM, TOTAL	µg/L	0.19 J	0.26 J	ND	ND	ND	ND	ND	ND
CADMIUM, TOTAL	µg/L	ND	ND	ND	0.49 J	1.7	1.3	0.089 J	ND
CHROMIUM, TOTAL	µg/L	ND	ND	0.70 J	ND	ND	0.35 J	ND	0.37 J
COBALT, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
FLUORIDE, TOTAL	mg/L	ND	ND	0.13 J	1.1	ND	0.42	0.34	ND
LEAD, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
LITHIUM, TOTAL	µg/L	13.7	23.0	22.6	26.7	18.3	29.2	23.4	17.3
MERCURY, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
MOLYBDENUM, TOTAL	µg/L	ND	ND	93.0	1,280	4,840	3,510	226	28.2
RADIUM [226 + 228]	pCi/L	ND	ND	ND	ND	ND	ND	ND	ND
SELENIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND
THALLIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND

NOTES
1. Unit Abbreviations: µg/L - micrograms per liter, mg/L - milligrams per liter, SU - standard units, pCi/L - picocuries per liter, mV - millivolts, mS/cm - millisiemens per centimeter, and NTU - nephelometric turbidity units.
2. J - Result is an estimated value.
3. NA - Not Applicable.
4. ND - Constituent was analyzed but was not detected above the Method Detection Limit (MDL) or the adjusted Practical Quantitation Limit (PQL) based on data validation and is considered a non-detect. Values displayed as ND.
5. Radium [226 + 228] is reported as the sum of the Radium 226 and the Radium 228 activity concentrations unless the sum of the Radium 226 and Radium 228 Minimum Detectable Concentrations (MDC) is higher in which case it is displayed as ND.

Prepared By: GTM
Checked By: JTR
Reviewed by: MNH

Table 11
November 2024 Assessment Monitoring Results
SCPA Surface Impoundment
Sioux Energy Center, St. Charles County, MO

		BACKGROUND		GROUNDWATER MONITORING WELLS					
ANALYTE	UNITS	BMW-1D	BMW-3D	UMW-1D	UMW-2D	UMW-3D	UMW-4D	UMW-5D	UMW-6D
FIELD PARAMETERS									
DATE	NA	11/20/2024	11/20/2024	11/14/2024	11/18/2024	11/18/2024	11/18/2024	11/18/2024	11/18/2024
DISSOLVED OXYGEN	mg/L	0.22	0.23	0.22	0.25	0.25	0.09	0.29	0.35
pH	SU	6.94	6.83	7.43	8.17	8.06	7.34	7.09	6.65
REDOX POTENTIAL	mV	-82.4	-124.2	94.8	113.8	42.1	-56.8	-145.2	-122.3
SPECIFIC CONDUCTIVITY	mS/cm	0.827	0.791	0.980	0.975	1.542	0.912	0.670	0.752
TURBIDITY	NTU	4.91	1.12	1.89	1.41	0.97	2.48	1.86	2.65
APPENDIX IV PARAMETERS									
ARSENIC, TOTAL	µg/L	0.48 J	0.32 J	2.3	3.7	1.5	0.56 J	0.42 J	0.59 J
BARIUM, TOTAL	µg/L	336	653	245	56.7	61.8	260	428	143
CADMIUM, TOTAL	µg/L	ND	ND	0.11 J	0.56	2.0	1.8	0.079 J	ND
CHROMIUM, TOTAL	µg/L	ND	ND	ND	0.37 J	ND	0.35 J	0.43 J	0.33 J
FLUORIDE, TOTAL	mg/L	ND	ND	0.47 J	1.0	0.38	0.55	0.29	ND
LITHIUM, TOTAL	µg/L	14.2	18.7	22.6	24.6	12.5	25.4	18.6	12.9
MOLYBDENUM, TOTAL	µg/L	ND	ND	70.6	1,310	4,820	85.4	173	26.0
RADIUM [226 + 228]	pCi/L	ND	ND	ND	ND	1.939	ND	ND	ND
SELENIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	0.22 J	ND	ND

NOTES
1. Unit Abbreviations: µg/L - micrograms per liter, mg/L - milligrams per liter, SU - standard units, pCi/L - picocuries per liter, mV - millivolts, mS/cm - millisiemens per centimeter, and NTU - nephelometric turbidity units.
2. J - Result is an estimated value.
3. NA - Not Applicable.
4. ND - Constituent was analyzed but was not detected above the Method Detection Limit (MDL) or the adjusted Practical Quantitation Limit (PQL) based on data validation and is considered a non-detect. Values displayed as ND.
5. Radium [226 + 228] is reported as the sum of the Radium 226 and the Radium 228 activity concentrations unless the sum of the Radium 226 and Radium 228 Minimum Detectable Concentrations (MDC) is higher in which case it is displayed as ND.

Prepared By: GTM
Checked By: JTR
Reviewed By: MNH

Table 12
November 2023 Corrective Action Monitoring Results
SCPA Surface Impoundment
Sioux Energy Center, St. Charles County, MO

ANALYTE	UNITS	BMW-1S	BMW-3S	LMW-1S	LMW-2S	LMW-4S	LMW-5S	LMW-6S	TP-6S	PZ-1S	UG-3	AM-1S	AM-1D	PZ-9D	TP-2D	TP-3D	TP-4D	TP-5D	TP-6D	TP-8D
FIELD PARAMETERS																				
DATE	NA	11/10/2023	11/10/2023	11/14/2023	11/14/2023	11/14/2023	11/14/2023	11/14/2023	11/10/2023	11/10/2023	11/13/2023	11/10/2023	11/10/2023	11/14/2023	11/13/2023	11/10/2023	11/13/2023	11/13/2023	11/10/2023	11/13/2023
DISSOLVED OXYGEN	mg/L	0.24	0.40	1.15	1.07	0.26	0.34	0.91	0.19	0.21	0.39	0.22	0.27	0.16	0.25	0.51	0.26	0.27	0.15	0.25
REDOX POTENTIAL	mV	91.8	74.2	140.3	175.5	165.1	-8.9	15.9	68.1	-59.4	69.6	10.4	-53.7	-102.5	88.7	-45.5	50.0	27.3	-85.4	-29.6
SPECIFIC CONDUCTIVITY	mS/cm	0.723	0.610	0.905	1.430	1.107	1.451	1.358	0.694	0.574	0.822	0.534	0.547	0.742	1.691	0.700	0.759	1.062	0.672	0.729
TURBIDITY	NTU	1.84	3.21	4.18	3.33	2.44	4.41	1.98	3.84	0.99	4.84	3.59	4.60	13.0	2.42	1.88	3.04	3.44	1.48	0.30
APPENDIX III PARAMETERS																				
BORON, TOTAL	µg/L	57.9 J	58.9 J	1,100	9,270	7,590	12,100	14,700	99.1 J	10,000	638	258	4,410	3,120	92.3 J	63.4 J	58.4 J	7,690	52.5 J	ND
CALCIUM, TOTAL	µg/L	136,000	114,000	116,000	180,000	139,000	214,000	235,000	127,000	82,600	107,000	75,800	75,800	139,000	270,000	119,000	113,000	140,000	112,000	112,000
CHLORIDE, TOTAL	mg/L	7.2	13.4	68.8 J	159 J	5.3 J	23.8 J	9.8 J	7.6	23.5	34.5 J	34.1	27.8	8.5 J	61.2 J	10.5	6.2 J	34.9 J	14.5	23.8 J
pH	SU	7.04	7.14	7.30	6.91	6.72	6.89	6.82	7.19	7.26	7.04	7.33	7.50	7.16	6.87	7.23	7.04	7.09	7.29	7.14
SULFATE, TOTAL	mg/L	46.9	12.3	103 J	221 J	51.8 J	644 J	586 J	39.6	106	65.0 J	1.3	7.2	244 J	459 J	80.6	95.1 J	256 J	60.8	33.3 J
TOTAL DISSOLVED SOLIDS	mg/L	475	398	566	962	689	1,290	1,290	433	507	504	346	369	682	1,270	488	467 J	774	470	416
APPENDIX IV PARAMETERS																				
ARSENIC, TOTAL	µg/L	0.93 J	0.45 J	2.2	0.99 J	0.79 J	0.81 J	0.83 J	0.69 J	0.27 J	0.49 J	1.6	0.16 J	0.47 J	0.34 J	0.16 J	2.2	0.38 J	0.18 J	1.3
BARIUM, TOTAL	µg/L	137	142	207	107	179	55.8	42.8	279	97.2	216	145	271	83.1	59.5	591	487	182	403	375
CADMIUM, TOTAL	µg/L	ND	0.057 J	0.096 J	0.66	0.24 J	0.57	1.2	0.055 J	0.45 J	0.32 J	ND	0.098 J	ND	ND	ND	ND	0.21 J	ND	ND
CHROMIUM, TOTAL	µg/L	ND	ND	0.37 J	ND	ND	ND	0.32 J	ND	ND	ND	ND	ND	0.59 J	ND	ND	ND	ND	ND	ND
COBALT, TOTAL	µg/L	ND	ND	1.4 J	4.3 J	ND	2.6 J	7.9	ND	ND	7.9	3.6 J	ND	ND	1.4 J	ND	ND	1.2 J	ND	1.9 J
FLUORIDE, TOTAL	mg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
LITHIUM, TOTAL	µg/L	8.2 J	12.6	21.3	31.9	38.8	46.3	20.6	39.7	17.9	27.5	26.3	33.1	30.8	50.1	35.5	31.9	37.1	29.3	34.1
MOLYBDENUM, TOTAL	µg/L	2.8 J	1.0 J	96.3	869	593	903	1.7 J	3.4 J	1,350	3.6 J	37.0	263	10.7 J	ND	1.3 J	ND	607	1.4 J	1.9 J
RADIUM [226 + 228]	pCi/L	ND	ND	ND	1.136	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.293 J	ND	ND	1.557
SELENIUM, TOTAL	µg/L	ND	0.21 J	4.1	ND	0.19 J	ND	ND	ND	ND	2.4	ND	ND	ND	ND	ND	ND	ND	ND	ND
ADDITIONAL PARAMETERS																				
ALKALINITY	mg/L	427	357	283	341	627	350	410	390	186	333	268	280	290	470	339	311	280	345	335
IRON, TOTAL	µg/L	57.0	58.0	60.8	44.3 J	9,420	132	98.6	174	5,350	14.8 J	829	2,900	8,610	16,700	7,820	5,980	9,620	7,130	6,210
MAGNESIUM, TOTAL	µg/L	26,600	20,700	28,100	38,800	35,000	44,300	56,900	27,700	16,700	20,800	15,900	16,300	34,000	74,000	29,600	28,000	35,500	28,600	24,800
MANGANESE, TOTAL	µg/L	489	211	80.1	530	1,120	1,170	414	262	602	1,080	1,970	367	977	1,290	676	383	1,150	490	452
POTASSIUM, TOTAL	µg/L	633	717	7,680	5,850	5,200	6,020	4,180	2,610	2,070	5,030	9,030	6,210	4,250	6,010	3,970	3,180	5,230	3,710	3,450
SODIUM, TOTAL	mg/L	6.0	6.0	30.2	73.9	36.6	132	64.3	5.7	22.9	45.8	17.7	23.5	17.3	21.8	6.9	7.4	37.9	5.6	6.4

NOTES
1. Unit Abbreviations: µg/L - micrograms per liter, mg/L - milligrams per liter, SU - standard units, pCi/L - picocuries per liter, mV - millivolts, mS/cm - millisiemens per centimeter, and NTU - nephelometric turbidity units.
2. J - Result is an estimated value.
3. ND - Constituent was analyzed but was not detected above the Method Detection Limit (MDL) or the adjusted Practical Quantitation Limit (PQL) based on data validation and is considered a non-detect. Values displayed as ND.
4. Radium [226 + 228] is reported as the sum of the Radium 226 and the Radium 228 activity concentrations unless the sum of the Radium 226 and Radium 228 Minimum Detectable Concentrations (MDC) is higher in which case it is displayed as ND.
5. NA - Not Applicable.

Prepared By: GTM
Checked By: ANT
Reviewed By: MNH

Table 13
May 2024 Corrective Action Monitoring Results
SCPA Surface Impoundment
Sioux Energy Center, St. Charles County, MO

ANALYTE	UNITS	BMW-1S	BMW-3S	LMW-1S	LMW-2S	LMW-4S	LMW-5S	LMW-6S	TP-6S	PZ-1S	UG-3	AM-1S	AM-1D	PZ-9D	TP-2D	TP-3D	TP-4D	TP-5D	TP-6D	TP-8D
FIELD PARAMETERS																				
DATE	NA	5/28/2024	5/28/2024	5/31/2024	5/28/2024	5/29/2024	5/31/2024	5/31/2024	5/28/2024	5/30/2024	5/28/2024	5/29/2024	5/29/2024	5/31/2024	5/31/2024	5/31/2024	5/29/2024	5/28/2024	5/28/2024	5/29/2024
DISSOLVED OXYGEN	mg/L	0.86	0.56	0.87	1.00	0.39	0.29	0.48	0.13	0.59	0.56	0.50	0.39	0.21	1.77	0.57	0.31	0.12	0.10	1.22
REDOX POTENTIAL	mV	-5.8	16.1	0.7	44.9	69.4	55.0	26.8	39.3	-117.0	25.8	-37.5	-123.5	-118.6	-106.7	-82.2	-93.0	-112.3	-109.5	-97.8
SPECIFIC CONDUCTIVITY	mS/cm	0.853	0.760	1.134	1.458	1.193	1.803	1.347	0.813	0.639	0.844	0.571	0.623	0.813	1.739	0.812	0.742	0.087	0.745	0.718
TURBIDITY	NTU	0.98	0.25	0.82	2.64	2.48	1.71	1.25	2.76	5.89	3.58	4.98	1.84	18.80	0.26	0.75	4.01	2.44	3.93	1.04
APPENDIX III PARAMETERS																				
BORON, TOTAL	µg/L	58.1 J	54.1 J	1,030	9,220	1,990	15,600	8,930	113	10,200	345	177	2,810	2,700	84.3 J	56.9 J	56.3 J	7,530	60.4 J	69.4 J
CALCIUM, TOTAL	µg/L	133,000	116,000	136,000	196,000	203,000	210,000	200,000	144,000 J	81,600	129,000	72,800	82,100	109,000	259,000	117,000	116,000	151,000	117,000	111,000
CHLORIDE, TOTAL	mg/L	10.1	11.1	139	167	21.5	10.8	23.9	7.8	27.0	28.0	37.1	27.9	7.2	62.8	8.6	8.3	42.8	12.5	13.5
pH	SU	6.86	6.95	7.33	7.03	6.76	6.91	6.95	6.92	7.06	7.00	7.10	7.31	7.13	6.92	7.12	7.17	7.05	7.07	7.08
SULFATE, TOTAL	mg/L	37.7	19.7	110	239	135	788	502	41.3	80.8	81.8	38.6	4.7	188	712 J	73.5 J	106	263	64.7	48.5
TOTAL DISSOLVED SOLIDS	mg/L	470	529	673	943	743	1,300	1,110	481	452	517	321	351	617	1,280	499	479	721	425	437
APPENDIX IV PARAMETERS																				
ANTIMONY, TOTAL	µg/L	ND	ND	0.31 J	0.18 J	ND	0.15 J	0.23 J	ND	ND	0.16 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
ARSENIC, TOTAL	µg/L	0.78 J	0.50 J	1.6	0.82 J	0.53 J	0.94 J	0.79 J	0.49 J	0.35 J	0.38 J	0.94 J	0.14 J	0.60 J	0.34 J	0.22 J	1.9	0.24 J	ND	1.3
BARIUM, TOTAL	µg/L	130	136	244	113	238	35.7	36.0	301	89.4	219	123	367	76.0	56.9	565	450	204	396	362
BERYLLIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CADMIUM, TOTAL	µg/L	ND	0.054 J	0.12 J	0.59	0.11 J	0.83	0.93	0.069 J	0.77	0.14 J	0.11 J	0.063 J	ND	ND	ND	ND	0.18 J	ND	ND
CHROMIUM, TOTAL	µg/L	0.31 J	ND	0.47 J	0.33 J	0.34 J	ND	0.49 J	ND	0.35 J	ND	0.38 J	0.41 J	1.2 J	0.31 J	0.39 J	ND	ND	ND	0.30 J
COBALT, TOTAL	µg/L	2.0 J	ND	ND	3.4 J	ND	ND	4.4 J	ND	ND	1.3 J	4.1 J	ND	ND	ND	ND	ND	ND	ND	ND
FLUORIDE, TOTAL	mg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.19 J	ND	ND	ND	ND	ND	ND	ND
LEAD, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
LITHIUM, TOTAL	µg/L	5.7 J	10.3	28.3	33.8	35.8	49.2	24.0	37.1	19.2	26.3	20.9	31.8	29.4	51.4	36.6	36.7	37.4	27.8	33.1
MERCURY, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.12 J	ND	ND	ND	ND	ND	ND	ND	ND	ND
MOLYBDENUM, TOTAL	µg/L	ND	ND	58.1	915	ND	1,500	10.6 J	ND	2,110	ND	42.9	184	14.6 J	ND	ND	1.0 J	504	ND	ND
RADIUM [226 + 228]	pCi/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.963	1.352	ND	ND	2.285
SELENIUM, TOTAL	µg/L	ND	ND	5.8	ND	0.25 J	ND	ND	ND	ND	1.9	ND	ND	ND	ND	ND	ND	ND	ND	ND
THALLIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ADDITIONAL PARAMETERS																				
ALKALINITY	mg/L	408	364	304	389	577	346	322	447	254	391	230	312	280	484	382	332	340	378	180
IRON, FERRIC, TOTAL	mg/L	ND	ND	ND	ND	ND	ND	ND	ND	4.8	ND	0.46	2.7	6.4	15.4	7.3	6.2	10.2	7.3	6.0
IRON, FERROUS, TOTAL	mg/L	0.11 J	0.12 J	0.068 J	0.082 J	0.068 J	0.11 J	0.068 J	0.056 J	0.28 J	0.056 J	0.14 J	0.26 J	0.88 J	0.60 J	0.45 J	0.32 J	0.29 J	0.27 J	0.27 J
IRON, TOTAL	µg/L	27.5 J	33.4 J	15.1 J	33.0 J	12.7 J	81.6	66.2	33.4 J	5,040	12.3 J	609	3,000	7,300	16,000	7,750	6,500	10,500	7,520	6,280
MAGNESIUM, TOTAL	µg/L	25,800	20,500	32,500	34,200	42,600	38,300	50,400	30,000	17,100	24,600	15,000	17,400	27,000	69,200	28,700	27,900	37,300	29,200	24,500
MANGANESE, TOTAL	µg/L	606	140	117	390	87.6	1,530	315	232	651	276	2,190	375	789	1,190	655	440	1,170	489	446
POTASSIUM, TOTAL	µg/L	404 J	618	8,210	7,410	4,740	4,100	3,740	2,300	1,600	4,950	7,770	6,590	3,940	5,720	3,890	3,270	5,410	3,710	3,480
SODIUM, TOTAL	mg/L	6.1	6.4	39.1	81.1	14.5	176	45.2	5.8	27.8	35.5	19.6	21.9	15.9	21.0	6.8	6.9	35.0	5.4	5.1
SULFIDE, TOTAL	mg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.038 J	0.029 J	ND	ND	0.018 J	ND	ND	ND

NOTES
1. Unit Abbreviations: µg/L - micrograms per liter, mg/L - milligrams per liter, SU - standard units, pCi/L - picocuries per liter, mV - millivolts, mS/cm - millisiemens per centimeter, and NTU - nephelometric turbidity units.
2. J - Result is an estimated value.
3. ND - Constituent was analyzed but was not detected above the Method Detection Limit (MDL) or the adjusted Practical Quantitation Limit (PQL) based on data validation and is considered a non-detect. Values displayed as ND.
4. Radium [226 + 228] is reported as the sum of the Radium 226 and the Radium 228 activity concentrations unless the sum of the Radium 226 and Radium 228 Minimum Detectable Concentrations (MDC) is higher in which case it is displayed as ND.
5. NA - Not Applicable.

Prepared By: GTM
Checked By: JTR
Reviewed by: MNH

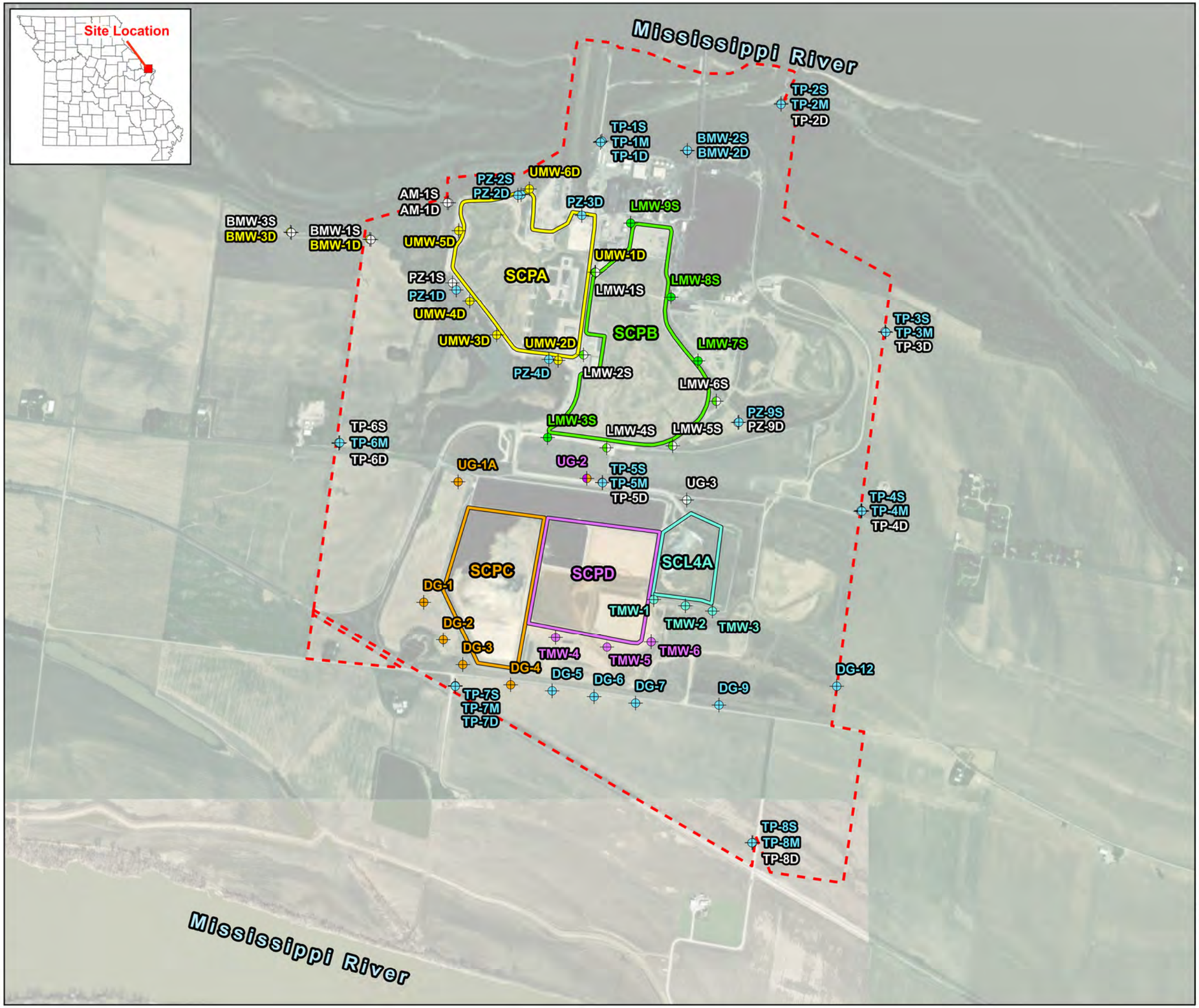
Table 14
November 2024 Corrective Action Monitoring Results
SCPA Surface Impoundment
Sioux Energy Center, St. Charles County, MO

ANALYTE	UNITS	BMW-1S	BMW-3S	LMW-1S	LMW-2S	LMW-4S	LMW-5S	LMW-6S	TP-6S	PZ-1S	UG-3	AM-1S	AM-1D	PZ-9D	TP-2D	TP-3D	TP-4D	TP-5D	TP-6D	TP-8D
FIELD PARAMETERS																				
DATE	NA	11/20/2024	11/20/2024	11/14/2024	11/19/2024	11/19/2024	11/15/2024	11/15/2024	11/14/2024	11/18/2024	11/14/2024	11/19/2024	11/19/2024	11/18/2024	11/20/2024	11/20/2024	11/20/2024	11/14/2024	11/14/2024	11/18/2024
DISSOLVED OXYGEN	mg/L	0.24	0.32	1.45	0.32	0.26	0.78	0.33	0.24	0.14	0.37	0.23	0.34	0.18	0.15	0.12	0.14	0.22	0.19	0.13
REDOX POTENTIAL	mV	31.7	8.4	-0.1	-75.2	-114.3	23.8	-227.1	-64.8	-45.8	-25.7	-65.3	13.6	-148.8	-26.6	-23.4	5.8	-130.5	-135.0	-24.3
SPECIFIC CONDUCTIVITY	mS/cm	1.081	0.729	1.233	1.409	1.383	2.114	1.749	0.873	0.693	0.842	0.527	0.607	0.729	1.720	0.814	0.770	1.151	0.824	0.737
TURBIDITY	NTU	3.49	0.51	2.34	0.97	0.77	4.17	3.00	4.83	3.97	4.81	3.97	1.42	19.3	1.66	0.14	0.39	3.37	1.88	1.02
APPENDIX III PARAMETERS																				
BORON, TOTAL	µg/L	61.9 J	57.3 J	1,240	9,060	310	17,700	17,800	113	8,120	418	158	2,510	2,010	87.5 J	55.2 J	56.8 J	7,800	97.7 J	72.6 J
CALCIUM, TOTAL	µg/L	175,000	113,000	142,000	172,000	220,000	236,000	259,000	135,000	81,900	120,000	59,600	83,700	91,800	281,000	127,000	115,000	156,000	119,000	116,000
CHLORIDE, TOTAL	mg/L	14.2	13.1	175 J	137	3.3	10.6 J	6.4 J	8.9 J	23.4	19.7 J	32.9	28.9	5.6	74.3	9.8	10.0	44.1 J	15.0 J	18.5
pH	SU	6.57	6.72	7.26	6.97	6.83	6.65	6.50	6.94	7.13	6.94	7.01	7.26	7.08	6.92	7.08	7.07	7.08	7.09	7.13
SULFATE, TOTAL	mg/L	37.1	17.1	108 J	234	33.3	915 J	547 J	35.2 J	73.3	79.1 J	23.3	2.7	139	502	92.0	118	242 J	55.7 J	41.7
TOTAL DISSOLVED SOLIDS	mg/L	613	413	713	892 J	785 J	1,630	1,290	520	450	497	324 J	387 J	449	1,270	527	494	784	465	427
APPENDIX IV PARAMETERS																				
ARSENIC, TOTAL	µg/L	0.84 J	0.71 J	2.2	1.2	0.98 J	1.3	1.2	0.97 J	0.52 J	0.64 J	1.3	0.32 J	0.89 J	0.63 J	0.38 J	2.4	0.54 J	0.33 J	1.5
BARIUM, TOTAL	µg/L	201	114	267	100	289	39.6	45.8	284	103	210	103	387	87.8	62.1	608	460	199	399	376
CADMIUM, TOTAL	µg/L	ND	ND	0.12 J	0.86	0.13 J	1.0	0.90	0.083 J	0.86	0.35 J	ND	0.11 J	0.12 J	ND	0.051 J	ND	0.23 J	ND	ND
CHROMIUM, TOTAL	µg/L	ND	ND	0.80 J	0.49 J	0.43 J	0.31 J	0.30 J	0.44 J	0.33 J	ND	ND	ND	1.1	0.60 J	ND	0.37 J	ND	0.38 J	ND
FLUORIDE, TOTAL	mg/L	ND	ND	0.34 J	ND	ND	0.37 J	0.33 J	0.44 J	0.15 J	0.47 J	0.19 J	0.28	ND	ND	ND	ND	0.34 J	0.41 J	ND
LITHIUM, TOTAL	µg/L	7.2 J	8.4 J	25.6	30.0	31.9	39.5	18.5	37.4	16.2	27.3	18.4	31.6	20.7	47.9	35.6	32.8	40.7	26.5	33.5
MOLYBDENUM, TOTAL	µg/L	2.5 J	3.4 J	87.0	1,060	1.2 J	1,710	2.5 J	3.6 J	1,840	4.4 J	45.2	178	19.6 J	ND	ND	1.5 J	564	ND	1.1 J
RADIUM [226 + 228]	pCi/L	ND	ND	ND	ND	1.690	ND	ND	ND	ND	ND	ND	1.994	ND	ND	ND	1.990	ND	1.808	ND
SELENIUM, TOTAL	µg/L	0.45 J	ND	4.8	ND	0.23 J	0.22 J	ND	0.23 J	ND	2.4	ND	ND	ND	ND	ND	ND	ND	ND	ND
ADDITIONAL PARAMETERS																				
ALKALINITY	mg/L	347	166	300	334	729	300	459	412	270	339	203	309	228	487	357	306	337	354	334
IRON, TOTAL	µg/L	121	28.9 J	39.6 J	23.4 J	9.7 J	66.1	43.6 J	251 J	5,960	ND	563	3,000	6,030	17,400	8,380	6,100	11,000	7,550	6,410
MAGNESIUM, TOTAL	µg/L	33,700	19,800	32,000	34,300	51,500	41,400	57,400	28,100	16,800	22,100	12,200	17,900	21,900	73,200	30,800	27,700	38,300	29,200	25,300
MANGANESE, TOTAL	µg/L	1,070	268	56.1	480	345	1,700	457	301	663	894	1,820	380	631	1,270	714	395	1,280	502	463
POTASSIUM, TOTAL	µg/L	450 J	452 J	9,960	5,590	5,810	4,190	4,320	2,620	1,760 J	4,590	7,150	6,510	3,360	6,280	4,270	3,270	5,700	3,710	3,580
SODIUM, TOTAL	mg/L	5.7	5.8	51.6	69.7	10.8	192	66.5	5.6	28.5	24.5	18.2	21.6	12.0	21.8	7.2	7.0	36.4	5.7	6.8

NOTES
1. Unit Abbreviations: µg/L - micrograms per liter, mg/L - milligrams per liter, SU - standard units, pCi/L - picocuries per liter, mV - millivolts, mS/cm - millisiemens per centimeter, and NTU - nephelometric turbidity units.
2. J - Result is an estimated value.
3. ND - Constituent was analyzed but was not detected above the Method Detection Limit (MDL) or the adjusted Practical Quantitation Limit (PQL) based on data validation and is considered a non-detect. Values displayed as ND.
4. Radium [226 + 228] is reported as the sum of the Radium 226 and the Radium 228 activity concentrations unless the sum of the Radium 226 and Radium 228 Minimum Detectable Concentrations (MDC) is higher in which case it is displayed as ND.
5. NA - Not Applicable.

Prepared By: GTM
Checked By: JTR
Reviewed By: MNH

Figures



TITLE

SIOUX ENERGY CENTER GROUNDWATER MONITORING PROGRAMS AND SAMPLE LOCATION MAP

Legend

- Sioux Energy Center Property Boundary

CCR Units

- SCPA - Bottom Ash Surface Impoundment (Closed)
- SCPB - Fly Ash Surface Impoundment (Closed)

Utility Waste Landfill Cells

- SCPC - FGD Surface Impoundment (Closed)
- SCL4A - Dry CCR Disposal Area
- SCPD - FGD Surface Impoundment

Monitoring Well Networks

- Corrective Action Monitoring Well
- SCPA Detection and Assessment Monitoring Well
- SCPB and Corrective Action Monitoring Well
- SCPB Detection Monitoring Well
- SCPC Detection Monitoring Well
- SCPD and SCPC Detection Monitoring Well
- SCPD Detection Monitoring Well
- SCL4A and Corrective Action Monitoring Well
- SCL4A Detection Monitoring Well
- Monitoring Well Used for Water Level Elevation Measurements Only

NOTES

1. All boundaries and locations are approximate.
2. FGD - Flue Gas Desulfurization.
3. CCR - Coal Combustion Residuals.

REFERENCES

1. Ameren Missouri Sioux Energy Center, Sioux Property Control Map, February 2011.

0 500 1,000 2,000 3,000 Feet

PROJECT
CCR RULE GROUNDWATER MONITORING PROGRAM

CLIENT
AMEREN MISSOURI
SIOUX ENERGY CENTER

Ameren

ROCKSMITH GEOENGINEERING

DESIGN	JSI	YYYY-MM-DD	2024-12-04
PREPARED	JSI	PROJECT No.	23009-24
REVIEW	GTM		
APPROVED	MNH		

FIGURE 1

Path: C:\Users\GinaMoney\Rocksmith Geoengineering LLC\23007 - Ameren GW - Documents\400 - Drawings, Figures\4.3-SEC4.3.2 - Production\Other Maps\Figure 1- SEC Well Locations.aprx

Appendix A
Laboratory Analytical Data

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

February 23, 2024

Mark Haddock
Rocksmith Geoengineering, LLC.
2320 Creve Coeur Mill Road
Maryland Heights, MO 63043

RE: Project: AMEREN SCPA-VERIFICATION SAMP.
Pace Project No.: 60446916

Dear Mark Haddock:

Enclosed are the analytical results for sample(s) received by the laboratory on February 09, 2024. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Kansas City

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jamie Church
jamie.church@pacelabs.com
314-838-7223
Project Manager

Enclosures

cc: Jeffrey Ingram, Rocksmith Geoengineering, LLC.
Lisa Meyer, Ameren
Grant Morey, Rocksmith Geoengineering, LLC.

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CERTIFICATIONS

Project: AMEREN SCPA-VERIFICATION SAMP.
Pace Project No.: 60446916

Pace Analytical Services Kansas

9608 Loiret Boulevard, Lenexa, KS 66219
Missouri Inorganic Drinking Water Certification #: 10090
Arkansas Drinking Water
Arkansas Certification #: 88-00679
Illinois Certification #: 2000302023-5
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212023-1
Oklahoma Certification #: 2022-057
Florida: Cert E871149 SEKS WET
Texas Certification #: T104704407-23-17
Utah Certification #: KS000212022-12
Illinois Certification #: 004592
Kansas Field Laboratory Accreditation: # E-92587
Missouri SEKS Micro Certification: 10070

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SAMPLE SUMMARY

Project: AMEREN SCPA-VERIFICATION SAMP.
Pace Project No.: 60446916

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60446916001	**S-UMW-1D**	Water	02/08/24 11:03	02/09/24 05:30
60446916002	**S-UMW-2D**	Water	02/08/24 11:54	02/09/24 05:30
60446916003	**S-UMW-DUP-1**	Water	02/08/24 00:00	02/09/24 05:30
60446916004	**S-UMW-FB-1**	Water	02/08/24 11:52	02/09/24 05:30

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: AMEREN SCPA-VERIFICATION SAMP.
Pace Project No.: 60446916

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60446916001	**S-UMW-1D**	EPA 300.0	PL	3	PASI-K
60446916002	**S-UMW-2D**	EPA 300.0	PL	3	PASI-K
60446916003	**S-UMW-DUP-1**	EPA 300.0	PL	3	PASI-K
60446916004	**S-UMW-FB-1**	EPA 300.0	RKA	3	PASI-K

PASI-K = Pace Analytical Services - Kansas City

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ANALYTICAL RESULTS

Project: AMEREN SCPA-VERIFICATION SAMP.
Pace Project No.: 60446916

Sample: S-UMW-1D **Lab ID: 60446916001** Collected: 02/08/24 11:03 Received: 02/09/24 05:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**44.3**	mg/L	10.0	5.3	10		02/22/24 20:47	16887-00-6	
Fluoride	**0.70**	mg/L	0.20	0.12	1		02/22/24 19:08	16984-48-8	L1,M0
Sulfate	**72.6**	mg/L	10.0	5.5	10		02/22/24 20:47	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA-VERIFICATION SAMP.
Pace Project No.: 60446916

Sample: S-UMW-2D **Lab ID: 60446916002** Collected: 02/08/24 11:54 Received: 02/09/24 05:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**31.0**	mg/L	10.0	5.3	10		02/22/24 21:49	16887-00-6	
Fluoride	**2.6**	mg/L	0.20	0.12	1		02/22/24 21:37	16984-48-8	L1
Sulfate	**265**	mg/L	50.0	27.5	50		02/22/24 22:01	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA-VERIFICATION SAMP.
Pace Project No.: 60446916

Sample: S-UMW-DUP-1 **Lab ID: 60446916003** Collected: 02/08/24 00:00 Received: 02/09/24 05:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**28.5**	mg/L	10.0	5.3	10		02/22/24 22:51	16887-00-6	
Fluoride	**2.6**	mg/L	0.20	0.12	1		02/22/24 22:39	16984-48-8	L1
Sulfate	**381**	mg/L	50.0	27.5	50		02/22/24 23:03	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA-VERIFICATION SAMP.
Pace Project No.: 60446916

Sample: S-UMW-FB-1 **Lab ID: 60446916004** Collected: 02/08/24 11:52 Received: 02/09/24 05:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**<0.53**	mg/L	1.0	0.53	1		02/21/24 16:21	16887-00-6	
Fluoride	**<0.12**	mg/L	0.20	0.12	1		02/21/24 16:21	16984-48-8	L1
Sulfate	**<0.55**	mg/L	1.0	0.55	1		02/21/24 16:21	14808-79-8	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-VERIFICATION SAMP.
Pace Project No.: 60446916

QC Batch: 883836
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60446916001, 60446916002, 60446916003, 60446916004

METHOD BLANK: 3498689 Matrix: Water
Associated Lab Samples: 60446916001, 60446916002, 60446916003, 60446916004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	02/21/24 12:01	
Fluoride	mg/L	<0.12	0.20	0.12	02/21/24 12:01	
Sulfate	mg/L	<0.55	1.0	0.55	02/21/24 12:01	

LABORATORY CONTROL SAMPLE: 3498690

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.8	96	90-110	
Fluoride	mg/L	2.5	4.9	196	90-110	L1
Sulfate	mg/L	5	5.3	106	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3498691 3498692

Parameter	Units	60446913002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	9.1	50	50	58.1	57.3	98	96	80-120	1	15	
Fluoride	mg/L	0.73	2.5	2.5	5.8	6.1	202	216	80-120	6	15	M0
Sulfate	mg/L	37.5	50	50	87.7	86.8	100	99	80-120	1	15	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3498694 3498695

Parameter	Units	60446916001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	44.3	50	50	90.1	89.3	92	90	80-120	1	15	
Fluoride	mg/L	0.70	2.5	2.5	6.2	6.3	221	223	80-120	1	15	M0
Sulfate	mg/L	72.6	50	50	123	122	100	98	80-120	1	15	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3498697 3498698

Parameter	Units	60446940001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	<5.3	50	50	52.6	52.7	96	96	80-120	0	15	
Fluoride	mg/L	<1.2	25	25	58.6	60.0	234	240	80-120	2	15	M0
Sulfate	mg/L	72.8	50	50	122	121	98	97	80-120	1	15	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALITY CONTROL DATA

Project: AMEREN SCPA-VERIFICATION SAMP.
Pace Project No.: 60446916

SAMPLE DUPLICATE: 3498693

Parameter	Units	60446913002 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	9.1	9.1	0	15	
Fluoride	mg/L	0.73	0.28	89	15	D6
Sulfate	mg/L	37.5	39.0	4	15	

SAMPLE DUPLICATE: 3498696

Parameter	Units	60446916001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	44.3	43.0	3	15	
Fluoride	mg/L	0.70	0.70	0	15	
Sulfate	mg/L	72.6	69.8	4	15	

SAMPLE DUPLICATE: 3498699

Parameter	Units	60446940001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	<5.3	<5.3		15	
Fluoride	mg/L	<1.2	<1.2		15	
Sulfate	mg/L	72.8	70.9	3	15	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALIFIERS

Project: AMEREN SCPA-VERIFICATION SAMP.
Pace Project No.: 60446916

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

D6	The precision between the sample and sample duplicate exceeded laboratory control limits.
L1	Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results for this analyte in associated samples may be biased high.
M0	Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN SCPA-VERIFICATION SAMP.
Pace Project No.: 60446916

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60446916001	**S-UMW-1D**	EPA 300.0	883836		
60446916002	**S-UMW-2D**	EPA 300.0	883836		
60446916003	**S-UMW-DUP-1**	EPA 300.0	883836		
60446916004	**S-UMW-FB-1**	EPA 300.0	883836		

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WO#: 60446916

60446916

Pace	DC#_Title: ENV-FRM-LENE-0009_Sample Co		
	Revision: 2	Effective Date: 01/12/2022	Issued By: Lenexa

Client Name: Rocksmith Geoeng

Courier: FedEx ☐ UPS ☐ VIA ☐ Clay ☐ PEX ☐ ECI ☐ Pace ☐ Xroads ☑ Client ☐ Other ☐

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☑

Custody Seal on Cooler/Box Present: Yes ☑ No ☐ Seals intact: Yes ☑ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☑ Other ☐

Thermometer Used: T298 **Type of Ice:** (Wet) Blue None

Cooler Temperature (°C): **As-read** 1.2/1.5 **Corr. Factor** -0.3 **Corrected** 0.9/1.2

Date and initials of person examining contents: PW 2/9/24

Temperature should be above freezing to 6°C

Chain of Custody present:	☑Yes ☐No ☐N/A	
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	
Samples arrived within holding time:	☑Yes ☐No ☐N/A	
Short Hold Time analyses (<72hr):	☐Yes ☑No ☐N/A	
Rush Turn Around Time requested:	☐Yes ☑No ☐N/A	
Sufficient volume:	☑Yes ☐No ☐N/A	
Correct containers used:	☑Yes ☐No ☐N/A	
Pace containers used:	☑Yes ☐No ☐N/A	
Containers intact:	☑Yes ☐No ☐N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☐No ☑N/A	
Filtered volume received for dissolved tests?	☐Yes ☐No ☑N/A	
Sample labels match COC: Date / time / ID / analyses	☑Yes ☐No ☐N/A	
Samples contain multiple phases? Matrix: WT	☐Yes ☑No ☐N/A	
Containers requiring pH preservation in compliance? (HNO_3, H_2SO_4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) **LOT#:** 67187	☑Yes ☐No ☐N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks: Lead acetate strip turns dark? (Record only)	☐Yes ☐No	
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No	
Trip Blank present:	☐Yes ☐No ☑N/A	
Headspace in VOA vials (>6mm):	☐Yes ☐No ☑N/A	
Samples from USDA Regulated Area: State:	☐Yes ☐No ☑N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☑N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

Qualtrax Document ID: 30468

Page 1 of 1

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www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 1

Section A — **Required** Client Information:

Company:	Rocksmith Geoengineering, LLC
Address:	5233 Roanoke Drive
	St. Charles, MO 63304
Email To:	mark.haddock@rocksmithgeo.com
Phone: 314-974-5678	Fax:
Requested Due Date/TAT:	Standard

Section B — **Required** Project Information:

Report To:	Mark Haddock
Copy To:	Jeffery Ingram, Grant Morey
Purchase Order No.:	COC #5
Project Name:	Ameren SCPA - Verification Sampling
Project Number:	COC#5

Section C — Invoice Information:

Attention:	
Company Name:	Rocksmith
Address:	
Pace Quote Reference:	
Pace Project Manager:	Jamie Church
Pace Profile #:	15856, line 1

REGULATORY AGENCY

☐ NPDES ☑ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: MO

Section D — **Required** Client Information

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
	WP
	AR
	OT
	TS

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	Sulfate	Chloride	Fluoride									Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
				DATE	TIME	DATE	TIME											Y/N	N	N	N	N	N	N	N	N	N				
1	S-UMW-1D	WT	G			2-8-24	1103		1	1									✓	✓	✓									6044916
2	S-UMW-2D	WT	G			2-8-24	1154		1	1									✓	✓	✓									
3	~~S-UMW-5D~~	WT	G																											
4	S-UMW-DUP-1	WT	G			2-8-24	—												✓	✓	✓									
5	S-UMW-FB-1	WT	G			2-8-24	1152		1	1									✓	✓	✓									
6	S-UMW-MS-1	WT	G			2-8-24	1103		1	1									✓	✓	✓									Collected @ S-UMW-1D
7	S-UMW-MSD-1	WT	G			2-8-24	1103		1	1									✓	✓	✓									
8		WT	G																											
9		WT	G																											
10		WT	G																											
11		WT	G																											
12		WT	G																											

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	Grant Morey / Rocksmith	2-8-24	1340		2/9	0530	1.2	✓	✓	✓
							0.9	✓	✓	✓

SAMPLER NAME AND SIGNATURE					
PRINT Name of SAMPLER:	Grant Morey		Temp In °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
SIGNATURE of SAMPLER:	Grant Morey	DATE Signed (MM/DD/YY): 02/08/24				

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

Client: Rocksmith Geoeng

Profile #: 15856-1

Site:

Notes

COC Line Item	Matrix	VG9H	DG9H	DG9Q	VG9U	DG9U	DG9M	DG9B	BG1U	AG1H	AG1U	AG2U	AG3S	AG4U	AG5U	JGFU	WGKU	WGDU	RP1U	BP2U	BP3U	BP1N	BP3N	BP3F	BP3S	BP3C	BP3Z	WPDU	ZPLC	Other		
1	WT																				3											
2	↓																				1											
3																																
4	↓																															
5	↓																				1											
6																					1											
7																																
8																																
9																																
10																																
11																																
12																																

Container Codes

Glass			
DG9B	40mL bisulfate clear vial	WGKU	8oz clear soil jar
DG9H	40mL HCl amber voa vial	WGFU	4oz clear soil jar
DG9M	40mL MeOH clear vial	WG2U	2oz clear soil jar
DG9Q	40mL TSP amber vial	JGFU	4oz unpreserved amber wide
DG9S	40mL H2SO4 amber vial	AG0U	100mL unores amber glass
DG9T	40mL Na Thio amber vial	AG1H	1L HCl amber glass
DG9U	40mL amber unpreserved	AG1S	1L H2SO4 amber glass
VG9H	40mL HCl clear vial	AG1T	1L Na Thiosulfate clear/amber glass
VG9T	40mL Na Thio. clear vial	AG1U	1liter unpres amber glass
VG9U	40mL unpreserved clear vial	AG2N	500mL HNO3 amber glass
BG1S	1liter H2SO4 clear glass	AG2S	500mL H2SO4 amber glass
BG1U	1liter unpres glass	AG3S	250mL H2SO4 amber glass
BG3H	250mL HCL Clear glass	AG2U	500mL unpres amber glass
BG3U	250mL Unpres Clear glass	AG3U	250mL unpres amber glass
WGDU	16oz clear soil jar	AG4U	125mL unpres amber glass
		AG5U	100mL unpres amber glass

Plastic	
BP1C	1L NAOH plastic
BP1N	1L HNO3 plastic
BP1S	1L H2SO4 plastic
BP1U	1L unpreserved plastic
BP1Z	1L NaOH, Zn Acetate
BP2C	500mL NAOH plastic
BP2N	500mL HNO3 plastic
BP2S	500mL H2SO4 plastic
BP2U	500mL unpreserved plastic
BP2Z	500mL NaOH, Zn Acetate
BP3C	250mL NaOH plastic
BP3F	250mL HNO3 plastic - field filtered
BP3N	250mL HNO3 plastic
BP3U	250mL unpreserved plastic
BP3S	250mL H2SO4 plastic
BP3Z	250mL NaOH, Zn Acetate
BP4U	125mL unpreserved plastic
BP4N	125mL HNO3 plastic
BP4S	125mL H2SO4 plastic
WPDU	16oz unpresserved plstic

Misc.	
I	Wipe/Swab
SP5T	120mL Coliform Na Thiosulfate
ZPLC	Ziploc Bag
AF	Air Filter
C	Air Cassettes
R	Terracore Kit
U	Summa Can

Matrix	
WT	Water
SL	Solid
NAL	Non-aqueous Liquid
OL	OIL
WP	Wipe
DW	Drinking Water

Work Order Number: 60446916

Memorandum

March 5, 2024

To:	Project File Rocksmith Geoengineering, LLC	**Project Number:**	23009
CC:	Mark Haddock, Jeffrey Ingram		
From:	Grant Morey	**Email:**	Grant.Morey@Rocksmithgeo.com
RE:	**Data Validation Summary, Sioux Energy Center – SCPA – Data Package 60446916**		

The following is a summary of instances where quality control criteria in the functional guidelines were not met and data qualification was required:

- When a compound was detected in a sample result between the Method Detection Limit (MDL) and Practical Quantification Limit (PQL), the results were recorded at the detection value and qualified as estimates (J).
- When a duplicate criterion was not met, the associated sample result was qualified as an estimate (J for detects, UJ for non-detects).
- When a Laboratory Control Sample (LCS) criterion was not met, the associated sample result was qualified as an estimate (J, J+ for estimates based high, and J- for estimates based low).
- When a matrix spike/matrix spike duplicate (MS/MSD) criterion was not met, the associated sample result was qualified as an estimate (J, J+ for estimates based high, and J- for estimates based low).

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Company Name: Rocksmith Geoengineering
Project Manager: J. Ingram
Project Name: Ameren SCPA Verification
Project Number: 23009
Reviewer: G. Morey
Validation Date: 3/5/2024

Laboratory: Pace Analytical
SDG #: 60446916
Analytical Method (type and no.): EPA 300.0 (Anions)
Matrix: ☐ Air ☐ Soil/Sed. ■ Water ☐ Waste ☐ _____
Sample Names S-UMW-1D, S-UMW-2D, S-UMW-DUP-1, S-UMW-FB-1

NOTE: Please provide calculation in Comment areas or on the back (if on the back please indicate in comment areas).

Field Information	YES	NO	NA	COMMENTS
a) Sampling dates noted?	☒	☐	☐	2/8/2024
b) Sampling team indicated?	☒	☐	☐	GTM
c) Sample location noted?	☒	☐	☐	
d) Sample depth indicated (Soils)?	☐	☐	☒	
e) Sample type indicated (grab/composite)?	☒	☐	☐	Grab
f) Field QC noted?	☒	☐	☐	See Notes
g) Field parameters collected (note types)?	☒	☐	☐	pH, Spec Cond, Turb, Temp, DO, ORP
h) Field Calibration within control limits?	☒	☐	☐	
i) Notations of unacceptable field conditions/performances from field logs or field notes?	☐	☒	☐	
j) Does the laboratory narrative indicate deficiencies?	☐	☐	☒	No lab narrative.

Note Deficiencies: _____

Chain-of-Custody (COC)	YES	NO	NA	COMMENTS
a) Was the COC properly completed?	☒	☐	☐	
b) Was the COC signed by both field and laboratory personnel?	☒	☐	☐	
c) Were samples received in good condition?	☒	☐	☐	

General (reference QAPP or Method)	YES	NO	NA	COMMENTS
a) Were hold times met for sample pretreatment?	☒	☐	☐	
b) Were hold times met for sample analysis?	☒	☐	☐	
c) Were the correct preservatives used?	☒	☐	☐	
d) Was the correct method used?	☒	☐	☐	
e) Were appropriate reporting limits achieved?	☒	☐	☐	
f) Were any sample dilutions noted?	☒	☐	☐	See Notes
g) Were any matrix problems noted?	☐	☒	☐	

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Blanks	YES	NO	NA	COMMENTS
a) Were analytes detected in the method blank(s)?	☐	☒	☐	
b) Were analytes detected in the field blank(s)?	☐	☒	☐	
c) Were analytes detected in the equipment blank(s)?	☐	☐	☒	
d) Were analytes detected in the trip blank(s)?	☐	☐	☒	

Laboratory Control Sample (LCS)	YES	NO	NA	COMMENTS
a) Was a LCS analyzed once per SDG?	☒	☐	☐	
b) Were the proper analytes included in the LCS?	☒	☐	☐	
c) Was the LCS accuracy criteria met?	☐	☒	☐	See Notes

Duplicates	YES	NO	NA	COMMENTS
a) Were field duplicates collected (note original and duplicate sample names)?	☒	☐	☐	S-UMW-DUP-1 @ S-UMW-2D
b) Were field dup. precision criteria met (note RPD)?	☐	☒	☐	See Notes
c) Were lab duplicates analyzed (note original and duplicate samples)?	☒	☐	☐	See Notes
d) Were lab dup. precision criteria met (note RPD)?	☐	☒	☐	See Notes

Blind Standards	YES	NO	NA	COMMENTS
a) Was a blind standard used (indicate name, analytes included and concentrations)?	☐	☐	☒	
b) Was the %D within control limits?	☐	☐	☒	

Matrix Spike/Matrix Spike Duplicate (MS/MSD)	YES	NO	NA	COMMENTS
a) Was MS accuracy criteria met?	☐	☒	☐	See Notes
Recovery could not be calculated since sample contained high concentration of analyte?	☐	☐	☒	
b) Was MSD accuracy criteria met?	☐	☒	☐	See Notes
Recovery could not be calculated since sample contained high concentration of analyte?	☐	☐	☒	
c) Were MS/MSD precision criteria met?	☒	☐	☐	

Comments/Notes:

General:

Chloride and sulfate diluted for several samples, no qualification necessary.

QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

Comments/Notes:

Laboratory Control Samples:

3498690: LCS recovery high for fluoride, associated with samples -001 through -004. Detected results are qualified as estimates.

Duplicates:

S-UMW-DUP-1 @ S-UMW-2D: field duplicate RPD exceeds control limit for sulfate (36%), results qualified as estimates.

Lab duplicate max RPD: 15%: chloride, fluoride, sulfate

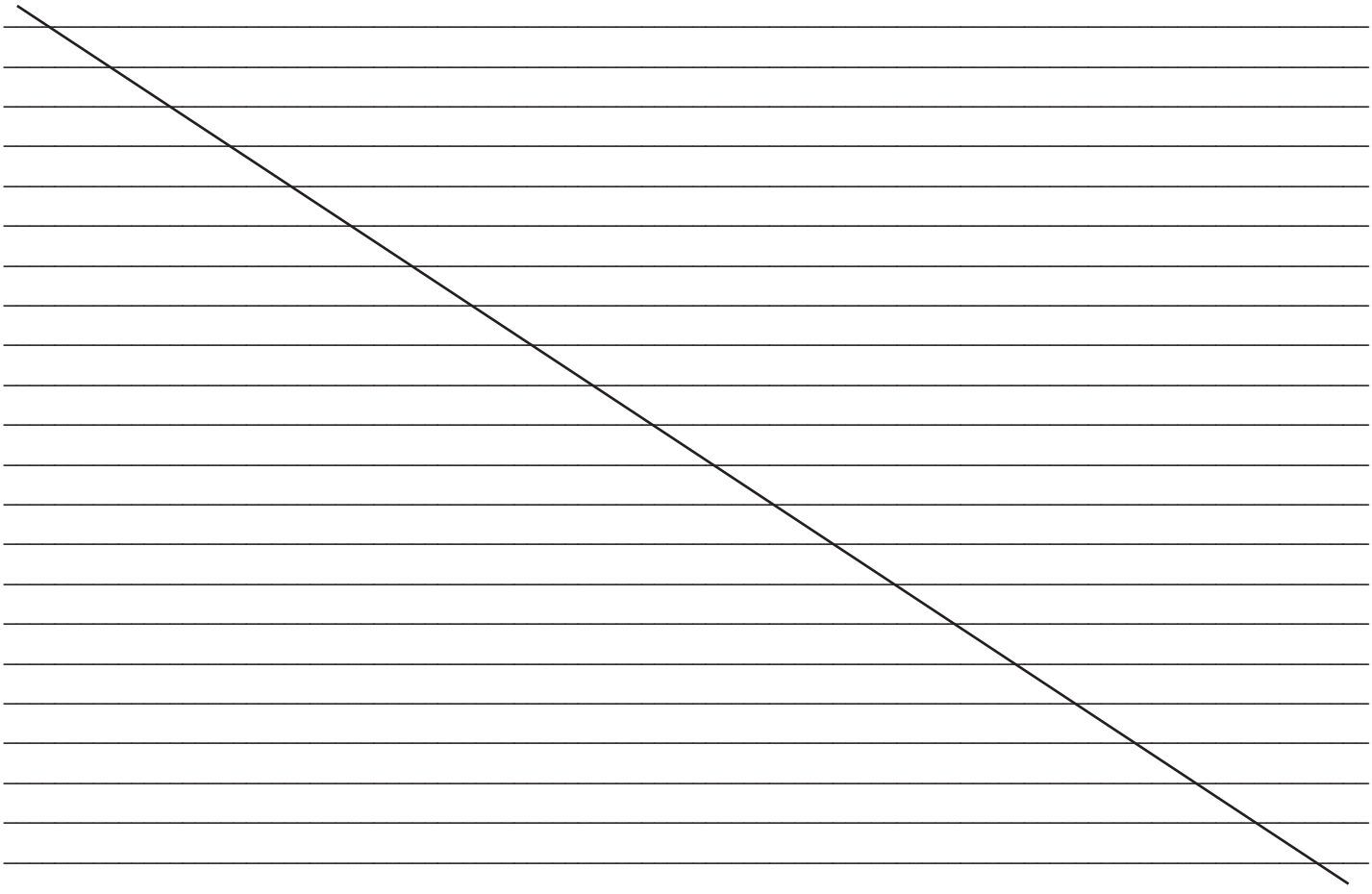
3498693: lab duplicate RPD exceeds control limits for fluoride (89%), associated with unrelated sample, no qualification necessary.

MS/MSD:

3498691/3498692: MS/MSD recoveries exceed control limits for fluoride, associated with unrelated sample, no qualification necessary.

3498694/3498695: MS/MSD recoveries exceed control limits for fluoride, associated with sample -001, result qualified as estimate.

3498697/3498698: MS/MSD recoveries exceed control limits for fluoride, associated with unrelated sample, no qualification necessary.



QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason
S-UMW-1D	Fluoride	0.70	J+	LCS recovery high
S-UMW-2D	"	2.6	J+	"
S-UMW-DUP-1	"	2.6	J+	"
S-UMW-2D	Sulfate	265	J	Field duplicate RPD exceeds control limits
S-UMW-DUP-1	"	381	J	"
S-UMW-1D	Fluoride	0.70	J-	MS/MSD recoveries low

Signature: Grant Morey Date: 3/5/2024

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

June 26, 2024

Mark Haddock
Rocksmith Geoengineering, LLC.
2320 Creve Coeur Mill Road
Maryland Heights, MO 63043

RE: Project: AMEREN SCPA
Pace Project No.: 60453805

Dear Mark Haddock:

Enclosed are the analytical results for sample(s) received by the laboratory between May 30, 2024 and June 01, 2024. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Kansas City
- Pace Analytical Services - Greensburg

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jamie Church
jamie.church@pacelabs.com
314-838-7223
Project Manager

Enclosures

cc: Jeffrey Ingram, Rocksmith Geoengineering, LLC.
Lisa Meyer, Ameren
Grant Morey, Rocksmith Geoengineering, LLC.

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CERTIFICATIONS

Project: AMEREN SCPA
Pace Project No.: 60453805

Pace Analytical Services Pennsylvania

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
ANABISO/IEC 17025:2017 Rad Cert#: L24170
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 2950
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA010
Louisiana DEQ/TNI Certification #: 04086
Maine Certification #: 2023021
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991
Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572023-03
New Hampshire/TNI Certification #: 297622
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-015
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: TN02867
Texas/TNI Certification #: T104704188-22-18
Utah/TNI Certification #: PA014572223-14
USDA Soil Permit #: 525-23-67-77263
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad

Pace Analytical Services Kansas

9608 Loiret Boulevard, Lenexa, KS 66219
Arkansas Inorganic Drinking Water Certification
Arkansas Certification #: 88-00679
Colorado Division of Oil and Public Safety
Illinois Certification #: 2000302023-6
Iowa Certification #: 118
Kansas Field Laboratory Certification #: E-92587
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Missouri Inorganic Drinking Water Certification
Nevada Certification #: KS000212024-1
Oklahoma Certification #: 2023-073
Texas Certification #: T104704407-23-17
Utah Certification #: KS000212022-13

REPORT OF LABORATORY ANALYSIS

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Lenexa, KS 66219
(913)599-5665

SAMPLE SUMMARY

Project: AMEREN SCPA
Pace Project No.: 60453805

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60453805001	**S-BMW-1D**	Water	05/28/24 12:33	05/30/24 05:35
60453805002	**S-BMW-3D**	Water	05/28/24 13:35	05/30/24 05:35
60453805003	**S-UMW-1D**	Water	05/31/24 14:02	06/01/24 07:05
60453805004	**S-UMW-2D**	Water	05/30/24 09:10	06/01/24 07:05
60453805005	**S-UMW-3D**	Water	05/30/24 13:16	06/01/24 07:05
60453805006	**S-UMW-4D**	Water	05/30/24 12:03	06/01/24 07:05
60453805007	**S-UMW-5D**	Water	05/30/24 14:41	06/01/24 07:05
60453805008	**S-UMW-6D**	Water	05/30/24 15:48	06/01/24 07:05
60453805009	**S-UMW-DUP-1**	Water	05/30/24 00:00	06/01/24 07:05
60453805010	**S-UMW-FB-1**	Water	05/30/24 14:45	06/01/24 07:05
60453805011	**S-UMW-MS-1**	Water	05/31/24 14:02	06/01/24 07:05
60453805012	**S-UMW-MSD-1**	Water	05/31/24 14:02	06/01/24 07:05

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(913)599-5665

SAMPLE ANALYTE COUNT

Project: AMEREN SCPA
Pace Project No.: 60453805

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60453805001	**S-BMW-1D**	EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MLD	1	PASI-K
		EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	SR1	1	PASI-K
		SM 2540C	KVI	1	PASI-K
		SM 3500-Fe B#4	CRN2	1	PASI-K
		SM 3500-Fe B#4	DLJ	1	PASI-K
		SM 4500-S-2 D	DLJ	1	PASI-K
		EPA 300.0	PL	3	PASI-K
60453805002	**S-BMW-3D**	EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MLD	1	PASI-K
		EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	SR1	1	PASI-K
		SM 2540C	KVI	1	PASI-K
		SM 3500-Fe B#4	CRN2	1	PASI-K
		SM 3500-Fe B#4	DLJ	1	PASI-K
		SM 4500-S-2 D	DLJ	1	PASI-K
		EPA 300.0	PL	3	PASI-K
60453805003	**S-UMW-1D**	EPA 200.7	ARMN	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MLD	1	PASI-K
		EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		SM 2320B	SR1	1	PASI-K
		SM 2540C	KVI	1	PASI-K
		SM 3500-Fe B#4	CRN2	1	PASI-K
		SM 3500-Fe B#4	DLJ	1	PASI-K
		SM 4500-S-2 D	DLJ	1	PASI-K
		EPA 300.0	PL	3	PASI-K
60453805004	**S-UMW-2D**	EPA 200.7	ARMN	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MLD	1	PASI-K

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Lenexa, KS 66219
(913)599-5665

SAMPLE ANALYTE COUNT

Project: AMEREN SCPA
Pace Project No.: 60453805

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		SM 2320B	SR1	1	PASI-K
		SM 2540C	KVI	1	PASI-K
		SM 3500-Fe B#4	CRN2	1	PASI-K
		SM 3500-Fe B#4	DLJ	1	PASI-K
		SM 4500-S-2 D	DLJ	1	PASI-K
		EPA 300.0	PL	3	PASI-K
60453805005	**S-UMW-3D**	EPA 200.7	ARMN	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MLD	1	PASI-K
		EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		SM 2320B	SR1	1	PASI-K
		SM 2540C	KVI	1	PASI-K
		SM 3500-Fe B#4	CRN2	1	PASI-K
		SM 3500-Fe B#4	DLJ	1	PASI-K
		SM 4500-S-2 D	DLJ	1	PASI-K
		EPA 300.0	PL	3	PASI-K
60453805006	**S-UMW-4D**	EPA 200.7	ARMN	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MLD	1	PASI-K
		EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		SM 2320B	SR1	1	PASI-K
		SM 2540C	KVI	1	PASI-K
		SM 3500-Fe B#4	CRN2	1	PASI-K
		SM 3500-Fe B#4	DLJ	1	PASI-K
		SM 4500-S-2 D	DLJ	1	PASI-K
		EPA 300.0	PL	3	PASI-K
60453805007	**S-UMW-5D**	EPA 200.7	ARMN	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MLD	1	PASI-K
		EPA 903.1	LL1	1	PASI-PA

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SAMPLE ANALYTE COUNT

Project: AMEREN SCPA
Pace Project No.: 60453805

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		SM 2320B	SR1	1	PASI-K
		SM 2540C	KVI	1	PASI-K
		SM 3500-Fe B#4	CRN2	1	PASI-K
		SM 3500-Fe B#4	DLJ	1	PASI-K
		SM 4500-S-2 D	DLJ	1	PASI-K
		EPA 300.0	PL	3	PASI-K
60453805008	**S-UMW-6D**	EPA 200.7	ARMN	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MLD	1	PASI-K
		EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		SM 2320B	SR1	1	PASI-K
		SM 2540C	KVI	1	PASI-K
		SM 3500-Fe B#4	CRN2	1	PASI-K
		SM 3500-Fe B#4	DLJ	1	PASI-K
		SM 4500-S-2 D	DLJ	1	PASI-K
		EPA 300.0	PL	3	PASI-K
60453805009	**S-UMW-DUP-1**	EPA 200.7	ARMN	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MLD	1	PASI-K
		EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
		SM 2320B	SR1	1	PASI-K
		SM 2540C	KVI	1	PASI-K
		SM 3500-Fe B#4	CRN2	1	PASI-K
		SM 3500-Fe B#4	DLJ	1	PASI-K
		SM 4500-S-2 D	DLJ	1	PASI-K
		EPA 300.0	PL	3	PASI-K
60453805010	**S-UMW-FB-1**	EPA 200.7	ARMN	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MLD	1	PASI-K
		EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA

REPORT OF LABORATORY ANALYSIS

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(913)599-5665

SAMPLE ANALYTE COUNT

Project: AMEREN SCPA
Pace Project No.: 60453805

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		Total Radium Calculation	JAL	1	PASI-PA
		SM 2320B	SR1	1	PASI-K
		SM 2540C	KVI	1	PASI-K
		SM 3500-Fe B#4	CRN2	1	PASI-K
		SM 3500-Fe B#4	DLJ	1	PASI-K
		SM 4500-S-2 D	DLJ	1	PASI-K
		EPA 300.0	PL	3	PASI-K
60453805011	**S-UMW-MS-1**	EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
60453805012	**S-UMW-MSD-1**	EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA

PASI-K = Pace Analytical Services - Kansas City
PASI-PA = Pace Analytical Services - Greensburg

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Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: AMEREN SCPA
Pace Project No.: 60453805

Sample: S-BMW-1D **Lab ID: 60453805001** Collected: 05/28/24 12:33 Received: 05/30/24 05:35 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Barium	**355**	ug/L	5.0	0.64	1	06/05/24 14:26	06/07/24 12:01	7440-39-3	
Beryllium	**0.19J**	ug/L	1.0	0.12	1	06/05/24 14:26	06/07/24 12:01	7440-41-7	
Boron	**117**	ug/L	100	6.4	1	06/05/24 14:26	06/07/24 12:01	7440-42-8	
Calcium	**122000**	ug/L	200	26.9	1	06/05/24 14:26	06/07/24 12:01	7440-70-2	
Cobalt	**<1.2**	ug/L	5.0	1.2	1	06/05/24 14:26	06/07/24 12:01	7440-48-4	
Iron	**9600**	ug/L	50.0	9.1	1	06/05/24 14:26	06/07/24 12:01	7439-89-6	
Lead	**<3.8**	ug/L	10.0	3.8	1	06/05/24 14:26	06/07/24 12:01	7439-92-1	
Lithium	**13.7**	ug/L	10.0	3.7	1	06/05/24 14:26	06/07/24 12:01	7439-93-2	
Magnesium	**26100**	ug/L	50.0	20.1	1	06/05/24 14:26	06/07/24 12:01	7439-95-4	
Manganese	**987**	ug/L	5.0	0.39	1	06/05/24 14:26	06/07/24 12:01	7439-96-5	
Molybdenum	**1.7J**	ug/L	20.0	1.0	1	06/05/24 14:26	06/07/24 12:01	7439-98-7	B
Potassium	**2500**	ug/L	500	69.7	1	06/05/24 14:26	06/07/24 12:01	7440-09-7	
Sodium	**6560**	ug/L	500	115	1	06/05/24 14:26	06/07/24 12:01	7440-23-5	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City								
Antimony	**<0.12**	ug/L	1.0	0.12	1	06/05/24 14:26	06/14/24 15:24	7440-36-0	
Arsenic	**0.23J**	ug/L	1.0	0.13	1	06/05/24 14:26	06/14/24 15:24	7440-38-2	
Cadmium	**<0.050**	ug/L	0.50	0.050	1	06/05/24 14:26	06/14/24 15:24	7440-43-9	
Chromium	**<0.30**	ug/L	1.0	0.30	1	06/05/24 14:26	06/14/24 15:24	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	06/05/24 14:26	06/14/24 15:24	7782-49-2	
Thallium	**<0.14**	ug/L	1.0	0.14	1	06/05/24 14:26	06/14/24 15:24	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City								
Mercury	**<0.096**	ug/L	0.20	0.096	1	06/12/24 16:56	06/13/24 14:15	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**830**	mg/L	40.0	21.0	2		06/05/24 16:12		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**431**	mg/L	10.0	10.0	1		06/03/24 13:05		
Iron, Ferric (Calculation)	Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City								
Iron, Ferric	**9.3**	mg/L	0.050		1		06/12/24 00:00	20074-52-6	
Iron, Ferrous	Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City								
Iron, Ferrous	**0.29**	mg/L	0.20	0.041	1		06/04/24 16:07	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN SCPA
Pace Project No.: 60453805

Sample: S-BMW-1D **Lab ID: 60453805001** Collected: 05/28/24 12:33 Received: 05/30/24 05:35 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	**<0.016**	mg/L	0.050	0.016	1		06/03/24 10:33	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**10.1**	mg/L	1.0	0.53	1		06/12/24 15:37	16887-00-6	M1
Fluoride	**<0.12**	mg/L	0.20	0.12	1		06/12/24 15:37	16984-48-8	M1,N2
Sulfate	**25.0**	mg/L	10.0	5.5	10		06/12/24 16:29	14808-79-8	M1

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ANALYTICAL RESULTS

Project: AMEREN SCPA
Pace Project No.: 60453805

Sample: S-BMW-3D **Lab ID: 60453805002** Collected: 05/28/24 13:35 Received: 05/30/24 05:35 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Barium	**669**	ug/L	5.0	0.64	1	06/05/24 14:26	06/07/24 12:07	7440-39-3	
Beryllium	**0.26J**	ug/L	1.0	0.12	1	06/05/24 14:26	06/07/24 12:07	7440-41-7	
Boron	**64.1J**	ug/L	100	6.4	1	06/05/24 14:26	06/07/24 12:07	7440-42-8	
Calcium	**112000**	ug/L	200	26.9	1	06/05/24 14:26	06/07/24 12:07	7440-70-2	
Cobalt	**<1.2**	ug/L	5.0	1.2	1	06/05/24 14:26	06/07/24 12:07	7440-48-4	
Iron	**8240**	ug/L	50.0	9.1	1	06/05/24 14:26	06/07/24 12:07	7439-89-6	
Lead	**<3.8**	ug/L	10.0	3.8	1	06/05/24 14:26	06/07/24 12:07	7439-92-1	
Lithium	**23.0**	ug/L	10.0	3.7	1	06/05/24 14:26	06/07/24 12:07	7439-93-2	
Magnesium	**25600**	ug/L	50.0	20.1	1	06/05/24 14:26	06/07/24 12:07	7439-95-4	
Manganese	**572**	ug/L	5.0	0.39	1	06/05/24 14:26	06/07/24 12:07	7439-96-5	
Molybdenum	**1.8J**	ug/L	20.0	1.0	1	06/05/24 14:26	06/07/24 12:07	7439-98-7	B
Potassium	**3410**	ug/L	500	69.7	1	06/05/24 14:26	06/07/24 12:07	7440-09-7	
Sodium	**6260**	ug/L	500	115	1	06/05/24 14:26	06/07/24 12:07	7440-23-5	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City								
Antimony	**<0.12**	ug/L	1.0	0.12	1	06/05/24 14:26	06/14/24 15:31	7440-36-0	
Arsenic	**<0.13**	ug/L	1.0	0.13	1	06/05/24 14:26	06/14/24 15:31	7440-38-2	
Cadmium	**<0.050**	ug/L	0.50	0.050	1	06/05/24 14:26	06/14/24 15:31	7440-43-9	
Chromium	**<0.30**	ug/L	1.0	0.30	1	06/05/24 14:26	06/14/24 15:31	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	06/05/24 14:26	06/14/24 15:31	7782-49-2	
Thallium	**<0.14**	ug/L	1.0	0.14	1	06/05/24 14:26	06/14/24 15:31	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City								
Mercury	**<0.096**	ug/L	0.20	0.096	1	06/12/24 16:56	06/13/24 14:17	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**385**	mg/L	20.0	10.5	1		06/05/24 16:17		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**431**	mg/L	10.0	10.0	1		06/03/24 13:05		
Iron, Ferric (Calculation)	Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City								
Iron, Ferric	**7.9**	mg/L	0.050		1		06/12/24 00:00	20074-52-6	
Iron, Ferrous	Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City								
Iron, Ferrous	**0.32**	mg/L	0.20	0.041	1		06/04/24 16:07	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN SCPA
Pace Project No.: 60453805

Sample: S-BMW-3D **Lab ID: 60453805002** Collected: 05/28/24 13:35 Received: 05/30/24 05:35 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	**<0.016**	mg/L	0.050	0.016	1		06/03/24 10:33	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**10.4**	mg/L	1.0	0.53	1		06/12/24 17:21	16887-00-6	
Fluoride	**<0.12**	mg/L	0.20	0.12	1		06/12/24 17:21	16984-48-8	N2
Sulfate	**18.9**	mg/L	1.0	0.55	1		06/12/24 17:21	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA
Pace Project No.: 60453805

Sample: S-UMW-1D **Lab ID: 60453805003** Collected: 05/31/24 14:02 Received: 06/01/24 07:05 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Barium	**185**	ug/L	5.0	0.64	1	06/06/24 15:48	06/11/24 09:24	7440-39-3	
Beryllium	**<0.12**	ug/L	1.0	0.12	1	06/06/24 15:48	06/11/24 09:24	7440-41-7	
Boron	**586**	ug/L	100	6.4	1	06/06/24 15:48	06/11/24 09:24	7440-42-8	
Calcium	**91900**	ug/L	200	26.9	1	06/06/24 15:48	06/11/24 09:24	7440-70-2	
Cobalt	**<1.2**	ug/L	5.0	1.2	1	06/06/24 15:48	06/11/24 09:24	7440-48-4	
Iron	**903**	ug/L	50.0	9.1	1	06/06/24 15:48	06/11/24 09:24	7439-89-6	
Lead	**<3.8**	ug/L	10.0	3.8	1	06/06/24 15:48	06/11/24 09:24	7439-92-1	
Lithium	**22.6**	ug/L	10.0	3.7	1	06/06/24 15:48	06/11/24 09:24	7439-93-2	
Magnesium	**27000**	ug/L	50.0	20.1	1	06/06/24 15:48	06/11/24 09:24	7439-95-4	
Manganese	**171**	ug/L	5.0	0.39	1	06/06/24 15:48	06/11/24 09:24	7439-96-5	
Molybdenum	**93.0**	ug/L	20.0	1.0	1	06/06/24 15:48	06/11/24 09:24	7439-98-7	
Potassium	**5630**	ug/L	500	69.7	1	06/06/24 15:48	06/11/24 09:24	7440-09-7	
Sodium	**20600**	ug/L	500	115	1	06/06/24 15:48	06/11/24 09:24	7440-23-5	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City								
Antimony	**<0.12**	ug/L	1.0	0.12	1	06/06/24 15:40	06/19/24 15:56	7440-36-0	
Arsenic	**2.0**	ug/L	1.0	0.13	1	06/06/24 15:40	06/19/24 15:56	7440-38-2	
Cadmium	**<0.050**	ug/L	0.50	0.050	1	06/06/24 15:40	06/19/24 15:56	7440-43-9	
Chromium	**0.70J**	ug/L	1.0	0.30	1	06/06/24 15:40	06/19/24 15:56	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	06/06/24 15:40	06/19/24 15:56	7782-49-2	
Thallium	**<0.14**	ug/L	1.0	0.14	1	06/06/24 15:40	06/19/24 15:56	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City								
Mercury	**<0.096**	ug/L	0.20	0.096	1	06/12/24 16:56	06/14/24 13:45	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**265**	mg/L	20.0	10.5	1		06/05/24 16:35		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**423**	mg/L	10.0	10.0	1		06/05/24 12:23		
Iron, Ferric (Calculation)	Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City								
Iron, Ferric	**0.67**	mg/L	0.050		1		06/18/24 00:00	20074-52-6	
Iron, Ferrous	Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City								
Iron, Ferrous	**0.23**	mg/L	0.20	0.041	1		06/04/24 14:43	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN SCPA
Pace Project No.: 60453805

Sample: S-UMW-1D **Lab ID: 60453805003** Collected: 05/31/24 14:02 Received: 06/01/24 07:05 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	**<0.016**	mg/L	0.050	0.016	1		06/04/24 13:37	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**48.7**	mg/L	10.0	5.3	10		06/12/24 22:29	16887-00-6	
Fluoride	**0.13J**	mg/L	0.20	0.12	1		06/12/24 21:30	16984-48-8	N2
Sulfate	**73.1**	mg/L	10.0	5.5	10		06/12/24 22:29	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA
Pace Project No.: 60453805

Sample: S-UMW-2D **Lab ID: 60453805004** Collected: 05/30/24 09:10 Received: 06/01/24 07:05 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Barium	**61.5**	ug/L	5.0	0.64	1	06/06/24 15:48	06/11/24 09:30	7440-39-3	
Beryllium	**<0.12**	ug/L	1.0	0.12	1	06/06/24 15:48	06/11/24 09:30	7440-41-7	
Boron	**11200**	ug/L	100	6.4	1	06/06/24 15:48	06/11/24 09:30	7440-42-8	
Calcium	**171000**	ug/L	200	26.9	1	06/06/24 15:48	06/11/24 09:30	7440-70-2	
Cobalt	**<1.2**	ug/L	5.0	1.2	1	06/06/24 15:48	06/11/24 09:30	7440-48-4	
Iron	**277**	ug/L	50.0	9.1	1	06/06/24 15:48	06/11/24 09:30	7439-89-6	
Lead	**<3.8**	ug/L	10.0	3.8	1	06/06/24 15:48	06/11/24 09:30	7439-92-1	
Lithium	**26.7**	ug/L	10.0	3.7	1	06/06/24 15:48	06/11/24 09:30	7439-93-2	
Magnesium	**3610**	ug/L	50.0	20.1	1	06/06/24 15:48	06/11/24 09:30	7439-95-4	
Manganese	**150**	ug/L	5.0	0.39	1	06/06/24 15:48	06/11/24 09:30	7439-96-5	
Molybdenum	**1280**	ug/L	20.0	1.0	1	06/06/24 15:48	06/11/24 09:30	7439-98-7	
Potassium	**25500**	ug/L	500	69.7	1	06/06/24 15:48	06/11/24 09:30	7440-09-7	
Sodium	**44000**	ug/L	500	115	1	06/06/24 15:48	06/11/24 09:30	7440-23-5	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City								
Antimony	**<0.12**	ug/L	1.0	0.12	1	06/07/24 09:46	06/17/24 12:52	7440-36-0	
Arsenic	**3.1**	ug/L	1.0	0.13	1	06/07/24 09:46	06/17/24 12:52	7440-38-2	
Cadmium	**0.49J**	ug/L	0.50	0.050	1	06/07/24 09:46	06/17/24 12:52	7440-43-9	
Chromium	**<0.30**	ug/L	1.0	0.30	1	06/07/24 09:46	06/17/24 12:52	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	06/07/24 09:46	06/17/24 12:52	7782-49-2	
Thallium	**<0.14**	ug/L	1.0	0.14	1	06/07/24 09:46	06/17/24 12:52	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City								
Mercury	**<0.096**	ug/L	0.20	0.096	1	06/12/24 16:56	06/14/24 13:56	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**179**	mg/L	20.0	10.5	1		06/05/24 16:46		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**749**	mg/L	13.3	13.3	1		06/05/24 09:56		
Iron, Ferric (Calculation)	Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City								
Iron, Ferric	**0.13**	mg/L	0.050		1		06/18/24 00:00	20074-52-6	
Iron, Ferrous	Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City								
Iron, Ferrous	**0.14J**	mg/L	0.20	0.041	1		06/05/24 14:58	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN SCPA
Pace Project No.: 60453805

Sample: S-UMW-2D **Lab ID: 60453805004** Collected: 05/30/24 09:10 Received: 06/01/24 07:05 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	**<0.016**	mg/L	0.050	0.016	1		06/04/24 10:44	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**23.8**	mg/L	10.0	5.3	10		06/12/24 23:48	16887-00-6	
Fluoride	**1.1**	mg/L	0.20	0.12	1		06/12/24 23:33	16984-48-8	N2
Sulfate	**356**	mg/L	50.0	27.5	50		06/13/24 00:32	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA
Pace Project No.: 60453805

Sample: S-UMW-3D **Lab ID: 60453805005** Collected: 05/30/24 13:16 Received: 06/01/24 07:05 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Barium	**62.9**	ug/L	5.0	0.64	1	06/06/24 15:48	06/11/24 09:32	7440-39-3	
Beryllium	**<0.12**	ug/L	1.0	0.12	1	06/06/24 15:48	06/11/24 09:32	7440-41-7	
Boron	**32800**	ug/L	100	6.4	1	06/06/24 15:48	06/11/24 09:32	7440-42-8	
Calcium	**234000**	ug/L	200	26.9	1	06/06/24 15:48	06/11/24 09:32	7440-70-2	
Cobalt	**<1.2**	ug/L	5.0	1.2	1	06/06/24 15:48	06/11/24 09:32	7440-48-4	
Iron	**694**	ug/L	50.0	9.1	1	06/06/24 15:48	06/11/24 09:32	7439-89-6	
Lead	**<3.8**	ug/L	10.0	3.8	1	06/06/24 15:48	06/11/24 09:32	7439-92-1	
Lithium	**18.3**	ug/L	10.0	3.7	1	06/06/24 15:48	06/11/24 09:32	7439-93-2	
Magnesium	**9680**	ug/L	50.0	20.1	1	06/06/24 15:48	06/11/24 09:32	7439-95-4	
Manganese	**410**	ug/L	5.0	0.39	1	06/06/24 15:48	06/11/24 09:32	7439-96-5	
Molybdenum	**4840**	ug/L	20.0	1.0	1	06/06/24 15:48	06/11/24 09:32	7439-98-7	
Potassium	**19800**	ug/L	500	69.7	1	06/06/24 15:48	06/11/24 09:32	7440-09-7	
Sodium	**90600**	ug/L	500	115	1	06/06/24 15:48	06/11/24 09:32	7440-23-5	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City								
Antimony	**<0.12**	ug/L	1.0	0.12	1	06/07/24 09:46	06/17/24 12:55	7440-36-0	
Arsenic	**0.95J**	ug/L	1.0	0.13	1	06/07/24 09:46	06/17/24 12:55	7440-38-2	
Cadmium	**1.7**	ug/L	0.50	0.050	1	06/07/24 09:46	06/17/24 12:55	7440-43-9	
Chromium	**<0.30**	ug/L	1.0	0.30	1	06/07/24 09:46	06/17/24 12:55	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	06/07/24 09:46	06/17/24 12:55	7782-49-2	
Thallium	**<0.14**	ug/L	1.0	0.14	1	06/07/24 09:46	06/17/24 12:55	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City								
Mercury	**<0.096**	ug/L	0.20	0.096	1	06/12/24 16:56	06/14/24 13:58	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**141**	mg/L	20.0	10.5	1		06/05/24 16:52		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**1200**	mg/L	13.3	13.3	1		06/05/24 09:56		
Iron, Ferric (Calculation)	Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City								
Iron, Ferric	**0.51**	mg/L	0.050		1		06/18/24 00:00	20074-52-6	
Iron, Ferrous	Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City								
Iron, Ferrous	**0.18J**	mg/L	0.20	0.041	1		06/05/24 14:58	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN SCPA
Pace Project No.: 60453805

Sample: S-UMW-3D **Lab ID: 60453805005** Collected: 05/30/24 13:16 Received: 06/01/24 07:05 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	**0.035J**	mg/L	0.050	0.016	1		06/04/24 10:44	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**17.5**	mg/L	1.0	0.53	1		06/13/24 00:47	16887-00-6	
Fluoride	**<0.12**	mg/L	0.20	0.12	1		06/13/24 00:47	16984-48-8	N2
Sulfate	**784**	mg/L	200	110	200		06/13/24 01:02	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA
Pace Project No.: 60453805

Sample: S-UMW-4D **Lab ID: 60453805006** Collected: 05/30/24 12:03 Received: 06/01/24 07:05 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Barium	**45.0**	ug/L	5.0	0.64	1	06/06/24 15:48	06/11/24 09:33	7440-39-3	
Beryllium	**<0.12**	ug/L	1.0	0.12	1	06/06/24 15:48	06/11/24 09:33	7440-41-7	
Boron	**13700**	ug/L	100	6.4	1	06/06/24 15:48	06/11/24 09:33	7440-42-8	M1,P6
Calcium	**114000**	ug/L	200	26.9	1	06/06/24 15:48	06/11/24 09:33	7440-70-2	M1,P6
Cobalt	**<1.2**	ug/L	5.0	1.2	1	06/06/24 15:48	06/11/24 09:33	7440-48-4	
Iron	**5140**	ug/L	50.0	9.1	1	06/06/24 15:48	06/11/24 09:33	7439-89-6	
Lead	**<3.8**	ug/L	10.0	3.8	1	06/06/24 15:48	06/11/24 09:33	7439-92-1	
Lithium	**29.2**	ug/L	10.0	3.7	1	06/06/24 15:48	06/11/24 09:33	7439-93-2	
Magnesium	**16400**	ug/L	50.0	20.1	1	06/06/24 15:48	06/11/24 09:33	7439-95-4	
Manganese	**1150**	ug/L	5.0	0.39	1	06/06/24 15:48	06/11/24 09:33	7439-96-5	
Molybdenum	**3510**	ug/L	20.0	1.0	1	06/06/24 15:48	06/11/24 09:33	7439-98-7	
Potassium	**12000**	ug/L	500	69.7	1	06/06/24 15:48	06/11/24 09:33	7440-09-7	
Sodium	**43700**	ug/L	500	115	1	06/06/24 15:48	06/11/24 09:33	7440-23-5	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City								
Antimony	**<0.12**	ug/L	1.0	0.12	1	06/07/24 09:46	06/17/24 12:57	7440-36-0	
Arsenic	**0.32J**	ug/L	1.0	0.13	1	06/07/24 09:46	06/17/24 12:57	7440-38-2	
Cadmium	**1.3**	ug/L	0.50	0.050	1	06/07/24 09:46	06/17/24 12:57	7440-43-9	
Chromium	**0.35J**	ug/L	1.0	0.30	1	06/07/24 09:46	06/17/24 12:57	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	06/07/24 09:46	06/17/24 12:57	7782-49-2	
Thallium	**<0.14**	ug/L	1.0	0.14	1	06/07/24 09:46	06/17/24 12:57	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City								
Mercury	**<0.096**	ug/L	0.20	0.096	1	06/12/24 16:56	06/14/24 14:01	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**244**	mg/L	40.0	21.0	2		06/05/24 16:57		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**594**	mg/L	10.0	10.0	1		06/05/24 09:57		
Iron, Ferric (Calculation)	Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City								
Iron, Ferric	**5.0**	mg/L	0.050		1		06/18/24 00:00	20074-52-6	
Iron, Ferrous	Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City								
Iron, Ferrous	**0.13J**	mg/L	0.20	0.041	1		06/05/24 14:58	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN SCPA
Pace Project No.: 60453805

Sample: S-UMW-4D **Lab ID: 60453805006** Collected: 05/30/24 12:03 Received: 06/01/24 07:05 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	**0.021J**	mg/L	0.050	0.016	1		06/04/24 10:44	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**34.5**	mg/L	20.0	10.5	20		06/13/24 01:32	16887-00-6	
Fluoride	**0.42**	mg/L	0.20	0.12	1		06/13/24 01:17	16984-48-8	N2
Sulfate	**249**	mg/L	20.0	11.0	20		06/13/24 01:32	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA
Pace Project No.: 60453805

Sample: S-UMW-5D **Lab ID: 60453805007** Collected: 05/30/24 14:41 Received: 06/01/24 07:05 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Barium	**453**	ug/L	5.0	0.64	1	06/06/24 15:48	06/11/24 09:37	7440-39-3	
Beryllium	**<0.12**	ug/L	1.0	0.12	1	06/06/24 15:48	06/11/24 09:37	7440-41-7	
Boron	**6040**	ug/L	100	6.4	1	06/06/24 15:48	06/11/24 09:37	7440-42-8	
Calcium	**84000**	ug/L	200	26.9	1	06/06/24 15:48	06/11/24 09:37	7440-70-2	
Cobalt	**<1.2**	ug/L	5.0	1.2	1	06/06/24 15:48	06/11/24 09:37	7440-48-4	
Iron	**3790**	ug/L	50.0	9.1	1	06/06/24 15:48	06/11/24 09:37	7439-89-6	
Lead	**<3.8**	ug/L	10.0	3.8	1	06/06/24 15:48	06/11/24 09:37	7439-92-1	
Lithium	**23.4**	ug/L	10.0	3.7	1	06/06/24 15:48	06/11/24 09:37	7439-93-2	
Magnesium	**19000**	ug/L	50.0	20.1	1	06/06/24 15:48	06/11/24 09:37	7439-95-4	
Manganese	**497**	ug/L	5.0	0.39	1	06/06/24 15:48	06/11/24 09:37	7439-96-5	
Molybdenum	**226**	ug/L	20.0	1.0	1	06/06/24 15:48	06/11/24 09:37	7439-98-7	
Potassium	**10300**	ug/L	500	69.7	1	06/06/24 15:48	06/11/24 09:37	7440-09-7	
Sodium	**22400**	ug/L	500	115	1	06/06/24 15:48	06/11/24 09:37	7440-23-5	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City								
Antimony	**<0.12**	ug/L	1.0	0.12	1	06/07/24 09:46	06/17/24 13:00	7440-36-0	
Arsenic	**0.30J**	ug/L	1.0	0.13	1	06/07/24 09:46	06/17/24 13:00	7440-38-2	
Cadmium	**0.089J**	ug/L	0.50	0.050	1	06/07/24 09:46	06/17/24 13:00	7440-43-9	
Chromium	**0.36J**	ug/L	1.0	0.30	1	06/07/24 09:46	06/17/24 13:00	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	06/07/24 09:46	06/17/24 13:00	7782-49-2	
Thallium	**<0.14**	ug/L	1.0	0.14	1	06/07/24 09:46	06/17/24 13:00	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City								
Mercury	**<0.096**	ug/L	0.20	0.096	1	06/12/24 16:56	06/14/24 14:03	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**301**	mg/L	20.0	10.5	1		06/05/24 17:02		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**422**	mg/L	10.0	10.0	1		06/05/24 09:57		
Iron, Ferric (Calculation)	Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City								
Iron, Ferric	**3.5**	mg/L	0.050		1		06/18/24 00:00	20074-52-6	
Iron, Ferrous	Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City								
Iron, Ferrous	**0.33**	mg/L	0.20	0.041	1		06/05/24 14:58	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN SCPA
Pace Project No.: 60453805

Sample: S-UMW-5D **Lab ID: 60453805007** Collected: 05/30/24 14:41 Received: 06/01/24 07:05 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	**0.054**	mg/L	0.050	0.016	1		06/04/24 10:44	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**44.3**	mg/L	10.0	5.3	10		06/13/24 02:01	16887-00-6	
Fluoride	**0.34**	mg/L	0.20	0.12	1		06/13/24 01:47	16984-48-8	N2
Sulfate	**10.8**	mg/L	1.0	0.55	1		06/13/24 01:47	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA
Pace Project No.: 60453805

Sample: S-UMW-6D **Lab ID: 60453805008** Collected: 05/30/24 15:48 Received: 06/01/24 07:05 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Barium	**148**	ug/L	5.0	0.64	1	06/06/24 15:48	06/11/24 09:39	7440-39-3	
Beryllium	**<0.12**	ug/L	1.0	0.12	1	06/06/24 15:48	06/11/24 09:39	7440-41-7	
Boron	**204**	ug/L	100	6.4	1	06/06/24 15:48	06/11/24 09:39	7440-42-8	
Calcium	**105000**	ug/L	200	26.9	1	06/06/24 15:48	06/11/24 09:39	7440-70-2	
Cobalt	**<1.2**	ug/L	5.0	1.2	1	06/06/24 15:48	06/11/24 09:39	7440-48-4	
Iron	**7250**	ug/L	50.0	9.1	1	06/06/24 15:48	06/11/24 09:39	7439-89-6	
Lead	**<3.8**	ug/L	10.0	3.8	1	06/06/24 15:48	06/11/24 09:39	7439-92-1	
Lithium	**17.3**	ug/L	10.0	3.7	1	06/06/24 15:48	06/11/24 09:39	7439-93-2	
Magnesium	**24300**	ug/L	50.0	20.1	1	06/06/24 15:48	06/11/24 09:39	7439-95-4	
Manganese	**661**	ug/L	5.0	0.39	1	06/06/24 15:48	06/11/24 09:39	7439-96-5	
Molybdenum	**28.2**	ug/L	20.0	1.0	1	06/06/24 15:48	06/11/24 09:39	7439-98-7	
Potassium	**4010**	ug/L	500	69.7	1	06/06/24 15:48	06/11/24 09:39	7440-09-7	
Sodium	**7310**	ug/L	500	115	1	06/06/24 15:48	06/11/24 09:39	7440-23-5	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City								
Antimony	**<0.12**	ug/L	1.0	0.12	1	06/07/24 09:46	06/17/24 13:05	7440-36-0	
Arsenic	**0.41J**	ug/L	1.0	0.13	1	06/07/24 09:46	06/17/24 13:05	7440-38-2	
Cadmium	**<0.050**	ug/L	0.50	0.050	1	06/07/24 09:46	06/17/24 13:05	7440-43-9	
Chromium	**0.37J**	ug/L	1.0	0.30	1	06/07/24 09:46	06/17/24 13:05	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	06/07/24 09:46	06/17/24 13:05	7782-49-2	
Thallium	**<0.14**	ug/L	1.0	0.14	1	06/07/24 09:46	06/17/24 13:05	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City								
Mercury	**<0.096**	ug/L	0.20	0.096	1	06/12/24 16:56	06/14/24 14:05	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**379**	mg/L	20.0	10.5	1		06/05/24 17:08		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**404**	mg/L	10.0	10.0	1		06/05/24 09:57		
Iron, Ferric (Calculation)	Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City								
Iron, Ferric	**6.8**	mg/L	0.050		1		06/18/24 00:00	20074-52-6	
Iron, Ferrous	Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City								
Iron, Ferrous	**0.45**	mg/L	0.20	0.041	1		06/05/24 14:58	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN SCPA
Pace Project No.: 60453805

Sample: S-UMW-6D **Lab ID: 60453805008** Collected: 05/30/24 15:48 Received: 06/01/24 07:05 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	**<0.016**	mg/L	0.050	0.016	1		06/04/24 10:44	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**<0.53**	mg/L	1.0	0.53	1		06/13/24 02:16	16887-00-6	
Fluoride	**<0.12**	mg/L	0.20	0.12	1		06/13/24 02:16	16984-48-8	N2
Sulfate	**37.7**	mg/L	10.0	5.5	10		06/13/24 02:31	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA
Pace Project No.: 60453805

Sample: S-UMW-DUP-1 **Lab ID: 60453805009** Collected: 05/30/24 00:00 Received: 06/01/24 07:05 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Barium	**151**	ug/L	5.0	0.64	1	06/06/24 15:48	06/11/24 09:47	7440-39-3	
Beryllium	**<0.12**	ug/L	1.0	0.12	1	06/06/24 15:48	06/11/24 09:47	7440-41-7	
Boron	**202**	ug/L	100	6.4	1	06/06/24 15:48	06/11/24 09:47	7440-42-8	
Calcium	**107000**	ug/L	200	26.9	1	06/06/24 15:48	06/11/24 09:47	7440-70-2	
Cobalt	**<1.2**	ug/L	5.0	1.2	1	06/06/24 15:48	06/11/24 09:47	7440-48-4	
Iron	**7400**	ug/L	50.0	9.1	1	06/06/24 15:48	06/11/24 09:47	7439-89-6	
Lead	**<3.8**	ug/L	10.0	3.8	1	06/06/24 15:48	06/11/24 09:47	7439-92-1	
Lithium	**17.5**	ug/L	10.0	3.7	1	06/06/24 15:48	06/11/24 09:47	7439-93-2	
Magnesium	**24700**	ug/L	50.0	20.1	1	06/06/24 15:48	06/11/24 09:47	7439-95-4	
Manganese	**662**	ug/L	5.0	0.39	1	06/06/24 15:48	06/11/24 09:47	7439-96-5	
Molybdenum	**27.6**	ug/L	20.0	1.0	1	06/06/24 15:48	06/11/24 09:47	7439-98-7	
Potassium	**4020**	ug/L	500	69.7	1	06/06/24 15:48	06/11/24 09:47	7440-09-7	
Sodium	**6530**	ug/L	500	115	1	06/06/24 15:48	06/11/24 09:47	7440-23-5	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City								
Antimony	**<0.12**	ug/L	1.0	0.12	1	06/07/24 09:46	06/17/24 13:08	7440-36-0	
Arsenic	**0.41J**	ug/L	1.0	0.13	1	06/07/24 09:46	06/17/24 13:08	7440-38-2	
Cadmium	**<0.050**	ug/L	0.50	0.050	1	06/07/24 09:46	06/17/24 13:08	7440-43-9	
Chromium	**<0.30**	ug/L	1.0	0.30	1	06/07/24 09:46	06/17/24 13:08	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	06/07/24 09:46	06/17/24 13:08	7782-49-2	
Thallium	**<0.14**	ug/L	1.0	0.14	1	06/07/24 09:46	06/17/24 13:08	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City								
Mercury	**<0.096**	ug/L	0.20	0.096	1	06/12/24 16:56	06/14/24 14:08	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**376**	mg/L	20.0	10.5	1		06/05/24 17:14		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**393**	mg/L	10.0	10.0	1		06/05/24 09:58		
Iron, Ferric (Calculation)	Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City								
Iron, Ferric	**6.7**	mg/L	0.050		1		06/18/24 00:00	20074-52-6	
Iron, Ferrous	Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City								
Iron, Ferrous	**0.67**	mg/L	0.20	0.041	1		06/05/24 14:58	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN SCPA
Pace Project No.: 60453805

Sample: S-UMW-DUP-1 **Lab ID: 60453805009** Collected: 05/30/24 00:00 Received: 06/01/24 07:05 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	**<0.016**	mg/L	0.050	0.016	1		06/04/24 10:44	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**4.6**	mg/L	1.0	0.53	1		06/13/24 02:46	16887-00-6	
Fluoride	**<0.12**	mg/L	0.20	0.12	1		06/13/24 02:46	16984-48-8	N2
Sulfate	**27.1**	mg/L	10.0	5.5	10		06/13/24 03:30	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA
Pace Project No.: 60453805

Sample: S-UMW-FB-1 **Lab ID: 60453805010** Collected: 05/30/24 14:45 Received: 06/01/24 07:05 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Barium	**<0.64**	ug/L	5.0	0.64	1	06/06/24 15:48	06/11/24 09:48	7440-39-3	
Beryllium	**<0.12**	ug/L	1.0	0.12	1	06/06/24 15:48	06/11/24 09:48	7440-41-7	
Boron	**<6.4**	ug/L	100	6.4	1	06/06/24 15:48	06/11/24 09:48	7440-42-8	
Calcium	**27.5J**	ug/L	200	26.9	1	06/06/24 15:48	06/11/24 09:48	7440-70-2	
Cobalt	**<1.2**	ug/L	5.0	1.2	1	06/06/24 15:48	06/11/24 09:48	7440-48-4	
Iron	**<9.1**	ug/L	50.0	9.1	1	06/06/24 15:48	06/11/24 09:48	7439-89-6	
Lead	**<3.8**	ug/L	10.0	3.8	1	06/06/24 15:48	06/11/24 09:48	7439-92-1	
Lithium	**<3.7**	ug/L	10.0	3.7	1	06/06/24 15:48	06/11/24 09:48	7439-93-2	
Magnesium	**<20.1**	ug/L	50.0	20.1	1	06/06/24 15:48	06/11/24 09:48	7439-95-4	
Manganese	**<0.39**	ug/L	5.0	0.39	1	06/06/24 15:48	06/11/24 09:48	7439-96-5	
Molybdenum	**<1.0**	ug/L	20.0	1.0	1	06/06/24 15:48	06/11/24 09:48	7439-98-7	
Potassium	**<69.7**	ug/L	500	69.7	1	06/06/24 15:48	06/11/24 09:48	7440-09-7	
Sodium	**<115**	ug/L	500	115	1	06/06/24 15:48	06/11/24 09:48	7440-23-5	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City								
Antimony	**<0.12**	ug/L	1.0	0.12	1	06/07/24 09:46	06/17/24 13:10	7440-36-0	
Arsenic	**<0.13**	ug/L	1.0	0.13	1	06/07/24 09:46	06/17/24 13:10	7440-38-2	
Cadmium	**<0.050**	ug/L	0.50	0.050	1	06/07/24 09:46	06/17/24 13:10	7440-43-9	
Chromium	**0.42J**	ug/L	1.0	0.30	1	06/07/24 09:46	06/17/24 13:10	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	06/07/24 09:46	06/17/24 13:10	7782-49-2	
Thallium	**<0.14**	ug/L	1.0	0.14	1	06/07/24 09:46	06/17/24 13:10	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City								
Mercury	**<0.096**	ug/L	0.20	0.096	1	06/12/24 16:56	06/14/24 14:10	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**<10.5**	mg/L	20.0	10.5	1		06/05/24 17:20		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**6.0**	mg/L	5.0	5.0	1		06/05/24 09:58		
Iron, Ferric (Calculation)	Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City								
Iron, Ferric	**0.0J**	mg/L	0.050		1		06/18/24 00:00	20074-52-6	
Iron, Ferrous	Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City								
Iron, Ferrous	**0.044J**	mg/L	0.20	0.041	1		06/05/24 14:58	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN SCPA
Pace Project No.: 60453805

Sample: S-UMW-FB-1 **Lab ID: 60453805010** Collected: 05/30/24 14:45 Received: 06/01/24 07:05 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	**<0.016**	mg/L	0.050	0.016	1		06/04/24 10:44	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**<0.53**	mg/L	1.0	0.53	1		06/13/24 04:00	16887-00-6	
Fluoride	**<0.12**	mg/L	0.20	0.12	1		06/13/24 04:00	16984-48-8	N2
Sulfate	**<0.55**	mg/L	1.0	0.55	1		06/13/24 04:00	14808-79-8	

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QUALITY CONTROL DATA

Project: AMEREN SCPA
Pace Project No.: 60453805

QC Batch: 897906
QC Batch Method: EPA 7470
Analysis Method: EPA 7470
Analysis Description: 7470 Mercury
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60453805001, 60453805002

METHOD BLANK: 3554377 Matrix: Water
Associated Lab Samples: 60453805001, 60453805002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	<0.096	0.20	0.096	06/13/24 15:50	

LABORATORY CONTROL SAMPLE: 3554378

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.8	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3554379 3554380

Parameter	Units	60453166015 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	<0.096	5	5	4.7	4.8	94	96	75-125	3	20	

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QUALITY CONTROL DATA

Project: AMEREN SCPA
Pace Project No.: 60453805

QC Batch: 897909
QC Batch Method: EPA 7470
Analysis Method: EPA 7470
Analysis Description: 7470 Mercury
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60453805003, 60453805004, 60453805005, 60453805006, 60453805007, 60453805008, 60453805009, 60453805010

METHOD BLANK: 3554389 Matrix: Water
Associated Lab Samples: 60453805003, 60453805004, 60453805005, 60453805006, 60453805007, 60453805008, 60453805009, 60453805010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	<0.096	0.20	0.096	06/14/24 13:40	

LABORATORY CONTROL SAMPLE: 3554390

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.6	92	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3554391 3554392

Parameter	Units	60453805003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	<0.096	5	5	4.7	4.6	93	91	75-125	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3554393 3554394

Parameter	Units	60453812020 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	<0.096	5	5	4.4	4.5	89	89	75-125	1	20	

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QUALITY CONTROL DATA

Project: AMEREN SCPA
Pace Project No.: 60453805

QC Batch: 896847
QC Batch Method: EPA 200.7
Analysis Method: EPA 200.7
Analysis Description: 200.7 Metals, Total
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60453805001, 60453805002

METHOD BLANK: 3549596 Matrix: Water
Associated Lab Samples: 60453805001, 60453805002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<0.64	5.0	0.64	06/07/24 11:57	
Beryllium	ug/L	<0.12	1.0	0.12	06/07/24 11:57	
Boron	ug/L	<6.4	100	6.4	06/07/24 11:57	
Calcium	ug/L	<26.9	200	26.9	06/07/24 11:57	
Cobalt	ug/L	<1.2	5.0	1.2	06/07/24 11:57	
Iron	ug/L	<9.1	50.0	9.1	06/07/24 11:57	
Lead	ug/L	<3.8	10.0	3.8	06/07/24 11:57	
Lithium	ug/L	<3.7	10.0	3.7	06/07/24 11:57	
Magnesium	ug/L	<20.1	50.0	20.1	06/07/24 11:57	
Manganese	ug/L	<0.39	5.0	0.39	06/07/24 11:57	
Molybdenum	ug/L	1.1J	20.0	1.0	06/07/24 11:57	
Potassium	ug/L	<69.7	500	69.7	06/07/24 11:57	
Sodium	ug/L	<115	500	115	06/07/24 11:57	

LABORATORY CONTROL SAMPLE: 3549597

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	1010	101	85-115	
Beryllium	ug/L	1000	1020	102	85-115	
Boron	ug/L	1000	954	95	85-115	
Calcium	ug/L	10000	10200	102	85-115	
Cobalt	ug/L	1000	1060	106	85-115	
Iron	ug/L	10000	10300	103	85-115	
Lead	ug/L	1000	1020	102	85-115	
Lithium	ug/L	1000	1030	103	85-115	
Magnesium	ug/L	10000	9920	99	85-115	
Manganese	ug/L	1000	1040	104	85-115	
Molybdenum	ug/L	1000	1020	102	85-115	
Potassium	ug/L	10000	10000	100	85-115	
Sodium	ug/L	10000	10100	101	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3549598 3549599

Parameter	Units	60453805002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Barium	ug/L	669	1000	1000	1680	1680	101	101	70-130	0	20	
Beryllium	ug/L	0.26J	1000	1000	1050	1040	105	104	70-130	1	20	

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QUALITY CONTROL DATA

Project: AMEREN SCPA
Pace Project No.: 60453805

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3549598 3549599

Parameter	Units	60453805002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	ug/L	64.1J	1000	1000	1030	1020	96	96	70-130	1	20	
Calcium	ug/L	112000	10000	10000	122000	121000	99	91	70-130	1	20	
Cobalt	ug/L	<1.2	1000	1000	1050	1030	105	103	70-130	2	20	
Iron	ug/L	8240	10000	10000	18500	18500	102	103	70-130	0	20	
Lead	ug/L	<3.8	1000	1000	1010	1000	101	100	70-130	1	20	
Lithium	ug/L	23.0	1000	1000	1070	1060	104	104	70-130	1	20	
Magnesium	ug/L	25600	10000	10000	35600	35100	100	96	70-130	1	20	
Manganese	ug/L	572	1000	1000	1610	1580	104	101	70-130	2	20	
Molybdenum	ug/L	1.8J	1000	1000	1040	1020	103	101	70-130	2	20	
Potassium	ug/L	3410	10000	10000	13600	13400	102	100	70-130	1	20	
Sodium	ug/L	6260	10000	10000	16300	16300	100	101	70-130	0	20	

MATRIX SPIKE SAMPLE: 3549600

Parameter	Units	60453812008 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	301	1000	1310	101	70-130	
Beryllium	ug/L	<0.12	1000	1050	105	70-130	
Boron	ug/L	113	1000	1060	95	70-130	
Calcium	ug/L	144000	10000	150000	62	70-130	M1
Cobalt	ug/L	<1.2	1000	1040	104	70-130	
Iron	ug/L	33.4J	10000	10300	102	70-130	
Lead	ug/L	<3.8	1000	1000	100	70-130	
Lithium	ug/L	37.1	1000	1090	105	70-130	
Magnesium	ug/L	30000	10000	39100	91	70-130	
Manganese	ug/L	232	1000	1260	103	70-130	
Molybdenum	ug/L	4.5J	1000	1030	102	70-130	
Potassium	ug/L	2300	10000	12500	102	70-130	
Sodium	ug/L	5820	10000	16000	102	70-130	

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QUALITY CONTROL DATA

Project: AMEREN SCPA
Pace Project No.: 60453805

QC Batch: 896969
QC Batch Method: EPA 200.7
Analysis Method: EPA 200.7
Analysis Description: 200.7 Metals, Total
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60453805003, 60453805004, 60453805005, 60453805006, 60453805007, 60453805008, 60453805009, 60453805010

METHOD BLANK: 3550163 Matrix: Water
Associated Lab Samples: 60453805003, 60453805004, 60453805005, 60453805006, 60453805007, 60453805008, 60453805009, 60453805010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<0.64	5.0	0.64	06/11/24 09:01	
Beryllium	ug/L	<0.12	1.0	0.12	06/11/24 09:01	
Boron	ug/L	<6.4	100	6.4	06/11/24 09:01	
Calcium	ug/L	<26.9	200	26.9	06/11/24 09:01	
Cobalt	ug/L	<1.2	5.0	1.2	06/11/24 09:01	
Iron	ug/L	18.2J	50.0	9.1	06/11/24 09:01	
Lead	ug/L	<3.8	10.0	3.8	06/11/24 09:01	
Lithium	ug/L	<3.7	10.0	3.7	06/11/24 09:01	
Magnesium	ug/L	<20.1	50.0	20.1	06/11/24 09:01	
Manganese	ug/L	<0.39	5.0	0.39	06/11/24 09:01	
Molybdenum	ug/L	<1.0	20.0	1.0	06/11/24 09:01	
Potassium	ug/L	<69.7	500	69.7	06/11/24 09:01	
Sodium	ug/L	<115	500	115	06/11/24 09:01	

LABORATORY CONTROL SAMPLE: 3550164

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	1020	102	85-115	
Beryllium	ug/L	1000	1020	102	85-115	
Boron	ug/L	1000	964	96	85-115	
Calcium	ug/L	10000	10400	104	85-115	
Cobalt	ug/L	1000	1050	105	85-115	
Iron	ug/L	10000	10200	102	85-115	
Lead	ug/L	1000	1030	103	85-115	
Lithium	ug/L	1000	1030	103	85-115	
Magnesium	ug/L	10000	10100	101	85-115	
Manganese	ug/L	1000	1030	103	85-115	
Molybdenum	ug/L	1000	1010	101	85-115	
Potassium	ug/L	10000	10000	100	85-115	
Sodium	ug/L	10000	10200	102	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3550165 3550166

Parameter	Units	60453805003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Barium	ug/L	185	1000	1000	1200	1260	101	107	70-130	5	20	

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QUALITY CONTROL DATA

Project: AMEREN SCPA
Pace Project No.: 60453805

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3550165 3550166

Parameter	Units	60453805003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Beryllium	ug/L	<0.12	1000	1000	1040	1120	104	112	70-130	7	20	
Boron	ug/L	586	1000	1000	1570	1630	99	105	70-130	4	20	
Calcium	ug/L	91900	10000	10000	103000	102000	115	104	70-130	1	20	
Cobalt	ug/L	<1.2	1000	1000	1030	1100	103	110	70-130	7	20	
Iron	ug/L	903	10000	10000	11200	11800	103	109	70-130	5	20	
Lead	ug/L	<3.8	1000	1000	1000	1070	100	107	70-130	7	20	
Lithium	ug/L	22.6	1000	1000	1060	1130	104	110	70-130	6	20	
Magnesium	ug/L	27000	10000	10000	37500	37400	105	104	70-130	0	20	
Manganese	ug/L	171	1000	1000	1190	1260	102	109	70-130	6	20	
Molybdenum	ug/L	93.0	1000	1000	1110	1190	102	109	70-130	6	20	
Potassium	ug/L	5630	10000	10000	15900	16600	103	110	70-130	5	20	
Sodium	ug/L	20600	10000	10000	30900	31300	103	107	70-130	1	20	

MATRIX SPIKE SAMPLE: 3550167

Parameter	Units	60453805006 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	45.0	1000	1030	99	70-130	
Beryllium	ug/L	<0.12	1000	1020	102	70-130	
Boron	ug/L	13700	1000	14400	66	70-130	M1
Calcium	ug/L	114000	10000	120000	64	70-130	M1
Cobalt	ug/L	<1.2	1000	1020	102	70-130	
Iron	ug/L	5140	10000	15100	99	70-130	
Lead	ug/L	<3.8	1000	993	99	70-130	
Lithium	ug/L	29.2	1000	1050	102	70-130	
Magnesium	ug/L	16400	10000	25800	94	70-130	
Manganese	ug/L	1150	1000	2150	100	70-130	
Molybdenum	ug/L	3510	1000	4510	100	70-130	
Potassium	ug/L	12000	10000	21900	100	70-130	
Sodium	ug/L	43700	10000	52400	87	70-130	

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QUALITY CONTROL DATA

Project: AMEREN SCPA
Pace Project No.: 60453805

QC Batch: 896849
QC Batch Method: EPA 200.8
Analysis Method: EPA 200.8
Analysis Description: 200.8 MET
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60453805001, 60453805002

METHOD BLANK: 3549607 Matrix: Water
Associated Lab Samples: 60453805001, 60453805002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.12	1.0	0.12	06/14/24 15:19	
Arsenic	ug/L	<0.13	1.0	0.13	06/14/24 15:19	
Cadmium	ug/L	<0.050	0.50	0.050	06/14/24 15:19	
Chromium	ug/L	<0.30	1.0	0.30	06/14/24 15:19	
Selenium	ug/L	<0.18	1.0	0.18	06/14/24 15:19	
Thallium	ug/L	<0.14	1.0	0.14	06/14/24 15:19	

LABORATORY CONTROL SAMPLE: 3549608

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	41.3	103	85-115	
Arsenic	ug/L	40	42.4	106	85-115	
Cadmium	ug/L	40	42.7	107	85-115	
Chromium	ug/L	40	43.6	109	85-115	
Selenium	ug/L	40	42.8	107	85-115	
Thallium	ug/L	40	40.9	102	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3549609 3549610

Parameter	Units	60453805001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	<0.12	40	40	39.6	39.0	99	97	70-130	2	20	
Arsenic	ug/L	0.23J	40	40	41.3	41.2	103	102	70-130	0	20	
Cadmium	ug/L	<0.050	40	40	40.0	39.7	100	99	70-130	1	20	
Chromium	ug/L	<0.30	40	40	42.3	42.3	105	105	70-130	0	20	
Selenium	ug/L	<0.18	40	40	39.9	39.9	100	100	70-130	0	20	
Thallium	ug/L	<0.14	40	40	41.1	41.2	103	103	70-130	0	20	

MATRIX SPIKE SAMPLE: 3549611

Parameter	Units	60453812009 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	<0.12	40	39.3	98	70-130	
Arsenic	ug/L	<0.13	40	40.5	101	70-130	
Cadmium	ug/L	<0.050	40	39.4	99	70-130	
Chromium	ug/L	<0.30	40	42.6	106	70-130	
Selenium	ug/L	<0.18	40	39.5	99	70-130	

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QUALITY CONTROL DATA

Project: AMEREN SCPA
Pace Project No.: 60453805

MATRIX SPIKE SAMPLE: 3549611

Parameter	Units	60453812009 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Thallium	ug/L	<0.14	40	41.4	103	70-130	

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QUALITY CONTROL DATA

Project: AMEREN SCPA
Pace Project No.: 60453805

QC Batch: 897035
QC Batch Method: EPA 200.8
Analysis Method: EPA 200.8
Analysis Description: 200.8 MET
Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60453805003

METHOD BLANK: 3550413 Matrix: Water
Associated Lab Samples: 60453805003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.12	1.0	0.12	06/19/24 15:52	
Arsenic	ug/L	<0.13	1.0	0.13	06/19/24 15:52	
Cadmium	ug/L	<0.050	0.50	0.050	06/19/24 15:52	
Chromium	ug/L	<0.30	1.0	0.30	06/19/24 15:52	
Selenium	ug/L	<0.18	1.0	0.18	06/19/24 15:52	
Thallium	ug/L	<0.14	1.0	0.14	06/19/24 15:52	

LABORATORY CONTROL SAMPLE: 3550414

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	39.1	98	85-115	
Arsenic	ug/L	40	41.0	103	85-115	
Cadmium	ug/L	40	40.7	102	85-115	
Chromium	ug/L	40	42.2	105	85-115	
Selenium	ug/L	40	41.1	103	85-115	
Thallium	ug/L	40	38.4	96	85-115	

MATRIX SPIKE SAMPLE: 3550415

Parameter	Units	60453957003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	<20.0	40	42.0	100	70-130	
Arsenic	ug/L	<0.020 mg/L	40	43.6	104	70-130	
Cadmium	ug/L	<10.0	40	40.3	101	70-130	
Chromium	ug/L	<20.0	40	43.2	98	70-130	
Selenium	ug/L	<20.0	40	41.3	102	70-130	
Thallium	ug/L	<20.0	40	40.9	102	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3550416 3550417

Parameter	Units	60453805003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	<0.12	40	40	39.1	39.3	98	98	70-130	0	20	
Arsenic	ug/L	2.0	40	40	42.7	42.6	102	102	70-130	0	20	
Cadmium	ug/L	<0.050	40	40	39.6	39.6	99	99	70-130	0	20	
Chromium	ug/L	0.70J	40	40	41.3	41.4	101	102	70-130	0	20	
Selenium	ug/L	<0.18	40	40	38.9	38.9	97	97	70-130	0	20	

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QUALITY CONTROL DATA

Project: AMEREN SCPA
Pace Project No.: 60453805

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3550416 3550417

Parameter	Units	60453805003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Thallium	ug/L	<0.14	40	40	40.1	40.2	100	100	70-130	0	20	

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QUALITY CONTROL DATA

Project: AMEREN SCPA
Pace Project No.: 60453805

QC Batch: 897099
QC Batch Method: EPA 200.8
Analysis Method: EPA 200.8
Analysis Description: 200.8 MET
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60453805004, 60453805005, 60453805006, 60453805007, 60453805008, 60453805009, 60453805010

METHOD BLANK: 3550854 Matrix: Water
Associated Lab Samples: 60453805004, 60453805005, 60453805006, 60453805007, 60453805008, 60453805009, 60453805010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.12	1.0	0.12	06/17/24 12:47	
Arsenic	ug/L	<0.13	1.0	0.13	06/17/24 12:47	
Cadmium	ug/L	<0.050	0.50	0.050	06/17/24 12:47	
Chromium	ug/L	<0.30	1.0	0.30	06/17/24 12:47	
Selenium	ug/L	<0.18	1.0	0.18	06/17/24 12:47	
Thallium	ug/L	<0.14	1.0	0.14	06/17/24 12:47	

LABORATORY CONTROL SAMPLE: 3550855

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	42.8	107	85-115	
Arsenic	ug/L	40	39.7	99	85-115	
Cadmium	ug/L	40	43.6	109	85-115	
Chromium	ug/L	40	40.3	101	85-115	
Selenium	ug/L	40	39.6	99	85-115	
Thallium	ug/L	40	37.0	93	85-115	

MATRIX SPIKE SAMPLE: 3550856

Parameter	Units	60453812017 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	<0.12	40	38.2	95	70-130	
Arsenic	ug/L	0.35J	40	39.6	98	70-130	
Cadmium	ug/L	0.77	40	39.1	96	70-130	
Chromium	ug/L	0.35J	40	39.8	99	70-130	
Selenium	ug/L	<0.18	40	37.9	94	70-130	
Thallium	ug/L	<0.14	40	38.8	97	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3550857 3550858

Parameter	Units	60453812020 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	<0.12	40	40	38.4	38.8	96	97	70-130	1	20	
Arsenic	ug/L	0.22J	40	40	39.8	40.1	99	100	70-130	1	20	
Cadmium	ug/L	<0.050	40	40	39.0	39.5	98	99	70-130	1	20	
Chromium	ug/L	0.39J	40	40	40.3	40.8	100	101	70-130	1	20	
Selenium	ug/L	<0.18	40	40	38.7	39.2	97	98	70-130	1	20	

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QUALITY CONTROL DATA

Project: AMEREN SCPA
Pace Project No.: 60453805

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3550857 3550858

Parameter	Units	60453812020 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Thallium	ug/L	<0.14	40	40	39.5	40.1	99	100	70-130	1	20	

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QUALITY CONTROL DATA

Project: AMEREN SCPA
Pace Project No.: 60453805

QC Batch: 896743 | Analysis Method: SM 2320B
QC Batch Method: SM 2320B | Analysis Description: 2320B Alkalinity
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60453805001, 60453805002, 60453805003, 60453805004, 60453805005, 60453805006, 60453805007, 60453805008, 60453805009, 60453805010

METHOD BLANK: 3549169 Matrix: Water
Associated Lab Samples: 60453805001, 60453805002, 60453805003, 60453805004, 60453805005, 60453805006, 60453805007, 60453805008, 60453805009, 60453805010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<10.5	20.0	10.5	06/05/24 16:02	

LABORATORY CONTROL SAMPLE: 3549170

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	518	104	90-110	

SAMPLE DUPLICATE: 3549171

Parameter	Units	60453805003 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	265	265	0	10	

SAMPLE DUPLICATE: 3549172

Parameter	Units	60453812001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	408	413	1	10	

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QUALITY CONTROL DATA

Project: AMEREN SCPA
Pace Project No.: 60453805

QC Batch: 896436
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60453805001, 60453805002

METHOD BLANK: 3548054 Matrix: Water
Associated Lab Samples: 60453805001, 60453805002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	06/03/24 13:04	

LABORATORY CONTROL SAMPLE: 3548055

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	931	93	80-120	

SAMPLE DUPLICATE: 3548056

Parameter	Units	60453848004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	3530	3930	11	10	D6,H1

SAMPLE DUPLICATE: 3548057

Parameter	Units	60453812008 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	481	489	2	10	

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QUALITY CONTROL DATA

Project: AMEREN SCPA
Pace Project No.: 60453805

QC Batch: 896723 | Analysis Method: SM 2540C
QC Batch Method: SM 2540C | Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60453805004, 60453805005, 60453805006, 60453805007, 60453805008, 60453805009, 60453805010

METHOD BLANK: 3549074 Matrix: Water
Associated Lab Samples: 60453805004, 60453805005, 60453805006, 60453805007, 60453805008, 60453805009, 60453805010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	06/05/24 09:55	

LABORATORY CONTROL SAMPLE: 3549075

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	946	95	80-120	

SAMPLE DUPLICATE: 3549078

Parameter	Units	60453815004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1150	1230	7	10	

SAMPLE DUPLICATE: 3549079

Parameter	Units	60453817003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	531	530	0	10	

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QUALITY CONTROL DATA

Project: AMEREN SCPA
Pace Project No.: 60453805

QC Batch: 896817
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60453805003

METHOD BLANK: 3549433 Matrix: Water
Associated Lab Samples: 60453805003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	06/05/24 12:20	

LABORATORY CONTROL SAMPLE: 3549434

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	909	91	80-120	

SAMPLE DUPLICATE: 3549437

Parameter	Units	60453818005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	465	467	0	10	

SAMPLE DUPLICATE: 3549438

Parameter	Units	60453805003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	423	415	2	10	

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QUALITY CONTROL DATA

Project: AMEREN SCPA
Pace Project No.: 60453805

QC Batch: 896706
QC Batch Method: SM 3500-Fe B#4
Analysis Method: SM 3500-Fe B#4
Analysis Description: Iron, Ferrous
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60453805001, 60453805002

METHOD BLANK: 3548943 Matrix: Water
Associated Lab Samples: 60453805001, 60453805002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron, Ferrous	mg/L	<0.041	0.20	0.041	06/04/24 16:07	H6

LABORATORY CONTROL SAMPLE: 3548944

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron, Ferrous	mg/L	2	2.1	105	90-110	H6

SAMPLE DUPLICATE: 3548945

Parameter	Units	60453812012 Result	Dup Result	RPD	Max RPD	Qualifiers
Iron, Ferrous	mg/L	0.056J	0.068J		20	H6

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QUALITY CONTROL DATA

Project: AMEREN SCPA
Pace Project No.: 60453805

QC Batch: 896707
QC Batch Method: SM 3500-Fe B#4
Analysis Method: SM 3500-Fe B#4
Analysis Description: Iron, Ferrous
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60453805004, 60453805005, 60453805006, 60453805007, 60453805008, 60453805009, 60453805010

METHOD BLANK: 3548952 Matrix: Water
Associated Lab Samples: 60453805004, 60453805005, 60453805006, 60453805007, 60453805008, 60453805009, 60453805010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron, Ferrous	mg/L	<0.041	0.20	0.041	06/05/24 14:58	H6

LABORATORY CONTROL SAMPLE: 3548953

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron, Ferrous	mg/L	2.3	2.4	102	90-110	H6

SAMPLE DUPLICATE: 3548954

Parameter	Units	60453959006 Result	Dup Result	RPD	Max RPD	Qualifiers
Iron, Ferrous	mg/L	0.47	0.43	8	20	H6

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QUALITY CONTROL DATA

Project: AMEREN SCPA
Pace Project No.: 60453805

QC Batch: 896708
QC Batch Method: SM 3500-Fe B#4
Analysis Method: SM 3500-Fe B#4
Analysis Description: Iron, Ferrous
Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60453805003

METHOD BLANK: 3548962 Matrix: Water
Associated Lab Samples: 60453805003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron, Ferrous	mg/L	<0.041	0.20	0.041	06/04/24 14:43	H6

LABORATORY CONTROL SAMPLE: 3548963

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron, Ferrous	mg/L	2	2.1	105	90-110	H6

SAMPLE DUPLICATE: 3548964

Parameter	Units	60453812018 Result	Dup Result	RPD	Max RPD	Qualifiers
Iron, Ferrous	mg/L	0.88	0.86	1	20	H6

SAMPLE DUPLICATE: 3548965

Parameter	Units	60453812020 Result	Dup Result	RPD	Max RPD	Qualifiers
Iron, Ferrous	mg/L	0.45	0.40	12	20	H6

SAMPLE DUPLICATE: 3548969

Parameter	Units	60453805003 Result	Dup Result	RPD	Max RPD	Qualifiers
Iron, Ferrous	mg/L	0.23	0.23	0	20	H6

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QUALITY CONTROL DATA

Project: AMEREN SCPA
Pace Project No.: 60453805

QC Batch: 896396
QC Batch Method: SM 4500-S-2 D
Analysis Method: SM 4500-S-2 D
Analysis Description: 4500S2D Sulfide, Total
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60453805001, 60453805002

METHOD BLANK: 3547869 Matrix: Water
Associated Lab Samples: 60453805001, 60453805002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.016	0.050	0.016	06/03/24 10:33	

LABORATORY CONTROL SAMPLE: 3547870

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.5	0.47	94	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3547871 3547872

Parameter	Units	60453848004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfide, Total	mg/L	ND	5	5	32.2	32.8	644	656	75-125	2	20	H1,M1

SAMPLE DUPLICATE: 3547918

Parameter	Units	60453848004 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	ND	<1.6		20	H1

SAMPLE DUPLICATE: 3547919

Parameter	Units	60453848005 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	0.035J	0.029J		20	H1

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QUALITY CONTROL DATA

Project: AMEREN SCPA
Pace Project No.: 60453805

QC Batch: 896567
QC Batch Method: SM 4500-S-2 D
Analysis Method: SM 4500-S-2 D
Analysis Description: 4500S2D Sulfide, Total
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60453805004, 60453805005, 60453805006, 60453805007, 60453805008, 60453805009, 60453805010

METHOD BLANK: 3548501 Matrix: Water
Associated Lab Samples: 60453805004, 60453805005, 60453805006, 60453805007, 60453805008, 60453805009, 60453805010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.016	0.050	0.016	06/04/24 10:44	

LABORATORY CONTROL SAMPLE: 3548502

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.5	0.48	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3548503 3548504

Parameter	Units	60453956002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfide, Total	mg/L	<0.050	0.5	0.5	0.11	0.11	21	20	75-125	4	20	M1

SAMPLE DUPLICATE: 3548507

Parameter	Units	60453956002 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.050	<0.016		20	

SAMPLE DUPLICATE: 3548508

Parameter	Units	60453956003 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	0.061	0.060	2	20	

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QUALITY CONTROL DATA

Project: AMEREN SCPA
Pace Project No.: 60453805

QC Batch: 896633
QC Batch Method: SM 4500-S-2 D
Analysis Method: SM 4500-S-2 D
Analysis Description: 4500S2D Sulfide, Total
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60453805003

METHOD BLANK: 3548665 Matrix: Water
Associated Lab Samples: 60453805003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.016	0.050	0.016	06/04/24 13:37	

LABORATORY CONTROL SAMPLE: 3548666

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.5	0.46	93	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3548667 3548668

Parameter	Units	60453812021 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfide, Total	mg/L	0.018J	0.5	0.5	0.44	0.42	83	80	75-125	4	20	

SAMPLE DUPLICATE: 3548671

Parameter	Units	60453812021 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	0.018J	0.019J		20	

SAMPLE DUPLICATE: 3548672

Parameter	Units	60453805003 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.016	<0.016		20	

SAMPLE DUPLICATE: 3548673

Parameter	Units	60453957002 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.050	<0.016		20	

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QUALITY CONTROL DATA

Project: AMEREN SCPA
Pace Project No.: 60453805

SAMPLE DUPLICATE: 3548675

Parameter	Units	60453812020 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.016	<0.016		20	

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QUALITY CONTROL DATA

Project: AMEREN SCPA
Pace Project No.: 60453805

QC Batch: 897826
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60453805001, 60453805002

METHOD BLANK: 3554025 Matrix: Water
Associated Lab Samples: 60453805001, 60453805002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	06/11/24 17:27	
Fluoride	mg/L	<0.12	0.20	0.12	06/11/24 17:27	N2
Sulfate	mg/L	<0.55	1.0	0.55	06/11/24 17:27	

LABORATORY CONTROL SAMPLE: 3554026

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.6	92	90-110	
Fluoride	mg/L	2.5	2.4	98	90-110	N2
Sulfate	mg/L	5	5.2	104	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3554027 3554028

Parameter	Units	60453805001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	10.1	5	5	18.3	18.3	163	163	80-120	0	15	M1
Fluoride	mg/L	<0.12	2.5	2.5	4.5	4.5	180	179	80-120	0	15	M1,N2
Sulfate	mg/L	25.0	50	50	135	126	220	202	80-120	7	15	M1

MATRIX SPIKE SAMPLE: 3554029

Parameter	Units	60453812008 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	7.8	5	12.5	94	80-120	
Fluoride	mg/L	<0.12	2.5	2.5	102	80-120	N2
Sulfate	mg/L	41.3	50	94.3	106	80-120	

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QUALITY CONTROL DATA

Project: AMEREN SCPA
Pace Project No.: 60453805

QC Batch: 897827
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60453805003, 60453805004, 60453805005, 60453805006, 60453805007, 60453805008, 60453805009, 60453805010

METHOD BLANK: 3554031 Matrix: Water
Associated Lab Samples: 60453805003, 60453805004, 60453805005, 60453805006, 60453805007, 60453805008, 60453805009, 60453805010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	06/11/24 08:59	
Fluoride	mg/L	<0.12	0.20	0.12	06/11/24 08:59	N2
Sulfate	mg/L	<0.55	1.0	0.55	06/11/24 08:59	

LABORATORY CONTROL SAMPLE: 3554032

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.8	96	90-110	
Fluoride	mg/L	2.5	2.7	107	90-110	N2
Sulfate	mg/L	5	4.8	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3554033 3554034

Parameter	Units	60453819001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	2.1	5	5	11.4	11.1	186	180	80-120	3	15	M1
Fluoride	mg/L	0.16J	2.5	2.5	4.9	4.7	191	183	80-120	4	15	M1,N2
Sulfate	mg/L	73.9	50	50	196	172	244	196	80-120	13	15	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3554036 3554037

Parameter	Units	60453805003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	48.7	50	50	107	102	117	106	80-120	5	15	
Fluoride	mg/L	0.13J	2.5	2.5	3.0	2.9	113	111	80-120	2	15	N2
Sulfate	mg/L	73.1	50	50	129	127	113	108	80-120	2	15	

SAMPLE DUPLICATE: 3554035

Parameter	Units	60453819001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	2.1	2.1	0	15	
Fluoride	mg/L	0.16J	0.16J		15	N2
Sulfate	mg/L	73.9	73.6	0	15	

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QUALITY CONTROL DATA

Project: AMEREN SCPA
Pace Project No.: 60453805

SAMPLE DUPLICATE: 3554038

Parameter	Units	60453805003 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	48.7	49.5	1	15	
Fluoride	mg/L	0.13J	0.14J		15	N2
Sulfate	mg/L	73.1	73.4	0	15	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA
Pace Project No.: 60453805

Sample: S-BMW-1D **Lab ID: 60453805001** Collected: 05/28/24 12:33 Received: 05/30/24 05:35 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.601 ± 0.416 (0.498) C:NA T:90%**	pCi/L	06/23/24 14:35	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**1.08 ± 0.646 (1.21) C:84% T:88%**	pCi/L	06/20/24 19:02	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA
Pace Project No.: 60453805

Sample: S-BMW-3D **Lab ID: 60453805002** Collected: 05/28/24 13:35 Received: 05/30/24 05:35 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
		Pace Analytical Services - Greensburg				
Radium-226	EPA 903.1	**0.885 ± 0.582 (0.739) C:NA T:93%**	pCi/L	06/23/24 14:35	13982-63-3	
		Pace Analytical Services - Greensburg				
Radium-228	EPA 904.0	**0.485 ± 0.575 (1.21) C:82% T:86%**	pCi/L	06/20/24 19:02	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA
Pace Project No.: 60453805

Sample: S-UMW-1D **Lab ID: 60453805003** Collected: 05/31/24 14:02 Received: 06/01/24 07:05 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**-0.122 ± 0.421 (0.754) C:NA T:91%**	pCi/L	06/23/24 12:42	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.617 ± 0.339 (0.597) C:83% T:84%**	pCi/L	06/20/24 12:37	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.617 ± 0.760 (1.35)**	pCi/L	06/25/24 17:40	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA
Pace Project No.: 60453805

Sample: S-UMW-2D **Lab ID: 60453805004** Collected: 05/30/24 09:10 Received: 06/01/24 07:05 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**-0.261 ± 0.756 (1.31) C:NA T:88%**	pCi/L	06/23/24 12:42	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.531 ± 0.303 (0.543) C:91% T:87%**	pCi/L	06/20/24 12:37	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.531 ± 1.06 (1.85)**	pCi/L	06/25/24 17:40	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA
Pace Project No.: 60453805

Sample: S-UMW-3D **Lab ID: 60453805005** Collected: 05/30/24 13:16 Received: 06/01/24 07:05 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**-0.337 ± 0.662 (1.18) C:NA T:91%**	pCi/L	06/23/24 12:42	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.658 ± 0.349 (0.612) C:85% T:86%**	pCi/L	06/20/24 12:37	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.658 ± 1.01 (1.79)**	pCi/L	06/25/24 17:40	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA
Pace Project No.: 60453805

Sample: S-UMW-4D **Lab ID: 60453805006** Collected: 05/30/24 12:03 Received: 06/01/24 07:05 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.0693 ± 0.592 (0.998) C:NA T:92%**	pCi/L	06/23/24 12:42	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.731 ± 0.377 (0.662) C:85% T:83%**	pCi/L	06/20/24 12:37	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.800 ± 0.969 (1.66)**	pCi/L	06/25/24 17:40	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA
Pace Project No.: 60453805

Sample: S-UMW-5D **Lab ID: 60453805007** Collected: 05/30/24 14:41 Received: 06/01/24 07:05 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**-0.0903 ± 0.528 (0.936) C:NA T:93%**	pCi/L	06/23/24 12:42	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**1.15 ± 0.527 (0.921) C:77% T:85%**	pCi/L	06/20/24 12:37	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**1.15 ± 1.06 (1.86)**	pCi/L	06/25/24 17:40	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA
Pace Project No.: 60453805

Sample: S-UMW-6D **Lab ID: 60453805008** Collected: 05/30/24 15:48 Received: 06/01/24 07:05 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.316 ± 0.756 (1.20) C:NA T:89%**	pCi/L	06/23/24 12:42	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.390 ± 0.480 (1.02) C:67% T:84%**	pCi/L	06/20/24 12:37	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.706 ± 1.24 (2.22)**	pCi/L	06/25/24 17:40	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA
Pace Project No.: 60453805

Sample: S-UMW-DUP-1 **Lab ID: 60453805009** Collected: 05/30/24 00:00 Received: 06/01/24 07:05 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.195 ± 0.576 (0.937) C:NA T:90%**	pCi/L	06/23/24 12:42	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**1.14 ± 0.462 (0.747) C:85% T:87%**	pCi/L	06/20/24 12:37	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**1.34 ± 1.04 (1.68)**	pCi/L	06/25/24 17:40	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA
Pace Project No.: 60453805

Sample: S-UMW-FB-1 **Lab ID: 60453805010** Collected: 05/30/24 14:45 Received: 06/01/24 07:05 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.270 ± 0.829 (1.32) C:NA T:90%**	pCi/L	06/23/24 12:42	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.790 ± 0.462 (0.860) C:88% T:76%**	pCi/L	06/20/24 12:38	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**1.06 ± 1.29 (2.18)**	pCi/L	06/25/24 17:40	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA
Pace Project No.: 60453805

Sample: S-UMW-MS-1 **Lab ID: 60453805011** Collected: 05/31/24 14:02 Received: 06/01/24 07:05 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**107.06 %REC ± NA (NA) C:NA T:NA**	pCi/L	06/23/24 13:01	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**92.39 %REC ± NA (NA) C:NA T:NA**	pCi/L	06/20/24 12:38	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA
Pace Project No.: 60453805

Sample: S-UMW-MSD-1 **Lab ID: 60453805012** Collected: 05/31/24 14:02 Received: 06/01/24 07:05 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**120.64 %REC 11.93RPD ± NA (NA) C:NA T:NA**	pCi/L	06/23/24 13:01	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**96.18 %REC 4.01RPD ± NA (NA) C:NA T:NA**	pCi/L	06/20/24 12:38	15262-20-1	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN SCPA
Pace Project No.: 60453805

QC Batch: 674848
QC Batch Method: EPA 904.0
Analysis Method: EPA 904.0
Analysis Description: 904.0 Radium 228
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 60453805003, 60453805004, 60453805005, 60453805006, 60453805007, 60453805008, 60453805009, 60453805010, 60453805011, 60453805012

METHOD BLANK: 3285456 Matrix: Water
Associated Lab Samples: 60453805003, 60453805004, 60453805005, 60453805006, 60453805007, 60453805008, 60453805009, 60453805010, 60453805011, 60453805012

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.400 ± 0.288 (0.554) C:100% T:79%	pCi/L	06/20/24 12:35	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN SCPA
Pace Project No.: 60453805

QC Batch: 673177
QC Batch Method: EPA 904.0
Analysis Method: EPA 904.0
Analysis Description: 904.0 Radium 228
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 60453805001, 60453805002

METHOD BLANK: 3276837 Matrix: Water
Associated Lab Samples: 60453805001, 60453805002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.313 ± 0.363 (0.765) C:85% T:89%	pCi/L	06/20/24 15:55	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN SCPA
Pace Project No.: 60453805

QC Batch: 674846
QC Batch Method: EPA 903.1
Analysis Method: EPA 903.1
Analysis Description: 903.1 Radium-226
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 60453805003, 60453805004, 60453805005, 60453805006, 60453805007, 60453805008, 60453805009, 60453805010, 60453805011, 60453805012

METHOD BLANK: 3285454 Matrix: Water
Associated Lab Samples: 60453805003, 60453805004, 60453805005, 60453805006, 60453805007, 60453805008, 60453805009, 60453805010, 60453805011, 60453805012

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.308 ± 0.330 (0.482) C:NA T:95%	pCi/L	06/23/24 12:24	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN SCPA
Pace Project No.: 60453805

QC Batch: 673174
QC Batch Method: EPA 903.1
Analysis Method: EPA 903.1
Analysis Description: 903.1 Radium-226
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 60453805001, 60453805002

METHOD BLANK: 3276836 Matrix: Water
Associated Lab Samples: 60453805001, 60453805002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.289 ± 0.341 (0.509) C:NA T:91%	pCi/L	06/23/24 14:17	

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QUALIFIERS

Project: AMEREN SCPA
Pace Project No.: 60453805

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval). Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

B	Analyte was detected in the associated method blank.
D6	The precision between the sample and sample duplicate exceeded laboratory control limits.
H1	Analysis conducted outside the EPA method holding time.
H6	Analysis initiated outside of the 15 minute EPA required holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
N2	The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.
P6	Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN SCPA
Pace Project No.: 60453805

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60453805001	**S-BMW-1D**	EPA 200.7	896847	EPA 200.7	897011
60453805002	**S-BMW-3D**	EPA 200.7	896847	EPA 200.7	897011
60453805003	**S-UMW-1D**	EPA 200.7	896969	EPA 200.7	897200
60453805004	**S-UMW-2D**	EPA 200.7	896969	EPA 200.7	897200
60453805005	**S-UMW-3D**	EPA 200.7	896969	EPA 200.7	897200
60453805006	**S-UMW-4D**	EPA 200.7	896969	EPA 200.7	897200
60453805007	**S-UMW-5D**	EPA 200.7	896969	EPA 200.7	897200
60453805008	**S-UMW-6D**	EPA 200.7	896969	EPA 200.7	897200
60453805009	**S-UMW-DUP-1**	EPA 200.7	896969	EPA 200.7	897200
60453805010	**S-UMW-FB-1**	EPA 200.7	896969	EPA 200.7	897200
60453805001	**S-BMW-1D**	EPA 200.8	896849	EPA 200.8	897010
60453805002	**S-BMW-3D**	EPA 200.8	896849	EPA 200.8	897010
60453805003	**S-UMW-1D**	EPA 200.8	897035	EPA 200.8	897201
60453805004	**S-UMW-2D**	EPA 200.8	897099	EPA 200.8	897351
60453805005	**S-UMW-3D**	EPA 200.8	897099	EPA 200.8	897351
60453805006	**S-UMW-4D**	EPA 200.8	897099	EPA 200.8	897351
60453805007	**S-UMW-5D**	EPA 200.8	897099	EPA 200.8	897351
60453805008	**S-UMW-6D**	EPA 200.8	897099	EPA 200.8	897351
60453805009	**S-UMW-DUP-1**	EPA 200.8	897099	EPA 200.8	897351
60453805010	**S-UMW-FB-1**	EPA 200.8	897099	EPA 200.8	897351
60453805001	**S-BMW-1D**	EPA 7470	897906	EPA 7470	898071
60453805002	**S-BMW-3D**	EPA 7470	897906	EPA 7470	898071
60453805003	**S-UMW-1D**	EPA 7470	897909	EPA 7470	898072
60453805004	**S-UMW-2D**	EPA 7470	897909	EPA 7470	898072
60453805005	**S-UMW-3D**	EPA 7470	897909	EPA 7470	898072
60453805006	**S-UMW-4D**	EPA 7470	897909	EPA 7470	898072
60453805007	**S-UMW-5D**	EPA 7470	897909	EPA 7470	898072
60453805008	**S-UMW-6D**	EPA 7470	897909	EPA 7470	898072
60453805009	**S-UMW-DUP-1**	EPA 7470	897909	EPA 7470	898072
60453805010	**S-UMW-FB-1**	EPA 7470	897909	EPA 7470	898072
60453805001	**S-BMW-1D**	EPA 903.1	673174		
60453805002	**S-BMW-3D**	EPA 903.1	673174		
60453805003	**S-UMW-1D**	EPA 903.1	674846		
60453805004	**S-UMW-2D**	EPA 903.1	674846		
60453805005	**S-UMW-3D**	EPA 903.1	674846		
60453805006	**S-UMW-4D**	EPA 903.1	674846		
60453805007	**S-UMW-5D**	EPA 903.1	674846		
60453805008	**S-UMW-6D**	EPA 903.1	674846		
60453805009	**S-UMW-DUP-1**	EPA 903.1	674846		
60453805010	**S-UMW-FB-1**	EPA 903.1	674846		
60453805011	**S-UMW-MS-1**	EPA 903.1	674846		
60453805012	**S-UMW-MSD-1**	EPA 903.1	674846		
60453805001	**S-BMW-1D**	EPA 904.0	673177		
60453805002	**S-BMW-3D**	EPA 904.0	673177		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN SCPA
Pace Project No.: 60453805

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60453805003	**S-UMW-1D**	EPA 904.0	674848		
60453805004	**S-UMW-2D**	EPA 904.0	674848		
60453805005	**S-UMW-3D**	EPA 904.0	674848		
60453805006	**S-UMW-4D**	EPA 904.0	674848		
60453805007	**S-UMW-5D**	EPA 904.0	674848		
60453805008	**S-UMW-6D**	EPA 904.0	674848		
60453805009	**S-UMW-DUP-1**	EPA 904.0	674848		
60453805010	**S-UMW-FB-1**	EPA 904.0	674848		
60453805011	**S-UMW-MS-1**	EPA 904.0	674848		
60453805012	**S-UMW-MSD-1**	EPA 904.0	674848		
60453805003	**S-UMW-1D**	Total Radium Calculation	678336		
60453805004	**S-UMW-2D**	Total Radium Calculation	678336		
60453805005	**S-UMW-3D**	Total Radium Calculation	678336		
60453805006	**S-UMW-4D**	Total Radium Calculation	678336		
60453805007	**S-UMW-5D**	Total Radium Calculation	678336		
60453805008	**S-UMW-6D**	Total Radium Calculation	678336		
60453805009	**S-UMW-DUP-1**	Total Radium Calculation	678336		
60453805010	**S-UMW-FB-1**	Total Radium Calculation	678336		
60453805001	**S-BMW-1D**	SM 2320B	896743		
60453805002	**S-BMW-3D**	SM 2320B	896743		
60453805003	**S-UMW-1D**	SM 2320B	896743		
60453805004	**S-UMW-2D**	SM 2320B	896743		
60453805005	**S-UMW-3D**	SM 2320B	896743		
60453805006	**S-UMW-4D**	SM 2320B	896743		
60453805007	**S-UMW-5D**	SM 2320B	896743		
60453805008	**S-UMW-6D**	SM 2320B	896743		
60453805009	**S-UMW-DUP-1**	SM 2320B	896743		
60453805010	**S-UMW-FB-1**	SM 2320B	896743		
60453805001	**S-BMW-1D**	SM 2540C	896436		
60453805002	**S-BMW-3D**	SM 2540C	896436		
60453805003	**S-UMW-1D**	SM 2540C	896817		
60453805004	**S-UMW-2D**	SM 2540C	896723		
60453805005	**S-UMW-3D**	SM 2540C	896723		
60453805006	**S-UMW-4D**	SM 2540C	896723		
60453805007	**S-UMW-5D**	SM 2540C	896723		
60453805008	**S-UMW-6D**	SM 2540C	896723		
60453805009	**S-UMW-DUP-1**	SM 2540C	896723		
60453805010	**S-UMW-FB-1**	SM 2540C	896723		
60453805001	**S-BMW-1D**	SM 3500-Fe B#4	897870		
60453805002	**S-BMW-3D**	SM 3500-Fe B#4	897870		
60453805003	**S-UMW-1D**	SM 3500-Fe B#4	898694		
60453805004	**S-UMW-2D**	SM 3500-Fe B#4	898694		
60453805005	**S-UMW-3D**	SM 3500-Fe B#4	898694		
60453805006	**S-UMW-4D**	SM 3500-Fe B#4	898694		
60453805007	**S-UMW-5D**	SM 3500-Fe B#4	898694		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN SCPA
Pace Project No.: 60453805

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60453805008	**S-UMW-6D**	SM 3500-Fe B#4	898694		
60453805009	**S-UMW-DUP-1**	SM 3500-Fe B#4	898694		
60453805010	**S-UMW-FB-1**	SM 3500-Fe B#4	898741		
60453805001	**S-BMW-1D**	SM 3500-Fe B#4	896706		
60453805002	**S-BMW-3D**	SM 3500-Fe B#4	896706		
60453805003	**S-UMW-1D**	SM 3500-Fe B#4	896708		
60453805004	**S-UMW-2D**	SM 3500-Fe B#4	896707		
60453805005	**S-UMW-3D**	SM 3500-Fe B#4	896707		
60453805006	**S-UMW-4D**	SM 3500-Fe B#4	896707		
60453805007	**S-UMW-5D**	SM 3500-Fe B#4	896707		
60453805008	**S-UMW-6D**	SM 3500-Fe B#4	896707		
60453805009	**S-UMW-DUP-1**	SM 3500-Fe B#4	896707		
60453805010	**S-UMW-FB-1**	SM 3500-Fe B#4	896707		
60453805001	**S-BMW-1D**	SM 4500-S-2 D	896396		
60453805002	**S-BMW-3D**	SM 4500-S-2 D	896396		
60453805003	**S-UMW-1D**	SM 4500-S-2 D	896633		
60453805004	**S-UMW-2D**	SM 4500-S-2 D	896567		
60453805005	**S-UMW-3D**	SM 4500-S-2 D	896567		
60453805006	**S-UMW-4D**	SM 4500-S-2 D	896567		
60453805007	**S-UMW-5D**	SM 4500-S-2 D	896567		
60453805008	**S-UMW-6D**	SM 4500-S-2 D	896567		
60453805009	**S-UMW-DUP-1**	SM 4500-S-2 D	896567		
60453805010	**S-UMW-FB-1**	SM 4500-S-2 D	896567		
60453805001	**S-BMW-1D**	EPA 300.0	897826		
60453805002	**S-BMW-3D**	EPA 300.0	897826		
60453805003	**S-UMW-1D**	EPA 300.0	897827		
60453805004	**S-UMW-2D**	EPA 300.0	897827		
60453805005	**S-UMW-3D**	EPA 300.0	897827		
60453805006	**S-UMW-4D**	EPA 300.0	897827		
60453805007	**S-UMW-5D**	EPA 300.0	897827		
60453805008	**S-UMW-6D**	EPA 300.0	897827		
60453805009	**S-UMW-DUP-1**	EPA 300.0	897827		
60453805010	**S-UMW-FB-1**	EPA 300.0	897827		

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WO# : 60453805

60453805

Pace ANALYTICAL SERVICES	DC#_Title: ENV-FRM-LENE-0009_Sample Cor		
	Revision: 2	Effective Date: 01/12/2022	Issued By: Lenexa

Client Name: Rocksmith Geoeng

Courier: FedEx ☐ UPS ☐ VIA ☐ Clay ☐ PEX ☐ ECI ☐ Pace ☐ Xroads ☑ Client ☐ Other ☐

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☑

Custody Seal on Cooler/Box Present: Yes ☑ No ☐ Seals intact: Yes ☑ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☑ Other ☐

Thermometer Used: T299 **Type of Ice:** Wet Blue None

Cooler Temperature (°C): **As-read** 20.1/1.4 **Corr. Factor** 0.0 **Corrected** 20.1/1.4

Date and initials of person examining contents: JN 5/30/24

Temperature should be above freezing to 6°C

Chain of Custody present:	☑Yes ☐No ☐N/A	
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	
Samples arrived within holding time:	☑Yes ☐No ☐N/A	
Short Hold Time analyses (<72hr):	☐Yes ☑No ☐N/A	
Rush Turn Around Time requested:	☐Yes ☑No ☐N/A	
Sufficient volume:	☑Yes ☐No ☐N/A	
Correct containers used:	☑Yes ☐No ☐N/A	
Pace containers used:	☑Yes ☐No ☐N/A	
Containers intact:	☑Yes ☐No ☐N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☐No ☑N/A	
Filtered volume received for dissolved tests?	☐Yes ☐No ☑N/A	
Sample labels match COC: Date / time / ID / analyses	☑Yes ☐No ☐N/A	
Samples contain multiple phases? Matrix: WT	☐Yes ☑No ☐N/A	
Containers requiring pH preservation in compliance? (HNO_3, H_2SO_4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) LOT#: 67187/60620	☑Yes ☐No ☐N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks: Lead acetate strip turns dark? (Record only)	☐Yes ☐No	
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No	
Trip Blank present:	☐Yes ☐No ☑N/A	
Headspace in VOA vials (>6mm):	☐Yes ☐No ☑N/A	
Samples from USDA Regulated Area: State:	☐Yes ☐No ☑N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☑N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

Pace® Location Requested (City/State):
Pace Analytical Kansas
9608 Loiret Blvd., Lenexa, KS 66219

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here

Scan QR Code for instructions

60453812 PW 5/31/24

60453805

Company Name:	Rocksmith Geoengineering, LLC	Contact/Report To:	Mark Haddock
Street Address:	2320 Creve Coeur Mill Road, Maryland Heights, MO 63043	Phone #:	314-974-6578
		E-Mail:	mark.haddock@rocksmithgeo.com
		Cc E-Mail:	
Customer Project #:	COC# 7		
Project Name:	AMEREN SCPA	Invoice To:	Mark Haddock
		Invoice E-Mail:	mark.haddock@rocksmithgeo.com
Site Collection Info/Facility ID (as applicable):		Purchase Order # (if applicable):	
		Quote #:	

Time Zone Collected: [ ] AK [ ] PT [ ] MT [ ] CT [ ] ET

County / State origin of sample(s): Missouri

Data Deliverables:
[ ] Level II [ ] Level III [ ] Level IV
[ ] EQUIS
[ ] Other

Regulatory Program (DW, RCRA, etc.) as applicable: Reportable [ ] Yes [ ] No

Rush (Pre-approval required):
[ ] Same Day [ ] 1 Day [ ] 2 Day [ ] 3 Day [ ] Other _____

DW PWSID # or WW Permit # as applicable:

Date Results Requested:

Field Filtered (if applicable): [ ] Yes [ ] No
Analysis:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Waste Water (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Surface Water (SW),Sediment (SED), Sludge (SL), Caulk (CK), Leachate (LL), Biosolid (BS), Other (OT)

Specify Container Size **: 1 1 1 3 3 3 1

Identify Container Preservative Type***: 1 1 1 6 2 2 2

**Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL vial, (7) EnCore, (8) TerraCore, (9) 90mL, (10) Other

*** Preservative Types: (1) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Sod. Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other

Analysis Requested

Customer Sample ID	Matrix *	Comp / Grab	Composite Start Date	Composite Start Time	Collected or Composite End Date	Collected or Composite End Time	# Cont.	Res. Chlorine Results	Res. Chlorine Units	Chloride/Fluoride/Sulfate	TDS / Alkalinity	Ferrous Iron / Ferric Iron	Sulfide	App III and Cat/An Metals (200.7)*	Appendix IV Metals (200.7/200.8/7470)*	Radium 226 & Radium 228	Sample Comment	Preservation non-conformance identified for sample
S-UMW-1D	WT																	
S-UMW-2D	WT																	
S-UMW-3D	WT																	
S-UMW-4D	WT																	
S-UMW-5D	WT																	
S-UMW-6D	WT																	
S-BMW-1D	WT	G			5-28-24	1233	6			✓	✓	✓	—	✓	✓	✓		
S-BMW-3D	WT	G			1	1335	6			✓	✓	✓	✓	✓	✓	✓		
S-UMW-DUP-1	WT																	
S-UMW-FB-1	WT																	

Lab Use Only
Proj. Mgr: Jamie Church
AcctNum / Client ID:
Table #:
Profile / Template: 15856
Prelog / Bottle Ord. ID: EZ 3086948

Additional Instructions from Pace®:
***App III and Cat/An Metals* - EPA 200.7: Fe, Mg, Mn, K, Na, Ca, B**
****App IV Metals - EPA 200.7 -Ba,Be,Co,Pb,Li,Mo & 200.8 Metals - Sb,As,Cd,Cr,Se,Tl +7470 Hg**

Collected By:
(Printed Name) Grant Mercy
Signature:

Customer Remarks / Special Conditions / Possible Hazards:

# Coolers:	Thermometer ID:	Correction Factor (°C):	Obs. Temp. (°C)	Corrected Temp. (°C)	On Ice:
2	T299	0.0	20.1/1.4	20.1/1.4	

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Tracking Number:
Rocksmith	5-29-24/1600		5/30/24 0535	
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Delivered by: [ ] In- Person [ ] Courier
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	[ ] FedEx [ ] UPS [ ] Other
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Page: 1 of 1

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace® Terms and Conditions found at https://www.pacelabs.com/resource-library/resource/pace-terms-and-conditions/

Client: Rocksmith Geoeng Profile # 15856

Site: Notes BP1N = SE-RAD/SE-RADON

COC Line Item	Matrix	VG9H	DG9H	DG9Q	VG9U	DG9U	DG9M	DG9B	BG1U	AG1H	AG1U	AG2U	AG3S	AG4U	AG5U	JGFU	WGKU	WGDU	BP1U	BP2U	BP3U	BP1N	BP3N	BP3F	BP3S	BP3C	BP3Z	WPDU	ZPLC	Other		
1																																
2																																
3																																
4																																
5																																
6																																
7	WT																		1		1	2	1				1					
8	↓																		1		1	2	1				1					
9																																
10																																
11																																
12																																

Container Codes

Glass			
DG9B	40mL bisulfate clear vial	WGKU	8oz clear soil jar
DG9H	40mL HCl amber voa vial	WGFU	4oz clear soil jar
DG9M	40mL MeOH clear vial	WG2U	2oz clear soil jar
DG9Q	40mL TSP amber vial	JGFU	4oz unpreserved amber wide
DG9S	40mL H2SO4 amber vial	AG0U	100mL unores amber glass
DG9T	40mL Na Thio amber vial	AG1H	1L HCl amber glass
DG9U	40mL amber unpreserved	AG1S	1L H2SO4 amber glass
VG9H	40mL HCl clear vial	AG1T	1L Na Thiosulfate clear/amber glass
VG9T	40mL Na Thio. clear vial	AG1U	1liter unpres amber glass
VG9U	40mL unpreserved clear vial	AG2N	500mL HNO3 amber glass
BG1S	1liter H2SO4 clear glass	AG2S	500mL H2SO4 amber glass
BG1U	1liter unpres glass	AG3S	250mL H2SO4 amber glass
BG3H	250mL HCL Clear glass	AG2U	500mL unpres amber glass
BG3U	250mL Unpres Clear glass	AG3U	250mL unpres amber glass
WGDU	16oz clear soil jar	AG4U	125mL unpres amber glass
		AG5U	100mL unpres amber glass

Plastic	
BP1C	1L NAOH plastic
BP1N	1L HNO3 plastic
BP1S	1L H2SO4 plastic
BP1U	1L unpreserved plastic
BP1Z	1L NaOH, Zn Acetate
BP2C	500mL NAOH plastic
BP2N	500mL HNO3 plastic
BP2S	500mL H2SO4 plastic
BP2U	500mL unpreserved plastic
BP2Z	500mL NaOH, Zn Acetate
BP3C	250mL NaOH plastic
BP3F	250mL HNO3 plastic - field filtered
BP3N	250mL HNO3 plastic
BP3U	250mL unpreserved plastic
BP3S	250mL H2SO4 plastic
BP3Z	250mL NaOH, Zn Acetate
BP4U	125mL unpreserved plastic
BP4N	125mL HNO3 plastic
BP4S	125mL H2SO4 plastic
WPDU	16oz unpresserved plstic

Misc.	
I	Wipe/Swab
SP5T	120mL Coliform Na Thiosulfate
ZPLC	Ziploc Bag
AF	Air Filter
C	Air Cassettes
R	Terracore Kit
U	Summa Can

Matrix	
WT	Water
SL	Solid
NAL	Non-aqueous Liquid
OL	OIL
WP	Wipe
DW	Drinking Water

Work Order Number: 60453805

WO# : 60453805

60453805

DC#_Title: ENV-FRM-LENE-0009_Sample		
Revision: 2	Effective Date: 01/12/2022	Issued By: Lenexa

Client Name: Rocksmith Geoeng

Courier: FedEx ☐ UPS ☐ VIA ☐ Clay ☐ PEX ☐ ECI ☐ Pace ☐ Xroads ☑ Client ☐ Other ☐

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☑

Custody Seal on Cooler/Box Present: Yes ☑ No ☐ Seals intact: Yes ☑ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☑ Other ☐

Thermometer Used: T299 **Type of Ice:** (Wet) Blue None

Cooler Temperature (°C): As-read 0.6/4.6/1.3/1.7 3.1/1.8/21.3/21.6/20.1 **Corr. Factor** 0.0 **Corrected** 0.6/4.6/1.3/1.7 3.1/1.8/21.3/21.6/20.1

Date and initials of person examining contents: AV 6/3/24

Temperature should be above freezing to 6°C

Chain of Custody present:	☑Yes ☐No ☐N/A	
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	
Samples arrived within holding time:	☑Yes ☐No ☐N/A	
Short Hold Time analyses (<72hr):	☐Yes ☑No ☐N/A	
Rush Turn Around Time requested:	☐Yes ☑No ☐N/A	
Sufficient volume:	☑Yes ☐No ☐N/A	
Correct containers used:	☑Yes ☐No ☐N/A	
Pace containers used:	☑Yes ☐No ☐N/A	
Containers intact:	☑Yes ☐No ☐N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☐No ☑N/A	
Filtered volume received for dissolved tests?	☐Yes ☐No ☑N/A	
Sample labels match COC: Date / time / ID / analyses	☑Yes ☐No ☐N/A	
Samples contain multiple phases? Matrix: WT	☐Yes ☑No ☐N/A	
Containers requiring pH preservation in compliance? (HNO_3, H_2SO_4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) LOT#: 67187/606203	☑Yes ☐No ☐N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks: Lead acetate strip turns dark? (Record only)	☐Yes ☐No	
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No	
Trip Blank present:	☐Yes ☐No ☑N/A	
Headspace in VOA vials (>6mm):	☐Yes ☐No ☑N/A	
Samples from USDA Regulated Area: State:	☐Yes ☐No ☑N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☑N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

Pace® Location Requested (City/State):
Pace Analytical Kansas
9608 Loiret Blvd., Lenexa, KS 66219

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here

60453805

Scan QR Code for instructions

Company Name:	Rocksmith Geoengineering, LLC.	Contact/Report To:	Mark Haddock
Street Address:	2320 Creve Coeur Mill Road, Maryland Heights, MO 63043	Phone #:	314-974-6578
		E-Mail:	mark.haddock@rocksmithgeo.com
		Cc E-Mail:	
Customer Project #:	COC# 7	Invoice To:	Mark Haddock
Project Name:	AMEREN SCPA	Invoice E-Mail:	mark.haddock@rocksmithgeo.com
Site Collection Info/Facility ID (as applicable):		Purchase Order # (if applicable):	
		Quote #:	

Time Zone Collected: [ ] AK [ ] PT [ ] MT [ ] CT [ ] ET

County / State origin of sample(s): Missouri

Data Deliverables:
[ ] Level II [ ] Level III [ ] Level IV
[ ] EQUIS
[ ] Other

Regulatory Program (DW, RCRA, etc.) as applicable: Reportable [ ] Yes [ ] No

Rush (Pre-approval required):
[ ] Same Day [ ] 1 Day [ ] 2 Day [ ] 3 Day [ ] Other _____

DW PWSID # or WW Permit # as applicable:

Date Results Requested:

Field Filtered (if applicable): [ ] Yes [ ] No

Analysis:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Waste Water (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Surface Water (SW),Sediment (SED), Sludge (SL), Caulk (CK), Leachate (LL), Biosolid (BS), Other (OT)

Specify Container Size **: 1 1 3 3 3 3 1

Identify Container Preservative Type***: 1 1 1 6 2 2 2

**Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL vial, (7) EnCore, (8) TerraCore, (9) 90mL, (10) Other

*** Preservative Types: (1) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Sod. Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other

Customer Sample ID	Matrix *	Comp / Grab	Composite Start Date	Composite Start Time	Collected or Composite End Date	Collected or Composite End Time	# Cont.	Res. Chlorine Results	Res. Chlorine Units	Chloride/Fluoride/Sulfate	TDS / Alkalinity	Ferrous Iron / Ferric Iron	Sulfide	App III and Cat/An Metals (200.7)*	Appendix IV Metals (200.7/200.8/7470)*	Radium 226 & Radium 228	Sample Comment	Preservation non-conformance identified for sample
S-UMW-1D	WT	G			5-31-24	1402	6			✓	✓	✓	✓	✓	✓	✓		
S-UMW-2D	WT	G			5-30-24	0910	6			✓	✓	✓	✓	✓	✓	✓		
S-UMW-3D	WT	G			"	1316	6			✓	✓	✓	✓	✓	✓	✓		
S-UMW-4D	WT	G			"	1203	6			✓	✓	✓	✓	✓	✓	✓		
S-UMW-5D	WT	G			5-30-24	1441	6			✓	✓	✓	✓	✓	✓	✓		
S-UMW-6D	WT	G			"	1548	6			✓	✓	✓	✓	✓	✓	✓		
S-BMW-1D	WT																	
S-BMW-3D	WT																	
S-UMW-DUP-1	WT	G			5-30-24	—	6			✓	✓	✓	✓	✓	✓	✓		
S-UMW-FB-1	WT	G			"	1445	6			✓	✓	✓	✓	✓	✓	✓		

Lab Use Only
Proj. Mgr: Jamie Church
AcctNum / Client ID:
Table #:
Profile / Template: 15856
Prelog / Bottle Ord. ID: EZ 3086948

Additional Instructions from Pace®:
**App III and Cat/An Metals* - EPA 200.7: Fe, Mg, Mn, K, Na, Ca, B
***App IV Metals - EPA 200.7 -Ba,Be,Co,Pb,Li,Mo & 200.8 Metals - Sb,As,Cd,Cr,Se,Tl +7470 Hg

Collected By: (Printed Name) Grant Morey
Signature:

Customer Remarks / Special Conditions / Possible Hazards:
PG13by

# Coolers:	Thermometer ID:	Correction Factor (°C):	Obs. Temp. (°C)	Corrected Temp. (°C)	On Ice:
A9	T299	0.0	0.6/4.6/1.3/1.9/3.1/1.8		

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Tracking Number:
Rocksmith	5-31-24/1600		6.1.24 0705	21.3/21.6/20.1
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Delivered by: [ ] In- Person [ ] Courier
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	[ ] FedEx [ ] UPS [ ] Other
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Page: 1 of 2

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace® Terms and Conditions found at https://www.pacelabs.com/resource-library/resource/pace-terms-and-conditions/

Pace® Location Requested (City/State):
Pace Analytical Kansas
9608 Loiret Blvd., Lenexa, KS 66219

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here

60453805

Scan QR Code for instructions

Company Name:	Rocksmith Geoengineering, LLC	Contact/Report To:	Mark Haddock
Street Address:	2320 Creve Coeur Mill Road, Maryland Heights, MO 63043	Phone #:	314-974-6578
		E-Mail:	mark.haddock@rocksmithgeo.com
		Cc E-Mail:	
Customer Project #:	COC# 7		
Project Name:	AMEREN SCPA	Invoice To:	Mark Haddock
		Invoice E-Mail:	mark.haddock@rocksmithgeo.com
Site Collection Info/Facility ID (as applicable):		Purchase Order # (if applicable):	
		Quote #:	

Time Zone Collected: [ ] AK [ ] PT [ ] MT [ ] CT [ ] ET

County / State origin of sample(s): Missouri

Data Deliverables:
[ ] Level II [ ] Level III [ ] Level IV
[ ] EQUIS
[ ] Other

Regulatory Program (DW, RCRA, etc.) as applicable: Reportable [ ] Yes [ ] No

Rush (Pre-approval required):
[ ] Same Day [ ] 1 Day [ ] 2 Day [ ] 3 Day [ ] Other _____

DW PWSID # or WW Permit # as applicable:

Date Results Requested:

Field Filtered (if applicable): [ ] Yes [ ] No
Analysis:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Waste Water (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Surface Water (SW),Sediment (SED), Sludge (SL), Caulk (CK), Leachate (LL), Biosolid (BS), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Composite Start Date	Composite Start Time	Collected or Composite End Date	Collected or Composite End Time	# Cont.	Res. Chlorine Results	Res. Chlorine Units	Chloride/Fluoride/Sulfate	TDS / Alkalinity	Ferrous Iron / Ferric Iron	Sulfide	App III and Cat/An Metals (200.7)*	Appendix IV Metals (200.7/200.8/7470)*	Radium 226 & Radium 228	Sample Comment
S-UMW-MS-1	WT	G			5-31-24	1402	6			✓	✓	✓	✓	✓	✓	✓	Collected @ S-UMW-1D
S-UMW-MSD-1	WT	G			1	1402	6			✓	✓	✓	✓	✓	✓	✓	1

Specify Container Size **: 1 1 3 3 3 3 1

Identify Container Preservative Type***: 1 1 1 6 2 3 2

Analysis Requested

**Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL vial, (7) EnCore, (8) TerraCore, (9) 90mL, (10) Other

*** Preservative Types: (1) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Sod. Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other

Lab Use Only
Proj. Mgr: Jamie Church
AcctNum / Client ID:
Table #:
Profile / Template: 15856
Prelog / Bottle Ord. ID: EZ 3086948

Preservation non-conformance identified for sample.

Additional Instructions from Pace®:
App III and Cat/An Metals - EPA 200.7: Fe, Mg, Mn, K, Na, Ca, B
**App IV Metals - EPA 200.7 -Ba,Be,Co,Pb,Li,Mo & 200.8 Metals - Sb,As,Cd,Cr,Se,Tl +7470 Hg

Collected By:
(Printed Name) Grant Morey
Signature:

Customer Remarks / Special Conditions / Possible Hazards:

# Coolers:	Thermometer ID:	Correction Factor (°C):	Obs. Temp. (°C)	Corrected Temp. (°C)	On Ice:
9	T299	0.0	0.6/4.6/1.3/1.7/3.1/1.3		

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Tracking Number:
Rocksmith	5-31-24/1600			21.3/21.6/20.1
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Delivered by: [ ] In- Person [ ] Courier
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	[ ] FedEx [ ] UPS [ ] Other
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Page: 2 of 2

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1/2

Client: Rocksmith Geoeng

Profile #

Site:

Notes Append to 60453805

COC Line Item	Matrix	VG9H	DG9H	DG9Q	VG9U	DG9U	DG9M	DG9B	BG1U	AG1H	AG1U	AG2U	AG3S	AG4U	AG5U	JGFU	WGKU	WGDU	BP1U	BP2U	BP3U	BP1N	BP3N	BP3F	BP3S	BP3C	BP3Z	WPDU	ZPLC	Other		
1	WT																		3		3	2	3				3					
2	↓																		1		1	2	1				1					
3																			↓		↓	↓	↓				↓					
4																																
5																																
6	↓																		↓		↓	↓	↓				↓					
7																																
8																																
9	↓																		↓		↓	↓	↓				↓					
10	↓																		↓		↓	↓	↓				↓					
11																																
12																																

Container Codes

Glass			
DG9B	40mL bisulfate clear vial	WGKU	8oz clear soil jar
DG9H	40mL HCl amber voa vial	WGFU	4oz clear soil jar
DG9M	40mL MeOH clear vial	WG2U	2oz clear soil jar
DG9Q	40mL TSP amber vial	JGFU	4oz unpreserved amber wide
DG9S	40mL H2SO4 amber vial	AG0U	100mL unores amber glass
DG9T	40mL Na Thio amber vial	AG1H	1L HCl amber glass
DG9U	40mL amber unpreserved	AG1S	1L H2SO4 amber glass
VG9H	40mL HCl clear vial	AG1T	1L Na Thiosulfate clear/amber glass
VG9T	40mL Na Thio. clear vial	AG1U	1liter unpres amber glass
VG9U	40mL unpreserved clear vial	AG2N	500mL HNO3 amber glass
BG1S	1liter H2SO4 clear glass	AG2S	500mL H2SO4 amber glass
BG1U	1liter unpres glass	AG3S	250mL H2SO4 amber glass
BG3H	250mL HCL Clear glass	AG2U	500mL unpres amber glass
BG3U	250mL Unpres Clear glass	AG3U	250mL unpres amber glass
WGDU	16oz clear soil jar	AG4U	125mL unpres amber glass
		AG5U	100mL unpres amber glass

Plastic	
BP1C	1L NAOH plastic
BP1N	1L HNO3 plastic
BP1S	1L H2SO4 plastic
BP1U	1L unpreserved plastic
BP1Z	1L NaOH, Zn Acetate
BP2C	500mL NAOH plastic
BP2N	500mL HNO3 plastic
BP2S	500mL H2SO4 plastic
BP2U	500mL unpreserved plastic
BP2Z	500mL NaOH, Zn Acetate
BP3C	250mL NaOH plastic
BP3F	250mL HNO3 plastic - field filtered
BP3N	250mL HNO3 plastic
BP3U	250mL unpreserved plastic
BP3S	250mL H2SO4 plastic
BP3Z	250mL NaOH, Zn Acetate
BP4U	125mL unpreserved plastic
BP4N	125mL HNO3 plastic
BP4S	125mL H2SO4 plastic
WPDU	16oz unpresserved plstic

Misc.	
I	Wipe/Swab
SP5T	120mL Coliform Na Thiosulfate
ZPLC	Ziploc Bag
AF	Air Filter
C	Air Cassettes
R	Terracore Kit
U	Summa Can

Matrix	
WT	Water
SL	Solid
NAL	Non-aqueous Liquid
OL	OIL
WP	Wipe
DW	Drinking Water

Work Order Number: pw613k4 Appd 60453805

DC#_Title: ENV-FRM-LENE-0001_Sample Container Count
Revision: 3 | Effective Date: | Issued by: Lenexa

2/2

Client: Rocksmith Geoeng

Profile #

Site:

Notes Append to 60453805

COC Line Item	Matrix	VG9H	DG9H	DG9Q	VG9U	DG9U	DG9M	DG9B	BG1U	AG1H	AG1U	AG2U	AG3S	AG4U	AG5U	JGFU	WGKU	WGDU	BP1U	BP2U	BP3U	BP1N	BP3N	BP3F	BP3S	BP3C	BP3Z	WPDU	ZPLC	Other		
1	WT																					2		Only 109				RAD			
2	1																					2									
3																															
4																															
5																															
6																															
7																															
8																															
9																															
10																															
11																															
12																															

Container Codes

Glass			
DG9B	40mL bisulfate clear vial	WGKU	8oz clear soil jar
DG9H	40mL HCl amber voa vial	WGFU	4oz clear soil jar
DG9M	40mL MeOH clear vial	WG2U	2oz clear soil jar
DG9Q	40mL TSP amber vial	JGFU	4oz unpreserved amber wide
DG9S	40mL H2SO4 amber vial	AG0U	100mL unores amber glass
DG9T	40mL Na Thio amber vial	AG1H	1L HCl amber glass
DG9U	40mL amber unpreserved	AG1S	1L H2SO4 amber glass
VG9H	40mL HCl clear vial	AG1T	1L Na Thiosulfate clear/amber glass
VG9T	40mL Na Thio clear vial	AG1U	1liter unpres amber glass
VG9U	40mL unpreserved clear vial	AG2N	500mL HNO3 amber glass
BG1S	1liter H2SO4 clear glass	AG2S	500mL H2SO4 amber glass
BG1U	1liter unpres glass	AG3S	250mL H2SO4 amber glass
BG3H	250mL HCL Clear glass	AG2U	500mL unpres amber glass
BG3U	250mL Unpres Clear glass	AG3U	250mL unpres amber glass
WGDU	16oz clear soil jar	AG4U	125mL unpres amber glass
		AG5U	100mL unpres amber glass

Plastic	
BP1C	1L NAOH plastic
BP1N	1L HNO3 plastic
BP1S	1L H2SO4 plastic
BP1U	1L unpreserved plastic
BP1Z	1L NaOH, Zn Acetate
BP2C	500mL NAOH plastic
BP2N	500mL HNO3 plastic
BP2S	500mL H2SO4 plastic
BP2U	500mL unpreserved plastic
BP2Z	500mL NaOH, Zn Acetate
BP3C	250mL NaOH plastic
BP3F	250mL HNO3 plastic - field filtered
BP3N	250mL HNO3 plastic
BP3U	250mL unpreserved plastic
BP3S	250mL H2SO4 plastic
BP3Z	250mL NaOH, Zn Acetate
BP4U	125mL unpreserved plastic
BP4N	125mL HNO3 plastic
BP4S	125mL H2SO4 plastic
WPDU	16oz unpresserved plstic

Misc.	
I	Wipe/Swab
SP5T	120mL Coliform Na Thiosulfate
ZPLC	Ziploc Bag
AF	Air Filter
C	Air Cassettes
R	Terracore Kit
U	Summa Can

Matrix	
WT	Water
SL	Solid
NAL	Non-aqueous Liquid
OL	OIL
WP	Wipe
DW	Drinking Water

Work Order Number: 60453805

Internal Transfer Chain of Custody

Pace

☐ Rush Multiplier____X
☐ Samples Pre-Logged into eCOC

State Of Origin: MO
Cert. Needed: ☐ Yes ☒ No

Workorder: 60453805 Workorder Name: AMEREN SCPA COC#7

Owner Received Date: 5/30/2024 Results Requested By: 6/13/2024

Report To	Subcontract To
Jamie Church Pace Analytical Kansas 9608 Loiret Blvd. Lenexa, KS 66219 Phone 314-838-7223	Pace Analytical Pittsburgh 1638 Roseytown Road Suites 2,3, & 4 Greensburg, PA 15601 Phone (724)850-5600

Requested Analysis

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: HNO3						Radium 226	Radium 228										LAB USE ONLY
1	S-BMW-1D	PS	5/28/2024 12:33	60453805001	Water	2						X	X										001
2	S-BMW-3D	PS	5/28/2024 13:35	60453805002	Water	2						X	X										002
3																							
4																							
5																							

Transfers	Released By	Date/Time	Received By	Date/Time
1			[signature] 6	14/24
2				
3				

Comments: KS sample location: RECEIVING 950

Cooler Temperature on Receipt ___ °C | Custody Seal Y or (N) | Received on Ice Y or (N) | Samples Intact (Y) or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.*

WO# : 30688792

30688792

DC#_Title: ENV-FRM-GBUR-0088 v07_Sample Condition Upon Receipt-Greensburg

Effective Date: 01/04/2024

WO# : 30688792

PM: MAR Due Date: 06/25/24

CLIENT: PACE_60_LEKS

Client Name: Pace - KS

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other

Tracking Number: 7146 2379 8549

Initial / Date

Examined By: PS 6/14/24

Labeled By: PS 6/14/24

Temped By: ____

Custody Seal on Cooler/Box Present: ☐ Yes ☑ No Seals Intact: ☐ Yes ☑ No

Thermometer Used: ____ Type of Ice: Wet Blue (None)

Cooler Temperature: Observed Temp ____ °C Correction Factor: ____ °C Final Temp: ____ °C

Temp should be above freezing to 6°C

pH paper Lot# 10D2931 D.P.D. Residual Chlorine Lot #

Comments:	Yes	No	NA	
Chain of Custody Present	✓			1.
Chain of Custody Filled Out:	✓			2.
-Were client corrections present on COC		✓		
Chain of Custody Relinquished		✓		3.
Sampler Name & Signature on COC:		✓		4.
Sample Labels match COC:	✓			5.
-Includes date/time/ID				
Matrix:	WT			
Samples Arrived within Hold Time:	✓			6.
Short Hold Time Analysis (<72hr remaining):		✓		7.
Rush Turn Around Time Requested:		✓		8.
Sufficient Volume:	✓			9.
Correct Containers Used:	✓			10.
-Pace Containers Used	✓			
Containers Intact:	✓			11.
Orthophosphate field filtered:			✓	12.
Hex Cr Aqueous samples field filtered:			✓	13.
Organic Samples checked for dichlorination			✓	14:
Filtered volume received for dissolved tests:			✓	15:
All containers checked for preservation:	✓			16.
exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, non-aqueous matrix				pH<2
All containers meet method preservation requirements:	✓			Initial when completed PS Date/Time of Preservation
				Lot# of added Preservative
8260C/D: Headspace in VOA Vials (> 6mm)			✓	17.
624.1: Headspace in VOA Vials (0mm)			✓	18.
Radon: Headspace in RAD Vials (0mm)			✓	19.
Trip Blank Present:			✓	Trip blank custody seal present? YES or NO
Rad Samples Screened <.05 mrem/hr.	✓			Initial when completed PS Date: 6/4/24 Survey Meter SN: 25014380

Comments:

Note: For NC compliance samples with discrepancies, a copy of this form must be sent to the DEHNR Certification office.
PM Review is documented electronically in LIMS through the SRF Review schedule in the Workorder Edit Screen.

Qualtrax ID: 55680

Internal Transfer Chain of Custody

☐ Rush Multiplier____X
☐ Samples Pre-Logged into eCOC

State Of Origin: MO
Cert. Needed: ☐ Yes ☒ No

Workorder: 60453805 Workorder Name: AMEREN SCPA COC#7

Owner Received Date: 5/30/2024 Results Requested By: 6/13/2024

Report To	Subcontract To
Jamie Church Pace Analytical Kansas 9608 Loiret Blvd. Lenexa, KS 66219 Phone 314-838-7223	Pace Analytical Pittsburgh 1638 Roseytown Road Suites 2,3, & 4 Greensburg, PA 15601 Phone (724)850-5600

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers HNO3						Requested Analysis Radium 226	Radium 228											LAB USE ONLY
1	S-BMW-1D	PS	5/28/2024 12:33	60453805001	Water	1						X	X											~~PS 6/10/24 004~~
2	S-BMW-3D	PS	5/28/2024 13:35	60453805002	Water	1						X	X											~~RS 6/10/24 003~~
3	S-UMW-1D	RQS	5/31/2024 14:02	60453805003	Water	2						X	X											003
4	S-UMW-2D	PS	5/30/2024 09:10	60453805004	Water	2						X	X											004
5	S-UMW-3D	PS	5/30/2024 13:16	60453805005	Water	2						X	X											005
6	S-UMW-4D	PS	5/30/2024 12:03	60453805006	Water	2						X	X											006
7	S-UMW-5D	PS	5/30/2024 14:41	60453805007	Water	2						X	X											007
8	S-UMW-6D	PS	5/30/2024 15:48	60453805008	Water	2						X	X											008
9	S-UMW-DUP-1	PS	5/30/2024 00:00	60453805009	Water	2						X	X											009
10	S-UMW-FB-1	PS	5/30/2024 14:45	60453805010	Water	2						X	X											010
11	S-UMW-MS-1	PS	5/31/2024 14:02	60453805011	Water	1						X	X											011
12	S-UMW-MSD-1	PS	5/31/2024 14:02	60453805012	Water	1						X	X											012

Transfers	Released By	Date/Time	Received By	Date/Time
1	Allison Strum	6/6/24 1600	Evan Laughlin	6/7/24 1030
2				
3				

Comments

Sample 003 is the primary sample for 011 and 012 MS/MSD.

Samples 003-012, samples 001-002 sent previously

Cooler Temperature on Receipt ___ °C | Custody Seal Y or (N) | Received on Ice Y or (N) | Samples Intact (Y) or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.
This chain of custody is considered complete as is since this information is available in the owner laboratory.

WO# : 30690838

30690838

DC#_Title: ENV-FRM-GBUR-0088 v07_Sample Condition Upon Receipt-Greensburg

Effective Date: 01/04/2024

WO# : 30690838

PM: MAR Due Date: 06/28/24

CLIENT: PACE_60_LEKS

Client Name: Pace - Lenexa, KS

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other

Tracking Number: 7146 2380 0873

Initial/ Date

Examined By: PS 6/10/24

Labeled By: PS 6/11/24 LW 6/12/24

Temped By: —

6/11/24

Custody Seal on Cooler/Box Present: ☐ Yes ☑ No Seals Intact: ☐ Yes ☑ No

Thermometer Used: — Type of Ice: Wet Blue (None)

Cooler Temperature: Observed Temp — °C Correction Factor: — °C Final Temp: — °C

Temp should be above freezing to 6°C

pH paper Lot# (002931) D.P.D. Residual Chlorine Lot # —

Comments:	Yes	No	NA	
Chain of Custody Present	✓			1.
Chain of Custody Filled Out: -Were client corrections present on COC	✓			2.
Chain of Custody Relinquished		✓		
Sampler Name & Signature on COC:	✓			3.
Sample Labels match COC: -Includes date/time/ID Matrix:		✓		4.
Samples Arrived within Hold Time:	✓ WT			5.
Short Hold Time Analysis (<72hr remaining):		✓		6.
Rush Turn Around Time Requested:		✓		7.
Sufficient Volume:	✓			8.
Correct Containers Used: -Pace Containers Used	✓			9.
Containers Intact:	✓			10.
Orthophosphate field filtered:			✓	11.
Hex Cr Aqueous samples field filtered:			✓	12.
Organic Samples checked for dichlorination			✓	13.
Filtered volume received for dissolved tests:			✓	14:
All containers checked for preservation: exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, non-aqueous matrix	✓			15:
All containers meet method preservation requirements:				16. PH<2
	✓			Initial when completed PS Date/Time of Preservation
				Lot# of added Preservative
8260C/D: Headspace in VOA Vials (> 6mm)			✓	17.
624.1: Headspace in VOA Vials (0mm)			✓	18.
Radon: Headspace in RAD Vials (0mm)			✓	19.
Trip Blank Present:			✓	Trip blank custody seal present? YES or NO
Rad Samples Screened <.05 mrem/hr.	✓			Initial when completed EL Date: 6/7/24 Survey Meter SN: 25014380

Comments: * COC should not have samples listed that are not sent.
* IDs for MS/MSD should match parent sample

Note: For NC compliance samples with discrepancies, a copy of this form must be sent to the DEHNR Certification office.
PM Review is documented electronically in LIMS through the SRF Review schedule in the Workorder Edit Screen.

Page 1 of 1

Qualtrax ID: 55680

Memorandum

August 5, 2024

To:	Project File Rocksmith Geoengineering, LLC	**Project Number:**	23009-24
CC:	Mark Haddock, Jeffrey Ingram		
From:	Jack Rasmussen	**Email:**	Jack.Rasmussen@Rocksmithgeo.com
RE:	**Data Validation Summary, Sioux Energy Center – SCPA – Data Package 60453805**		

The following is a summary of instances where quality control criteria in the functional guidelines were not met and data qualification was required:

- When a compound was analyzed outside of hold time, the sample result was qualified as an estimate (J for detects, UJ for non-detects).
- When a compound was detected in a blank (i.e. method, field), and the blank comparison criterion was not met, associated sample results were qualified as estimates (J) or non-detects (U).
- When a compound was detected in a sample result between the Method Detection Limit (MDL) and Practical Quantification Limit (PQL), the results were recorded at the detection value and qualified as estimates (J).
- When a duplicate criterion was not met, the associated sample result was qualified as an estimate (J for detects, UJ for non-detects).
- When a Laboratory Control Sample (LCS) criterion was not met, the associated sample result was qualified as an estimate (J, J+ for estimates based high, and J- for estimates based low).

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Company Name: Rocksmith Geoengineering
Project Manager: J. Ingram
Project Name: Ameren SCPA
Project Number: 23009-24
Reviewer: J. Rasmussen
Validation Date: 08/05/2024

Laboratory: Pace Analytical
SDG #: 60453805
Analytical Method (type and no.): EPA 200.7/200.8/7470 (Total Metals); SM 2320B (Alkalinity); SM 2540C (TDS); EPA 300.0 (Anions);
Matrix: ☐ Air ☐ Soil/Sed. ■ Water ☐ Waste ☐ SM 3500-FE (Ferric Iron); SM 4500-S-2 (Sulfide); EPA 903.1/904.0 (Radium 226+228)
Sample Names S-BMW-1D, S-BMW-3D, S-UMW-1D, S-UMW-2D, S-UMW-3D, S-UMW-4D, S-UMW-5D, S-UMW-6D, S-UMW-DUP-1, S-UMW-DUP-1, S-UMW-FB-1, S-UMW-MS-1, S-UMW-MSD-1

NOTE: Please provide calculation in Comment areas or on the back (if on the back please indicate in comment areas).

Field Information	YES	NO	NA	COMMENTS
a) Sampling dates noted?	x			5/28/2024 - 5/31/2024
b) Sampling team indicated?	x			GTM, JTA
c) Sample location noted?	x			
d) Sample depth indicated (Soils)?			x	
e) Sample type indicated (grab/composite)?	x			Grab
f) Field QC noted?	x			See Notes
g) Field parameters collected (note types)?	x			pH, Spec Cond, Turb, Temp, DO, ORP
h) Field Calibration within control limits?	x			
i) Notations of unacceptable field conditions/performances from field logs or field notes?		x		
j) Does the laboratory narrative indicate deficiencies?			x	No lab narrative.

Note Deficiencies:

Chain-of-Custody (COC)	YES	NO	NA	COMMENTS
a) Was the COC properly completed?	x			
b) Was the COC signed by both field and laboratory personnel?	x			
c) Were samples received in good condition?	x			

General (reference QAPP or Method)	YES	NO	NA	COMMENTS
a) Were hold times met for sample pretreatment?	x			
b) Were hold times met for sample analysis?		x		See Notes
c) Were the correct preservatives used?	x			
d) Was the correct method used?	x			
e) Were appropriate reporting limits achieved?	x			
f) Were any sample dilutions noted?	x			See Notes
g) Were any matrix problems noted?		x		

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Blanks	YES	NO	NA	COMMENTS
a) Were analytes detected in the method blank(s)?	x			See Notes
b) Were analytes detected in the field blank(s)?	x			See Notes
c) Were analytes detected in the equipment blank(s)?			x	
d) Were analytes detected in the trip blank(s)?			x	

Laboratory Control Sample (LCS)	YES	NO	NA	COMMENTS
a) Was a LCS analyzed once per SDG?	x			
b) Were the proper analytes included in the LCS?	x			
c) Was the LCS accuracy criteria met?	x			

Duplicates	YES	NO	NA	COMMENTS
a) Were field duplicates collected (note original and duplicate sample names)?	x			S-UMW-DUP-1 collected @ S-UMW-6D
b) Were field dup. precision criteria met (note RPD)?		x		See Notes
c) Were lab duplicates analyzed (note original and duplicate samples)?	x			See Notes
d) Were lab dup. precision criteria met (note RPD)?		x		See Notes

Blind Standards	YES	NO	NA	COMMENTS
a) Was a blind standard used (indicate name, analytes included and concentrations)?			x	
b) Was the %D within control limits?			x	

Matrix Spike/Matrix Spike Duplicate (MS/MSD)	YES	NO	NA	COMMENTS
a) Was MS accuracy criteria met?		x		See Notes
Recovery could not be calculated since sample contained high concentration of analyte?			x	
b) Was MSD accuracy criteria met?		x		See Notes
Recovery could not be calculated since sample contained high concentration of analyte?			x	
c) Were MS/MSD precision criteria met?		x		See Notes

Comments/Notes:

General:

Ferrous iron samples were all analyzed outside of hold time. Results qualified as estimates.

Alkalinty, chloride, and/or sulfate were diluted in several samples; no qualification necessary.

QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

Comments/Notes:

Method Blanks:

3550163: iron (18.2J). Associated with samples -003 through -010. All results > RL and > 10x blank or non-detect, no qualification necessary.

3549596: molybdenum (1.1J). Associated with samples -001 and -002. Results < RL, report at RL and qualified as non-detect (U).

Field Blanks:

S-UMW-FB-1 @ S-UMW-5D: calcium (27.5J), chromium (0.42J), TDS (6.0), and ferrous iron (0.044J).

Calcium > RL and 10x blank, no qualification necessary. Chromium < RL, report at RL and qualify as non-detect. Ferrous iron > RL and 10x blank, no qualification necessary.

Duplicates:

S-UMW-DUP-1 @ S-UMW-6D: field duplicate RPD exceeds control limit (20%) for ferrous iron (39%) and sulfate (33%), results qualified as estimates. Chloride not detected in original sample, detected in duplicate: results qualified as estimates. Chromium detected in original sample, not detected in duplicate: results qualified as estimates. Radium-228 detected in duplicate, not detected in original sample: results qualified as estimates.

Lab duplicate max RPD: 10%: alkalinity, TDS; 15%: chloride, fluoride, sulfate; 20%: ferrous iron, sulfide

3548056: Lab duplicate exceeds max RPD for TDS, associated with unrelated sample, no qualification necessary.

MS/MSD:

3549600: MS recovery low for calcium. Associated with unrelated sample, no qualification necessary.

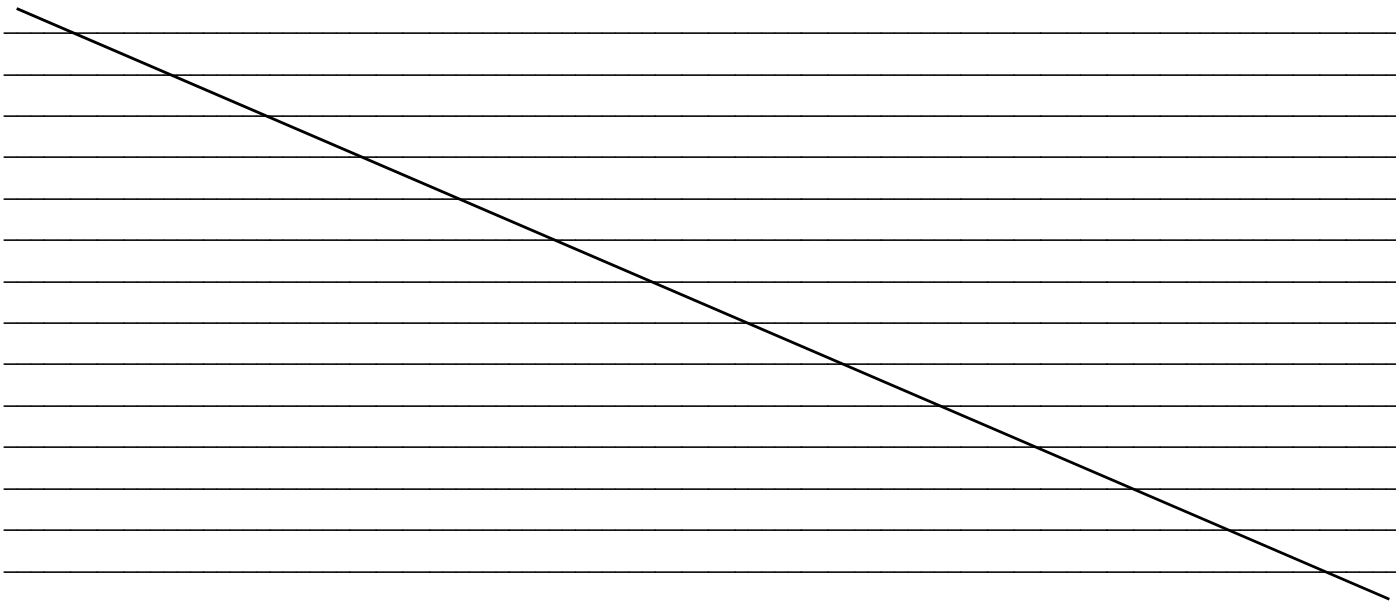
3550167: MS recovery low for calcium and boron. Associated with sample -006, results qualified as estimates.

3548503/3548504: MS/MSD recovery low for sulfide, associated with unrelated sample.

3554027/3554028: MS/MSD recovery high for chloride, sulfate, and fluoride, associated with sample -001. Chloride and sulfate qualify as estimates, fluoride is a non-detect and no qualification is necessary.

3554033/3554034: MS/MSD recovery high for chloride, sulfate, and fluoride. Associated with unrelated sample, no qualification necessary.

3547871/3547872: MS/MSD recovery high for sulfide, associated with unrelated sample, no qualification necessary.



QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason
S-BMW-1D	Ferrous Iron	0.29	J	Analyzed outside of hold time
S-BMW-3D	"	0.32	J	"
S-UMW-1D	"	0.23	J	"
S-UMW-2D	"	0.14	J	"
S-UMW-3D	"	0.18	J	"
S-UMW-4D	"	0.13	J	"
S-UMW-5D	"	0.33	J	"
S-UMW-6D	"	0.45	J	"
S-UMW-DUP-1	"	0.67	J	"
S-UMW-FB-1	"	0.044	J	"
S-BMW-1D	Molybdenum	20.0	U	Detected in method blank, result < RL
S-BMW-3D	"	20.0	U	"
S-UMW-5D	Chromium	1.0	U	Detected in field blank, result < RL
S-UMW-6D	Ferrous iron	0.45	J	Field DUP RPD exceeds control limits
S-UMW-DUP-1	"	0.67	J	"
S-UMW-6D	Chloride	0.53	UJ	Non-detect in original sample, detected in field duplicate
S-UMW-DUP-1	"	4.6	J	"
S-UMW-6D	Chromium	0.37	J	Detected in original sample, non-detected in field duplicate
S-UMW-DUP-1	"	0.30	UJ	"
S-UMW-6D	Radium-228	0.390 ± 0.480	UJ	Non-detect in original sample, detected in filed duplicate
S-UMW-DUP-1	"	1.14 ± 0.462	J	"
S-UMW-6D	Sulfate	37.7	J	Field DUP RPD exceeds control limits
S-UMW-DUP-1	"	27.1	J	"
S-UMW-4D	Calcium	114000	J-	MS recovery low
"	Boron	13700	J-	"
S-BMW-1D	Chloride	10.1	J+	MS/MSD recovery high
"	Sulfate	25.0	J+	"

QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason

Signature: _____ Date: 08/05/2024

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

June 26, 2024

Mark Haddock
Rocksmith Geoengineering, LLC.
2320 Creve Coeur Mill Road
Maryland Heights, MO 63043

RE: Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Dear Mark Haddock:

Enclosed are the analytical results for sample(s) received by the laboratory between May 30, 2024 and June 01, 2024. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Kansas City
- Pace Analytical Services - Greensburg

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jamie Church
jamie.church@pacelabs.com
314-838-7223
Project Manager

Enclosures

cc: Jeffrey Ingram, Rocksmith Geoengineering, LLC.
Lisa Meyer, Ameren
Grant Morey, Rocksmith Geoengineering, LLC.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, LLC.

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

CERTIFICATIONS

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Pace Analytical Services Pennsylvania

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
ANABISO/IEC 17025:2017 Rad Cert#: L24170
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 2950
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA010
Louisiana DEQ/TNI Certification #: 04086
Maine Certification #: 2023021
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991
Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572023-03
New Hampshire/TNI Certification #: 297622
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-015
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: TN02867
Texas/TNI Certification #: T104704188-22-18
Utah/TNI Certification #: PA014572223-14
USDA Soil Permit #: 525-23-67-77263
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad

Pace Analytical Services Kansas

9608 Loiret Boulevard, Lenexa, KS 66219
Arkansas Inorganic Drinking Water Certification
Arkansas Certification #: 88-00679
Colorado Division of Oil and Public Safety
Illinois Certification #: 2000302023-6
Iowa Certification #: 118
Kansas Field Laboratory Certification #: E-92587
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Missouri Inorganic Drinking Water Certification
Nevada Certification #: KS000212024-1
Oklahoma Certification #: 2023-073
Texas Certification #: T104704407-23-17
Utah Certification #: KS000212022-13

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60453812001	**S-BMW-1S**	Water	05/28/24 11:35	05/30/24 05:35
60453812002	**S-BMW-3S**	Water	05/28/24 14:20	05/30/24 05:35
60453812003	**S-LMW-2S**	Water	05/29/24 14:05	05/30/24 05:35
60453812004	**S-LMW-4S**	Water	05/29/24 11:30	05/30/24 05:35
60453812005	**S-AM-1S**	Water	05/29/24 09:20	05/30/24 05:35
60453812006	**S-AM-1D**	Water	05/29/24 10:05	05/30/24 05:35
60453812007	**S-TP-5D**	Water	05/28/24 14:18	05/30/24 05:35
60453812008	**S-TP-6S**	Water	05/28/24 11:17	05/30/24 05:35
60453812009	**S-TP-6D**	Water	05/28/24 12:20	05/30/24 05:35
60453812010	**S-TP-8D**	Water	05/29/24 15:07	05/30/24 05:35
60453812011	**S-UG-3**	Water	05/28/24 15:44	05/30/24 05:35
60453812012	**S-CA-DUP-1**	Water	05/28/24 00:00	05/30/24 05:35
60453812013	**S-CA-FB-1**	Water	05/28/24 14:44	05/30/24 05:35
60453812014	**S-LMW-1S**	Water	05/31/24 13:35	06/01/24 07:05
60453812015	**S-LMW-5S**	Water	05/31/24 12:58	06/01/24 07:05
60453812016	**S-LMW-6S**	Water	05/31/24 12:06	06/01/24 07:05
60453812017	**S-PZ-1S**	Water	05/30/24 10:50	06/01/24 07:05
60453812018	**S-PZ-9D**	Water	05/31/24 10:53	06/01/24 07:05
60453812019	**S-TP-2D**	Water	05/31/24 09:25	06/01/24 07:05
60453812020	**S-TP-3D**	Water	05/31/24 11:02	06/01/24 07:05
60453812021	**S-TP-4D**	Water	05/29/24 16:20	06/01/24 07:05
60453812022	**S-CA-DUP-2**	Water	05/31/24 00:00	06/01/24 07:05
60453812023	**S-CA-FB-2**	Water	05/31/24 11:00	06/01/24 07:05
60453812024	**S-CA-MS-1**	Water	05/31/24 11:02	06/01/24 07:05
60453812025	**S-CA-MSD-1**	Water	05/31/24 11:02	06/01/24 07:05

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SAMPLE ANALYTE COUNT

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60453812001	**S-BMW-1S**	EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MLD	1	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	SR1	1	PASI-K
		SM 2540C	KVI	1	PASI-K
		SM 3500-Fe B#4	CRN2	1	PASI-K
		SM 3500-Fe B#4	DLJ	1	PASI-K
		SM 4500-S-2 D	DLJ	1	PASI-K
		EPA 300.0	PL	3	PASI-K
60453812002	**S-BMW-3S**	EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MLD	1	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	SR1	1	PASI-K
		SM 2540C	KVI	1	PASI-K
		SM 3500-Fe B#4	CRN2	1	PASI-K
		SM 3500-Fe B#4	DLJ	1	PASI-K
		SM 4500-S-2 D	DLJ	1	PASI-K
		EPA 300.0	PL	3	PASI-K
60453812003	**S-LMW-2S**	EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MLD	1	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	SR1	1	PASI-K
		SM 2540C	KVI	1	PASI-K
		SM 3500-Fe B#4	CRN2	1	PASI-K
		SM 3500-Fe B#4	DLJ	1	PASI-K
		SM 4500-S-2 D	DLJ	1	PASI-K
		EPA 300.0	PL	3	PASI-K
60453812004	**S-LMW-4S**	EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MLD	1	PASI-K
		EPA 903.1	CLM	1	PASI-PA

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SAMPLE ANALYTE COUNT

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	SR1	1	PASI-K
		SM 2540C	KVI	1	PASI-K
		SM 3500-Fe B#4	CRN2	1	PASI-K
		SM 3500-Fe B#4	DLJ	1	PASI-K
		SM 4500-S-2 D	DLJ	1	PASI-K
		EPA 300.0	PL	3	PASI-K
60453812005	**S-AM-1S**	EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MLD	1	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	SR1	1	PASI-K
		SM 2540C	KVI	1	PASI-K
		SM 3500-Fe B#4	CRN2	1	PASI-K
		SM 3500-Fe B#4	DLJ	1	PASI-K
		SM 4500-S-2 D	DLJ	1	PASI-K
		EPA 300.0	PL	3	PASI-K
60453812006	**S-AM-1D**	EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MLD	1	PASI-K
		EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	SR1	1	PASI-K
		SM 2540C	KVI	1	PASI-K
		SM 3500-Fe B#4	CRN2	1	PASI-K
		SM 3500-Fe B#4	DLJ	1	PASI-K
		SM 4500-S-2 D	DLJ	1	PASI-K
		EPA 300.0	PL	3	PASI-K
60453812007	**S-TP-5D**	EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MLD	1	PASI-K
		EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	SR1	1	PASI-K
		SM 2540C	KVI	1	PASI-K
		SM 3500-Fe B#4	CRN2	1	PASI-K

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SAMPLE ANALYTE COUNT

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		SM 3500-Fe B#4	DLJ	1	PASI-K
		SM 4500-S-2 D	DLJ	1	PASI-K
		EPA 300.0	PL	3	PASI-K
60453812008	**S-TP-6S**	EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MLD	1	PASI-K
		EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	SR1	1	PASI-K
		SM 2540C	KVI	1	PASI-K
		SM 3500-Fe B#4	CRN2	1	PASI-K
		SM 3500-Fe B#4	DLJ	1	PASI-K
		SM 4500-S-2 D	DLJ	1	PASI-K
		EPA 300.0	PL	3	PASI-K
60453812009	**S-TP-6D**	EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MLD	1	PASI-K
		EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	SR1	1	PASI-K
		SM 2540C	KVI	1	PASI-K
		SM 3500-Fe B#4	CRN2	1	PASI-K
		SM 3500-Fe B#4	DLJ	1	PASI-K
		SM 4500-S-2 D	DLJ	1	PASI-K
		EPA 300.0	PL	3	PASI-K
60453812010	**S-TP-8D**	EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MLD	1	PASI-K
		EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	SR1	1	PASI-K
		SM 2540C	KVI	1	PASI-K
		SM 3500-Fe B#4	CRN2	1	PASI-K
		SM 3500-Fe B#4	DLJ	1	PASI-K
		SM 4500-S-2 D	DLJ	1	PASI-K
		EPA 300.0	PL	3	PASI-K
60453812011	**S-UG-3**	EPA 200.7	JXD	13	PASI-K

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SAMPLE ANALYTE COUNT

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MLD	1	PASI-K
		EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	SR1	1	PASI-K
		SM 2540C	KVI	1	PASI-K
		SM 3500-Fe B#4	CRN2	1	PASI-K
		SM 3500-Fe B#4	DLJ	1	PASI-K
		SM 4500-S-2 D	DLJ	1	PASI-K
		EPA 300.0	PL	3	PASI-K
60453812012	**S-CA-DUP-1**	EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MLD	1	PASI-K
		EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	SR1	1	PASI-K
		SM 2540C	KVI	1	PASI-K
		SM 3500-Fe B#4	CRN2	1	PASI-K
		SM 3500-Fe B#4	DLJ	1	PASI-K
		SM 4500-S-2 D	DLJ	1	PASI-K
		EPA 300.0	PL	3	PASI-K
60453812013	**S-CA-FB-1**	EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MLD	1	PASI-K
		EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	SR1	1	PASI-K
		SM 2540C	KVI	1	PASI-K
		SM 3500-Fe B#4	CRN2	1	PASI-K
		SM 3500-Fe B#4	DLJ	1	PASI-K
		SM 4500-S-2 D	DLJ	1	PASI-K
		EPA 300.0	PL	3	PASI-K
60453812014	**S-LMW-1S**	EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MLD	1	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA

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SAMPLE ANALYTE COUNT

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		SM 2320B	SR1	1	PASI-K
		SM 2540C	KVI	1	PASI-K
		SM 3500-Fe B#4	CRN2	1	PASI-K
		SM 3500-Fe B#4	DLJ	1	PASI-K
		SM 4500-S-2 D	DLJ	1	PASI-K
		EPA 300.0	PL	3	PASI-K
60453812015	**S-LMW-5S**	EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MLD	1	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	SR1	1	PASI-K
		SM 2540C	KVI	1	PASI-K
		SM 3500-Fe B#4	CRN2	1	PASI-K
		SM 3500-Fe B#4	DLJ	1	PASI-K
		SM 4500-S-2 D	DLJ	1	PASI-K
		EPA 300.0	PL	3	PASI-K
60453812016	**S-LMW-6S**	EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MLD	1	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	SR1	1	PASI-K
		SM 2540C	KVI	1	PASI-K
		SM 3500-Fe B#4	CRN2	1	PASI-K
		SM 3500-Fe B#4	DLJ	1	PASI-K
		SM 4500-S-2 D	DLJ	1	PASI-K
		EPA 300.0	PL	3	PASI-K
60453812017	**S-PZ-1S**	EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MLD	1	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	SR1	1	PASI-K
		SM 2540C	KVI	1	PASI-K
		SM 3500-Fe B#4	CRN2	1	PASI-K
		SM 3500-Fe B#4	DLJ	1	PASI-K

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SAMPLE ANALYTE COUNT

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		SM 4500-S-2 D	DLJ	1	PASI-K
		EPA 300.0	PL	3	PASI-K
60453812018	**S-PZ-9D**	EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MLD	1	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	SR1	1	PASI-K
		SM 2540C	KVI	1	PASI-K
		SM 3500-Fe B#4	CRN2	1	PASI-K
		SM 3500-Fe B#4	DLJ	1	PASI-K
		SM 4500-S-2 D	DLJ	1	PASI-K
		EPA 300.0	PL	3	PASI-K
60453812019	**S-TP-2D**	EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MLD	1	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	SR1	1	PASI-K
		SM 2540C	KVI	1	PASI-K
		SM 3500-Fe B#4	CRN2	1	PASI-K
		SM 3500-Fe B#4	DLJ	1	PASI-K
		SM 4500-S-2 D	DLJ	1	PASI-K
		EPA 300.0	PL	3	PASI-K
60453812020	**S-TP-3D**	EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MLD	1	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	SR1	1	PASI-K
		SM 2540C	KVI	1	PASI-K
		SM 3500-Fe B#4	CRN2	1	PASI-K
		SM 3500-Fe B#4	DLJ	1	PASI-K
		SM 4500-S-2 D	DLJ	1	PASI-K
		EPA 300.0	PL	3	PASI-K
60453812021	**S-TP-4D**	EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K

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SAMPLE ANALYTE COUNT

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 7470	MLD	1	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	SR1	1	PASI-K
		SM 2540C	KVI	1	PASI-K
		SM 3500-Fe B#4	CRN2	1	PASI-K
		SM 3500-Fe B#4	DLJ	1	PASI-K
		SM 4500-S-2 D	DLJ	1	PASI-K
		EPA 300.0	PL	3	PASI-K
60453812022	**S-CA-DUP-2**	EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MLD	1	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	SR1	1	PASI-K
		SM 2540C	KVI	1	PASI-K
		SM 3500-Fe B#4	CRN2	1	PASI-K
		SM 3500-Fe B#4	DLJ	1	PASI-K
		SM 4500-S-2 D	DLJ	1	PASI-K
		EPA 300.0	PL	3	PASI-K
60453812023	**S-CA-FB-2**	EPA 200.7	JXD	13	PASI-K
		EPA 200.8	JGP	6	PASI-K
		EPA 7470	MLD	1	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	SR1	1	PASI-K
		SM 2540C	KVI	1	PASI-K
		SM 3500-Fe B#4	CRN2	1	PASI-K
		SM 3500-Fe B#4	DLJ	1	PASI-K
		SM 4500-S-2 D	DLJ	1	PASI-K
		EPA 300.0	PL	3	PASI-K
60453812024	**S-CA-MS-1**	EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
60453812025	**S-CA-MSD-1**	EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA

PASI-K = Pace Analytical Services - Kansas City
PASI-PA = Pace Analytical Services - Greensburg

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Sample: S-BMW-1S **Lab ID: 60453812001** Collected: 05/28/24 11:35 Received: 05/30/24 05:35 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Barium	**130**	ug/L	5.0	0.64	1	06/05/24 14:26	06/07/24 12:09	7440-39-3	
Beryllium	**<0.12**	ug/L	1.0	0.12	1	06/05/24 14:26	06/07/24 12:09	7440-41-7	
Boron	**58.1J**	ug/L	100	6.4	1	06/05/24 14:26	06/07/24 12:09	7440-42-8	
Calcium	**133000**	ug/L	200	26.9	1	06/05/24 14:26	06/07/24 12:09	7440-70-2	
Cobalt	**2.0J**	ug/L	5.0	1.2	1	06/05/24 14:26	06/07/24 12:09	7440-48-4	
Iron	**27.5J**	ug/L	50.0	9.1	1	06/05/24 14:26	06/07/24 12:09	7439-89-6	
Lead	**<3.8**	ug/L	10.0	3.8	1	06/05/24 14:26	06/07/24 12:09	7439-92-1	
Lithium	**5.7J**	ug/L	10.0	3.7	1	06/05/24 14:26	06/07/24 12:09	7439-93-2	
Magnesium	**25800**	ug/L	50.0	20.1	1	06/05/24 14:26	06/07/24 12:09	7439-95-4	
Manganese	**606**	ug/L	5.0	0.39	1	06/05/24 14:26	06/07/24 12:09	7439-96-5	
Molybdenum	**3.1J**	ug/L	20.0	1.0	1	06/05/24 14:26	06/07/24 12:09	7439-98-7	B
Potassium	**404J**	ug/L	500	69.7	1	06/05/24 14:26	06/07/24 12:09	7440-09-7	
Sodium	**6070**	ug/L	500	115	1	06/05/24 14:26	06/07/24 12:09	7440-23-5	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City								
Antimony	**<0.12**	ug/L	1.0	0.12	1	06/05/24 14:26	06/14/24 15:34	7440-36-0	
Arsenic	**0.78J**	ug/L	1.0	0.13	1	06/05/24 14:26	06/14/24 15:34	7440-38-2	
Cadmium	**<0.050**	ug/L	0.50	0.050	1	06/05/24 14:26	06/14/24 15:34	7440-43-9	
Chromium	**0.31J**	ug/L	1.0	0.30	1	06/05/24 14:26	06/14/24 15:34	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	06/05/24 14:26	06/14/24 15:34	7782-49-2	
Thallium	**<0.14**	ug/L	1.0	0.14	1	06/05/24 14:26	06/14/24 15:34	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City								
Mercury	**<0.096**	ug/L	0.20	0.096	1	06/12/24 16:56	06/13/24 14:19	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**408**	mg/L	20.0	10.5	1		06/05/24 17:24		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**470**	mg/L	10.0	10.0	1		06/03/24 13:05		
Iron, Ferric (Calculation)	Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City								
Iron, Ferric	**0.0J**	mg/L	0.050		1		06/12/24 00:00	20074-52-6	
Iron, Ferrous	Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City								
Iron, Ferrous	**0.11J**	mg/L	0.20	0.041	1		06/04/24 16:07	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Sample: S-BMW-1S **Lab ID: 60453812001** Collected: 05/28/24 11:35 Received: 05/30/24 05:35 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	**<0.016**	mg/L	0.050	0.016	1		06/03/24 10:33	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**10.1**	mg/L	1.0	0.53	1		06/12/24 18:30	16887-00-6	
Fluoride	**<0.12**	mg/L	0.20	0.12	1		06/12/24 18:30	16984-48-8	N2
Sulfate	**37.7**	mg/L	10.0	5.5	10		06/12/24 18:47	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Sample: S-BMW-3S **Lab ID: 60453812002** Collected: 05/28/24 14:20 Received: 05/30/24 05:35 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Barium	**136**	ug/L	5.0	0.64	1	06/05/24 14:26	06/07/24 12:11	7440-39-3	
Beryllium	**<0.12**	ug/L	1.0	0.12	1	06/05/24 14:26	06/07/24 12:11	7440-41-7	
Boron	**54.1J**	ug/L	100	6.4	1	06/05/24 14:26	06/07/24 12:11	7440-42-8	
Calcium	**116000**	ug/L	200	26.9	1	06/05/24 14:26	06/07/24 12:11	7440-70-2	
Cobalt	**<1.2**	ug/L	5.0	1.2	1	06/05/24 14:26	06/07/24 12:11	7440-48-4	
Iron	**33.4J**	ug/L	50.0	9.1	1	06/05/24 14:26	06/07/24 12:11	7439-89-6	
Lead	**<3.8**	ug/L	10.0	3.8	1	06/05/24 14:26	06/07/24 12:11	7439-92-1	
Lithium	**10.3**	ug/L	10.0	3.7	1	06/05/24 14:26	06/07/24 12:11	7439-93-2	
Magnesium	**20500**	ug/L	50.0	20.1	1	06/05/24 14:26	06/07/24 12:11	7439-95-4	
Manganese	**140**	ug/L	5.0	0.39	1	06/05/24 14:26	06/07/24 12:11	7439-96-5	
Molybdenum	**2.5J**	ug/L	20.0	1.0	1	06/05/24 14:26	06/07/24 12:11	7439-98-7	B
Potassium	**618**	ug/L	500	69.7	1	06/05/24 14:26	06/07/24 12:11	7440-09-7	
Sodium	**6410**	ug/L	500	115	1	06/05/24 14:26	06/07/24 12:11	7440-23-5	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City								
Antimony	**<0.12**	ug/L	1.0	0.12	1	06/05/24 14:26	06/14/24 15:39	7440-36-0	
Arsenic	**0.50J**	ug/L	1.0	0.13	1	06/05/24 14:26	06/14/24 15:39	7440-38-2	
Cadmium	**0.054J**	ug/L	0.50	0.050	1	06/05/24 14:26	06/14/24 15:39	7440-43-9	
Chromium	**<0.30**	ug/L	1.0	0.30	1	06/05/24 14:26	06/14/24 15:39	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	06/05/24 14:26	06/14/24 15:39	7782-49-2	
Thallium	**<0.14**	ug/L	1.0	0.14	1	06/05/24 14:26	06/14/24 15:39	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City								
Mercury	**<0.096**	ug/L	0.20	0.096	1	06/12/24 16:56	06/13/24 14:22	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**364**	mg/L	20.0	10.5	1		06/05/24 17:47		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**529**	mg/L	10.0	10.0	1		06/03/24 13:05		
Iron, Ferric (Calculation)	Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City								
Iron, Ferric	**0.0J**	mg/L	0.050		1		06/12/24 00:00	20074-52-6	
Iron, Ferrous	Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City								
Iron, Ferrous	**0.12J**	mg/L	0.20	0.041	1		06/04/24 16:07	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Sample: S-BMW-3S **Lab ID: 60453812002** Collected: 05/28/24 14:20 Received: 05/30/24 05:35 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	**<0.016**	mg/L	0.050	0.016	1		06/03/24 10:33	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**11.1**	mg/L	1.0	0.53	1		06/12/24 19:05	16887-00-6	
Fluoride	**<0.12**	mg/L	0.20	0.12	1		06/12/24 19:05	16984-48-8	N2
Sulfate	**19.7**	mg/L	1.0	0.55	1		06/12/24 19:05	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Sample: S-LMW-2S **Lab ID: 60453812003** Collected: 05/29/24 14:05 Received: 05/30/24 05:35 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Barium	**113**	ug/L	5.0	0.64	1	06/05/24 14:26	06/07/24 12:13	7440-39-3	
Beryllium	**<0.12**	ug/L	1.0	0.12	1	06/05/24 14:26	06/07/24 12:13	7440-41-7	
Boron	**9220**	ug/L	100	6.4	1	06/05/24 14:26	06/07/24 12:13	7440-42-8	
Calcium	**196000**	ug/L	200	26.9	1	06/05/24 14:26	06/07/24 12:13	7440-70-2	
Cobalt	**3.4J**	ug/L	5.0	1.2	1	06/05/24 14:26	06/07/24 12:13	7440-48-4	
Iron	**33.0J**	ug/L	50.0	9.1	1	06/05/24 14:26	06/07/24 12:13	7439-89-6	
Lead	**<3.8**	ug/L	10.0	3.8	1	06/05/24 14:26	06/07/24 12:13	7439-92-1	
Lithium	**33.8**	ug/L	10.0	3.7	1	06/05/24 14:26	06/07/24 12:13	7439-93-2	
Magnesium	**34200**	ug/L	50.0	20.1	1	06/05/24 14:26	06/07/24 12:13	7439-95-4	
Manganese	**390**	ug/L	5.0	0.39	1	06/05/24 14:26	06/07/24 12:13	7439-96-5	
Molybdenum	**915**	ug/L	20.0	1.0	1	06/05/24 14:26	06/07/24 12:13	7439-98-7	
Potassium	**7410**	ug/L	500	69.7	1	06/05/24 14:26	06/07/24 12:13	7440-09-7	
Sodium	**81100**	ug/L	500	115	1	06/05/24 14:26	06/07/24 12:13	7440-23-5	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City								
Antimony	**0.18J**	ug/L	1.0	0.12	1	06/05/24 14:26	06/14/24 15:41	7440-36-0	
Arsenic	**0.82J**	ug/L	1.0	0.13	1	06/05/24 14:26	06/14/24 15:41	7440-38-2	
Cadmium	**0.59**	ug/L	0.50	0.050	1	06/05/24 14:26	06/14/24 15:41	7440-43-9	
Chromium	**0.33J**	ug/L	1.0	0.30	1	06/05/24 14:26	06/14/24 15:41	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	06/05/24 14:26	06/14/24 15:41	7782-49-2	
Thallium	**<0.14**	ug/L	1.0	0.14	1	06/05/24 14:26	06/14/24 15:41	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City								
Mercury	**<0.096**	ug/L	0.20	0.096	1	06/12/24 16:56	06/13/24 14:24	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**389**	mg/L	20.0	10.5	1		06/05/24 17:53		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**943**	mg/L	13.3	13.3	1		06/04/24 12:48		
Iron, Ferric (Calculation)	Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City								
Iron, Ferric	**0.0J**	mg/L	0.050		1		06/12/24 00:00	20074-52-6	
Iron, Ferrous	Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City								
Iron, Ferrous	**0.082J**	mg/L	0.20	0.041	1		06/05/24 14:58	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Sample: S-LMW-2S **Lab ID: 60453812003** Collected: 05/29/24 14:05 Received: 05/30/24 05:35 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	**<0.016**	mg/L	0.050	0.016	1		06/03/24 10:33	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**167**	mg/L	20.0	10.5	20		06/12/24 19:57	16887-00-6	
Fluoride	**<0.12**	mg/L	0.20	0.12	1		06/12/24 19:40	16984-48-8	N2
Sulfate	**239**	mg/L	20.0	11.0	20		06/12/24 19:57	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Sample: S-LMW-4S **Lab ID: 60453812004** Collected: 05/29/24 11:30 Received: 05/30/24 05:35 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Barium	**238**	ug/L	5.0	0.64	1	06/05/24 14:26	06/07/24 12:20	7440-39-3	
Beryllium	**<0.12**	ug/L	1.0	0.12	1	06/05/24 14:26	06/07/24 12:20	7440-41-7	
Boron	**1990**	ug/L	100	6.4	1	06/05/24 14:26	06/07/24 12:20	7440-42-8	
Calcium	**203000**	ug/L	200	26.9	1	06/05/24 14:26	06/07/24 12:20	7440-70-2	
Cobalt	**<1.2**	ug/L	5.0	1.2	1	06/05/24 14:26	06/07/24 12:20	7440-48-4	
Iron	**12.7J**	ug/L	50.0	9.1	1	06/05/24 14:26	06/07/24 12:20	7439-89-6	
Lead	**<3.8**	ug/L	10.0	3.8	1	06/05/24 14:26	06/07/24 12:20	7439-92-1	
Lithium	**35.8**	ug/L	10.0	3.7	1	06/05/24 14:26	06/07/24 12:20	7439-93-2	
Magnesium	**42600**	ug/L	50.0	20.1	1	06/05/24 14:26	06/07/24 12:20	7439-95-4	
Manganese	**87.6**	ug/L	5.0	0.39	1	06/05/24 14:26	06/07/24 12:20	7439-96-5	
Molybdenum	**2.2J**	ug/L	20.0	1.0	1	06/05/24 14:26	06/07/24 12:20	7439-98-7	B
Potassium	**4740**	ug/L	500	69.7	1	06/05/24 14:26	06/07/24 12:20	7440-09-7	
Sodium	**14500**	ug/L	500	115	1	06/05/24 14:26	06/07/24 12:20	7440-23-5	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City								
Antimony	**<0.12**	ug/L	1.0	0.12	1	06/05/24 14:26	06/14/24 15:44	7440-36-0	
Arsenic	**0.53J**	ug/L	1.0	0.13	1	06/05/24 14:26	06/14/24 15:44	7440-38-2	
Cadmium	**0.11J**	ug/L	0.50	0.050	1	06/05/24 14:26	06/14/24 15:44	7440-43-9	
Chromium	**0.34J**	ug/L	1.0	0.30	1	06/05/24 14:26	06/14/24 15:44	7440-47-3	
Selenium	**0.25J**	ug/L	1.0	0.18	1	06/05/24 14:26	06/14/24 15:44	7782-49-2	
Thallium	**<0.14**	ug/L	1.0	0.14	1	06/05/24 14:26	06/14/24 15:44	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City								
Mercury	**<0.096**	ug/L	0.20	0.096	1	06/12/24 16:56	06/13/24 14:26	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**577**	mg/L	20.0	10.5	1		06/05/24 17:59		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**743**	mg/L	13.3	13.3	1		06/04/24 12:48		
Iron, Ferric (Calculation)	Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City								
Iron, Ferric	**0.0J**	mg/L	0.050		1		06/12/24 00:00	20074-52-6	
Iron, Ferrous	Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City								
Iron, Ferrous	**0.068J**	mg/L	0.20	0.041	1		06/04/24 16:07	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Sample: S-LMW-4S **Lab ID: 60453812004** Collected: 05/29/24 11:30 Received: 05/30/24 05:35 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	**<0.016**	mg/L	0.050	0.016	1		06/03/24 10:33	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**21.5**	mg/L	10.0	5.3	10		06/12/24 20:32	16887-00-6	
Fluoride	**<0.12**	mg/L	0.20	0.12	1		06/12/24 20:14	16984-48-8	N2
Sulfate	**135**	mg/L	10.0	5.5	10		06/12/24 20:32	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Sample: S-AM-1S **Lab ID: 60453812005** Collected: 05/29/24 09:20 Received: 05/30/24 05:35 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Barium	**123**	ug/L	5.0	0.64	1	06/05/24 14:26	06/07/24 12:22	7440-39-3	
Beryllium	**<0.12**	ug/L	1.0	0.12	1	06/05/24 14:26	06/07/24 12:22	7440-41-7	
Boron	**177**	ug/L	100	6.4	1	06/05/24 14:26	06/07/24 12:22	7440-42-8	
Calcium	**72800**	ug/L	200	26.9	1	06/05/24 14:26	06/07/24 12:22	7440-70-2	
Cobalt	**4.1J**	ug/L	5.0	1.2	1	06/05/24 14:26	06/07/24 12:22	7440-48-4	
Iron	**609**	ug/L	50.0	9.1	1	06/05/24 14:26	06/07/24 12:22	7439-89-6	
Lead	**<3.8**	ug/L	10.0	3.8	1	06/05/24 14:26	06/07/24 12:22	7439-92-1	
Lithium	**20.9**	ug/L	10.0	3.7	1	06/05/24 14:26	06/07/24 12:22	7439-93-2	
Magnesium	**15000**	ug/L	50.0	20.1	1	06/05/24 14:26	06/07/24 12:22	7439-95-4	
Manganese	**2190**	ug/L	5.0	0.39	1	06/05/24 14:26	06/07/24 12:22	7439-96-5	
Molybdenum	**42.9**	ug/L	20.0	1.0	1	06/05/24 14:26	06/07/24 12:22	7439-98-7	
Potassium	**7770**	ug/L	500	69.7	1	06/05/24 14:26	06/07/24 12:22	7440-09-7	
Sodium	**19600**	ug/L	500	115	1	06/05/24 14:26	06/07/24 12:22	7440-23-5	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City								
Antimony	**<0.12**	ug/L	1.0	0.12	1	06/05/24 14:26	06/14/24 15:46	7440-36-0	
Arsenic	**0.94J**	ug/L	1.0	0.13	1	06/05/24 14:26	06/14/24 15:46	7440-38-2	
Cadmium	**0.11J**	ug/L	0.50	0.050	1	06/05/24 14:26	06/14/24 15:46	7440-43-9	
Chromium	**0.38J**	ug/L	1.0	0.30	1	06/05/24 14:26	06/14/24 15:46	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	06/05/24 14:26	06/14/24 15:46	7782-49-2	
Thallium	**<0.14**	ug/L	1.0	0.14	1	06/05/24 14:26	06/14/24 15:46	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City								
Mercury	**<0.096**	ug/L	0.20	0.096	1	06/12/24 16:56	06/13/24 14:28	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**230**	mg/L	20.0	10.5	1		06/05/24 18:06		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**321**	mg/L	10.0	10.0	1		06/04/24 12:48		
Iron, Ferric (Calculation)	Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City								
Iron, Ferric	**0.46**	mg/L	0.050		1		06/12/24 00:00	20074-52-6	
Iron, Ferrous	Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City								
Iron, Ferrous	**0.14J**	mg/L	0.20	0.041	1		06/04/24 16:07	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Sample: S-AM-1S **Lab ID: 60453812005** Collected: 05/29/24 09:20 Received: 05/30/24 05:35 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	**<0.016**	mg/L	0.050	0.016	1		06/03/24 10:33	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**37.1**	mg/L	10.0	5.3	10		06/12/24 21:07	16887-00-6	
Fluoride	**<0.12**	mg/L	0.20	0.12	1		06/12/24 20:49	16984-48-8	N2
Sulfate	**38.6**	mg/L	10.0	5.5	10		06/12/24 21:07	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Sample: S-AM-1D **Lab ID: 60453812006** Collected: 05/29/24 10:05 Received: 05/30/24 05:35 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Barium	**367**	ug/L	5.0	0.64	1	06/05/24 14:26	06/07/24 12:24	7440-39-3	
Beryllium	**<0.12**	ug/L	1.0	0.12	1	06/05/24 14:26	06/07/24 12:24	7440-41-7	
Boron	**2810**	ug/L	100	6.4	1	06/05/24 14:26	06/07/24 12:24	7440-42-8	
Calcium	**82100**	ug/L	200	26.9	1	06/05/24 14:26	06/07/24 12:24	7440-70-2	
Cobalt	**<1.2**	ug/L	5.0	1.2	1	06/05/24 14:26	06/07/24 12:24	7440-48-4	
Iron	**3000**	ug/L	50.0	9.1	1	06/05/24 14:26	06/07/24 12:24	7439-89-6	
Lead	**<3.8**	ug/L	10.0	3.8	1	06/05/24 14:26	06/07/24 12:24	7439-92-1	
Lithium	**31.8**	ug/L	10.0	3.7	1	06/05/24 14:26	06/07/24 12:24	7439-93-2	
Magnesium	**17400**	ug/L	50.0	20.1	1	06/05/24 14:26	06/07/24 12:24	7439-95-4	
Manganese	**375**	ug/L	5.0	0.39	1	06/05/24 14:26	06/07/24 12:24	7439-96-5	
Molybdenum	**184**	ug/L	20.0	1.0	1	06/05/24 14:26	06/07/24 12:24	7439-98-7	
Potassium	**6590**	ug/L	500	69.7	1	06/05/24 14:26	06/07/24 12:24	7440-09-7	
Sodium	**21900**	ug/L	500	115	1	06/05/24 14:26	06/07/24 12:24	7440-23-5	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City								
Antimony	**<0.12**	ug/L	1.0	0.12	1	06/05/24 14:26	06/14/24 15:49	7440-36-0	
Arsenic	**0.14J**	ug/L	1.0	0.13	1	06/05/24 14:26	06/14/24 15:49	7440-38-2	
Cadmium	**0.063J**	ug/L	0.50	0.050	1	06/05/24 14:26	06/14/24 15:49	7440-43-9	
Chromium	**0.41J**	ug/L	1.0	0.30	1	06/05/24 14:26	06/14/24 15:49	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	06/05/24 14:26	06/14/24 15:49	7782-49-2	
Thallium	**<0.14**	ug/L	1.0	0.14	1	06/05/24 14:26	06/14/24 15:49	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City								
Mercury	**<0.096**	ug/L	0.20	0.096	1	06/12/24 16:56	06/13/24 14:31	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**312**	mg/L	20.0	10.5	1		06/05/24 18:12		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**351**	mg/L	10.0	10.0	1		06/04/24 12:48		
Iron, Ferric (Calculation)	Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City								
Iron, Ferric	**2.7**	mg/L	0.050		1		06/12/24 00:00	20074-52-6	
Iron, Ferrous	Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City								
Iron, Ferrous	**0.26**	mg/L	0.20	0.041	1		06/04/24 16:07	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Sample: S-AM-1D **Lab ID: 60453812006** Collected: 05/29/24 10:05 Received: 05/30/24 05:35 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	**0.038J**	mg/L	0.050	0.016	1		06/03/24 10:33	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**27.9**	mg/L	10.0	5.3	10		06/12/24 22:16	16887-00-6	
Fluoride	**0.19J**	mg/L	0.20	0.12	1		06/12/24 21:59	16984-48-8	N2
Sulfate	**4.7**	mg/L	1.0	0.55	1		06/12/24 21:59	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Sample: S-TP-5D **Lab ID: 60453812007** Collected: 05/28/24 14:18 Received: 05/30/24 05:35 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Barium	**204**	ug/L	5.0	0.64	1	06/05/24 14:26	06/07/24 12:26	7440-39-3	
Beryllium	**<0.12**	ug/L	1.0	0.12	1	06/05/24 14:26	06/07/24 12:26	7440-41-7	
Boron	**7530**	ug/L	100	6.4	1	06/05/24 14:26	06/07/24 12:26	7440-42-8	
Calcium	**151000**	ug/L	200	26.9	1	06/05/24 14:26	06/07/24 12:26	7440-70-2	
Cobalt	**<1.2**	ug/L	5.0	1.2	1	06/05/24 14:26	06/07/24 12:26	7440-48-4	
Iron	**10500**	ug/L	50.0	9.1	1	06/05/24 14:26	06/07/24 12:26	7439-89-6	
Lead	**<3.8**	ug/L	10.0	3.8	1	06/05/24 14:26	06/07/24 12:26	7439-92-1	
Lithium	**37.4**	ug/L	10.0	3.7	1	06/05/24 14:26	06/07/24 12:26	7439-93-2	
Magnesium	**37300**	ug/L	50.0	20.1	1	06/05/24 14:26	06/07/24 12:26	7439-95-4	
Manganese	**1170**	ug/L	5.0	0.39	1	06/05/24 14:26	06/07/24 12:26	7439-96-5	
Molybdenum	**504**	ug/L	20.0	1.0	1	06/05/24 14:26	06/07/24 12:26	7439-98-7	
Potassium	**5410**	ug/L	500	69.7	1	06/05/24 14:26	06/07/24 12:26	7440-09-7	
Sodium	**35000**	ug/L	500	115	1	06/05/24 14:26	06/07/24 12:26	7440-23-5	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City								
Antimony	**<0.12**	ug/L	1.0	0.12	1	06/05/24 14:26	06/14/24 15:54	7440-36-0	
Arsenic	**0.24J**	ug/L	1.0	0.13	1	06/05/24 14:26	06/14/24 15:54	7440-38-2	
Cadmium	**0.18J**	ug/L	0.50	0.050	1	06/05/24 14:26	06/14/24 15:54	7440-43-9	
Chromium	**<0.30**	ug/L	1.0	0.30	1	06/05/24 14:26	06/14/24 15:54	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	06/05/24 14:26	06/14/24 15:54	7782-49-2	
Thallium	**<0.14**	ug/L	1.0	0.14	1	06/05/24 14:26	06/14/24 15:54	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City								
Mercury	**<0.096**	ug/L	0.20	0.096	1	06/12/24 16:56	06/13/24 14:33	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**340**	mg/L	40.0	21.0	2		06/05/24 18:18		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**721**	mg/L	13.3	13.3	1		06/03/24 13:06		
Iron, Ferric (Calculation)	Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City								
Iron, Ferric	**10.2**	mg/L	0.050		1		06/12/24 00:00	20074-52-6	
Iron, Ferrous	Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City								
Iron, Ferrous	**0.29**	mg/L	0.20	0.041	1		06/04/24 16:07	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Sample: S-TP-5D **Lab ID: 60453812007** Collected: 05/28/24 14:18 Received: 05/30/24 05:35 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	**<0.016**	mg/L	0.050	0.016	1		06/03/24 10:33	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**42.8**	mg/L	20.0	10.5	20		06/12/24 22:51	16887-00-6	
Fluoride	**<0.12**	mg/L	0.20	0.12	1		06/12/24 22:33	16984-48-8	N2
Sulfate	**263**	mg/L	20.0	11.0	20		06/12/24 22:51	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Sample: S-TP-6S **Lab ID: 60453812008** Collected: 05/28/24 11:17 Received: 05/30/24 05:35 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Barium	**301**	ug/L	5.0	0.64	1	06/05/24 14:26	06/07/24 12:28	7440-39-3	
Beryllium	**<0.12**	ug/L	1.0	0.12	1	06/05/24 14:26	06/07/24 12:28	7440-41-7	
Boron	**113**	ug/L	100	6.4	1	06/05/24 14:26	06/07/24 12:28	7440-42-8	
Calcium	**144000**	ug/L	200	26.9	1	06/05/24 14:26	06/07/24 12:28	7440-70-2	M1
Cobalt	**<1.2**	ug/L	5.0	1.2	1	06/05/24 14:26	06/07/24 12:28	7440-48-4	
Iron	**33.4J**	ug/L	50.0	9.1	1	06/05/24 14:26	06/07/24 12:28	7439-89-6	
Lead	**<3.8**	ug/L	10.0	3.8	1	06/05/24 14:26	06/07/24 12:28	7439-92-1	
Lithium	**37.1**	ug/L	10.0	3.7	1	06/05/24 14:26	06/07/24 12:28	7439-93-2	
Magnesium	**30000**	ug/L	50.0	20.1	1	06/05/24 14:26	06/07/24 12:28	7439-95-4	
Manganese	**232**	ug/L	5.0	0.39	1	06/05/24 14:26	06/07/24 12:28	7439-96-5	
Molybdenum	**4.5J**	ug/L	20.0	1.0	1	06/05/24 14:26	06/07/24 12:28	7439-98-7	B
Potassium	**2300**	ug/L	500	69.7	1	06/05/24 14:26	06/07/24 12:28	7440-09-7	
Sodium	**5820**	ug/L	500	115	1	06/05/24 14:26	06/07/24 12:28	7440-23-5	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City								
Antimony	**<0.12**	ug/L	1.0	0.12	1	06/05/24 14:26	06/14/24 15:56	7440-36-0	
Arsenic	**0.49J**	ug/L	1.0	0.13	1	06/05/24 14:26	06/14/24 15:56	7440-38-2	
Cadmium	**0.069J**	ug/L	0.50	0.050	1	06/05/24 14:26	06/14/24 15:56	7440-43-9	
Chromium	**<0.30**	ug/L	1.0	0.30	1	06/05/24 14:26	06/14/24 15:56	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	06/05/24 14:26	06/14/24 15:56	7782-49-2	
Thallium	**<0.14**	ug/L	1.0	0.14	1	06/05/24 14:26	06/14/24 15:56	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City								
Mercury	**<0.096**	ug/L	0.20	0.096	1	06/12/24 16:56	06/13/24 14:40	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**447**	mg/L	20.0	10.5	1		06/05/24 18:23		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**481**	mg/L	10.0	10.0	1		06/03/24 13:06		
Iron, Ferric (Calculation)	Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City								
Iron, Ferric	**0.0J**	mg/L	0.050		1		06/12/24 00:00	20074-52-6	
Iron, Ferrous	Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City								
Iron, Ferrous	**0.056J**	mg/L	0.20	0.041	1		06/04/24 16:07	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Sample: S-TP-6S **Lab ID: 60453812008** Collected: 05/28/24 11:17 Received: 05/30/24 05:35 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	**<0.016**	mg/L	0.050	0.016	1		06/03/24 10:33	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**7.8**	mg/L	1.0	0.53	1		06/12/24 23:08	16887-00-6	
Fluoride	**<0.12**	mg/L	0.20	0.12	1		06/12/24 23:08	16984-48-8	N2
Sulfate	**41.3**	mg/L	10.0	5.5	10		06/12/24 23:43	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Sample: S-TP-6D **Lab ID: 60453812009** Collected: 05/28/24 12:20 Received: 05/30/24 05:35 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Barium	**396**	ug/L	5.0	0.64	1	06/05/24 14:26	06/07/24 12:32	7440-39-3	
Beryllium	**<0.12**	ug/L	1.0	0.12	1	06/05/24 14:26	06/07/24 12:32	7440-41-7	
Boron	**60.4J**	ug/L	100	6.4	1	06/05/24 14:26	06/07/24 12:32	7440-42-8	
Calcium	**117000**	ug/L	200	26.9	1	06/05/24 14:26	06/07/24 12:32	7440-70-2	
Cobalt	**<1.2**	ug/L	5.0	1.2	1	06/05/24 14:26	06/07/24 12:32	7440-48-4	
Iron	**7520**	ug/L	50.0	9.1	1	06/05/24 14:26	06/07/24 12:32	7439-89-6	
Lead	**<3.8**	ug/L	10.0	3.8	1	06/05/24 14:26	06/07/24 12:32	7439-92-1	
Lithium	**27.8**	ug/L	10.0	3.7	1	06/05/24 14:26	06/07/24 12:32	7439-93-2	
Magnesium	**29200**	ug/L	50.0	20.1	1	06/05/24 14:26	06/07/24 12:32	7439-95-4	
Manganese	**489**	ug/L	5.0	0.39	1	06/05/24 14:26	06/07/24 12:32	7439-96-5	
Molybdenum	**2.0J**	ug/L	20.0	1.0	1	06/05/24 14:26	06/07/24 12:32	7439-98-7	B
Potassium	**3710**	ug/L	500	69.7	1	06/05/24 14:26	06/07/24 12:32	7440-09-7	
Sodium	**5360**	ug/L	500	115	1	06/05/24 14:26	06/07/24 12:32	7440-23-5	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City								
Antimony	**<0.12**	ug/L	1.0	0.12	1	06/05/24 14:26	06/14/24 15:58	7440-36-0	
Arsenic	**<0.13**	ug/L	1.0	0.13	1	06/05/24 14:26	06/14/24 15:58	7440-38-2	
Cadmium	**<0.050**	ug/L	0.50	0.050	1	06/05/24 14:26	06/14/24 15:58	7440-43-9	
Chromium	**<0.30**	ug/L	1.0	0.30	1	06/05/24 14:26	06/14/24 15:58	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	06/05/24 14:26	06/14/24 15:58	7782-49-2	
Thallium	**<0.14**	ug/L	1.0	0.14	1	06/05/24 14:26	06/14/24 15:58	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City								
Mercury	**<0.096**	ug/L	0.20	0.096	1	06/12/24 16:56	06/13/24 14:42	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**378**	mg/L	40.0	21.0	2		06/05/24 18:40		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**425**	mg/L	10.0	10.0	1		06/03/24 13:06		
Iron, Ferric (Calculation)	Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City								
Iron, Ferric	**7.3**	mg/L	0.050		1		06/12/24 00:00	20074-52-6	
Iron, Ferrous	Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City								
Iron, Ferrous	**0.27**	mg/L	0.20	0.041	1		06/04/24 16:07	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Sample: S-TP-6D **Lab ID: 60453812009** Collected: 05/28/24 12:20 Received: 05/30/24 05:35 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	**<0.016**	mg/L	0.050	0.016	1		06/03/24 10:33	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**12.5**	mg/L	1.0	0.53	1		06/13/24 00:18	16887-00-6	
Fluoride	**<0.12**	mg/L	0.20	0.12	1		06/13/24 00:18	16984-48-8	N2
Sulfate	**64.7**	mg/L	10.0	5.5	10		06/13/24 00:35	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Sample: S-TP-8D **Lab ID: 60453812010** Collected: 05/29/24 15:07 Received: 05/30/24 05:35 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Barium	**362**	ug/L	5.0	0.64	1	06/05/24 14:26	06/07/24 12:34	7440-39-3	
Beryllium	**<0.12**	ug/L	1.0	0.12	1	06/05/24 14:26	06/07/24 12:34	7440-41-7	
Boron	**69.4J**	ug/L	100	6.4	1	06/05/24 14:26	06/07/24 12:34	7440-42-8	
Calcium	**111000**	ug/L	200	26.9	1	06/05/24 14:26	06/07/24 12:34	7440-70-2	
Cobalt	**<1.2**	ug/L	5.0	1.2	1	06/05/24 14:26	06/07/24 12:34	7440-48-4	
Iron	**6280**	ug/L	50.0	9.1	1	06/05/24 14:26	06/07/24 12:34	7439-89-6	
Lead	**<3.8**	ug/L	10.0	3.8	1	06/05/24 14:26	06/07/24 12:34	7439-92-1	
Lithium	**33.1**	ug/L	10.0	3.7	1	06/05/24 14:26	06/07/24 12:34	7439-93-2	
Magnesium	**24500**	ug/L	50.0	20.1	1	06/05/24 14:26	06/07/24 12:34	7439-95-4	
Manganese	**446**	ug/L	5.0	0.39	1	06/05/24 14:26	06/07/24 12:34	7439-96-5	
Molybdenum	**2.3J**	ug/L	20.0	1.0	1	06/05/24 14:26	06/07/24 12:34	7439-98-7	B
Potassium	**3480**	ug/L	500	69.7	1	06/05/24 14:26	06/07/24 12:34	7440-09-7	
Sodium	**5060**	ug/L	500	115	1	06/05/24 14:26	06/07/24 12:34	7440-23-5	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City								
Antimony	**<0.12**	ug/L	1.0	0.12	1	06/05/24 14:26	06/14/24 16:06	7440-36-0	
Arsenic	**1.3**	ug/L	1.0	0.13	1	06/05/24 14:26	06/14/24 16:06	7440-38-2	
Cadmium	**<0.050**	ug/L	0.50	0.050	1	06/05/24 14:26	06/14/24 16:06	7440-43-9	
Chromium	**0.30J**	ug/L	1.0	0.30	1	06/05/24 14:26	06/14/24 16:06	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	06/05/24 14:26	06/14/24 16:06	7782-49-2	
Thallium	**<0.14**	ug/L	1.0	0.14	1	06/05/24 14:26	06/14/24 16:06	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City								
Mercury	**<0.096**	ug/L	0.20	0.096	1	06/12/24 16:56	06/13/24 14:44	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**180**	mg/L	20.0	10.5	1		06/05/24 18:45		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**437**	mg/L	10.0	10.0	1		06/04/24 12:48		
Iron, Ferric (Calculation)	Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City								
Iron, Ferric	**6.0**	mg/L	0.050		1		06/12/24 00:00	20074-52-6	
Iron, Ferrous	Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City								
Iron, Ferrous	**0.27**	mg/L	0.20	0.041	1		06/05/24 14:58	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Sample: S-TP-8D **Lab ID: 60453812010** Collected: 05/29/24 15:07 Received: 05/30/24 05:35 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	**<0.016**	mg/L	0.050	0.016	1		06/03/24 10:33	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**13.5**	mg/L	1.0	0.53	1		06/13/24 01:27	16887-00-6	
Fluoride	**<0.12**	mg/L	0.20	0.12	1		06/13/24 01:27	16984-48-8	N2
Sulfate	**48.5**	mg/L	10.0	5.5	10		06/13/24 01:45	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Sample: S-UG-3 **Lab ID: 60453812011** Collected: 05/28/24 15:44 Received: 05/30/24 05:35 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Barium	**219**	ug/L	5.0	0.64	1	06/05/24 14:26	06/07/24 12:36	7440-39-3	
Beryllium	**<0.12**	ug/L	1.0	0.12	1	06/05/24 14:26	06/07/24 12:36	7440-41-7	
Boron	**345**	ug/L	100	6.4	1	06/05/24 14:26	06/07/24 12:36	7440-42-8	
Calcium	**129000**	ug/L	200	26.9	1	06/05/24 14:26	06/07/24 12:36	7440-70-2	
Cobalt	**1.3J**	ug/L	5.0	1.2	1	06/05/24 14:26	06/07/24 12:36	7440-48-4	
Iron	**12.3J**	ug/L	50.0	9.1	1	06/05/24 14:26	06/07/24 12:36	7439-89-6	
Lead	**<3.8**	ug/L	10.0	3.8	1	06/05/24 14:26	06/07/24 12:36	7439-92-1	
Lithium	**26.3**	ug/L	10.0	3.7	1	06/05/24 14:26	06/07/24 12:36	7439-93-2	
Magnesium	**24600**	ug/L	50.0	20.1	1	06/05/24 14:26	06/07/24 12:36	7439-95-4	
Manganese	**276**	ug/L	5.0	0.39	1	06/05/24 14:26	06/07/24 12:36	7439-96-5	
Molybdenum	**3.6J**	ug/L	20.0	1.0	1	06/05/24 14:26	06/07/24 12:36	7439-98-7	B
Potassium	**4950**	ug/L	500	69.7	1	06/05/24 14:26	06/07/24 12:36	7440-09-7	
Sodium	**35500**	ug/L	500	115	1	06/05/24 14:26	06/07/24 12:36	7440-23-5	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City								
Antimony	**0.16J**	ug/L	1.0	0.12	1	06/05/24 14:26	06/14/24 16:08	7440-36-0	
Arsenic	**0.38J**	ug/L	1.0	0.13	1	06/05/24 14:26	06/14/24 16:08	7440-38-2	
Cadmium	**0.14J**	ug/L	0.50	0.050	1	06/05/24 14:26	06/14/24 16:08	7440-43-9	
Chromium	**<0.30**	ug/L	1.0	0.30	1	06/05/24 14:26	06/14/24 16:08	7440-47-3	
Selenium	**1.9**	ug/L	1.0	0.18	1	06/05/24 14:26	06/14/24 16:08	7782-49-2	
Thallium	**<0.14**	ug/L	1.0	0.14	1	06/05/24 14:26	06/14/24 16:08	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City								
Mercury	**0.12J**	ug/L	0.20	0.096	1	06/12/24 16:56	06/13/24 14:47	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**391**	mg/L	20.0	10.5	1		06/06/24 13:04		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**517**	mg/L	10.0	10.0	1		06/03/24 13:07		
Iron, Ferric (Calculation)	Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City								
Iron, Ferric	**0.0J**	mg/L	0.050		1		06/12/24 00:00	20074-52-6	
Iron, Ferrous	Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City								
Iron, Ferrous	**0.056J**	mg/L	0.20	0.041	1		06/04/24 16:07	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Sample: S-UG-3 **Lab ID: 60453812011** Collected: 05/28/24 15:44 Received: 05/30/24 05:35 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	**<0.016**	mg/L	0.050	0.016	1		06/03/24 10:33	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**28.0**	mg/L	10.0	5.3	10		06/13/24 02:19	16887-00-6	
Fluoride	**<0.12**	mg/L	0.20	0.12	1		06/13/24 02:02	16984-48-8	N2
Sulfate	**81.8**	mg/L	10.0	5.5	10		06/13/24 02:19	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Sample: S-CA-DUP-1 **Lab ID: 60453812012** Collected: 05/28/24 00:00 Received: 05/30/24 05:35 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Barium	**301**	ug/L	5.0	0.64	1	06/05/24 14:26	06/07/24 12:43	7440-39-3	
Beryllium	**<0.12**	ug/L	1.0	0.12	1	06/05/24 14:26	06/07/24 12:43	7440-41-7	
Boron	**93.3J**	ug/L	100	6.4	1	06/05/24 14:26	06/07/24 12:43	7440-42-8	
Calcium	**142000**	ug/L	200	26.9	1	06/05/24 14:26	06/07/24 12:43	7440-70-2	
Cobalt	**<1.2**	ug/L	5.0	1.2	1	06/05/24 14:26	06/07/24 12:43	7440-48-4	
Iron	**45.4J**	ug/L	50.0	9.1	1	06/05/24 14:26	06/07/24 12:43	7439-89-6	
Lead	**<3.8**	ug/L	10.0	3.8	1	06/05/24 14:26	06/07/24 12:43	7439-92-1	
Lithium	**37.9**	ug/L	10.0	3.7	1	06/05/24 14:26	06/07/24 12:43	7439-93-2	
Magnesium	**29500**	ug/L	50.0	20.1	1	06/05/24 14:26	06/07/24 12:43	7439-95-4	
Manganese	**239**	ug/L	5.0	0.39	1	06/05/24 14:26	06/07/24 12:43	7439-96-5	
Molybdenum	**4.5J**	ug/L	20.0	1.0	1	06/05/24 14:26	06/07/24 12:43	7439-98-7	B
Potassium	**2340**	ug/L	500	69.7	1	06/05/24 14:26	06/07/24 12:43	7440-09-7	
Sodium	**5790**	ug/L	500	115	1	06/05/24 14:26	06/07/24 12:43	7440-23-5	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City								
Antimony	**<0.12**	ug/L	1.0	0.12	1	06/05/24 14:26	06/14/24 16:11	7440-36-0	
Arsenic	**0.51J**	ug/L	1.0	0.13	1	06/05/24 14:26	06/14/24 16:11	7440-38-2	
Cadmium	**0.076J**	ug/L	0.50	0.050	1	06/05/24 14:26	06/14/24 16:11	7440-43-9	
Chromium	**<0.30**	ug/L	1.0	0.30	1	06/05/24 14:26	06/14/24 16:11	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	06/05/24 14:26	06/14/24 16:11	7782-49-2	
Thallium	**<0.14**	ug/L	1.0	0.14	1	06/05/24 14:26	06/14/24 16:11	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City								
Mercury	**0.19J**	ug/L	0.20	0.096	1	06/12/24 16:56	06/13/24 14:49	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**456**	mg/L	20.0	10.5	1		06/06/24 13:09		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**496**	mg/L	10.0	10.0	1		06/03/24 13:07		
Iron, Ferric (Calculation)	Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City								
Iron, Ferric	**0.0J**	mg/L	0.050		1		06/12/24 00:00	20074-52-6	
Iron, Ferrous	Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City								
Iron, Ferrous	**0.056J**	mg/L	0.20	0.041	1		06/04/24 16:07	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Sample: S-CA-DUP-1 **Lab ID: 60453812012** Collected: 05/28/24 00:00 Received: 05/30/24 05:35 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	**<0.016**	mg/L	0.050	0.016	1		06/03/24 10:33	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**7.9**	mg/L	1.0	0.53	1		06/13/24 02:37	16887-00-6	
Fluoride	**<0.12**	mg/L	0.20	0.12	1		06/13/24 02:37	16984-48-8	N2
Sulfate	**42.3**	mg/L	20.0	11.0	20		06/13/24 02:54	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Sample: S-CA-FB-1 **Lab ID: 60453812013** Collected: 05/28/24 14:44 Received: 05/30/24 05:35 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Barium	**<0.64**	ug/L	5.0	0.64	1	06/05/24 14:26	06/07/24 12:45	7440-39-3	
Beryllium	**<0.12**	ug/L	1.0	0.12	1	06/05/24 14:26	06/07/24 12:45	7440-41-7	
Boron	**<6.4**	ug/L	100	6.4	1	06/05/24 14:26	06/07/24 12:45	7440-42-8	
Calcium	**<26.9**	ug/L	200	26.9	1	06/05/24 14:26	06/07/24 12:45	7440-70-2	
Cobalt	**<1.2**	ug/L	5.0	1.2	1	06/05/24 14:26	06/07/24 12:45	7440-48-4	
Iron	**<9.1**	ug/L	50.0	9.1	1	06/05/24 14:26	06/07/24 12:45	7439-89-6	
Lead	**<3.8**	ug/L	10.0	3.8	1	06/05/24 14:26	06/07/24 12:45	7439-92-1	
Lithium	**<3.7**	ug/L	10.0	3.7	1	06/05/24 14:26	06/07/24 12:45	7439-93-2	
Magnesium	**<20.1**	ug/L	50.0	20.1	1	06/05/24 14:26	06/07/24 12:45	7439-95-4	
Manganese	**<0.39**	ug/L	5.0	0.39	1	06/05/24 14:26	06/07/24 12:45	7439-96-5	
Molybdenum	**<1.0**	ug/L	20.0	1.0	1	06/05/24 14:26	06/07/24 12:45	7439-98-7	
Potassium	**<69.7**	ug/L	500	69.7	1	06/05/24 14:26	06/07/24 12:45	7440-09-7	
Sodium	**<115**	ug/L	500	115	1	06/05/24 14:26	06/07/24 12:45	7440-23-5	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City								
Antimony	**<0.12**	ug/L	1.0	0.12	1	06/05/24 14:26	06/14/24 16:13	7440-36-0	
Arsenic	**<0.13**	ug/L	1.0	0.13	1	06/05/24 14:26	06/14/24 16:13	7440-38-2	
Cadmium	**<0.050**	ug/L	0.50	0.050	1	06/05/24 14:26	06/14/24 16:13	7440-43-9	
Chromium	**0.42J**	ug/L	1.0	0.30	1	06/05/24 14:26	06/14/24 16:13	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	06/05/24 14:26	06/14/24 16:13	7782-49-2	
Thallium	**<0.14**	ug/L	1.0	0.14	1	06/05/24 14:26	06/14/24 16:13	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City								
Mercury	**0.14J**	ug/L	0.20	0.096	1	06/12/24 16:56	06/13/24 14:51	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**<10.5**	mg/L	20.0	10.5	1		06/06/24 13:16		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**7.5**	mg/L	5.0	5.0	1		06/03/24 13:07		
Iron, Ferric (Calculation)	Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City								
Iron, Ferric	**0.0J**	mg/L	0.050		1		06/12/24 00:00	20074-52-6	
Iron, Ferrous	Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City								
Iron, Ferrous	**<0.041**	mg/L	0.20	0.041	1		06/04/24 16:07	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Sample: S-CA-FB-1 **Lab ID: 60453812013** Collected: 05/28/24 14:44 Received: 05/30/24 05:35 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	**<0.016**	mg/L	0.050	0.016	1		06/03/24 10:33	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**<0.53**	mg/L	1.0	0.53	1		06/13/24 03:12	16887-00-6	
Fluoride	**<0.12**	mg/L	0.20	0.12	1		06/13/24 03:12	16984-48-8	N2
Sulfate	**<0.55**	mg/L	1.0	0.55	1		06/13/24 03:12	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Sample: S-LMW-1S **Lab ID: 60453812014** Collected: 05/31/24 13:35 Received: 06/01/24 07:05 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Barium	**244**	ug/L	5.0	0.64	1	06/11/24 09:35	06/12/24 11:25	7440-39-3	
Beryllium	**<0.12**	ug/L	1.0	0.12	1	06/11/24 09:35	06/12/24 11:25	7440-41-7	
Boron	**1030**	ug/L	100	6.4	1	06/11/24 09:35	06/12/24 11:25	7440-42-8	
Calcium	**136000**	ug/L	200	26.9	1	06/11/24 09:35	06/12/24 11:25	7440-70-2	
Cobalt	**<1.2**	ug/L	5.0	1.2	1	06/11/24 09:35	06/12/24 11:25	7440-48-4	
Iron	**15.1J**	ug/L	50.0	9.1	1	06/11/24 09:35	06/12/24 11:25	7439-89-6	
Lead	**<3.8**	ug/L	10.0	3.8	1	06/11/24 09:35	06/12/24 11:25	7439-92-1	
Lithium	**28.3**	ug/L	10.0	3.7	1	06/11/24 09:35	06/12/24 11:25	7439-93-2	
Magnesium	**32500**	ug/L	50.0	20.1	1	06/11/24 09:35	06/12/24 11:25	7439-95-4	
Manganese	**117**	ug/L	5.0	0.39	1	06/11/24 09:35	06/12/24 11:25	7439-96-5	
Molybdenum	**58.1**	ug/L	20.0	1.0	1	06/11/24 09:35	06/12/24 11:25	7439-98-7	
Potassium	**8210**	ug/L	500	69.7	1	06/11/24 09:35	06/12/24 11:25	7440-09-7	
Sodium	**39100**	ug/L	500	115	1	06/11/24 09:35	06/12/24 11:25	7440-23-5	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City								
Antimony	**0.31J**	ug/L	1.0	0.12	1	06/07/24 09:46	06/17/24 13:13	7440-36-0	
Arsenic	**1.6**	ug/L	1.0	0.13	1	06/07/24 09:46	06/17/24 13:13	7440-38-2	
Cadmium	**0.12J**	ug/L	0.50	0.050	1	06/07/24 09:46	06/17/24 13:13	7440-43-9	
Chromium	**0.47J**	ug/L	1.0	0.30	1	06/07/24 09:46	06/17/24 13:13	7440-47-3	
Selenium	**5.8**	ug/L	1.0	0.18	1	06/07/24 09:46	06/17/24 13:13	7782-49-2	
Thallium	**<0.14**	ug/L	1.0	0.14	1	06/07/24 09:46	06/17/24 13:13	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City								
Mercury	**<0.096**	ug/L	0.20	0.096	1	06/12/24 16:56	06/14/24 14:12	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**304**	mg/L	20.0	10.5	1		06/06/24 13:19		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**673**	mg/L	13.3	13.3	1		06/05/24 12:23		
Iron, Ferric (Calculation)	Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City								
Iron, Ferric	**0.0J**	mg/L	0.050		1		06/18/24 00:00	20074-52-6	
Iron, Ferrous	Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City								
Iron, Ferrous	**0.068J**	mg/L	0.20	0.041	1		06/04/24 14:43	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Sample: S-LMW-1S **Lab ID: 60453812014** Collected: 05/31/24 13:35 Received: 06/01/24 07:05 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	**<0.016**	mg/L	0.050	0.016	1		06/04/24 13:37	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**139**	mg/L	20.0	10.5	20		06/14/24 17:29	16887-00-6	
Fluoride	**<0.12**	mg/L	0.20	0.12	1		06/14/24 17:15	16984-48-8	N2
Sulfate	**110**	mg/L	20.0	11.0	20		06/14/24 17:29	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Sample: S-LMW-5S **Lab ID: 60453812015** Collected: 05/31/24 12:58 Received: 06/01/24 07:05 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Barium	**35.7**	ug/L	5.0	0.64	1	06/11/24 09:35	06/12/24 11:27	7440-39-3	
Beryllium	**<0.12**	ug/L	1.0	0.12	1	06/11/24 09:35	06/12/24 11:27	7440-41-7	
Boron	**15600**	ug/L	100	6.4	1	06/11/24 09:35	06/12/24 11:27	7440-42-8	
Calcium	**210000**	ug/L	200	26.9	1	06/11/24 09:35	06/12/24 11:27	7440-70-2	
Cobalt	**<1.2**	ug/L	5.0	1.2	1	06/11/24 09:35	06/12/24 11:27	7440-48-4	
Iron	**81.6**	ug/L	50.0	9.1	1	06/11/24 09:35	06/12/24 11:27	7439-89-6	
Lead	**<3.8**	ug/L	10.0	3.8	1	06/11/24 09:35	06/12/24 11:27	7439-92-1	
Lithium	**49.2**	ug/L	10.0	3.7	1	06/11/24 09:35	06/12/24 11:27	7439-93-2	
Magnesium	**38300**	ug/L	50.0	20.1	1	06/11/24 09:35	06/12/24 11:27	7439-95-4	
Manganese	**1530**	ug/L	5.0	0.39	1	06/11/24 09:35	06/12/24 11:27	7439-96-5	
Molybdenum	**1500**	ug/L	20.0	1.0	1	06/11/24 09:35	06/12/24 11:27	7439-98-7	
Potassium	**4100**	ug/L	500	69.7	1	06/11/24 09:35	06/12/24 11:27	7440-09-7	
Sodium	**176000**	ug/L	500	115	1	06/11/24 09:35	06/12/24 11:27	7440-23-5	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City								
Antimony	**0.15J**	ug/L	1.0	0.12	1	06/07/24 09:46	06/17/24 13:18	7440-36-0	
Arsenic	**0.94J**	ug/L	1.0	0.13	1	06/07/24 09:46	06/17/24 13:18	7440-38-2	
Cadmium	**0.83**	ug/L	0.50	0.050	1	06/07/24 09:46	06/17/24 13:18	7440-43-9	
Chromium	**<0.30**	ug/L	1.0	0.30	1	06/07/24 09:46	06/17/24 13:18	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	06/07/24 09:46	06/17/24 13:18	7782-49-2	
Thallium	**<0.14**	ug/L	1.0	0.14	1	06/07/24 09:46	06/17/24 13:18	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City								
Mercury	**<0.096**	ug/L	0.20	0.096	1	06/12/24 16:56	06/14/24 14:14	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**346**	mg/L	20.0	10.5	1		06/06/24 13:25		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**1300**	mg/L	20.0	20.0	1		06/06/24 09:27		
Iron, Ferric (Calculation)	Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City								
Iron, Ferric	**0.0J**	mg/L	0.050		1		06/18/24 00:00	20074-52-6	
Iron, Ferrous	Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City								
Iron, Ferrous	**0.11J**	mg/L	0.20	0.041	1		06/04/24 14:43	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Sample: S-LMW-5S **Lab ID: 60453812015** Collected: 05/31/24 12:58 Received: 06/01/24 07:05 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	**<0.016**	mg/L	0.050	0.016	1		06/04/24 13:37	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**10.8**	mg/L	1.0	0.53	1		06/14/24 17:43	16887-00-6	
Fluoride	**<0.12**	mg/L	0.20	0.12	1		06/14/24 17:43	16984-48-8	N2
Sulfate	**788**	mg/L	100	55.0	100		06/17/24 17:39	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Sample: S-LMW-6S **Lab ID: 60453812016** Collected: 05/31/24 12:06 Received: 06/01/24 07:05 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Barium	**36.0**	ug/L	5.0	0.64	1	06/11/24 09:35	06/12/24 11:28	7440-39-3	
Beryllium	**<0.12**	ug/L	1.0	0.12	1	06/11/24 09:35	06/12/24 11:28	7440-41-7	
Boron	**8930**	ug/L	100	6.4	1	06/11/24 09:35	06/12/24 11:28	7440-42-8	
Calcium	**200000**	ug/L	200	26.9	1	06/11/24 09:35	06/12/24 11:28	7440-70-2	
Cobalt	**4.4J**	ug/L	5.0	1.2	1	06/11/24 09:35	06/12/24 11:28	7440-48-4	
Iron	**66.2**	ug/L	50.0	9.1	1	06/11/24 09:35	06/12/24 11:28	7439-89-6	
Lead	**<3.8**	ug/L	10.0	3.8	1	06/11/24 09:35	06/12/24 11:28	7439-92-1	
Lithium	**24.0**	ug/L	10.0	3.7	1	06/11/24 09:35	06/12/24 11:28	7439-93-2	
Magnesium	**50400**	ug/L	50.0	20.1	1	06/11/24 09:35	06/12/24 11:28	7439-95-4	
Manganese	**315**	ug/L	5.0	0.39	1	06/11/24 09:35	06/12/24 11:28	7439-96-5	
Molybdenum	**10.6J**	ug/L	20.0	1.0	1	06/11/24 09:35	06/12/24 11:28	7439-98-7	
Potassium	**3740**	ug/L	500	69.7	1	06/11/24 09:35	06/12/24 11:28	7440-09-7	
Sodium	**45200**	ug/L	500	115	1	06/11/24 09:35	06/12/24 11:28	7440-23-5	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City								
Antimony	**0.23J**	ug/L	1.0	0.12	1	06/07/24 09:46	06/17/24 13:21	7440-36-0	
Arsenic	**0.79J**	ug/L	1.0	0.13	1	06/07/24 09:46	06/17/24 13:21	7440-38-2	
Cadmium	**0.93**	ug/L	0.50	0.050	1	06/07/24 09:46	06/17/24 13:21	7440-43-9	
Chromium	**0.49J**	ug/L	1.0	0.30	1	06/07/24 09:46	06/17/24 13:21	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	06/07/24 09:46	06/17/24 13:21	7782-49-2	
Thallium	**<0.14**	ug/L	1.0	0.14	1	06/07/24 09:46	06/17/24 13:21	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City								
Mercury	**<0.096**	ug/L	0.20	0.096	1	06/12/24 16:56	06/14/24 14:17	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**322**	mg/L	20.0	10.5	1		06/06/24 13:31		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**1110**	mg/L	13.3	13.3	1		06/06/24 09:27		
Iron, Ferric (Calculation)	Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City								
Iron, Ferric	**0.0J**	mg/L	0.050		1		06/18/24 00:00	20074-52-6	
Iron, Ferrous	Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City								
Iron, Ferrous	**0.068J**	mg/L	0.20	0.041	1		06/04/24 14:43	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Sample: S-LMW-6S **Lab ID: 60453812016** Collected: 05/31/24 12:06 Received: 06/01/24 07:05 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	**<0.016**	mg/L	0.050	0.016	1		06/04/24 13:37	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**23.9**	mg/L	2.0	1.1	2		06/17/24 17:52	16887-00-6	
Fluoride	**<0.12**	mg/L	0.20	0.12	1		06/14/24 18:11	16984-48-8	N2
Sulfate	**502**	mg/L	50.0	27.5	50		06/14/24 18:25	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Sample: S-PZ-1S **Lab ID: 60453812017** Collected: 05/30/24 10:50 Received: 06/01/24 07:05 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Barium	**89.4**	ug/L	5.0	0.64	1	06/11/24 09:35	06/12/24 11:30	7440-39-3	
Beryllium	**<0.12**	ug/L	1.0	0.12	1	06/11/24 09:35	06/12/24 11:30	7440-41-7	
Boron	**10200**	ug/L	100	6.4	1	06/11/24 09:35	06/12/24 11:30	7440-42-8	
Calcium	**81600**	ug/L	200	26.9	1	06/11/24 09:35	06/12/24 11:30	7440-70-2	
Cobalt	**<1.2**	ug/L	5.0	1.2	1	06/11/24 09:35	06/12/24 11:30	7440-48-4	
Iron	**5040**	ug/L	50.0	9.1	1	06/11/24 09:35	06/12/24 11:30	7439-89-6	
Lead	**<3.8**	ug/L	10.0	3.8	1	06/11/24 09:35	06/12/24 11:30	7439-92-1	
Lithium	**19.2**	ug/L	10.0	3.7	1	06/11/24 09:35	06/12/24 11:30	7439-93-2	
Magnesium	**17100**	ug/L	50.0	20.1	1	06/11/24 09:35	06/12/24 11:30	7439-95-4	
Manganese	**651**	ug/L	5.0	0.39	1	06/11/24 09:35	06/12/24 11:30	7439-96-5	
Molybdenum	**2110**	ug/L	20.0	1.0	1	06/11/24 09:35	06/12/24 11:30	7439-98-7	
Potassium	**1600**	ug/L	500	69.7	1	06/11/24 09:35	06/12/24 11:30	7440-09-7	
Sodium	**27800**	ug/L	500	115	1	06/11/24 09:35	06/12/24 11:30	7440-23-5	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City								
Antimony	**<0.12**	ug/L	1.0	0.12	1	06/07/24 09:46	06/17/24 13:23	7440-36-0	
Arsenic	**0.35J**	ug/L	1.0	0.13	1	06/07/24 09:46	06/17/24 13:23	7440-38-2	
Cadmium	**0.77**	ug/L	0.50	0.050	1	06/07/24 09:46	06/17/24 13:23	7440-43-9	
Chromium	**0.35J**	ug/L	1.0	0.30	1	06/07/24 09:46	06/17/24 13:23	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	06/07/24 09:46	06/17/24 13:23	7782-49-2	
Thallium	**<0.14**	ug/L	1.0	0.14	1	06/07/24 09:46	06/17/24 13:23	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City								
Mercury	**<0.19**	ug/L	0.40	0.19	1	06/12/24 16:56	06/14/24 14:24	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**254**	mg/L	20.0	10.5	1		06/06/24 13:37		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**452**	mg/L	10.0	10.0	1		06/05/24 10:00		
Iron, Ferric (Calculation)	Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City								
Iron, Ferric	**4.8**	mg/L	0.050		1		06/18/24 00:00	20074-52-6	
Iron, Ferrous	Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City								
Iron, Ferrous	**0.28**	mg/L	0.20	0.041	1		06/05/24 14:58	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Sample: S-PZ-1S **Lab ID: 60453812017** Collected: 05/30/24 10:50 Received: 06/01/24 07:05 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	**<0.016**	mg/L	0.050	0.016	1		06/04/24 13:37	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**27.0**	mg/L	20.0	10.5	20		06/14/24 18:52	16887-00-6	
Fluoride	**<0.12**	mg/L	0.20	0.12	1		06/14/24 18:39	16984-48-8	N2
Sulfate	**80.8**	mg/L	20.0	11.0	20		06/14/24 18:52	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Sample: S-PZ-9D **Lab ID: 60453812018** Collected: 05/31/24 10:53 Received: 06/01/24 07:05 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Barium	**76.0**	ug/L	5.0	0.64	1	06/11/24 09:35	06/12/24 11:32	7440-39-3	
Beryllium	**<0.12**	ug/L	1.0	0.12	1	06/11/24 09:35	06/12/24 11:32	7440-41-7	
Boron	**2700**	ug/L	100	6.4	1	06/11/24 09:35	06/12/24 11:32	7440-42-8	
Calcium	**109000**	ug/L	200	26.9	1	06/11/24 09:35	06/12/24 11:32	7440-70-2	
Cobalt	**<1.2**	ug/L	5.0	1.2	1	06/11/24 09:35	06/12/24 11:32	7440-48-4	
Iron	**7300**	ug/L	50.0	9.1	1	06/11/24 09:35	06/12/24 11:32	7439-89-6	
Lead	**<3.8**	ug/L	10.0	3.8	1	06/11/24 09:35	06/12/24 11:32	7439-92-1	
Lithium	**29.4**	ug/L	10.0	3.7	1	06/11/24 09:35	06/12/24 11:32	7439-93-2	
Magnesium	**27000**	ug/L	50.0	20.1	1	06/11/24 09:35	06/12/24 11:32	7439-95-4	
Manganese	**789**	ug/L	5.0	0.39	1	06/11/24 09:35	06/12/24 11:32	7439-96-5	
Molybdenum	**14.6J**	ug/L	20.0	1.0	1	06/11/24 09:35	06/12/24 11:32	7439-98-7	
Potassium	**3940**	ug/L	500	69.7	1	06/11/24 09:35	06/12/24 11:32	7440-09-7	
Sodium	**15900**	ug/L	500	115	1	06/11/24 09:35	06/12/24 11:32	7440-23-5	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City								
Antimony	**<0.12**	ug/L	1.0	0.12	1	06/07/24 09:46	06/17/24 13:31	7440-36-0	
Arsenic	**0.60J**	ug/L	1.0	0.13	1	06/07/24 09:46	06/17/24 13:31	7440-38-2	
Cadmium	**<0.050**	ug/L	0.50	0.050	1	06/07/24 09:46	06/17/24 13:31	7440-43-9	
Chromium	**1.2**	ug/L	1.0	0.30	1	06/07/24 09:46	06/17/24 13:31	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	06/07/24 09:46	06/17/24 13:31	7782-49-2	
Thallium	**<0.14**	ug/L	1.0	0.14	1	06/07/24 09:46	06/17/24 13:31	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City								
Mercury	**<0.096**	ug/L	0.20	0.096	1	06/12/24 16:56	06/14/24 14:26	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**280**	mg/L	20.0	10.5	1		06/06/24 13:43		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**617**	mg/L	10.0	10.0	1		06/06/24 09:27		
Iron, Ferric (Calculation)	Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City								
Iron, Ferric	**6.4**	mg/L	0.050		1		06/18/24 00:00	20074-52-6	
Iron, Ferrous	Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City								
Iron, Ferrous	**0.88**	mg/L	0.20	0.041	1		06/04/24 14:43	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Sample: S-PZ-9D **Lab ID: 60453812018** Collected: 05/31/24 10:53 Received: 06/01/24 07:05 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	**0.029J**	mg/L	0.050	0.016	1		06/04/24 13:37	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**7.2**	mg/L	1.0	0.53	1		06/14/24 19:06	16887-00-6	
Fluoride	**<0.12**	mg/L	0.20	0.12	1		06/14/24 19:06	16984-48-8	N2
Sulfate	**188**	mg/L	20.0	11.0	20		06/14/24 19:48	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Sample: S-TP-2D **Lab ID: 60453812019** Collected: 05/31/24 09:25 Received: 06/01/24 07:05 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Barium	**56.9**	ug/L	5.0	0.64	1	06/11/24 09:35	06/12/24 11:35	7440-39-3	
Beryllium	**<0.12**	ug/L	1.0	0.12	1	06/11/24 09:35	06/12/24 11:35	7440-41-7	
Boron	**84.3J**	ug/L	100	6.4	1	06/11/24 09:35	06/12/24 11:35	7440-42-8	
Calcium	**259000**	ug/L	200	26.9	1	06/11/24 09:35	06/12/24 11:35	7440-70-2	
Cobalt	**<1.2**	ug/L	5.0	1.2	1	06/11/24 09:35	06/12/24 11:35	7440-48-4	
Iron	**16000**	ug/L	50.0	9.1	1	06/11/24 09:35	06/12/24 11:35	7439-89-6	
Lead	**<3.8**	ug/L	10.0	3.8	1	06/11/24 09:35	06/12/24 11:35	7439-92-1	
Lithium	**51.4**	ug/L	10.0	3.7	1	06/11/24 09:35	06/12/24 11:35	7439-93-2	
Magnesium	**69200**	ug/L	50.0	20.1	1	06/11/24 09:35	06/12/24 11:35	7439-95-4	
Manganese	**1190**	ug/L	5.0	0.39	1	06/11/24 09:35	06/12/24 11:35	7439-96-5	
Molybdenum	**<1.0**	ug/L	20.0	1.0	1	06/11/24 09:35	06/12/24 11:35	7439-98-7	
Potassium	**5720**	ug/L	500	69.7	1	06/11/24 09:35	06/12/24 11:35	7440-09-7	
Sodium	**21000**	ug/L	500	115	1	06/11/24 09:35	06/12/24 11:35	7440-23-5	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City								
Antimony	**<0.12**	ug/L	1.0	0.12	1	06/07/24 09:46	06/17/24 13:34	7440-36-0	
Arsenic	**0.34J**	ug/L	1.0	0.13	1	06/07/24 09:46	06/17/24 13:34	7440-38-2	
Cadmium	**<0.050**	ug/L	0.50	0.050	1	06/07/24 09:46	06/17/24 13:34	7440-43-9	
Chromium	**0.31J**	ug/L	1.0	0.30	1	06/07/24 09:46	06/17/24 13:34	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	06/07/24 09:46	06/17/24 13:34	7782-49-2	
Thallium	**<0.14**	ug/L	1.0	0.14	1	06/07/24 09:46	06/17/24 13:34	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City								
Mercury	**<0.096**	ug/L	0.20	0.096	1	06/12/24 16:56	06/14/24 14:28	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**484**	mg/L	20.0	10.5	1		06/06/24 13:59		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**1280**	mg/L	20.0	20.0	1		06/06/24 09:27		
Iron, Ferric (Calculation)	Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City								
Iron, Ferric	**15.4**	mg/L	0.050		1		06/18/24 00:00	20074-52-6	
Iron, Ferrous	Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City								
Iron, Ferrous	**0.60**	mg/L	0.20	0.041	1		06/05/24 14:58	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Sample: S-TP-2D **Lab ID: 60453812019** Collected: 05/31/24 09:25 Received: 06/01/24 07:05 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	**<0.016**	mg/L	0.050	0.016	1		06/04/24 13:37	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**62.8**	mg/L	20.0	10.5	20		06/14/24 20:16	16887-00-6	
Fluoride	**<0.12**	mg/L	0.20	0.12	1		06/14/24 20:02	16984-48-8	N2
Sulfate	**712**	mg/L	50.0	27.5	50		06/17/24 18:04	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Sample: S-TP-3D **Lab ID: 60453812020** Collected: 05/31/24 11:02 Received: 06/01/24 07:05 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Barium	**565**	ug/L	5.0	0.64	1	06/11/24 09:35	06/12/24 11:37	7440-39-3	
Beryllium	**<0.12**	ug/L	1.0	0.12	1	06/11/24 09:35	06/12/24 11:37	7440-41-7	
Boron	**56.9J**	ug/L	100	6.4	1	06/11/24 09:35	06/12/24 11:37	7440-42-8	
Calcium	**117000**	ug/L	200	26.9	1	06/11/24 09:35	06/12/24 11:37	7440-70-2	
Cobalt	**<1.2**	ug/L	5.0	1.2	1	06/11/24 09:35	06/12/24 11:37	7440-48-4	
Iron	**7750**	ug/L	50.0	9.1	1	06/11/24 09:35	06/12/24 11:37	7439-89-6	
Lead	**<3.8**	ug/L	10.0	3.8	1	06/11/24 09:35	06/12/24 11:37	7439-92-1	
Lithium	**36.6**	ug/L	10.0	3.7	1	06/11/24 09:35	06/12/24 11:37	7439-93-2	
Magnesium	**28700**	ug/L	50.0	20.1	1	06/11/24 09:35	06/12/24 11:37	7439-95-4	
Manganese	**655**	ug/L	5.0	0.39	1	06/11/24 09:35	06/12/24 11:37	7439-96-5	
Molybdenum	**<1.0**	ug/L	20.0	1.0	1	06/11/24 09:35	06/12/24 11:37	7439-98-7	
Potassium	**3890**	ug/L	500	69.7	1	06/11/24 09:35	06/12/24 11:37	7440-09-7	
Sodium	**6750**	ug/L	500	115	1	06/11/24 09:35	06/12/24 11:37	7440-23-5	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City								
Antimony	**<0.12**	ug/L	1.0	0.12	1	06/07/24 09:46	06/17/24 13:36	7440-36-0	
Arsenic	**0.22J**	ug/L	1.0	0.13	1	06/07/24 09:46	06/17/24 13:36	7440-38-2	
Cadmium	**<0.050**	ug/L	0.50	0.050	1	06/07/24 09:46	06/17/24 13:36	7440-43-9	
Chromium	**0.39J**	ug/L	1.0	0.30	1	06/07/24 09:46	06/17/24 13:36	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	06/07/24 09:46	06/17/24 13:36	7782-49-2	
Thallium	**<0.14**	ug/L	1.0	0.14	1	06/07/24 09:46	06/17/24 13:36	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City								
Mercury	**<0.096**	ug/L	0.20	0.096	1	06/12/24 16:56	06/14/24 14:30	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**382**	mg/L	20.0	10.5	1		06/06/24 14:06		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**499**	mg/L	10.0	10.0	1		06/06/24 09:28		
Iron, Ferric (Calculation)	Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City								
Iron, Ferric	**7.3**	mg/L	0.050		1		06/18/24 00:00	20074-52-6	
Iron, Ferrous	Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City								
Iron, Ferrous	**0.45**	mg/L	0.20	0.041	1		06/04/24 14:43	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Sample: S-TP-3D **Lab ID: 60453812020** Collected: 05/31/24 11:02 Received: 06/01/24 07:05 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	**<0.016**	mg/L	0.050	0.016	1		06/04/24 13:37	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**8.6**	mg/L	1.0	0.53	1		06/15/24 12:14	16887-00-6	
Fluoride	**<0.12**	mg/L	0.20	0.12	1		06/15/24 12:14	16984-48-8	N2
Sulfate	**73.5**	mg/L	20.0	11.0	20		06/15/24 13:09	14808-79-8	D6,M1

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Sample: S-TP-4D **Lab ID: 60453812021** Collected: 05/29/24 16:20 Received: 06/01/24 07:05 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Barium	**450**	ug/L	5.0	0.64	1	06/11/24 09:35	06/12/24 11:46	7440-39-3	
Beryllium	**<0.12**	ug/L	1.0	0.12	1	06/11/24 09:35	06/12/24 11:46	7440-41-7	
Boron	**56.3J**	ug/L	100	6.4	1	06/11/24 09:35	06/12/24 11:46	7440-42-8	
Calcium	**116000**	ug/L	200	26.9	1	06/11/24 09:35	06/12/24 11:46	7440-70-2	
Cobalt	**<1.2**	ug/L	5.0	1.2	1	06/11/24 09:35	06/12/24 11:46	7440-48-4	
Iron	**6500**	ug/L	50.0	9.1	1	06/11/24 09:35	06/12/24 11:46	7439-89-6	
Lead	**<3.8**	ug/L	10.0	3.8	1	06/11/24 09:35	06/12/24 11:46	7439-92-1	
Lithium	**36.7**	ug/L	10.0	3.7	1	06/11/24 09:35	06/12/24 11:46	7439-93-2	
Magnesium	**27900**	ug/L	50.0	20.1	1	06/11/24 09:35	06/12/24 11:46	7439-95-4	
Manganese	**440**	ug/L	5.0	0.39	1	06/11/24 09:35	06/12/24 11:46	7439-96-5	
Molybdenum	**1.0J**	ug/L	20.0	1.0	1	06/11/24 09:35	06/12/24 11:46	7439-98-7	
Potassium	**3270**	ug/L	500	69.7	1	06/11/24 09:35	06/12/24 11:46	7440-09-7	
Sodium	**6880**	ug/L	500	115	1	06/11/24 09:35	06/12/24 11:46	7440-23-5	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City								
Antimony	**<0.12**	ug/L	1.0	0.12	1	06/07/24 09:46	06/17/24 13:46	7440-36-0	
Arsenic	**1.9**	ug/L	1.0	0.13	1	06/07/24 09:46	06/17/24 13:46	7440-38-2	
Cadmium	**<0.050**	ug/L	0.50	0.050	1	06/07/24 09:46	06/17/24 13:46	7440-43-9	
Chromium	**<0.30**	ug/L	1.0	0.30	1	06/07/24 09:46	06/17/24 13:46	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	06/07/24 09:46	06/17/24 13:46	7782-49-2	
Thallium	**<0.14**	ug/L	1.0	0.14	1	06/07/24 09:46	06/17/24 13:46	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City								
Mercury	**<0.096**	ug/L	0.20	0.096	1	06/12/24 16:56	06/14/24 14:37	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**332**	mg/L	20.0	10.5	1		06/06/24 14:18		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**479**	mg/L	10.0	10.0	1		06/04/24 10:46		
Iron, Ferric (Calculation)	Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City								
Iron, Ferric	**6.2**	mg/L	0.050		1		06/18/24 00:00	20074-52-6	
Iron, Ferrous	Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City								
Iron, Ferrous	**0.32**	mg/L	0.20	0.041	1		06/05/24 14:58	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Sample: S-TP-4D **Lab ID: 60453812021** Collected: 05/29/24 16:20 Received: 06/01/24 07:05 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	**0.018J**	mg/L	0.050	0.016	1		06/04/24 13:37	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**8.3**	mg/L	1.0	0.53	1		06/14/24 20:29	16887-00-6	
Fluoride	**<0.12**	mg/L	0.20	0.12	1		06/14/24 20:29	16984-48-8	N2
Sulfate	**106**	mg/L	20.0	11.0	20		06/14/24 20:43	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Sample: S-CA-DUP-2 **Lab ID: 60453812022** Collected: 05/31/24 00:00 Received: 06/01/24 07:05 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Barium	**58.4**	ug/L	5.0	0.64	1	06/11/24 09:35	06/12/24 11:48	7440-39-3	
Beryllium	**<0.12**	ug/L	1.0	0.12	1	06/11/24 09:35	06/12/24 11:48	7440-41-7	
Boron	**80.8J**	ug/L	100	6.4	1	06/11/24 09:35	06/12/24 11:48	7440-42-8	
Calcium	**268000**	ug/L	200	26.9	1	06/11/24 09:35	06/12/24 11:48	7440-70-2	
Cobalt	**<1.2**	ug/L	5.0	1.2	1	06/11/24 09:35	06/12/24 11:48	7440-48-4	
Iron	**16400**	ug/L	50.0	9.1	1	06/11/24 09:35	06/12/24 11:48	7439-89-6	
Lead	**<3.8**	ug/L	10.0	3.8	1	06/11/24 09:35	06/12/24 11:48	7439-92-1	
Lithium	**55.2**	ug/L	10.0	3.7	1	06/11/24 09:35	06/12/24 11:48	7439-93-2	
Magnesium	**71200**	ug/L	50.0	20.1	1	06/11/24 09:35	06/12/24 11:48	7439-95-4	
Manganese	**1230**	ug/L	5.0	0.39	1	06/11/24 09:35	06/12/24 11:48	7439-96-5	
Molybdenum	**<1.0**	ug/L	20.0	1.0	1	06/11/24 09:35	06/12/24 11:48	7439-98-7	
Potassium	**5880**	ug/L	500	69.7	1	06/11/24 09:35	06/12/24 11:48	7440-09-7	
Sodium	**21700**	ug/L	500	115	1	06/11/24 09:35	06/12/24 11:48	7440-23-5	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City								
Antimony	**<0.12**	ug/L	1.0	0.12	1	06/07/24 09:46	06/17/24 13:49	7440-36-0	
Arsenic	**0.36J**	ug/L	1.0	0.13	1	06/07/24 09:46	06/17/24 13:49	7440-38-2	
Cadmium	**<0.050**	ug/L	0.50	0.050	1	06/07/24 09:46	06/17/24 13:49	7440-43-9	
Chromium	**0.34J**	ug/L	1.0	0.30	1	06/07/24 09:46	06/17/24 13:49	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	06/07/24 09:46	06/17/24 13:49	7782-49-2	
Thallium	**<0.14**	ug/L	1.0	0.14	1	06/07/24 09:46	06/17/24 13:49	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City								
Mercury	**<0.096**	ug/L	0.20	0.096	1	06/12/24 16:56	06/14/24 14:40	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**505**	mg/L	20.0	10.5	1		06/06/24 14:24		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**1270**	mg/L	20.0	20.0	1		06/06/24 09:28		
Iron, Ferric (Calculation)	Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City								
Iron, Ferric	**15.6**	mg/L	0.050		1		06/18/24 00:00	20074-52-6	
Iron, Ferrous	Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City								
Iron, Ferrous	**0.80**	mg/L	0.20	0.041	1		06/05/24 14:58	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Sample: S-CA-DUP-2 **Lab ID: 60453812022** Collected: 05/31/24 00:00 Received: 06/01/24 07:05 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	**<0.016**	mg/L	0.050	0.016	1		06/04/24 13:37	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**66.8**	mg/L	20.0	10.5	20		06/14/24 21:11	16887-00-6	
Fluoride	**<0.12**	mg/L	0.20	0.12	1		06/14/24 20:57	16984-48-8	N2
Sulfate	**479**	mg/L	50.0	27.5	50		06/17/24 18:16	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Sample: S-CA-FB-2 **Lab ID: 60453812023** Collected: 05/31/24 11:00 Received: 06/01/24 07:05 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Barium	**<0.64**	ug/L	5.0	0.64	1	06/11/24 09:35	06/12/24 11:50	7440-39-3	
Beryllium	**<0.12**	ug/L	1.0	0.12	1	06/11/24 09:35	06/12/24 11:50	7440-41-7	
Boron	**<6.4**	ug/L	100	6.4	1	06/11/24 09:35	06/12/24 11:50	7440-42-8	
Calcium	**27.8J**	ug/L	200	26.9	1	06/11/24 09:35	06/12/24 11:50	7440-70-2	B
Cobalt	**<1.2**	ug/L	5.0	1.2	1	06/11/24 09:35	06/12/24 11:50	7440-48-4	
Iron	**<9.1**	ug/L	50.0	9.1	1	06/11/24 09:35	06/12/24 11:50	7439-89-6	
Lead	**<3.8**	ug/L	10.0	3.8	1	06/11/24 09:35	06/12/24 11:50	7439-92-1	
Lithium	**<3.7**	ug/L	10.0	3.7	1	06/11/24 09:35	06/12/24 11:50	7439-93-2	
Magnesium	**<20.1**	ug/L	50.0	20.1	1	06/11/24 09:35	06/12/24 11:50	7439-95-4	
Manganese	**<0.39**	ug/L	5.0	0.39	1	06/11/24 09:35	06/12/24 11:50	7439-96-5	
Molybdenum	**<1.0**	ug/L	20.0	1.0	1	06/11/24 09:35	06/12/24 11:50	7439-98-7	
Potassium	**<69.7**	ug/L	500	69.7	1	06/11/24 09:35	06/12/24 11:50	7440-09-7	
Sodium	**<115**	ug/L	500	115	1	06/11/24 09:35	06/12/24 11:50	7440-23-5	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City								
Antimony	**<0.12**	ug/L	1.0	0.12	1	06/07/24 09:46	06/17/24 13:52	7440-36-0	
Arsenic	**<0.13**	ug/L	1.0	0.13	1	06/07/24 09:46	06/17/24 13:52	7440-38-2	
Cadmium	**<0.050**	ug/L	0.50	0.050	1	06/07/24 09:46	06/17/24 13:52	7440-43-9	
Chromium	**0.32J**	ug/L	1.0	0.30	1	06/07/24 09:46	06/17/24 13:52	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	06/07/24 09:46	06/17/24 13:52	7782-49-2	
Thallium	**<0.14**	ug/L	1.0	0.14	1	06/07/24 09:46	06/17/24 13:52	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Pace Analytical Services - Kansas City								
Mercury	**<0.096**	ug/L	0.20	0.096	1	06/12/24 16:56	06/14/24 14:42	7439-97-6	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**<10.5**	mg/L	20.0	10.5	1		06/06/24 14:31		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**7.5**	mg/L	5.0	5.0	1		06/06/24 09:28		
Iron, Ferric (Calculation)	Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City								
Iron, Ferric	**0.0J**	mg/L	0.050		1		06/18/24 00:00	20074-52-6	
Iron, Ferrous	Analytical Method: SM 3500-Fe B#4 Pace Analytical Services - Kansas City								
Iron, Ferrous	**0.044J**	mg/L	0.20	0.041	1		06/04/24 14:43	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Sample: S-CA-FB-2 **Lab ID: 60453812023** Collected: 05/31/24 11:00 Received: 06/01/24 07:05 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
4500S2D Sulfide, Total	Analytical Method: SM 4500-S-2 D Pace Analytical Services - Kansas City								
Sulfide, Total	**<0.016**	mg/L	0.050	0.016	1		06/04/24 13:37	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**<0.53**	mg/L	1.0	0.53	1		06/14/24 21:25	16887-00-6	
Fluoride	**<0.12**	mg/L	0.20	0.12	1		06/14/24 21:25	16984-48-8	N2
Sulfate	**<0.55**	mg/L	1.0	0.55	1		06/14/24 21:25	14808-79-8	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

QC Batch: 897906
QC Batch Method: EPA 7470
Analysis Method: EPA 7470
Analysis Description: 7470 Mercury
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60453812001, 60453812002, 60453812003, 60453812004, 60453812005, 60453812006, 60453812007, 60453812008, 60453812009, 60453812010, 60453812011, 60453812012, 60453812013

METHOD BLANK: 3554377 Matrix: Water
Associated Lab Samples: 60453812001, 60453812002, 60453812003, 60453812004, 60453812005, 60453812006, 60453812007, 60453812008, 60453812009, 60453812010, 60453812011, 60453812012, 60453812013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	<0.096	0.20	0.096	06/13/24 15:50	

LABORATORY CONTROL SAMPLE: 3554378

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.8	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3554379 3554380

Parameter	Units	60453166015 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	<0.096	5	5	4.7	4.8	94	96	75-125	3	20	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

QC Batch: 897909
QC Batch Method: EPA 7470
Analysis Method: EPA 7470
Analysis Description: 7470 Mercury
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60453812014, 60453812015, 60453812016, 60453812017, 60453812018, 60453812019, 60453812020, 60453812021, 60453812022, 60453812023

METHOD BLANK: 3554389 Matrix: Water
Associated Lab Samples: 60453812014, 60453812015, 60453812016, 60453812017, 60453812018, 60453812019, 60453812020, 60453812021, 60453812022, 60453812023

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	<0.096	0.20	0.096	06/14/24 13:40	

LABORATORY CONTROL SAMPLE: 3554390

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.6	92	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3554391 3554392

Parameter	Units	60453805003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	<0.096	5	5	4.7	4.6	93	91	75-125	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3554393 3554394

Parameter	Units	60453812020 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	<0.096	5	5	4.4	4.5	89	89	75-125	1	20	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

QC Batch: 896847
QC Batch Method: EPA 200.7
Analysis Method: EPA 200.7
Analysis Description: 200.7 Metals, Total
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60453812001, 60453812002, 60453812003, 60453812004, 60453812005, 60453812006, 60453812007, 60453812008, 60453812009, 60453812010, 60453812011, 60453812012, 60453812013

METHOD BLANK: 3549596 Matrix: Water
Associated Lab Samples: 60453812001, 60453812002, 60453812003, 60453812004, 60453812005, 60453812006, 60453812007, 60453812008, 60453812009, 60453812010, 60453812011, 60453812012, 60453812013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<0.64	5.0	0.64	06/07/24 11:57	
Beryllium	ug/L	<0.12	1.0	0.12	06/07/24 11:57	
Boron	ug/L	<6.4	100	6.4	06/07/24 11:57	
Calcium	ug/L	<26.9	200	26.9	06/07/24 11:57	
Cobalt	ug/L	<1.2	5.0	1.2	06/07/24 11:57	
Iron	ug/L	<9.1	50.0	9.1	06/07/24 11:57	
Lead	ug/L	<3.8	10.0	3.8	06/07/24 11:57	
Lithium	ug/L	<3.7	10.0	3.7	06/07/24 11:57	
Magnesium	ug/L	<20.1	50.0	20.1	06/07/24 11:57	
Manganese	ug/L	<0.39	5.0	0.39	06/07/24 11:57	
Molybdenum	ug/L	1.1J	20.0	1.0	06/07/24 11:57	
Potassium	ug/L	<69.7	500	69.7	06/07/24 11:57	
Sodium	ug/L	<115	500	115	06/07/24 11:57	

LABORATORY CONTROL SAMPLE: 3549597

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	1010	101	85-115	
Beryllium	ug/L	1000	1020	102	85-115	
Boron	ug/L	1000	954	95	85-115	
Calcium	ug/L	10000	10200	102	85-115	
Cobalt	ug/L	1000	1060	106	85-115	
Iron	ug/L	10000	10300	103	85-115	
Lead	ug/L	1000	1020	102	85-115	
Lithium	ug/L	1000	1030	103	85-115	
Magnesium	ug/L	10000	9920	99	85-115	
Manganese	ug/L	1000	1040	104	85-115	
Molybdenum	ug/L	1000	1020	102	85-115	
Potassium	ug/L	10000	10000	100	85-115	
Sodium	ug/L	10000	10100	101	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3549598 3549599

Parameter	Units	60453805002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Barium	ug/L	669	1000	1000	1680	1680	101	101	70-130	0	20	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3549598 3549599

Parameter	Units	60453805002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Beryllium	ug/L	0.26J	1000	1000	1050	1040	105	104	70-130	1	20	
Boron	ug/L	64.1J	1000	1000	1030	1020	96	96	70-130	1	20	
Calcium	ug/L	112000	10000	10000	122000	121000	99	91	70-130	1	20	
Cobalt	ug/L	<1.2	1000	1000	1050	1030	105	103	70-130	2	20	
Iron	ug/L	8240	10000	10000	18500	18500	102	103	70-130	0	20	
Lead	ug/L	<3.8	1000	1000	1010	1000	101	100	70-130	1	20	
Lithium	ug/L	23.0	1000	1000	1070	1060	104	104	70-130	1	20	
Magnesium	ug/L	25600	10000	10000	35600	35100	100	96	70-130	1	20	
Manganese	ug/L	572	1000	1000	1610	1580	104	101	70-130	2	20	
Molybdenum	ug/L	1.8J	1000	1000	1040	1020	103	101	70-130	2	20	
Potassium	ug/L	3410	10000	10000	13600	13400	102	100	70-130	1	20	
Sodium	ug/L	6260	10000	10000	16300	16300	100	101	70-130	0	20	

MATRIX SPIKE SAMPLE: 3549600

Parameter	Units	60453812008 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	301	1000	1310	101	70-130	
Beryllium	ug/L	<0.12	1000	1050	105	70-130	
Boron	ug/L	113	1000	1060	95	70-130	
Calcium	ug/L	144000	10000	150000	62	70-130	M1
Cobalt	ug/L	<1.2	1000	1040	104	70-130	
Iron	ug/L	33.4J	10000	10300	102	70-130	
Lead	ug/L	<3.8	1000	1000	100	70-130	
Lithium	ug/L	37.1	1000	1090	105	70-130	
Magnesium	ug/L	30000	10000	39100	91	70-130	
Manganese	ug/L	232	1000	1260	103	70-130	
Molybdenum	ug/L	4.5J	1000	1030	102	70-130	
Potassium	ug/L	2300	10000	12500	102	70-130	
Sodium	ug/L	5820	10000	16000	102	70-130	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

QC Batch: 897579
QC Batch Method: EPA 200.7
Analysis Method: EPA 200.7
Analysis Description: 200.7 Metals, Total
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60453812014, 60453812015, 60453812016, 60453812017, 60453812018, 60453812019, 60453812020, 60453812021, 60453812022, 60453812023

METHOD BLANK: 3553144 Matrix: Water
Associated Lab Samples: 60453812014, 60453812015, 60453812016, 60453812017, 60453812018, 60453812019, 60453812020, 60453812021, 60453812022, 60453812023

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<0.64	5.0	0.64	06/12/24 11:06	
Beryllium	ug/L	<0.12	1.0	0.12	06/12/24 11:06	
Boron	ug/L	<6.4	100	6.4	06/12/24 11:06	
Calcium	ug/L	28.7J	200	26.9	06/12/24 11:06	
Cobalt	ug/L	<1.2	5.0	1.2	06/12/24 11:06	
Iron	ug/L	<9.1	50.0	9.1	06/12/24 11:06	
Lead	ug/L	<3.8	10.0	3.8	06/12/24 11:06	
Lithium	ug/L	<3.7	10.0	3.7	06/12/24 11:06	
Magnesium	ug/L	<20.1	50.0	20.1	06/12/24 11:06	
Manganese	ug/L	<0.39	5.0	0.39	06/12/24 11:06	
Molybdenum	ug/L	<1.0	20.0	1.0	06/12/24 11:06	
Potassium	ug/L	<69.7	500	69.7	06/12/24 11:06	
Sodium	ug/L	<115	500	115	06/12/24 11:06	

LABORATORY CONTROL SAMPLE: 3553145

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	1000	100	85-115	
Beryllium	ug/L	1000	1010	101	85-115	
Boron	ug/L	1000	952	95	85-115	
Calcium	ug/L	10000	10100	101	85-115	
Cobalt	ug/L	1000	1040	104	85-115	
Iron	ug/L	10000	9970	100	85-115	
Lead	ug/L	1000	1040	104	85-115	
Lithium	ug/L	1000	1000	100	85-115	
Magnesium	ug/L	10000	9880	99	85-115	
Manganese	ug/L	1000	1030	103	85-115	
Molybdenum	ug/L	1000	999	100	85-115	
Potassium	ug/L	10000	9750	97	85-115	
Sodium	ug/L	10000	9980	100	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3553146 3553147

Parameter	Units	60453815004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Barium	ug/L	121	1000	1000	1110	1130	99	101	70-130	2	20	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3553146 3553147

Parameter	Units	60453815004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Beryllium	ug/L	<0.12	1000	1000	994	1020	99	102	70-130	3	20	
Boron	ug/L	5390	1000	1000	6320	6440	93	105	70-130	2	20	
Calcium	ug/L	235000	10000	10000	241000	248000	63	129	70-130	3	20	M1
Cobalt	ug/L	8.8	1000	1000	1000	1030	99	102	70-130	3	20	
Iron	ug/L	<9.1	10000	10000	9880	10100	99	101	70-130	2	20	
Lead	ug/L	<3.8	1000	1000	987	1010	99	101	70-130	2	20	
Lithium	ug/L	35.2	1000	1000	1050	1080	102	104	70-130	3	20	
Magnesium	ug/L	58100	10000	10000	67400	69300	93	112	70-130	3	20	
Manganese	ug/L	1160	1000	1000	2140	2200	98	104	70-130	3	20	
Molybdenum	ug/L	105	1000	1000	1110	1140	100	103	70-130	3	20	
Potassium	ug/L	5340	10000	10000	15100	15700	98	103	70-130	3	20	
Sodium	ug/L	68200	10000	10000	76900	78900	87	107	70-130	3	20	

MATRIX SPIKE SAMPLE: 3553149

Parameter	Units	60453812020 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	565	1000	1560	100	70-130	
Beryllium	ug/L	<0.12	1000	1010	101	70-130	
Boron	ug/L	56.9J	1000	1010	95	70-130	
Calcium	ug/L	117000	10000	126000	95	70-130	
Cobalt	ug/L	<1.2	1000	1010	101	70-130	
Iron	ug/L	7750	10000	17900	101	70-130	
Lead	ug/L	<3.8	1000	1010	101	70-130	
Lithium	ug/L	36.6	1000	1060	102	70-130	
Magnesium	ug/L	28700	10000	38300	96	70-130	
Manganese	ug/L	655	1000	1650	100	70-130	
Molybdenum	ug/L	<1.0	1000	1000	100	70-130	
Potassium	ug/L	3890	10000	13800	99	70-130	
Sodium	ug/L	6750	10000	16800	100	70-130	

SAMPLE DUPLICATE: 3554404

Parameter	Units	60453812018 Result	Dup Result	RPD	Max RPD	Qualifiers
Barium	ug/L	76.0	79.5	4	20	
Beryllium	ug/L	<0.12	<0.12		20	
Boron	ug/L	2700	2830	5	20	
Calcium	ug/L	109000	116000	6	20	
Cobalt	ug/L	<1.2	<1.2		20	
Iron	ug/L	7300	7630	4	19	
Lead	ug/L	<3.8	<3.8		27	
Lithium	ug/L	29.4	31.9	8	20	
Magnesium	ug/L	27000	28700	6	20	
Manganese	ug/L	789	827	5	12	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

SAMPLE DUPLICATE: 3554404

Parameter	Units	60453812018 Result	Dup Result	RPD	Max RPD	Qualifiers
Molybdenum	ug/L	14.6J	15.1J		20	
Potassium	ug/L	3940	4200	6	20	
Sodium	ug/L	15900	16800	5	20	

SAMPLE DUPLICATE: 3554413

Parameter	Units	60453812020 Result	Dup Result	RPD	Max RPD	Qualifiers
Barium	ug/L	565	560	1	20	
Beryllium	ug/L	<0.12	<0.12		20	
Boron	ug/L	56.9J	54.3J		20	
Calcium	ug/L	117000	119000	2	20	
Cobalt	ug/L	<1.2	<1.2		20	
Iron	ug/L	7750	7690	1	19	
Lead	ug/L	<3.8	<3.8		27	
Lithium	ug/L	36.6	36.7	0	20	
Magnesium	ug/L	28700	29300	2	20	
Manganese	ug/L	655	650	1	12	
Molybdenum	ug/L	<1.0	<1.0		20	
Potassium	ug/L	3890	3860	1	20	
Sodium	ug/L	6750	6760	0	20	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

QC Batch: 896849
QC Batch Method: EPA 200.8
Analysis Method: EPA 200.8
Analysis Description: 200.8 MET
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60453812001, 60453812002, 60453812003, 60453812004, 60453812005, 60453812006, 60453812007, 60453812008, 60453812009, 60453812010, 60453812011, 60453812012, 60453812013

METHOD BLANK: 3549607 Matrix: Water
Associated Lab Samples: 60453812001, 60453812002, 60453812003, 60453812004, 60453812005, 60453812006, 60453812007, 60453812008, 60453812009, 60453812010, 60453812011, 60453812012, 60453812013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.12	1.0	0.12	06/14/24 15:19	
Arsenic	ug/L	<0.13	1.0	0.13	06/14/24 15:19	
Cadmium	ug/L	<0.050	0.50	0.050	06/14/24 15:19	
Chromium	ug/L	<0.30	1.0	0.30	06/14/24 15:19	
Selenium	ug/L	<0.18	1.0	0.18	06/14/24 15:19	
Thallium	ug/L	<0.14	1.0	0.14	06/14/24 15:19	

LABORATORY CONTROL SAMPLE: 3549608

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	41.3	103	85-115	
Arsenic	ug/L	40	42.4	106	85-115	
Cadmium	ug/L	40	42.7	107	85-115	
Chromium	ug/L	40	43.6	109	85-115	
Selenium	ug/L	40	42.8	107	85-115	
Thallium	ug/L	40	40.9	102	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3549609 3549610

Parameter	Units	60453805001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	<0.12	40	40	39.6	39.0	99	97	70-130	2	20	
Arsenic	ug/L	0.23J	40	40	41.3	41.2	103	102	70-130	0	20	
Cadmium	ug/L	<0.050	40	40	40.0	39.7	100	99	70-130	1	20	
Chromium	ug/L	<0.30	40	40	42.3	42.3	105	105	70-130	0	20	
Selenium	ug/L	<0.18	40	40	39.9	39.9	100	100	70-130	0	20	
Thallium	ug/L	<0.14	40	40	41.1	41.2	103	103	70-130	0	20	

MATRIX SPIKE SAMPLE: 3549611

Parameter	Units	60453812009 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	<0.12	40	39.3	98	70-130	
Arsenic	ug/L	<0.13	40	40.5	101	70-130	
Cadmium	ug/L	<0.050	40	39.4	99	70-130	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

MATRIX SPIKE SAMPLE: 3549611

Parameter	Units	60453812009 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chromium	ug/L	<0.30	40	42.6	106	70-130	
Selenium	ug/L	<0.18	40	39.5	99	70-130	
Thallium	ug/L	<0.14	40	41.4	103	70-130	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

QC Batch: 897099
QC Batch Method: EPA 200.8
Analysis Method: EPA 200.8
Analysis Description: 200.8 MET
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60453812014, 60453812015, 60453812016, 60453812017, 60453812018, 60453812019, 60453812020, 60453812021, 60453812022, 60453812023

METHOD BLANK: 3550854 Matrix: Water
Associated Lab Samples: 60453812014, 60453812015, 60453812016, 60453812017, 60453812018, 60453812019, 60453812020, 60453812021, 60453812022, 60453812023

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.12	1.0	0.12	06/17/24 12:47	
Arsenic	ug/L	<0.13	1.0	0.13	06/17/24 12:47	
Cadmium	ug/L	<0.050	0.50	0.050	06/17/24 12:47	
Chromium	ug/L	<0.30	1.0	0.30	06/17/24 12:47	
Selenium	ug/L	<0.18	1.0	0.18	06/17/24 12:47	
Thallium	ug/L	<0.14	1.0	0.14	06/17/24 12:47	

LABORATORY CONTROL SAMPLE: 3550855

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	42.8	107	85-115	
Arsenic	ug/L	40	39.7	99	85-115	
Cadmium	ug/L	40	43.6	109	85-115	
Chromium	ug/L	40	40.3	101	85-115	
Selenium	ug/L	40	39.6	99	85-115	
Thallium	ug/L	40	37.0	93	85-115	

MATRIX SPIKE SAMPLE: 3550856

Parameter	Units	60453812017 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	<0.12	40	38.2	95	70-130	
Arsenic	ug/L	0.35J	40	39.6	98	70-130	
Cadmium	ug/L	0.77	40	39.1	96	70-130	
Chromium	ug/L	0.35J	40	39.8	99	70-130	
Selenium	ug/L	<0.18	40	37.9	94	70-130	
Thallium	ug/L	<0.14	40	38.8	97	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3550857 3550858

Parameter	Units	60453812020 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	<0.12	40	40	38.4	38.8	96	97	70-130	1	20	
Arsenic	ug/L	0.22J	40	40	39.8	40.1	99	100	70-130	1	20	
Cadmium	ug/L	<0.050	40	40	39.0	39.5	98	99	70-130	1	20	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3550857 3550858

Parameter	Units	60453812020 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chromium	ug/L	0.39J	40	40	40.3	40.8	100	101	70-130	1	20	
Selenium	ug/L	<0.18	40	40	38.7	39.2	97	98	70-130	1	20	
Thallium	ug/L	<0.14	40	40	39.5	40.1	99	100	70-130	1	20	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

QC Batch: 896743
QC Batch Method: SM 2320B
Analysis Method: SM 2320B
Analysis Description: 2320B Alkalinity
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60453812001, 60453812002, 60453812003, 60453812004, 60453812005, 60453812006, 60453812007, 60453812008, 60453812009, 60453812010

METHOD BLANK: 3549169 Matrix: Water
Associated Lab Samples: 60453812001, 60453812002, 60453812003, 60453812004, 60453812005, 60453812006, 60453812007, 60453812008, 60453812009, 60453812010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<10.5	20.0	10.5	06/05/24 16:02	

LABORATORY CONTROL SAMPLE: 3549170

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	518	104	90-110	

SAMPLE DUPLICATE: 3549171

Parameter	Units	60453805003 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	265	265	0	10	

SAMPLE DUPLICATE: 3549172

Parameter	Units	60453812001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	408	413	1	10	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

QC Batch: 896830 — Analysis Method: SM 2320B
QC Batch Method: SM 2320B — Analysis Description: 2320B Alkalinity
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60453812011, 60453812012, 60453812013, 60453812014, 60453812015, 60453812016, 60453812017, 60453812018, 60453812019, 60453812020, 60453812021, 60453812022, 60453812023

METHOD BLANK: 3549482 — Matrix: Water
Associated Lab Samples: 60453812011, 60453812012, 60453812013, 60453812014, 60453812015, 60453812016, 60453812017, 60453812018, 60453812019, 60453812020, 60453812021, 60453812022, 60453812023

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<10.5	20.0	10.5	06/06/24 12:54	

LABORATORY CONTROL SAMPLE: 3549483

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	512	102	90-110	

SAMPLE DUPLICATE: 3549484

Parameter	Units	60453812020 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	382	382	0	10	

SAMPLE DUPLICATE: 3549485

Parameter	Units	60453815004 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	370	371	0	10	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

QC Batch: 896436
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60453812001, 60453812002, 60453812007, 60453812008, 60453812009, 60453812011, 60453812012, 60453812013

METHOD BLANK: 3548054 Matrix: Water
Associated Lab Samples: 60453812001, 60453812002, 60453812007, 60453812008, 60453812009, 60453812011, 60453812012, 60453812013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	06/03/24 13:04	

LABORATORY CONTROL SAMPLE: 3548055

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	931	93	80-120	

SAMPLE DUPLICATE: 3548056

Parameter	Units	60453848004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	3530	3930	11	10	D6,H1

SAMPLE DUPLICATE: 3548057

Parameter	Units	60453812008 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	481	489	2	10	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

QC Batch: 896439 | Analysis Method: SM 2540C
QC Batch Method: SM 2540C | Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60453812003, 60453812004, 60453812005, 60453812006, 60453812010

METHOD BLANK: 3548058 Matrix: Water
Associated Lab Samples: 60453812003, 60453812004, 60453812005, 60453812006, 60453812010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	06/04/24 12:47	

LABORATORY CONTROL SAMPLE: 3548059

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	973	97	80-120	

SAMPLE DUPLICATE: 3548060

Parameter	Units	60453775001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	2820	2660	6	10	

SAMPLE DUPLICATE: 3548067

Parameter	Units	60453819001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	381	394	3	10	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

QC Batch: 896638
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60453812021

METHOD BLANK: 3548689 Matrix: Water
Associated Lab Samples: 60453812021

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	06/04/24 10:43	

LABORATORY CONTROL SAMPLE: 3548690

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	923	92	80-120	

SAMPLE DUPLICATE: 3548691

Parameter	Units	60453931001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	198	195	1	10	H1

SAMPLE DUPLICATE: 3548692

Parameter	Units	60453954001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1710	1620	6	10	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

QC Batch: 896723
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60453812017

METHOD BLANK: 3549074 Matrix: Water
Associated Lab Samples: 60453812017

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	06/05/24 09:55	

LABORATORY CONTROL SAMPLE: 3549075

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	946	95	80-120	

SAMPLE DUPLICATE: 3549078

Parameter	Units	60453815004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1150	1230	7	10	

SAMPLE DUPLICATE: 3549079

Parameter	Units	60453817003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	531	530	0	10	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

QC Batch: 896817
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60453812014

METHOD BLANK: 3549433 Matrix: Water
Associated Lab Samples: 60453812014

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	06/05/24 12:20	

LABORATORY CONTROL SAMPLE: 3549434

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	909	91	80-120	

SAMPLE DUPLICATE: 3549437

Parameter	Units	60453818005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	465	467	0	10	

SAMPLE DUPLICATE: 3549438

Parameter	Units	60453805003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	423	415	2	10	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

QC Batch: 896890
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60453812015, 60453812016, 60453812018, 60453812019, 60453812020, 60453812022, 60453812023

METHOD BLANK: 3549805 Matrix: Water
Associated Lab Samples: 60453812015, 60453812016, 60453812018, 60453812019, 60453812020, 60453812022, 60453812023

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	06/06/24 09:26	

LABORATORY CONTROL SAMPLE: 3549806

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	873	87	80-120	

SAMPLE DUPLICATE: 3549807

Parameter	Units	60454084001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	445	440	1	10	

SAMPLE DUPLICATE: 3549809

Parameter	Units	60453812020 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	499	518	4	10	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

QC Batch: 896706
QC Batch Method: SM 3500-Fe B#4
Analysis Method: SM 3500-Fe B#4
Analysis Description: Iron, Ferrous
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60453812001, 60453812002, 60453812004, 60453812005, 60453812006, 60453812007, 60453812008, 60453812009, 60453812011, 60453812012, 60453812013

METHOD BLANK: 3548943 Matrix: Water
Associated Lab Samples: 60453812001, 60453812002, 60453812004, 60453812005, 60453812006, 60453812007, 60453812008, 60453812009, 60453812011, 60453812012, 60453812013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron, Ferrous	mg/L	<0.041	0.20	0.041	06/04/24 16:07	H6

LABORATORY CONTROL SAMPLE: 3548944

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron, Ferrous	mg/L	2	2.1	105	90-110	H6

SAMPLE DUPLICATE: 3548945

Parameter	Units	60453812012 Result	Dup Result	RPD	Max RPD	Qualifiers
Iron, Ferrous	mg/L	0.056J	0.068J		20	H6

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

QC Batch: 896707 | Analysis Method: SM 3500-Fe B#4
QC Batch Method: SM 3500-Fe B#4 | Analysis Description: Iron, Ferrous
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60453812003, 60453812010, 60453812017, 60453812019, 60453812021, 60453812022

METHOD BLANK: 3548952 Matrix: Water
Associated Lab Samples: 60453812003, 60453812010, 60453812017, 60453812019, 60453812021, 60453812022

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron, Ferrous	mg/L	<0.041	0.20	0.041	06/05/24 14:58	H6

LABORATORY CONTROL SAMPLE: 3548953

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron, Ferrous	mg/L	2.3	2.4	102	90-110	H6

SAMPLE DUPLICATE: 3548954

Parameter	Units	60453959006 Result	Dup Result	RPD	Max RPD	Qualifiers
Iron, Ferrous	mg/L	0.47	0.43	8	20	H6

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

QC Batch: 896708
QC Batch Method: SM 3500-Fe B#4
Analysis Method: SM 3500-Fe B#4
Analysis Description: Iron, Ferrous
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60453812014, 60453812015, 60453812016, 60453812018, 60453812020, 60453812023

METHOD BLANK: 3548962 Matrix: Water
Associated Lab Samples: 60453812014, 60453812015, 60453812016, 60453812018, 60453812020, 60453812023

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron, Ferrous	mg/L	<0.041	0.20	0.041	06/04/24 14:43	H6

LABORATORY CONTROL SAMPLE: 3548963

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron, Ferrous	mg/L	2	2.1	105	90-110	H6

SAMPLE DUPLICATE: 3548964

Parameter	Units	60453812018 Result	Dup Result	RPD	Max RPD	Qualifiers
Iron, Ferrous	mg/L	0.88	0.86	1	20	H6

SAMPLE DUPLICATE: 3548965

Parameter	Units	60453812020 Result	Dup Result	RPD	Max RPD	Qualifiers
Iron, Ferrous	mg/L	0.45	0.40	12	20	H6

SAMPLE DUPLICATE: 3548969

Parameter	Units	60453805003 Result	Dup Result	RPD	Max RPD	Qualifiers
Iron, Ferrous	mg/L	0.23	0.23	0	20	H6

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

QC Batch: 896396
QC Batch Method: SM 4500-S-2 D
Analysis Method: SM 4500-S-2 D
Analysis Description: 4500S2D Sulfide, Total
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60453812001, 60453812002, 60453812007, 60453812008, 60453812009, 60453812011, 60453812012, 60453812013

METHOD BLANK: 3547869 Matrix: Water
Associated Lab Samples: 60453812001, 60453812002, 60453812007, 60453812008, 60453812009, 60453812011, 60453812012, 60453812013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.016	0.050	0.016	06/03/24 10:33	

LABORATORY CONTROL SAMPLE: 3547870

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.5	0.47	94	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3547871 3547872

Parameter	Units	60453848004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfide, Total	mg/L	ND	5	5	32.2	32.8	644	656	75-125	2	20	H1,M1

SAMPLE DUPLICATE: 3547918

Parameter	Units	60453848004 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	ND	<1.6		20	H1

SAMPLE DUPLICATE: 3547919

Parameter	Units	60453848005 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	0.035J	0.029J		20	H1

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

QC Batch: 896406
QC Batch Method: SM 4500-S-2 D
Analysis Method: SM 4500-S-2 D
Analysis Description: 4500S2D Sulfide, Total
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60453812003, 60453812004, 60453812005, 60453812006, 60453812010

METHOD BLANK: 3547971 Matrix: Water
Associated Lab Samples: 60453812003, 60453812004, 60453812005, 60453812006, 60453812010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.016	0.050	0.016	06/03/24 10:33	

LABORATORY CONTROL SAMPLE: 3547972

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.5	0.47	95	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3547973 3547974

Parameter	Units	60453876001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfide, Total	mg/L	ND	0.5	0.5	0.30	0.33	57	64	75-125	11	20	M1

SAMPLE DUPLICATE: 3547977

Parameter	Units	60453876001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	ND	<0.016		20	

SAMPLE DUPLICATE: 3547978

Parameter	Units	60453876002 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	ND	<0.016		20	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

QC Batch: 896633
QC Batch Method: SM 4500-S-2 D
Analysis Method: SM 4500-S-2 D
Analysis Description: 4500S2D Sulfide, Total
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60453812014, 60453812015, 60453812016, 60453812017, 60453812018, 60453812019, 60453812020, 60453812021, 60453812022, 60453812023

METHOD BLANK: 3548665 Matrix: Water
Associated Lab Samples: 60453812014, 60453812015, 60453812016, 60453812017, 60453812018, 60453812019, 60453812020, 60453812021, 60453812022, 60453812023

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.016	0.050	0.016	06/04/24 13:37	

LABORATORY CONTROL SAMPLE: 3548666

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.5	0.46	93	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3548667 3548668

Parameter	Units	60453812021 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfide, Total	mg/L	0.018J	0.5	0.5	0.44	0.42	83	80	75-125	4	20	

SAMPLE DUPLICATE: 3548671

Parameter	Units	60453812021 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	0.018J	0.019J		20	

SAMPLE DUPLICATE: 3548672

Parameter	Units	60453805003 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.016	<0.016		20	

SAMPLE DUPLICATE: 3548673

Parameter	Units	60453957002 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.050	<0.016		20	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

SAMPLE DUPLICATE: 3548675

Parameter	Units	60453812020 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.016	<0.016		20	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

QC Batch: 897826
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60453812001, 60453812002, 60453812003, 60453812004, 60453812005, 60453812006, 60453812007, 60453812008, 60453812009, 60453812010, 60453812011, 60453812012, 60453812013

METHOD BLANK: 3554025 Matrix: Water
Associated Lab Samples: 60453812001, 60453812002, 60453812003, 60453812004, 60453812005, 60453812006, 60453812007, 60453812008, 60453812009, 60453812010, 60453812011, 60453812012, 60453812013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	06/11/24 17:27	
Fluoride	mg/L	<0.12	0.20	0.12	06/11/24 17:27	N2
Sulfate	mg/L	<0.55	1.0	0.55	06/11/24 17:27	

LABORATORY CONTROL SAMPLE: 3554026

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.6	92	90-110	
Fluoride	mg/L	2.5	2.4	98	90-110	N2
Sulfate	mg/L	5	5.2	104	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3554027 3554028

Parameter	Units	60453805001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	10.1	5	5	18.3	18.3	163	163	80-120	0	15	M1
Fluoride	mg/L	<0.12	2.5	2.5	4.5	4.5	180	179	80-120	0	15	M1,N2
Sulfate	mg/L	25.0	50	50	135	126	220	202	80-120	7	15	M1

MATRIX SPIKE SAMPLE: 3554029

Parameter	Units	60453812008 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	7.8	5	12.5	94	80-120	
Fluoride	mg/L	<0.12	2.5	2.5	102	80-120	N2
Sulfate	mg/L	41.3	50	94.3	106	80-120	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

QC Batch: 898111
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60453812014, 60453812015, 60453812016, 60453812017, 60453812018, 60453812019, 60453812021, 60453812022, 60453812023

METHOD BLANK: 3555140 Matrix: Water
Associated Lab Samples: 60453812014, 60453812015, 60453812016, 60453812017, 60453812018, 60453812019, 60453812021, 60453812022, 60453812023

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	06/14/24 14:16	
Fluoride	mg/L	<0.12	0.20	0.12	06/14/24 14:16	N2
Sulfate	mg/L	<0.55	1.0	0.55	06/14/24 14:16	

LABORATORY CONTROL SAMPLE: 3555141

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	5.0	99	90-110	
Fluoride	mg/L	2.5	2.6	105	90-110	N2
Sulfate	mg/L	5	5.3	105	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3555143 3555144

Parameter	Units	60453815004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	113	250	250	406	451	117	135	80-120	11	15	M1
Fluoride	mg/L	<0.12	2.5	2.5	3.5	3.6	141	144	80-120	3	15	M1,N2
Sulfate	mg/L	475	250	250	799	892	130	167	80-120	11	15	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3555145 3555146

Parameter	Units	60453817003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	11.2	5	5	18.8	18.2	154	140	80-120	4	15	M1
Fluoride	mg/L	0.16J	2.5	2.5	4.9	4.4	189	170	80-120	10	15	M1,N2
Sulfate	mg/L	64.7	50	50	138	140	147	151	80-120	1	15	M1

SAMPLE DUPLICATE: 3555142

Parameter	Units	60453815004 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	113	118	4	15	
Fluoride	mg/L	<0.12	<0.12		15	N2
Sulfate	mg/L	475	476	0	15	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

SAMPLE DUPLICATE: 3555147

Parameter	Units	60453817003 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	11.2	11.2	1	15	
Fluoride	mg/L	0.16J	<0.12		15	N2
Sulfate	mg/L	64.7	65.9	2	15	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

QC Batch: 898112
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60453812020

METHOD BLANK: 3555148 Matrix: Water
Associated Lab Samples: 60453812020

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	06/17/24 08:57	
Fluoride	mg/L	<0.12	0.20	0.12	06/17/24 08:57	N2
Sulfate	mg/L	<0.55	1.0	0.55	06/17/24 08:57	

LABORATORY CONTROL SAMPLE: 3555149

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.9	98	90-110	
Fluoride	mg/L	2.5	2.7	110	90-110	N2
Sulfate	mg/L	5	4.6	92	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3555151 3555152

Parameter	Units	60453812020 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	8.6	5	5	13.9	14.5	106	118	80-120	4	15	
Fluoride	mg/L	<0.12	2.5	2.5	2.5	2.6	101	105	80-120	4	15	N2
Sulfate	mg/L	73.5	100	100	193	219	119	145	80-120	13	15	M1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3555153 3555154

Parameter	Units	60453818005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	12.8	5	5	12.7	19.1	-2	127	80-120	41	15	M1,R1
Fluoride	mg/L	<0.12	2.5	2.5	<0.12	3.2	1	127	80-120		15	M1,N2
Sulfate	mg/L	57.6	50	50	55.6	121	-4	128	80-120	74	15	M1,R1

SAMPLE DUPLICATE: 3555150

Parameter	Units	60453812020 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	8.6	8.3	4	15	
Fluoride	mg/L	<0.12	<0.12		15	N2
Sulfate	mg/L	73.5	87.6	17	15	D6

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

SAMPLE DUPLICATE: 3555155

Parameter	Units	60453818005 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	12.8	17.8	32	15	D6
Fluoride	mg/L	<0.12	2.5		15	N2
Sulfate	mg/L	57.6	111	63	15	D6

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Sample: S-BMW-1S **Lab ID: 60453812001** Collected: 05/28/24 11:35 Received: 05/30/24 05:35 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**-0.222 ± 0.588 (1.07) C:NA T:93%**	pCi/L	06/22/24 14:15	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.550 ± 0.336 (0.617) C:93% T:84%**	pCi/L	06/20/24 15:57	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Sample: S-BMW-3S **Lab ID: 60453812002** Collected: 05/28/24 14:20 Received: 05/30/24 05:35 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.0662 ± 0.566 (0.953) C:NA T:95%**	pCi/L	06/22/24 14:15	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.220 ± 0.378 (0.824) C:88% T:87%**	pCi/L	06/20/24 15:57	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Sample: S-LMW-2S **Lab ID: 60453812003** Collected: 05/29/24 14:05 Received: 05/30/24 05:35 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**-0.511 ± 0.535 (1.03) C:NA T:95%**	pCi/L	06/22/24 14:15	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.407 ± 0.387 (0.794) C:85% T:87%**	pCi/L	06/20/24 15:57	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Sample: S-LMW-4S **Lab ID: 60453812004** Collected: 05/29/24 11:30 Received: 05/30/24 05:35 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
		Pace Analytical Services - Greensburg				
Radium-226	EPA 903.1	**1.00 ± 0.708 (0.964) C:NA T:93%**	pCi/L	06/22/24 14:15	13982-63-3	
		Pace Analytical Services - Greensburg				
Radium-228	EPA 904.0	**0.716 ± 0.545 (1.09) C:77% T:81%**	pCi/L	06/20/24 15:57	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Sample: S-AM-1S **Lab ID: 60453812005** Collected: 05/29/24 09:20 Received: 05/30/24 05:35 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**1.12 ± 0.780 (1.05) C:NA T:99%**	pCi/L	06/22/24 14:15	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**-0.0203 ± 0.328 (0.769) C:86% T:83%**	pCi/L	06/20/24 15:57	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Sample: S-AM-1D **Lab ID: 60453812006** Collected: 05/29/24 10:05 Received: 05/30/24 05:35 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**-0.0226 ± 0.450 (0.805) C:NA T:92%**	pCi/L	06/23/24 14:17	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.928 ± 0.508 (0.942) C:80% T:90%**	pCi/L	06/20/24 15:58	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Sample: S-TP-5D **Lab ID: 60453812007** Collected: 05/28/24 14:18 Received: 05/30/24 05:35 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
		Pace Analytical Services - Greensburg				
Radium-226	EPA 903.1	**0.0519 ± 0.631 (1.07) C:NA T:92%**	pCi/L	06/23/24 14:17	13982-63-3	
		Pace Analytical Services - Greensburg				
Radium-228	EPA 904.0	**0.738 ± 0.534 (1.05) C:73% T:82%**	pCi/L	06/20/24 15:58	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Sample: S-TP-6S **Lab ID: 60453812008** Collected: 05/28/24 11:17 Received: 05/30/24 05:35 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**-0.152 ± 0.585 (1.05) C:NA T:89%**	pCi/L	06/23/24 14:17	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.905 ± 0.493 (0.901) C:82% T:85%**	pCi/L	06/20/24 15:59	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Sample: S-TP-6D **Lab ID: 60453812009** Collected: 05/28/24 12:20 Received: 05/30/24 05:35 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.249 ± 0.557 (0.897) C:NA T:95%**	pCi/L	06/23/24 14:17	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**1.41 ± 0.561 (0.892) C:80% T:91%**	pCi/L	06/20/24 15:59	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Sample: S-TP-8D **Lab ID: 60453812010** Collected: 05/29/24 15:07 Received: 05/30/24 05:35 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.675 ± 0.663 (0.959) C:NA T:88%**	pCi/L	06/23/24 14:17	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**1.61 ± 0.622 (0.922) C:83% T:91%**	pCi/L	06/20/24 19:02	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Sample: S-UG-3 **Lab ID: 60453812011** Collected: 05/28/24 15:44 Received: 05/30/24 05:35 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.157 ± 0.766 (1.26) C:NA T:93%**	pCi/L	06/23/24 14:17	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.565 ± 0.442 (0.857) C:81% T:89%**	pCi/L	06/20/24 19:02	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Sample: S-CA-DUP-1 **Lab ID: 60453812012** Collected: 05/28/24 00:00 Received: 05/30/24 05:35 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.862 ± 0.919 (1.36) C:NA T:89%**	pCi/L	06/23/24 14:17	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.530 ± 0.447 (0.886) C:83% T:87%**	pCi/L	06/20/24 19:02	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Sample: S-CA-FB-1 **Lab ID: 60453812013** Collected: 05/28/24 14:44 Received: 05/30/24 05:35 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.144 ± 0.652 (1.08) C:NA T:98%**	pCi/L	06/23/24 14:35	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.184 ± 0.405 (0.899) C:88% T:86%**	pCi/L	06/20/24 19:02	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Sample: S-LMW-1S **Lab ID: 60453812014** Collected: 05/31/24 13:35 Received: 06/01/24 07:05 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.615 ± 0.881 (1.50) C:NA T:91%**	pCi/L	06/25/24 16:49	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.638 ± 0.386 (0.723) C:88% T:87%**	pCi/L	06/24/24 15:34	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Sample: S-LMW-5S **Lab ID: 60453812015** Collected: 05/31/24 12:58 Received: 06/01/24 07:05 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.199 ± 0.344 (0.615) C:NA T:88%**	pCi/L	06/25/24 16:49	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.223 ± 0.302 (0.645) C:94% T:87%**	pCi/L	06/24/24 15:35	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Sample: S-LMW-6S **Lab ID: 60453812016** Collected: 05/31/24 12:06 Received: 06/01/24 07:05 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.615 ± 0.901 (1.53) C:NA T:87%**	pCi/L	06/25/24 16:49	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.821 ± 0.371 (0.616) C:92% T:91%**	pCi/L	06/24/24 15:35	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Sample: S-PZ-1S **Lab ID: 60453812017** Collected: 05/30/24 10:50 Received: 06/01/24 07:05 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.302 ± 0.460 (0.718) C:NA T:91%**	pCi/L	06/25/24 16:49	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.481 ± 0.394 (0.791) C:87% T:83%**	pCi/L	06/24/24 15:35	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Sample: S-PZ-9D **Lab ID: 60453812018** Collected: 05/31/24 10:53 Received: 06/01/24 07:05 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.438 ± 0.508 (0.820) C:NA T:94%**	pCi/L	06/25/24 16:49	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.127 ± 0.309 (0.689) C:90% T:85%**	pCi/L	06/24/24 15:35	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Sample: S-TP-2D **Lab ID: 60453812019** Collected: 05/31/24 09:25 Received: 06/01/24 07:05 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**-0.340 ± 0.641 (1.37) C:NA T:92%**	pCi/L	06/25/24 16:49	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.836 ± 0.435 (0.780) C:86% T:85%**	pCi/L	06/24/24 15:35	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Sample: S-TP-3D **Lab ID: 60453812020** Collected: 05/31/24 11:02 Received: 06/01/24 07:05 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.953 ± 0.581 (0.735) C:NA T:90%**	pCi/L	06/25/24 16:49	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**1.01 ± 0.447 (0.729) C:81% T:85%**	pCi/L	06/24/24 15:34	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Sample: S-TP-4D **Lab ID: 60453812021** Collected: 05/29/24 16:20 Received: 06/01/24 07:05 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.662 ± 0.417 (0.179) C:NA T:90%**	pCi/L	06/25/24 17:06	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.690 ± 0.376 (0.665) C:90% T:84%**	pCi/L	06/24/24 15:34	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Sample: S-CA-DUP-2 **Lab ID: 60453812022** Collected: 05/31/24 00:00 Received: 06/01/24 07:05 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.353 ± 0.460 (0.759) C:NA T:93%**	pCi/L	06/25/24 17:06	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.493 ± 0.318 (0.595) C:95% T:88%**	pCi/L	06/24/24 15:34	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Sample: S-CA-FB-2 **Lab ID: 60453812023** Collected: 05/31/24 11:00 Received: 06/01/24 07:05 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**-0.133 ± 0.368 (0.869) C:NA T:89%**	pCi/L	06/25/24 17:06	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.125 ± 0.328 (0.734) C:87% T:79%**	pCi/L	06/24/24 15:34	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Sample: S-CA-MS-1 **Lab ID: 60453812024** Collected: 05/31/24 11:02 Received: 06/01/24 07:05 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**108.82 %REC ± NA (NA) C:NA T:NA**	pCi/L	06/25/24 17:30	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**90.43 %REC ± NA (NA) C:NA T:NA**	pCi/L	06/24/24 15:34	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Sample: S-CA-MSD-1 **Lab ID: 60453812025** Collected: 05/31/24 11:02 Received: 06/01/24 07:05 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**85.81 %REC 23.64RPD ± NA (NA) C:NA T:NA**	pCi/L	06/25/24 17:42	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**93.41 %REC 3.25RPD ± NA (NA) C:NA T:NA**	pCi/L	06/24/24 15:34	15262-20-1	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

QC Batch: 673167
QC Batch Method: EPA 904.0
Analysis Method: EPA 904.0
Analysis Description: 904.0 Radium 228
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 60453812001, 60453812002, 60453812003, 60453812004, 60453812005

METHOD BLANK: 3276831 Matrix: Water
Associated Lab Samples: 60453812001, 60453812002, 60453812003, 60453812004, 60453812005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.319 ± 0.335 (0.698) C:90% T:84%	pCi/L	06/20/24 12:40	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

QC Batch: 673177
QC Batch Method: EPA 904.0
Analysis Method: EPA 904.0
Analysis Description: 904.0 Radium 228
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 60453812006, 60453812007, 60453812008, 60453812009, 60453812010, 60453812011, 60453812012, 60453812013

METHOD BLANK: 3276837 Matrix: Water
Associated Lab Samples: 60453812006, 60453812007, 60453812008, 60453812009, 60453812010, 60453812011, 60453812012, 60453812013

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.313 ± 0.363 (0.765) C:85% T:89%	pCi/L	06/20/24 15:55	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

QC Batch: 674552
QC Batch Method: EPA 903.1
Analysis Method: EPA 903.1
Analysis Description: 903.1 Radium-226
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 60453812014, 60453812015, 60453812016, 60453812017, 60453812018, 60453812019, 60453812020, 60453812021, 60453812022, 60453812023, 60453812024, 60453812025

METHOD BLANK: 3284003 Matrix: Water
Associated Lab Samples: 60453812014, 60453812015, 60453812016, 60453812017, 60453812018, 60453812019, 60453812020, 60453812021, 60453812022, 60453812023, 60453812024, 60453812025

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.158 ± 0.310 (0.566) C:NA T:85%	pCi/L	06/25/24 16:49	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

QC Batch: 673166
QC Batch Method: EPA 903.1
Analysis Method: EPA 903.1
Analysis Description: 903.1 Radium-226
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 60453812001, 60453812002, 60453812003, 60453812004, 60453812005

METHOD BLANK: 3276828 Matrix: Water
Associated Lab Samples: 60453812001, 60453812002, 60453812003, 60453812004, 60453812005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	-0.0671 ± 0.237 (0.473) C:NA T:96%	pCi/L	06/22/24 13:39	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

QC Batch: 673174
QC Batch Method: EPA 903.1
Analysis Method: EPA 903.1
Analysis Description: 903.1 Radium-226
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 60453812006, 60453812007, 60453812008, 60453812009, 60453812010, 60453812011, 60453812012, 60453812013

METHOD BLANK: 3276836 Matrix: Water
Associated Lab Samples: 60453812006, 60453812007, 60453812008, 60453812009, 60453812010, 60453812011, 60453812012, 60453812013

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.289 ± 0.341 (0.509) C:NA T:91%	pCi/L	06/23/24 14:17	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

QC Batch: 674554
QC Batch Method: EPA 904.0
Analysis Method: EPA 904.0
Analysis Description: 904.0 Radium 228
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 60453812014, 60453812015, 60453812016, 60453812017, 60453812018, 60453812019, 60453812020, 60453812021, 60453812022, 60453812023, 60453812024, 60453812025

METHOD BLANK: 3284004 Matrix: Water
Associated Lab Samples: 60453812014, 60453812015, 60453812016, 60453812017, 60453812018, 60453812019, 60453812020, 60453812021, 60453812022, 60453812023, 60453812024, 60453812025

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	-0.0361 ± 0.335 (0.785) C:92% T:77%	pCi/L	06/24/24 15:34	

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QUALIFIERS

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval). Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

B	Analyte was detected in the associated method blank.
D6	The precision between the sample and sample duplicate exceeded laboratory control limits.
H1	Analysis conducted outside the EPA method holding time.
H6	Analysis initiated outside of the 15 minute EPA required holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
N2	The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.
R1	RPD value was outside control limits.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60453812001	**S-BMW-1S**	EPA 200.7	896847	EPA 200.7	897011
60453812002	**S-BMW-3S**	EPA 200.7	896847	EPA 200.7	897011
60453812003	**S-LMW-2S**	EPA 200.7	896847	EPA 200.7	897011
60453812004	**S-LMW-4S**	EPA 200.7	896847	EPA 200.7	897011
60453812005	**S-AM-1S**	EPA 200.7	896847	EPA 200.7	897011
60453812006	**S-AM-1D**	EPA 200.7	896847	EPA 200.7	897011
60453812007	**S-TP-5D**	EPA 200.7	896847	EPA 200.7	897011
60453812008	**S-TP-6S**	EPA 200.7	896847	EPA 200.7	897011
60453812009	**S-TP-6D**	EPA 200.7	896847	EPA 200.7	897011
60453812010	**S-TP-8D**	EPA 200.7	896847	EPA 200.7	897011
60453812011	**S-UG-3**	EPA 200.7	896847	EPA 200.7	897011
60453812012	**S-CA-DUP-1**	EPA 200.7	896847	EPA 200.7	897011
60453812013	**S-CA-FB-1**	EPA 200.7	896847	EPA 200.7	897011
60453812014	**S-LMW-1S**	EPA 200.7	897579	EPA 200.7	897660
60453812015	**S-LMW-5S**	EPA 200.7	897579	EPA 200.7	897660
60453812016	**S-LMW-6S**	EPA 200.7	897579	EPA 200.7	897660
60453812017	**S-PZ-1S**	EPA 200.7	897579	EPA 200.7	897660
60453812018	**S-PZ-9D**	EPA 200.7	897579	EPA 200.7	897660
60453812019	**S-TP-2D**	EPA 200.7	897579	EPA 200.7	897660
60453812020	**S-TP-3D**	EPA 200.7	897579	EPA 200.7	897660
60453812021	**S-TP-4D**	EPA 200.7	897579	EPA 200.7	897660
60453812022	**S-CA-DUP-2**	EPA 200.7	897579	EPA 200.7	897660
60453812023	**S-CA-FB-2**	EPA 200.7	897579	EPA 200.7	897660
60453812001	**S-BMW-1S**	EPA 200.8	896849	EPA 200.8	897010
60453812002	**S-BMW-3S**	EPA 200.8	896849	EPA 200.8	897010
60453812003	**S-LMW-2S**	EPA 200.8	896849	EPA 200.8	897010
60453812004	**S-LMW-4S**	EPA 200.8	896849	EPA 200.8	897010
60453812005	**S-AM-1S**	EPA 200.8	896849	EPA 200.8	897010
60453812006	**S-AM-1D**	EPA 200.8	896849	EPA 200.8	897010
60453812007	**S-TP-5D**	EPA 200.8	896849	EPA 200.8	897010
60453812008	**S-TP-6S**	EPA 200.8	896849	EPA 200.8	897010
60453812009	**S-TP-6D**	EPA 200.8	896849	EPA 200.8	897010
60453812010	**S-TP-8D**	EPA 200.8	896849	EPA 200.8	897010
60453812011	**S-UG-3**	EPA 200.8	896849	EPA 200.8	897010
60453812012	**S-CA-DUP-1**	EPA 200.8	896849	EPA 200.8	897010
60453812013	**S-CA-FB-1**	EPA 200.8	896849	EPA 200.8	897010
60453812014	**S-LMW-1S**	EPA 200.8	897099	EPA 200.8	897351
60453812015	**S-LMW-5S**	EPA 200.8	897099	EPA 200.8	897351
60453812016	**S-LMW-6S**	EPA 200.8	897099	EPA 200.8	897351
60453812017	**S-PZ-1S**	EPA 200.8	897099	EPA 200.8	897351
60453812018	**S-PZ-9D**	EPA 200.8	897099	EPA 200.8	897351
60453812019	**S-TP-2D**	EPA 200.8	897099	EPA 200.8	897351
60453812020	**S-TP-3D**	EPA 200.8	897099	EPA 200.8	897351
60453812021	**S-TP-4D**	EPA 200.8	897099	EPA 200.8	897351
60453812022	**S-CA-DUP-2**	EPA 200.8	897099	EPA 200.8	897351
60453812023	**S-CA-FB-2**	EPA 200.8	897099	EPA 200.8	897351
60453812001	**S-BMW-1S**	EPA 7470	897906	EPA 7470	898071

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60453812002	**S-BMW-3S**	EPA 7470	897906	EPA 7470	898071
60453812003	**S-LMW-2S**	EPA 7470	897906	EPA 7470	898071
60453812004	**S-LMW-4S**	EPA 7470	897906	EPA 7470	898071
60453812005	**S-AM-1S**	EPA 7470	897906	EPA 7470	898071
60453812006	**S-AM-1D**	EPA 7470	897906	EPA 7470	898071
60453812007	**S-TP-5D**	EPA 7470	897906	EPA 7470	898071
60453812008	**S-TP-6S**	EPA 7470	897906	EPA 7470	898071
60453812009	**S-TP-6D**	EPA 7470	897906	EPA 7470	898071
60453812010	**S-TP-8D**	EPA 7470	897906	EPA 7470	898071
60453812011	**S-UG-3**	EPA 7470	897906	EPA 7470	898071
60453812012	**S-CA-DUP-1**	EPA 7470	897906	EPA 7470	898071
60453812013	**S-CA-FB-1**	EPA 7470	897906	EPA 7470	898071
60453812014	**S-LMW-1S**	EPA 7470	897909	EPA 7470	898072
60453812015	**S-LMW-5S**	EPA 7470	897909	EPA 7470	898072
60453812016	**S-LMW-6S**	EPA 7470	897909	EPA 7470	898072
60453812017	**S-PZ-1S**	EPA 7470	897909	EPA 7470	898072
60453812018	**S-PZ-9D**	EPA 7470	897909	EPA 7470	898072
60453812019	**S-TP-2D**	EPA 7470	897909	EPA 7470	898072
60453812020	**S-TP-3D**	EPA 7470	897909	EPA 7470	898072
60453812021	**S-TP-4D**	EPA 7470	897909	EPA 7470	898072
60453812022	**S-CA-DUP-2**	EPA 7470	897909	EPA 7470	898072
60453812023	**S-CA-FB-2**	EPA 7470	897909	EPA 7470	898072
60453812001	**S-BMW-1S**	EPA 903.1	673166		
60453812002	**S-BMW-3S**	EPA 903.1	673166		
60453812003	**S-LMW-2S**	EPA 903.1	673166		
60453812004	**S-LMW-4S**	EPA 903.1	673166		
60453812005	**S-AM-1S**	EPA 903.1	673166		
60453812006	**S-AM-1D**	EPA 903.1	673174		
60453812007	**S-TP-5D**	EPA 903.1	673174		
60453812008	**S-TP-6S**	EPA 903.1	673174		
60453812009	**S-TP-6D**	EPA 903.1	673174		
60453812010	**S-TP-8D**	EPA 903.1	673174		
60453812011	**S-UG-3**	EPA 903.1	673174		
60453812012	**S-CA-DUP-1**	EPA 903.1	673174		
60453812013	**S-CA-FB-1**	EPA 903.1	673174		
60453812014	**S-LMW-1S**	EPA 903.1	674552		
60453812015	**S-LMW-5S**	EPA 903.1	674552		
60453812016	**S-LMW-6S**	EPA 903.1	674552		
60453812017	**S-PZ-1S**	EPA 903.1	674552		
60453812018	**S-PZ-9D**	EPA 903.1	674552		
60453812019	**S-TP-2D**	EPA 903.1	674552		
60453812020	**S-TP-3D**	EPA 903.1	674552		
60453812021	**S-TP-4D**	EPA 903.1	674552		
60453812022	**S-CA-DUP-2**	EPA 903.1	674552		
60453812023	**S-CA-FB-2**	EPA 903.1	674552		
60453812024	**S-CA-MS-1**	EPA 903.1	674552		
60453812025	**S-CA-MSD-1**	EPA 903.1	674552		

REPORT OF LABORATORY ANALYSIS

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(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60453812001	**S-BMW-1S**	EPA 904.0	673167		
60453812002	**S-BMW-3S**	EPA 904.0	673167		
60453812003	**S-LMW-2S**	EPA 904.0	673167		
60453812004	**S-LMW-4S**	EPA 904.0	673167		
60453812005	**S-AM-1S**	EPA 904.0	673167		
60453812006	**S-AM-1D**	EPA 904.0	673177		
60453812007	**S-TP-5D**	EPA 904.0	673177		
60453812008	**S-TP-6S**	EPA 904.0	673177		
60453812009	**S-TP-6D**	EPA 904.0	673177		
60453812010	**S-TP-8D**	EPA 904.0	673177		
60453812011	**S-UG-3**	EPA 904.0	673177		
60453812012	**S-CA-DUP-1**	EPA 904.0	673177		
60453812013	**S-CA-FB-1**	EPA 904.0	673177		
60453812014	**S-LMW-1S**	EPA 904.0	674554		
60453812015	**S-LMW-5S**	EPA 904.0	674554		
60453812016	**S-LMW-6S**	EPA 904.0	674554		
60453812017	**S-PZ-1S**	EPA 904.0	674554		
60453812018	**S-PZ-9D**	EPA 904.0	674554		
60453812019	**S-TP-2D**	EPA 904.0	674554		
60453812020	**S-TP-3D**	EPA 904.0	674554		
60453812021	**S-TP-4D**	EPA 904.0	674554		
60453812022	**S-CA-DUP-2**	EPA 904.0	674554		
60453812023	**S-CA-FB-2**	EPA 904.0	674554		
60453812024	**S-CA-MS-1**	EPA 904.0	674554		
60453812025	**S-CA-MSD-1**	EPA 904.0	674554		
60453812001	**S-BMW-1S**	SM 2320B	896743		
60453812002	**S-BMW-3S**	SM 2320B	896743		
60453812003	**S-LMW-2S**	SM 2320B	896743		
60453812004	**S-LMW-4S**	SM 2320B	896743		
60453812005	**S-AM-1S**	SM 2320B	896743		
60453812006	**S-AM-1D**	SM 2320B	896743		
60453812007	**S-TP-5D**	SM 2320B	896743		
60453812008	**S-TP-6S**	SM 2320B	896743		
60453812009	**S-TP-6D**	SM 2320B	896743		
60453812010	**S-TP-8D**	SM 2320B	896743		
60453812011	**S-UG-3**	SM 2320B	896830		
60453812012	**S-CA-DUP-1**	SM 2320B	896830		
60453812013	**S-CA-FB-1**	SM 2320B	896830		
60453812014	**S-LMW-1S**	SM 2320B	896830		
60453812015	**S-LMW-5S**	SM 2320B	896830		
60453812016	**S-LMW-6S**	SM 2320B	896830		
60453812017	**S-PZ-1S**	SM 2320B	896830		
60453812018	**S-PZ-9D**	SM 2320B	896830		
60453812019	**S-TP-2D**	SM 2320B	896830		
60453812020	**S-TP-3D**	SM 2320B	896830		
60453812021	**S-TP-4D**	SM 2320B	896830		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60453812022	**S-CA-DUP-2**	SM 2320B	896830		
60453812023	**S-CA-FB-2**	SM 2320B	896830		
60453812001	**S-BMW-1S**	SM 2540C	896436		
60453812002	**S-BMW-3S**	SM 2540C	896436		
60453812003	**S-LMW-2S**	SM 2540C	896439		
60453812004	**S-LMW-4S**	SM 2540C	896439		
60453812005	**S-AM-1S**	SM 2540C	896439		
60453812006	**S-AM-1D**	SM 2540C	896439		
60453812007	**S-TP-5D**	SM 2540C	896436		
60453812008	**S-TP-6S**	SM 2540C	896436		
60453812009	**S-TP-6D**	SM 2540C	896436		
60453812010	**S-TP-8D**	SM 2540C	896439		
60453812011	**S-UG-3**	SM 2540C	896436		
60453812012	**S-CA-DUP-1**	SM 2540C	896436		
60453812013	**S-CA-FB-1**	SM 2540C	896436		
60453812014	**S-LMW-1S**	SM 2540C	896817		
60453812015	**S-LMW-5S**	SM 2540C	896890		
60453812016	**S-LMW-6S**	SM 2540C	896890		
60453812017	**S-PZ-1S**	SM 2540C	896723		
60453812018	**S-PZ-9D**	SM 2540C	896890		
60453812019	**S-TP-2D**	SM 2540C	896890		
60453812020	**S-TP-3D**	SM 2540C	896890		
60453812021	**S-TP-4D**	SM 2540C	896638		
60453812022	**S-CA-DUP-2**	SM 2540C	896890		
60453812023	**S-CA-FB-2**	SM 2540C	896890		
60453812001	**S-BMW-1S**	SM 3500-Fe B#4	897870		
60453812002	**S-BMW-3S**	SM 3500-Fe B#4	897870		
60453812003	**S-LMW-2S**	SM 3500-Fe B#4	897870		
60453812004	**S-LMW-4S**	SM 3500-Fe B#4	897870		
60453812005	**S-AM-1S**	SM 3500-Fe B#4	897870		
60453812006	**S-AM-1D**	SM 3500-Fe B#4	897870		
60453812007	**S-TP-5D**	SM 3500-Fe B#4	897870		
60453812008	**S-TP-6S**	SM 3500-Fe B#4	897870		
60453812009	**S-TP-6D**	SM 3500-Fe B#4	897870		
60453812010	**S-TP-8D**	SM 3500-Fe B#4	897870		
60453812011	**S-UG-3**	SM 3500-Fe B#4	897870		
60453812012	**S-CA-DUP-1**	SM 3500-Fe B#4	897871		
60453812013	**S-CA-FB-1**	SM 3500-Fe B#4	897871		
60453812014	**S-LMW-1S**	SM 3500-Fe B#4	898741		
60453812015	**S-LMW-5S**	SM 3500-Fe B#4	898741		
60453812016	**S-LMW-6S**	SM 3500-Fe B#4	898741		
60453812017	**S-PZ-1S**	SM 3500-Fe B#4	898741		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60453812018	**S-PZ-9D**	SM 3500-Fe B#4	898741		
60453812019	**S-TP-2D**	SM 3500-Fe B#4	898741		
60453812020	**S-TP-3D**	SM 3500-Fe B#4	898741		
60453812021	**S-TP-4D**	SM 3500-Fe B#4	898741		
60453812022	**S-CA-DUP-2**	SM 3500-Fe B#4	898741		
60453812023	**S-CA-FB-2**	SM 3500-Fe B#4	898741		
60453812001	**S-BMW-1S**	SM 3500-Fe B#4	896706		
60453812002	**S-BMW-3S**	SM 3500-Fe B#4	896706		
60453812003	**S-LMW-2S**	SM 3500-Fe B#4	896707		
60453812004	**S-LMW-4S**	SM 3500-Fe B#4	896706		
60453812005	**S-AM-1S**	SM 3500-Fe B#4	896706		
60453812006	**S-AM-1D**	SM 3500-Fe B#4	896706		
60453812007	**S-TP-5D**	SM 3500-Fe B#4	896706		
60453812008	**S-TP-6S**	SM 3500-Fe B#4	896706		
60453812009	**S-TP-6D**	SM 3500-Fe B#4	896706		
60453812010	**S-TP-8D**	SM 3500-Fe B#4	896707		
60453812011	**S-UG-3**	SM 3500-Fe B#4	896706		
60453812012	**S-CA-DUP-1**	SM 3500-Fe B#4	896706		
60453812013	**S-CA-FB-1**	SM 3500-Fe B#4	896706		
60453812014	**S-LMW-1S**	SM 3500-Fe B#4	896708		
60453812015	**S-LMW-5S**	SM 3500-Fe B#4	896708		
60453812016	**S-LMW-6S**	SM 3500-Fe B#4	896708		
60453812017	**S-PZ-1S**	SM 3500-Fe B#4	896707		
60453812018	**S-PZ-9D**	SM 3500-Fe B#4	896708		
60453812019	**S-TP-2D**	SM 3500-Fe B#4	896707		
60453812020	**S-TP-3D**	SM 3500-Fe B#4	896708		
60453812021	**S-TP-4D**	SM 3500-Fe B#4	896707		
60453812022	**S-CA-DUP-2**	SM 3500-Fe B#4	896707		
60453812023	**S-CA-FB-2**	SM 3500-Fe B#4	896708		
60453812001	**S-BMW-1S**	SM 4500-S-2 D	896396		
60453812002	**S-BMW-3S**	SM 4500-S-2 D	896396		
60453812003	**S-LMW-2S**	SM 4500-S-2 D	896406		
60453812004	**S-LMW-4S**	SM 4500-S-2 D	896406		
60453812005	**S-AM-1S**	SM 4500-S-2 D	896406		
60453812006	**S-AM-1D**	SM 4500-S-2 D	896406		
60453812007	**S-TP-5D**	SM 4500-S-2 D	896396		
60453812008	**S-TP-6S**	SM 4500-S-2 D	896396		
60453812009	**S-TP-6D**	SM 4500-S-2 D	896396		
60453812010	**S-TP-8D**	SM 4500-S-2 D	896406		
60453812011	**S-UG-3**	SM 4500-S-2 D	896396		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN SCPA-CA
Pace Project No.: 60453812

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60453812012	**S-CA-DUP-1**	SM 4500-S-2 D	896396		
60453812013	**S-CA-FB-1**	SM 4500-S-2 D	896396		
60453812014	**S-LMW-1S**	SM 4500-S-2 D	896633		
60453812015	**S-LMW-5S**	SM 4500-S-2 D	896633		
60453812016	**S-LMW-6S**	SM 4500-S-2 D	896633		
60453812017	**S-PZ-1S**	SM 4500-S-2 D	896633		
60453812018	**S-PZ-9D**	SM 4500-S-2 D	896633		
60453812019	**S-TP-2D**	SM 4500-S-2 D	896633		
60453812020	**S-TP-3D**	SM 4500-S-2 D	896633		
60453812021	**S-TP-4D**	SM 4500-S-2 D	896633		
60453812022	**S-CA-DUP-2**	SM 4500-S-2 D	896633		
60453812023	**S-CA-FB-2**	SM 4500-S-2 D	896633		
60453812001	**S-BMW-1S**	EPA 300.0	897826		
60453812002	**S-BMW-3S**	EPA 300.0	897826		
60453812003	**S-LMW-2S**	EPA 300.0	897826		
60453812004	**S-LMW-4S**	EPA 300.0	897826		
60453812005	**S-AM-1S**	EPA 300.0	897826		
60453812006	**S-AM-1D**	EPA 300.0	897826		
60453812007	**S-TP-5D**	EPA 300.0	897826		
60453812008	**S-TP-6S**	EPA 300.0	897826		
60453812009	**S-TP-6D**	EPA 300.0	897826		
60453812010	**S-TP-8D**	EPA 300.0	897826		
60453812011	**S-UG-3**	EPA 300.0	897826		
60453812012	**S-CA-DUP-1**	EPA 300.0	897826		
60453812013	**S-CA-FB-1**	EPA 300.0	897826		
60453812014	**S-LMW-1S**	EPA 300.0	898111		
60453812015	**S-LMW-5S**	EPA 300.0	898111		
60453812016	**S-LMW-6S**	EPA 300.0	898111		
60453812017	**S-PZ-1S**	EPA 300.0	898111		
60453812018	**S-PZ-9D**	EPA 300.0	898111		
60453812019	**S-TP-2D**	EPA 300.0	898111		
60453812020	**S-TP-3D**	EPA 300.0	898112		
60453812021	**S-TP-4D**	EPA 300.0	898111		
60453812022	**S-CA-DUP-2**	EPA 300.0	898111		
60453812023	**S-CA-FB-2**	EPA 300.0	898111		

REPORT OF LABORATORY ANALYSIS

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WO# : 60453812

60453812

Pace ANALYTICAL SERVICES	DC#_Title: ENV-FRM-LENE-0009_Sample Cor		
	Revision: 2	Effective Date: 01/12/2022	Issued By: Lenexa

Client Name: Rocksmith Geoeng

Courier: FedEx ☐ UPS ☐ VIA ☐ Clay ☐ PEX ☐ ECI ☐ Pace ☐ Xroads ☑ Client ☐ Other ☐

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☑

Custody Seal on Cooler/Box Present: Yes ☑ No ☐ Seals intact: Yes ☑ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☑ Other ☐

Thermometer Used: T299 **Type of Ice:** (Wet) Blue None

Cooler Temperature (°C): As-read) 1.6/1.4/2.1 **Corr. Factor** 0.0 **Corrected** 1.6/1.4/2.1

Date and initials of person examining contents:

Temperature should be above freezing to 6°C 2.2/20.1/19.6 2.2/20.1/19.6 AW 5/30/24

Chain of Custody present:	☑Yes ☐No ☐N/A	
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	
Samples arrived within holding time:	☑Yes ☐No ☐N/A	
Short Hold Time analyses (<72hr):	☐Yes ☑No ☐N/A	
Rush Turn Around Time requested:	☐Yes ☑No ☐N/A	
Sufficient volume:	☑Yes ☐No ☐N/A	
Correct containers used:	☑Yes ☐No ☐N/A	
Pace containers used:	☑Yes ☐No ☐N/A	
Containers intact:	☑Yes ☐No ☐N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☐No ☑N/A	
Filtered volume received for dissolved tests?	☐Yes ☐No ☑N/A	
Sample labels match COC: Date / time / ID / analyses	☑Yes ☐No ☐N/A	
Samples contain multiple phases? Matrix: WT	☐Yes ☑No ☐N/A	
Containers requiring pH preservation in compliance? (HNO_3, H_2SO_4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) LOT#: 67169/606203	☑Yes ☐No ☐N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks: Lead acetate strip turns dark? (Record only)	☐Yes ☐No	
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No	
Trip Blank present:	☐Yes ☐No ☑N/A	
Headspace in VOA vials (>6mm):	☐Yes ☐No ☑N/A	
Samples from USDA Regulated Area: State:	☐Yes ☐No ☑N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☑N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

Pace® Location Requested (City/State):
Pace Analytical Kansas
9608 Loiret Blvd., Lenexa, KS 66219

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here

60453812

Scan QR Code for instructions

Company Name:	Rocksmith Geoengineering, LLC.	Contact/Report To:	Mark Haddock
Street Address:	2320 Creve Coeur Mill Road, Maryland Heights, MO 63043	Phone #:	314-974-6578
		E-Mail:	mark.haddock@rocksmithgeo.com
		Cc E-Mail:	
Customer Project #:	COC# 8		
Project Name:	AMEREN SCPA-CA	Invoice To:	Mark Haddock
		Invoice E-Mail:	mark.haddock@rocksmithgeo.com
Site Collection Info/Facility ID (as applicable):		Purchase Order # (if applicable):	
		Quote #:	

Time Zone Collected: [ ] AK [ ] PT [ ] MT [ ] CT [ ] ET

County / State origin of sample(s): Missouri

Data Deliverables:
[ ] Level II [ ] Level III [ ] Level IV
[ ] EQUIS
[ ] Other

Regulatory Program (DW, RCRA, etc.) as applicable: Reportable [ ] Yes [ ] No

Rush (Pre-approval required):
[ ] Same Day [ ] 1 Day [ ] 2 Day [ ] 3 Day [ ] Other _____

DW PWSID # or WW Permit # as applicable:

Date Results Requested:

Field Filtered (if applicable): [ ] Yes [ ] No
Analysis:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Waste Water (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Surface Water (SW),Sediment (SED), Sludge (SL), Caulk (CK), Leachate (LL), Biosolid (BS), Other (OT)

Specify Container Size **: 1 1 3 3 3 3 1

Identify Container Preservative Type***: 1 1 1 6 2 2 2

**Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL vial, (7) EnCore, (8) TerraCore, (9) 90mL, (10) Other

*** Preservative Types: (1) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Sod. Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other

Lab Use Only
Proj. Mgr: Jamie Church
AcctNum / Client ID:
Table #:
Profile / Template: 15856
Prelog / Bottle Ord. ID: EZ 3086958

Customer Sample ID	Matrix *	Comp / Grab	Composite Start Date	Composite Start Time	Collected or Composite End Date	Collected or Composite End Time	# Cont.	Res. Chlorine Results	Res. Chlorine Units	Chloride/Fluoride/Sulfate	TDS / Alkalinity	Ferrous Iron / Ferric Iron	Sulfide	App III and Cat/An Metals (200.7)*	Appendix IV Metals (200.7/200.8/7470)*	Radium 226 & Radium 228	Sample Comment	Preservation non conformance identified for sample.
S-BMW-1S	WT	G			5-28-24	1135	6			✓	✓	✓	✓	✓	✓	✓		
S-BMW-3S	WT	G			5-28-24	1420	6			✓	✓	✓	✓	✓	✓	✓		
S-LMW-1S	WT																	
S-LMW-2S	WT				5-29-24	1405	6			✓	✓	✓	✓	✓	✓	✓		
S-LMW-4S	WT				5-29-24	1130	6			✓	✓	✓	✓	✓	✓	✓		
S-LMW-5S	WT																	
S-LMW-6S	WT																	
S-AM-1S	WT				5-29-24	0920	6			✓	✓	✓	✓	✓	✓	✓		
S-AM-1D	WT				5-29-24	1005	6			✓	✓	✓	✓	✓	✓	✓		
S-PZ-1S	WT																	

Additional Instructions from Pace®:
***App III and Cat/An Metals* - EPA 200.7: Fe, Mg, Mn, K, Na, Ca, B**
****App IV Metals - EPA 200.7 -Ba,Be,Co,Pb,Li,Mo & 200.8 Metals - Sb,As,Cd,Cr,Se,Tl +7470 Hg**

Collected By:
(Printed Name) Grant Morey
Signature:

Customer Remarks / Special Conditions / Possible Hazards:

# Coolers:	Thermometer ID:	Correction Factor (°C):	Obs. Temp. (°C)	Corrected Temp. (°C)	On Ice:
6	T299	0.0	20.1/19.6	1.6/1.4/2.1/2.2	

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Rocksmith	5-29-24/1600		
		per 30hr	
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time: 5/30/24 05:35
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:

Tracking Number:

Delivered by: [ ] In- Person [ ] Courier
[ ] FedEx [ ] UPS [ ] Other

Page: 1 of 3

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Pace® Location Requested (City/State):
Pace Analytical Kansas
9608 Loiret Blvd., Lenexa, KS 66219

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here

604538n

Scan QR Code for instructions

Company Name:	Rocksmith Geoengineering, LLC.	Contact/Report To:	Mark Haddock
Street Address:	2320 Creve Coeur Mill Road, Maryland Heights, MO 63043	Phone #:	314-974-6578
		E-Mail:	mark.haddock@rocksmithgeo.com
		Cc E-Mail:	
Customer Project #:	COC# 8		
Project Name:	AMEREN SCPA-CA	Invoice To:	Mark Haddock
		Invoice E-Mail:	mark.haddock@rocksmithgeo.com
Site Collection Info/Facility ID (as applicable):		Purchase Order # (if applicable):	
		Quote #:	

Time Zone Collected: [ ] AK [ ] PT [ ] MT [ ] CT [ ] ET

County / State origin of sample(s): Missouri

Data Deliverables:
[ ] Level II [ ] Level III [ ] Level IV
[ ] EQUIS
[ ] Other

Regulatory Program (DW, RCRA, etc.) as applicable: Reportable [ ] Yes [ ] No

Rush (Pre-approval required):
[ ] Same Day [ ] 1 Day [ ] 2 Day [ ] 3 Day [ ] Other _____

DW PWSID # or WW Permit # as applicable:

Date Results Requested:

Field Filtered (if applicable): [ ] Yes [ ] No

Analysis:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Waste Water (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Surface Water (SW), Sediment (SED), Sludge (SL), Caulk (CK), Leachate (LL), Biosolid (BS), Other (OT)

Specify Container Size **: 1 1 3 3 2 3 1

Identify Container Preservative Type***: 1 1 1 6 2 2 2

**Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL vial, (7) EnCore, (8) TerraCore, (9) 90mL, (10) Other

*** Preservative Types: (1) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Sod. Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other

Customer Sample ID	Matrix *	Comp / Grab	Composite Start Date	Composite Start Time	Collected or Composite End Date	Collected or Composite End Time	# Cont.	Res. Chlorine Results	Res. Chlorine Units	Chloride/Fluoride/Sulfate	TDS / Alkalinity	Ferrous Iron / Ferric Iron	Sulfide	App III and Cat/An Metals (200.7) *	Appendix IV Metals (200.7/200.8/7470)*	Radium 226 & Radium 228	Sample Comment
S-PZ-9D	WT																
SP-TP-2D	WT																
SP-TP-3D	WT																
SP-TP-4D	WT																
SP-TP-5D	WT	G			5-28-24	1418	6			✓	✓	✓	✓	✓	✓	✓	
SP-TP-6S	WT	G			5-28-24	1117	4			✓	✓	✓	✓	✓	✓	✓	
SP-TP-6D	WT	G			5-28-24	1220	4			✓	✓	✓	✓	✓	✓	✓	
SP-TP-8D	WT	G			5-29-24	1507	6			✓	✓	✓	✓	✓	✓	✓	
S-UG-3	WT				5-28-24	1544	6			✓	✓	✓	✓	✓	✓	✓	
S-CA-DUP-1	WT				5-28-24	—	6			✓	✓	✓	✓	✓	✓	✓	

Lab Use Only
Proj. Mgr: Jamie Church
AcctNum / Client ID:
Table #:
Profile / Template: 15856
Prelog / Bottle Ord. ID: EZ 3086958

Preservation non-conformance identified for sample.

Additional Instructions from Pace®:
**App III and Cat/An Metals* - EPA 200.7: Fe, Mg, Mn, K, Na, Ca, B
**App IV Metals - EPA 200.7 -Ba,Be,Co,Pb,Li,Mo & 200.8 Metals - Sb,As,Cd,Cr,Se,Tl +7470 Hg

Collected By: (Printed Name) Grant Morey
Signature:

Customer Remarks / Special Conditions / Possible Hazards:

20.1/19.1

# Coolers:	Thermometer ID:	Correction Factor (°C):	Obs. Temp. (°C)	Corrected Temp. (°C)	On Ice:
6	T299	0.0	6	1.6/1.4/2.1/2.2	

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Tracking Number:
Rocksmith	5-29-24/1600		5/30/24 05:35	
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Delivered by: [ ] In-Person [ ] Courier
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	[ ] FedEX [ ] UPS [ ] Other
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Page: 2 of 3

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Pace® Location Requested (City/State):
Pace Analytical Kansas
9608 Loiret Blvd., Lenexa, KS 66219

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here

60453812

Scan QR Code for instructions

Company Name:	Rocksmith Geoengineering, LLC.	Contact/Report To:	Mark Haddock
Street Address:	2320 Creve Coeur Mill Road, Maryland Heights, MO 63043	Phone #:	314-974-6578
		E-Mail:	mark.haddock@rocksmithgeo.com
		Cc E-Mail:	
Customer Project #:	COC# 8		
Project Name:	AMEREN SCPA-CA	Invoice To:	Mark Haddock
		Invoice E-Mail:	mark.haddock@rocksmithgeo.com
Site Collection Info/Facility ID (as applicable):		Purchase Order # (if applicable):	
		Quote #:	

Time Zone Collected: [ ] AK [ ] PT [ ] MT [ ] CT [ ] ET

County / State origin of sample(s): Missouri

Data Deliverables:
[ ] Level II [ ] Level III [ ] Level IV
[ ] EQUIS
[ ] Other

Regulatory Program (DW, RCRA, etc.) as applicable: Reportable [ ] Yes [ ] No

Rush (Pre-approval required):
[ ] Same Day [ ] 1 Day [ ] 2 Day [ ] 3 Day [ ] Other _____

DW PWSID # or WW Permit # as applicable:

Date Results Requested:

Field Filtered (if applicable): [ ] Yes [ ] No

Analysis:

Specify Container Size **: 1 1 3 3 3 2 1

Identify Container Preservative Type***: 1 1 1 6 2 2 2

**Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL vial, (7) EnCore, (8) TerraCore, (9) 90mL, (10) Other

*** Preservative Types: (1) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Sod. Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other

Lab Use Only:
Proj. Mgr: Jamie Church
AcctNum / Client ID:
Table #:
Profile / Template: 15856
Prelog / Bottle Ord. ID: EZ 3086958

Preservation non-conformance identified for sample.

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Waste Water (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Surface Water (SW),Sediment (SED), Sludge (SL), Caulk (CK), Leachate (LL), Biosolid (BS), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Composite Start Date	Composite Start Time	Collected or Composite End Date	Collected or Composite End Time	# Cont.	Res. Chlorine Results	Res. Chlorine Units	Chloride/Fluoride/Sulfate	TDS / Alkalinity	Ferrous Iron / Ferric Iron	Sulfide	App III and Cat/An Metals (200.7) *	Appendix IV Metals (200.7/200.8/7470) *	Radium 226 & Radium 228	Sample Comment
S-CA-DUP-2	WT																
S-CA-FB-1	WT	G			5-28-24	1444	6			✓	✓	✓	✓	✓	✓	✓	
S-CA-FB-2	WT																
S-CA-MS-1	WT																
S-CA-MSD-1	WT																

Additional Instructions from Pace®:
***App III and Cat/An Metals* - EPA 200.7: Fe, Mg, Mn, K, Na, Ca, B**
****App IV Metals - EPA 200.7 -Ba,Be,Co,Pb,Li,Mo & 200.8 Metals - Sb,As,Cd,Cr,Se,Tl +7470 Hg**

Collected By:
(Printed Name) Grant Maney
Signature: Grant Maney

Customer Remarks / Special Conditions / Possible Hazards:

20.1/19.6

# Coolers:	Thermometer ID:	Correction Factor (°C):	Obs. Temp. (°C)	Corrected Temp. (°C)	On Ice:
6	T249	0.0		16/1-9/2.1/20	

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Tracking Number:
Rocksmith	5-29-24/1600	PACE	5/30/24 0535	
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Delivered by: [ ] In- Person [ ] Courier
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	[ ] FedEX [ ] UPS [ ] Other
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Page: 3 of 3

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1/3

Client: Rocksmith Geoeng

Profile # 15865

Site:

Notes BP1N = SE-RAD / SF-RAD OL

COC Line Item	Matrix	VG9H	DG9H	DG9Q	VG9U	DG9U	DG9M	DG9B	BG1U	AG1H	AG1U	AG2U	AG3S	AG4U	AG5U	JGFU	WGKU	WGDU	BP1U	BP2U	BP3U	BP1N	BP3N	BP3F	BP3S	BP3C	BP3Z	WPDU	ZPLC	Other		
1	WT																		1		1	2	1				1					
2	WT																		1		1	2	1				1					
3																																
4	WT																		1		1	2	1				1					
5	WT																		1		1	2	1				1					
6																																
7																																
8	WT																		1		1	2	1				1					
9	WT																		1		1	2	1				1					
10																																
11																																
12																																

Container Codes

Glass				Plastic		Misc.	
DG9B	40mL bisulfate clear vial	WGKU	8oz clear soil jar	BP1C	1L NAOH plastic	I	Wipe/Swab
DG9H	40mL HCl amber voa vial	WGFU	4oz clear soil jar	BP1N	1L HNO3 plastic	SP5T	120mL Coliform Na Thiosulfate
DG9M	40mL MeOH clear vial	WG2U	2oz clear soil jar	BP1S	1L H2SO4 plastic	ZPLC	Ziploc Bag
DG9Q	40mL TSP amber vial	JGFU	4oz unpreserved amber wide	BP1U	1L unpreserved plastic	AF	Air Filter
DG9S	40mL H2SO4 amber vial	AG0U	100mL unores amber glass	BP1Z	1L NaOH, Zn Acetate	C	Air Cassettes
DG9T	40mL Na Thio amber vial	AG1H	1L HCl amber glass	BP2C	500mL NAOH plastic	R	Terracore Kit
DG9U	40mL amber unpreserved	AG1S	1L H2SO4 amber glass	BP2N	500mL HNO3 plastic	U	Summa Can
VG9H	40mL HCl clear vial	AG1T	1L Na Thiosulfate clear/amber glass	BP2S	500mL H2SO4 plastic		
VG9T	40mL Na Thio. clear vial	AG1U	1liter unpres amber glass	BP2U	500mL unpreserved plastic		
VG9U	40mL unpreserved clear vial	AG2N	500mL HNO3 amber glass	BP2Z	500mL NaOH, Zn Acetate	Matrix	
BG1S	1liter H2SO4 clear glass	AG2S	500mL H2SO4 amber glass	BP3C	250mL NaOH plastic		
BG1U	1liter unpres glass	AG3S	250mL H2SO4 amber glass	BP3F	250mL HNO3 plastic - field filtered	WT	Water
BG3H	250mL HCL Clear glass	AG2U	500mL unpres amber glass	BP3N	250mL HNO3 plastic	SL	Solid
BG3U	250mL Unpres Clear glass	AG3U	250mL unpres amber glass	BP3U	250mL unpreserved plastic	NAL	Non-aqueous Liquid
WGDU	16oz clear soil jar	AG4U	125mL unpres amber glass	BP3S	250mL H2SO4 plastic	OL	OIL
		AG5U	100mL unpres amber glass	BP3Z	250mL NaOH, Zn Acetate	WP	Wipe
				BP4U	125mL unpreserved plastic	DW	Drinking Water
				BP4N	125mL HNO3 plastic		
				BP4S	125mL H2SO4 plastic		
				WPDU	16oz unpresserved plstic		

Work Order Number: 604573 SR

2/3

Client: Rocksmith Geoeng

Profile # 15865

Site:

Notes BAN: SE-RAD / ST-RAD 02

COC Line Item	Matrix	VG9H	DG9H	DG9Q	VG9U	DG9U	DG9M	DG9B	BG1U	AG1H	AG1U	AG2U	AG3S	AG4U	AG5U	JGFU	WGKU	WGDU	BP1U	BP2U	BP3U	BP1N	BP3N	BP3F	BP3S	BP3C	BP3Z	WPDU	ZPLC	Other		
1																																
2																																
3																																
4																																
5	WT																		1		1	2	1				1					
6	WT																		1		1	2	1				1					
7	WT																		1		1	2	1				1					
8	WT																		1		1	2	1				1					
9	WT																		1		1	2	1				1					
10	WT																															
11																																
12																																

Container Codes

Glass			
DG9B	40mL bisulfate clear vial	WGKU	8oz clear soil jar
DG9H	40mL HCl amber voa vial	WGFU	4oz clear soil jar
DG9M	40mL MeOH clear vial	WG2U	2oz clear soil jar
DG9Q	40mL TSP amber vial	JGFU	4oz unpreserved amber wide
DG9S	40mL H2SO4 amber vial	AG0U	100mL unores amber glass
DG9T	40mL Na Thio amber vial	AG1H	1L HCl amber glass
DG9U	40mL amber unpreserved	AG1S	1L H2SO4 amber glass
VG9H	40mL HCl clear vial	AG1T	1L Na Thiosulfate clear/amber glass
VG9T	40mL Na Thio. clear vial	AG1U	1liter unpres amber glass
VG9U	40mL unpreserved clear vial	AG2N	500mL HNO3 amber glass
BG1S	1liter H2SO4 clear glass	AG2S	500mL H2SO4 amber glass
BG1U	1liter unpres glass	AG3S	250mL H2SO4 amber glass
BG3H	250mL HCL Clear glass	AG2U	500mL unpres amber glass
BG3U	250mL Unpres Clear glass	AG3U	250mL unpres amber glass
WGDU	16oz clear soil jar	AG4U	125mL unpres amber glass
		AG5U	100mL unpres amber glass

Plastic	
BP1C	1L NAOH plastic
BP1N	1L HNO3 plastic
BP1S	1L H2SO4 plastic
BP1U	1L unpreserved plastic
BP1Z	1L NaOH, Zn Acetate
BP2C	500mL NAOH plastic
BP2N	500mL HNO3 plastic
BP2S	500mL H2SO4 plastic
BP2U	500mL unpreserved plastic
BP2Z	500mL NaOH, Zn Acetate
BP3C	250mL NaOH plastic
BP3F	250mL HNO3 plastic - field filtered
BP3N	250mL HNO3 plastic
BP3U	250mL unpreserved plastic
BP3S	250mL H2SO4 plastic
BP3Z	250mL NaOH, Zn Acetate
BP4U	125mL unpreserved plastic
BP4N	125mL HNO3 plastic
BP4S	125mL H2SO4 plastic
WPDU	16oz unpresserved plstic

Misc.	
I	Wipe/Swab
SP5T	120mL Coliform Na Thiosulfate
ZPLC	Ziploc Bag
AF	Air Filter
C	Air Cassettes
R	Terracore Kit
U	Summa Can

Matrix	
WT	Water
SL	Solid
NAL	Non-aqueous Liquid
OL	OIL
WP	Wipe
DW	Drinking Water

Work Order Number: 6045812

3/3

Client: Rocksmith Geoeng

Profile # 15856

Site:

Notes BP1N=SI-RAD/SI-RAD02

COC Line Item	Matrix	VG9H	DG9H	DG9Q	VG9U	DG9U	DG9M	DG9B	BG1U	AG1H	AG1U	AG2U	AG3S	AG4U	AG5U	JGFU	WGKU	WGDU	BP1U	BP2U	BP3U	BP1N	BP3N	BP3F	BP3S	BP3C	BP3Z	WPDU	ZPLC	Other		
1																			1		1	2	1				1					
2	WT																															
3																																
4																																
5																																
6																																
7																																
8																																
9																																
10																																
11																																
12																																

Container Codes

Glass			
DG9B	40mL bisulfate clear vial	WGKU	8oz clear soil jar
DG9H	40mL HCl amber voa vial	WGFU	4oz clear soil jar
DG9M	40mL MeOH clear vial	WG2U	2oz clear soil jar
DG9Q	40mL TSP amber vial	JGFU	4oz unpreserved amber wide
DG9S	40mL H2SO4 amber vial	AG0U	100mL unores amber glass
DG9T	40mL Na Thio amber vial	AG1H	1L HCl amber glass
DG9U	40mL amber unpreserved	AG1S	1L H2SO4 amber glass
VG9H	40mL HCl clear vial	AG1T	1L Na Thiosulfate clear/amber glass
VG9T	40mL Na Thio. clear vial	AG1U	1liter unpres amber glass
VG9U	40mL unpreserved clear vial	AG2N	500mL HNO3 amber glass
BG1S	1liter H2SO4 clear glass	AG2S	500mL H2SO4 amber glass
BG1U	1liter unpres glass	AG3S	250mL H2SO4 amber glass
BG3H	250mL HCL Clear glass	AG2U	500mL unpres amber glass
BG3U	250mL Unpres Clear glass	AG3U	250mL unpres amber glass
WGDU	16oz clear soil jar	AG4U	125mL unpres amber glass
		AG5U	100mL unpres amber glass

Plastic	
BP1C	1L NAOH plastic
BP1N	1L HNO3 plastic
BP1S	1L H2SO4 plastic
BP1U	1L unpreserved plastic
BP1Z	1L NaOH, Zn Acetate
BP2C	500mL NAOH plastic
BP2N	500mL HNO3 plastic
BP2S	500mL H2SO4 plastic
BP2U	500mL unpreserved plastic
BP2Z	500mL NaOH, Zn Acetate
BP3C	250mL NaOH plastic
BP3F	250mL HNO3 plastic - field filtered
BP3N	250mL HNO3 plastic
BP3U	250mL unpreserved plastic
BP3S	250mL H2SO4 plastic
BP3Z	250mL NaOH, Zn Acetate
BP4U	125mL unpreserved plastic
BP4N	125mL HNO3 plastic
BP4S	125mL H2SO4 plastic
WPDU	16oz unpresserved plstic

Misc.	
I	Wipe/Swab
SP5T	120mL Coliform Na Thiosulfate
ZPLC	Ziploc Bag
AF	Air Filter
C	Air Cassettes
R	Terracore Kit
U	Summa Can

Matrix	
WT	Water
SL	Solid
NAL	Non-aqueous Liquid
OL	OIL
WP	Wipe
DW	Drinking Water

Work Order Number: 60453812

WO# : 60453812

60453812

Pace ANALYTICAL SERVICES	DC#_Title: ENV-FRM-LENE-0009_Sample		
	Revision: 2	Effective Date: 01/12/2022	Issued By: Lenexa

Client Name: Rocksmith Geoeng

Courier: FedEx ☐ UPS ☐ VIA ☐ Clay ☐ PEX ☐ ECI ☐ Pace ☐ Xroads ☑ Client ☐ Other ☐

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☑

Custody Seal on Cooler/Box Present: Yes ☑ No ☐ Seals intact: Yes ☑ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☑ Other ☐

Thermometer Used: T299 **Type of Ice:** (Wet) Blue None

Cooler Temperature (°C): As-read 0.6/4.6/1.3/1.7 **Corr. Factor** 0.0 **Corrected** 0.6/4.6/1.3/1.7 3.1/1.8/21.6/21.3/20.1

Date and initials of person examining contents: 06/3/24

Temperature should be above freezing to 6°C 3.1/1.8/21.6/21.3/20.1

Chain of Custody present:	☑Yes ☐No ☐N/A	
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	
Samples arrived within holding time:	☑Yes ☐No ☐N/A	
Short Hold Time analyses (<72hr):	☐Yes ☑No ☐N/A	
Rush Turn Around Time requested:	☐Yes ☑No ☐N/A	
Sufficient volume:	☑Yes ☐No ☐N/A	
Correct containers used:	☑Yes ☐No ☐N/A	
Pace containers used:	☑Yes ☐No ☐N/A	
Containers intact:	☑Yes ☐No ☐N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☐No ☑N/A	
Filtered volume received for dissolved tests?	☐Yes ☐No ☑N/A	
Sample labels match COC: Date / time / ID / analyses	☑Yes ☐No ☐N/A	
Samples contain multiple phases? Matrix: WT	☐Yes ☑No ☐N/A	
Containers requiring pH preservation in compliance? (HNO_3, H_2SO_4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) LOT# 67127/606203	☑Yes ☐No ☐N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks: Lead acetate strip turns dark? (Record only)	☐Yes ☐No	
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No	
Trip Blank present:	☐Yes ☐No ☑N/A	
Headspace in VOA vials (>6mm):	☐Yes ☐No ☑N/A	
Samples from USDA Regulated Area: State:	☐Yes ☐No ☑N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☑N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

Pace® Location Requested (City/State):
Pace Analytical Kansas
9608 Loiret Blvd., Lenexa, KS 66219

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here

60453812

Scan QR Code for instructions

Company Name:	Rocksmith Geoengineering, LLC	Contact/Report To:	Mark Haddock
Street Address:	2320 Creve Coeur Mill Road, Maryland Heights, MO 63043	Phone #:	314-974-6578
		E-Mail:	mark.haddock@rocksmithgeo.com
		Cc E-Mail:	
Customer Project #:	COC# 8		
Project Name:	AMEREN SCPA-CA	Invoice To:	Mark Haddock
		Invoice E-Mail:	mark.haddock@rocksmithgeo.com
Site Collection Info/Facility ID (as applicable):		Purchase Order # (if applicable):	
		Quote #:	

Time Zone Collected: [ ] AK [ ] PT [ ] MT [ ] CT [ ] ET

County / State origin of sample(s): Missouri

Data Deliverables:
[ ] Level II [ ] Level III [ ] Level IV
[ ] EQUIS
[ ] Other

Regulatory Program (DW, RCRA, etc.) as applicable: Reportable [ ] Yes [ ] No

Rush (Pre-approval required):
[ ] Same Day [ ] 1 Day [ ] 2 Day [ ] 3 Day [ ] Other _____

DW PWSID # or WW Permit # as applicable:

Date Results Requested:

Field Filtered (if applicable): [ ] Yes [ ] No

Analysis:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Waste Water (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Surface Water (SW),Sediment (SED), Sludge (SL), Caulk (CK), Leachate (LL), Biosolid (BS), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Composite Start Date	Composite Start Time	Collected or Composite End Date	Collected or Composite End Time	# Cont.	Res. Chlorine Results	Res. Chlorine Units	Chloride/Fluoride/Sulfate	TDS / Alkalinity	Ferrous Iron / Ferric Iron	Sulfide	App III and Cat/An Metals (200.7)*	Appendix IV Metals (200.7/200.8/7470)*	Radium 226 & Radium 228	Sample Comment
Specify Container Size **										1	1	3	3	3	3	1	
Identify Container Preservative Type***										1	1	1	6	2	2	2	
S-BMW-1S	WT																
S-BMW-3S	WT																
S-LMW-1S	WT	G			5-31-24	1335	6			✓	✓	✓	✓	✓	✓	✓	
S-LMW-2S	WT																
S-LMW-4S	WT																
S-LMW-5S	WT	G			5-31-24	1258	6			✓	✓	✓	✓	✓	✓	✓	
S-LMW-6S	WT	G			1	1206	6			✓	✓	✓	✓	✓	✓	✓	
S-AM-1S	WT																
S-AM-1D	WT																
S-PZ-1S	WT	G			5-30-24	1050	6			✓	✓	✓	✓	✓	✓	✓	

**Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL vial, (7) EnCore, (8) TerraCore, (9) 90mL, (10) Other

*** Preservative Types: (1) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Sod. Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other

Lab Use Only
Proj. Mgr: Jamie Church
AcctNum / Client ID:
Table #:
Profile / Template: 15856
Prelog / Bottle Ord. ID: EZ 3086958

Preservation non-conformance identified for sample.

Additional Instructions from Pace®:
App III and Cat/An Metals - EPA 200.7: Fe, Mg, Mn, K, Na, Ca, B
****App IV Metals** - EPA 200.7 -Ba,Be,Co,Pb,Li,Mo & 200.8 Metals - Sb,As,Cd,Cr,Se,Tl +7470 Hg

Collected By: (Printed Name) Grant Morey
Signature: Grant Morey

Customer Remarks / Special Conditions / Possible Hazards:

# Coolers:	Thermometer ID:	Correction Factor (°C):	Obs. Temp. (°C)	Corrected Temp. (°C)	On Ice:
9	T295	0.0	0.6/4.6/1.3/1.7/3.1	21.6/21.3/20.1	1-8

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Tracking Number:
Grant Morey / Rocksmith	5-31-24/1600	[signature] / PASE	6/1/24 0705	
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Delivered by: [ ] In- Person [ ] Courier
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	[ ] FedEx [ ] UPS [ ] Other
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Page: 1 of 3

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace® Terms and Conditions found at https://www.pacelabs.com/resource-library/resource/pace-terms-and-conditions/

Pace® Location Requested (City/State):
Pace Analytical Kansas
9608 Loiret Blvd., Lenexa, KS 66219

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here

60453812

Scan QR Code for instructions

Company Name:	Rocksmith Geoengineering, LLC.	Contact/Report To:	Mark Haddock
Street Address:	2320 Creve Coeur Mill Road, Maryland Heights, MO 63043	Phone #:	314-974-6578
		E-Mail:	mark.haddock@rocksmithgeo.com
		Cc E-Mail:	
Customer Project #:	COC# 8		
Project Name:	AMEREN SCPA-CA	Invoice To:	Mark Haddock
		Invoice E-Mail:	mark.haddock@rocksmithgeo.com
Site Collection Info/Facility ID (as applicable):		Purchase Order # (if applicable):	
		Quote #:	

Time Zone Collected: [ ] AK [ ] PT [ ] MT [ ] CT [ ] ET

County / State origin of sample(s): Missouri

Data Deliverables:
[ ] Level II [ ] Level III [ ] Level IV
[ ] EQUIS
[ ] Other

Regulatory Program (DW, RCRA, etc.) as applicable: Reportable [ ] Yes [ ] No

Rush (Pre-approval required):
[ ] Same Day [ ] 1 Day [ ] 2 Day [ ] 3 Day [ ] Other _____

DW PWSID # or WW Permit # as applicable:

Date Results Requested:

Field Filtered (if applicable): [ ] Yes [ ] No
Analysis:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Waste Water (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Surface Water (SW),Sediment (SED), Sludge (SL), Caulk (CK), Leachate (LL), Biosolid (BS), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Composite Start Date	Composite Start Time	Collected or Composite End Date	Collected or Composite End Time	# Cont.	Res. Chlorine Results	Res. Chlorine Units	Chloride/Fluoride/Sulfate	TDS / Alkalinity	Ferrous Iron / Ferric Iron	Sulfide	App III and Cat/An Metals (200.7)*	Appendix IV Metals (200.7/200.8/7470)*	Radium 226 & Radium 228	Sample Comment
Specify Container Size **										1	1	3	3	3	3	1	
Identify Container Preservative Type***										1	1	1	6	2	2	2	
S-PZ-9D	WT	G			5-31-24	1053	6			✓	✓	✓	✓	✓	✓	✓	
S-TP-2D	WT	G			5-31-24	0925	6			✓	✓	✓	✓	✓	✓	✓	
S-TP-3D	WT	G			5-31-24	1102	6			✓	✓	✓	✓	✓	✓	✓	
S-TP-4D	WT	G			5-29-24	1620	6			✓	✓	✓	✓	✓	✓	✓	
S-TP-5D	WT																
S-TP-6S	WT																
S-TP-6D	WT																
S-TP-8D	WT																
S-UG-3	WT																
S-CA-DUP-1	WT																

**Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL vial, (7) EnCore, (8) TerraCore, (9) 90mL, (10) Other

*** Preservative Types: (1) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Sod. Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other

Lab Use Only
Proj. Mgr: Jamie Church
AcctNum / Client ID:
Table #:
Profile / Template: 15856
Prelog / Bottle Ord. ID: EZ 3086958

Preservation non-conformance identified for sample.

Additional Instructions from Pace®:
***App III and Cat/An Metals* - EPA 200.7: Fe, Mg, Mn, K, Na, Ca, B**
****App IV Metals - EPA 200.7 -Ba,Be,Co,Pb,Li,Mo & 200.8 Metals - Sb,As,Cd,Cr,Se,Tl +7470 Hg**

Collected By: (Printed Name) Grant Morey
Signature: Grant Morey

Customer Remarks / Special Conditions / Possible Hazards:

21.6/21.3/20.1

# Coolers:	Thermometer ID:	Correction Factor (°C):	Obs. Temp. (°C)	Corrected Temp. (°C)	On Ice:
9	T299	0.0	0.6/4.6/1.3/1.7/3.1/1.8		

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Tracking Number:
Grant Morey/Rocksmith	5-31-24/1600		6/1/24 0705	
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Delivered by: [ ] In- Person [ ] Courier
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	[ ] FedEx [ ] UPS [ ] Other
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Page: 2 of 3

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace® Terms and Conditions found at https://www.pacelabs.com/resource-library/resource/pace-terms-and-conditions/

Pace® Location Requested (City/State):
Pace Analytical Kansas
9608 Loiret Blvd., Lenexa, KS 66219

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here

60453812

Scan QR Code for instructions

Company Name:	Rocksmith Geoengineering, LLC	Contact/Report To:	Mark Haddock
Street Address:	2320 Creve Coeur Mill Road, Maryland Heights, MO 63043	Phone #:	314-974-6578
		E-Mail:	mark.haddock@rocksmithgeo.com
		Cc E-Mail:	
Customer Project #:	COC# 8		
Project Name:	AMEREN SCPA-CA	Invoice To:	Mark Haddock
		Invoice E-Mail:	mark.haddock@rocksmithgeo.com
Site Collection Info/Facility ID (as applicable):		Purchase Order # (if applicable):	
		Quote #:	

Time Zone Collected: [ ] AK [ ] PT [ ] MT [ ] CT [ ] ET

County / State origin of sample(s): Missouri

Data Deliverables:
[ ] Level II [ ] Level III [ ] Level IV
[ ] EQUIS
[ ] Other

Regulatory Program (DW, RCRA, etc.) as applicable: Reportable [ ] Yes [ ] No

Rush (Pre-approval required):
[ ] Same Day [ ] 1 Day [ ] 2 Day [ ] 3 Day [ ] Other _____

DW PWSID # or WW Permit # as applicable:

Date Results Requested:

Field Filtered (if applicable): [ ] Yes [ ] No
Analysis:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Waste Water (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Surface Water (SW),Sediment (SED), Sludge (SL), Caulk (CK), Leachate (LL), Biosolid (BS), Other (OT)

Specify Container Size **: 1 1 3 3 3 3 1

Identify Container Preservative Type***: 1 1 1 6 2 2 2

**Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL vial, (7) EnCore, (8) TerraCore, (9) 90mL, (10) Other

*** Preservative Types: (1) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Sod. Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other

Customer Sample ID	Matrix *	Comp / Grab	Composite Start Date	Composite Start Time	Collected or Composite End Date	Collected or Composite End Time	# Cont.	Res. Chlorine Results	Res. Chlorine Units	Chloride/Fluoride/Sulfate	TDS / Alkalinity	Ferrous Iron / Ferric Iron	Sulfide	App III and Cat/An Metals (200.7)*	Appendix IV Metals (200.7/200.8/7470)*	Radium 226 & Radium 228	Sample Comment
S-CA-DUP-2	WT	G			5-31-24	—	6			✓	✓	✓	✓	✓	✓	✓	
S-CA-FB-1	WT																
S-CA-FB-2	WT	G			5-31-24	1100	6			✓	✓	✓	✓	✓	✓	✓	
S-CA-MS-1	WT	G			"	1102	6			✓	✓	✓	✓	✓	✓	✓	Collected @ S-TP-3D
S-CA-MSD-1	WT	G			"	1102	6			✓	✓	✓	✓	✓	✓	✓	"

Lab Use Only

Proj. Mgr: Jamie Church
AcctNum / Client ID:
Table #:
Profile / Template: 15856
Prelog / Bottle Ord. ID: EZ 3086958

Preservation non-conformance identified for sample.

Additional Instructions from Pace®:
***App III and Cat/An Metals* - EPA 200.7: Fe, Mg, Mn, K, Na, Ca, B**
****App IV Metals - EPA 200.7 -Ba,Be,Co,Pb,Li,Mo & 200.8 Metals - Sb,As,Cd,Cr,Se,Tl +7470 Hg**

Collected By:
(Printed Name) Grant Moore
Signature:

Customer Remarks / Special Conditions / Possible Hazards:

# Coolers:	Thermometer ID:	Correction Factor (°C):	Obs. Temp. (°C)	Corrected Temp. (°C)	On Ice:
9	T299	0.0	0.6/4.6/1.3/1.7/2.1/1.8	21.6/21.3/20.1	

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Rocksmith	5-31-24/1600	FedEx	6/1/24 0105
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:

Tracking Number:

Delivered by: [ ] In- Person [ ] Courier
[ ] FedEx [ ] UPS [ ] Other

Page: 3 of 3

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace® Terms and Conditions found at https://www.pacelabs.com/resource-library/resource/pace-terms-and-conditions/

1/3

Client: Rocksmith Geoeng

Profile #

Site:

Notes Append to 60453812

COC Line Item	Matrix	VG9H	DG9H	DG9Q	VG9U	DG9U	DG9M	DG9B	BG1U	AG1H	AG1U	AG2U	AG3S	AG4U	AG5U	JGFU	WGKU	WGDU	BP1U	BP2U	BP3U	BP1N	BP3N	BP3F	BP3S	BP3C	BP3Z	WPDU	ZPLC	Other		
1																																
2																																
3	WT																		1		1	2	1				1					
4																																
5																																
6	WT																		1		1	2	1				1					
7	WT																		1		1	2	1				1					
8																																
9																																
10	WT																		1		1	2	1				1					
11																																
12																																

Container Codes

Glass			
DG9B	40mL bisulfate clear vial	WGKU	8oz clear soil jar
DG9H	40mL HCl amber voa vial	WGFU	4oz clear soil jar
DG9M	40mL MeOH clear vial	WG2U	2oz clear soil jar
DG9Q	40mL TSP amber vial	JGFU	4oz unpreserved amber wide
DG9S	40mL H2SO4 amber vial	AG0U	100mL unores amber glass
DG9T	40mL Na Thio amber vial	AG1H	1L HCl amber glass
DG9U	40mL amber unpreserved	AG1S	1L H2SO4 amber glass
VG9H	40mL HCl clear vial	AG1T	1L Na Thiosulfate clear/amber glass
VG9T	40mL Na Thio. clear vial	AG1U	1liter unpres amber glass
VG9U	40mL unpreserved clear vial	AG2N	500mL HNO3 amber glass
BG1S	1liter H2SO4 clear glass	AG2S	500mL H2SO4 amber glass
BG1U	1liter unpres glass	AG3S	250mL H2SO4 amber glass
BG3H	250mL HCL Clear glass	AG2U	500mL unpres amber glass
BG3U	250mL Unpres Clear glass	AG3U	250mL unpres amber glass
WGDU	16oz clear soil jar	AG4U	125mL unpres amber glass
		AG5U	100mL unpres amber glass

Plastic	
BP1C	1L NAOH plastic
BP1N	1L HNO3 plastic
BP1S	1L H2SO4 plastic
BP1U	1L unpreserved plastic
BP1Z	1L NaOH, Zn Acetate
BP2C	500mL NAOH plastic
BP2N	500mL HNO3 plastic
BP2S	500mL H2SO4 plastic
BP2U	500mL unpreserved plastic
BP2Z	500mL NaOH, Zn Acetate
BP3C	250mL NaOH plastic
BP3F	250mL HNO3 plastic - field filtered
BP3N	250mL HNO3 plastic
BP3U	250mL unpreserved plastic
BP3S	250mL H2SO4 plastic
BP3Z	250mL NaOH, Zn Acetate
BP4U	125mL unpreserved plastic
BP4N	125mL HNO3 plastic
BP4S	125mL H2SO4 plastic
WPDU	16oz unpresserved plstic

Misc.	
I	Wipe/Swab
SP5T	120mL Coliform Na Thiosulfate
ZPLC	Ziploc Bag
AF	Air Filter
C	Air Cassettes
R	Terracore Kit
U	Summa Can

Matrix	
WT	Water
SL	Solid
NAL	Non-aqueous Liquid
OL	OIL
WP	Wipe
DW	Drinking Water

Work Order Number: 60453812

DC#_Title: ENV-FRM-LENE-0001_Sample Container Count
Revision: 3 | Effective Date: | Issued by: Lenexa

Client: Locksmith Geoeng

Profile #

Site:

Notes Append to 60453812

COC Line Item	Matrix	VG9H	DG9H	DG9Q	VG9U	DG9U	DG9M	DG9B	BG1U	AG1H	AG1U	AG2U	AG3S	AG4U	AG5U	JGFU	WGKU	WGDU	BP1U	BP2U	BP3U	BP1N	BP3N	BP3F	BP3S	BP3C	BP3Z	WPDU	ZPLC	Other		
1	WT																		1		1	2	1				1					
2																			1		1	2	1				1					
3																			3		3	2	3				3					
4																			1		1	2	1				1					
5																																
6																																
7																																
8																																
9																																
10																																
11																																
12																																

Container Codes

Glass				Plastic		Misc.	
DG9B	40mL bisulfate clear vial	WGKU	8oz clear soil jar	BP1C	1L NAOH plastic	I	Wipe/Swab
DG9H	40mL HCl amber voa vial	WGFU	4oz clear soil jar	BP1N	1L HNO3 plastic	SP5T	120mL Coliform Na Thiosulfate
DG9M	40mL MeOH clear vial	WG2U	2oz clear soil jar	BP1S	1L H2SO4 plastic	ZPLC	Ziploc Bag
DG9Q	40mL TSP amber vial	JGFU	4oz unpreserved amber wide	BP1U	1L unpreserved plastic	AF	Air Filter
DG9S	40mL H2SO4 amber vial	AG0U	100mL unores amber glass	BP1Z	1L NaOH, Zn Acetate	C	Air Cassettes
DG9T	40mL Na Thio amber vial	AG1H	1L HCl amber glass	BP2C	500mL NAOH plastic	R	Terracore Kit
DG9U	40mL amber unpreserved	AG1S	1L H2SO4 amber glass	BP2N	500mL HNO3 plastic	U	Summa Can
VG9H	40mL HCl clear vial	AG1T	1L Na Thiosulfate clear/amber glass	BP2S	500mL H2SO4 plastic		
VG9T	40mL Na Thio. clear vial	AG1U	1liter unpres amber glass	BP2U	500mL unpreserved plastic		
VG9U	40mL unpreserved clear vial	AG2N	500mL HNO3 amber glass	BP2Z	500mL NaOH, Zn Acetate		
BG1S	1liter H2SO4 clear glass	AG2S	500mL H2SO4 amber glass	BP3C	250mL NaOH plastic		
BG1U	1liter unpres glass	AG3S	250mL H2SO4 amber glass	BP3F	250mL HNO3 plastic - field filtered		
BG3H	250mL HCL Clear glass	AG2U	500mL unpres amber glass	BP3N	250mL HNO3 plastic		
BG3U	250mL Unpres Clear glass	AG3U	250mL unpres amber glass	BP3U	250mL unpreserved plastic		
WGDU	16oz clear soil jar	AG4U	125mL unpres amber glass	BP3S	250mL H2SO4 plastic		
		AG5U	100mL unpres amber glass	BP3Z	250mL NaOH, Zn Acetate		
				BP4U	125mL unpreserved plastic		
				BP4N	125mL HNO3 plastic		
				BP4S	125mL H2SO4 plastic		
				WPDU	16oz unpresserved plstic		

Matrix	
WT	Water
SL	Solid
NAL	Non-aqueous Liquid
OL	OIL
WP	Wipe
DW	Drinking Water

Work Order Number: 60453812

3/3

Client: Rocksmith Geoeng

Profile #

Site:

Notes Append to 60453812

COC Line Item	Matrix	VG9H	DG9H	DG9Q	VG9U	DG9U	DG9M	DG9B	BG1U	AG1H	AG1U	AG2U	AG3S	AG4U	AG5U	JGFU	WGKU	WGDU	BP1U	BP2U	BP3U	BP1N	BP3N	BP3F	BP3S	BP3C	BP3Z	WPDU	ZPLC	Other		
1	WT																		1		1	2	1				1					
2																																
3	WT																		1		1	2	1				1					
4	WT																					2		Only 109 RAD								
5	WT																					2										
6																																
7																																
8																																
9																																
10																																
11																																
12																																

Container Codes

Glass			
DG9B	40mL bisulfate clear vial	WGKU	8oz clear soil jar
DG9H	40mL HCl amber voa vial	WGFU	4oz clear soil jar
DG9M	40mL MeOH clear vial	WG2U	2oz clear soil jar
DG9Q	40mL TSP amber vial	JGFU	4oz unpreserved amber wide
DG9S	40mL H2SO4 amber vial	AG0U	100mL unores amber glass
DG9T	40mL Na Thio amber vial	AG1H	1L HCl amber glass
DG9U	40mL amber unpreserved	AG1S	1L H2SO4 amber glass
VG9H	40mL HCl clear vial	AG1T	1L Na Thiosulfate clear/amber glass
VG9T	40mL Na Thio. clear vial	AG1U	1liter unpres amber glass
VG9U	40mL unpreserved clear vial	AG2N	500mL HNO3 amber glass
BG1S	1liter H2SO4 clear glass	AG2S	500mL H2SO4 amber glass
BG1U	1liter unpres glass	AG3S	250mL H2SO4 amber glass
BG3H	250mL HCL Clear glass	AG2U	500mL unpres amber glass
BG3U	250mL Unpres Clear glass	AG3U	250mL unpres amber glass
WGDU	16oz clear soil jar	AG4U	125mL unpres amber glass
		AG5U	100mL unpres amber glass

Plastic	
BP1C	1L NAOH plastic
BP1N	1L HNO3 plastic
BP1S	1L H2SO4 plastic
BP1U	1L unpreserved plastic
BP1Z	1L NaOH, Zn Acetate
BP2C	500mL NAOH plastic
BP2N	500mL HNO3 plastic
BP2S	500mL H2SO4 plastic
BP2U	500mL unpreserved plastic
BP2Z	500mL NaOH, Zn Acetate
BP3C	250mL NaOH plastic
BP3F	250mL HNO3 plastic - field filtered
BP3N	250mL HNO3 plastic
BP3U	250mL unpreserved plastic
BP3S	250mL H2SO4 plastic
BP3Z	250mL NaOH, Zn Acetate
BP4U	125mL unpreserved plastic
BP4N	125mL HNO3 plastic
BP4S	125mL H2SO4 plastic
WPDU	16oz unpresserved plstic

Misc.	
I	Wipe/Swab
SP5T	120mL Coliform Na Thiosulfate
ZPLC	Ziploc Bag
AF	Air Filter
C	Air Cassettes
R	Terracore Kit
U	Summa Can

Matrix	
WT	Water
SL	Solid
NAL	Non-aqueous Liquid
OL	OIL
WP	Wipe
DW	Drinking Water

Work Order Number: 60453812

Internal Transfer Chain of Custody

Rush Multiplier____X

Samples Pre-Logged into eCOC

State Of Origin: MO

Cert. Needed: ☐ Yes ☒ No

Workorder: 60453812 Workorder Name: AMEREN SCPA-CA COC#8

Owner Received Date: 5/30/2024 Results Requested By: 6/13/2024

Report To	Subcontract To
Jamie Church Pace Analytical Kansas 9608 Loiret Blvd. Lenexa, KS 66219 Phone 314-838-7223	Pace Analytical Pittsburgh 1638 Roseytown Road Suites 2,3, & 4 Greensburg, PA 15601 Phone (724)850-5600

						Preserved Containers						Requested Analysis												
Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	HNO3						Radium 226	Radium 228											LAB USE ONLY
1	S-BMW-1S	PS	5/28/2024 11:35	60453812001	Water	2						X	X											001
2	S-BMW-3S	PS	5/28/2024 14:20	60453812002	Water	2						X	X											002
3	S-LMW-2S	PS	5/29/2024 14:05	60453812003	Water	2						X	X											003
4	S-LMW-4S	PS	5/29/2024 11:30	60453812004	Water	2						X	X											004
5	S-AM-1S	PS	5/29/2024 09:20	60453812005	Water	2						X	X											005
6	S-AM-1D	PS	5/29/2024 10:05	60453812006	Water	2						X	X											006
7	S-TP-5D	PS	5/28/2024 14:18	60453812007	Water	2						X	X											007
8	S-TP-6S	PS	5/28/2024 11:17	60453812008	Water	2						X	X											008
9	S-TP-6D	PS	5/28/2024 12:20	60453812009	Water	2						X	X											009
10	S-TP-8D	PS	5/29/2024 15:07	60453812010	Water	2						X	X											010
11	S-UG-3	PS	5/28/2024 15:44	60453812011	Water	2						X	X											011
12	S-CA-DUP-1	PS	5/28/2024 00:00	60453812012	Water	2						X	X											012
13	S-CA-FB-1	PS	5/28/2024 14:44	60453812013	Water	2						X	X											013

WO# : 30688781

30688781

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1			[illegible]	6/4/24 950	KS sample location: RECEIVING
2					
3					

Cooler Temperature on Receipt ___ °C	Custody Seal Y or (N)	Received on Ice Y or (N)	Samples Intact (Y) or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.*



DC#_Title: ENV-FRM-GBUR-0088 v07_Sample Condition Upon Receipt-Greensburg

Effective Date: 01/04/2024

WO#: 30688781

PM: MAR Due Date: 06/25/24

CLIENT: PACE_60_LEKS

Client Name: Pace - KS

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other

Tracking Number: 7146 2379 8549

Initial/ Date

Examined By: PS 6/4/24

Labeled By: PS 6/4/24

Temped By:

Custody Seal on Cooler/Box Present: ☐ Yes ☑ No **Seals Intact:** ☐ Yes ☑ No

Thermometer Used: _____ **Type of Ice:** Wet Blue (None)

Cooler Temperature: Observed Temp ____ °C Correction Factor: ____ °C Final Temp: ____ °C

Temp should be above freezing to 6°C

Comments:	Yes	No	NA	
Chain of Custody Present	✓			1.
Chain of Custody Filled Out:	✓			2.
-Were client corrections present on COC		✓		
Chain of Custody Relinquished		✓		3.
Sampler Name & Signature on COC:		✓		4.
Sample Labels match COC:	✓			5.
-Includes date/time/ID				
Matrix:	WT			
Samples Arrived within Hold Time:	✓			6.
Short Hold Time Analysis (<72hr remaining):		✓		7.
Rush Turn Around Time Requested:		✓		8.
Sufficient Volume:	✓			9.
Correct Containers Used:	✓			10.
-Pace Containers Used	✓			
Containers Intact:	✓			11.
Orthophosphate field filtered:			✓	12.
Hex Cr Aqueous samples field filtered:			✓	13.
Organic Samples checked for dichlorination			✓	14:
Filtered volume received for dissolved tests:			✓	15:
All containers checked for preservation:	✓			16.
exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, non-aqueous matrix				pH<2
All containers meet method preservation requirements:	✓			Initial when completed: PS Date/Time of Preservation:
				Lot# of added Preservative:
8260C/D: Headspace in VOA Vials (> 6mm)			✓	17.
624.1: Headspace in VOA Vials (0mm)			✓	18.
Radon: Headspace in RAD Vials (0mm)			✓	19.
Trip Blank Present:			✓	Trip blank custody seal present? YES or NO
Rad Samples Screened <.05 mrem/hr.	✓			Initial when completed: PS Date: 6/4/24 Survey Meter SN: 25014380

pH paper Lot# 10D2931

D.P.D. Residual Chlorine Lot # ____

Comments:

Note: For NC compliance samples with discrepancies, a copy of this form must be sent to the DEHNR Certification office.
PM Review is documented electronically in LIMS through the SRF Review schedule in the Workorder Edit Screen.

Qualtrax ID: 55680

Internal Transfer Chain of Custody

☐ Rush Multiplier_____X
☐ Samples Pre-Logged into eCOC

State Of Origin: MO
Cert. Needed: ☐ Yes ☒ No

Workorder: 60453812 Workorder Name: AMEREN SCPA-CA COC#8

Owner Received Date: 5/30/2024 Results Requested By: 6/13/2024

Report To	Subcontract To
Jamie Church Pace Analytical Kansas 9608 Loiret Blvd. Lenexa, KS 66219 Phone 314-838-7223	Pace Analytical Pittsburgh 1638 Roseytown Road Suites 2,3, & 4 Greensburg, PA 15601 Phone (724)850-5600

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers HNO3						Requested Analysis Radium 226	Radium 228											LAB USE ONLY
1	S-BMW-1S	PS	5/28/2024 11:35	60453812001	Water	1						X	X											ps 6/7/24 ~~001~~
2	S-BMW-3S	PS	5/28/2024 14:20	60453812002	Water	1						X	X											ps 6/7/24 ~~002~~
3	S-LMW-2S	PS	5/29/2024 14:05	60453812003	Water	1						X	X											ps 6/7/24 ~~003~~
4	S-LMW-4S	PS	5/29/2024 11:30	60453812004	Water	1						X	X											ps 6/7/24 ~~004~~
5	S-AM-1S	PS	5/29/2024 09:20	60453812005	Water	1						X	X											ps 6/7/24 ~~005~~
6	S-AM-1D	PS	5/29/2024 10:05	60453812006	Water	1						X	X											ps 6/7/24 ~~006~~
7	S-TP-5D	PS	5/28/2024 14:18	60453812007	Water	1						X	X											ps 6/7/24 ~~007~~
8	S-TP-6S	PS	5/28/2024 11:17	60453812008	Water	1						X	X											ps 6/7/24 ~~008~~
9	S-TP-6D	PS	5/28/2024 12:20	60453812009	Water	1						X	X											ps 6/7/24 ~~009~~
10	S-TP-8D	PS	5/29/2024 15:07	60453812010	Water	1						X	X											ps 6/7/24 ~~010~~
11	S-UG-3	PS	5/28/2024 15:44	60453812011	Water	1						X	X											ps 6/7/24 ~~011~~
12	S-CA-DUP-1	PS	5/28/2024 00:00	60453812012	Water	1						X	X											ps 6/7/24 ~~012~~
13	S-CA-FB-1	PS	5/28/2024 14:44	60453812013	Water	1						X	X											ps 6/7/24 ~~013~~
14	S-LMW-1S	PS	5/31/2024 13:35	60453812014	Water	1						X	X											014
15	S-LMW-5S	PS	5/31/2024 12:58	60453812015	Water	1						X	X											015
16	S-LMW-6S	PS	5/31/2024 12:06	60453812016	Water	1						X	X											016
17	S-PZ-1S	PS	5/30/2024 10:50	60453812017	Water	1						X	X											017
18	S-PZ-9D	PS	5/31/2024 10:53	60453812018	Water	1						X	X											018
19	S-TP-2D	PS	5/31/2024 09:25	60453812019	Water	1						X	X											019

WO# : 30690294

30690294

Internal Transfer Chain of Custody

☐ Rush Multiplier____X
☐ Samples Pre-Logged into eCOC

State Of Origin: MO
Cert. Needed: ☐ Yes ☐ No

Workorder: 60453812 Workorder Name: AMEREN SCPA-CA COC#8

Owner Received Date: 5/30/2024 Results Requested By: 6/13/2024

Report To	Subcontract To
Jamie Church Pace Analytical Kansas 9608 Loiret Blvd. Lenexa, KS 66219 Phone 314-838-7223	Pace Analytical Pittsburgh 1638 Roseytown Road Suites 2,3, & 4 Greensburg, PA 15601 Phone (724)850-5600

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers HNO3	Radium 226	Radium 228	LAB USE ONLY
20	S-TP-3D	RQS	5/31/2024 11:02	60453812020	Water	1	X	X	020
21	S-TP-4D	PS	5/29/2024 16:20	60453812021	Water	1	X	X	021
22	S-CA-DUP-2	PS	5/31/2024 00:00	60453812022	Water	1	X	X	022
23	S-CA-FB-2	PS	5/31/2024 11:00	60453812023	Water	1	X	X	023
24	S-CA-MS-1	PS	5/31/2024 11:02	60453812024	Water	1	X	X	024
25	S-CA-MSD-1	PS	5/31/2024 11:02	60453812025	Water	1	X	X	025

Transfers	Released By	Date/Time	Received By	Date/Time
1	Allison Strum	6/6/24 1600	[signature]	6/7/24 1030
2				
3				

Comments

**Sample 020 is the parent sample for 024 and 025 MS/MSD

Samples 014-025, sent 001-013 previously

Cooler Temperature on Receipt ____°C | Custody Seal Y or (N) | Received on Ice Y or (N) | Samples Intact (Y) or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.

WO#: 30690294
PM: MAR Due Date: 06/28/24
CLIENT: PACE_60_LEKS

DC#_Title: ENV-FRM-GBUR-0088 v07_Sample Condition Upon Receipt-Greensburg

Effective Date: 01/04/2024

WO# : 30690294

PM: MAR Due Date: 06/28/24

CLIENT: PACE_60_LEKS

Client Name: pace - KS

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other

Tracking Number: 7146 2380 0884

Initial / Date

Examined By: BS 6/7/24

Labeled By: BS 6/7/24

Temped By: ____

Custody Seal on Cooler/Box Present: ☐ Yes ☒ No **Seals Intact:** ☐ Yes ☒ No

Thermometer Used: ____ **Type of Ice:** Wet Blue (None)

Cooler Temperature: Observed Temp ____ °C Correction Factor: ____ °C Final Temp: ____ °C

Temp should be above freezing to 6°C

Comments:	Yes	No	NA
Chain of Custody Present	✓		
Chain of Custody Filled Out:	✓		
-Were client corrections present on COC		✓	
Chain of Custody Relinquished	✓		
Sampler Name & Signature on COC:		✓	
Sample Labels match COC:	✓		
-Includes date/time/ID			
Matrix:	WT		
Samples Arrived within Hold Time:	✓		
Short Hold Time Analysis (<72hr remaining):		✓	
Rush Turn Around Time Requested:		✓	
Sufficient Volume:	✓		
Correct Containers Used:	✓		
-Pace Containers Used	✓		
Containers Intact:	✓		
Orthophosphate field filtered:			✓
Hex Cr Aqueous samples field filtered:			✓
Organic Samples checked for dichlorination			✓
Filtered volume received for dissolved tests:			✓
All containers checked for preservation:	✓		
exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, non-aqueous matrix			
All containers meet method preservation requirements:	✓		
8260C/D: Headspace in VOA Vials (> 6mm)			✓
624.1: Headspace in VOA Vials (0mm)			✓
Radon: Headspace in RAD Vials (0mm)			✓
Trip Blank Present:			✓
Rad Samples Screened <.05 mrem/hr.	✓		

pH paper Lot# 10027931

D.P.D. Residual Chlorine Lot # ____

1. ____
2. ____
3. ____
4. ____
5. ____
6. ____
7. ____
8. ____
9. ____
10. ____
11. ____
12. ____
13. ____
14: ____
15: ____
16. pH<2

Initial when completed: BS Date/Time of Preservation: ____

Lot# of added Preservative: ____

17. ____
18. ____
19. ____

Trip blank custody seal present? YES or NO

Initial when completed: JS Date: 6/7/24 Survey Meter SN: 25014380

Comments: * TDS not correct for MS/MSD, should match parent Sample ID.

* Project should be sent at the same time or COC needs to match bottles sent.

* 2 bottles (DPIN) received for each sample, Not 2 as listed on COC.

Note: For NC compliance samples with discrepancies, a copy of this form must be sent to the DEHNR Certification office.
PM Review is documented electronically in LIMS through the SRF Review schedule in the Workorder Edit Screen.

Qualtrax ID: 55680

Memorandum

August 6, 2024

To:	Project File Rocksmith Geoengineering, LLC	**Project Number:**	23009-24
CC:	Mark Haddock, Jeffrey Ingram		
From:	Jack Rasmussen	**Email:**	Jack.Rasmussen@Rocksmithgeo.com
RE:	**Data Validation Summary, Sioux Energy Center – SCPA-CA – Data Package 60453812**		

The following is a summary of instances where quality control criteria in the functional guidelines were not met and data qualification was required:

- When a compound was analyzed outside of hold time, the sample result was qualified as an estimate (J for detects, UJ for non-detects).
- When a compound was detected in a blank (i.e. method, field), and the blank comparison criterion was not met, associated sample results were qualified as estimates (J) or non-detects (U).
- When a compound was detected in a sample result between the Method Detection Limit (MDL) and Practical Quantification Limit (PQL), the results were recorded at the detection value and qualified as estimates (J).
- When a duplicate criterion was not met, the associated sample result was qualified as an estimate (J for detects, UJ for non-detects).
- When a matrix spike/matrix spike duplicate (MS/MSD) criterion was not met, the associated sample result was qualified as an estimate (J, J+ for estimates based high, and J- for estimates based low).

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Company Name: Rocksmith Geoengineering
Project Manager: J. Ingram
Project Name: Ameren SCPA-CA
Project Number: 23009-24
Reviewer: J. Rasmussen
Validation Date: 8/6/2024

Laboratory: Pace Analytical
SDG #: 60453812
Analytical Method (type and no.): EPA 200.7/200.8 (Total Metals); SM 2320B (Alkalinity); SM 2540C (TDS); EPA 300.0 (Anions); EPA 7470 (Mercury); SM 4500-S-2 D (Sulfide)
Matrix: ☐ Air ☐ Soil/Sed. ■ Water ☐ Waste ☐ SM 3500-Fe B#4(Ferrous and Ferric iron); EPA 903.1/904.0 (Radium 226+228)
Sample Names S-BMW-1S, S-BMW-3S, S-LMW-2S, S-LMW-4S, S-AM-1S, S-AM-1D, S-TP-5D, S-TP-6S, S-TP-6D, S-TP-8D, S-UG-3, S-CA-DUP-1, S-CA-FB-1, S-LMW-1S, S-LMW-5S, S-LMW-6S, S-PZ-1S, S-PZ-9D, S-TP-2D, S-TP-3D, S-TP-4D, S-CA-DUP-2, S-CA-FB-2, S-CA-MS-1, S-CA-MSD-1

NOTE: Please provide calculation in Comment areas or on the back (if on the back please indicate in comment areas).

Field Information	YES	NO	NA	COMMENTS
a) Sampling dates noted?	x			05/28/2024-05/31/2024
b) Sampling team indicated?	x			GTM/JTA
c) Sample location noted?	x			
d) Sample depth indicated (Soils)?			x	
e) Sample type indicated (grab/composite)?	x			Grab
f) Field QC noted?	x			See Notes
g) Field parameters collected (note types)?	x			pH, Spec Cond, Turb, Temp, DO, ORP
h) Field Calibration within control limits?	x			
i) Notations of unacceptable field conditions/performances from field logs or field notes?		x		
j) Does the laboratory narrative indicate deficiencies?			x	No lab narrative.

Note Deficiencies:

Chain-of-Custody (COC)	YES	NO	NA	COMMENTS
a) Was the COC properly completed?	x			
b) Was the COC signed by both field and laboratory personnel?	x			
c) Were samples received in good condition?	x			

General (reference QAPP or Method)	YES	NO	NA	COMMENTS
a) Were hold times met for sample pretreatment?	x			
b) Were hold times met for sample analysis?		x		See Notes
c) Were the correct preservatives used?	x			
d) Was the correct method used?	x			
e) Were appropriate reporting limits achieved?	x			
f) Were any sample dilutions noted?	x			See Notes
g) Were any matrix problems noted?		x		

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Blanks	YES	NO	NA	COMMENTS
a) Were analytes detected in the method blank(s)?	x			See Notes
b) Were analytes detected in the field blank(s)?	x			See Notes
c) Were analytes detected in the equipment blank(s)?			x	
d) Were analytes detected in the trip blank(s)?			x	

Laboratory Control Sample (LCS)	YES	NO	NA	COMMENTS
a) Was a LCS analyzed once per SDG?	x			
b) Were the proper analytes included in the LCS?	x			
c) Was the LCS accuracy criteria met?	x			

Duplicates	YES	NO	NA	COMMENTS
a) Were field duplicates collected (note original and duplicate sample names)?				S-CA-DUP-1 @ S-TP-6S; S-CA-DUP-2 @ S-TP-2D
	x			See Notes
b) Were field dup. precision criteria met (note RPD)?		x		See Notes
c) Were lab duplicates analyzed (note original and duplicate samples)?				
	x			See Notes
d) Were lab dup. precision criteria met (note RPD)?		x		See Notes

Blind Standards	YES	NO	NA	COMMENTS
a) Was a blind standard used (indicate name, analytes included and concentrations)?			x	
b) Was the %D within control limits?			x	

Matrix Spike/Matrix Spike Duplicate (MS/MSD)	YES	NO	NA	COMMENTS
a) Was MS accuracy criteria met?		x		See Notes
Recovery could not be calculated since sample contained high concentration of analyte?			x	
b) Was MSD accuracy criteria met?		x		See Notes
Recovery could not be calculated since sample contained high concentration of analyte?			x	
c) Were MS/MSD precision criteria met?		x		See Notes

Comments/Notes:

General:

Ferrous iron samples were all analyzed outside of hold time. Results qualified as estimates.

Alkalinity, chloride and/or sulfate were diluted in several samples; no qualification necessary.

QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

Comments/Notes:

Method Blanks:

3549596: molybdenum (1.1J). Associated with samples -001 through -013. Samples -001, -002, -004, -008, -009, -010, -011, -012, results < RL, report at RL and qualify as non-detect (U). Samples -003, -005, -006, -007, -013, results > RL and 10x blank, no qualification necessary.

3553144: calcium (28.7 J). Associated with samples -014 through -023. Samples -014 through -022, results > RL and 10x blank, no qualification necessary. Sample -023, result < RL, report at RL and qualify as non-detect (U).

Field Blanks:

S-CA-FB-1 @ S-TP-5D: chromium (0.42J), mercury (0.14J), TDS (7.5).

Chromium and mercury results are non-detects; TDS reported > RL and 10x blank, no qualifications necessary.

S-CA-FB-2 @ S-PZ-9D: calcium (27.8J), chromium (0.32J), TDS (7.5), ferrous iron (0.044J). Calcium reported > RL and 10x blank, no qualification necessary. Chromium reported > RL and < 10x blank, result qualified as estimate. TDS reported > RL and 10x blank, no qualification necessary. Ferrous iron reported > RL and 10x blank, no qualification necessary.

Duplicates:

S-CA-DUP-1 @ S-TP-6S: field duplicate RPD exceeds control limit (20%) for iron (30%), results qualified as estimates.

Mercury not detected in original sample, detected in duplicate: results qualified as estimates. Radium- 228 detected in original sample, not detected in duplicate: results qualified as estimates.

S-CA-DUP-2 @ S-TP-2D: field duplicate RPD exceeds control limit (20%) for ferrous iron (28%), results qualified as estimates.

Radium-228 detected in original sample, not detected in field blank, results qualified as estimates. RPD exceeds control limit for sulfate (39%), results qualified as estimates.

Lab duplicate RPD: 10%; alkalinity, TDS; 15%: chloride, fluoride, sulfate; 20%: ferrous iron, sulfide, other metals.

3548056: Lab duplicate exceeds max RPD for TDS, associated with unrelated sample, no qualification necessary.

3555150: Lab duplicate exceeds max RPD for sulfate, associated with sample -020, result qualified as estimates.

3555155: Lab duplicate exceeds max RPD for chloride and sulfate associated with unrelated sample, no qualification necessary.

MS/MSD:

3549600: MS recovery low for calcium. Associated with sample -008, result qualified as estimate.

3553146: MS recovery low for calcium, MSD and RPD both meet criteria, no qualification necessary.

3547871/3547872: MS/MSD recovery high for sulfide. Associated with unrelated sample.

3547973/3547974: MS/MSD recovery low for sulfide. Associated with unrelated sample.

3554027/3554028: MS/MSD recovery high for chloride, fluoride, sulfate. Associated with unrelated sample.

3555143/3555144: MS recovery high for chloride, MS/MSD recovery high for fluoride and sulfate. Associated with unrelated sample.

3555145/3555146: MS/MSD recovery high for chloride,fluoride, sulfate. Associated with unrelated sample.

3555151/3555152: MSD recovery high for sulfate. Associated with sample -020, MS and RPD both meet criteria, no qualification necessary.

3555153/3555152: MS recovery low, MSD and RPD high for chloride, fluoride, sulfate. Associated with unrelated sample.

3553146/3553147: MS recovery low for calcium, MSD recovery and RPD both meet criteria. Associated with unrelated sample, no qualification necessary.

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason
S-BMW-1S	Ferrous iron	0.11	J	Analyzed outside of hold time controls
S-BMW-3S	"	0.12	J	"
S-LMW-2S	"	0.082	J	"
S-LMW-4S	"	0.068	J	"
S-AM-1S	"	0.14	J	"
S-AM-1D	"	0.26	J	"
S-TP-5D	"	0.29	J	"
S-TP-6S	"	0.056	J	"
S-TP-6D	"	0.27	J	"
S-TP-8D	"	0.27	J	"
S-UG-3	"	0.056	J	"
S-CA-DUP-1	"	0.056	J	"
S-CA-FB-1	"	0.041	UJ	"
S-LMW-1S	"	0.068	J	"
S-LMW-5S	"	0.11	J	"
S-LMW-6S	"	0.068	J	"
S-PZ-1S	"	0.28	J	"
S-PZ-9D	"	0.88	J	"
S-TP-2D	"	0.60	J	"
S-TP-3D	"	0.45	J	"
S-TP-4D	"	0.32	J	"
S-CA-DUP-2	"	0.80	J	"
S-CA-FB-2	"	0.044	J	"
S-BMW-1S	Molybdenum	20.0	U	Detected in method blank, result < RL
S-BMW-3S	"	20.0	U	"
S-LMW-4S	"	20.0	U	"
S-TP-6S	"	20.0	U	"
S-TP-6D	"	20.0	U	"
S-TP-8D	"	20.0	U	"
S-UG-3	"	20.0	U	"
S-CA-DUP-1	"	20.0	U	"
S-CA-FB-2	Calcium	200	U	Detected in method blank, result < RL

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason
S-PZ-9D	Chromium	1.2	J	Detected in field blank, result > RL and < 10x blank
S-TP-6S	Iron, Total	33.4	J	Field DUP RPD exceeds control limits
S-CA-DUP-1	"	45.4	J	"
S-TP-6S	Mercury	0.096	UJ	Non-detect in original sample, detected in field DUP
S-CA-DUP-1	"	0.19	J	"
S-TP-6S	Radium-228	0.905 ± 0.493	J	Detected in original sample, non-detect in field DUP
S-CA-DUP-1	"	0.530 ± 0.447	UJ	"
S-TP-2D	Iron, Ferrous	0.60	J	Field DUP RPD exceeds control limits
S-CA-DUP-2	"	0.80	J	"
S-TP-2D	Radium-228	0.836 ± 0.435	J	Detected in original sample, non-detect in field DUP
S-CA-DUP-2	"	0.493 ± 0.318	UJ	"
S-TP-2D	Sulfate	712	J	Field DUP RPD exceeds control limits
S-CA-DUP-2	"	479	J	"
S-TP-6S	Calcium	144000	J-	MS percent recovery low
S-TP-3D	Sulfate	73.5	J	Lab DUP RPD exceeds control limits

QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason

Signature: _____ Date: 08/06/2024

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

December 18, 2024

Mark Haddock
Rocksmith Geoengineering, LLC.
2320 Creve Coeur Mill Road
Maryland Heights, MO 63043

RE: Project: AMEREN SCPA
Pace Project No.: 60464769

Dear Mark Haddock:

Enclosed are the analytical results for sample(s) received by the laboratory between November 15, 2024 and November 20, 2024. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Kansas City
- Pace Analytical Services - Greensburg

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jamie Church
jamie.church@pacelabs.com
314-838-7223
Project Manager

Enclosures

cc: Jeffrey Ingram, Rocksmith Geoengineering, LLC.
Lisa Meyer, Ameren
Grant Morey, Rocksmith Geoengineering, LLC.
Austin Nieman, Ameren

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Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

CERTIFICATIONS

Project: AMEREN SCPA
Pace Project No.: 60464769

Pace Analytical Services Pennsylvania

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
ANABISO/IEC 17025:2017 Rad Cert#: L24170
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 2950
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA010
Louisiana DEQ/TNI Certification #: 04086
Maine Certification #: 2023021
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991
Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572023-03
New Hampshire/TNI Certification #: 297622
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-015
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: TN02867
Texas/TNI Certification #: T104704188-22-18
Utah/TNI Certification #: PA014572223-14
USDA Soil Permit #: 525-23-67-77263
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad

Pace Analytical Services Kansas

9608 Loiret Boulevard, Lenexa, KS 66219
Arkansas Certification #: 88-00679
Colorado Division of Oil and Public Safety
Illinois Certification #: 2000302023-6
Iowa Certification #: 118
Kansas Field Laboratory Certification #: E-92587
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Missouri Inorganic Drinking Water Certification
Nevada Certification #: KS000212024-1
Oklahoma Certification #: 2023-073
Texas Certification #: T104704407-23-17
Utah Certification #: KS000212022-13

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SAMPLE SUMMARY

Project: AMEREN SCPA
Pace Project No.: 60464769

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60464769001	**S-UMW-1D**	Water	11/14/24 16:05	11/15/24 15:10
60464769002	**S-UMW-FB-1**	Water	11/14/24 16:20	11/19/24 07:00
60464769003	**S-UMW-2D**	Water	11/18/24 09:52	11/19/24 07:00
60464769004	**S-UMW-3D**	Water	11/18/24 12:15	11/19/24 07:00
60464769005	**S-UMW-4D**	Water	11/18/24 11:20	11/19/24 07:00
60464769006	**S-UMW-5D**	Water	11/18/24 14:53	11/19/24 07:00
60464769007	**S-UMW-6D**	Water	11/18/24 13:45	11/19/24 07:00
60464769008	**S-UMW-DUP-1**	Water	11/18/24 00:00	11/19/24 07:00
60464769009	**S-UMW-MS-1**	Water	11/18/24 13:45	11/19/24 07:00
60464769010	**S-UMW-MSD-1**	Water	11/18/24 13:45	11/19/24 07:00
60464769011	**S-BMW-1D**	Water	11/20/24 10:00	11/20/24 15:30
60464769012	**S-BMW-3D**	Water	11/20/24 11:00	11/20/24 15:30

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SAMPLE ANALYTE COUNT

Project: AMEREN SCPA
Pace Project No.: 60464769

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60464769001	**S-UMW-1D**	EPA 200.7	ARMN	10	PASI-K
		EPA 200.8	JGP	4	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	TML	1	PASI-K
		SM 2540C	TML	1	PASI-K
		EPA 300.0	AAA	3	PASI-K
60464769002	**S-UMW-FB-1**	EPA 200.7	ARMN	10	PASI-K
		EPA 200.8	JGP	4	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	TML	1	PASI-K
		SM 2540C	TML	1	PASI-K
		EPA 300.0	AAA	3	PASI-K
60464769003	**S-UMW-2D**	EPA 200.7	ARMN	10	PASI-K
		EPA 200.8	JGP	4	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	TML	1	PASI-K
		SM 2540C	TML	1	PASI-K
		EPA 300.0	AAA	3	PASI-K
60464769004	**S-UMW-3D**	EPA 200.7	ARMN	10	PASI-K
		EPA 200.8	JGP	4	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	TML	1	PASI-K
		SM 2540C	TML	1	PASI-K
		EPA 300.0	AAA	3	PASI-K
60464769005	**S-UMW-4D**	EPA 200.7	ARMN	10	PASI-K
		EPA 200.8	JGP	4	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	TML	1	PASI-K
		SM 2540C	TML	1	PASI-K
		EPA 300.0	AAA	3	PASI-K
60464769006	**S-UMW-5D**	EPA 200.7	ARMN	10	PASI-K
		EPA 200.8	JGP	4	PASI-K

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SAMPLE ANALYTE COUNT

Project: AMEREN SCPA
Pace Project No.: 60464769

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	TML	1	PASI-K
		SM 2540C	TML	1	PASI-K
		EPA 300.0	AAA	3	PASI-K
60464769007	**S-UMW-6D**	EPA 200.7	ARMN	10	PASI-K
		EPA 200.8	JGP	4	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	TML	1	PASI-K
		SM 2540C	TML	1	PASI-K
		EPA 300.0	AAA	3	PASI-K
60464769008	**S-UMW-DUP-1**	EPA 200.7	ARMN	10	PASI-K
		EPA 200.8	JGP	4	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	TML	1	PASI-K
		SM 2540C	TML	1	PASI-K
		EPA 300.0	AAA	3	PASI-K
60464769009	**S-UMW-MS-1**	EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
60464769010	**S-UMW-MSD-1**	EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
60464769011	**S-BMW-1D**	EPA 200.7	ARMN	10	PASI-K
		EPA 200.8	JGP	4	PASI-K
		EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	TML	1	PASI-K
		SM 2540C	TML	1	PASI-K
		EPA 300.0	AAA	3	PASI-K
60464769012	**S-BMW-3D**	EPA 200.7	ARMN	10	PASI-K
		EPA 200.8	JGP	4	PASI-K
		EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	TML	1	PASI-K
		SM 2540C	TML	1	PASI-K
		EPA 300.0	AAA	3	PASI-K

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: AMEREN SCPA
Pace Project No.: 60464769

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory

PASI-K = Pace Analytical Services - Kansas City
PASI-PA = Pace Analytical Services - Greensburg

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ANALYTICAL RESULTS

Project: AMEREN SCPA
Pace Project No.: 60464769

Sample: S-UMW-1D **Lab ID: 60464769001** Collected: 11/14/24 16:05 Received: 11/15/24 15:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Barium	**245**	ug/L	5.0	0.64	1	11/18/24 13:51	12/04/24 16:07	7440-39-3	
Boron	**548**	ug/L	100	6.4	1	11/18/24 13:51	12/04/24 16:07	7440-42-8	
Calcium	**121000**	ug/L	200	26.9	1	11/18/24 13:51	12/04/24 16:07	7440-70-2	
Iron	**1240**	ug/L	50.0	9.1	1	11/18/24 13:51	12/04/24 16:07	7439-89-6	
Lithium	**22.6**	ug/L	10.0	3.7	1	11/18/24 13:51	12/04/24 16:07	7439-93-2	
Magnesium	**34400**	ug/L	50.0	20.1	1	11/18/24 13:51	12/04/24 16:07	7439-95-4	
Manganese	**234**	ug/L	5.0	0.39	1	11/18/24 13:51	12/04/24 16:07	7439-96-5	
Molybdenum	**70.6**	ug/L	20.0	1.0	1	11/18/24 13:51	12/04/24 16:07	7439-98-7	
Potassium	**6450**	ug/L	500	69.7	1	11/18/24 13:51	12/04/24 16:07	7440-09-7	
Sodium	**21900**	ug/L	500	115	1	11/18/24 13:51	12/04/24 16:07	7440-23-5	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City								
Arsenic	**2.3**	ug/L	1.0	0.13	1	12/03/24 09:18	12/10/24 12:20	7440-38-2	
Cadmium	**0.11J**	ug/L	0.50	0.050	1	12/03/24 09:18	12/10/24 12:20	7440-43-9	
Chromium	**0.48J**	ug/L	1.0	0.30	1	12/03/24 09:18	12/10/24 12:20	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	12/03/24 09:18	12/10/24 12:20	7782-49-2	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**269**	mg/L	20.0	10.5	1		11/27/24 17:45		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**591**	mg/L	13.3	13.3	1		11/19/24 12:19		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**161**	mg/L	10.0	5.3	10		12/13/24 15:28	16887-00-6	H1
Fluoride	**0.47**	mg/L	0.20	0.12	1		12/13/24 14:36	16984-48-8	H1,IC
Sulfate	**67.8**	mg/L	5.0	2.8	5		12/13/24 15:15	14808-79-8	H1

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ANALYTICAL RESULTS

Project: AMEREN SCPA
Pace Project No.: 60464769

Sample: S-UMW-FB-1 **Lab ID: 60464769002** Collected: 11/14/24 16:20 Received: 11/19/24 07:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Barium	**<0.64**	ug/L	5.0	0.64	1	11/19/24 14:30	11/26/24 23:27	7440-39-3	
Boron	**<6.4**	ug/L	100	6.4	1	11/19/24 14:30	11/26/24 23:27	7440-42-8	
Calcium	**27.5J**	ug/L	200	26.9	1	11/19/24 14:30	11/26/24 23:27	7440-70-2	
Iron	**28.8J**	ug/L	50.0	9.1	1	11/19/24 14:30	11/26/24 23:27	7439-89-6	
Lithium	**<3.7**	ug/L	10.0	3.7	1	11/19/24 14:30	11/26/24 23:27	7439-93-2	
Magnesium	**<20.1**	ug/L	50.0	20.1	1	11/19/24 14:30	11/26/24 23:27	7439-95-4	
Manganese	**<0.39**	ug/L	5.0	0.39	1	11/19/24 14:30	11/26/24 23:27	7439-96-5	
Molybdenum	**<1.0**	ug/L	20.0	1.0	1	11/19/24 14:30	11/26/24 23:27	7439-98-7	
Potassium	**<69.7**	ug/L	500	69.7	1	11/19/24 14:30	11/26/24 23:27	7440-09-7	
Sodium	**<115**	ug/L	500	115	1	11/19/24 14:30	11/26/24 23:27	7440-23-5	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City								
Arsenic	**<0.13**	ug/L	1.0	0.13	1	12/04/24 13:36	12/09/24 15:20	7440-38-2	L1
Cadmium	**<0.050**	ug/L	0.50	0.050	1	12/04/24 13:36	12/09/24 15:20	7440-43-9	L1
Chromium	**0.35J**	ug/L	1.0	0.30	1	12/04/24 13:36	12/09/24 15:20	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	12/04/24 13:36	12/09/24 15:20	7782-49-2	L1,M0
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**<10.5**	mg/L	20.0	10.5	1		11/27/24 18:13		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**10.0**	mg/L	5.0	5.0	1		11/20/24 12:08		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**<0.53**	mg/L	1.0	0.53	1		12/13/24 14:24	16887-00-6	H1
Fluoride	**0.33**	mg/L	0.20	0.12	1		12/13/24 14:24	16984-48-8	H1,IC
Sulfate	**<0.55**	mg/L	1.0	0.55	1		12/13/24 14:24	14808-79-8	H1

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ANALYTICAL RESULTS

Project: AMEREN SCPA
Pace Project No.: 60464769

Sample: S-UMW-2D **Lab ID: 60464769003** Collected: 11/18/24 09:52 Received: 11/19/24 07:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Barium	**56.7**	ug/L	5.0	0.64	1	11/19/24 14:30	11/26/24 23:28	7440-39-3	
Boron	**12000**	ug/L	100	6.4	1	11/19/24 14:30	11/26/24 23:28	7440-42-8	
Calcium	**151000**	ug/L	200	26.9	1	11/19/24 14:30	11/26/24 23:28	7440-70-2	
Iron	**137**	ug/L	50.0	9.1	1	11/19/24 14:30	11/26/24 23:28	7439-89-6	
Lithium	**24.6**	ug/L	10.0	3.7	1	11/19/24 14:30	11/26/24 23:28	7439-93-2	
Magnesium	**3020**	ug/L	50.0	20.1	1	11/19/24 14:30	11/26/24 23:28	7439-95-4	
Manganese	**151**	ug/L	5.0	0.39	1	11/19/24 14:30	11/26/24 23:28	7439-96-5	
Molybdenum	**1310**	ug/L	20.0	1.0	1	11/19/24 14:30	11/26/24 23:28	7439-98-7	
Potassium	**23800**	ug/L	500	69.7	1	11/19/24 14:30	11/26/24 23:28	7440-09-7	
Sodium	**34700**	ug/L	500	115	1	11/19/24 14:30	11/26/24 23:28	7440-23-5	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City								
Arsenic	**3.7**	ug/L	1.0	0.13	1	12/03/24 09:18	12/10/24 12:34	7440-38-2	
Cadmium	**0.56**	ug/L	0.50	0.050	1	12/03/24 09:18	12/10/24 12:34	7440-43-9	
Chromium	**0.37J**	ug/L	1.0	0.30	1	12/03/24 09:18	12/10/24 12:34	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	12/03/24 09:18	12/10/24 12:34	7782-49-2	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**214**	mg/L	20.0	10.5	1		11/27/24 20:35		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**703**	mg/L	13.3	13.3	1		11/25/24 12:53		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**23.3**	mg/L	10.0	5.3	10		12/14/24 11:32	16887-00-6	
Fluoride	**1.0**	mg/L	0.20	0.12	1		12/14/24 11:19	16984-48-8	
Sulfate	**286**	mg/L	50.0	27.5	50		12/14/24 11:46	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA
Pace Project No.: 60464769

Sample: S-UMW-3D **Lab ID: 60464769004** Collected: 11/18/24 12:15 Received: 11/19/24 07:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Barium	**61.8**	ug/L	5.0	0.64	1	11/19/24 14:30	11/26/24 23:36	7440-39-3	
Boron	**32400**	ug/L	100	6.4	1	11/19/24 14:30	11/26/24 23:36	7440-42-8	
Calcium	**225000**	ug/L	200	26.9	1	11/19/24 14:30	11/26/24 23:36	7440-70-2	
Iron	**715**	ug/L	50.0	9.1	1	11/19/24 14:30	11/26/24 23:36	7439-89-6	
Lithium	**12.5**	ug/L	10.0	3.7	1	11/19/24 14:30	11/26/24 23:36	7439-93-2	
Magnesium	**10700**	ug/L	50.0	20.1	1	11/19/24 14:30	11/26/24 23:36	7439-95-4	
Manganese	**401**	ug/L	5.0	0.39	1	11/19/24 14:30	11/26/24 23:36	7439-96-5	
Molybdenum	**4820**	ug/L	20.0	1.0	1	11/19/24 14:30	11/26/24 23:36	7439-98-7	
Potassium	**18600**	ug/L	500	69.7	1	11/19/24 14:30	11/26/24 23:36	7440-09-7	
Sodium	**90500**	ug/L	500	115	1	11/19/24 14:30	11/26/24 23:36	7440-23-5	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City								
Arsenic	**1.5**	ug/L	1.0	0.13	1	12/03/24 09:18	12/10/24 12:36	7440-38-2	
Cadmium	**2.0**	ug/L	0.50	0.050	1	12/03/24 09:18	12/10/24 12:36	7440-43-9	
Chromium	**<0.30**	ug/L	1.0	0.30	1	12/03/24 09:18	12/10/24 12:36	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	12/03/24 09:18	12/10/24 12:36	7782-49-2	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**132**	mg/L	20.0	10.5	1		11/27/24 20:52		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**1240**	mg/L	20.0	20.0	1		11/25/24 12:53		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**18.4**	mg/L	1.0	0.53	1		12/14/24 12:00	16887-00-6	
Fluoride	**0.38**	mg/L	0.20	0.12	1		12/14/24 12:00	16984-48-8	
Sulfate	**808**	mg/L	200	110	200		12/14/24 12:14	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA
Pace Project No.: 60464769

Sample: S-UMW-4D **Lab ID: 60464769005** Collected: 11/18/24 11:20 Received: 11/19/24 07:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Barium	**260**	ug/L	5.0	0.64	1	11/19/24 14:30	11/26/24 23:38	7440-39-3	
Boron	**1210**	ug/L	100	6.4	1	11/19/24 14:30	11/26/24 23:38	7440-42-8	
Calcium	**135000**	ug/L	200	26.9	1	11/19/24 14:30	11/26/24 23:38	7440-70-2	
Iron	**38.0J**	ug/L	50.0	9.1	1	11/19/24 14:30	11/26/24 23:38	7439-89-6	
Lithium	**25.4**	ug/L	10.0	3.7	1	11/19/24 14:30	11/26/24 23:38	7439-93-2	
Magnesium	**30600**	ug/L	50.0	20.1	1	11/19/24 14:30	11/26/24 23:38	7439-95-4	
Manganese	**54.5**	ug/L	5.0	0.39	1	11/19/24 14:30	11/26/24 23:38	7439-96-5	
Molybdenum	**85.4**	ug/L	20.0	1.0	1	11/19/24 14:30	11/26/24 23:38	7439-98-7	
Potassium	**9500**	ug/L	500	69.7	1	11/19/24 14:30	11/26/24 23:38	7440-09-7	
Sodium	**48900**	ug/L	500	115	1	11/19/24 14:30	11/26/24 23:38	7440-23-5	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City								
Arsenic	**0.56J**	ug/L	1.0	0.13	1	12/03/24 09:18	12/10/24 12:53	7440-38-2	
Cadmium	**1.8**	ug/L	0.50	0.050	1	12/03/24 09:18	12/10/24 12:53	7440-43-9	
Chromium	**0.35J**	ug/L	1.0	0.30	1	12/03/24 09:18	12/10/24 12:53	7440-47-3	
Selenium	**0.22J**	ug/L	1.0	0.18	1	12/03/24 09:18	12/10/24 12:53	7782-49-2	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**215**	mg/L	20.0	10.5	1		11/27/24 20:58		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**614**	mg/L	10.0	10.0	1		11/25/24 12:53		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**30.9**	mg/L	20.0	10.5	20		12/14/24 12:42	16887-00-6	
Fluoride	**0.55**	mg/L	0.20	0.12	1		12/14/24 12:28	16984-48-8	
Sulfate	**223**	mg/L	20.0	11.0	20		12/14/24 12:42	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA
Pace Project No.: 60464769

Sample: S-UMW-5D **Lab ID: 60464769006** Collected: 11/18/24 14:53 Received: 11/19/24 07:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Barium	**428**	ug/L	5.0	0.64	1	11/19/24 14:30	11/26/24 23:40	7440-39-3	
Boron	**5000**	ug/L	100	6.4	1	11/19/24 14:30	11/26/24 23:40	7440-42-8	
Calcium	**76600**	ug/L	200	26.9	1	11/19/24 14:30	11/26/24 23:40	7440-70-2	
Iron	**3490**	ug/L	50.0	9.1	1	11/19/24 14:30	11/26/24 23:40	7439-89-6	
Lithium	**18.6**	ug/L	10.0	3.7	1	11/19/24 14:30	11/26/24 23:40	7439-93-2	
Magnesium	**16400**	ug/L	50.0	20.1	1	11/19/24 14:30	11/26/24 23:40	7439-95-4	
Manganese	**422**	ug/L	5.0	0.39	1	11/19/24 14:30	11/26/24 23:40	7439-96-5	
Molybdenum	**173**	ug/L	20.0	1.0	1	11/19/24 14:30	11/26/24 23:40	7439-98-7	
Potassium	**9410**	ug/L	500	69.7	1	11/19/24 14:30	11/26/24 23:40	7440-09-7	
Sodium	**20800**	ug/L	500	115	1	11/19/24 14:30	11/26/24 23:40	7440-23-5	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City								
Arsenic	**0.42J**	ug/L	1.0	0.13	1	12/03/24 09:18	12/10/24 12:55	7440-38-2	
Cadmium	**0.079J**	ug/L	0.50	0.050	1	12/03/24 09:18	12/10/24 12:55	7440-43-9	
Chromium	**0.43J**	ug/L	1.0	0.30	1	12/03/24 09:18	12/10/24 12:55	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	12/03/24 09:18	12/10/24 12:55	7782-49-2	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**259**	mg/L	20.0	10.5	1		11/27/24 21:05		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**371**	mg/L	10.0	10.0	1		11/25/24 12:53		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**32.0**	mg/L	10.0	5.3	10		12/14/24 13:23	16887-00-6	
Fluoride	**0.29**	mg/L	0.20	0.12	1		12/14/24 13:09	16984-48-8	
Sulfate	**1.7**	mg/L	1.0	0.55	1		12/14/24 13:09	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA
Pace Project No.: 60464769

Sample: S-UMW-6D **Lab ID: 60464769007** Collected: 11/18/24 13:45 Received: 11/19/24 07:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Barium	**143**	ug/L	5.0	0.64	1	11/19/24 14:30	11/26/24 23:17	7440-39-3	
Boron	**162**	ug/L	100	6.4	1	11/19/24 14:30	11/26/24 23:17	7440-42-8	
Calcium	**98000**	ug/L	200	26.9	1	11/19/24 14:30	11/26/24 23:17	7440-70-2	M1,P6
Iron	**7260**	ug/L	50.0	9.1	1	11/19/24 14:30	11/26/24 23:17	7439-89-6	
Lithium	**12.9**	ug/L	10.0	3.7	1	11/19/24 14:30	11/26/24 23:17	7439-93-2	
Magnesium	**22300**	ug/L	50.0	20.1	1	11/19/24 14:30	11/26/24 23:17	7439-95-4	
Manganese	**610**	ug/L	5.0	0.39	1	11/19/24 14:30	11/26/24 23:17	7439-96-5	
Molybdenum	**26.0**	ug/L	20.0	1.0	1	11/19/24 14:30	11/26/24 23:17	7439-98-7	
Potassium	**3430**	ug/L	500	69.7	1	11/19/24 14:30	11/26/24 23:17	7440-09-7	
Sodium	**6030**	ug/L	500	115	1	11/19/24 14:30	11/26/24 23:17	7440-23-5	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City								
Arsenic	**0.59J**	ug/L	1.0	0.13	1	12/03/24 09:18	12/10/24 12:44	7440-38-2	
Cadmium	**<0.050**	ug/L	0.50	0.050	1	12/03/24 09:18	12/10/24 12:44	7440-43-9	
Chromium	**0.33J**	ug/L	1.0	0.30	1	12/03/24 09:18	12/10/24 12:44	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	12/03/24 09:18	12/10/24 12:44	7782-49-2	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**351**	mg/L	20.0	10.5	1		11/27/24 21:11		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**414**	mg/L	10.0	10.0	1		11/25/24 12:54		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**5.6**	mg/L	1.0	0.53	1		12/14/24 09:00	16887-00-6	
Fluoride	**<0.12**	mg/L	0.20	0.12	1		12/14/24 09:00	16984-48-8	CL,M1,R1
Sulfate	**33.6**	mg/L	10.0	5.5	10		12/14/24 09:14	14808-79-8	M1

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ANALYTICAL RESULTS

Project: AMEREN SCPA
Pace Project No.: 60464769

Sample: S-UMW-DUP-1 **Lab ID: 60464769008** Collected: 11/18/24 00:00 Received: 11/19/24 07:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Barium	**423**	ug/L	5.0	0.64	1	11/19/24 14:30	11/26/24 23:43	7440-39-3	
Boron	**5010**	ug/L	100	6.4	1	11/19/24 14:30	11/26/24 23:43	7440-42-8	
Calcium	**75600**	ug/L	200	26.9	1	11/19/24 14:30	11/26/24 23:43	7440-70-2	
Iron	**3450**	ug/L	50.0	9.1	1	11/19/24 14:30	11/26/24 23:43	7439-89-6	
Lithium	**19.1**	ug/L	10.0	3.7	1	11/19/24 14:30	11/26/24 23:43	7439-93-2	
Magnesium	**16300**	ug/L	50.0	20.1	1	11/19/24 14:30	11/26/24 23:43	7439-95-4	
Manganese	**419**	ug/L	5.0	0.39	1	11/19/24 14:30	11/26/24 23:43	7439-96-5	
Molybdenum	**173**	ug/L	20.0	1.0	1	11/19/24 14:30	11/26/24 23:43	7439-98-7	
Potassium	**9340**	ug/L	500	69.7	1	11/19/24 14:30	11/26/24 23:43	7440-09-7	
Sodium	**20700**	ug/L	500	115	1	11/19/24 14:30	11/26/24 23:43	7440-23-5	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City								
Arsenic	**0.41J**	ug/L	1.0	0.13	1	12/03/24 09:18	12/10/24 12:58	7440-38-2	
Cadmium	**0.081J**	ug/L	0.50	0.050	1	12/03/24 09:18	12/10/24 12:58	7440-43-9	
Chromium	**0.45J**	ug/L	1.0	0.30	1	12/03/24 09:18	12/10/24 12:58	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	12/03/24 09:18	12/10/24 12:58	7782-49-2	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**301**	mg/L	20.0	10.5	1		12/02/24 15:46		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**372**	mg/L	10.0	10.0	1		11/25/24 12:54		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**26.8**	mg/L	10.0	5.3	10		12/14/24 14:18	16887-00-6	
Fluoride	**0.28**	mg/L	0.20	0.12	1		12/14/24 14:04	16984-48-8	
Sulfate	**1.8**	mg/L	1.0	0.55	1		12/14/24 14:04	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA
Pace Project No.: 60464769

Sample: S-BMW-1D **Lab ID: 60464769011** Collected: 11/20/24 10:00 Received: 11/20/24 15:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Barium	**336**	ug/L	5.0	0.64	1	11/22/24 08:54	12/10/24 17:07	7440-39-3	
Boron	**116**	ug/L	100	6.4	1	11/22/24 08:54	12/10/24 17:07	7440-42-8	
Calcium	**122000**	ug/L	200	26.9	1	11/22/24 08:54	12/10/24 17:07	7440-70-2	M1,P6
Iron	**9550**	ug/L	50.0	9.1	1	11/22/24 08:54	12/10/24 17:07	7439-89-6	M1
Lithium	**14.2**	ug/L	10.0	3.7	1	11/22/24 08:54	12/10/24 17:07	7439-93-2	
Magnesium	**26200**	ug/L	50.0	20.1	1	11/22/24 08:54	12/10/24 17:07	7439-95-4	M1
Manganese	**985**	ug/L	5.0	0.39	1	11/22/24 08:54	12/10/24 17:07	7439-96-5	M1
Molybdenum	**<1.0**	ug/L	20.0	1.0	1	11/22/24 08:54	12/10/24 17:07	7439-98-7	
Potassium	**2530**	ug/L	500	69.7	1	11/22/24 08:54	12/10/24 17:07	7440-09-7	
Sodium	**6950**	ug/L	500	115	1	11/22/24 08:54	12/10/24 17:07	7440-23-5	M1
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City								
Arsenic	**0.48J**	ug/L	1.0	0.13	1	12/03/24 09:18	12/10/24 13:07	7440-38-2	
Cadmium	**<0.050**	ug/L	0.50	0.050	1	12/03/24 09:18	12/10/24 13:07	7440-43-9	
Chromium	**<0.30**	ug/L	1.0	0.30	1	12/03/24 09:18	12/10/24 13:07	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	12/03/24 09:18	12/10/24 13:07	7782-49-2	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**384**	mg/L	20.0	10.5	1		12/02/24 18:32		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**463**	mg/L	10.0	10.0	1		11/27/24 17:58		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**11.6**	mg/L	1.0	0.53	1		12/14/24 15:42	16887-00-6	
Fluoride	**<0.12**	mg/L	0.20	0.12	1		12/14/24 15:42	16984-48-8	
Sulfate	**23.3**	mg/L	10.0	5.5	10		12/14/24 15:55	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA
Pace Project No.: 60464769

Sample: S-BMW-3D **Lab ID: 60464769012** Collected: 11/20/24 11:00 Received: 11/20/24 15:30 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Barium	**653**	ug/L	5.0	0.64	1	11/22/24 08:54	12/10/24 17:08	7440-39-3	
Boron	**58.4J**	ug/L	100	6.4	1	11/22/24 08:54	12/10/24 17:08	7440-42-8	
Calcium	**111000**	ug/L	200	26.9	1	11/22/24 08:54	12/10/24 17:08	7440-70-2	
Iron	**7900**	ug/L	50.0	9.1	1	11/22/24 08:54	12/10/24 17:08	7439-89-6	
Lithium	**18.7**	ug/L	10.0	3.7	1	11/22/24 08:54	12/10/24 17:08	7439-93-2	
Magnesium	**25400**	ug/L	50.0	20.1	1	11/22/24 08:54	12/10/24 17:08	7439-95-4	
Manganese	**548**	ug/L	5.0	0.39	1	11/22/24 08:54	12/10/24 17:08	7439-96-5	
Molybdenum	**<1.0**	ug/L	20.0	1.0	1	11/22/24 08:54	12/10/24 17:08	7439-98-7	
Potassium	**3270**	ug/L	500	69.7	1	11/22/24 08:54	12/10/24 17:08	7440-09-7	
Sodium	**6360**	ug/L	500	115	1	11/22/24 08:54	12/10/24 17:08	7440-23-5	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City								
Arsenic	**0.32J**	ug/L	1.0	0.13	1	12/03/24 09:18	12/10/24 13:10	7440-38-2	
Cadmium	**<0.050**	ug/L	0.50	0.050	1	12/03/24 09:18	12/10/24 13:10	7440-43-9	
Chromium	**<0.30**	ug/L	1.0	0.30	1	12/03/24 09:18	12/10/24 13:10	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	12/03/24 09:18	12/10/24 13:10	7782-49-2	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**372**	mg/L	20.0	10.5	1		12/02/24 18:39		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**436**	mg/L	10.0	10.0	1		11/27/24 17:58		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**12.6**	mg/L	1.0	0.53	1		12/14/24 16:09	16887-00-6	M1
Fluoride	**<0.12**	mg/L	0.20	0.12	1		12/14/24 16:09	16984-48-8	
Sulfate	**19.7**	mg/L	10.0	5.5	10		12/14/24 16:51	14808-79-8	

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QUALITY CONTROL DATA

Project: AMEREN SCPA
Pace Project No.: 60464769

QC Batch: 916806
QC Batch Method: EPA 200.7
Analysis Method: EPA 200.7
Analysis Description: 200.7 Metals, Total
Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60464769001

METHOD BLANK: 3630185 Matrix: Water
Associated Lab Samples: 60464769001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<0.64	5.0	0.64	12/04/24 16:03	
Boron	ug/L	<6.4	100	6.4	12/04/24 16:03	
Calcium	ug/L	<26.9	200	26.9	12/04/24 16:03	
Iron	ug/L	<9.1	50.0	9.1	12/04/24 16:03	
Lithium	ug/L	<3.7	10.0	3.7	12/04/24 16:03	
Magnesium	ug/L	<20.1	50.0	20.1	12/04/24 16:03	
Manganese	ug/L	<0.39	5.0	0.39	12/04/24 16:03	
Molybdenum	ug/L	<1.0	20.0	1.0	12/04/24 16:03	
Potassium	ug/L	<69.7	500	69.7	12/04/24 16:03	
Sodium	ug/L	<115	500	115	12/04/24 16:03	

LABORATORY CONTROL SAMPLE: 3630186

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	989	99	85-115	
Boron	ug/L	1000	932	93	85-115	
Calcium	ug/L	10000	10100	101	85-115	
Iron	ug/L	10000	10000	100	85-115	
Lithium	ug/L	1000	996	100	85-115	
Magnesium	ug/L	10000	9880	99	85-115	
Manganese	ug/L	1000	1030	103	85-115	
Molybdenum	ug/L	1000	1020	102	85-115	
Potassium	ug/L	10000	9750	98	85-115	
Sodium	ug/L	10000	10300	103	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3630187 3630188

Parameter	Units	60464704004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Barium	ug/L	297	1000	1000	1300	1290	100	99	70-130	1	20	
Boron	ug/L	103	1000	1000	1060	1040	96	94	70-130	2	20	
Calcium	ug/L	141000	10000	10000	150000	149000	97	79	70-130	1	20	
Iron	ug/L	1160	10000	10000	11500	11400	104	102	70-130	1	20	
Lithium	ug/L	40.3	1000	1000	1060	1040	102	100	70-130	2	20	
Magnesium	ug/L	31400	10000	10000	40800	40400	94	91	70-130	1	20	
Manganese	ug/L	588	1000	1000	1610	1590	102	100	70-130	1	20	
Molybdenum	ug/L	1.6J	1000	1000	1030	1030	103	102	70-130	1	20	

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QUALITY CONTROL DATA

Project: AMEREN SCPA
Pace Project No.: 60464769

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3630187 3630188

Parameter	Units	60464704004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Potassium	ug/L	6370	10000	10000	16400	16100	100	97	70-130	2	20	
Sodium	ug/L	4930	10000	10000	15100	14900	102	100	70-130	1	20	

MATRIX SPIKE SAMPLE: 3630189

Parameter	Units	60464704007 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	363	1000	1370	101	70-130	
Boron	ug/L	100	1000	1060	96	70-130	
Calcium	ug/L	148000	10000	154000	60	70-130	M1
Iron	ug/L	5470	10000	15900	105	70-130	
Lithium	ug/L	43.9	1000	1070	103	70-130	
Magnesium	ug/L	31900	10000	40600	86	70-130	
Manganese	ug/L	466	1000	1490	102	70-130	
Molybdenum	ug/L	1.1J	1000	1050	105	70-130	
Potassium	ug/L	6280	10000	16200	99	70-130	
Sodium	ug/L	5440	10000	15600	102	70-130	

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QUALITY CONTROL DATA

Project: AMEREN SCPA
Pace Project No.: 60464769

QC Batch: 916983
QC Batch Method: EPA 200.7
Analysis Method: EPA 200.7
Analysis Description: 200.7 Metals, Total
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60464769002, 60464769003, 60464769004, 60464769005, 60464769006, 60464769007, 60464769008

METHOD BLANK: 3630720 Matrix: Water
Associated Lab Samples: 60464769002, 60464769003, 60464769004, 60464769005, 60464769006, 60464769007, 60464769008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<0.64	5.0	0.64	12/04/24 19:34	
Boron	ug/L	<6.4	100	6.4	12/04/24 19:34	
Calcium	ug/L	<26.9	200	26.9	12/04/24 19:34	
Iron	ug/L	<9.1	50.0	9.1	12/04/24 19:34	
Lithium	ug/L	<3.7	10.0	3.7	12/04/24 19:34	
Magnesium	ug/L	<20.1	50.0	20.1	12/04/24 19:34	
Manganese	ug/L	<0.39	5.0	0.39	12/04/24 19:34	
Molybdenum	ug/L	<1.0	20.0	1.0	12/04/24 19:34	
Potassium	ug/L	252J	500	69.7	12/04/24 19:34	
Sodium	ug/L	316J	500	115	12/04/24 19:34	

LABORATORY CONTROL SAMPLE: 3630721

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	939	94	85-115	
Boron	ug/L	1000	899	90	85-115	
Calcium	ug/L	10000	9540	95	85-115	
Iron	ug/L	10000	9700	97	85-115	
Lithium	ug/L	1000	951	95	85-115	
Magnesium	ug/L	10000	9190	92	85-115	
Manganese	ug/L	1000	978	98	85-115	
Molybdenum	ug/L	1000	950	95	85-115	
Potassium	ug/L	10000	9520	95	85-115	
Sodium	ug/L	10000	9700	97	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3630722 3630723

Parameter	Units	60464769007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Barium	ug/L	143	1000	1000	1060	1120	92	98	70-130	5	20	
Boron	ug/L	162	1000	1000	1030	1080	87	91	70-130	4	20	
Calcium	ug/L	98000	10000	10000	107000	112000	88	143	70-130	5	20	M1
Iron	ug/L	7260	10000	10000	16500	17600	93	103	70-130	6	20	
Lithium	ug/L	12.9	1000	1000	955	993	94	98	70-130	4	20	
Magnesium	ug/L	22300	10000	10000	30700	32600	83	102	70-130	6	20	
Manganese	ug/L	610	1000	1000	1550	1620	94	101	70-130	4	20	
Molybdenum	ug/L	26.0	1000	1000	971	1010	94	99	70-130	4	20	

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QUALITY CONTROL DATA

Project: AMEREN SCPA
Pace Project No.: 60464769

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3630722 3630723

Parameter	Units	60464769007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Potassium	ug/L	3430	10000	10000	12500	13000	91	95	70-130	4	20	
Sodium	ug/L	6030	10000	10000	15000	15800	90	98	70-130	5	20	

MATRIX SPIKE SAMPLE: 3630724

Parameter	Units	60464769008 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	423	1000	1370	94	70-130	
Boron	ug/L	5010	1000	5820	81	70-130	
Calcium	ug/L	75600	10000	83100	75	70-130	
Iron	ug/L	3450	10000	13100	97	70-130	
Lithium	ug/L	19.1	1000	982	96	70-130	
Magnesium	ug/L	16300	10000	24700	84	70-130	
Manganese	ug/L	419	1000	1370	96	70-130	
Molybdenum	ug/L	173	1000	1150	97	70-130	
Potassium	ug/L	9340	10000	18600	92	70-130	
Sodium	ug/L	20700	10000	29400	87	70-130	

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QUALITY CONTROL DATA

Project: AMEREN SCPA
Pace Project No.: 60464769

QC Batch: 917373
QC Batch Method: EPA 200.7
Analysis Method: EPA 200.7
Analysis Description: 200.7 Metals, Total
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60464769011, 60464769012

METHOD BLANK: 3632823 Matrix: Water
Associated Lab Samples: 60464769011, 60464769012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<0.64	5.0	0.64	12/10/24 16:58	
Boron	ug/L	<6.4	100	6.4	12/10/24 16:58	
Calcium	ug/L	43.2J	200	26.9	12/10/24 16:58	
Iron	ug/L	18.1J	50.0	9.1	12/10/24 16:58	
Lithium	ug/L	<3.7	10.0	3.7	12/10/24 16:58	
Magnesium	ug/L	<20.1	50.0	20.1	12/10/24 16:58	
Manganese	ug/L	<0.39	5.0	0.39	12/10/24 16:58	
Molybdenum	ug/L	<1.0	20.0	1.0	12/10/24 16:58	
Potassium	ug/L	<69.7	500	69.7	12/10/24 16:58	
Sodium	ug/L	184J	500	115	12/10/24 16:58	

LABORATORY CONTROL SAMPLE: 3632824

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	1020	102	85-115	
Boron	ug/L	1000	954	95	85-115	
Calcium	ug/L	10000	10300	103	85-115	
Iron	ug/L	10000	10000	100	85-115	
Lithium	ug/L	1000	1030	103	85-115	
Magnesium	ug/L	10000	10100	101	85-115	
Manganese	ug/L	1000	1040	104	85-115	
Molybdenum	ug/L	1000	1010	101	85-115	
Potassium	ug/L	10000	10100	101	85-115	
Sodium	ug/L	10000	10300	103	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3632825 3632826

Parameter	Units	60465156001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Barium	ug/L	197	1000	1000	1090	1040	89	84	70-130	4	20	
Boron	ug/L	83.6J	1000	1000	932	881	85	80	70-130	6	20	
Calcium	ug/L	118000	10000	10000	128000	131000	107	132	70-130	2	20	M1
Iron	ug/L	13.6J	10000	10000	8860	8280	88	83	70-130	7	20	M1
Lithium	ug/L	28.0	1000	1000	941	881	91	85	70-130	7	20	
Magnesium	ug/L	19900	10000	10000	29200	29100	92	92	70-130	0	20	M1
Manganese	ug/L	331	1000	1000	1240	1180	91	85	70-130	6	20	M1
Molybdenum	ug/L	5.5J	1000	1000	905	828	90	82	70-130	9	20	

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QUALITY CONTROL DATA

Project: AMEREN SCPA
Pace Project No.: 60464769

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3632825 3632826

Parameter	Units	60465156001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Potassium	ug/L	5120	10000	10000	14300	13700	92	86	70-130	4	20	
Sodium	ug/L	4000	10000	10000	13000	12500	90	85	70-130	4	20	M1

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QUALITY CONTROL DATA

Project: AMEREN SCPA
Pace Project No.: 60464769

QC Batch: 918180
QC Batch Method: EPA 200.8
Analysis Method: EPA 200.8
Analysis Description: 200.8 MET
Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60464769002

METHOD BLANK: 3637136 Matrix: Water
Associated Lab Samples: 60464769002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	ug/L	<0.13	1.0	0.13	12/09/24 15:16	
Cadmium	ug/L	<0.050	0.50	0.050	12/09/24 15:16	
Chromium	ug/L	<0.30	1.0	0.30	12/09/24 15:16	
Selenium	ug/L	<0.18	1.0	0.18	12/09/24 15:16	

LABORATORY CONTROL SAMPLE: 3637137

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	40	49.0	123	85-115	L1
Cadmium	ug/L	40	47.3	118	85-115	L1
Chromium	ug/L	40	44.8	112	85-115	
Selenium	ug/L	40	54.7	137	85-115	L1

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3637139 3637138

Parameter	Units	60464769002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	ug/L	<0.13	40	40	48.7	48.5	122	121	70-130	0	20	
Cadmium	ug/L	<0.050	40	40	46.9	47.1	117	118	70-130	0	20	
Chromium	ug/L	0.35J	40	40	45.6	45.1	113	112	70-130	1	20	
Selenium	ug/L	<0.18	40	40	54.3	54.3	136	136	70-130	0	20	M0

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QUALITY CONTROL DATA

Project: AMEREN SCPA
Pace Project No.: 60464769

QC Batch: 918238
QC Batch Method: EPA 200.8
Analysis Method: EPA 200.8
Analysis Description: 200.8 MET
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60464769001, 60464769003, 60464769004, 60464769005, 60464769006, 60464769007, 60464769008, 60464769011, 60464769012

METHOD BLANK: 3636122 Matrix: Water
Associated Lab Samples: 60464769001, 60464769003, 60464769004, 60464769005, 60464769006, 60464769007, 60464769008, 60464769011, 60464769012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	ug/L	<0.13	1.0	0.13	12/10/24 12:03	
Cadmium	ug/L	<0.050	0.50	0.050	12/10/24 12:03	
Chromium	ug/L	<0.30	1.0	0.30	12/10/24 12:03	
Selenium	ug/L	<0.18	1.0	0.18	12/10/24 12:03	

LABORATORY CONTROL SAMPLE: 3636123

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	40	42.0	105	85-115	
Cadmium	ug/L	40	42.8	107	85-115	
Chromium	ug/L	40	44.2	110	85-115	
Selenium	ug/L	40	41.9	105	85-115	

MATRIX SPIKE SAMPLE: 3636124

Parameter	Units	60464769004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	1.5	40	45.3	109	70-130	
Cadmium	ug/L	2.0	40	41.6	99	70-130	
Chromium	ug/L	<0.30	40	36.7	91	70-130	
Selenium	ug/L	<0.18	40	41.5	103	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3636125 3636126

Parameter	Units	60464769007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	ug/L	0.59J	40	40	43.4	42.5	107	105	70-130	2	20	
Cadmium	ug/L	<0.050	40	40	41.9	41.1	105	103	70-130	2	20	
Chromium	ug/L	0.33J	40	40	42.1	41.1	104	102	70-130	2	20	
Selenium	ug/L	<0.18	40	40	42.0	41.1	105	103	70-130	2	20	

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QUALITY CONTROL DATA

Project: AMEREN SCPA
Pace Project No.: 60464769

QC Batch: 917909
QC Batch Method: SM 2320B
Analysis Method: SM 2320B
Analysis Description: 2320B Alkalinity
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60464769001, 60464769002

METHOD BLANK: 3634992 Matrix: Water
Associated Lab Samples: 60464769001, 60464769002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<10.5	20.0	10.5	11/27/24 15:47	

LABORATORY CONTROL SAMPLE: 3634993

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	480	96	90-110	

SAMPLE DUPLICATE: 3634994

Parameter	Units	60464293013 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	343	347	1	10	

SAMPLE DUPLICATE: 3634995

Parameter	Units	60464699001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	337	339	1	10	

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QUALITY CONTROL DATA

Project: AMEREN SCPA
Pace Project No.: 60464769

QC Batch: 917910
QC Batch Method: SM 2320B
Analysis Method: SM 2320B
Analysis Description: 2320B Alkalinity
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60464769003, 60464769004, 60464769005, 60464769006, 60464769007

METHOD BLANK: 3634996 Matrix: Water
Associated Lab Samples: 60464769003, 60464769004, 60464769005, 60464769006, 60464769007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<10.5	20.0	10.5	11/27/24 18:31	

LABORATORY CONTROL SAMPLE: 3634997

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	483	97	90-110	

SAMPLE DUPLICATE: 3634998

Parameter	Units	60464704004 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	442	443	0	10	

SAMPLE DUPLICATE: 3634999

Parameter	Units	60464795002 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	424	415	2	10	

SAMPLE DUPLICATE: 3635000

Parameter	Units	60464769007 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	351	351	0	10	

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QUALITY CONTROL DATA

Project: AMEREN SCPA
Pace Project No.: 60464769

QC Batch: 918130
QC Batch Method: SM 2320B
Analysis Method: SM 2320B
Analysis Description: 2320B Alkalinity
Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60464769008

METHOD BLANK: 3635810 Matrix: Water
Associated Lab Samples: 60464769008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<10.5	20.0	10.5	12/02/24 15:36	

LABORATORY CONTROL SAMPLE: 3635811

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	481	96	90-110	

SAMPLE DUPLICATE: 3635812

Parameter	Units	60464769008 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	301	294	2	10	

SAMPLE DUPLICATE: 3635813

Parameter	Units	60465166003 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	428	438	2	10	

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QUALITY CONTROL DATA

Project: AMEREN SCPA
Pace Project No.: 60464769

QC Batch: 918131
QC Batch Method: SM 2320B
Analysis Method: SM 2320B
Analysis Description: 2320B Alkalinity
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60464769011, 60464769012

METHOD BLANK: 3635814 Matrix: Water
Associated Lab Samples: 60464769011, 60464769012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<10.5	20.0	10.5	12/02/24 16:17	

LABORATORY CONTROL SAMPLE: 3635815

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	487	97	90-110	

SAMPLE DUPLICATE: 3635816

Parameter	Units	60464699019 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	306	306	0	10	

SAMPLE DUPLICATE: 3635817

Parameter	Units	60465156001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	329	347	5	10	

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QUALITY CONTROL DATA

Project: AMEREN SCPA
Pace Project No.: 60464769

QC Batch: 916954
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60464769001

METHOD BLANK: 3630622 Matrix: Water
Associated Lab Samples: 60464769001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	11/19/24 12:16	

LABORATORY CONTROL SAMPLE: 3630623

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1020	102	80-120	

SAMPLE DUPLICATE: 3630624

Parameter	Units	60464559003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	140	140	0	10	

SAMPLE DUPLICATE: 3630625

Parameter	Units	60464294022 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	647	664	3	10	

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QUALITY CONTROL DATA

Project: AMEREN SCPA
Pace Project No.: 60464769

QC Batch: 917114
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60464769002

METHOD BLANK: 3631336 Matrix: Water
Associated Lab Samples: 60464769002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	11/20/24 12:07	

LABORATORY CONTROL SAMPLE: 3631337

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1010	101	80-120	

SAMPLE DUPLICATE: 3631338

Parameter	Units	60464704004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	522	529	1	10	

SAMPLE DUPLICATE: 3631347

Parameter	Units	60464795002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1870	1820	3	10	

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QUALITY CONTROL DATA

Project: AMEREN SCPA
Pace Project No.: 60464769

QC Batch: 917602 | Analysis Method: SM 2540C
QC Batch Method: SM 2540C | Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60464769003, 60464769004, 60464769005, 60464769006, 60464769007, 60464769008

METHOD BLANK: 3633953 Matrix: Water
Associated Lab Samples: 60464769003, 60464769004, 60464769005, 60464769006, 60464769007, 60464769008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	11/25/24 12:53	

LABORATORY CONTROL SAMPLE: 3633955

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1020	102	80-120	

SAMPLE DUPLICATE: 3633957

Parameter	Units	60464769007 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	414	404	2	10	

SAMPLE DUPLICATE: 3633959

Parameter	Units	60464925002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	6130	6100	1	10	

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QUALITY CONTROL DATA

Project: AMEREN SCPA
Pace Project No.: 60464769

QC Batch: 917911
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60464769011, 60464769012

METHOD BLANK: 3635001 Matrix: Water
Associated Lab Samples: 60464769011, 60464769012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	11/27/24 17:56	

LABORATORY CONTROL SAMPLE: 3635002

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	992	99	80-120	

SAMPLE DUPLICATE: 3635003

Parameter	Units	60464699019 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	494	499	1	10	

SAMPLE DUPLICATE: 3635004

Parameter	Units	60465156001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	460	452	2	10	

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QUALITY CONTROL DATA

Project: AMEREN SCPA
Pace Project No.: 60464769

QC Batch: 919543
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60464769001, 60464769002

METHOD BLANK: 3641950 Matrix: Water
Associated Lab Samples: 60464769001, 60464769002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	12/13/24 11:50	
Fluoride	mg/L	<0.12	0.20	0.12	12/13/24 11:50	IC
Sulfate	mg/L	<0.55	1.0	0.55	12/13/24 11:50	

LABORATORY CONTROL SAMPLE: 3641951

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.6	92	90-110	
Fluoride	mg/L	2.5	2.4	96	90-110	IC
Sulfate	mg/L	5	4.9	98	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3641952 3641953

Parameter	Units	60464699002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	8.9	5	5	12.7	12.7	75	75	80-120	0	15	H1,M1
Fluoride	mg/L	0.44	2.5	2.5	3.5	3.5	121	122	80-120	0	15	H1,IC, M1
Sulfate	mg/L	35.2	50	50	101	84.2	132	98	80-120	18	15	H1,M1, R1

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QUALITY CONTROL DATA

Project: AMEREN SCPA
Pace Project No.: 60464769

QC Batch: 919641
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60464769003, 60464769004, 60464769005, 60464769006, 60464769007, 60464769008, 60464769011, 60464769012

METHOD BLANK: 3642615 Matrix: Water
Associated Lab Samples: 60464769003, 60464769004, 60464769005, 60464769006, 60464769007, 60464769008, 60464769011, 60464769012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	12/14/24 04:07	
Fluoride	mg/L	<0.12	0.20	0.12	12/14/24 04:07	CL
Sulfate	mg/L	<0.55	1.0	0.55	12/14/24 04:07	

LABORATORY CONTROL SAMPLE: 3642616

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.7	93	90-110	
Fluoride	mg/L	2.5	2.3	92	90-110	CL
Sulfate	mg/L	5	5.2	104	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3642617 3642618

Parameter	Units	60464769007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	5.6	5	5	10.9	9.8	107	85	80-120	11	15	
Fluoride	mg/L	<0.12	2.5	2.5	3.8	3.1	151	126	80-120	18	15	CL,M1,R1
Sulfate	mg/L	33.6	50	50	92.1	100	117	133	80-120	8	15	M1

MATRIX SPIKE SAMPLE: 3642620

Parameter	Units	60464769012 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	12.6	5	16.1	72	80-120	M1
Fluoride	mg/L	<0.12	2.5	3.0	120	80-120	
Sulfate	mg/L	19.7	50	72.0	105	80-120	

SAMPLE DUPLICATE: 3642619

Parameter	Units	60464769007 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	5.6	5.6	0	15	
Fluoride	mg/L	<0.12	<0.12		15	CL
Sulfate	mg/L	33.6	31.7	6	15	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA
Pace Project No.: 60464769

Sample: S-UMW-1D **Lab ID: 60464769001** Collected: 11/14/24 16:05 Received: 11/15/24 15:10 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.000 ± 0.621 (1.22) C:NA T:91%**	pCi/L	12/13/24 14:24	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.294 ± 0.390 (0.831) C:71% T:84%**	pCi/L	12/12/24 14:49	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA
Pace Project No.: 60464769

Sample: S-UMW-FB-1 **Lab ID: 60464769002** Collected: 11/14/24 16:20 Received: 11/19/24 07:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**-0.122 ± 0.340 (0.802) C:NA T:94%**	pCi/L	12/13/24 14:24	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.0491 ± 0.482 (1.10) C:65% T:93%**	pCi/L	12/12/24 14:49	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA
Pace Project No.: 60464769

Sample: S-UMW-2D **Lab ID: 60464769003** Collected: 11/18/24 09:52 Received: 11/19/24 07:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.119 ± 0.660 (1.23) C:NA T:89%**	pCi/L	12/13/24 14:24	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.456 ± 0.520 (1.10) C:67% T:83%**	pCi/L	12/12/24 14:49	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA
Pace Project No.: 60464769

Sample: S-UMW-3D **Lab ID: 60464769004** Collected: 11/18/24 12:15 Received: 11/19/24 07:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.389 ± 0.501 (0.834) C:NA T:95%**	pCi/L	12/13/24 14:36	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**1.55 ± 0.658 (1.09) C:70% T:82%**	pCi/L	12/12/24 14:49	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA
Pace Project No.: 60464769

Sample: S-UMW-4D **Lab ID: 60464769005** Collected: 11/18/24 11:20 Received: 11/19/24 07:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.181 ± 0.488 (0.906) C:NA T:91%**	pCi/L	12/13/24 14:36	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.521 ± 0.557 (1.16) C:68% T:82%**	pCi/L	12/12/24 14:49	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA
Pace Project No.: 60464769

Sample: S-UMW-5D **Lab ID: 60464769006** Collected: 11/18/24 14:53 Received: 11/19/24 07:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.0613 ± 0.399 (0.803) C:NA T:92%**	pCi/L	12/13/24 14:36	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.947 ± 0.531 (0.975) C:67% T:93%**	pCi/L	12/12/24 14:49	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA
Pace Project No.: 60464769

Sample: S-UMW-6D **Lab ID: 60464769007** Collected: 11/18/24 13:45 Received: 11/19/24 07:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.298 ± 0.478 (0.827) C:NA T:88%**	pCi/L	12/13/24 14:36	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.865 ± 0.499 (0.916) C:71% T:84%**	pCi/L	12/12/24 14:49	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA
Pace Project No.: 60464769

Sample: S-UMW-DUP-1 **Lab ID: 60464769008** Collected: 11/18/24 00:00 Received: 11/19/24 07:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
		Pace Analytical Services - Greensburg				
Radium-226	EPA 903.1	**-0.555 ± 0.579 (1.28) C:NA T:98%**	pCi/L	12/13/24 14:36	13982-63-3	
		Pace Analytical Services - Greensburg				
Radium-228	EPA 904.0	**1.05 ± 0.567 (1.03) C:59% T:91%**	pCi/L	12/12/24 14:49	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA
Pace Project No.: 60464769

Sample: S-UMW-MS-1 **Lab ID: 60464769009** Collected: 11/18/24 13:45 Received: 11/19/24 07:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**88.49 %REC ± NA (NA) C:NA T:NA**	pCi/L	12/13/24 14:36	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**95.59 %REC ± NA (NA) C:NA T:NA**	pCi/L	12/12/24 14:49	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA
Pace Project No.: 60464769

Sample: S-UMW-MSD-1 **Lab ID: 60464769010** Collected: 11/18/24 13:45 Received: 11/19/24 07:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**111.90 %REC 23.36RPD ± NA (NA) C:NA T:NA**	pCi/L	12/13/24 14:36	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**77.45 %REC 20.96RPD ± NA (NA) C:NA T:NA**	pCi/L	12/12/24 14:49	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA
Pace Project No.: 60464769

Sample: S-BMW-1D **Lab ID: 60464769011** Collected: 11/20/24 10:00 Received: 11/20/24 15:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
		Pace Analytical Services - Greensburg				
Radium-226	EPA 903.1	**0.232 ± 0.623 (1.13) C:NA T:96%**	pCi/L	12/18/24 14:54	13982-63-3	
		Pace Analytical Services - Greensburg				
Radium-228	EPA 904.0	**0.700 ± 0.377 (0.656) C:79% T:88%**	pCi/L	12/17/24 14:33	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA
Pace Project No.: 60464769

Sample: S-BMW-3D **Lab ID: 60464769012** Collected: 11/20/24 11:00 Received: 11/20/24 15:30 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**-0.0551 ± 0.495 (1.000) C:NA T:96%**	pCi/L	12/18/24 14:54	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**1.30 ± 0.486 (0.704) C:79% T:87%**	pCi/L	12/17/24 14:33	15262-20-1	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN SCPA
Pace Project No.: 60464769

QC Batch: 711719
QC Batch Method: EPA 903.1
Analysis Method: EPA 903.1
Analysis Description: 903.1 Radium-226
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 60464769001, 60464769002, 60464769003, 60464769004, 60464769005, 60464769006, 60464769007, 60464769008, 60464769009, 60464769010

METHOD BLANK: 3466238 Matrix: Water
Associated Lab Samples: 60464769001, 60464769002, 60464769003, 60464769004, 60464769005, 60464769006, 60464769007, 60464769008, 60464769009, 60464769010

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.178 ± 0.277 (0.479) C:NA T:95%	pCi/L	12/13/24 14:24	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN SCPA
Pace Project No.: 60464769

QC Batch: 713036
QC Batch Method: EPA 904.0
Analysis Method: EPA 904.0
Analysis Description: 904.0 Radium 228
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 60464769011, 60464769012

METHOD BLANK: 3472020 Matrix: Water
Associated Lab Samples: 60464769011, 60464769012

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.125 ± 0.321 (0.717) C:79% T:86%	pCi/L	12/17/24 14:33	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN SCPA
Pace Project No.: 60464769

QC Batch: 711721
QC Batch Method: EPA 904.0
Analysis Method: EPA 904.0
Analysis Description: 904.0 Radium 228
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 60464769001, 60464769002, 60464769003, 60464769004, 60464769005, 60464769006, 60464769007, 60464769008, 60464769009, 60464769010

METHOD BLANK: 3466245 Matrix: Water
Associated Lab Samples: 60464769001, 60464769002, 60464769003, 60464769004, 60464769005, 60464769006, 60464769007, 60464769008, 60464769009, 60464769010

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.226 ± 0.347 (0.750) C:63% T:90%	pCi/L	12/12/24 14:48	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN SCPA
Pace Project No.: 60464769

QC Batch: 713035
QC Batch Method: EPA 903.1
Analysis Method: EPA 903.1
Analysis Description: 903.1 Radium-226
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 60464769011, 60464769012

METHOD BLANK: 3472019 Matrix: Water
Associated Lab Samples: 60464769011, 60464769012

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.280 ± 0.368 (0.612) C:NA T:95%	pCi/L	12/18/24 14:54	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALIFIERS

Project: AMEREN SCPA
Pace Project No.: 60464769

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval). Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

CL	The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased low.
H1	Analysis conducted outside the EPA method holding time.
IC	The initial calibration for this compound was outside of method control limits. The result is estimated.
L1	Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results for this analyte in associated samples may be biased high.
M0	Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
P6	Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.
R1	RPD value was outside control limits.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN SCPA
Pace Project No.: 60464769

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60464769001	**S-UMW-1D**	EPA 200.7	916806	EPA 200.7	916863
60464769002	**S-UMW-FB-1**	EPA 200.7	916983	EPA 200.7	917023
60464769003	**S-UMW-2D**	EPA 200.7	916983	EPA 200.7	917023
60464769004	**S-UMW-3D**	EPA 200.7	916983	EPA 200.7	917023
60464769005	**S-UMW-4D**	EPA 200.7	916983	EPA 200.7	917023
60464769006	**S-UMW-5D**	EPA 200.7	916983	EPA 200.7	917023
60464769007	**S-UMW-6D**	EPA 200.7	916983	EPA 200.7	917023
60464769008	**S-UMW-DUP-1**	EPA 200.7	916983	EPA 200.7	917023
60464769011	**S-BMW-1D**	EPA 200.7	917373	EPA 200.7	917466
60464769012	**S-BMW-3D**	EPA 200.7	917373	EPA 200.7	917466
60464769001	**S-UMW-1D**	EPA 200.8	918238	EPA 200.8	918269
60464769002	**S-UMW-FB-1**	EPA 200.8	918180	EPA 200.8	918479
60464769003	**S-UMW-2D**	EPA 200.8	918238	EPA 200.8	918269
60464769004	**S-UMW-3D**	EPA 200.8	918238	EPA 200.8	918269
60464769005	**S-UMW-4D**	EPA 200.8	918238	EPA 200.8	918269
60464769006	**S-UMW-5D**	EPA 200.8	918238	EPA 200.8	918269
60464769007	**S-UMW-6D**	EPA 200.8	918238	EPA 200.8	918269
60464769008	**S-UMW-DUP-1**	EPA 200.8	918238	EPA 200.8	918269
60464769011	**S-BMW-1D**	EPA 200.8	918238	EPA 200.8	918269
60464769012	**S-BMW-3D**	EPA 200.8	918238	EPA 200.8	918269
60464769001	**S-UMW-1D**	EPA 903.1	711719		
60464769002	**S-UMW-FB-1**	EPA 903.1	711719		
60464769003	**S-UMW-2D**	EPA 903.1	711719		
60464769004	**S-UMW-3D**	EPA 903.1	711719		
60464769005	**S-UMW-4D**	EPA 903.1	711719		
60464769006	**S-UMW-5D**	EPA 903.1	711719		
60464769007	**S-UMW-6D**	EPA 903.1	711719		
60464769008	**S-UMW-DUP-1**	EPA 903.1	711719		
60464769009	**S-UMW-MS-1**	EPA 903.1	711719		
60464769010	**S-UMW-MSD-1**	EPA 903.1	711719		
60464769011	**S-BMW-1D**	EPA 903.1	713035		
60464769012	**S-BMW-3D**	EPA 903.1	713035		
60464769001	**S-UMW-1D**	EPA 904.0	711721		
60464769002	**S-UMW-FB-1**	EPA 904.0	711721		
60464769003	**S-UMW-2D**	EPA 904.0	711721		
60464769004	**S-UMW-3D**	EPA 904.0	711721		
60464769005	**S-UMW-4D**	EPA 904.0	711721		
60464769006	**S-UMW-5D**	EPA 904.0	711721		
60464769007	**S-UMW-6D**	EPA 904.0	711721		
60464769008	**S-UMW-DUP-1**	EPA 904.0	711721		
60464769009	**S-UMW-MS-1**	EPA 904.0	711721		
60464769010	**S-UMW-MSD-1**	EPA 904.0	711721		
60464769011	**S-BMW-1D**	EPA 904.0	713036		
60464769012	**S-BMW-3D**	EPA 904.0	713036		

REPORT OF LABORATORY ANALYSIS

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Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN SCPA
Pace Project No.: 60464769

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60464769001	**S-UMW-1D**	SM 2320B	917909		
60464769002	**S-UMW-FB-1**	SM 2320B	917909		
60464769003	**S-UMW-2D**	SM 2320B	917910		
60464769004	**S-UMW-3D**	SM 2320B	917910		
60464769005	**S-UMW-4D**	SM 2320B	917910		
60464769006	**S-UMW-5D**	SM 2320B	917910		
60464769007	**S-UMW-6D**	SM 2320B	917910		
60464769008	**S-UMW-DUP-1**	SM 2320B	918130		
60464769011	**S-BMW-1D**	SM 2320B	918131		
60464769012	**S-BMW-3D**	SM 2320B	918131		
60464769001	**S-UMW-1D**	SM 2540C	916954		
60464769002	**S-UMW-FB-1**	SM 2540C	917114		
60464769003	**S-UMW-2D**	SM 2540C	917602		
60464769004	**S-UMW-3D**	SM 2540C	917602		
60464769005	**S-UMW-4D**	SM 2540C	917602		
60464769006	**S-UMW-5D**	SM 2540C	917602		
60464769007	**S-UMW-6D**	SM 2540C	917602		
60464769008	**S-UMW-DUP-1**	SM 2540C	917602		
60464769011	**S-BMW-1D**	SM 2540C	917911		
60464769012	**S-BMW-3D**	SM 2540C	917911		
60464769001	**S-UMW-1D**	EPA 300.0	919543		
60464769002	**S-UMW-FB-1**	EPA 300.0	919543		
60464769003	**S-UMW-2D**	EPA 300.0	919641		
60464769004	**S-UMW-3D**	EPA 300.0	919641		
60464769005	**S-UMW-4D**	EPA 300.0	919641		
60464769006	**S-UMW-5D**	EPA 300.0	919641		
60464769007	**S-UMW-6D**	EPA 300.0	919641		
60464769008	**S-UMW-DUP-1**	EPA 300.0	919641		
60464769011	**S-BMW-1D**	EPA 300.0	919641		
60464769012	**S-BMW-3D**	EPA 300.0	919641		

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WO# : 60464769

60464769

Pace ANALYTICAL SERVICES	DC#_Title: ENV-FRM-LENE-0009_Sample		
	Revision: 2	Effective Date: 01/12/2022	Issued By: Lenexa

Client Name: Rocksmith Geoeng

Courier: FedEx ☐ UPS ☐ VIA ☐ Clay ☐ PEX ☐ ECI ☐ Pace ☐ Xroads ☑ Client ☐ Other ☐

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☑

Custody Seal on Cooler/Box Present: Yes ☐ No ☑ Seals intact: Yes ☐ No ☑

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☑ Other ☐

Thermometer Used: T298 **Type of Ice:** Wet Blue None

Cooler Temperature (°C): As-read 1.2/14.2 Corr. Factor -0.1 Corrected 1.1/14.1

Date and initials of person examining contents: PM 11/19/24

Temperature should be above freezing to 6°C

Chain of Custody present:	☑Yes ☐No ☐N/A	Receive sample S-UMW-FB-1 on 11/19/24.
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	
Samples arrived within holding time:	☑Yes ☐No ☐N/A	
Short Hold Time analyses (<72hr):	☐Yes ☑No ☐N/A	
Rush Turn Around Time requested:	☐Yes ☑No ☐N/A	
Sufficient volume:	☑Yes ☐No ☐N/A	
Correct containers used:	☑Yes ☐No ☐N/A	
Pace containers used:	☑Yes ☐No ☐N/A	
Containers intact:	☑Yes ☐No ☐N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☐No ☑N/A	
Filtered volume received for dissolved tests?	☐Yes ☐No ☑N/A	
Sample labels match COC: Date / time / ID / analyses	☑Yes ☐No ☐N/A	
Samples contain multiple phases? Matrix: WT	☐Yes ☑No ☐N/A	
Containers requiring pH preservation in compliance? (HNO_3, H_2SO_4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) **LOT#:** 88727	☑Yes ☐No ☐N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks: Lead acetate strip turns dark? (Record only)	☐Yes ☐No	
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No	
Trip Blank present:	☐Yes ☐No ☑N/A	
Headspace in VOA vials (>6mm):	☐Yes ☐No ☑N/A	
Samples from USDA Regulated Area: State:	☐Yes ☐No ☑N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☑N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

Pace Analytical Services	DC#_Title: ENV-FRM-LENE-0009_Sample Condition Upon Receipt (SCUR)		
	Revision: 2	Effective Date: 01/12/2022	Issued By: Lenexa

Client Name: Rocksmith

Courier: FedEx ☐ UPS ☐ VIA ☐ Clay ☐ PEX ☐ ECI ☐ Pace ☐ Xroads ☑ Client ☐ Other ☐

Tracking #: _____ Pace Shipping Label Used? Yes ☑ No ☐

Custody Seal on Cooler/Box Present: Yes ☑ No ☐ Seals intact: Yes ☑ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☑ Other ☐

Thermometer Used: T298 **Type of Ice:** (Wet) Blue None

Cooler Temperature (°C): **As-read** 2.0 **Corr. Factor** -0.1 **Corrected** 1.9

Date and initials of person examining contents: MM 11/16/24

Temperature should be above freezing to 6°C

Chain of Custody present:	☑Yes ☐No ☐N/A	
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	Cooler 2) 17.4°
Samples arrived within holding time:	☑Yes ☐No ☐N/A	
Short Hold Time analyses (<72hr):	☐Yes ☑No ☐N/A	The 2 BP1N's from sample 1
Rush Turn Around Time requested:	☐Yes ☑No ☐N/A	were in cooler two
Sufficient volume:	☑Yes ☐No ☐N/A	
Correct containers used:	☑Yes ☐No ☐N/A	~~We did not receive volume~~
Pace containers used:	☑Yes ☐No ☐N/A	~~For sample SUMW-FB-1~~
Containers intact:	☑Yes ☐No ☐N/A	AMM 11/19/24
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☑No ☐N/A	
Filtered volume received for dissolved tests?	☐Yes ☑No ☐N/A	
Sample labels match COC: Date / time / ID / analyses	☑Yes ☐No ☐N/A	
Samples contain multiple phases? Matrix: WT	☐Yes ☑No ☐N/A	
Containers requiring pH preservation in compliance? (HNO_3, H_2SO_4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) **LOT#:** 88727	☑Yes ☐No ☐N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks: Lead acetate strip turns dark? (Record only)	☐Yes ☐No	
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No	
Trip Blank present:	☐Yes ☐No ☑N/A	
Headspace in VOA vials (>6mm):	☐Yes ☐No ☑N/A	
Samples from USDA Regulated Area: State:	☐Yes ☑No ☐N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☑No ☐N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

Qualtrax Document ID: 30468

Pace® Location Requested (City/State):
Pace Analytical Kansas
9608 Loiret Blvd., Lenexa, KS 66219

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here

60464769

Scan QR Code for Instructions

Company Name:	Rocksmith Geoengineering, LLC	Contact/Report To:	Mark Haddock
Street Address:	2320 Creve Coeur Mill Road, Maryland Heights, MO 63043	Phone #:	314-974-6578
		E-Mail:	mark haddock@rocksmithgeo.com
		Cc E-Mail:	
Customer Project #:	COC# 7	Invoice To:	Mark Haddock
Project Name:	AMEREN SCPA	Invoice E-Mail:	mark haddock@rocksmithgeo.com
Site Collection Info/Facility ID (as applicable):		Purchase Order # (if applicable):	
		Quote #:	

Time Zone Collected: [ ] AK [ ] PT [ ] MT [ ] CT [ ] ET

County / State origin of sample(s): Missouri

Data Deliverables: [ ] Level II [ ] Level III [ ] Level IV [ ] EQUIS [ ] Other

Regulatory Program (DW, RCRA, etc.) as applicable: Reportable [ ] Yes [ ] No

Rush (Pre-approval required): [ ] Same Day [ ] 1 Day [ ] 2 Day [ ] 3 Day [ ] Other _____

DW PWSID # or WW Permit # as applicable:

Date Results Requested:

Field Filtered (if applicable): [ ] Yes [ ] No

Analysis:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Waste Water (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Surface Water (SW), Sediment (SED), Sludge (SL), Caulk (CK), Leachate (LL), Biosolid (BS), Other (OT)

Specify Container Size **: 1 1 3 3 1

Identify Container Preservative Type***: 1 1 2 2 2

** Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL vial, (7) EnCore, (8) TerraCore, (9) 90mL, (10) Other

*** Preservative Types: (1) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Sod. Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other

Customer Sample ID	Matrix *	Comp / Grab	Composite Start Date	Composite Start Time	Collected or Composite End Date	Collected or Composite End Time	# Cont.	Res. Chlorine Results	Res. Chlorine Units	Chloride/Fluoride/Sulfate	TDS / Alkalinity	App III and Cat/An Metals (200.7)*	Appendix IV Metals (200.7/200.8)**	Radium 226 & Radium 228
S-UMW-1D	WT	G			11-14-24	1605	4			✓	✓	✓	✓	✓
S-UMW-2D	WT													
S-UMW-3D	WT													
S-UMW-4D	WT													
S-UMW-5D	WT													
S-UMW-6D	WT													
S-BMW-1D	WT													
S-BMW-3D	WT													
S-UMW-DUP-1	WT													
S-UMW-FB-1	WT	G			11-14-24	1620	4			✓	✓	✓	✓	✓

Lab Use Only: Proj. Mgr: Jamie Church; AcctNum / Client ID:; Table #:; Profile / Template: 15856; Prelog / Bottle Ord. ID: EZ 3163155

Sample Comment

Preservation non-conformance identified for sample:

Additional Instructions from Pace®:
***App III and Cat/An Metals* - EPA 200.7: Fe, Mg, Mn, K, Na, Ca, B**
****App IV Metals - EPA 200.7 -Ba,Li,Mo & 200.8 Metals - As,Cd,Cr,Se**

Collected By: (Printed Name) John Rasmussen

Signature:

Customer Remarks / Special Conditions / Possible Hazards:

# Coolers:	Thermometer ID:	Correction Factor (°C):	Obs. Temp. (°C)	Corrected Temp (°C)	On Ice:
2	TL98	-0.1	1.9	1.7	

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Tracking Number:
Rocksmith	11/15/24 1510		11/16/24 05:34	
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Delivered by: [ ] In-Person [ ] Courier
		1.1/14.1	11/19/24 0700	[ ] FedEx [ ] UPS [ ] Other
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Page: 1 of 1

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace® Terms and Conditions found at https://www.pacelabs.com/resource-library/resource/pace-terms-and-conditions/

ENV-FRM-CORQ-0019_v02_110123 ©

Client: Rocksmith Profile/EZ #: ez 3163155

Site: Coc#7 Ameren SCPA Notes:

COC Line Item	Matrix	VG9H	DG9H	DG9Q	VG9U	DG9U	DG9M	DG9B	BG1U	AG1H	AG1U	AG2U	AG3S	AG4U	AG5U	JGFU	WGKU	WGDU	BP1U	BP2U	BP3U	BP1N	BP3N	BP3F	BP3S	BP3B	BP3Z	WPDU	ZPLC	Other		
1	WT																		1			2	1									
2																																
3																																
4																																
5																																
6																																
7																																
8																																
9																																
10	WT																		1			2	1									
11																																
12																																

Container Codes

Glass			
DG9B	40mL bisulfate clear vial	WGKU	8oz clear soil jar
DG9H	40mL HCl amber voa vial	WGFU	4oz clear soil jar
DG9M	40mL MeOH clear vial	WG2U	2oz clear soil jar
DG9Q	40mL TSP amber vial	JGFU	4oz unpreserved amber wide
DG9S	40mL H2SO4 amber vial	AG0U	100mL unores amber glass
DG9T	40mL Na Thio amber vial	AG1H	1L HCl amber glass
DG9U	40mL amber unpreserved	AG1S	1L H2SO4 amber glass
VG9H	40mL HCl clear vial	AG1T	1L Na Thiosulfate clear/amber glass
VG9T	40mL Na Thio. clear vial	AG1U	1liter unpres amber glass
VG9U	40mL unpreserved clear vial	AG2N	500mL HNO3 amber glass
BG1S	1liter H2SO4 clear glass	AG2S	500mL H2SO4 amber glass
BG1U	1liter unpres glass	AG3S	250mL H2SO4 amber glass
BG3H	250mL HCL Clear glass	AG2U	500mL unpres amber glass
BG3U	250mL Unpres Clear glass	AG3U	250mL unpres amber glass
WGDU	16oz clear soil jar	AG4U	125mL unpres amber glass
		AG5U	100mL unpres amber glass

Plastic	
BP1B	1L NAOH plastic
BP1N	1L HNO3 plastic
BP1S	1L H2SO4 plastic
BP1U	1L unpreserved plastic
BP1Z	1L NaOH, Zn Acetate
BP2B	500mL NAOH plastic
BP2N	500mL HNO3 plastic
BP2S	500mL H2SO4 plastic
BP2U	500mL unpreserved plastic
BP2Z	500mL NaOH, Zn Acetate
BP3B	250mL NaOH plastic
BP3F	250mL HNO3 plastic - field filtered
BP3N	250mL HNO3 plastic
BP3U	250mL unpreserved plastic
BP3S	250mL H2SO4 plastic
BP3Z	250mL NaOH, Zn Acetate
BP4U	125mL unpreserved plastic
BP4N	125mL HNO3 plastic
BP4S	125mL H2SO4 plastic
WPDU	16oz unpresserved plstic

Misc.	
I	Wipe/Swab
SP5T	120mL Coliform Na Thiosulfate
ZPLC	Ziploc Bag
AF	Air Filter
C	Air Cassettes
R	Terracore Kit
U	Summa Can

Matrix	
WT	Water
SL	Solid
NAL	Non-aqueous Liquid
OL	OIL
WP	Wipe
DW	Drinking Water

Work Order Number: **WO#: 60464769**

PM: JLS Due Date: 12/04/24

CLIENT: Rocksmith

WO# : 60464769

60464769

Pace ANALYTICAL SERVICES	DC#_Title: ENV-FRM-LENE-0009_Sample Cor		
	Revision: 2	Effective Date: 01/12/2022	Issued By: Lenexa

Client Name: Rocksmith Geoeng

Courier: FedEx ☐ UPS ☐ VIA ☐ Clay ☐ PEX ☐ ECI ☐ Pace ☐ Xroads ☑ Client ☐ Other ☐

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☑

Custody Seal on Cooler/Box Present: Yes ☑ No ☐ Seals intact: Yes ☑ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☑ Other ☐

Thermometer Used: T298 **Type of Ice:** (Wet) Blue None

Cooler Temperature (°C): **As-read** 2.0/1.2 **Corr. Factor** -0.1 **Corrected** 1.9/1.1/14.1

Temperature should be above freezing to 6°C 14.2

Date and initials of person examining contents: PM 11/19/24

Chain of Custody present:	☑Yes ☐No ☐N/A	
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	
Samples arrived within holding time:	☑Yes ☐No ☐N/A	
Short Hold Time analyses (<72hr):	☐Yes ☑No ☐N/A	
Rush Turn Around Time requested:	☐Yes ☑No ☐N/A	
Sufficient volume:	☑Yes ☐No ☐N/A	
Correct containers used:	☑Yes ☐No ☐N/A	
Pace containers used:	☑Yes ☐No ☐N/A	
Containers intact:	☑Yes ☐No ☐N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☐No ☑N/A	
Filtered volume received for dissolved tests?	☐Yes ☐No ☑N/A	
Sample labels match COC: Date / time / ID / analyses	☑Yes ☐No ☐N/A	
Samples contain multiple phases? Matrix: WT	☐Yes ☑No ☐N/A	
Containers requiring pH preservation in compliance? (HNO_3, H_2SO_4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) **LOT#:** 88727	☑Yes ☐No ☐N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks: Lead acetate strip turns dark? (Record only)	☐Yes ☐No	
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No	
Trip Blank present:	☐Yes ☐No ☑N/A	
Headspace in VOA vials (>6mm):	☐Yes ☐No ☑N/A	
Samples from USDA Regulated Area: State:	☐Yes ☐No ☑N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☑N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

Pace® Location Requested (City/State):
Pace Analytical Kansas
9608 Loiret Blvd., Lenexa, KS 66219

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here

60464769

Scan QR Code for instructions

Company Name:	Rocksmith Geoengineering, LLC	Contact/Report To:	Mark Haddock
Street Address:	2320 Creve Coeur Mill Road, Maryland Heights, MO 63043	Phone #:	314-974-6578
		E-Mail:	mark.haddock@rocksmithgeo.com
		Cc E-Mail:	
Customer Project #:	COC# 7	Invoice To:	Mark Haddock
Project Name:	AMEREN SCPA	Invoice E-Mail:	mark.haddock@rocksmithgeo.com
Site Collection Info/Facility ID (as applicable):		Purchase Order # (if applicable):	
		Quote #:	

Time Zone Collected: [ ] AK [ ] PT [ ] MT [ ] CT [ ] ET

County / State origin of sample(s): Missouri

Data Deliverables: [ ] Level II [ ] Level III [ ] Level IV [ ] EQUIS [ ] Other

Regulatory Program (DW, RCRA, etc.) as applicable: Reportable [ ] Yes [ ] No

Rush (Pre-approval required): [ ] Same Day [ ] 1 Day [ ] 2 Day [ ] 3 Day [ ] Other _____

DW PWSID # or WW Permit # as applicable:

Date Results Requested:

Field Filtered (if applicable): [ ] Yes [ ] No

Analysis:

Specify Container Size **: 1 1 3 3 1

Identify Container Preservative Type***: 1 1 2 2 2

**Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL vial, (7) EnCore, (8) TerraCore, (9) 90mL, (10) Other

*** Preservative Types: (1) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Sod. Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other

Lab Use Only

Proj. Mgr: Jamie Church

AcctNum / Client ID:

Table #:

Profile / Template: 15856

Prelog / Bottle Ord. ID: EZ 3163155

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Waste Water (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Surface Water (SW), Sediment (SED), Sludge (SL), Caulk (CK), Leachate (LL), Biosolid (BS), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Composite Start Date	Composite Start Time	Collected or Composite End Date	Collected or Composite End Time	# Cont.	Res. Chlorine Results	Res. Chlorine Units	Chloride/Fluoride/Sulfate	TDS / Alkalinity	App III and Cat/An Metals (200.7)*	Appendix IV Metals (200.7/200.8)**	Radium 226 & Radium 228	Sample Comment	Preservation non-conformance identified for sample
S-UMW-1D	WT															
S-UMW-2D	WT	G			11/18/24	0952	4			✓	✓	✓	✓	✓		
S-UMW-3D	WT	G			11/18/24	1215	4			✓	✓	✓	✓	✓		
S-UMW-4D	WT	G			11/18/24	1120	4			✓	✓	✓	✓	✓		
S-UMW-5D	WT	G			11/18/24	1453	4			✓	✓	✓	✓	✓		
S-UMW-6D	WT	G			11/18/24	1345	4			✓	✓	✓	✓	✓		
S-BMW-1D	WT															
S-BMW-3D	WT															
S-UMW-DUP-1	WT	G			11/18/24	—	4			✓	✓	✓	✓	✓		
S-UMW-FB-1	WT															

Additional Instructions from Pace®:
App III and Cat/An Metals - EPA 200.7: Fe, Mg, Mn, K, Na, Ca, B
**App IV Metals - EPA 200.7 -Ba,Li,Mo & 200.8 Metals - As,Cd,Cr,Se

Collected By: (Printed Name) John Rasmussen

Signature:

Customer Remarks / Special Conditions / Possible Hazards:

# Coolers:	Thermometer ID:	Correction Factor (°C):	Obs. Temp. (°C)	Corrected Temp. (°C)	On Ice:
3	T298	-0.1		1.9/1.1/14.1	

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Tracking Number:
Rocksmith	11/18/24 1600		11/19/24 0700	
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Delivered by: [ ] In-Person [ ] Courier
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	[ ] FedEx [ ] UPS [ ] Other
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Page: 1 of 2

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace® Terms and Conditions found at https://www.pacelabs.com/resource-library/resource/pace-terms-and-conditions/

Pace® Location Requested (City/State):
Pace Analytical Kansas
9608 Loiret Blvd , Lenexa, KS 66219

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here

60464769

Scan QR Code for instructions

Company Name:	Rocksmith Geoengineering, LLC	Contact/Report To:	Mark Haddock
Street Address:	2320 Creve Coeur Mill Road, Maryland Heights, MO 63043	Phone #:	314-974-6578
		E-Mail:	mark.haddock@rocksmithgeo.com
		Cc E-Mail:	
Customer Project #:	COC# 7		
Project Name:	AMEREN SCPA	Invoice To:	Mark Haddock
		Invoice E-Mail:	mark.haddock@rocksmithgeo.com
Site Collection Info/Facility ID (as applicable):		Purchase Order # (if applicable):	
		Quote #:	

Time Zone Collected: [ ] AK [ ] PT [ ] MT [ ] CT [ ] ET

County / State origin of sample(s): Missouri

Data Deliverables:
[ ] Level II [ ] Level III [ ] Level IV
[ ] EQUIS
[ ] Other

Regulatory Program (DW, RCRA, etc.) as applicable: Reportable [ ] Yes [ ] No

Rush (Pre-approval required):
[ ] Same Day [ ] 1 Day [ ] 2 Day [ ] 3 Day [ ] Other _____

DW PWSID # or WW Permit # as applicable:

Date Results Requested:

Field Filtered (if applicable): [ ] Yes [ ] No

Analysis:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Waste Water (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Surface Water (SW),Sediment (SED), Sludge (SL), Caulk (CK), Leachate (LL), Biosolid (BS), Other (OT)

Specify Container Size **: 1 1 3 3 1

Identify Container Preservative Type***: 1 1 2 2 2

**Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL vial, (7) EnCore, (8) TerraCore, (9) 90mL, (10) Other

*** Preservative Types: (1) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Sod Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other

Customer Sample ID	Matrix *	Comp / Grab	Composite Start Date	Composite Start Time	Collected or Composite End Date	Collected or Composite End Time	# Cont.	Res. Chlorine Results	Res. Chlorine Units	Chloride/Fluoride/Sulfate	TDS / Alkalinity	App III and Cat/An Metals (200.7)*	Appendix IV Metals (200.7/200.8)**	Radium 226 & Radium 228	Sample Comment
S-UMW-MS-1	WT	G			11/18/24	1345	4			✓	✓	✓	✓	✓	
S-UMW-MSD-1	WT	G			11/18/24	1345	4			✓	✓	✓	✓	✓	

Lab Use Only
Proj. Mgr: Jamie Church
AcctNum / Client ID:
Table #:
Profile / Template: 15856
Prelog / Bottle Ord. ID: EZ 3163155

Preservation non-conformance identified for sample:

Additional Instructions from Pace®:
App III and Cat/An Metals - EPA 200.7: Fe, Mg, Mn, K, Na, Ca, B
**App IV Metals - EPA 200.7 -Ba,Li,Mo & 200.8 Metals - As,Cd,Cr,Se

Collected By:
(Printed Name): John Rasmussen
Signature:

Customer Remarks / Special Conditions / Possible Hazards:

# Coolers:	Thermometer ID:	Correction Factor (°C):	Obs. Temp. (°C):	Corrected Temp. (°C):	On Ice:
3	T298	-0.1	1.9	1.1	Y

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Tracking Number:
Rocksmith	11/18/24 1600			
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Delivered by: [ ] In- Person [ ] Courier
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	[ ] FedEx [ ] UPS [ ] Other
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Page: 2 of 2

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace® Terms and Conditions found at https://www.pacelabs.com/resource-library/resource/pace-terms-and-conditions/

DC#_Title: ENV-FRM-LENE-0001 v07_Sample Container Count
Effective Date: 7/12/2024

1/2

Client: Rocksmith Geoeng

Profile/EZ #: ONLY print what you log.

Site:

Notes: Append to 60464769

COC Line Item	Matrix	VG9H	DG9H	DG9Q	VG9U	DG9U	DG9M	DG9B	BG1U	AG1H	AG1U	AG2U	AG3S	AG4U	AG5U	JGFU	WGKU	WGDU	BP1U	BP2U	BP3U	BP1N	BP3N	BP3F	BP3S	BP3B	BP3Z	WPDU	ZPLC	Other		
1																																
2	WT																		1			2	1									
3	↓																		1			2	1									
4																			1			2	1									
5																			1			2	1									
6	↓																		3			2	3									
7																																
8																																
9	WT																		1			2	1									
10																																
11																																
12																																

Container Codes

Glass			
DG9B	40mL bisulfate clear vial	WGKU	8oz clear soil jar
DG9H	40mL HCl amber voa vial	WGFU	4oz clear soil jar
DG9M	40mL MeOH clear vial	WG2U	2oz clear soil jar
DG9Q	40mL TSP amber vial	JGFU	4oz unpreserved amber wide
DG9S	40mL H2SO4 amber vial	AG0U	100mL unores amber glass
DG9T	40mL Na Thio amber vial	AG1H	1L HCl amber glass
DG9U	40mL amber unpreserved	AG1S	1L H2SO4 amber glass
VG9H	40mL HCl clear vial	AG1T	1L Na Thiosulfate clear/amber glass
VG9T	40mL Na Thio. clear vial	AG1U	1liter unpres amber glass
VG9U	40mL unpreserved clear vial	AG2N	500mL HNO3 amber glass
BG1S	1liter H2SO4 clear glass	AG2S	500mL H2SO4 amber glass
BG1U	1liter unpres glass	AG3S	250mL H2SO4 amber glass
BG3H	250mL HCL Clear glass	AG2U	500mL unpres amber glass
BG3U	250mL Unpres Clear glass	AG3U	250mL unpres amber glass
WGDU	16oz clear soil jar	AG4U	125mL unpres amber glass
		AG5U	100mL unpres amber glass

Plastic	
BP1B	1L NAOH plastic
BP1N	1L HNO3 plastic
BP1S	1L H2SO4 plastic
BP1U	1L unpreserved plastic
BP1Z	1L NaOH, Zn Acetate
BP2B	500mL NAOH plastic
BP2N	500mL HNO3 plastic
BP2S	500mL H2SO4 plastic
BP2U	500mL unpreserved plastic
BP2Z	500mL NaOH, Zn Acetate
BP3B	250mL NaOH plastic
BP3F	250mL HNO3 plastic - field filtered
BP3N	250mL HNO3 plastic
BP3U	250mL unpreserved plastic
BP3S	250mL H2SO4 plastic
BP3Z	250mL NaOH, Zn Acetate
BP4U	125mL unpreserved plastic
BP4N	125mL HNO3 plastic
BP4S	125mL H2SO4 plastic
WPDU	16oz unpresserved plstic

Misc.	
I	Wipe/Swab
SP5T	120mL Coliform Na Thiosulfate
ZPLC	Ziploc Bag
AF	Air Filter
C	Air Cassettes
R	Terracore Kit
U	Summa Can

Matrix	
WT	Water
SL	Solid
NAL	Non-aqueous Liquid
OL	OIL
WP	Wipe
DW	Drinking Water

Work Order Number: 60464769

DC#_Title: ENV-FRM-LENE-0001 v07_Sample Container Count
Effective Date: 7/12/2024

Client: Locksmith Cleaning

Profile/EZ # Only Print What You Log.

Site:

Notes Append to 60464769

COC Line Item	Matrix	VG9H	DG9H	DG9Q	VG9U	DG9U	DG9M	DG9B	BG1U	AG1H	AG1U	AG2U	AG3S	AG4U	AG5U	JGFU	WGKU	WGDU	BP1U	BP2U	BP3U	BP1N	BP3N	BP3F	BP3S	BP3B	BP3Z	WPDU	ZPLC	Other		
1	WT																					2		(ONLY LOG RAD)								
2	WT																					2										
3																																
4																																
5																																
6																																
7																																
8																																
9																																
10																																
11																																
12																																

Container Codes

Glass			
DG9B	40mL bisulfate clear vial	WGKU	8oz clear soil jar
DG9H	40mL HCl amber voa vial	WGFU	4oz clear soil jar
DG9M	40mL MeOH clear vial	WG2U	2oz clear soil jar
DG9Q	40mL TSP amber vial	JGFU	4oz unpreserved amber wide
DG9S	40mL H2SO4 amber vial	AG0U	100mL unores amber glass
DG9T	40mL Na Thio amber vial	AG1H	1L HCl amber glass
DG9U	40mL amber unpreserved	AG1S	1L H2SO4 amber glass
VG9H	40mL HCl clear vial	AG1T	1L Na Thiosulfate clear/amber glass
VG9T	40mL Na Thio. clear vial	AG1U	1liter unpres amber glass
VG9U	40mL unpreserved clear vial	AG2N	500mL HNO3 amber glass
BG1S	1liter H2SO4 clear glass	AG2S	500mL H2SO4 amber glass
BG1U	1liter unpres glass	AG3S	250mL H2SO4 amber glass
BG3H	250mL HCL Clear glass	AG2U	500mL unpres amber glass
BG3U	250mL Unpres Clear glass	AG3U	250mL unpres amber glass
WGDU	16oz clear soil jar	AG4U	125mL unpres amber glass
		AG5U	100mL unpres amber glass

Plastic	
BP1B	1L NAOH plastic
BP1N	1L HNO3 plastic
BP1S	1L H2SO4 plastic
BP1U	1L unpreserved plastic
BP1Z	1L NaOH, Zn Acetate
BP2B	500mL NAOH plastic
BP2N	500mL HNO3 plastic
BP2S	500mL H2SO4 plastic
BP2U	500mL unpreserved plastic
BP2Z	500mL NaOH, Zn Acetate
BP3B	250mL NaOH plastic
BP3F	250mL HNO3 plastic - field filtered
BP3N	250mL HNO3 plastic
BP3U	250mL unpreserved plastic
BP3S	250mL H2SO4 plastic
BP3Z	250mL NaOH, Zn Acetate
BP4U	125mL unpreserved plastic
BP4N	125mL HNO3 plastic
BP4S	125mL H2SO4 plastic
WPDU	16oz unpresserved plstic

Misc.	
I	Wipe/Swab
SP5T	120mL Coliform Na Thiosulfate
ZPLC	Ziploc Bag
AF	Air Filter
C	Air Cassettes
R	Terracore Kit
U	Summa Can

Matrix	
WT	Water
SL	Solid
NAL	Non-aqueous Liquid
OL	OIL
WP	Wipe
DW	Drinking Water

Work Order Number: 60464769

WO# : 60464769

60464769

Pace ANALYTICAL SERVICES	DC#_Title: ENV-FRM-LENE-0009_Sample Co		
	Revision: 2	Effective Date: 01/12/2022	Issued By: Lenexa

Client Name: Rocksmith Geoeng

Courier: FedEx ☐ UPS ☐ VIA ☐ Clay ☐ PEX ☐ ECI ☐ Pace ☐ Xroads ☑ Client ☐ Other ☐

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☑

Custody Seal on Cooler/Box Present: Yes ☑ No ☐ Seals intact: Yes ☑ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☑ Other ☐

Thermometer Used: T298 **Type of Ice:** Wet Blue None

Cooler Temperature (°C): **As-read** 1.8/10.6 **Corr. Factor** -0.1 **Corrected** 1.7/10.5

Date and initials of person examining contents: 11/21 hy

Temperature should be above freezing to 6°C

Chain of Custody present:	☑Yes ☐No ☐N/A	
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	
Samples arrived within holding time:	☑Yes ☐No ☐N/A	
Short Hold Time analyses (<72hr):	☐Yes ☑No ☐N/A	
Rush Turn Around Time requested:	☐Yes ☑No ☐N/A	
Sufficient volume:	☑Yes ☐No ☐N/A	
Correct containers used:	☑Yes ☐No ☐N/A	
Pace containers used:	☑Yes ☐No ☐N/A	
Containers intact:	☑Yes ☐No ☐N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☐No ☑N/A	
Filtered volume received for dissolved tests?	☐Yes ☑No ☐N/A	
Sample labels match COC: Date / time / ID / analyses	☑Yes ☐No ☐N/A	
Samples contain multiple phases? Matrix: WT	☐Yes ☑No ☐N/A	
Containers requiring pH preservation in compliance? (HNO_3, H_2SO_4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) **LOT#:** 88727	☑Yes ☐No ☐N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks: Lead acetate strip turns dark? (Record only)	☐Yes ☐No	
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No	
Trip Blank present:	☐Yes ☐No ☑N/A	
Headspace in VOA vials (>6mm):	☐Yes ☐No ☑N/A	
Samples from USDA Regulated Area: State:	☐Yes ☐No ☑N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☑N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

Pace® Location Requested (City/State):
Pace Analytical Kansas
9608 Loiret Blvd., Lenexa, KS 66219

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here

60464769

Scan QR Code for instructions

Company Name:	Rocksmith Geoengineering, LLC	Contact/Report To:	Mark Haddock
Street Address:	2320 Creve Coeur Mill Road, Maryland Heights, MO 63043	Phone #:	314-974-6578
		E-Mail:	mark.haddock@rocksmithgeo.com
		Cc E-Mail:	
Customer Project #:	COC# 7		
Project Name:	AMEREN SCPA	Invoice To:	Mark Haddock
		Invoice E-Mail:	mark.haddock@rocksmithgeo.com
Site Collection Info/Facility ID (as applicable):		Purchase Order # (if applicable):	
		Quote #:	

Time Zone Collected: [ ] AK [ ] PT [ ] MT [ ] CT [ ] ET

County / State origin of sample(s): Missouri

Data Deliverables:
[ ] Level II [ ] Level III [ ] Level IV
[ ] EQuIS
[ ] Other

Regulatory Program (DW, RCRA, etc.) as applicable: Reportable [ ] Yes [ ] No

Rush (Pre-approval required):
[ ] Same Day [ ] 1 Day [ ] 2 Day [ ] 5 Day [ ] Other

DW PWSID # or WW Permit # as applicable:

Date Results Requested:

Field Filtered (if applicable): [ ] Yes [ ] No

Analysis:

Specify Container Size **: 1 1 3 3 1

Identify Container Preservative Type***: 1 1 2 2 2

**Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL vial, (7) EnCore, (8) TerraCore, (9) 90mL, (10) Other

*** Preservative Types: (1) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Sod. Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other

Lab Use Only
Proj. Mgr: Jamie Church
AcctNum / Client ID:
Table #:
Profile / Template: 15856
Prelog / Bottle Ord. ID: EZ 3163155

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Waste Water (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Surface Water (SW), Sediment (SED), Sludge (SL), Caulk (CK), Leachate (LL), Biosolid (BS), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Composite Start Date	Composite Start Time	Collected or Composite End Date	Collected or Composite End Time	# Cont.	Res. Chlorine Results	Res. Chlorine Units	Chloride/Fluoride/Sulfate	TDS / Alkalinity	App III and Cat/An Metals (200.7)*	Appendix IV Metals (200.7/200.8)**	Radium 226 & Radium 228	Sample Comment	Preservation non-conformance identifier
S-UMW-1D	WT															
S-UMW-2D	WT															
S-UMW-3D	WT															
S-UMW-4D	WT															
S-UMW-5D	WT															
S-UMW-6D	WT															
S-BMW-1D	WT	G	[illegible]		12-20-24	1000	4			✓	✓	✓	✓	✓		
S-BMW-3D	WT	G	[illegible]		12-20-24	1100	4			✓	✓	✓	✓	✓		
S-UMW-DUP-1	WT															
S-UMW-FB-1	WT															

Additional Instructions from Pace®:
App III and Cat/An Metals - EPA 200.7: Fe, Mg, Mn, K, Na, Ca, B
**App IV Metals - EPA 200.7 -Ba,Li,Mo & 200.8 Metals - As,Cd,Cr,Se

Collected By:
(Printed Name): John Rasmussen
Signature:

Customer Remarks / Special Conditions / Possible Hazards:

# Coolers:	Thermometer ID:	Correction Factor (°C):	Obs. Temp. (°C):	Corrected Temp. (°C):	On Ice:
2	T248	-0.1	1.7	10.5	

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Tracking Number:
Rocksmith	11/20/24 1530			
Relinquished by/Company: (Signature)	Date/Time	Received by/Company: (Signature)	Date/Time:	
Relinquished by/Company: (Signature)	Date/Time	Received by/Company: (Signature)	Date/Time:	Delivered by: [ ] In-Person [ ] Courier [ ] FedEx [ ] UPS [ ] Other
Relinquished by/Company: (Signature)	Date/Time	Received by/Company: (Signature)	Date/Time:	Page: 1 of 1

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace® Terms and Conditions found at https://www.pacelabs.com/resource-library/resource/pace-terms-and-conditions/

ENV-FRM-CORO-0019_v02_110123 ©

Client: Rocksmith Geoeng

Profile/EZ #: only print what you /07.

Site:

Notes: Append to 6046769

COC Line Item	Matrix	VG9H	DG9H	DG9Q	VG9U	DG9U	DG9M	DG9B	BG1U	AG1H	AG1U	AG2U	AG3S	AG4U	AG5U	JGFU	WGKU	WGDU	BP1U	BP2U	BP3U	BP1N	BP3N	BP3F	BP3S	BP3B	BP3Z	WPDU	ZPLC	Other		
1																																
2																																
3																																
4																																
5																																
6																																
7	WT																		1			2	1									
8	1																		1			2	1									
9																																
10																																
11																																
12																																

Container Codes

Glass			
DG9B	40mL bisulfate clear vial	WGKU	8oz clear soil jar
DG9H	40mL HCl amber voa vial	WGFU	4oz clear soil jar
DG9M	40mL MeOH clear vial	WG2U	2oz clear soil jar
DG9Q	40mL TSP amber vial	JGFU	4oz unpreserved amber wide
DG9S	40mL H2SO4 amber vial	AG0U	100mL unores amber glass
DG9T	40mL Na Thio amber vial	AG1H	1L HCl amber glass
DG9U	40mL amber unpreserved	AG1S	1L H2SO4 amber glass
VG9H	40mL HCl clear vial	AG1T	1L Na Thiosulfate clear/amber glass
VG9T	40mL Na Thio. clear vial	AG1U	1liter unpres amber glass
VG9U	40mL unpreserved clear vial	AG2N	500mL HNO3 amber glass
BG1S	1liter H2SO4 clear glass	AG2S	500mL H2SO4 amber glass
BG1U	1liter unpres glass	AG3S	250mL H2SO4 amber glass
BG3H	250mL HCL Clear glass	AG2U	500mL unpres amber glass
BG3U	250mL Unpres Clear glass	AG3U	250mL unpres amber glass
WGDU	16oz clear soil jar	AG4U	125mL unpres amber glass
		AG5U	100mL unpres amber glass

Plastic	
BP1B	1L NAOH plastic
BP1N	1L HNO3 plastic
BP1S	1L H2SO4 plastic
BP1U	1L unpreserved plastic
BP1Z	1L NaOH, Zn Acetate
BP2B	500mL NAOH plastic
BP2N	500mL HNO3 plastic
BP2S	500mL H2SO4 plastic
BP2U	500mL unpreserved plastic
BP2Z	500mL NaOH, Zn Acetate
BP3B	250mL NaOH plastic
BP3F	250mL HNO3 plastic - field filtered
BP3N	250mL HNO3 plastic
BP3U	250mL unpreserved plastic
BP3S	250mL H2SO4 plastic
BP3Z	250mL NaOH, Zn Acetate
BP4U	125mL unpreserved plastic
BP4N	125mL HNO3 plastic
BP4S	125mL H2SO4 plastic
WPDU	16oz unpresserved plstic

Misc.	
I	Wipe/Swab
SP5T	120mL Coliform Na Thiosulfate
ZPLC	Ziploc Bag
AF	Air Filter
C	Air Cassettes
R	Terracore Kit
U	Summa Can

Matrix	
WT	Water
SL	Solid
NAL	Non-aqueous Liquid
OL	OIL
WP	Wipe
DW	Drinking Water

Work Order Number: 6046769

Internal Transfer Chain of Custody

Rush Multiplier_____X
Samples Pre-Logged into eCOC

State Of Origin: MO
Cert. Needed: ☐ Yes ☒ No
Owner Received Date: 11/15/2024 Results Requested By: 12/12/2024

Workorder: 60464769 Workorder Name: AMEREN SCPA

Report To	Subcontract To
Jamie Church Pace Analytical Kansas 9608 Loiret Blvd. Lenexa, KS 66219 Phone 314-838-7223	Pace Analytical Pittsburgh 1638 Roseytown Road Suites 2,3, & 4 Greensburg, PA 15601 Phone (724)850-5600

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers HNO3						Requested Analysis Radium 226	Radium 228											LAB USE ONLY
1	S-UMW-1D	PS	11/14/2024 16:05	60464769001	Water	2						X	X											001
2	S-UMW-FB-1	PS	11/14/2024 16:20	60464769002	Water	2						X	X											002
3	S-UMW-2D	PS	11/18/2024 09:52	60464769003	Water	2						X	X											003
4	S-UMW-3D	PS	11/18/2024 12:15	60464769004	Water	2						X	X											004
5	S-UMW-4D	PS	11/18/2024 11:20	60464769005	Water	2						X	X											005
6	S-UMW-5D	PS	11/18/2024 14:53	60464769006	Water	2						X	X											006
7	S-UMW-6D	RQS	11/18/2024 13:45	60464769007	Water	2						X	X											MS/MSD 007
8	S-UMW-DUP-1	PS	11/18/2024 00:00	60464769008	Water	2						X	X											008
9	S-UMW-MS-1	PS	11/18/2024 13:45	60464769009	Water	2						X	X											009
10	S-UMW-MSD-1	PS	11/18/2024 13:45	60464769010	Water	2						X	X											010

Transfers	Released By	Date/Time	Received By	Date/Time
1	Carmen Tuve	11/20 1800	[signature]	11/21/24 0940
2				
3				

Comments: KS sample location: 60-R01-S3A

Cooler Temperature on Receipt ___ °C | Custody Seal Y or (N) | Received on Ice Y or (N) | Samples Intact (Y) or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.
This chain of custody is considered complete as is since this information is available in the owner laboratory.

WO# : 30736623

30736623

DC#_Title: ENV-FRM-GBUR-0088 v07_Sample Condition Upon Receipt
Greensburg

Effective Date: 01/04/2024

WO# : 30736623

PM: MAR Due Date: 12/16/24
CLIENT: PACE_GO_LEKS

Client Name: Pace-KS

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other

Tracking Number: 4033 6453 0955

Initial / Date
Examined By: PS 11/21/24
Labeled By: PS 11/22/24
Temped By:

Custody Seal on Cooler/Box Present: ☐ Yes ☑ No **Seals Intact:** ☐ Yes ☐ No

Thermometer Used: — **Type of Ice:** Wet Blue (None)

Cooler Temperature: Observed Temp — °C Correction Factor: — °C Final Temp: — °C

Temp should be above freezing to 6°C

Comments:	Yes	No	NA
Chain of Custody Present	✓		
Chain of Custody Filled Out: -Were client corrections present on COC	✓		
Chain of Custody Relinquished		✓	
Sampler Name & Signature on COC:		✓	
Sample Labels match COC: -Includes date/time/ID Matrix: WT	✓		
Samples Arrived within Hold Time:	✓		
Short Hold Time Analysis (<72hr remaining):		✓	
Rush Turn Around Time Requested:		✓	
Sufficient Volume:	✓		
Correct Containers Used: -Pace Containers Used	✓		
Containers Intact:	✓		
Orthophosphate field filtered:			✓
Hex Cr Aqueous samples field filtered:			✓
Organic Samples checked for dichlorination			✓
Filtered volume received for dissolved tests:			✓
All containers checked for preservation: exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, non-aqueous matrix	✓		
All containers meet method preservation requirements:	✓		
8260C/D: Headspace in VOA Vials (> 6mm)			✓
624.1: Headspace in VOA Vials (0mm)			✓
Radon: Headspace in RAD Vials (0mm)			✓
Trip Blank Present:			✓
Rad Samples Screened <.05 mrem/hr.	✓		

pH paper Lot# 100104 | **D.P.D. Residual Chlorine Lot #** —

1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14: 15: 16.

PH<2

Initial when completed PS Date/Time of Preservation

Lot# of added Preservative

17. 18. 19.

Trip blank custody seal present? YES or NO

Initial when completed PS Date: 11/21/24 Survey Meter SN: 25014380

Comments:

Note: For NC compliance samples with discrepancies, a copy of this form must be sent to the DEHNR Certification office.
PM Review is documented electronically in LIMS through the SRF Review schedule in the Workorder Edit Screen.

Page 1 of 1

Qualtrax ID: 55680

Memorandum

January 22, 2025

To:	Project File Rocksmith Geoengineering, LLC	**Project Number:**	23009-24
CC:	Mark Haddock, Jeffrey Ingram		
From:	Grant Morey	**Email:**	grant.morey@rocksmithgeo.com
RE:	**Data Validation Summary, Sioux Energy Center – SCPA – Data Package 60464769**		

The following is a summary of instances where quality control criteria in the functional guidelines were not met and data qualification was required:

- When a compound was detected in a blank (i.e. method, field), and the blank comparison criterion was not met, associated sample results were qualified as estimates (J) or non-detects (U).
- When a compound was detected in a sample result between the Method Detection Limit (MDL) and Practical Quantification Limit (PQL), the results were recorded at the detection value and qualified as estimates (J).
- When a duplicate criterion was not met, the associated sample result was qualified as an estimate (J for detects, UJ for non-detects).
- When a matrix spike/matrix spike duplicate (MS/MSD) criterion was not met, the associated sample result was qualified as an estimate (J, J+ for estimates based high, and J- for estimates based low).
- When a compound was analyzed outside of hold time controls, the sample result was qualified as an estimate (J for detects, UJ for non-detects).
- When an initial laboratory calibration was outside of method control limits, the sample result was qualified as an estimate (J for detects, UJ for non-detects).

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Company Name: Rocksmith Geoengineering
Project Manager: J. Ingram
Project Name: Ameren SCPA
Project Number: 23009-24
Reviewer: G. Morey
Validation Date: 01/22/2025

Laboratory: Pace Analytical
SDG #: 60464769
Analytical Method (type and no.): EPA 200.7/200.8 (Total Metals); SM 2320B (Alkalinity); SM 2540C (TDS); EPA 300.0 (Anions);
Matrix: ☐ Air ☐ Soil/Sed. ■ Water ☐ Waste ☐ EPA 903.1/904.0 (Radium 226+228)
Sample Names S-UMW-1D,S-UMW-FB-1, S-UMW-2D, S-UMW-3D, S-UMW-4D, S-UMW-5D, S-UMW-6D, S-UMW-DUP-1, S-UMW-MSD-1
S-BMW-1D, S-BMW-3D

NOTE: Please provide calculation in Comment areas or on the back (if on the back please indicate in comment areas).

Field Information	YES	NO	NA	COMMENTS
a) Sampling dates noted?	x			11/14/24 - 11/20/24
b) Sampling team indicated?	x			JTR & JDQ
c) Sample location noted?	x			
d) Sample depth indicated (Soils)?			x	
e) Sample type indicated (grab/composite)?	x			Grab
f) Field QC noted?	x			See Notes
g) Field parameters collected (note types)?	x			pH, Spec Cond, Turb, Temp, DO, ORP
h) Field Calibration within control limits?	x			
i) Notations of unacceptable field conditions/performances from field logs or field notes?		x		
j) Does the laboratory narrative indicate deficiencies?			x	No lab narrative.

Note Deficiencies:

Chain-of-Custody (COC)	YES	NO	NA	COMMENTS
a) Was the COC properly completed?	x			
b) Was the COC signed by both field and laboratory personnel?	x			
c) Were samples received in good condition?	x			

General (reference QAPP or Method)	YES	NO	NA	COMMENTS
a) Were hold times met for sample pretreatment?	x			
b) Were hold times met for sample analysis?		x		See Notes
c) Were the correct preservatives used?	x			
d) Was the correct method used?	x			
e) Were appropriate reporting limits achieved?	x			
f) Were any sample dilutions noted?	x			See Notes
g) Were any matrix problems noted?		x		

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Blanks	YES	NO	NA	COMMENTS
a) Were analytes detected in the method blank(s)?	x			See Notes
b) Were analytes detected in the field blank(s)?	x			See Notes
c) Were analytes detected in the equipment blank(s)?			x	S-UMW-FB-1 @ S-UMW-1D
d) Were analytes detected in the trip blank(s)?			x	

Laboratory Control Sample (LCS)	YES	NO	NA	COMMENTS
a) Was a LCS analyzed once per SDG?	x			
b) Were the proper analytes included in the LCS?	x			
c) Was the LCS accuracy criteria met?		x		See Notes

Duplicates	YES	NO	NA	COMMENTS
a) Were field duplicates collected (note original and duplicate sample names)?	x			S-UMW-DUP-1 @ S-UMW-5D
b) Were field dup. precision criteria met (note RPD)?		x		See Notes
c) Were lab duplicates analyzed (note original and duplicate samples)?	x			
d) Were lab dup. precision criteria met (note RPD)?	x			

Blind Standards	YES	NO	NA	COMMENTS
a) Was a blind standard used (indicate name, analytes included and concentrations)?			x	
b) Was the %D within control limits?			x	

Matrix Spike/Matrix Spike Duplicate (MS/MSD)	YES	NO	NA	COMMENTS
a) Was MS accuracy criteria met?		x		See Notes
Recovery could not be calculated since sample contained high concentration of analyte?			x	
b) Was MSD accuracy criteria met?		x		See Notes
Recovery could not be calculated since sample contained high concentration of analyte?			x	
c) Were MS/MSD precision criteria met?		x		See Notes

Comments/Notes:

General:

Chloride and sulfate were diluted in several samples; no qualification necessary.

Chloride, sulfate and fluoride analyzed outside hold time controls for several samples, results qualified as estimates,

Initial calibration outside of laboratory control limits for some fluoride samples, results qualified as estimates.

QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

Comments/Notes:

Method Blanks:

3630720: potassium (252J) and sodium (316J). Associated with samples -002 through -008. Results were ND or > 10x the method blank results, no qualification necessary.

3632823: calcium (43.2J), Iron (18.1J), and sodium (184J). Associated with samples -011 and -012. Results > 10x method blank results, no qualification necessary.

Field Blanks:

S-UMW-FB-1 @ S-UMW-1D: calcium (27.5J), iron (28.8J), chromium (0.35J), total dissolved solids (10), and fluoride (0.33). Calcium, iron, TDS, and chromium results > RL and 10x blank, no qualification necessary. Chromium < RL, qualified as non-detect at RL. Fluoride results < 10x blank result and > RL, result qualified as estimate.

Duplicates:

S-UMW-DUP-1 @ S-UMW-5D: radium-228 detected in field duplicate and not in parent sample. Results qualified as estimates.

Lab duplicate max RPD: 15% for chloride, fluoride, and sulfate; 10% for TDS and alkalinity.

MS/MSD:

3630189: MS recovery low for calcium. Associated with unrelated sample, no qualification necessary.

3630722/3630723: MSD recovery high for calcium, RPD/MS are within control limits. Associated with sample -007, no qualification necessary.

3632825/3632826: MSD recovery high for calcium, RPD is within control limits. Associated with unrelated sample, no qualification necessary.

3637139/3637138: MS/MSD high for selenium, RPD is within control limits. Associated with sample -002, result qualified as estimate.

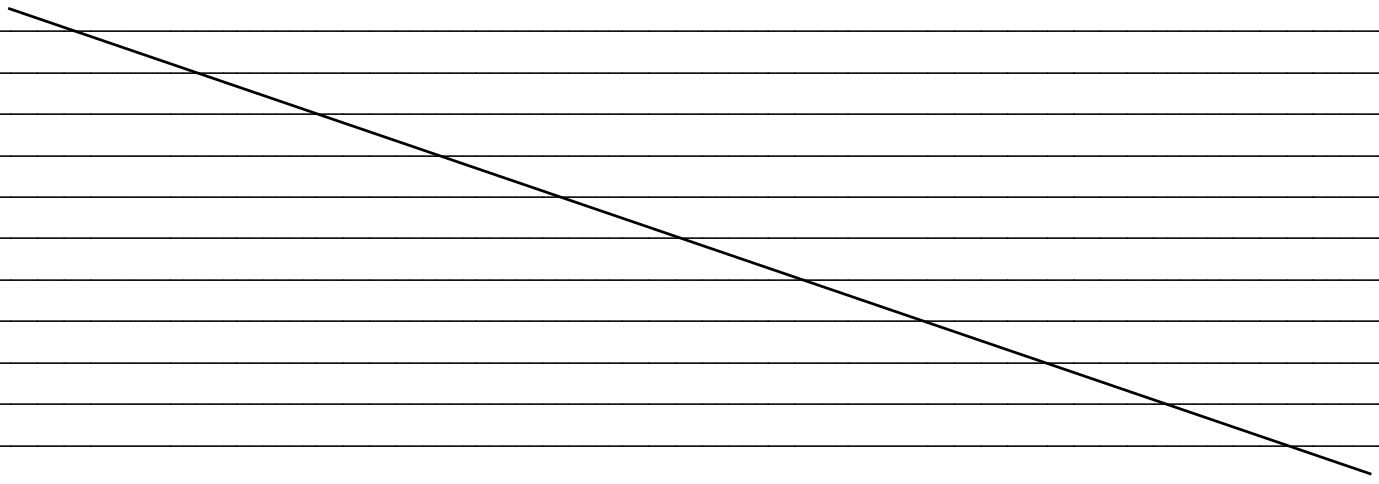
3641952/3641953: MS/MSD recovery low for chloride and high for fluoride, RPD within limits. MS recovery high for sulfate, RPD outside of control limit. Associated with unrelated sample, no qualification necessary.

3642617/3642618: MS/MSD recovery high for fluoride, RPD outside of control limits. MSD recovery high for sulfate, MS recovery and RPD in control limits. Associated with sample -007, fluoride qualified as estimate.

3642620: MS recovery low for chloride. Associated with sample -012 result qualified as estimate.

Laboratory Control Standards:

3637137: LCS recovery high for arsenic, cadmium and selenium. Associated results are non-detects, no qualification necessary.



QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason
S-UMW-FB-1	Fluoride	0.33	J	Initial calibration outside controls
S-UMW-1D	Fluoride	0.47	J	Results < 10x field blank and > than RL
S-UMW-6D	Calcium	98000	J+	MS/MSD recoveries high, RPD within control
S-UMW-FB-1	Selenium	0.18	UJ	MS/MSD recoveries high, RPD within control
S-BMW-3D	Chloride	12.6	J-	MS recovery low
S-UMW-DUP-1	Radium-228	1.05	J	Detected in field duplicate and not in parent sample
S-UMW-5D	Radium-228	0.975	UJ	"
S-UMW-6D	Fluoride	0.12	UJ	MS/MSD recoveries high
S-UMW-1D	Chloride	161	J	Analyzed outside hold time controls
"	Fluoride	0.47	J	"
"	Sulfate	67.8	J	"
S-UMW-FB-1	Chloride	0.53	UJ	"
"	Fluoride	0.33	J	"
"	Sulfate	0.55	UJ	"
S-UMW-1D	Fluoride	0.47	J	Initial calibration outside controls
"	Chromium	1.0	U	Detected in field blank, result < RL

Signature: Grant Morey Date: 01/22/2025

Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

December 19, 2024

Mark Haddock
Rocksmith Geoengineering, LLC.
2320 Creve Coeur Mill Road
Maryland Heights, MO 63043

RE: Project: AMEREN SCPA-CA
Pace Project No.: 60464699

Dear Mark Haddock:

Enclosed are the analytical results for sample(s) received by the laboratory between November 15, 2024 and November 21, 2024. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Kansas City
- Pace Analytical Services - Greensburg

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jamie Church
jamie.church@pacelabs.com
314-838-7223
Project Manager

Enclosures

cc: Jeffrey Ingram, Rocksmith Geoengineering, LLC.
Lisa Meyer, Ameren
Grant Morey, Rocksmith Geoengineering, LLC.
Austin Nieman, Ameren

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Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

CERTIFICATIONS

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

Pace Analytical Services Pennsylvania

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
ANABISO/IEC 17025:2017 Rad Cert#: L24170
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 2950
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA010
Louisiana DEQ/TNI Certification #: 04086
Maine Certification #: 2023021
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991
Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572023-03
New Hampshire/TNI Certification #: 297622
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-015
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: TN02867
Texas/TNI Certification #: T104704188-22-18
Utah/TNI Certification #: PA014572223-14
USDA Soil Permit #: 525-23-67-77263
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad

Pace Analytical Services Kansas

9608 Loiret Boulevard, Lenexa, KS 66219
Arkansas Certification #: 88-00679
Colorado Division of Oil and Public Safety
Illinois Certification #: 2000302023-6
Iowa Certification #: 118
Kansas Field Laboratory Certification #: E-92587
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Missouri Inorganic Drinking Water Certification
Nevada Certification #: KS000212024-1
Oklahoma Certification #: 2023-073
Texas Certification #: T104704407-23-17
Utah Certification #: KS000212022-13

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Pace Analytical Services, LLC
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

SAMPLE SUMMARY

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60464699001	**S-TP-5D**	Water	11/14/24 13:20	11/15/24 05:55
60464699002	**S-TP-6S**	Water	11/14/24 14:27	11/15/24 05:55
60464699003	**S-UG-3**	Water	11/14/24 11:15	11/15/24 05:55
60464699004	**S-CA-DUP-1**	Water	11/14/24 08:00	11/15/24 05:55
60464699005	**S-LMW-1S**	Water	11/14/24 16:06	11/16/24 05:34
60464699006	**S-LMW-5S**	Water	11/15/24 13:40	11/16/24 05:34
60464699007	**S-LMW-6S**	Water	11/15/24 12:48	11/16/24 05:34
60464699008	**S-TP-6D**	Water	11/14/24 15:10	11/16/24 05:34
60464699009	**S-PZ-1S**	Water	11/18/24 14:25	11/19/24 07:00
60464699010	**S-PZ-9D**	Water	11/18/24 12:05	11/19/24 07:00
60464699011	**S-BMW-1S**	Water	11/20/24 09:00	11/21/24 07:45
60464699012	**S-BMW-3S**	Water	11/20/24 11:43	11/21/24 07:45
60464699013	**S-LMW-2S**	Water	11/19/24 12:27	11/21/24 07:45
60464699014	**S-LMW-4S**	Water	11/19/24 11:13	11/21/24 07:45
60464699015	**S-AM-1S**	Water	11/19/24 14:54	11/21/24 07:45
60464699016	**S-AM-1D**	Water	11/19/24 14:55	11/21/24 07:45
60464699017	**S-TP-2D**	Water	11/20/24 09:53	11/21/24 07:45
60464699018	**S-TP-3D**	Water	11/20/24 11:24	11/21/24 07:45
60464699019	**S-TP-4D**	Water	11/20/24 12:32	11/21/24 07:45
60464699020	**S-TP-8D**	Water	11/18/24 16:17	11/21/24 07:45
60464699021	**S-CA-DUP-2**	Water	11/19/24 00:00	11/21/24 07:45
60464699022	**S-CA-FB-1**	Water	11/18/24 16:36	11/21/24 07:45
60464699023	**S-CA-FB-2**	Water	11/20/24 11:56	11/21/24 07:45
60464699024	**S-CA-MS-1**	Water	11/20/24 12:32	11/21/24 07:45
60464699025	**S-CA-MSD-1**	Water	11/20/24 12:32	11/21/24 07:45

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(913)599-5665

SAMPLE ANALYTE COUNT

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60464699001	**S-TP-5D**	EPA 200.7	ARMN	10	PASI-K
		EPA 200.8	JGP	4	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	TML	1	PASI-K
		SM 2540C	TML	1	PASI-K
		EPA 300.0	AAA	3	PASI-K
60464699002	**S-TP-6S**	EPA 200.7	ARMN	10	PASI-K
		EPA 200.8	JGP	4	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	TML	1	PASI-K
		SM 2540C	TML	1	PASI-K
		EPA 300.0	AAA	3	PASI-K
60464699003	**S-UG-3**	EPA 200.7	ARMN	10	PASI-K
		EPA 200.8	JGP	4	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	TML	1	PASI-K
		SM 2540C	TML	1	PASI-K
		EPA 300.0	AAA	3	PASI-K
60464699004	**S-CA-DUP-1**	EPA 200.7	ARMN	10	PASI-K
		EPA 200.8	JGP	4	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	TML	1	PASI-K
		SM 2540C	TML	1	PASI-K
		EPA 300.0	AAA	3	PASI-K
60464699005	**S-LMW-1S**	EPA 200.7	ARMN	10	PASI-K
		EPA 200.8	JGP	4	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	TML	1	PASI-K
		SM 2540C	TML	1	PASI-K
		EPA 300.0	AAA	3	PASI-K
60464699006	**S-LMW-5S**	EPA 200.7	ARMN	10	PASI-K
		EPA 200.8	JGP	4	PASI-K

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SAMPLE ANALYTE COUNT

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	TML	1	PASI-K
		SM 2540C	TML	1	PASI-K
		EPA 300.0	AAA	3	PASI-K
60464699007	**S-LMW-6S**	EPA 200.7	ARMN	10	PASI-K
		EPA 200.8	JGP	4	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	TML	1	PASI-K
		SM 2540C	TML	1	PASI-K
		EPA 300.0	AAA	3	PASI-K
60464699008	**S-TP-6D**	EPA 200.7	ARMN	10	PASI-K
		EPA 200.8	JGP	4	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	TML	1	PASI-K
		SM 2540C	TML	1	PASI-K
		EPA 300.0	AAA	3	PASI-K
60464699009	**S-PZ-1S**	EPA 200.7	ARMN	10	PASI-K
		EPA 200.8	JGP	4	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	TML	1	PASI-K
		SM 2540C	TML	1	PASI-K
		EPA 300.0	AAA	3	PASI-K
60464699010	**S-PZ-9D**	EPA 200.7	ARMN	10	PASI-K
		EPA 200.8	JGP	4	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	TML	1	PASI-K
		SM 2540C	TML	1	PASI-K
		EPA 300.0	AAA	3	PASI-K
60464699011	**S-BMW-1S**	EPA 200.7	ARMN	10	PASI-K
		EPA 200.8	JGP	4	PASI-K
		EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA

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SAMPLE ANALYTE COUNT

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		SM 2320B	TML	1	PASI-K
		SM 2540C	TML	1	PASI-K
		EPA 300.0	AAA	3	PASI-K
60464699012	**S-BMW-3S**	EPA 200.7	ARMN	10	PASI-K
		EPA 200.8	JGP	4	PASI-K
		EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	TML	1	PASI-K
		SM 2540C	TML	1	PASI-K
		EPA 300.0	AAA	3	PASI-K
60464699013	**S-LMW-2S**	EPA 200.7	ARMN	10	PASI-K
		EPA 200.8	JGP	4	PASI-K
		EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	TML	1	PASI-K
		SM 2540C	TML	1	PASI-K
		EPA 300.0	AAA	3	PASI-K
60464699014	**S-LMW-4S**	EPA 200.7	ARMN	10	PASI-K
		EPA 200.8	JGP	4	PASI-K
		EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	TML	1	PASI-K
		SM 2540C	TML	1	PASI-K
		EPA 300.0	AAA	3	PASI-K
60464699015	**S-AM-1S**	EPA 200.7	ARMN	10	PASI-K
		EPA 200.8	JGP	4	PASI-K
		EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	TML	1	PASI-K
		SM 2540C	TML	1	PASI-K
		EPA 300.0	AAA	3	PASI-K
60464699016	**S-AM-1D**	EPA 200.7	ARMN	10	PASI-K
		EPA 200.8	JGP	4	PASI-K
		EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	TML	1	PASI-K
		SM 2540C	TML	1	PASI-K

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SAMPLE ANALYTE COUNT

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 300.0	AAA	3	PASI-K
60464699017	S-TP-2D	EPA 200.7	ARMN	10	PASI-K
		EPA 200.8	JGP	4	PASI-K
		EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	TML	1	PASI-K
		SM 2540C	TML	1	PASI-K
		EPA 300.0	AAA	3	PASI-K
60464699018	S-TP-3D	EPA 200.7	ARMN	10	PASI-K
		EPA 200.8	JGP	4	PASI-K
		EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	TML	1	PASI-K
		SM 2540C	TML	1	PASI-K
		EPA 300.0	AAA	3	PASI-K
60464699019	S-TP-4D	EPA 200.7	ARMN	10	PASI-K
		EPA 200.8	JGP	4	PASI-K
		EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	TML	1	PASI-K
		SM 2540C	TML	1	PASI-K
		EPA 300.0	AAA	3	PASI-K
60464699020	S-TP-8D	EPA 200.7	ARMN	10	PASI-K
		EPA 200.8	JGP	4	PASI-K
		EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	TML	1	PASI-K
		SM 2540C	TML	1	PASI-K
		EPA 300.0	AAA	3	PASI-K
60464699021	S-CA-DUP-2	EPA 200.7	ARMN	10	PASI-K
		EPA 200.8	JGP	4	PASI-K
		EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	TML	1	PASI-K
		SM 2540C	TML	1	PASI-K
		EPA 300.0	AAA	3	PASI-K
60464699022	S-CA-FB-1	EPA 200.7	ARMN	10	PASI-K

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SAMPLE ANALYTE COUNT

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 200.8	JGP	4	PASI-K
		EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	TML	1	PASI-K
		SM 2540C	TML	1	PASI-K
		EPA 300.0	AAA	3	PASI-K
60464699023	**S-CA-FB-2**	EPA 200.7	ARMN	10	PASI-K
		EPA 200.8	JGP	4	PASI-K
		EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	TML	1	PASI-K
		SM 2540C	TML	1	PASI-K
		EPA 300.0	AAA	3	PASI-K
60464699024	**S-CA-MS-1**	EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
60464699025	**S-CA-MSD-1**	EPA 903.1	LL1	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA

PASI-K = Pace Analytical Services - Kansas City
PASI-PA = Pace Analytical Services - Greensburg

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

Sample: S-TP-5D **Lab ID: 60464699001** Collected: 11/14/24 13:20 Received: 11/15/24 05:55 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Barium	**199**	ug/L	5.0	0.64	1	11/15/24 15:15	11/20/24 12:38	7440-39-3	
Boron	**7800**	ug/L	100	6.4	1	11/15/24 15:15	11/20/24 12:38	7440-42-8	
Calcium	**156000**	ug/L	200	26.9	1	11/15/24 15:15	11/20/24 12:38	7440-70-2	
Iron	**11000**	ug/L	50.0	9.1	1	11/15/24 15:15	11/20/24 12:38	7439-89-6	
Lithium	**40.7**	ug/L	10.0	3.7	1	11/15/24 15:15	11/20/24 12:38	7439-93-2	
Magnesium	**38300**	ug/L	50.0	20.1	1	11/15/24 15:15	11/20/24 12:38	7439-95-4	
Manganese	**1280**	ug/L	5.0	0.39	1	11/15/24 15:15	11/20/24 12:38	7439-96-5	
Molybdenum	**564**	ug/L	20.0	1.0	1	11/15/24 15:15	11/20/24 12:38	7439-98-7	
Potassium	**5700**	ug/L	500	69.7	1	11/15/24 15:15	11/20/24 12:38	7440-09-7	
Sodium	**36400**	ug/L	500	115	1	11/15/24 15:15	11/20/24 12:38	7440-23-5	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City								
Arsenic	**0.54J**	ug/L	1.0	0.13	1	12/03/24 09:18	12/10/24 12:08	7440-38-2	
Cadmium	**0.23J**	ug/L	0.50	0.050	1	12/03/24 09:18	12/10/24 12:08	7440-43-9	
Chromium	**<0.30**	ug/L	1.0	0.30	1	12/03/24 09:18	12/10/24 12:08	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	12/03/24 09:18	12/10/24 12:08	7782-49-2	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**337**	mg/L	40.0	21.0	2		11/27/24 17:10		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**784**	mg/L	13.3	13.3	1		11/19/24 12:19		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**44.1**	mg/L	20.0	10.5	20		12/13/24 14:11	16887-00-6	H1
Fluoride	**0.34**	mg/L	0.20	0.12	1		12/13/24 13:58	16984-48-8	H1,IC
Sulfate	**242**	mg/L	20.0	11.0	20		12/13/24 14:11	14808-79-8	H1

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

Sample: S-TP-6S **Lab ID: 60464699002** Collected: 11/14/24 14:27 Received: 11/15/24 05:55 Matrix: Water

Comments: • Upon receipt at the laboratory, 5 mls of nitric acid were added to 1 out of 2 bottles of the sample to meet the sample preservation requirement of pH<2 for radiochemistry analysis, where the method requires preservation, in water. The samples were not preserved pH <2 within the required 5 days of collection (EPA 815-R-05-004).

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Barium	**284**	ug/L	5.0	0.64	1	11/15/24 15:15	11/20/24 12:40	7440-39-3	
Boron	**113**	ug/L	100	6.4	1	11/15/24 15:15	11/20/24 12:40	7440-42-8	
Calcium	**135000**	ug/L	200	26.9	1	11/15/24 15:15	11/20/24 12:40	7440-70-2	
Iron	**251**	ug/L	50.0	9.1	1	11/15/24 15:15	11/20/24 12:40	7439-89-6	B
Lithium	**37.4**	ug/L	10.0	3.7	1	11/15/24 15:15	11/20/24 12:40	7439-93-2	
Magnesium	**28100**	ug/L	50.0	20.1	1	11/15/24 15:15	11/20/24 12:40	7439-95-4	
Manganese	**301**	ug/L	5.0	0.39	1	11/15/24 15:15	11/20/24 12:40	7439-96-5	
Molybdenum	**3.6J**	ug/L	20.0	1.0	1	11/15/24 15:15	11/20/24 12:40	7439-98-7	
Potassium	**2620**	ug/L	500	69.7	1	11/15/24 15:15	11/20/24 12:40	7440-09-7	
Sodium	**5600**	ug/L	500	115	1	11/15/24 15:15	11/20/24 12:40	7440-23-5	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City								
Arsenic	**0.97J**	ug/L	1.0	0.13	1	12/03/24 09:18	12/10/24 12:10	7440-38-2	
Cadmium	**0.083J**	ug/L	0.50	0.050	1	12/03/24 09:18	12/10/24 12:10	7440-43-9	
Chromium	**0.44J**	ug/L	1.0	0.30	1	12/03/24 09:18	12/10/24 12:10	7440-47-3	
Selenium	**0.23J**	ug/L	1.0	0.18	1	12/03/24 09:18	12/10/24 12:10	7782-49-2	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**412**	mg/L	20.0	10.5	1		11/27/24 17:20		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**520**	mg/L	10.0	10.0	1		11/19/24 12:19		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**8.9**	mg/L	1.0	0.53	1		12/13/24 12:41	16887-00-6	H1,M1
Fluoride	**0.44**	mg/L	0.20	0.12	1		12/13/24 12:41	16984-48-8	H1,IC, M1
Sulfate	**35.2**	mg/L	10.0	5.5	10		12/13/24 12:54	14808-79-8	H1,M1, R1

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

Sample: S-UG-3 **Lab ID: 60464699003** Collected: 11/14/24 11:15 Received: 11/15/24 05:55 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Barium	**210**	ug/L	5.0	0.64	1	11/15/24 15:15	11/20/24 12:56	7440-39-3	
Boron	**418**	ug/L	100	6.4	1	11/15/24 15:15	11/20/24 12:56	7440-42-8	
Calcium	**120000**	ug/L	200	26.9	1	11/15/24 15:15	11/20/24 12:56	7440-70-2	
Iron	**14.9J**	ug/L	50.0	9.1	1	11/15/24 15:15	11/20/24 12:56	7439-89-6	B
Lithium	**27.3**	ug/L	10.0	3.7	1	11/15/24 15:15	11/20/24 12:56	7439-93-2	
Magnesium	**22100**	ug/L	50.0	20.1	1	11/15/24 15:15	11/20/24 12:56	7439-95-4	
Manganese	**894**	ug/L	5.0	0.39	1	11/15/24 15:15	11/20/24 12:56	7439-96-5	
Molybdenum	**4.4J**	ug/L	20.0	1.0	1	11/15/24 15:15	11/20/24 12:56	7439-98-7	
Potassium	**4590**	ug/L	500	69.7	1	11/15/24 15:15	11/20/24 12:56	7440-09-7	
Sodium	**24500**	ug/L	500	115	1	11/15/24 15:15	11/20/24 12:56	7440-23-5	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City								
Arsenic	**0.64J**	ug/L	1.0	0.13	1	12/03/24 09:18	12/10/24 12:12	7440-38-2	
Cadmium	**0.35J**	ug/L	0.50	0.050	1	12/03/24 09:18	12/10/24 12:12	7440-43-9	
Chromium	**<0.30**	ug/L	1.0	0.30	1	12/03/24 09:18	12/10/24 12:12	7440-47-3	
Selenium	**2.4**	ug/L	1.0	0.18	1	12/03/24 09:18	12/10/24 12:12	7782-49-2	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**339**	mg/L	20.0	10.5	1		11/27/24 17:27		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**497**	mg/L	10.0	10.0	1		11/19/24 12:19		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**19.7**	mg/L	10.0	5.3	10		12/13/24 16:32	16887-00-6	H1
Fluoride	**0.47**	mg/L	0.20	0.12	1		12/13/24 16:19	16984-48-8	H1,IC
Sulfate	**79.1**	mg/L	10.0	5.5	10		12/13/24 16:32	14808-79-8	H1

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

Sample: S-CA-DUP-1 **Lab ID: 60464699004** Collected: 11/14/24 08:00 Received: 11/15/24 05:55 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Barium	**290**	ug/L	5.0	0.64	1	11/15/24 15:15	11/20/24 12:58	7440-39-3	
Boron	**102**	ug/L	100	6.4	1	11/15/24 15:15	11/20/24 12:58	7440-42-8	
Calcium	**139000**	ug/L	200	26.9	1	11/15/24 15:15	11/20/24 12:58	7440-70-2	
Iron	**271**	ug/L	50.0	9.1	1	11/15/24 15:15	11/20/24 12:58	7439-89-6	B
Lithium	**38.1**	ug/L	10.0	3.7	1	11/15/24 15:15	11/20/24 12:58	7439-93-2	
Magnesium	**29000**	ug/L	50.0	20.1	1	11/15/24 15:15	11/20/24 12:58	7439-95-4	
Manganese	**320**	ug/L	5.0	0.39	1	11/15/24 15:15	11/20/24 12:58	7439-96-5	
Molybdenum	**3.5J**	ug/L	20.0	1.0	1	11/15/24 15:15	11/20/24 12:58	7439-98-7	
Potassium	**2700**	ug/L	500	69.7	1	11/15/24 15:15	11/20/24 12:58	7440-09-7	
Sodium	**5750**	ug/L	500	115	1	11/15/24 15:15	11/20/24 12:58	7440-23-5	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City								
Arsenic	**0.97J**	ug/L	1.0	0.13	1	12/03/24 09:18	12/10/24 12:14	7440-38-2	
Cadmium	**0.066J**	ug/L	0.50	0.050	1	12/03/24 09:18	12/10/24 12:14	7440-43-9	
Chromium	**0.44J**	ug/L	1.0	0.30	1	12/03/24 09:18	12/10/24 12:14	7440-47-3	
Selenium	**0.20J**	ug/L	1.0	0.18	1	12/03/24 09:18	12/10/24 12:14	7782-49-2	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**411**	mg/L	20.0	10.5	1		11/27/24 17:33		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**505**	mg/L	10.0	10.0	1		11/19/24 12:19		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**8.9**	mg/L	1.0	0.53	1		12/13/24 15:41	16887-00-6	H1
Fluoride	**0.44**	mg/L	0.20	0.12	1		12/13/24 15:41	16984-48-8	H1,IC
Sulfate	**35.4**	mg/L	10.0	5.5	10		12/13/24 15:54	14808-79-8	H1

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

Sample: S-LMW-1S **Lab ID: 60464699005** Collected: 11/14/24 16:06 Received: 11/16/24 05:34 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Barium	**267**	ug/L	5.0	0.64	1	11/20/24 09:33	12/04/24 16:57	7440-39-3	
Boron	**1240**	ug/L	100	6.4	1	11/20/24 09:33	12/04/24 16:57	7440-42-8	
Calcium	**142000**	ug/L	200	26.9	1	11/20/24 09:33	12/04/24 16:57	7440-70-2	
Iron	**39.6J**	ug/L	50.0	9.1	1	11/20/24 09:33	12/04/24 16:57	7439-89-6	
Lithium	**25.6**	ug/L	10.0	3.7	1	11/20/24 09:33	12/04/24 16:57	7439-93-2	
Magnesium	**32000**	ug/L	50.0	20.1	1	11/20/24 09:33	12/04/24 16:57	7439-95-4	
Manganese	**56.1**	ug/L	5.0	0.39	1	11/20/24 09:33	12/04/24 16:57	7439-96-5	
Molybdenum	**87.0**	ug/L	20.0	1.0	1	11/20/24 09:33	12/04/24 16:57	7439-98-7	
Potassium	**9960**	ug/L	500	69.7	1	11/20/24 09:33	12/04/24 16:57	7440-09-7	
Sodium	**51600**	ug/L	500	115	1	11/20/24 09:33	12/04/24 16:57	7440-23-5	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City								
Arsenic	**2.2**	ug/L	1.0	0.13	1	12/03/24 09:18	12/10/24 12:22	7440-38-2	
Cadmium	**0.12J**	ug/L	0.50	0.050	1	12/03/24 09:18	12/10/24 12:22	7440-43-9	
Chromium	**0.80J**	ug/L	1.0	0.30	1	12/03/24 09:18	12/10/24 12:22	7440-47-3	
Selenium	**4.8**	ug/L	1.0	0.18	1	12/03/24 09:18	12/10/24 12:22	7782-49-2	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**300**	mg/L	20.0	10.5	1		11/27/24 18:02		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**713**	mg/L	13.3	13.3	1		11/19/24 12:20		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**175**	mg/L	20.0	10.5	20		12/15/24 02:09	16887-00-6	H1
Fluoride	**0.34**	mg/L	0.20	0.12	1		12/15/24 01:56	16984-48-8	H1,IC
Sulfate	**108**	mg/L	20.0	11.0	20		12/15/24 02:09	14808-79-8	H1

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

Sample: S-LMW-5S **Lab ID: 60464699006** Collected: 11/15/24 13:40 Received: 11/16/24 05:34 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Barium	**39.6**	ug/L	5.0	0.64	1	11/18/24 13:51	12/04/24 16:09	7440-39-3	
Boron	**17700**	ug/L	100	6.4	1	11/18/24 13:51	12/04/24 16:09	7440-42-8	
Calcium	**236000**	ug/L	200	26.9	1	11/18/24 13:51	12/04/24 16:09	7440-70-2	
Iron	**66.1**	ug/L	50.0	9.1	1	11/18/24 13:51	12/04/24 16:09	7439-89-6	
Lithium	**39.5**	ug/L	10.0	3.7	1	11/18/24 13:51	12/04/24 16:09	7439-93-2	
Magnesium	**41400**	ug/L	50.0	20.1	1	11/18/24 13:51	12/04/24 16:09	7439-95-4	
Manganese	**1700**	ug/L	5.0	0.39	1	11/18/24 13:51	12/04/24 16:09	7439-96-5	
Molybdenum	**1710**	ug/L	20.0	1.0	1	11/18/24 13:51	12/04/24 16:09	7439-98-7	
Potassium	**4190**	ug/L	500	69.7	1	11/18/24 13:51	12/04/24 16:09	7440-09-7	
Sodium	**192000**	ug/L	500	115	1	11/18/24 13:51	12/04/24 16:09	7440-23-5	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City								
Arsenic	**1.3**	ug/L	1.0	0.13	1	12/03/24 09:18	12/10/24 12:24	7440-38-2	
Cadmium	**1.0**	ug/L	0.50	0.050	1	12/03/24 09:18	12/10/24 12:24	7440-43-9	
Chromium	**0.31J**	ug/L	1.0	0.30	1	12/03/24 09:18	12/10/24 12:24	7440-47-3	
Selenium	**0.22J**	ug/L	1.0	0.18	1	12/03/24 09:18	12/10/24 12:24	7782-49-2	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**300**	mg/L	20.0	10.5	1		11/27/24 18:40		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**1630**	mg/L	40.0	40.0	1		11/20/24 12:08		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**10.6**	mg/L	1.0	0.53	1		12/15/24 02:22	16887-00-6	H1
Fluoride	**0.37**	mg/L	0.20	0.12	1		12/15/24 02:22	16984-48-8	H1,IC
Sulfate	**915**	mg/L	100	55.0	100		12/15/24 02:48	14808-79-8	H1

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

Sample: S-LMW-6S **Lab ID: 60464699007** Collected: 11/15/24 12:48 Received: 11/16/24 05:34 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Barium	**45.8**	ug/L	5.0	0.64	1	11/18/24 13:51	12/04/24 16:11	7440-39-3	
Boron	**17800**	ug/L	100	6.4	1	11/18/24 13:51	12/04/24 16:11	7440-42-8	
Calcium	**259000**	ug/L	200	26.9	1	11/18/24 13:51	12/04/24 16:11	7440-70-2	
Iron	**43.6J**	ug/L	50.0	9.1	1	11/18/24 13:51	12/04/24 16:11	7439-89-6	
Lithium	**18.5**	ug/L	10.0	3.7	1	11/18/24 13:51	12/04/24 16:11	7439-93-2	
Magnesium	**57400**	ug/L	50.0	20.1	1	11/18/24 13:51	12/04/24 16:11	7439-95-4	
Manganese	**457**	ug/L	5.0	0.39	1	11/18/24 13:51	12/04/24 16:11	7439-96-5	
Molybdenum	**2.5J**	ug/L	20.0	1.0	1	11/18/24 13:51	12/04/24 16:11	7439-98-7	
Potassium	**4320**	ug/L	500	69.7	1	11/18/24 13:51	12/04/24 16:11	7440-09-7	
Sodium	**66500**	ug/L	500	115	1	11/18/24 13:51	12/04/24 16:11	7440-23-5	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City								
Arsenic	**1.2**	ug/L	1.0	0.13	1	12/03/24 09:18	12/10/24 12:26	7440-38-2	
Cadmium	**0.90**	ug/L	0.50	0.050	1	12/03/24 09:18	12/10/24 12:26	7440-43-9	
Chromium	**0.30J**	ug/L	1.0	0.30	1	12/03/24 09:18	12/10/24 12:26	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	12/03/24 09:18	12/10/24 12:26	7782-49-2	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**459**	mg/L	20.0	10.5	1		11/27/24 18:46		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**1290**	mg/L	20.0	20.0	1		11/20/24 12:08		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**6.4**	mg/L	1.0	0.53	1		12/15/24 03:26	16887-00-6	H1
Fluoride	**0.33**	mg/L	0.20	0.12	1		12/15/24 03:26	16984-48-8	H1,IC
Sulfate	**547**	mg/L	50.0	27.5	50		12/15/24 03:52	14808-79-8	H1

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

Sample: S-TP-6D **Lab ID: 60464699008** Collected: 11/14/24 15:10 Received: 11/16/24 05:34 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Barium	**399**	ug/L	5.0	0.64	1	11/18/24 13:51	12/04/24 16:12	7440-39-3	
Boron	**97.7J**	ug/L	100	6.4	1	11/18/24 13:51	12/04/24 16:12	7440-42-8	
Calcium	**119000**	ug/L	200	26.9	1	11/18/24 13:51	12/04/24 16:12	7440-70-2	
Iron	**7550**	ug/L	50.0	9.1	1	11/18/24 13:51	12/04/24 16:12	7439-89-6	
Lithium	**26.5**	ug/L	10.0	3.7	1	11/18/24 13:51	12/04/24 16:12	7439-93-2	
Magnesium	**29200**	ug/L	50.0	20.1	1	11/18/24 13:51	12/04/24 16:12	7439-95-4	
Manganese	**502**	ug/L	5.0	0.39	1	11/18/24 13:51	12/04/24 16:12	7439-96-5	
Molybdenum	**<1.0**	ug/L	20.0	1.0	1	11/18/24 13:51	12/04/24 16:12	7439-98-7	
Potassium	**3710**	ug/L	500	69.7	1	11/18/24 13:51	12/04/24 16:12	7440-09-7	
Sodium	**5690**	ug/L	500	115	1	11/18/24 13:51	12/04/24 16:12	7440-23-5	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City								
Arsenic	**0.33J**	ug/L	1.0	0.13	1	12/03/24 09:18	12/10/24 12:32	7440-38-2	
Cadmium	**<0.050**	ug/L	0.50	0.050	1	12/03/24 09:18	12/10/24 12:32	7440-43-9	
Chromium	**0.38J**	ug/L	1.0	0.30	1	12/03/24 09:18	12/10/24 12:32	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	12/03/24 09:18	12/10/24 12:32	7782-49-2	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**354**	mg/L	40.0	21.0	2		11/27/24 18:08		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**465**	mg/L	10.0	10.0	1		11/20/24 12:08		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**15.0**	mg/L	1.0	0.53	1		12/15/24 04:43	16887-00-6	H1
Fluoride	**0.41**	mg/L	0.20	0.12	1		12/15/24 04:43	16984-48-8	H1,IC
Sulfate	**55.7**	mg/L	10.0	5.5	10		12/15/24 04:56	14808-79-8	H1

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

Sample: S-PZ-1S **Lab ID: 60464699009** Collected: 11/18/24 14:25 Received: 11/19/24 07:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Barium	**103**	ug/L	5.0	0.64	1	11/19/24 14:30	11/26/24 23:47	7440-39-3	
Boron	**8120**	ug/L	100	6.4	1	11/19/24 14:30	11/26/24 23:47	7440-42-8	
Calcium	**81900**	ug/L	200	26.9	1	11/19/24 14:30	11/26/24 23:47	7440-70-2	
Iron	**5960**	ug/L	50.0	9.1	1	11/19/24 14:30	11/26/24 23:47	7439-89-6	
Lithium	**16.2**	ug/L	10.0	3.7	1	11/19/24 14:30	11/26/24 23:47	7439-93-2	
Magnesium	**16800**	ug/L	50.0	20.1	1	11/19/24 14:30	11/26/24 23:47	7439-95-4	
Manganese	**663**	ug/L	5.0	0.39	1	11/19/24 14:30	11/26/24 23:47	7439-96-5	
Molybdenum	**1840**	ug/L	20.0	1.0	1	11/19/24 14:30	11/26/24 23:47	7439-98-7	
Potassium	**1760**	ug/L	500	69.7	1	11/19/24 14:30	11/26/24 23:47	7440-09-7	B
Sodium	**28500**	ug/L	500	115	1	11/19/24 14:30	11/26/24 23:47	7440-23-5	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City								
Arsenic	**0.52J**	ug/L	1.0	0.13	1	12/03/24 09:18	12/10/24 13:00	7440-38-2	
Cadmium	**0.86**	ug/L	0.50	0.050	1	12/03/24 09:18	12/10/24 13:00	7440-43-9	
Chromium	**0.33J**	ug/L	1.0	0.30	1	12/03/24 09:18	12/10/24 13:00	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	12/03/24 09:18	12/10/24 13:00	7782-49-2	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**270**	mg/L	20.0	10.5	1		12/02/24 15:57		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**450**	mg/L	10.0	10.0	1		11/25/24 12:54		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**23.4**	mg/L	20.0	10.5	20		12/14/24 15:00	16887-00-6	
Fluoride	**0.15J**	mg/L	0.20	0.12	1		12/14/24 14:46	16984-48-8	
Sulfate	**73.3**	mg/L	20.0	11.0	20		12/14/24 15:00	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

Sample: S-PZ-9D **Lab ID: 60464699010** Collected: 11/18/24 12:05 Received: 11/19/24 07:00 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Barium	**87.8**	ug/L	5.0	0.64	1	11/19/24 14:30	11/26/24 23:49	7440-39-3	
Boron	**2010**	ug/L	100	6.4	1	11/19/24 14:30	11/26/24 23:49	7440-42-8	
Calcium	**91800**	ug/L	200	26.9	1	11/19/24 14:30	11/26/24 23:49	7440-70-2	
Iron	**6030**	ug/L	50.0	9.1	1	11/19/24 14:30	11/26/24 23:49	7439-89-6	
Lithium	**20.7**	ug/L	10.0	3.7	1	11/19/24 14:30	11/26/24 23:49	7439-93-2	
Magnesium	**21900**	ug/L	50.0	20.1	1	11/19/24 14:30	11/26/24 23:49	7439-95-4	
Manganese	**631**	ug/L	5.0	0.39	1	11/19/24 14:30	11/26/24 23:49	7439-96-5	
Molybdenum	**19.6J**	ug/L	20.0	1.0	1	11/19/24 14:30	11/26/24 23:49	7439-98-7	
Potassium	**3360**	ug/L	500	69.7	1	11/19/24 14:30	11/26/24 23:49	7440-09-7	
Sodium	**12000**	ug/L	500	115	1	11/19/24 14:30	11/26/24 23:49	7440-23-5	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City								
Arsenic	**0.89J**	ug/L	1.0	0.13	1	12/03/24 09:18	12/10/24 13:05	7440-38-2	
Cadmium	**0.12J**	ug/L	0.50	0.050	1	12/03/24 09:18	12/10/24 13:05	7440-43-9	
Chromium	**1.1**	ug/L	1.0	0.30	1	12/03/24 09:18	12/10/24 13:05	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	12/03/24 09:18	12/10/24 13:05	7782-49-2	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**228**	mg/L	20.0	10.5	1		12/02/24 14:02		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**449**	mg/L	10.0	10.0	1		11/25/24 12:54		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**5.6**	mg/L	1.0	0.53	1		12/14/24 15:14	16887-00-6	
Fluoride	**<0.12**	mg/L	0.20	0.12	1		12/14/24 15:14	16984-48-8	
Sulfate	**139**	mg/L	20.0	11.0	20		12/14/24 15:28	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

Sample: S-BMW-1S **Lab ID: 60464699011** Collected: 11/20/24 09:00 Received: 11/21/24 07:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Barium	**201**	ug/L	5.0	0.64	1	11/22/24 09:01	12/10/24 11:19	7440-39-3	
Boron	**61.9J**	ug/L	100	6.4	1	11/22/24 09:01	12/10/24 11:19	7440-42-8	
Calcium	**175000**	ug/L	200	26.9	1	11/22/24 09:01	12/10/24 11:19	7440-70-2	
Iron	**121**	ug/L	50.0	9.1	1	11/22/24 09:01	12/10/24 11:19	7439-89-6	
Lithium	**7.2J**	ug/L	10.0	3.7	1	11/22/24 09:01	12/10/24 11:19	7439-93-2	
Magnesium	**33700**	ug/L	50.0	20.1	1	11/22/24 09:01	12/10/24 11:19	7439-95-4	
Manganese	**1070**	ug/L	5.0	0.39	1	11/22/24 09:01	12/10/24 11:19	7439-96-5	
Molybdenum	**2.5J**	ug/L	20.0	1.0	1	11/22/24 09:01	12/10/24 11:19	7439-98-7	
Potassium	**450J**	ug/L	500	69.7	1	11/22/24 09:01	12/10/24 11:19	7440-09-7	
Sodium	**5690**	ug/L	500	115	1	11/22/24 09:01	12/10/24 11:19	7440-23-5	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City								
Arsenic	**0.84J**	ug/L	1.0	0.13	1	12/03/24 09:18	12/10/24 11:16	7440-38-2	
Cadmium	**<0.050**	ug/L	0.50	0.050	1	12/03/24 09:18	12/10/24 11:16	7440-43-9	
Chromium	**<0.30**	ug/L	1.0	0.30	1	12/03/24 09:18	12/10/24 11:16	7440-47-3	
Selenium	**0.45J**	ug/L	1.0	0.18	1	12/03/24 09:18	12/10/24 11:16	7782-49-2	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**347**	mg/L	20.0	10.5	1		12/02/24 16:57		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**613**	mg/L	13.3	13.3	1		11/27/24 17:56		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**14.2**	mg/L	1.0	0.53	1		12/14/24 17:32	16887-00-6	
Fluoride	**<0.12**	mg/L	0.20	0.12	1		12/14/24 17:32	16984-48-8	
Sulfate	**37.1**	mg/L	10.0	5.5	10		12/14/24 17:46	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

Sample: S-BMW-3S **Lab ID: 60464699012** Collected: 11/20/24 11:43 Received: 11/21/24 07:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Barium	**114**	ug/L	5.0	0.64	1	11/22/24 09:01	12/10/24 11:21	7440-39-3	
Boron	**57.3J**	ug/L	100	6.4	1	11/22/24 09:01	12/10/24 11:21	7440-42-8	
Calcium	**113000**	ug/L	200	26.9	1	11/22/24 09:01	12/10/24 11:21	7440-70-2	
Iron	**28.9J**	ug/L	50.0	9.1	1	11/22/24 09:01	12/10/24 11:21	7439-89-6	
Lithium	**8.4J**	ug/L	10.0	3.7	1	11/22/24 09:01	12/10/24 11:21	7439-93-2	
Magnesium	**19800**	ug/L	50.0	20.1	1	11/22/24 09:01	12/10/24 11:21	7439-95-4	
Manganese	**268**	ug/L	5.0	0.39	1	11/22/24 09:01	12/10/24 11:21	7439-96-5	
Molybdenum	**3.4J**	ug/L	20.0	1.0	1	11/22/24 09:01	12/10/24 11:21	7439-98-7	
Potassium	**452J**	ug/L	500	69.7	1	11/22/24 09:01	12/10/24 11:21	7440-09-7	
Sodium	**5840**	ug/L	500	115	1	11/22/24 09:01	12/10/24 11:21	7440-23-5	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City								
Arsenic	**0.71J**	ug/L	1.0	0.13	1	12/03/24 09:18	12/10/24 11:18	7440-38-2	
Cadmium	**<0.050**	ug/L	0.50	0.050	1	12/03/24 09:18	12/10/24 11:18	7440-43-9	
Chromium	**<0.30**	ug/L	1.0	0.30	1	12/03/24 09:18	12/10/24 11:18	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	12/03/24 09:18	12/10/24 11:18	7782-49-2	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**166**	mg/L	20.0	10.5	1		12/02/24 17:03		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**413**	mg/L	10.0	10.0	1		11/27/24 17:57		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**13.1**	mg/L	1.0	0.53	1		12/14/24 18:00	16887-00-6	
Fluoride	**<0.12**	mg/L	0.20	0.12	1		12/14/24 18:00	16984-48-8	
Sulfate	**17.1**	mg/L	1.0	0.55	1		12/14/24 18:00	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

Sample: S-LMW-2S **Lab ID: 60464699013** Collected: 11/19/24 12:27 Received: 11/21/24 07:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Barium	**100**	ug/L	5.0	0.64	1	11/22/24 09:01	12/10/24 11:23	7440-39-3	
Boron	**9060**	ug/L	100	6.4	1	11/22/24 09:01	12/10/24 11:23	7440-42-8	
Calcium	**172000**	ug/L	200	26.9	1	11/22/24 09:01	12/10/24 11:23	7440-70-2	
Iron	**23.4J**	ug/L	50.0	9.1	1	11/22/24 09:01	12/10/24 11:23	7439-89-6	
Lithium	**30.0**	ug/L	10.0	3.7	1	11/22/24 09:01	12/10/24 11:23	7439-93-2	
Magnesium	**34300**	ug/L	50.0	20.1	1	11/22/24 09:01	12/10/24 11:23	7439-95-4	
Manganese	**480**	ug/L	5.0	0.39	1	11/22/24 09:01	12/10/24 11:23	7439-96-5	
Molybdenum	**1060**	ug/L	20.0	1.0	1	11/22/24 09:01	12/10/24 11:23	7439-98-7	
Potassium	**5590**	ug/L	500	69.7	1	11/22/24 09:01	12/10/24 11:23	7440-09-7	
Sodium	**69700**	ug/L	500	115	1	11/22/24 09:01	12/10/24 11:23	7440-23-5	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City								
Arsenic	**1.2**	ug/L	1.0	0.13	1	12/03/24 09:18	12/10/24 11:20	7440-38-2	
Cadmium	**0.86**	ug/L	0.50	0.050	1	12/03/24 09:18	12/10/24 11:20	7440-43-9	
Chromium	**0.49J**	ug/L	1.0	0.30	1	12/03/24 09:18	12/10/24 11:20	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	12/03/24 09:18	12/10/24 11:20	7782-49-2	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**334**	mg/L	20.0	10.5	1		12/02/24 17:19		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**892**	mg/L	13.3	13.3	1		11/27/24 17:57		H1
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**137**	mg/L	20.0	10.5	20		12/14/24 18:28	16887-00-6	
Fluoride	**<0.12**	mg/L	0.20	0.12	1		12/14/24 18:14	16984-48-8	
Sulfate	**234**	mg/L	20.0	11.0	20		12/14/24 18:28	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

Sample: S-LMW-4S **Lab ID: 60464699014** Collected: 11/19/24 11:13 Received: 11/21/24 07:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Barium	**289**	ug/L	5.0	0.64	1	11/22/24 09:01	12/10/24 11:30	7440-39-3	
Boron	**310**	ug/L	100	6.4	1	11/22/24 09:01	12/10/24 11:30	7440-42-8	
Calcium	**220000**	ug/L	200	26.9	1	11/22/24 09:01	12/10/24 11:30	7440-70-2	
Iron	**9.7J**	ug/L	50.0	9.1	1	11/22/24 09:01	12/10/24 11:30	7439-89-6	
Lithium	**31.9**	ug/L	10.0	3.7	1	11/22/24 09:01	12/10/24 11:30	7439-93-2	
Magnesium	**51500**	ug/L	50.0	20.1	1	11/22/24 09:01	12/10/24 11:30	7439-95-4	
Manganese	**345**	ug/L	5.0	0.39	1	11/22/24 09:01	12/10/24 11:30	7439-96-5	
Molybdenum	**1.2J**	ug/L	20.0	1.0	1	11/22/24 09:01	12/10/24 11:30	7439-98-7	
Potassium	**5810**	ug/L	500	69.7	1	11/22/24 09:01	12/10/24 11:30	7440-09-7	
Sodium	**10800**	ug/L	500	115	1	11/22/24 09:01	12/10/24 11:30	7440-23-5	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City								
Arsenic	**0.98J**	ug/L	1.0	0.13	1	12/03/24 09:18	12/10/24 11:22	7440-38-2	
Cadmium	**0.13J**	ug/L	0.50	0.050	1	12/03/24 09:18	12/10/24 11:22	7440-43-9	
Chromium	**0.43J**	ug/L	1.0	0.30	1	12/03/24 09:18	12/10/24 11:22	7440-47-3	
Selenium	**0.23J**	ug/L	1.0	0.18	1	12/03/24 09:18	12/10/24 11:22	7782-49-2	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**729**	mg/L	20.0	10.5	1		12/02/24 17:25		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**785**	mg/L	13.3	13.3	1		11/27/24 17:57		H1
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**3.3**	mg/L	1.0	0.53	1		12/14/24 18:42	16887-00-6	
Fluoride	**<0.12**	mg/L	0.20	0.12	1		12/14/24 18:42	16984-48-8	
Sulfate	**33.3**	mg/L	5.0	2.8	5		12/14/24 18:56	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

Sample: S-AM-1S **Lab ID: 60464699015** Collected: 11/19/24 14:54 Received: 11/21/24 07:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Barium	**103**	ug/L	5.0	0.64	1	11/22/24 09:01	12/10/24 11:31	7440-39-3	
Boron	**158**	ug/L	100	6.4	1	11/22/24 09:01	12/10/24 11:31	7440-42-8	
Calcium	**59600**	ug/L	200	26.9	1	11/22/24 09:01	12/10/24 11:31	7440-70-2	
Iron	**563**	ug/L	50.0	9.1	1	11/22/24 09:01	12/10/24 11:31	7439-89-6	
Lithium	**18.4**	ug/L	10.0	3.7	1	11/22/24 09:01	12/10/24 11:31	7439-93-2	
Magnesium	**12200**	ug/L	50.0	20.1	1	11/22/24 09:01	12/10/24 11:31	7439-95-4	
Manganese	**1820**	ug/L	5.0	0.39	1	11/22/24 09:01	12/10/24 11:31	7439-96-5	
Molybdenum	**45.2**	ug/L	20.0	1.0	1	11/22/24 09:01	12/10/24 11:31	7439-98-7	
Potassium	**7150**	ug/L	500	69.7	1	11/22/24 09:01	12/10/24 11:31	7440-09-7	
Sodium	**18200**	ug/L	500	115	1	11/22/24 09:01	12/10/24 11:31	7440-23-5	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City								
Arsenic	**1.3**	ug/L	1.0	0.13	1	12/03/24 09:18	12/10/24 11:28	7440-38-2	
Cadmium	**<0.050**	ug/L	0.50	0.050	1	12/03/24 09:18	12/10/24 11:28	7440-43-9	
Chromium	**<0.30**	ug/L	1.0	0.30	1	12/03/24 09:18	12/10/24 11:28	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	12/03/24 09:18	12/10/24 11:28	7782-49-2	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**203**	mg/L	20.0	10.5	1		12/02/24 17:32		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**324**	mg/L	10.0	10.0	1		11/27/24 17:57		H1
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**32.9**	mg/L	10.0	5.3	10		12/14/24 20:03	16887-00-6	
Fluoride	**0.19J**	mg/L	0.20	0.12	1		12/14/24 19:49	16984-48-8	
Sulfate	**23.3**	mg/L	10.0	5.5	10		12/14/24 20:03	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

Sample: S-AM-1D **Lab ID: 60464699016** Collected: 11/19/24 14:55 Received: 11/21/24 07:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Barium	**387**	ug/L	5.0	0.64	1	11/22/24 09:01	12/10/24 11:33	7440-39-3	
Boron	**2510**	ug/L	100	6.4	1	11/22/24 09:01	12/10/24 11:33	7440-42-8	
Calcium	**83700**	ug/L	200	26.9	1	11/22/24 09:01	12/10/24 11:33	7440-70-2	
Iron	**3000**	ug/L	50.0	9.1	1	11/22/24 09:01	12/10/24 11:33	7439-89-6	
Lithium	**31.6**	ug/L	10.0	3.7	1	11/22/24 09:01	12/10/24 11:33	7439-93-2	
Magnesium	**17900**	ug/L	50.0	20.1	1	11/22/24 09:01	12/10/24 11:33	7439-95-4	
Manganese	**380**	ug/L	5.0	0.39	1	11/22/24 09:01	12/10/24 11:33	7439-96-5	
Molybdenum	**178**	ug/L	20.0	1.0	1	11/22/24 09:01	12/10/24 11:33	7439-98-7	
Potassium	**6510**	ug/L	500	69.7	1	11/22/24 09:01	12/10/24 11:33	7440-09-7	
Sodium	**21600**	ug/L	500	115	1	11/22/24 09:01	12/10/24 11:33	7440-23-5	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City								
Arsenic	**0.32J**	ug/L	1.0	0.13	1	12/03/24 09:18	12/10/24 11:30	7440-38-2	
Cadmium	**0.11J**	ug/L	0.50	0.050	1	12/03/24 09:18	12/10/24 11:30	7440-43-9	
Chromium	**<0.30**	ug/L	1.0	0.30	1	12/03/24 09:18	12/10/24 11:30	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	12/03/24 09:18	12/10/24 11:30	7782-49-2	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**309**	mg/L	20.0	10.5	1		12/02/24 17:38		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**387**	mg/L	10.0	10.0	1		11/27/24 17:57		H1
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**28.9**	mg/L	10.0	5.3	10		12/14/24 20:30	16887-00-6	
Fluoride	**0.28**	mg/L	0.20	0.12	1		12/14/24 20:16	16984-48-8	
Sulfate	**2.7**	mg/L	1.0	0.55	1		12/14/24 20:16	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

Sample: S-TP-2D **Lab ID: 60464699017** Collected: 11/20/24 09:53 Received: 11/21/24 07:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Barium	**62.1**	ug/L	5.0	0.64	1	11/22/24 09:01	12/10/24 11:35	7440-39-3	
Boron	**87.5J**	ug/L	100	6.4	1	11/22/24 09:01	12/10/24 11:35	7440-42-8	
Calcium	**281000**	ug/L	200	26.9	1	11/22/24 09:01	12/10/24 11:35	7440-70-2	
Iron	**17400**	ug/L	50.0	9.1	1	11/22/24 09:01	12/10/24 11:35	7439-89-6	
Lithium	**47.9**	ug/L	10.0	3.7	1	11/22/24 09:01	12/10/24 11:35	7439-93-2	
Magnesium	**73200**	ug/L	50.0	20.1	1	11/22/24 09:01	12/10/24 11:35	7439-95-4	
Manganese	**1270**	ug/L	5.0	0.39	1	11/22/24 09:01	12/10/24 11:35	7439-96-5	
Molybdenum	**<1.0**	ug/L	20.0	1.0	1	11/22/24 09:01	12/10/24 11:35	7439-98-7	
Potassium	**6280**	ug/L	500	69.7	1	11/22/24 09:01	12/10/24 11:35	7440-09-7	
Sodium	**21800**	ug/L	500	115	1	11/22/24 09:01	12/10/24 11:35	7440-23-5	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City								
Arsenic	**0.63J**	ug/L	1.0	0.13	1	12/03/24 09:18	12/10/24 11:32	7440-38-2	
Cadmium	**<0.050**	ug/L	0.50	0.050	1	12/03/24 09:18	12/10/24 11:32	7440-43-9	
Chromium	**0.60J**	ug/L	1.0	0.30	1	12/03/24 09:18	12/10/24 11:32	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	12/03/24 09:18	12/10/24 11:32	7782-49-2	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**487**	mg/L	40.0	21.0	2		12/02/24 17:44		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**1270**	mg/L	20.0	20.0	1		11/27/24 17:57		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**74.3**	mg/L	20.0	10.5	20		12/14/24 20:58	16887-00-6	
Fluoride	**<0.12**	mg/L	0.20	0.12	1		12/14/24 20:44	16984-48-8	
Sulfate	**502**	mg/L	50.0	27.5	50		12/14/24 21:12	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

Sample: S-TP-3D **Lab ID: 60464699018** Collected: 11/20/24 11:24 Received: 11/21/24 07:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Barium	**608**	ug/L	5.0	0.64	1	11/22/24 09:01	12/10/24 11:37	7440-39-3	
Boron	**55.2J**	ug/L	100	6.4	1	11/22/24 09:01	12/10/24 11:37	7440-42-8	
Calcium	**127000**	ug/L	200	26.9	1	11/22/24 09:01	12/10/24 11:37	7440-70-2	
Iron	**8380**	ug/L	50.0	9.1	1	11/22/24 09:01	12/10/24 11:37	7439-89-6	
Lithium	**35.6**	ug/L	10.0	3.7	1	11/22/24 09:01	12/10/24 11:37	7439-93-2	
Magnesium	**30800**	ug/L	50.0	20.1	1	11/22/24 09:01	12/10/24 11:37	7439-95-4	
Manganese	**714**	ug/L	5.0	0.39	1	11/22/24 09:01	12/10/24 11:37	7439-96-5	
Molybdenum	**<1.0**	ug/L	20.0	1.0	1	11/22/24 09:01	12/10/24 11:37	7439-98-7	
Potassium	**4270**	ug/L	500	69.7	1	11/22/24 09:01	12/10/24 11:37	7440-09-7	
Sodium	**7240**	ug/L	500	115	1	11/22/24 09:01	12/10/24 11:37	7440-23-5	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City								
Arsenic	**0.38J**	ug/L	1.0	0.13	1	12/03/24 09:18	12/10/24 11:34	7440-38-2	
Cadmium	**0.051J**	ug/L	0.50	0.050	1	12/03/24 09:18	12/10/24 11:34	7440-43-9	
Chromium	**0.54J**	ug/L	1.0	0.30	1	12/03/24 09:18	12/10/24 11:34	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	12/03/24 09:18	12/10/24 11:34	7782-49-2	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**357**	mg/L	40.0	21.0	2		12/02/24 17:49		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**527**	mg/L	10.0	10.0	1		11/27/24 17:57		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**9.8**	mg/L	1.0	0.53	1		12/17/24 19:34	16887-00-6	
Fluoride	**<0.12**	mg/L	0.20	0.12	1		12/17/24 19:34	16984-48-8	
Sulfate	**92.0**	mg/L	20.0	11.0	20		12/17/24 19:48	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

Sample: S-TP-4D **Lab ID: 60464699019** Collected: 11/20/24 12:32 Received: 11/21/24 07:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Barium	**460**	ug/L	5.0	0.64	1	11/22/24 09:01	12/10/24 11:12	7440-39-3	
Boron	**56.8J**	ug/L	100	6.4	1	11/22/24 09:01	12/10/24 11:12	7440-42-8	
Calcium	**115000**	ug/L	200	26.9	1	11/22/24 09:01	12/10/24 11:12	7440-70-2	M1
Iron	**6100**	ug/L	50.0	9.1	1	11/22/24 09:01	12/10/24 11:12	7439-89-6	
Lithium	**32.8**	ug/L	10.0	3.7	1	11/22/24 09:01	12/10/24 11:12	7439-93-2	
Magnesium	**27700**	ug/L	50.0	20.1	1	11/22/24 09:01	12/10/24 11:12	7439-95-4	
Manganese	**395**	ug/L	5.0	0.39	1	11/22/24 09:01	12/10/24 11:12	7439-96-5	
Molybdenum	**1.5J**	ug/L	20.0	1.0	1	11/22/24 09:01	12/10/24 11:12	7439-98-7	
Potassium	**3270**	ug/L	500	69.7	1	11/22/24 09:01	12/10/24 11:12	7440-09-7	
Sodium	**6960**	ug/L	500	115	1	11/22/24 09:01	12/10/24 11:12	7440-23-5	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City								
Arsenic	**2.4**	ug/L	1.0	0.13	1	12/03/24 09:18	12/10/24 11:40	7440-38-2	
Cadmium	**<0.050**	ug/L	0.50	0.050	1	12/03/24 09:18	12/10/24 11:40	7440-43-9	
Chromium	**0.37J**	ug/L	1.0	0.30	1	12/03/24 09:18	12/10/24 11:40	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	12/03/24 09:18	12/10/24 11:40	7782-49-2	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**306**	mg/L	20.0	10.5	1		12/02/24 17:54		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**494**	mg/L	10.0	10.0	1		11/27/24 17:57		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**10**	mg/L	1.0	0.53	1		12/17/24 10:07	16887-00-6	
Fluoride	**<0.12**	mg/L	0.20	0.12	1		12/17/24 10:07	16984-48-8	M1
Sulfate	**118**	mg/L	20.0	11.0	20		12/17/24 10:20	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

Sample: S-TP-8D **Lab ID: 60464699020** Collected: 11/18/24 16:17 Received: 11/21/24 07:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Barium	**376**	ug/L	5.0	0.64	1	11/22/24 09:01	12/10/24 11:42	7440-39-3	
Boron	**72.6J**	ug/L	100	6.4	1	11/22/24 09:01	12/10/24 11:42	7440-42-8	
Calcium	**116000**	ug/L	200	26.9	1	11/22/24 09:01	12/10/24 11:42	7440-70-2	
Iron	**6410**	ug/L	50.0	9.1	1	11/22/24 09:01	12/10/24 11:42	7439-89-6	
Lithium	**33.5**	ug/L	10.0	3.7	1	11/22/24 09:01	12/10/24 11:42	7439-93-2	
Magnesium	**25300**	ug/L	50.0	20.1	1	11/22/24 09:01	12/10/24 11:42	7439-95-4	
Manganese	**463**	ug/L	5.0	0.39	1	11/22/24 09:01	12/10/24 11:42	7439-96-5	
Molybdenum	**1.1J**	ug/L	20.0	1.0	1	11/22/24 09:01	12/10/24 11:42	7439-98-7	
Potassium	**3580**	ug/L	500	69.7	1	11/22/24 09:01	12/10/24 11:42	7440-09-7	
Sodium	**6790**	ug/L	500	115	1	11/22/24 09:01	12/10/24 11:42	7440-23-5	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City								
Arsenic	**1.5**	ug/L	1.0	0.13	1	12/03/24 09:18	12/10/24 11:46	7440-38-2	
Cadmium	**<0.050**	ug/L	0.50	0.050	1	12/03/24 09:18	12/10/24 11:46	7440-43-9	
Chromium	**<0.30**	ug/L	1.0	0.30	1	12/03/24 09:18	12/10/24 11:46	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	12/03/24 09:18	12/10/24 11:46	7782-49-2	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**334**	mg/L	20.0	10.5	1		12/02/24 14:17		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**427**	mg/L	10.0	10.0	1		11/25/24 12:56		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**18.5**	mg/L	1.0	0.53	1		12/14/24 21:26	16887-00-6	
Fluoride	**<0.12**	mg/L	0.20	0.12	1		12/14/24 21:26	16984-48-8	
Sulfate	**41.7**	mg/L	10.0	5.5	10		12/14/24 21:40	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

Sample: S-CA-DUP-2 **Lab ID: 60464699021** Collected: 11/19/24 00:00 Received: 11/21/24 07:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Barium	**103**	ug/L	5.0	0.64	1	11/22/24 09:01	12/10/24 11:43	7440-39-3	
Boron	**156**	ug/L	100	6.4	1	11/22/24 09:01	12/10/24 11:43	7440-42-8	
Calcium	**59400**	ug/L	200	26.9	1	11/22/24 09:01	12/10/24 11:43	7440-70-2	
Iron	**559**	ug/L	50.0	9.1	1	11/22/24 09:01	12/10/24 11:43	7439-89-6	
Lithium	**19.8**	ug/L	10.0	3.7	1	11/22/24 09:01	12/10/24 11:43	7439-93-2	
Magnesium	**12100**	ug/L	50.0	20.1	1	11/22/24 09:01	12/10/24 11:43	7439-95-4	
Manganese	**1810**	ug/L	5.0	0.39	1	11/22/24 09:01	12/10/24 11:43	7439-96-5	
Molybdenum	**44.7**	ug/L	20.0	1.0	1	11/22/24 09:01	12/10/24 11:43	7439-98-7	
Potassium	**7140**	ug/L	500	69.7	1	11/22/24 09:01	12/10/24 11:43	7440-09-7	
Sodium	**18000**	ug/L	500	115	1	11/22/24 09:01	12/10/24 11:43	7440-23-5	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City								
Arsenic	**1.3**	ug/L	1.0	0.13	1	12/03/24 09:18	12/10/24 11:52	7440-38-2	
Cadmium	**<0.050**	ug/L	0.50	0.050	1	12/03/24 09:18	12/10/24 11:52	7440-43-9	
Chromium	**0.37J**	ug/L	1.0	0.30	1	12/03/24 09:18	12/10/24 11:52	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	12/03/24 09:18	12/10/24 11:52	7782-49-2	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**197**	mg/L	20.0	10.5	1		12/02/24 14:57		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**302**	mg/L	10.0	10.0	1		11/26/24 15:38		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**33.0**	mg/L	10.0	5.3	10		12/14/24 22:35	16887-00-6	
Fluoride	**0.18J**	mg/L	0.20	0.12	1		12/14/24 22:21	16984-48-8	
Sulfate	**23.7**	mg/L	10.0	5.5	10		12/14/24 22:35	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

Sample: S-CA-FB-1 **Lab ID: 60464699022** Collected: 11/18/24 16:36 Received: 11/21/24 07:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Barium	**<0.64**	ug/L	5.0	0.64	1	11/22/24 09:01	12/10/24 11:50	7440-39-3	
Boron	**<6.4**	ug/L	100	6.4	1	11/22/24 09:01	12/10/24 11:50	7440-42-8	
Calcium	**<26.9**	ug/L	200	26.9	1	11/22/24 09:01	12/10/24 11:50	7440-70-2	
Iron	**<9.1**	ug/L	50.0	9.1	1	11/22/24 09:01	12/10/24 11:50	7439-89-6	
Lithium	**<3.7**	ug/L	10.0	3.7	1	11/22/24 09:01	12/10/24 11:50	7439-93-2	
Magnesium	**<20.1**	ug/L	50.0	20.1	1	11/22/24 09:01	12/10/24 11:50	7439-95-4	
Manganese	**<0.39**	ug/L	5.0	0.39	1	11/22/24 09:01	12/10/24 11:50	7439-96-5	
Molybdenum	**<1.0**	ug/L	20.0	1.0	1	11/22/24 09:01	12/10/24 11:50	7439-98-7	
Potassium	**<69.7**	ug/L	500	69.7	1	11/22/24 09:01	12/10/24 11:50	7440-09-7	
Sodium	**<115**	ug/L	500	115	1	11/22/24 09:01	12/10/24 11:50	7440-23-5	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City								
Arsenic	**<0.13**	ug/L	1.0	0.13	1	12/03/24 09:18	12/10/24 11:56	7440-38-2	
Cadmium	**<0.050**	ug/L	0.50	0.050	1	12/03/24 09:18	12/10/24 11:56	7440-43-9	
Chromium	**0.40J**	ug/L	1.0	0.30	1	12/03/24 09:18	12/10/24 11:56	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	12/03/24 09:18	12/10/24 11:56	7782-49-2	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**<10.5**	mg/L	20.0	10.5	1		12/02/24 14:23		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**<5.0**	mg/L	5.0	5.0	1		11/25/24 12:56		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**<0.53**	mg/L	1.0	0.53	1		12/14/24 23:03	16887-00-6	
Fluoride	**<0.12**	mg/L	0.20	0.12	1		12/14/24 23:03	16984-48-8	
Sulfate	**<0.55**	mg/L	1.0	0.55	1		12/14/24 23:03	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

Sample: S-CA-FB-2 **Lab ID: 60464699023** Collected: 11/20/24 11:56 Received: 11/21/24 07:45 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7 Pace Analytical Services - Kansas City								
Barium	**<0.64**	ug/L	5.0	0.64	1	11/22/24 09:01	12/10/24 11:52	7440-39-3	
Boron	**<6.4**	ug/L	100	6.4	1	11/22/24 09:01	12/10/24 11:52	7440-42-8	
Calcium	**<26.9**	ug/L	200	26.9	1	11/22/24 09:01	12/10/24 11:52	7440-70-2	
Iron	**<9.1**	ug/L	50.0	9.1	1	11/22/24 09:01	12/10/24 11:52	7439-89-6	
Lithium	**<3.7**	ug/L	10.0	3.7	1	11/22/24 09:01	12/10/24 11:52	7439-93-2	
Magnesium	**<20.1**	ug/L	50.0	20.1	1	11/22/24 09:01	12/10/24 11:52	7439-95-4	
Manganese	**<0.39**	ug/L	5.0	0.39	1	11/22/24 09:01	12/10/24 11:52	7439-96-5	
Molybdenum	**<1.0**	ug/L	20.0	1.0	1	11/22/24 09:01	12/10/24 11:52	7439-98-7	
Potassium	**<69.7**	ug/L	500	69.7	1	11/22/24 09:01	12/10/24 11:52	7440-09-7	
Sodium	**<115**	ug/L	500	115	1	11/22/24 09:01	12/10/24 11:52	7440-23-5	
200.8 MET ICPMS	Analytical Method: EPA 200.8 Preparation Method: EPA 200.8 Pace Analytical Services - Kansas City								
Arsenic	**<0.13**	ug/L	1.0	0.13	1	12/03/24 09:18	12/10/24 11:58	7440-38-2	
Cadmium	**<0.050**	ug/L	0.50	0.050	1	12/03/24 09:18	12/10/24 11:58	7440-43-9	
Chromium	**0.33J**	ug/L	1.0	0.30	1	12/03/24 09:18	12/10/24 11:58	7440-47-3	
Selenium	**<0.18**	ug/L	1.0	0.18	1	12/03/24 09:18	12/10/24 11:58	7782-49-2	
2320B Alkalinity	Analytical Method: SM 2320B Pace Analytical Services - Kansas City								
Alkalinity, Total as CaCO3	**<10.5**	mg/L	20.0	10.5	1		12/02/24 18:06		
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	**13.0**	mg/L	5.0	5.0	1		11/27/24 17:57		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	**<0.53**	mg/L	1.0	0.53	1		12/17/24 20:02	16887-00-6	
Fluoride	**<0.12**	mg/L	0.20	0.12	1		12/17/24 20:02	16984-48-8	
Sulfate	**<0.55**	mg/L	1.0	0.55	1		12/17/24 20:02	14808-79-8	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

QC Batch: 916636
QC Batch Method: EPA 200.7
Analysis Method: EPA 200.7
Analysis Description: 200.7 Metals, Total
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60464699001, 60464699002, 60464699003, 60464699004

METHOD BLANK: 3629486 Matrix: Water
Associated Lab Samples: 60464699001, 60464699002, 60464699003, 60464699004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<0.64	5.0	0.64	11/20/24 12:05	
Boron	ug/L	<6.4	100	6.4	11/20/24 12:05	
Calcium	ug/L	<26.9	200	26.9	11/20/24 12:05	
Iron	ug/L	43.4J	50.0	9.1	11/20/24 12:05	
Lithium	ug/L	<3.7	10.0	3.7	11/20/24 12:05	
Magnesium	ug/L	<20.1	50.0	20.1	11/20/24 12:05	
Manganese	ug/L	2.4J	5.0	0.39	11/20/24 12:05	
Molybdenum	ug/L	<1.0	20.0	1.0	11/20/24 12:05	
Potassium	ug/L	<69.7	500	69.7	11/20/24 12:05	
Sodium	ug/L	<115	500	115	11/20/24 12:05	

LABORATORY CONTROL SAMPLE: 3629487

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	988	99	85-115	
Boron	ug/L	1000	934	93	85-115	
Calcium	ug/L	10000	9970	100	85-115	
Iron	ug/L	10000	10300	103	85-115	
Lithium	ug/L	1000	992	99	85-115	
Magnesium	ug/L	10000	9570	96	85-115	
Manganese	ug/L	1000	1060	106	85-115	
Molybdenum	ug/L	1000	1040	104	85-115	
Potassium	ug/L	10000	9760	98	85-115	
Sodium	ug/L	10000	9790	98	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3629488 3629489

Parameter	Units	60464695001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Barium	ug/L	150	1000	1000	1150	1170	100	102	70-130	1	20	
Boron	ug/L	113	1000	1000	1070	1080	96	96	70-130	1	20	
Calcium	ug/L	265	10000	10000	10300	10300	100	101	70-130	1	20	
Iron	ug/L	4810	10000	10000	15600	15800	107	110	70-130	2	20	
Lithium	ug/L	ND	1000	1000	1010	1010	101	101	70-130	0	20	
Magnesium	ug/L	ND	10000	10000	9500	9570	95	95	70-130	1	20	
Manganese	ug/L	591	1000	1000	1670	1690	107	110	70-130	1	20	
Molybdenum	ug/L	ND	1000	1000	1060	1070	105	106	70-130	1	20	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3629488 3629489

Parameter	Units	60464695001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Potassium	ug/L	9450	10000	10000	20200	20200	107	108	70-130	0	20	
Sodium	ug/L	153000	10000	10000	171000	173000	179	197	70-130	1	20	M1

MATRIX SPIKE SAMPLE: 3629490

Parameter	Units	60464293011 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	56.8	1000	1050	100	70-130	
Boron	ug/L	11200	1000	11900	76	70-130	
Calcium	ug/L	18400	10000	27900	95	70-130	
Iron	ug/L	148	10000	10700	105	70-130	
Lithium	ug/L	17.5	1000	1000	99	70-130	
Magnesium	ug/L	1270	10000	10800	95	70-130	
Manganese	ug/L	21.1	1000	1070	104	70-130	
Molybdenum	ug/L	519	1000	1550	103	70-130	
Potassium	ug/L	4880	10000	14500	96	70-130	
Sodium	ug/L	209000	10000	215000	62	70-130	M1

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

QC Batch: 916806
QC Batch Method: EPA 200.7
Analysis Method: EPA 200.7
Analysis Description: 200.7 Metals, Total
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60464699006, 60464699007, 60464699008

METHOD BLANK: 3630185 Matrix: Water
Associated Lab Samples: 60464699006, 60464699007, 60464699008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<0.64	5.0	0.64	12/04/24 16:03	
Boron	ug/L	<6.4	100	6.4	12/04/24 16:03	
Calcium	ug/L	<26.9	200	26.9	12/04/24 16:03	
Iron	ug/L	<9.1	50.0	9.1	12/04/24 16:03	
Lithium	ug/L	<3.7	10.0	3.7	12/04/24 16:03	
Magnesium	ug/L	<20.1	50.0	20.1	12/04/24 16:03	
Manganese	ug/L	<0.39	5.0	0.39	12/04/24 16:03	
Molybdenum	ug/L	<1.0	20.0	1.0	12/04/24 16:03	
Potassium	ug/L	<69.7	500	69.7	12/04/24 16:03	
Sodium	ug/L	<115	500	115	12/04/24 16:03	

LABORATORY CONTROL SAMPLE: 3630186

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	989	99	85-115	
Boron	ug/L	1000	932	93	85-115	
Calcium	ug/L	10000	10100	101	85-115	
Iron	ug/L	10000	10000	100	85-115	
Lithium	ug/L	1000	996	100	85-115	
Magnesium	ug/L	10000	9880	99	85-115	
Manganese	ug/L	1000	1030	103	85-115	
Molybdenum	ug/L	1000	1020	102	85-115	
Potassium	ug/L	10000	9750	98	85-115	
Sodium	ug/L	10000	10300	103	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3630187 3630188

Parameter	Units	60464704004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Barium	ug/L	297	1000	1000	1300	1290	100	99	70-130	1	20	
Boron	ug/L	103	1000	1000	1060	1040	96	94	70-130	2	20	
Calcium	ug/L	141000	10000	10000	150000	149000	97	79	70-130	1	20	
Iron	ug/L	1160	10000	10000	11500	11400	104	102	70-130	1	20	
Lithium	ug/L	40.3	1000	1000	1060	1040	102	100	70-130	2	20	
Magnesium	ug/L	31400	10000	10000	40800	40400	94	91	70-130	1	20	
Manganese	ug/L	588	1000	1000	1610	1590	102	100	70-130	1	20	
Molybdenum	ug/L	1.6J	1000	1000	1030	1030	103	102	70-130	1	20	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3630187 3630188

Parameter	Units	60464704004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Potassium	ug/L	6370	10000	10000	16400	16100	100	97	70-130	2	20	
Sodium	ug/L	4930	10000	10000	15100	14900	102	100	70-130	1	20	

MATRIX SPIKE SAMPLE: 3630189

Parameter	Units	60464704007 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	363	1000	1370	101	70-130	
Boron	ug/L	100	1000	1060	96	70-130	
Calcium	ug/L	148000	10000	154000	60	70-130	M1
Iron	ug/L	5470	10000	15900	105	70-130	
Lithium	ug/L	43.9	1000	1070	103	70-130	
Magnesium	ug/L	31900	10000	40600	86	70-130	
Manganese	ug/L	466	1000	1490	102	70-130	
Molybdenum	ug/L	1.1J	1000	1050	105	70-130	
Potassium	ug/L	6280	10000	16200	99	70-130	
Sodium	ug/L	5440	10000	15600	102	70-130	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

QC Batch: 916983
QC Batch Method: EPA 200.7
Analysis Method: EPA 200.7
Analysis Description: 200.7 Metals, Total
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60464699009, 60464699010

METHOD BLANK: 3630720 Matrix: Water
Associated Lab Samples: 60464699009, 60464699010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<0.64	5.0	0.64	12/04/24 19:34	
Boron	ug/L	<6.4	100	6.4	12/04/24 19:34	
Calcium	ug/L	<26.9	200	26.9	12/04/24 19:34	
Iron	ug/L	<9.1	50.0	9.1	12/04/24 19:34	
Lithium	ug/L	<3.7	10.0	3.7	12/04/24 19:34	
Magnesium	ug/L	<20.1	50.0	20.1	12/04/24 19:34	
Manganese	ug/L	<0.39	5.0	0.39	12/04/24 19:34	
Molybdenum	ug/L	<1.0	20.0	1.0	12/04/24 19:34	
Potassium	ug/L	252J	500	69.7	12/04/24 19:34	
Sodium	ug/L	316J	500	115	12/04/24 19:34	

LABORATORY CONTROL SAMPLE: 3630721

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	939	94	85-115	
Boron	ug/L	1000	899	90	85-115	
Calcium	ug/L	10000	9540	95	85-115	
Iron	ug/L	10000	9700	97	85-115	
Lithium	ug/L	1000	951	95	85-115	
Magnesium	ug/L	10000	9190	92	85-115	
Manganese	ug/L	1000	978	98	85-115	
Molybdenum	ug/L	1000	950	95	85-115	
Potassium	ug/L	10000	9520	95	85-115	
Sodium	ug/L	10000	9700	97	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3630722 3630723

Parameter	Units	60464769007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Barium	ug/L	143	1000	1000	1060	1120	92	98	70-130	5	20	
Boron	ug/L	162	1000	1000	1030	1080	87	91	70-130	4	20	
Calcium	ug/L	98000	10000	10000	107000	112000	88	143	70-130	5	20	M1
Iron	ug/L	7260	10000	10000	16500	17600	93	103	70-130	6	20	
Lithium	ug/L	12.9	1000	1000	955	993	94	98	70-130	4	20	
Magnesium	ug/L	22300	10000	10000	30700	32600	83	102	70-130	6	20	
Manganese	ug/L	610	1000	1000	1550	1620	94	101	70-130	4	20	
Molybdenum	ug/L	26.0	1000	1000	971	1010	94	99	70-130	4	20	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3630722 3630723

Parameter	Units	60464769007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Potassium	ug/L	3430	10000	10000	12500	13000	91	95	70-130	4	20	
Sodium	ug/L	6030	10000	10000	15000	15800	90	98	70-130	5	20	

MATRIX SPIKE SAMPLE: 3630724

Parameter	Units	60464769008 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	423	1000	1370	94	70-130	
Boron	ug/L	5010	1000	5820	81	70-130	
Calcium	ug/L	75600	10000	83100	75	70-130	
Iron	ug/L	3450	10000	13100	97	70-130	
Lithium	ug/L	19.1	1000	982	96	70-130	
Magnesium	ug/L	16300	10000	24700	84	70-130	
Manganese	ug/L	419	1000	1370	96	70-130	
Molybdenum	ug/L	173	1000	1150	97	70-130	
Potassium	ug/L	9340	10000	18600	92	70-130	
Sodium	ug/L	20700	10000	29400	87	70-130	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

QC Batch: 917055
QC Batch Method: EPA 200.7
Analysis Method: EPA 200.7
Analysis Description: 200.7 Metals, Total
Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60464699005

METHOD BLANK: 3631008 Matrix: Water
Associated Lab Samples: 60464699005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<0.64	5.0	0.64	12/04/24 16:45	
Boron	ug/L	<6.4	100	6.4	12/04/24 16:45	
Calcium	ug/L	<26.9	200	26.9	12/04/24 16:45	
Iron	ug/L	<9.1	50.0	9.1	12/04/24 16:45	
Lithium	ug/L	<3.7	10.0	3.7	12/04/24 16:45	
Magnesium	ug/L	<20.1	50.0	20.1	12/04/24 16:45	
Manganese	ug/L	<0.39	5.0	0.39	12/04/24 16:45	
Molybdenum	ug/L	<1.0	20.0	1.0	12/04/24 16:45	
Potassium	ug/L	<69.7	500	69.7	12/04/24 16:45	
Sodium	ug/L	<115	500	115	12/04/24 16:45	

LABORATORY CONTROL SAMPLE: 3631009

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	1030	103	85-115	
Boron	ug/L	1000	972	97	85-115	
Calcium	ug/L	10000	10400	104	85-115	
Iron	ug/L	10000	10400	104	85-115	
Lithium	ug/L	1000	1030	103	85-115	
Magnesium	ug/L	10000	9850	99	85-115	
Manganese	ug/L	1000	1050	105	85-115	
Molybdenum	ug/L	1000	1040	104	85-115	
Potassium	ug/L	10000	10000	100	85-115	
Sodium	ug/L	10000	10300	103	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3631010 3631011

Parameter	Units	60464850002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Barium	ug/L	109	1000	1000	1050	1130	94	102	70-130	8	20	
Boron	ug/L	106	1000	1000	1010	1080	90	98	70-130	7	20	
Calcium	ug/L	93300	10000	10000	95600	101000	23	72	70-130	5	20	M1
Iron	ug/L	155	10000	10000	9770	10600	96	105	70-130	8	20	
Lithium	ug/L	19.2	1000	1000	958	1040	94	102	70-130	8	20	
Magnesium	ug/L	15900	10000	10000	23700	25100	78	92	70-130	6	20	
Manganese	ug/L	131	1000	1000	1080	1160	95	103	70-130	7	20	
Molybdenum	ug/L	ND	1000	1000	979	1050	97	105	70-130	7	20	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3631010 3631011

Parameter	Units	60464850002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Potassium	ug/L	4830	10000	10000	13900	14700	91	99	70-130	6	20	
Sodium	ug/L	133000	10000	10000	131000	138000	-11	51	70-130	5	20	M1

MATRIX SPIKE SAMPLE: 3631012

Parameter	Units	60464881001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	472	1000	1490	102	70-130	
Boron	ug/L	ND	1000	1010	97	70-130	
Calcium	ug/L	287000	10000	303000	164	70-130	M1
Iron	ug/L	2970	10000	13600	107	70-130	
Lithium	ug/L	84.8	1000	1120	103	70-130	
Magnesium	ug/L	2840	10000	12200	94	70-130	
Manganese	ug/L	107	1000	1150	104	70-130	
Molybdenum	ug/L	38.4	1000	1090	105	70-130	
Potassium	ug/L	40600	10000	52000	114	70-130	
Sodium	ug/L	57600	10000	69700	122	70-130	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

QC Batch: 917371
QC Batch Method: EPA 200.7
Analysis Method: EPA 200.7
Analysis Description: 200.7 Metals, Total
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60464699011, 60464699012, 60464699013, 60464699014, 60464699015, 60464699016, 60464699017, 60464699018, 60464699019, 60464699020, 60464699021, 60464699022, 60464699023

METHOD BLANK: 3632816 Matrix: Water
Associated Lab Samples: 60464699011, 60464699012, 60464699013, 60464699014, 60464699015, 60464699016, 60464699017, 60464699018, 60464699019, 60464699020, 60464699021, 60464699022, 60464699023

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<0.64	5.0	0.64	12/10/24 11:09	
Boron	ug/L	<6.4	100	6.4	12/10/24 11:09	
Calcium	ug/L	<26.9	200	26.9	12/10/24 11:09	
Iron	ug/L	<9.1	50.0	9.1	12/10/24 11:09	
Lithium	ug/L	<3.7	10.0	3.7	12/10/24 11:09	
Magnesium	ug/L	<20.1	50.0	20.1	12/10/24 11:09	
Manganese	ug/L	<0.39	5.0	0.39	12/10/24 11:09	
Molybdenum	ug/L	<1.0	20.0	1.0	12/10/24 11:09	
Potassium	ug/L	<69.7	500	69.7	12/10/24 11:09	
Sodium	ug/L	<115	500	115	12/10/24 11:09	

LABORATORY CONTROL SAMPLE: 3632817

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	1030	103	85-115	
Boron	ug/L	1000	972	97	85-115	
Calcium	ug/L	10000	10300	103	85-115	
Iron	ug/L	10000	10200	102	85-115	
Lithium	ug/L	1000	1030	103	85-115	
Magnesium	ug/L	10000	10200	102	85-115	
Manganese	ug/L	1000	1070	107	85-115	
Molybdenum	ug/L	1000	1040	104	85-115	
Potassium	ug/L	10000	10000	100	85-115	
Sodium	ug/L	10000	10300	103	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3632818 3632819

Parameter	Units	60464699019 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Barium	ug/L	460	1000	1000	1500	1500	104	104	70-130	0	20	
Boron	ug/L	56.8J	1000	1000	1040	1040	98	99	70-130	0	20	
Calcium	ug/L	115000	10000	10000	129000	127000	148	119	70-130	2	20	M1
Iron	ug/L	6100	10000	10000	16700	16700	106	106	70-130	0	20	
Lithium	ug/L	32.8	1000	1000	1070	1080	104	105	70-130	1	20	
Magnesium	ug/L	27700	10000	10000	38800	37700	111	101	70-130	3	20	
Manganese	ug/L	395	1000	1000	1450	1440	106	105	70-130	1	20	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3632818 3632819

Parameter	Units	60464699019 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Molybdenum	ug/L	1.5J	1000	1000	1050	1050	105	105	70-130	0	20	
Potassium	ug/L	3270	10000	10000	13500	13600	103	104	70-130	1	20	
Sodium	ug/L	6960	10000	10000	17300	17200	104	103	70-130	1	20	

MATRIX SPIKE SAMPLE: 3632820

Parameter	Units	60464699018 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	608	1000	1650	104	70-130	
Boron	ug/L	55.2J	1000	1050	99	70-130	
Calcium	ug/L	127000	10000	138000	110	70-130	
Iron	ug/L	8380	10000	19100	107	70-130	
Lithium	ug/L	35.6	1000	1090	105	70-130	
Magnesium	ug/L	30800	10000	41500	106	70-130	
Manganese	ug/L	714	1000	1790	108	70-130	
Molybdenum	ug/L	<1.0	1000	1070	107	70-130	
Potassium	ug/L	4270	10000	14600	103	70-130	
Sodium	ug/L	7240	10000	17700	105	70-130	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

QC Batch: 918238
QC Batch Method: EPA 200.8
Analysis Method: EPA 200.8
Analysis Description: 200.8 MET
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60464699001, 60464699002, 60464699003, 60464699004, 60464699005, 60464699006, 60464699007, 60464699008, 60464699009, 60464699010

METHOD BLANK: 3636122 Matrix: Water
Associated Lab Samples: 60464699001, 60464699002, 60464699003, 60464699004, 60464699005, 60464699006, 60464699007, 60464699008, 60464699009, 60464699010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	ug/L	<0.13	1.0	0.13	12/10/24 12:03	
Cadmium	ug/L	<0.050	0.50	0.050	12/10/24 12:03	
Chromium	ug/L	<0.30	1.0	0.30	12/10/24 12:03	
Selenium	ug/L	<0.18	1.0	0.18	12/10/24 12:03	

LABORATORY CONTROL SAMPLE: 3636123

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	40	42.0	105	85-115	
Cadmium	ug/L	40	42.8	107	85-115	
Chromium	ug/L	40	44.2	110	85-115	
Selenium	ug/L	40	41.9	105	85-115	

MATRIX SPIKE SAMPLE: 3636124

Parameter	Units	60464769004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	1.5	40	45.3	109	70-130	
Cadmium	ug/L	2.0	40	41.6	99	70-130	
Chromium	ug/L	<0.30	40	36.7	91	70-130	
Selenium	ug/L	<0.18	40	41.5	103	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3636125 3636126

Parameter	Units	60464769007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	ug/L	0.59J	40	40	43.4	42.5	107	105	70-130	2	20	
Cadmium	ug/L	<0.050	40	40	41.9	41.1	105	103	70-130	2	20	
Chromium	ug/L	0.33J	40	40	42.1	41.1	104	102	70-130	2	20	
Selenium	ug/L	<0.18	40	40	42.0	41.1	105	103	70-130	2	20	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

QC Batch: 918239
QC Batch Method: EPA 200.8
Analysis Method: EPA 200.8
Analysis Description: 200.8 MET
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60464699011, 60464699012, 60464699013, 60464699014, 60464699015, 60464699016, 60464699017, 60464699018, 60464699019, 60464699020, 60464699021, 60464699022, 60464699023

METHOD BLANK: 3636127 Matrix: Water
Associated Lab Samples: 60464699011, 60464699012, 60464699013, 60464699014, 60464699015, 60464699016, 60464699017, 60464699018, 60464699019, 60464699020, 60464699021, 60464699022, 60464699023

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Arsenic	ug/L	<0.13	1.0	0.13	12/10/24 11:11	
Cadmium	ug/L	<0.050	0.50	0.050	12/10/24 11:11	
Chromium	ug/L	<0.30	1.0	0.30	12/10/24 11:11	
Selenium	ug/L	<0.18	1.0	0.18	12/10/24 11:11	

LABORATORY CONTROL SAMPLE: 3636128

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	40	40.0	100	85-115	
Cadmium	ug/L	40	40.3	101	85-115	
Chromium	ug/L	40	39.7	99	85-115	
Selenium	ug/L	40	40.6	102	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3636129 3636130

Parameter	Units	60464699019 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	ug/L	2.4	40	40	43.3	43.1	102	102	70-130	0	20	
Cadmium	ug/L	<0.050	40	40	39.6	39.3	99	98	70-130	1	20	
Chromium	ug/L	0.37J	40	40	40.0	39.8	99	99	70-130	0	20	
Selenium	ug/L	<0.18	40	40	40.3	39.9	101	100	70-130	1	20	

MATRIX SPIKE SAMPLE: 3636131

Parameter	Units	60464699021 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Arsenic	ug/L	1.3	40	42.9	104	70-130	
Cadmium	ug/L	<0.050	40	40.5	101	70-130	
Chromium	ug/L	0.37J	40	40.9	101	70-130	
Selenium	ug/L	<0.18	40	40.8	102	70-130	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

QC Batch: 917909 | Analysis Method: SM 2320B
QC Batch Method: SM 2320B | Analysis Description: 2320B Alkalinity
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60464699001, 60464699002, 60464699003, 60464699004, 60464699005, 60464699008

METHOD BLANK: 3634992 Matrix: Water
Associated Lab Samples: 60464699001, 60464699002, 60464699003, 60464699004, 60464699005, 60464699008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<10.5	20.0	10.5	11/27/24 15:47	

LABORATORY CONTROL SAMPLE: 3634993

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	480	96	90-110	

SAMPLE DUPLICATE: 3634994

Parameter	Units	60464293013 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	343	347	1	10	

SAMPLE DUPLICATE: 3634995

Parameter	Units	60464699001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	337	339	1	10	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

QC Batch: 917910
QC Batch Method: SM 2320B
Analysis Method: SM 2320B
Analysis Description: 2320B Alkalinity
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60464699006, 60464699007

METHOD BLANK: 3634996 Matrix: Water
Associated Lab Samples: 60464699006, 60464699007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<10.5	20.0	10.5	11/27/24 18:31	

LABORATORY CONTROL SAMPLE: 3634997

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	483	97	90-110	

SAMPLE DUPLICATE: 3634998

Parameter	Units	60464704004 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	442	443	0	10	

SAMPLE DUPLICATE: 3634999

Parameter	Units	60464795002 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	424	415	2	10	

SAMPLE DUPLICATE: 3635000

Parameter	Units	60464769007 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	351	351	0	10	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

QC Batch: 918130 | Analysis Method: SM 2320B
QC Batch Method: SM 2320B | Analysis Description: 2320B Alkalinity
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60464699009, 60464699010, 60464699020, 60464699021, 60464699022

METHOD BLANK: 3635810 Matrix: Water
Associated Lab Samples: 60464699009, 60464699010, 60464699020, 60464699021, 60464699022

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<10.5	20.0	10.5	12/02/24 15:36	

LABORATORY CONTROL SAMPLE: 3635811

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	481	96	90-110	

SAMPLE DUPLICATE: 3635812

Parameter	Units	60464769008 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	301	294	2	10	

SAMPLE DUPLICATE: 3635813

Parameter	Units	60465166003 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	428	438	2	10	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

QC Batch: 918131
QC Batch Method: SM 2320B
Analysis Method: SM 2320B
Analysis Description: 2320B Alkalinity
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60464699011, 60464699012, 60464699013, 60464699014, 60464699015, 60464699016, 60464699017, 60464699018, 60464699019, 60464699023

METHOD BLANK: 3635814 Matrix: Water
Associated Lab Samples: 60464699011, 60464699012, 60464699013, 60464699014, 60464699015, 60464699016, 60464699017, 60464699018, 60464699019, 60464699023

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<10.5	20.0	10.5	12/02/24 16:17	

LABORATORY CONTROL SAMPLE: 3635815

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	487	97	90-110	

SAMPLE DUPLICATE: 3635816

Parameter	Units	60464699019 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	306	306	0	10	

SAMPLE DUPLICATE: 3635817

Parameter	Units	60465156001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	329	347	5	10	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

QC Batch: 916954
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60464699001, 60464699002, 60464699003, 60464699004, 60464699005

METHOD BLANK: 3630622 Matrix: Water
Associated Lab Samples: 60464699001, 60464699002, 60464699003, 60464699004, 60464699005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	11/19/24 12:16	

LABORATORY CONTROL SAMPLE: 3630623

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1020	102	80-120	

SAMPLE DUPLICATE: 3630624

Parameter	Units	60464559003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	140	140	0	10	

SAMPLE DUPLICATE: 3630625

Parameter	Units	60464294022 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	647	664	3	10	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

QC Batch: 917114
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60464699006, 60464699007, 60464699008

METHOD BLANK: 3631336 Matrix: Water
Associated Lab Samples: 60464699006, 60464699007, 60464699008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	11/20/24 12:07	

LABORATORY CONTROL SAMPLE: 3631337

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1010	101	80-120	

SAMPLE DUPLICATE: 3631338

Parameter	Units	60464704004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	522	529	1	10	

SAMPLE DUPLICATE: 3631347

Parameter	Units	60464795002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1870	1820	3	10	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

QC Batch: 917602
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60464699009, 60464699010, 60464699020, 60464699022

METHOD BLANK: 3633953 Matrix: Water
Associated Lab Samples: 60464699009, 60464699010, 60464699020, 60464699022

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	11/25/24 12:53	

LABORATORY CONTROL SAMPLE: 3633955

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1020	102	80-120	

SAMPLE DUPLICATE: 3633957

Parameter	Units	60464769007 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	414	404	2	10	

SAMPLE DUPLICATE: 3633959

Parameter	Units	60464925002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	6130	6100	1	10	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

QC Batch: 917791
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60464699021

METHOD BLANK: 3634577 Matrix: Water
Associated Lab Samples: 60464699021

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	11/26/24 15:36	

LABORATORY CONTROL SAMPLE: 3634578

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	979	98	80-120	

SAMPLE DUPLICATE: 3634579

Parameter	Units	60464925008 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	6220	6380	3	10	

SAMPLE DUPLICATE: 3634580

Parameter	Units	60465166003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	556	553	0	10	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

QC Batch: 917911
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60464699011, 60464699012, 60464699013, 60464699014, 60464699015, 60464699016, 60464699017, 60464699018, 60464699019, 60464699023

METHOD BLANK: 3635001 Matrix: Water
Associated Lab Samples: 60464699011, 60464699012, 60464699013, 60464699014, 60464699015, 60464699016, 60464699017, 60464699018, 60464699019, 60464699023

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	11/27/24 17:56	

LABORATORY CONTROL SAMPLE: 3635002

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	992	99	80-120	

SAMPLE DUPLICATE: 3635003

Parameter	Units	60464699019 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	494	499	1	10	

SAMPLE DUPLICATE: 3635004

Parameter	Units	60465156001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	460	452	2	10	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

QC Batch: 919474
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60464699005, 60464699006, 60464699007, 60464699008

METHOD BLANK: 3641620 Matrix: Water
Associated Lab Samples: 60464699005, 60464699006, 60464699007, 60464699008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	12/14/24 21:39	
Fluoride	mg/L	<0.12	0.20	0.12	12/14/24 21:39	IC
Sulfate	mg/L	<0.55	1.0	0.55	12/14/24 21:39	

LABORATORY CONTROL SAMPLE: 3641621

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.7	94	90-110	
Fluoride	mg/L	2.5	2.5	101	90-110	IC
Sulfate	mg/L	5	4.8	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3641622 3641623

Parameter	Units	60465425001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	397	500	500	848	847	90	90	80-120	0	15	
Fluoride	mg/L	ND	50	50	50.9	52.0	102	104	80-120	2	15	IC
Sulfate	mg/L	237	100	100	325	325	88	88	80-120	0	15	

MATRIX SPIKE SAMPLE: 3641624

Parameter	Units	60464699007 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	6.4	5	10.4	80	80-120	
Fluoride	mg/L	0.33	2.5	3.1	111	80-120	IC
Sulfate	mg/L	547	250	793	98	80-120	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

QC Batch: 919543
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60464699001, 60464699002, 60464699003, 60464699004

METHOD BLANK: 3641950 Matrix: Water
Associated Lab Samples: 60464699001, 60464699002, 60464699003, 60464699004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	12/13/24 11:50	
Fluoride	mg/L	<0.12	0.20	0.12	12/13/24 11:50	IC
Sulfate	mg/L	<0.55	1.0	0.55	12/13/24 11:50	

LABORATORY CONTROL SAMPLE: 3641951

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.6	92	90-110	
Fluoride	mg/L	2.5	2.4	96	90-110	IC
Sulfate	mg/L	5	4.9	98	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3641952 3641953

Parameter	Units	60464699002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	8.9	5	5	12.7	12.7	75	75	80-120	0	15	H1,M1
Fluoride	mg/L	0.44	2.5	2.5	3.5	3.5	121	122	80-120	0	15	H1,IC, M1
Sulfate	mg/L	35.2	50	50	101	84.2	132	98	80-120	18	15	H1,M1, R1

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

QC Batch: 919641
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60464699009, 60464699010, 60464699011, 60464699012, 60464699013, 60464699014, 60464699015, 60464699016, 60464699017, 60464699020, 60464699021, 60464699022

METHOD BLANK: 3642615 Matrix: Water
Associated Lab Samples: 60464699009, 60464699010, 60464699011, 60464699012, 60464699013, 60464699014, 60464699015, 60464699016, 60464699017, 60464699020, 60464699021, 60464699022

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	12/14/24 04:07	
Fluoride	mg/L	<0.12	0.20	0.12	12/14/24 04:07	CL
Sulfate	mg/L	<0.55	1.0	0.55	12/14/24 04:07	

LABORATORY CONTROL SAMPLE: 3642616

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.7	93	90-110	
Fluoride	mg/L	2.5	2.3	92	90-110	CL
Sulfate	mg/L	5	5.2	104	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3642617 3642618

Parameter	Units	60464769007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	5.6	5	5	10.9	9.8	107	85	80-120	11	15	
Fluoride	mg/L	<0.12	2.5	2.5	3.8	3.1	151	126	80-120	18	15	CL,M1,R1
Sulfate	mg/L	33.6	50	50	92.1	100	117	133	80-120	8	15	M1

MATRIX SPIKE SAMPLE: 3642620

Parameter	Units	60464769012 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	12.6	5	16.1	72	80-120	M1
Fluoride	mg/L	<0.12	2.5	3.0	120	80-120	
Sulfate	mg/L	19.7	50	72.0	105	80-120	

SAMPLE DUPLICATE: 3642619

Parameter	Units	60464769007 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	5.6	5.6	0	15	
Fluoride	mg/L	<0.12	<0.12		15	CL
Sulfate	mg/L	33.6	31.7	6	15	

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QUALITY CONTROL DATA

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

QC Batch: 919646
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60464699018, 60464699019, 60464699023

METHOD BLANK: 3642728 Matrix: Water
Associated Lab Samples: 60464699018, 60464699019, 60464699023

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	12/17/24 09:35	
Fluoride	mg/L	<0.12	0.20	0.12	12/17/24 09:35	
Sulfate	mg/L	<0.55	1.0	0.55	12/17/24 09:35	

LABORATORY CONTROL SAMPLE: 3642729

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.6	92	90-110	
Fluoride	mg/L	2.5	2.4	97	90-110	
Sulfate	mg/L	5	5.3	106	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3642730 3642731

Parameter	Units	60464699019 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	10	5	5	14.0	14.0	81	80	80-120	0	15	
Fluoride	mg/L	<0.12	2.5	2.5	3.1	3.1	125	125	80-120	0	15	M1
Sulfate	mg/L	118	100	100	235	222	117	104	80-120	6	15	

MATRIX SPIKE SAMPLE: 3642733

Parameter	Units	60465556006 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	25.9	100	113	87	80-120	
Fluoride	mg/L	<0.20	2.5	3.2	130	80-120	M1
Sulfate	mg/L	264	100	370	106	80-120	

SAMPLE DUPLICATE: 3642732

Parameter	Units	60464699019 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	10	10	0	15	
Fluoride	mg/L	<0.12	<0.12		15	
Sulfate	mg/L	118	117	1	15	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

Sample: S-TP-5D **Lab ID: 60464699001** Collected: 11/14/24 13:20 Received: 11/15/24 05:55 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.262 ± 0.655 (1.19) C:NA T:88%**	pCi/L	12/11/24 13:08	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.691 ± 0.499 (0.967) C:76% T:81%**	pCi/L	12/09/24 14:47	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

Sample: S-TP-6S **Lab ID: 60464699002** Collected: 11/14/24 14:27 Received: 11/15/24 05:55 Matrix: Water
PWS: Site ID: Sample Type:

Comments: • Upon receipt at the laboratory, 5 mls of nitric acid were added to 1 out of 2 bottles of the sample to meet the sample preservation requirement of pH<2 for radiochemistry analysis, where the method requires preservation, in water. The samples were not preserved pH <2 within the required 5 days of collection (EPA 815-R-05-004).

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
		Pace Analytical Services - Greensburg				
Radium-226	EPA 903.1	**0.163 ± 0.511 (0.947) C:NA T:97%**	pCi/L	12/11/24 13:08	13982-63-3	
		Pace Analytical Services - Greensburg				
Radium-228	EPA 904.0	**0.451 ± 0.397 (0.798) C:77% T:83%**	pCi/L	12/09/24 14:47	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

Sample: S-UG-3 **Lab ID: 60464699003** Collected: 11/14/24 11:15 Received: 11/15/24 05:55 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.0623 ± 0.762 (1.43) C:NA T:86%**	pCi/L	12/11/24 13:08	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.597 ± 0.371 (0.689) C:86% T:84%**	pCi/L	12/09/24 14:47	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

Sample: S-CA-DUP-1 **Lab ID: 60464699004** Collected: 11/14/24 08:00 Received: 11/15/24 05:55 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.695 ± 0.585 (0.870) C:NA T:90%**	pCi/L	12/11/24 13:08	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.781 ± 0.416 (0.728) C:78% T:85%**	pCi/L	12/09/24 14:47	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

Sample: S-LMW-1S **Lab ID: 60464699005** Collected: 11/14/24 16:06 Received: 11/16/24 05:34 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.000 ± 0.650 (1.24) C:NA T:91%**	pCi/L	12/11/24 13:08	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.598 ± 0.394 (0.745) C:82% T:85%**	pCi/L	12/09/24 14:47	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

Sample: S-LMW-5S **Lab ID: 60464699006** Collected: 11/15/24 13:40 Received: 11/16/24 05:34 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
		Pace Analytical Services - Greensburg				
Radium-226	EPA 903.1	**0.216 ± 0.519 (0.941) C:NA T:91%**	pCi/L	12/11/24 13:08	13982-63-3	
		Pace Analytical Services - Greensburg				
Radium-228	EPA 904.0	**0.819 ± 0.423 (0.733) C:77% T:88%**	pCi/L	12/09/24 14:47	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

Sample: S-LMW-6S **Lab ID: 60464699007** Collected: 11/15/24 12:48 Received: 11/16/24 05:34 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.0550 ± 0.418 (0.826) C:NA T:92%**	pCi/L	12/11/24 13:22	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.451 ± 0.390 (0.781) C:79% T:81%**	pCi/L	12/09/24 14:47	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

Sample: S-TP-6D **Lab ID: 60464699008** Collected: 11/14/24 15:10 Received: 11/16/24 05:34 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.228 ± 0.448 (0.805) C:NA T:92%**	pCi/L	12/11/24 13:22	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**1.58 ± 0.557 (0.753) C:81% T:80%**	pCi/L	12/09/24 14:47	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

Sample: S-PZ-1S **Lab ID: 60464699009** Collected: 11/18/24 14:25 Received: 11/19/24 07:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.213 ± 0.331 (0.573) C:NA T:97%**	pCi/L	12/11/24 13:22	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.352 ± 0.312 (0.623) C:82% T:90%**	pCi/L	12/09/24 14:47	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

Sample: S-PZ-9D **Lab ID: 60464699010** Collected: 11/18/24 12:05 Received: 11/19/24 07:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.330 ± 0.405 (0.661) C:NA T:92%**	pCi/L	12/11/24 13:22	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.502 ± 0.369 (0.715) C:84% T:83%**	pCi/L	12/09/24 14:47	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

Sample: S-BMW-1S **Lab ID: 60464699011** Collected: 11/20/24 09:00 Received: 11/21/24 07:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.163 ± 0.632 (1.16) C:NA T:96%**	pCi/L	12/18/24 14:54	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.802 ± 0.409 (0.697) C:75% T:90%**	pCi/L	12/17/24 14:33	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

Sample: S-BMW-3S **Lab ID: 60464699012** Collected: 11/20/24 11:43 Received: 11/21/24 07:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**-0.0643 ± 0.766 (1.48) C:NA T:87%**	pCi/L	12/18/24 14:54	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.572 ± 0.343 (0.613) C:76% T:89%**	pCi/L	12/17/24 14:33	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

Sample: S-LMW-2S **Lab ID: 60464699013** Collected: 11/19/24 12:27 Received: 11/21/24 07:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.238 ± 0.825 (1.49) C:NA T:96%**	pCi/L	12/18/24 14:54	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**1.21 ± 0.510 (0.790) C:74% T:79%**	pCi/L	12/17/24 14:33	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

Sample: S-LMW-4S **Lab ID: 60464699014** Collected: 11/19/24 11:13 Received: 11/21/24 07:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.170 ± 0.457 (0.849) C:NA T:95%**	pCi/L	12/18/24 14:54	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**1.52 ± 0.527 (0.726) C:77% T:89%**	pCi/L	12/17/24 14:33	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

Sample: S-AM-1S **Lab ID: 60464699015** Collected: 11/19/24 14:54 Received: 11/21/24 07:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.382 ± 0.357 (0.506) C:NA T:99%**	pCi/L	12/18/24 15:09	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.572 ± 0.364 (0.669) C:73% T:90%**	pCi/L	12/17/24 14:33	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

Sample: S-AM-1D **Lab ID: 60464699016** Collected: 11/19/24 14:55 Received: 11/21/24 07:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.964 ± 0.522 (0.527) C:NA T:93%**	pCi/L	12/18/24 15:09	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**1.03 ± 0.410 (0.598) C:77% T:90%**	pCi/L	12/17/24 14:34	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

Sample: S-TP-2D **Lab ID: 60464699017** Collected: 11/20/24 09:53 Received: 11/21/24 07:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**-0.113 ± 0.383 (0.846) C:NA T:102%**	pCi/L	12/18/24 15:09	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**1.15 ± 0.505 (0.809) C:75% T:82%**	pCi/L	12/17/24 14:34	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

Sample: S-TP-3D **Lab ID: 60464699018** Collected: 11/20/24 11:24 Received: 11/21/24 07:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.850 ± 0.847 (1.36) C:NA T:90%**	pCi/L	12/18/24 15:09	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**1.11 ± 0.457 (0.708) C:75% T:88%**	pCi/L	12/17/24 14:34	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

Sample: S-TP-4D **Lab ID: 60464699019** Collected: 11/20/24 12:32 Received: 11/21/24 07:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
		Pace Analytical Services - Greensburg				
Radium-226	EPA 903.1	**0.570 ± 0.674 (1.12) C:NA T:91%**	pCi/L	12/18/24 15:09	13982-63-3	
		Pace Analytical Services - Greensburg				
Radium-228	EPA 904.0	**1.42 ± 0.524 (0.752) C:76% T:82%**	pCi/L	12/17/24 14:34	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

Sample: S-TP-8D **Lab ID: 60464699020** Collected: 11/18/24 16:17 Received: 11/21/24 07:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.318 ± 0.694 (1.24) C:NA T:94%**	pCi/L	12/18/24 15:09	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**1.14 ± 0.461 (0.689) C:75% T:93%**	pCi/L	12/17/24 14:34	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

Sample: S-CA-DUP-2 **Lab ID: 60464699021** Collected: 11/19/24 00:00 Received: 11/21/24 07:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.235 ± 0.541 (0.979) C:NA T:96%**	pCi/L	12/18/24 15:09	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.516 ± 0.376 (0.724) C:76% T:86%**	pCi/L	12/17/24 14:34	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

Sample: S-CA-FB-1 **Lab ID: 60464699022** Collected: 11/18/24 16:36 Received: 11/21/24 07:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**-0.111 ± 0.556 (1.12) C:NA T:96%**	pCi/L	12/18/24 15:09	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.274 ± 0.410 (0.884) C:78% T:82%**	pCi/L	12/17/24 14:34	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

Sample: S-CA-FB-2 **Lab ID: 60464699023** Collected: 11/20/24 11:56 Received: 11/21/24 07:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.120 ± 0.407 (0.785) C:NA T:92%**	pCi/L	12/18/24 15:26	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.412 ± 0.451 (0.938) C:75% T:83%**	pCi/L	12/17/24 14:34	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

Sample: S-CA-MS-1 **Lab ID: 60464699024** Collected: 11/20/24 12:32 Received: 11/21/24 07:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**95.73 %REC ± NA (NA) C:NA T:NA**	pCi/L	12/18/24 15:26	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**61.30 %REC ± NA (NA) C:NA T:NA**	pCi/L	12/17/24 14:34	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

Sample: S-CA-MSD-1 **Lab ID: 60464699025** Collected: 11/20/24 12:32 Received: 11/21/24 07:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**120.42 %REC 22.84RPD ± NA (NA) C:NA T:NA**	pCi/L	12/18/24 15:26	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**72.71 %REC 17.04RPD ± NA (NA) C:NA T:NA**	pCi/L	12/17/24 14:35	15262-20-1	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

QC Batch: 711681
QC Batch Method: EPA 903.1
Analysis Method: EPA 903.1
Analysis Description: 903.1 Radium-226
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 60464699001, 60464699002, 60464699003, 60464699004, 60464699005, 60464699006, 60464699007, 60464699008, 60464699009, 60464699010

METHOD BLANK: 3466084 Matrix: Water
Associated Lab Samples: 60464699001, 60464699002, 60464699003, 60464699004, 60464699005, 60464699006, 60464699007, 60464699008, 60464699009, 60464699010

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.218 ± 0.257 (0.405) C:NA T:93%	pCi/L	12/11/24 12:56	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

QC Batch: 713036
QC Batch Method: EPA 904.0
Analysis Method: EPA 904.0
Analysis Description: 904.0 Radium 228
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 60464699011, 60464699012, 60464699013, 60464699014, 60464699015, 60464699016, 60464699017, 60464699018, 60464699019, 60464699020, 60464699021, 60464699022, 60464699023, 60464699024, 60464699025

METHOD BLANK: 3472020
Matrix: Water
Associated Lab Samples: 60464699011, 60464699012, 60464699013, 60464699014, 60464699015, 60464699016, 60464699017, 60464699018, 60464699019, 60464699020, 60464699021, 60464699022, 60464699023, 60464699024, 60464699025

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.125 ± 0.321 (0.717) C:79% T:86%	pCi/L	12/17/24 14:33	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

QC Batch: 711683
QC Batch Method: EPA 904.0
Analysis Method: EPA 904.0
Analysis Description: 904.0 Radium 228
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 60464699001, 60464699002, 60464699003, 60464699004, 60464699005, 60464699006, 60464699007, 60464699008, 60464699009, 60464699010

METHOD BLANK: 3466085 Matrix: Water
Associated Lab Samples: 60464699001, 60464699002, 60464699003, 60464699004, 60464699005, 60464699006, 60464699007, 60464699008, 60464699009, 60464699010

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.470 ± 0.337 (0.644) C:79% T:89%	pCi/L	12/09/24 14:45	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

QC Batch: 713035
QC Batch Method: EPA 903.1
Analysis Method: EPA 903.1
Analysis Description: 903.1 Radium-226
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 60464699011, 60464699012, 60464699013, 60464699014, 60464699015, 60464699016, 60464699017, 60464699018, 60464699019, 60464699020, 60464699021, 60464699022, 60464699023, 60464699024, 60464699025

METHOD BLANK: 3472019
Matrix: Water
Associated Lab Samples: 60464699011, 60464699012, 60464699013, 60464699014, 60464699015, 60464699016, 60464699017, 60464699018, 60464699019, 60464699020, 60464699021, 60464699022, 60464699023, 60464699024, 60464699025

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.280 ± 0.368 (0.612) C:NA T:95%	pCi/L	12/18/24 14:54	

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QUALIFIERS

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval). Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

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TNI - The NELAC Institute.

ANALYTE QUALIFIERS

B	Analyte was detected in the associated method blank.
CL	The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased low.
H1	Analysis conducted outside the EPA method holding time.
IC	The initial calibration for this compound was outside of method control limits. The result is estimated.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
R1	RPD value was outside control limits.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60464699001	**S-TP-5D**	EPA 200.7	916636	EPA 200.7	916671
60464699002	**S-TP-6S**	EPA 200.7	916636	EPA 200.7	916671
60464699003	**S-UG-3**	EPA 200.7	916636	EPA 200.7	916671
60464699004	**S-CA-DUP-1**	EPA 200.7	916636	EPA 200.7	916671
60464699005	**S-LMW-1S**	EPA 200.7	917055	EPA 200.7	917177
60464699006	**S-LMW-5S**	EPA 200.7	916806	EPA 200.7	916863
60464699007	**S-LMW-6S**	EPA 200.7	916806	EPA 200.7	916863
60464699008	**S-TP-6D**	EPA 200.7	916806	EPA 200.7	916863
60464699009	**S-PZ-1S**	EPA 200.7	916983	EPA 200.7	917023
60464699010	**S-PZ-9D**	EPA 200.7	916983	EPA 200.7	917023
60464699011	**S-BMW-1S**	EPA 200.7	917371	EPA 200.7	917460
60464699012	**S-BMW-3S**	EPA 200.7	917371	EPA 200.7	917460
60464699013	**S-LMW-2S**	EPA 200.7	917371	EPA 200.7	917460
60464699014	**S-LMW-4S**	EPA 200.7	917371	EPA 200.7	917460
60464699015	**S-AM-1S**	EPA 200.7	917371	EPA 200.7	917460
60464699016	**S-AM-1D**	EPA 200.7	917371	EPA 200.7	917460
60464699017	**S-TP-2D**	EPA 200.7	917371	EPA 200.7	917460
60464699018	**S-TP-3D**	EPA 200.7	917371	EPA 200.7	917460
60464699019	**S-TP-4D**	EPA 200.7	917371	EPA 200.7	917460
60464699020	**S-TP-8D**	EPA 200.7	917371	EPA 200.7	917460
60464699021	**S-CA-DUP-2**	EPA 200.7	917371	EPA 200.7	917460
60464699022	**S-CA-FB-1**	EPA 200.7	917371	EPA 200.7	917460
60464699023	**S-CA-FB-2**	EPA 200.7	917371	EPA 200.7	917460
60464699001	**S-TP-5D**	EPA 200.8	918238	EPA 200.8	918269
60464699002	**S-TP-6S**	EPA 200.8	918238	EPA 200.8	918269
60464699003	**S-UG-3**	EPA 200.8	918238	EPA 200.8	918269
60464699004	**S-CA-DUP-1**	EPA 200.8	918238	EPA 200.8	918269
60464699005	**S-LMW-1S**	EPA 200.8	918238	EPA 200.8	918269
60464699006	**S-LMW-5S**	EPA 200.8	918238	EPA 200.8	918269
60464699007	**S-LMW-6S**	EPA 200.8	918238	EPA 200.8	918269
60464699008	**S-TP-6D**	EPA 200.8	918238	EPA 200.8	918269
60464699009	**S-PZ-1S**	EPA 200.8	918238	EPA 200.8	918269
60464699010	**S-PZ-9D**	EPA 200.8	918238	EPA 200.8	918269
60464699011	**S-BMW-1S**	EPA 200.8	918239	EPA 200.8	918268
60464699012	**S-BMW-3S**	EPA 200.8	918239	EPA 200.8	918268
60464699013	**S-LMW-2S**	EPA 200.8	918239	EPA 200.8	918268
60464699014	**S-LMW-4S**	EPA 200.8	918239	EPA 200.8	918268
60464699015	**S-AM-1S**	EPA 200.8	918239	EPA 200.8	918268
60464699016	**S-AM-1D**	EPA 200.8	918239	EPA 200.8	918268
60464699017	**S-TP-2D**	EPA 200.8	918239	EPA 200.8	918268
60464699018	**S-TP-3D**	EPA 200.8	918239	EPA 200.8	918268
60464699019	**S-TP-4D**	EPA 200.8	918239	EPA 200.8	918268
60464699020	**S-TP-8D**	EPA 200.8	918239	EPA 200.8	918268
60464699021	**S-CA-DUP-2**	EPA 200.8	918239	EPA 200.8	918268
60464699022	**S-CA-FB-1**	EPA 200.8	918239	EPA 200.8	918268
60464699023	**S-CA-FB-2**	EPA 200.8	918239	EPA 200.8	918268

REPORT OF LABORATORY ANALYSIS

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Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60464699001	**S-TP-5D**	EPA 903.1	711681		
60464699002	**S-TP-6S**	EPA 903.1	711681		
60464699003	**S-UG-3**	EPA 903.1	711681		
60464699004	**S-CA-DUP-1**	EPA 903.1	711681		
60464699005	**S-LMW-1S**	EPA 903.1	711681		
60464699006	**S-LMW-5S**	EPA 903.1	711681		
60464699007	**S-LMW-6S**	EPA 903.1	711681		
60464699008	**S-TP-6D**	EPA 903.1	711681		
60464699009	**S-PZ-1S**	EPA 903.1	711681		
60464699010	**S-PZ-9D**	EPA 903.1	711681		
60464699011	**S-BMW-1S**	EPA 903.1	713035		
60464699012	**S-BMW-3S**	EPA 903.1	713035		
60464699013	**S-LMW-2S**	EPA 903.1	713035		
60464699014	**S-LMW-4S**	EPA 903.1	713035		
60464699015	**S-AM-1S**	EPA 903.1	713035		
60464699016	**S-AM-1D**	EPA 903.1	713035		
60464699017	**S-TP-2D**	EPA 903.1	713035		
60464699018	**S-TP-3D**	EPA 903.1	713035		
60464699019	**S-TP-4D**	EPA 903.1	713035		
60464699020	**S-TP-8D**	EPA 903.1	713035		
60464699021	**S-CA-DUP-2**	EPA 903.1	713035		
60464699022	**S-CA-FB-1**	EPA 903.1	713035		
60464699023	**S-CA-FB-2**	EPA 903.1	713035		
60464699024	**S-CA-MS-1**	EPA 903.1	713035		
60464699025	**S-CA-MSD-1**	EPA 903.1	713035		
60464699001	**S-TP-5D**	EPA 904.0	711683		
60464699002	**S-TP-6S**	EPA 904.0	711683		
60464699003	**S-UG-3**	EPA 904.0	711683		
60464699004	**S-CA-DUP-1**	EPA 904.0	711683		
60464699005	**S-LMW-1S**	EPA 904.0	711683		
60464699006	**S-LMW-5S**	EPA 904.0	711683		
60464699007	**S-LMW-6S**	EPA 904.0	711683		
60464699008	**S-TP-6D**	EPA 904.0	711683		
60464699009	**S-PZ-1S**	EPA 904.0	711683		
60464699010	**S-PZ-9D**	EPA 904.0	711683		
60464699011	**S-BMW-1S**	EPA 904.0	713036		
60464699012	**S-BMW-3S**	EPA 904.0	713036		
60464699013	**S-LMW-2S**	EPA 904.0	713036		
60464699014	**S-LMW-4S**	EPA 904.0	713036		
60464699015	**S-AM-1S**	EPA 904.0	713036		
60464699016	**S-AM-1D**	EPA 904.0	713036		
60464699017	**S-TP-2D**	EPA 904.0	713036		
60464699018	**S-TP-3D**	EPA 904.0	713036		
60464699019	**S-TP-4D**	EPA 904.0	713036		
60464699020	**S-TP-8D**	EPA 904.0	713036		
60464699021	**S-CA-DUP-2**	EPA 904.0	713036		
60464699022	**S-CA-FB-1**	EPA 904.0	713036		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60464699023	**S-CA-FB-2**	EPA 904.0	713036		
60464699024	**S-CA-MS-1**	EPA 904.0	713036		
60464699025	**S-CA-MSD-1**	EPA 904.0	713036		
60464699001	**S-TP-5D**	SM 2320B	917909		
60464699002	**S-TP-6S**	SM 2320B	917909		
60464699003	**S-UG-3**	SM 2320B	917909		
60464699004	**S-CA-DUP-1**	SM 2320B	917909		
60464699005	**S-LMW-1S**	SM 2320B	917909		
60464699006	**S-LMW-5S**	SM 2320B	917910		
60464699007	**S-LMW-6S**	SM 2320B	917910		
60464699008	**S-TP-6D**	SM 2320B	917909		
60464699009	**S-PZ-1S**	SM 2320B	918130		
60464699010	**S-PZ-9D**	SM 2320B	918130		
60464699011	**S-BMW-1S**	SM 2320B	918131		
60464699012	**S-BMW-3S**	SM 2320B	918131		
60464699013	**S-LMW-2S**	SM 2320B	918131		
60464699014	**S-LMW-4S**	SM 2320B	918131		
60464699015	**S-AM-1S**	SM 2320B	918131		
60464699016	**S-AM-1D**	SM 2320B	918131		
60464699017	**S-TP-2D**	SM 2320B	918131		
60464699018	**S-TP-3D**	SM 2320B	918131		
60464699019	**S-TP-4D**	SM 2320B	918131		
60464699020	**S-TP-8D**	SM 2320B	918130		
60464699021	**S-CA-DUP-2**	SM 2320B	918130		
60464699022	**S-CA-FB-1**	SM 2320B	918130		
60464699023	**S-CA-FB-2**	SM 2320B	918131		
60464699001	**S-TP-5D**	SM 2540C	916954		
60464699002	**S-TP-6S**	SM 2540C	916954		
60464699003	**S-UG-3**	SM 2540C	916954		
60464699004	**S-CA-DUP-1**	SM 2540C	916954		
60464699005	**S-LMW-1S**	SM 2540C	916954		
60464699006	**S-LMW-5S**	SM 2540C	917114		
60464699007	**S-LMW-6S**	SM 2540C	917114		
60464699008	**S-TP-6D**	SM 2540C	917114		
60464699009	**S-PZ-1S**	SM 2540C	917602		
60464699010	**S-PZ-9D**	SM 2540C	917602		
60464699011	**S-BMW-1S**	SM 2540C	917911		
60464699012	**S-BMW-3S**	SM 2540C	917911		
60464699013	**S-LMW-2S**	SM 2540C	917911		
60464699014	**S-LMW-4S**	SM 2540C	917911		
60464699015	**S-AM-1S**	SM 2540C	917911		
60464699016	**S-AM-1D**	SM 2540C	917911		
60464699017	**S-TP-2D**	SM 2540C	917911		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN SCPA-CA
Pace Project No.: 60464699

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60464699018	**S-TP-3D**	SM 2540C	917911		
60464699019	**S-TP-4D**	SM 2540C	917911		
60464699020	**S-TP-8D**	SM 2540C	917602		
60464699021	**S-CA-DUP-2**	SM 2540C	917791		
60464699022	**S-CA-FB-1**	SM 2540C	917602		
60464699023	**S-CA-FB-2**	SM 2540C	917911		
60464699001	**S-TP-5D**	EPA 300.0	919543		
60464699002	**S-TP-6S**	EPA 300.0	919543		
60464699003	**S-UG-3**	EPA 300.0	919543		
60464699004	**S-CA-DUP-1**	EPA 300.0	919543		
60464699005	**S-LMW-1S**	EPA 300.0	919474		
60464699006	**S-LMW-5S**	EPA 300.0	919474		
60464699007	**S-LMW-6S**	EPA 300.0	919474		
60464699008	**S-TP-6D**	EPA 300.0	919474		
60464699009	**S-PZ-1S**	EPA 300.0	919641		
60464699010	**S-PZ-9D**	EPA 300.0	919641		
60464699011	**S-BMW-1S**	EPA 300.0	919641		
60464699012	**S-BMW-3S**	EPA 300.0	919641		
60464699013	**S-LMW-2S**	EPA 300.0	919641		
60464699014	**S-LMW-4S**	EPA 300.0	919641		
60464699015	**S-AM-1S**	EPA 300.0	919641		
60464699016	**S-AM-1D**	EPA 300.0	919641		
60464699017	**S-TP-2D**	EPA 300.0	919641		
60464699018	**S-TP-3D**	EPA 300.0	919646		
60464699019	**S-TP-4D**	EPA 300.0	919646		
60464699020	**S-TP-8D**	EPA 300.0	919641		
60464699021	**S-CA-DUP-2**	EPA 300.0	919641		
60464699022	**S-CA-FB-1**	EPA 300.0	919641		
60464699023	**S-CA-FB-2**	EPA 300.0	919646		

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WO# : 60464699

60464699

Pace ANALYTICAL SERVICES	DC#_Title: ENV-FRM-LENE-0009_Sample C		
	Revision: 2	Effective Date: 01/12/2022	Issued By: Lenexa

Client Name: Rocksmith Geoeng

Courier: FedEx ☐ UPS ☐ VIA ☐ Clay ☐ PEX ☐ ECI ☐ Pace ☐ Xroads ☑ Client ☐ Other ☐

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☑

Custody Seal on Cooler/Box Present: Yes ☑ No ☐ Seals intact: Yes ☑ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☑ Other ☐

Thermometer Used: T298 **Type of Ice:** Wet ☑ Blue None

Cooler Temperature (°C): As-read 2.0/13.0 Corr. Factor -0.1 Corrected 1.9/12.9/1.0

Date and initials of person examining contents: PM 11/15/24

Temperature should be above freezing to 6°C 1.1

Chain of Custody present:	☑Yes ☐No ☐N/A	
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	
Samples arrived within holding time:	☑Yes ☐No ☐N/A	
Short Hold Time analyses (<72hr):	☐Yes ☑No ☐N/A	
Rush Turn Around Time requested:	☐Yes ☑No ☐N/A	
Sufficient volume:	☑Yes ☐No ☐N/A	
Correct containers used:	☑Yes ☐No ☐N/A	
Pace containers used:	☑Yes ☐No ☐N/A	
Containers intact:	☑Yes ☐No ☐N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☐No ☑N/A	
Filtered volume received for dissolved tests?	☐Yes ☐No ☑N/A	
Sample labels match COC: Date / time / ID / analyses	☑Yes ☐No ☐N/A	
Samples contain multiple phases? Matrix: WT	☐Yes ☑No ☐N/A	
Containers requiring pH preservation in compliance? (HNO_3, H_2SO_4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) LOT#: 88721	☑Yes ☐No ☐N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks: Lead acetate strip turns dark? (Record only)	☐Yes ☐No	
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No	
Trip Blank present:	☐Yes ☐No ☑N/A	
Headspace in VOA vials (>6mm):	☐Yes ☐No ☑N/A	
Samples from USDA Regulated Area: State:	☐Yes ☐No ☑N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☑N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

Pace™ Location Requested (City/State):
Pace Analytical Kansas
9608 Loiret Blvd., Lenexa, KS 66219

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here

60464699

Scan QR Code for instructions

Company Name:	Rocksmith Geoengineering, LLC
Street Address:	2320 Creve Coeur Mill Road, Maryland Heights, MO 63043
Customer Project #:	COC# 8
Project Name:	AMEREN SCPA-CA
Site Collection Info/Facility ID (as applicable):	
Contact/Report To:	Mark Haddock
Phone #:	314-974-6578
E-Mail:	mark.haddock@rocksmithgeo.com
Cc E-Mail:	
Invoice To:	Mark Haddock
Invoice E-Mail:	mark.haddock@rocksmithgeo.com
Purchase Order # (if applicable):	
Quote #:	

Time Zone Collected: [ ] AK [ ] PT [ ] MT [ ] CT [ ] ET

County / State origin of sample(s): Missouri

Data Deliverables: [ ] Level II [ ] Level III [ ] Level IV [ ] EQUIS [ ] Other

Regulatory Program (DW, RCRA, etc.) as applicable: Reportable [ ] Yes [ ] No

Rush (Pre-approval required): [ ] Same Day [ ] 1 Day [ ] 2 Day [ ] 3 Day [ ] Other _____

DW PWSID # or WW Permit # as applicable:

Date Results Requested:

Field Filtered (if applicable): [ ] Yes [ ] No

Analysis:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Waste Water (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Surface Water (SW), Sediment (SED), Sludge (SL), Caulk (CK), Leachate (LL), Biosolid (BS), Other (OT)

Specify Container Size **: 1 1 3 3 1

** Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL vial, (7) EnCore, (8) [illegible], (9) 90mL, (10) Other

Identify Container Preservative Type***: 1 1 2 2 1

*** Preservative Types: (1) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Sod. Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other

Analysis Requested: Chloride/Fluoride/Sulfate; TDS / Alkalinity; App III and Cat/An Metals (200.7)*; Appendix IV Metals (200.7/200.8)**; Radium 226 & Radium 228

Lab Use Only: Proj. Mgr: Jamie Church; AcctNum / Client ID:; Table #:; Profile / Template: 15856; Prelog / Bottle Ord. ID: EZ 3163156

Preservation non-conformance identified for sample:

Customer Sample ID	Matrix *	Comp / Grab	Composite Start Date	Composite Start Time	Collected or Composite End Date	Collected or Composite End Time	# Cont.	Res. Chlorine Results	Res. Chlorine Units	Sample Comment
S-PZ-9D	WT									
SP-TP-2D	WT									
SP-TP-3D	WT									
SP-TP-4D	WT									
SP-TP-5D	WT	G			11-14-24	1320	4			
SP-TP-6S	WT	G			11-14-24	1427	4			
SP-TP-6D	WT									
SP-TP-8D	WT									
S-UG-3	WT	G			11-14-24	1115	4			
S-CA-DUP-1	WT	G			11-14-24	—	4			

Additional Instructions from Pace®:
App III and Cat/An Metals - EPA 200.7: Fe, Mg, Mn, K, Na, Ca, B
**App IV Metals - EPA 200.7 -Ba, Li, Mo & 200.8 Metals - As,Cd,Cr,Se

Collected By: (Printed Name) Grant Morey

Signature:

Customer Remarks / Special Conditions / Possible Hazards:

# Coolers:	Thermometer ID:	Correction Factor (°C):	Obs. Temp. (°C)	Corrected Temp. (°C)	On Ice
3	T298	-0.1	1.9	12.9	1.0

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Tracking Number:
Grant Morey / Rocksmith	11-14-24 / 1600	[signature] PASE	11/15/24 05:55	
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Delivered by: [ ] In-Person [ ] Courier [ ] FedEX [ ] UPS [ ] Other
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Page: 1 of 1

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace® Terms and Conditions found at https://www.pacelabs.com/resource-library/resource/pace-terms-and-conditions/

Client: Rocksmith Geoeng Profile# 3163156

Site: Notes

COC Line Item	Matrix	VG9H	DG9H	DG9Q	VG9U	DG9U	DG9M	DG9B	BG1U	AG1H	AG1U	AG2U	AG3S	AG4U	AG5U	JGFU	WGKU	WGDU	BP1U	BP2U	BP3U	BP1N	BP3N	BP3F	BP3S	BP3B	BP3Z	WPDU	ZPLC	Other		
1																																
2																																
3																																
4																																
5	WT																		1			2	1									
6	WT																		1			2	1									
7																																
8																																
9	WT																		1			2	1									
10	WT																		1			2	1									
11																																
12																																

Container Codes

Glass			
DG9B	40mL bisulfate clear vial	WGKU	8oz clear soil jar
DG9H	40mL HCl amber voa vial	WGFU	4oz clear soil jar
DG9M	40mL MeOH clear vial	WG2U	2oz clear soil jar
DG9Q	40mL TSP amber vial	JGFU	4oz unpreserved amber wide
DG9S	40mL H2SO4 amber vial	AG0U	100mL unores amber glass
DG9T	40mL Na Thio amber vial	AG1H	1L HCl amber glass
DG9U	40mL amber unpreserved	AG1S	1L H2SO4 amber glass
VG9H	40mL HCl clear vial	AG1T	1L Na Thiosulfate clear/amber glass
VG9T	40mL Na Thio. clear vial	AG1U	1liter unpres amber glass
VG9U	40mL unpreserved clear vial	AG2N	500mL HNO3 amber glass
BG1S	1liter H2SO4 clear glass	AG2S	500mL H2SO4 amber glass
BG1U	1liter unpres glass	AG3S	250mL H2SO4 amber glass
BG3H	250mL HCL Clear glass	AG2U	500mL unpres amber glass
BG3U	250mL Unpres Clear glass	AG3U	250mL unpres amber glass
WGDU	16oz clear soil jar	AG4U	125mL unpres amber glass
		AG5U	100mL unpres amber glass

Plastic	
BP1B	1L NAOH plastic
BP1N	1L HNO3 plastic
BP1S	1L H2SO4 plastic
BP1U	1L unpreserved plastic
BP1Z	1L NaOH, Zn Acetate
BP2B	500mL NAOH plastic
BP2N	500mL HNO3 plastic
BP2S	500mL H2SO4 plastic
BP2U	500mL unpreserved plastic
BP2Z	500mL NaOH, Zn Acetate
BP3B	250mL NaOH plastic
BP3F	250mL HNO3 plastic - field filtered
BP3N	250mL HNO3 plastic
BP3U	250mL unpreserved plastic
BP3S	250mL H2SO4 plastic
BP3Z	250mL NaOH, Zn Acetate
BP4U	125mL unpreserved plastic
BP4N	125mL HNO3 plastic
BP4S	125mL H2SO4 plastic
WPDU	16oz unpresserved plstic

Misc.	
I	Wipe/Swab
SP5T	120mL Coliform Na Thiosulfate
ZPLC	Ziploc Bag
AF	Air Filter
C	Air Cassettes
R	Terracore Kit
U	Summa Can

Matrix	
WT	Water
SL	Solid
NAL	Non-aqueous Liquid
OL	OIL
WP	Wipe
DW	Drinking Water

Work Order Number: 60464699

WO# : 60464699

60464699

Pace	DC#_Title: ENV-FRM-LENE-0009_Sample Con		
	Revision: 2	Effective Date: 01/12/2022	Issued By: Lenexa

Client Name: Rocksmith Geoeng

Courier: FedEx ☐ UPS ☐ VIA ☐ Clay ☐ PEX ☐ ECI ☐ Pace ☐ Xroads ☑ Client ☐ Other ☐

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☑

Custody Seal on Cooler/Box Present: Yes ☑ No ☐ Seals intact: Yes ☑ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☑ Other ☐

Thermometer Used: T298 **Type of Ice:** (Wet) Blue None

Cooler Temperature (°C): As-read 1.0/12.5 **Corr. Factor** -0.1 **Corrected** 0.9/12.4

Date and initials of person examining contents: AR 11/18/24

Temperature should be above freezing to 6°C

Chain of Custody present:	☑Yes ☐No ☐N/A	
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	
Samples arrived within holding time:	☑Yes ☐No ☐N/A	
Short Hold Time analyses (<72hr):	☐Yes ☑No ☐N/A	
Rush Turn Around Time requested:	☐Yes ☑No ☐N/A	
Sufficient volume:	☑Yes ☐No ☐N/A	
Correct containers used:	☑Yes ☐No ☐N/A	
Pace containers used:	☑Yes ☐No ☐N/A	
Containers intact:	☑Yes ☐No ☐N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☐No ☑N/A	
Filtered volume received for dissolved tests?	☐Yes ☐No ☑N/A	
Sample labels match COC: Date / time / ID / analyses	☑Yes ☐No ☐N/A	
Samples contain multiple phases? Matrix: WT	☐Yes ☑No ☐N/A	
Containers requiring pH preservation in compliance? (HNO_3, H_2SO_4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) **LOT#:** 82727	☑Yes ☐No ☐N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks: Lead acetate strip turns dark? (Record only)	☐Yes ☐No	
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No	
Trip Blank present:	☐Yes ☐No ☑N/A	
Headspace in VOA vials (>6mm):	☐Yes ☐No ☑N/A	
Samples from USDA Regulated Area: State:	☐Yes ☐No ☑N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☑N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

Qualtrax Document ID: 30468

Pace® Location Requested (City/State):
Pace Analytical Kansas
9608 Loiret Blvd., Lenexa, KS 66219

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here

6c464699

Scan QR Code for instructions

Company Name:	Rocksmith Geoengineering, LLC
Street Address:	2320 Creve Coeur Mill Road, Maryland Heights, MO 63043
Customer Project #:	COC# 8
Project Name:	AMEREN SCPA-CA
Site Collection Info/Facility ID (as applicable):	
Contact/Report To:	Mark Haddock
Phone #:	314-974-6578
E-Mail:	mark.haddock@rocksmithgeo.com
Cc E-Mail:	
Invoice To:	Mark Haddock
Invoice E-Mail:	mark.haddock@rocksmithgeo.com
Purchase Order # (if applicable):	
Quote #:	

Time Zone Collected: [ ] AK [ ] PT [ ] MT [ ] CT [ ] ET

County / State origin of sample(s): Missouri

Data Deliverables:
[ ] Level II [ ] Level III [ ] Level IV
[ ] EQUIS
[ ] Other

Regulatory Program (DW, RCRA, etc.) as applicable: Reportable [ ] Yes [ ] No

Rush (Pre-approval required):
[ ] Same Day [ ] 1 Day [ ] 2 Day [ ] 3 Day [ ] Other _____

DW PWSID # or WW Permit # as applicable

Date Results Requested:

Field Filtered (if applicable): [ ] Yes [ ] No

Analysis:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Waste Water (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Surface Water (SW), Sediment (SED), Sludge (SL), Caulk (CK), Leachate (LL), Biosolid (BS), Other (OT)

Specify Container Size **

Identify Container Preservative Type***

Analysis Requested

Customer Sample ID	Matrix *	Comp / Grab	Composite Start Date	Composite Start Time	Collected or Composite End Date	Collected or Composite End Time	# Cont.	Res. Chlorine Results	Res. Chlorine Units	Chloride/Fluoride/Sulfate	TDS / Alkalinity	App III and Cat/An Metals (200.7)*	Appendix IV Metals (200.7/200.8)**	Radium 226 & Radium 228	Sample Comment
S-BMW-1S	WT														
S-BMW-3S	WT														
S-LMW-1S	WT	G			11/14/24	1606	4			✓	✓	✓	✓	✓	
S-LMW-2S	WT														
S-LMW-4S	WT														
S-LMW-5S	WT	G			11/15/24	1340	4			✓	✓	✓	✓	✓	
S-LMW-6S	WT	G			11/15/24	1248	4			✓	✓	✓	✓	✓	
S-AM-1S	WT														
S-AM-1D	WT														
S-PZ-1S	WT														

Lab Use Only
Proj. Mgr: Jamie Church
AcctNum / Client ID:
Table #:
Profile / Template: 15856
Prelog / Bottle Ord. ID: EZ 3163156

Preservation non-conformance identified for sample

**Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL vial, (7) EnCore, (8) TerraCore, (9) 90mL, (10) Other

*** Preservative Types: (1) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Sod. Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other

Additional Instructions from Pace®:
App III and Cat/An Metals - EPA 200.7: Fe, Mg, Mn, K, Na, Ca, B
**App IV Metals - EPA 200.7 -Ba, Li, Mo & 200.8 Metals - As,Cd,Cr,Se

Collected By: (Printed Name) John Rasmussen
Signature:

Customer Remarks / Special Conditions / Possible Hazards:

# Coolers:	Thermometer ID:	Correction Factor (°C):	Obs. Temp. (°C)	Corrected Temp. (°C)	On Ice:
	T298	-0.1	1.0	0.9	

Relinquished by/Company: (Signature) Rocksmith	Date/Time: 11/15/24 1510	Received by/Company: (Signature)	Date/Time: 11-16 0534	Tracking Number:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Delivered by: [ ] In-Person [ ] Courier
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	[ ] FedEX [ ] UPS [ ] Other
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time	Page: 1 of 2

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace® Terms and Conditions found at https://www.pacelabs.com/resource-library/resource/pace-terms-and-conditions/

Pace® Location Requested (City/State):
Pace Analytical Kansas
9608 Loiret Blvd., Lenexa, KS 66219

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here

60464699

Scan QR Code for instructions

Company Name:	Rocksmith Geoengineering, LLC	Contact/Report To:	Mark Haddock
Street Address:	2320 Creve Coeur Mill Road, Maryland Heights, MO 63043	Phone #:	314-974-6578
		E-Mail:	mark.haddock@rocksmithgeo.com
		Cc E-Mail:	
Customer Project #:	COC# 8		
Project Name:	AMEREN SCPA-CA	Invoice To:	Mark Haddock
		Invoice E-Mail:	mark.haddock@rocksmithgeo.com
Site Collection Info/Facility ID (as applicable):		Purchase Order # (if applicable):	
		Quote #:	

Time Zone Collected: [ ] AK [ ] PT [ ] MT [ ] CT [ ] ET

County / State origin of sample(s): Missouri

Data Deliverables: [ ] Level II [ ] Level III [ ] Level IV [ ] EQUIS [ ] Other

Regulatory Program (DW, RCRA, etc.) as applicable: Reportable [ ] Yes [ ] No

Rush (Pre-approval required): [ ] Same Day [ ] 1 Day [ ] 2 Day [ ] 3 Day [ ] Other _____

DW PWSID # or WW Permit # as applicable

Date Results Requested:

Field Filtered (if applicable): [ ] Yes [ ] No

Analysis:

Specify Container Size **: 1 1 3 3 1

Identify Container Preservative Type***: 1 1 2 2 2

**Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL vial, (7) EnCore, (8) TerraCore, (9) 90mL, (10) Other

*** Preservative Types: (1) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Sod. Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other

Analysis Requested: Chloride/Fluoride/Sulfate; TDS / Alkalinity; App III and Cat/An Metals (200.7)*; Appendix IV Metals (200.7/200.8)**; Radium 226 & Radium 228

Lab Use Only: Proj. Mgr.: Jamie Church; AcctNum / Client ID:; Table #:; Profile / Template: 15856; Prelog / Bottle Ord. ID: EZ 3163156

Sample Comment

Preservation non-conformance identified for sample.

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Waste Water (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Surface Water (SW), Sediment (SED), Sludge (SL), Caulk (CK), Leachate (LL), Biosolid (BS), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Composite Start Date	Composite Start Time	Collected or Composite End Date	Collected or Composite End Time	# Cont.	Res. Chlorine Results	Res. Chlorine Units	Chloride/Fluoride/Sulfate	TDS / Alkalinity	App III and Cat/An Metals (200.7)*	Appendix IV Metals (200.7/200.8)**	Radium 226 & Radium 228	Sample Comment
S-PZ-9D	WT														
SP-TP-2D	WT														
SP-TP-3D	WT														
SP-TP-4D	WT														
SP-TP-5D	WT														
SP-TP-6S	WT														
SP-TP-6D	WT	G			11-14-24	1510	4			✓	✓	✓	✓	✓	
SP-TP-8D	WT														
S-UG-3	WT														
S-CA-DUP-1	WT														

Additional Instructions from Pace®:
App III and Cat/An Metals - EPA 200.7: Fe, Mg, Mn, K, Na, Ca, B
**App IV Metals - EPA 200.7 -Ba, Li, Mo & 200.8 Metals - As,Cd,Cr,Se

Collected By: (Printed Name) John Rasmussen

Signature:

Customer Remarks / Special Conditions / Possible Hazards:

Coolers: Thermometer ID: Correction Factor (°C): Obs. Temp. (°C): Corrected Temp. (°C): 0.9 On Ice

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Tracking Number:
Rocksmith	11/15/24 1510		11-16 0534	
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Delivered by: [ ] In-Person [ ] Courier
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	[ ] FedEx [ ] UPS [ ] Other
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Page: 2 of 2

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Client: Rocksmith Geeng Profile/EZ #

Site: Notes Append to 60464699

COC Line Item	Matrix	VG9H	DG9H	DG9Q	VG9U	DG9U	DG9M	DG9B	BG1U	AG1H	AG1U	AG2U	AG3S	AG4U	AG5U	JGFU	WGKU	WGDU	BP1U	BP2U	BP3U	BP1N	BP3N	BP3F	BP3S	BP3B	BP3Z	WPDU	ZPLC	Other		
1																																
2																																
3	WT																		1			2	1									
4																																
5																																
6	WT																		1			2	1									
7	WT																		1			2	1									
8																																
9																																
10																																
11																																
12																																

Container Codes

Glass			
DG9B	40mL bisulfate clear vial	WGKU	8oz clear soil jar
DG9H	40mL HCl amber voa vial	WGFU	4oz clear soil jar
DG9M	40mL MeOH clear vial	WG2U	2oz clear soil jar
DG9Q	40mL TSP amber vial	JGFU	4oz unpreserved amber wide
DG9S	40mL H2SO4 amber vial	AG0U	100mL unores amber glass
DG9T	40mL Na Thio amber vial	AG1H	1L HCl amber glass
DG9U	40mL amber unpreserved	AG1S	1L H2SO4 amber glass
VG9H	40mL HCl clear vial	AG1T	1L Na Thiosulfate clear/amber glass
VG9T	40mL Na Thio. clear vial	AG1U	1liter unpres amber glass
VG9U	40mL unpreserved clear vial	AG2N	500mL HNO3 amber glass
BG1S	1liter H2SO4 clear glass	AG2S	500mL H2SO4 amber glass
BG1U	1liter unpres glass	AG3S	250mL H2SO4 amber glass
BG3H	250mL HCL Clear glass	AG2U	500mL unpres amber glass
BG3U	250mL Unpres Clear glass	AG3U	250mL unpres amber glass
WGDU	16oz clear soil jar	AG4U	125mL unpres amber glass
		AG5U	100mL unpres amber glass

Plastic	
BP1B	1L NAOH plastic
BP1N	1L HNO3 plastic
BP1S	1L H2SO4 plastic
BP1U	1L unpreserved plastic
BP1Z	1L NaOH, Zn Acetate
BP2B	500mL NAOH plastic
BP2N	500mL HNO3 plastic
BP2S	500mL H2SO4 plastic
BP2U	500mL unpreserved plastic
BP2Z	500mL NaOH, Zn Acetate
BP3B	250mL NaOH plastic
BP3F	250mL HNO3 plastic - field filtered
BP3N	250mL HNO3 plastic
BP3U	250mL unpreserved plastic
BP3S	250mL H2SO4 plastic
BP3Z	250mL NaOH, Zn Acetate
BP4U	125mL unpreserved plastic
BP4N	125mL HNO3 plastic
BP4S	125mL H2SO4 plastic
WPDU	16oz unpresserved plstic

Misc.	
I	Wipe/Swab
SP5T	120mL Coliform Na Thiosulfate
ZPLC	Ziploc Bag
AF	Air Filter
C	Air Cassettes
R	Terracore Kit
U	Summa Can

Matrix	
WT	Water
SL	Solid
NAL	Non-aqueous Liquid
OL	OIL
WP	Wipe
DW	Drinking Water

Work Order Number: 60464699

Client: Rocksmith Boeing Profile/EZ #

Site: Notes Attend to 6C464699

COC Line Item	Matrix	VG9H	DG9H	DG9Q	VG9U	DG9U	DG9M	DG9B	BG1U	AG1H	AG1U	AG2U	AG3S	AG4U	AG5U	JGFU	WGKU	WGDU	BP1U	BP2U	BP3U	BP1N	BP3N	BP3F	BP3S	BP3B	BP3Z	WPDU	ZPLC	Other		
1																																
2																																
3																																
4																																
5																																
6																																
7	WT																		1			2	1									
8																																
9																																
10																																
11																																
12																																

Container Codes

Glass			
DG9B	40mL bisulfate clear vial	WGKU	8oz clear soil jar
DG9H	40mL HCl amber voa vial	WGFU	4oz clear soil jar
DG9M	40mL MeOH clear vial	WG2U	2oz clear soil jar
DG9Q	40mL TSP amber vial	JGFU	4oz unpreserved amber wide
DG9S	40mL H2SO4 amber vial	AG0U	100mL unores amber glass
DG9T	40mL Na Thio amber vial	AG1H	1L HCl amber glass
DG9U	40mL amber unpreserved	AG1S	1L H2SO4 amber glass
VG9H	40mL HCl clear vial	AG1T	1L Na Thiosulfate clear/amber glass
VG9T	40mL Na Thio. clear vial	AG1U	1liter unpres amber glass
VG9U	40mL unpreserved clear vial	AG2N	500mL HNO3 amber glass
BG1S	1liter H2SO4 clear glass	AG2S	500mL H2SO4 amber glass
BG1U	1liter unpres glass	AG3S	250mL H2SO4 amber glass
BG3H	250mL HCL Clear glass	AG2U	500mL unpres amber glass
BG3U	250mL Unpres Clear glass	AG3U	250mL unpres amber glass
WGDU	16oz clear soil jar	AG4U	125mL unpres amber glass
		AG5U	100mL unpres amber glass

Plastic	
BP1B	1L NAOH plastic
BP1N	1L HNO3 plastic
BP1S	1L H2SO4 plastic
BP1U	1L unpreserved plastic
BP1Z	1L NaOH, Zn Acetate
BP2B	500mL NAOH plastic
BP2N	500mL HNO3 plastic
BP2S	500mL H2SO4 plastic
BP2U	500mL unpreserved plastic
BP2Z	500mL NaOH, Zn Acetate
BP3B	250mL NaOH plastic
BP3F	250mL HNO3 plastic - field filtered
BP3N	250mL HNO3 plastic
BP3U	250mL unpreserved plastic
BP3S	250mL H2SO4 plastic
BP3Z	250mL NaOH, Zn Acetate
BP4U	125mL unpreserved plastic
BP4N	125mL HNO3 plastic
BP4S	125mL H2SO4 plastic
WPDU	16oz unpresserved plstic

Misc.	
I	Wipe/Swab
SP5T	120mL Coliform Na Thiosulfate
ZPLC	Ziploc Bag
AF	Air Filter
C	Air Cassettes
R	Terracore Kit
U	Summa Can

Matrix	
WT	Water
SL	Solid
NAL	Non-aqueous Liquid
OL	OIL
WP	Wipe
DW	Drinking Water

Work Order Number: 6C464699

WO# : 60464699

60464699

Pace ANALYTICAL SERVICES	DC#_Title: ENV-FRM-LENE-0009_Sample Co		
	Revision: 2	Effective Date: 01/12/2022	Issued By: Lenexa

Client Name: Rocksmith Geoeng

Courier: FedEx ☐ UPS ☐ VIA ☐ Clay ☐ PEX ☐ ECI ☐ Pace ☐ Xroads ☑ Client ☐ Other ☐

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☑

Custody Seal on Cooler/Box Present: Yes ☑ No ☐ Seals intact: Yes ☑ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☑ Other ☐

Thermometer Used: T298 **Type of Ice:** (Wet) Blue None

Cooler Temperature (°C): **As-read** 1.2/2.0 **Corr. Factor** -0.1 **Corrected** 1.1/1.9

Date and initials of person examining contents: 11/19/24

Temperature should be above freezing to 6°C

Chain of Custody present:	☑Yes ☐No ☐N/A	
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	
Samples arrived within holding time:	☑Yes ☐No ☐N/A	
Short Hold Time analyses (<72hr):	☐Yes ☑No ☐N/A	
Rush Turn Around Time requested:	☐Yes ☑No ☐N/A	
Sufficient volume:	☑Yes ☐No ☐N/A	
Correct containers used:	☑Yes ☐No ☐N/A	
Pace containers used:	☑Yes ☐No ☐N/A	
Containers intact:	☑Yes ☐No ☐N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☐No ☑N/A	
Filtered volume received for dissolved tests?	☐Yes ☐No ☑N/A	
Sample labels match COC: Date / time / ID / analyses	☑Yes ☐No ☐N/A	
Samples contain multiple phases? Matrix: WT	☐Yes ☑No ☐N/A	
Containers requiring pH preservation in compliance? (HNO_3, H_2SO_4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) **LOT#:** 88727	☑Yes ☐No ☐N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks: Lead acetate strip turns dark? (Record only)	☐Yes ☐No	
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No	
Trip Blank present:	☐Yes ☐No ☑N/A	
Headspace in VOA vials (>6mm):	☐Yes ☐No ☑N/A	
Samples from USDA Regulated Area: State:	☐Yes ☐No ☑N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☑N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

Pace® Location Requested (City/State):
Pace Analytical Kansas
9608 Loiret Blvd, Lenexa, KS 66219

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here

60464699

Scan QR Code for instructions

Company Name:	Rocksmith Geoengineering, LLC.	Contact/Report To:	Mark Haddock
Street Address:	2320 Creve Coeur Mill Road, Maryland Heights, MO 63043	Phone #:	314-974-6578
		E-Mail:	mark.haddock@rocksmithgeo.com
		Cc E-Mail:	
Customer Project #:	COC# 5		
Project Name:	AMEREN SCPA-CA	Invoice To:	Mark Haddock
		Invoice E-Mail:	mark.haddock@rocksmithgeo.com
Site Collection Info/Facility ID (as applicable):		Purchase Order # (if applicable):	
		Quote #:	
Time Zone Collected: [ ] AK [ ] PT [ ] MT [ ] CT [ ] ET		County / State origin of sample(s):	Missouri
Data Deliverables: [ ] Level I [ ] Level II [ ] Level IV [ ] EQuIS [ ] Other		Regulatory Program (DW, NPDES, RCRA, etc.) as applicable:	Reportable [ ] Yes [ ] No
		Rush (Pre-approval required): [ ] Same Day [ ] 1 Day [ ] 2 Day [ ] 3 Day [ ] Other	(DW PWSID # or WW Permit # as applicable)
		Date Results Requested:	Field Filtered (if applicable): [ ] Yes [ ] No
			Analytes:

Specify Container Size **: 1 1 3 3 6

Identify Container Preservative Type***: 1 1 2 2 2

Analysis Requested

** Container Type: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL vial, (7) Encore, (8) SmartKote, (9) 90mL, (10) Other

*** Preservative Types: (1) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) NaOH+ Ascorbate, (7) NaHSO4, (8) Sod. Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other

Lab Use Only: Proj. Mgr: Jamie Church; Acct.Num / Client ID: ; Table #: ; Profile / Template: 15856; Prelog / Bottle Ord. ID: EZ 3163156

Preservation confirmed after identified for sample

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Waste Water (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Surface Water (SW), Sediment (SED), Sludge (SL), Caulk (CK), Leachate (LC), Fiberglass (FB), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Composite Start Date	Composite Start Time	Collected or Composite End Date	Collected or Composite End Time	# Cont.	Res. Chlorine Results	Res. Chlorine Units	Chloride/Fluoride/Sulfate	TDS / Alkalinity	App III and Cat/An Metals (200.7)*	Appendix IV Metals (200.7/200.8)**	Radium 226 & Radium 228	Sample Comment
S-BMW-1S	WT														
S-BMW-3S	WT														
S-LMW-1S	WT														
S-LMW-2S	WT														
S-LMW-4S	WT														
S-LMW-5S	WT														
S-LMW-6S	WT														
S-AM-1S	WT														
S-AM-1D	WT														
S-PZ-1S	WT	G			11/18/24	1425	4			✓	✓	✓	✓	✓	

Additional Instructions from Pace®:
App III and Cat/An Metals - EPA 200.7: Fe, Mg, Mn, K, Na, Ca, B
**App IV Metals - EPA 200.7 -Ba, Li, Mo & 200.8 Metals - As,Cd,Cr,Se

Collected By: (Printed Name) John Rasmussen
Signature:

Customer Remarks / Special Conditions / Possible Hazards:

# Coolers:	Thermometer ID:	Correction Factor (°C):	Obs. Temp. (°C):	Corrected Temp. (°C):	On Ice
2	T298	-0.1	1.1	1.9	

Relinquished by/Company: (Signature) Rocksmith	Date/Time: 11/18/24 1600	Received by/Company: (Signature)	Date/Time: 11/19/24 0700	Tracking Number:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Delivered by: [ ] In Person [ ] Courier [ ] FedEX [ ] UPS [ ] Other
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Page: 1 of 2

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ENV-FRM-CORO-0019_v02_110123 ©

Pace® Location Requested (City/State):
Pace Analytical Kansas
9608 Loiret Blvd., Lenexa, KS 66219

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here

60464699

Scan QR Code for instructions

Company Name:	Rocksmith Geoengineering, LLC
Street Address:	2320 Creve Coeur Mill Road, Maryland Heights, MO 63043
Customer Project #:	COC# 8
Project Name:	AMEREN SCPA-CA
Site Collection Info/Facility ID (as applicable):	
Time Zone Collected:	[ ] AK [ ] PT [ ] MT [ ] CT [ ] ET
Data Deliverables:	[ ] Level II [ ] Level III [ ] Level IV [ ] EQUIS [ ] Other

Contact/Report To:	Mark Haddock
Phone #:	314-974-6578
E-Mail:	mark.haddock@rocksmithgeo.com
Cc E-Mail:	
Invoice To:	Mark Haddock
Invoice E-Mail:	mark.haddock@rocksmithgeo.com
Purchase Order # (if applicable):	
Quote #:	
County / State origin of sample(s):	Missouri

Regulatory Program (DW, RCRA, etc.) as applicable: Reportable [ ] Yes [ ] No

Rush (Pre-approval required): [ ] Same Day [ ] 1 Day [ ] 2 Day [ ] 3 Day [ ] Other _____

DW PWSID # or WW Permit # as applicable:

Date Results Requested:

Field Filtered (if applicable): [ ] Yes [ ] No

Analysis:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Waste Water (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Surface Water (SW) Sediment (SED), Sludge (SL), Caulk (CK), Leachate (LL), Biosolid (BS), Other (OT)

Specify Container Size **: 1 1 3 3 1

Identify Container Preservative Type***: 1 1 2 2 2

**Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL Vial, (7) EnCore, (8) TerraCore, (9) 90mL, (10) Other

*** Preservative Types: (1) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Sod. Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other

Customer Sample ID	Matrix *	Comp / Grab	Composite Start Date	Composite Start Time	Collected or Composite End Date	Collected or Composite End Time	# Cont.	Res. Chlorine Results	Res. Chlorine Units	Chloride/Fluoride/Sulfate	TDS / Alkalinity	App III and Cat/An Metals (200.7)*	Appendix IV Metals (200.7/200.8)**	Radium 226 & Radium 228	Sample Comment
S-PZ-9D	WT	G			11/18/24	1205	4			✓	✓	✓	✓	✓	
SP-TP-2D	WT														
SP-TP-3D	WT														
SP-TP-4D	WT														
SP-TP-5D	WT														
SP-TP-6S	WT														
SP-TP-6D	WT														
SP-TP-8D	WT														
S-UG-3	WT														
S-CA-DUP-1	WT														

Lab Use Only

Proj. Mgr: Jamie Church

AcctNum / Client ID:

Table #:

Profile / Template: 15856

Prelog / Bottle Ord. ID: EZ 3163156

Preservation non-conformance identified for sample

Additional Instructions from Pace®:
App III and Cat/An Metals - EPA 200.7: Fe, Mg, Mn, K, Na, Ca, B
**App IV Metals - EPA 200.7 -Ba, Li, Mo & 200.8 Metals - As,Cd,Cr,Se

Collected By: (Printed Name) John Rasmussen

Signature:

Customer Remarks / Special Conditions / Possible Hazards:

# Coolers:	Thermometer ID:	Correction Factor (°C)	Obs. Temp. (°C)	Corrected Temp. (°C)	On Ice
2	T248	-0.1	1.1	1.9	

Relinquished by/Company: (Signature) Rocksmith	Date/Time: 11/18/24 1600	Received by/Company: (Signature) PACE	Date/Time: 11/19/24 0700
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:

Tracking Number:

Delivered by: [ ] In-Person [ ] Courier [ ] FedEx [ ] UPS [ ] Other

Page: 2 of 2

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace® Terms and Conditions found at https://www.pacelabs.com/resource-library/resource/pace-terms-and-conditions/

Client: Rocksmith Brewing Profile/EZ # only print what you log.

Site: Notes Append to 60464699

COC Line Item	Matrix	VG9H	DG9H	DG9Q	VG9U	DG9U	DG9M	DG9B	BG1U	AG1H	AG1U	AG2U	AG3S	AG4U	AG5U	JGFU	WGKU	WGDU	BP1U	BP2U	BP3U	BP1N	BP3N	BP3F	BP3S	BP3B	BP3Z	WPDU	ZPLC	Other		
1																																
2																																
3																																
4																																
5																																
6																																
7																																
8																																
9																																
10	WT																		1			2	1									
11	WT																		1			2	1									
12																																

Container **Codes**

Glass			
DG9B	40mL bisulfate clear vial	WGKU	8oz clear soil jar
DG9H	40mL HCl amber voa vial	WGFU	4oz clear soil jar
DG9M	40mL MeOH clear vial	WG2U	2oz clear soil jar
DG9Q	40mL TSP amber vial	JGFU	4oz unpreserved amber wide
DG9S	40mL H2SO4 amber vial	AG0U	100mL unores amber glass
DG9T	40mL Na Thio amber vial	AG1H	1L HCl amber glass
DG9U	40mL amber unpreserved	AG1S	1L H2SO4 amber glass
VG9H	40mL HCl clear vial	AG1T	1L Na Thiosulfate clear/amber glass
VG9T	40mL Na Thio. clear vial	AG1U	1liter unpres amber glass
VG9U	40mL unpreserved clear vial	AG2N	500mL HNO3 amber glass
BG1S	1liter H2SO4 clear glass	AG2S	500mL H2SO4 amber glass
BG1U	1liter unpres glass	AG3S	250mL H2SO4 amber glass
BG3H	250mL HCL Clear glass	AG2U	500mL unpres amber glass
BG3U	250mL Unpres Clear glass	AG3U	250mL unpres amber glass
WGDU	16oz clear soil jar	AG4U	125mL unpres amber glass
		AG5U	100mL unpres amber glass

Plastic	
BP1B	1L NAOH plastic
BP1N	1L HNO3 plastic
BP1S	1L H2SO4 plastic
BP1U	1L unpreserved plastic
BP1Z	1L NaOH, Zn Acetate
BP2B	500mL NAOH plastic
BP2N	500mL HNO3 plastic
BP2S	500mL H2SO4 plastic
BP2U	500mL unpreserved plastic
BP2Z	500mL NaOH, Zn Acetate
BP3B	250mL NaOH plastic
BP3F	250mL HNO3 plastic - field filtered
BP3N	250mL HNO3 plastic
BP3U	250mL unpreserved plastic
BP3S	250mL H2SO4 plastic
BP3Z	250mL NaOH, Zn Acetate
BP4U	125mL unpreserved plastic
BP4N	125mL HNO3 plastic
BP4S	125mL H2SO4 plastic
WPDU	16oz unpresserved plstic

Misc.	
I	Wipe/Swab
SP5T	120mL Coliform Na Thiosulfate
ZPLC	Ziploc Bag
AF	Air Filter
C	Air Cassettes
R	Terracore Kit
U	Summa Can

Matrix	
WT	Water
SL	Solid
NAL	Non-aqueous Liquid
OL	OIL
WP	Wipe
DW	Drinking Water

Work Order Number: 60464699

WO# : 60464699

60464699

Pace ANALYTICAL SERVICES	DC#_Title: ENV-FRM-LENE-0009_Sample Co		
	Revision: 2	Effective Date: 01/12/2022	Issued By: Lenexa

Client Name: Rocksmith Eng

Courier: FedEx ☐ UPS ☐ VIA ☐ Clay ☐ PEX ☐ ECI ☐ Pace ☐ Xroads ☑ Client ☐ Other ☐

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☑

Custody Seal on Cooler/Box Present: Yes ☑ No ☐ Seals intact: Yes ☑ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☑ Other ☐

Thermometer Used: T298 **Type of Ice:** (Wet) Blue None

Cooler Temperature (°C): **As-read** 5/0.4/2.4 **Corr. Factor** -0.1 **Corrected** 1.4/0.3/2.3/1.7

Date and initials of person examining contents: 11/21/24

Temperature should be above freezing to 6°C 1.8/2.9/10.6/18.2 2.8/10.5/18.1

Chain of Custody present:	☑Yes ☐No ☐N/A	
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	
Samples arrived within holding time:	☑Yes ☐No ☐N/A	
Short Hold Time analyses (<72hr):	☐Yes ☑No ☐N/A	
Rush Turn Around Time requested:	☐Yes ☑No ☐N/A	
Sufficient volume:	☑Yes ☐No ☐N/A	
Correct containers used:	☑Yes ☐No ☐N/A	
Pace containers used:	☑Yes ☐No ☐N/A	
Containers intact:	☑Yes ☐No ☐N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	☐Yes ☐No ☑N/A	
Filtered volume received for dissolved tests?	☐Yes ☐No ☑N/A	
Sample labels match COC: Date / time / ID / analyses	☑Yes ☐No ☐N/A	
Samples contain multiple phases? Matrix: WT	☐Yes ☑No ☐N/A	
Containers requiring pH preservation in compliance? (HNO_3, H_2SO_4, HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) **LOT#:** 88727	☑Yes ☐No ☐N/A	List sample IDs, volumes, lot #'s of preservative and the date/time added.
Cyanide water sample checks: Lead acetate strip turns dark? (Record only)	☐Yes ☐No	
Potassium iodide test strip turns blue/purple? (Preserve)	☐Yes ☐No	
Trip Blank present:	☐Yes ☐No ☑N/A	
Headspace in VOA vials (>6mm):	☐Yes ☐No ☑N/A	
Samples from USDA Regulated Area: State:	☐Yes ☐No ☑N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	☐Yes ☐No ☑N/A	

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____

Qualtrax Document ID: 30468

Pace® Location Requested (City/State):
Pace Analytical Kansas
9608 Loiret Blvd. Lenexa, KS 66219

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here

6a164699

Scan QR Code for instructions

Company Name:	Rocksmith Geoengineering, LLC	Contact/Report To:	Mark Haddock
Street Address:	2320 Creve Coeur Mill Road, Maryland Heights, MO 63043	Phone #:	314-974-6578
		E-Mail:	mark.haddock@rocksmithgeo.com
		Cc E-Mail:	
Customer Project #:	COC# 8		
Project Name:	AMEREN SCPA-CA	Invoice To:	Mark Haddock
		Invoice E-Mail:	mark.haddock@rocksmithgeo.com
Site Collection Info/Facility ID (as applicable):		Purchase Order # (if applicable):	
		Quote #:	

Time Zone Collected: [ ] AK [ ] PT [ ] MT [ ] CT [ ] ET

County / State origin of sample(s): Missouri

Data Deliverables:
[ ] Level II [ ] Level III [ ] Level IV
[ ] EQUIS
[ ] Other

Regulatory Program (DW, RCRA, etc.) as applicable: Reportable [ ] Yes [ ] No

Rush (Pre-approval required):
[ ] Same Day [ ] 1 Day [ ] 2 Day [ ] 3 Day [ ] Other _____

DW PWSID # or WW Permit # as applicable:

Date Results Requested:

Field Filtered (if applicable): [ ] Yes [ ] No

Analysis:

Specify Container Size **: 1 1 3 3 1

Identify Container Preservative Type***: 1 1 2 2 2

**Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL vial, (7) EnCore, (8) TerraCore, (9) 90mL, (10) Other

*** Preservative Types: (1) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Sod. Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other

Analysis Requested

Lab Use Only
Proj. Mgr: Jamie Church
AcctNum / Client ID:
Table #:
Profile / Template: 15856
Prelog / Bottle Ord. ID: EZ 3163156

Preservation non conformance identified for sample:

* Matrix Codes (Insert in Matrix Box below): Drinking Water (DW), Ground Water (GW), Waste Water (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Surface Water (SW), Sediment (SED), Sludge (SL), Caulk (CK), Leachate (LL), Biosolid (BS), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Composite Start Date	Composite Start Time	Collected or Composite End Date	Collected or Composite End Time	# Cont.	Res. Chlorine Results	Res. Chlorine Units	Chloride/Fluoride/Sulfate	TDS / Alkalinity	App III and Cat/An Metals (200.7)*	Appendix IV Metals (200.7/200.8)**	Radium 226 & Radium 228	Sample Comment
S-BMW-1S	WT	G			11-20-24	0900	4			✓	✓	✓	✓	✓	
S-BMW-3S	WT	G			11-20-24	1143	4			✓	✓	✓	✓	✓	
S-LMW-1S	WT														
S-LMW-2S	WT	G			11-19-24	1227	4			✓	✓	✓	✓	✓	
S-LMW-4S	WT	G			"	1113	4			✓	✓	✓	✓	✓	
S-LMW-5S	WT														
S-LMW-6S	WT														
S-AM-1S	WT	G			11-19-24	1454	4			✓	✓	✓	✓	✓	
S-AM-1D	WT	G			"	1455	4			✓	✓	✓	✓	✓	
S-PZ-1S	WT														

Additional Instructions from Pace®:
App III and Cat/An Metals - EPA 200.7: Fe, Mg, Mn, K, Na, Ca, B
**App IV Metals - EPA 200.7 -Ba, Li, Mo & 200.8 Metals - As,Cd,Cr,Se

Collected By: (Printed Name) John Rasmussen
Signature:

Customer Remarks / Special Conditions / Possible Hazards:

# Coolers:	Thermometer ID:	Correction Factor (°C):	Obs. Temp. (°C)	Corrected Temp. (°C)	On Ice
1	T498	-0.1	1.4	0.3	Y

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Rocksmith	11/20/24 1530		11/21/24 0745
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:

Tracking Number: 10.5/18.7

Delivered by: [ ] In-Person [ ] Courier [ ] FedEx [ ] UPS [ ] Other

Page: 1 of 3

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace® Terms and Conditions found at https://www.pacelabs.com/resource-library/resource/pace-terms-and-conditions/

Pace® Location Requested (City/State):
Pace Analytical Kansas
9608 Loiret Blvd., Lenexa, KS 66219

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT. Complete all relevant fields.

LAB USE ONLY- Affix Workorder/Login Label Here

lc4164699

Scan QR Code for instructions

Company Name:	Rocksmith Geoengineering, LLC
Street Address:	2320 Creve Coeur Mill Road, Maryland Heights, MO 63043
Customer Project #:	COC# 8
Project Name:	AMEREN SCPA-CA
Site Collection Info/Facility ID (as applicable):	
Time Zone Collected:	[ ] AK [ ] PT [ ] MT [ ] CT [ ] ET
Data Deliverables:	[ ] Level II [ ] Level III [ ] Level IV [ ] EQUIS [ ] Other
Contact/Report To:	Mark Haddock
Phone #:	314 974-6578
E-Mail:	mark.haddock@rocksmithgeo.com
Cc E-Mail:	
Invoice To:	Mark Haddock
Invoice E-Mail:	mark.haddock@rocksmithgeo.com
Purchase Order # (if applicable):	
Quote #:	
County / State origin of sample(s):	Missouri
Regulatory Program (DW, RCRA, etc.) as applicable:	Reportable [ ] Yes [ ] No
Rush (Pre-approval required):	[ ] Same Day [ ] 1 Day [ ] 2 Day [ ] 3 Day [ ] Other _____
DW PWSID # or WW Permit # as applicable:	
Date Results Requested:	
Field Filtered (if applicable):	[ ] Yes [ ] No
Analysis:	

Specify Container Size **: 1 1 3 3 1

Identify Container Preservative Type***: 1 1 2 2 2

**Container Size: (1) 1L, (2) 500ml, (3) 250ml, (4) 125mL, (5) 100mL, (6) 40ml vial, (7) EnCore (8) TerraCore, (9) 90mL, (10) Other

*** Preservative Types: (1) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Sod. Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other

Analysis Requested

Lab Use Only: Proj. Mgr: Jamie Church; AcctNum / Client ID:; Table #:; Profile / Template: 15856; Prelog / Bottle Ord. ID: EZ 3163156

* Matrix Codes (insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Waste Water (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Surface Water (SW), Sediment (SED), Sludge (SL), Caulk (CK), Leachate (LL), Biosolid (BS), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Composite Start Date	Composite Start Time	Collected or Composite End Date	Collected or Composite End Time	# Cont.	Res. Chlorine Results	Res. Chlorine Units	Chloride/Fluoride/Sulfate	TDS / Alkalinity	App III and Cat/An Metals (200.7)*	Appendix IV Metals (200.7/200.8)**	Radium 226 & Radium 228	Sample Comment	Preservation non conformance identified for sample
S-PZ-9D	WT															
SP-TP-2D	WT	G			11/20/24	0953	4			✓	✓	✓	✓	✓		
SP-TP-3D	WT	G			11/20/24	1124	4			✓	✓	✓	✓	✓		
SP-TP-4D	WT	G			11/20/24	1232	4			✓	✓	✓	✓	✓		
SP-TP-5D	WT															
SP-TP-6S	WT															
SP-TP-6D	WT															
SP-TP-8D	WT	G			11/18/24	1617	4			✓	✓	✓	✓	✓		
S-UG-3	WT															
S-CA-DUP-1	WT															

Additional Instructions from Pace®:
App III and Cat/An Metals - EPA 200.7: Fe, Mg, Mn, K, Na, Ca, B
**App IV Metals - EPA 200.7 -Ba, Li, Mo & 200.8 Metals - As,Cd,Cr,Se

Collected By: (Printed Name) John Rasmossen
Signature:

Customer Remarks / Special Conditions / Possible Hazards:

Coolers: 7 | Thermometer ID: TL98 | Correction Factor (°C): -0.1 | Obs. Temp (°C) | Corrected Temp (°C) | On Ice: 1.4/0.3/2.7/1.7/2.8

Relinquished by/Company: (Signature) Rocksmith	Date/Time: 11/20/24 1530	Received by/Company: (Signature)	Date/Time: 11/21/24 0745
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time

Tracking Number: 10.5/18.7

Delivered by: [ ] In-Person [ ] Courier [ ] FedEx [ ] UPS [ ] Other

Page: 2 of 3

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ENV-FRM-CORQ-0019_v02_110123 ©

Pace® Location Requested (City/State):
Pace Analytical Kansas
9608 Loiret Blvd., Lenexa, KS 66219

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here

60464699

Scan QR Code for instructions

Company Name:	Rocksmith Geoengineering, LLC
Street Address	2320 Creve Coeur Mill Road, Maryland Heights, MO 63043
Customer Project #:	COC# 8
Project Name:	AMEREN SCPA-CA
Site Collection Info/Facility ID (as applicable):	
Time Zone Collected:	[ ] AK [ ] PT [ ] MT [ ] CT [ ] ET
Data Deliverables:	[ ] Level II [ ] Level III [ ] Level IV [ ] EQUIS [ ] Other
Contact/Report To:	Mark Haddock
Phone #:	314-974-6578
E-Mail:	mark.haddock@rocksmithgeo.com
Cc E-Mail:	
Invoice To:	Mark Haddock
Invoice E-Mail:	mark.haddock@rocksmithgeo.com
Purchase Order # (if applicable):	
Quote #:	
County / State origin of sample(s):	Missouri
Regulatory Program (DW, RCRA, etc.) as applicable:	Reportable [ ] Yes [ ] No
Rush (Pre-approval required):	[ ] Same Day [ ] 1 Day [ ] 2 Day [ ] 3 Day [ ] Other _____
DW PWSID # or WW Permit # as applicable:	
Date Results Requested:	
Field Filtered (if applicable):	[ ] Yes [ ] No
Analysis:	

Specify Container Size **: 1 1 3 3 1

Identify Container Preservative Type***: 1 1 2 2 2

**Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40ml vial, (7) EnCore, (8) TerraCore, (9) 90mL, (10) Other

*** Preservative Types: (1) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Sod. Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other

Lab Use Only:
Proj. Mgr: Jamie Church
AcctNum / Client ID:
Table #:
Profile / Template: 15856
Prelog / Bottle Ord. ID: EZ 3163156

Preservation non-conformance identified for Sample

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Waste Water (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Biossay (B), Vapor (V), Surface Water (SW), Sediment (SED), Sludge (SL), Caulk (CK), Leachate (LL), Biosolid (BS), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Composite Start Date	Composite Start Time	Collected or Composite End Date	Collected or Composite End Time	# Cont.	Res. Chlorine Results	Res. Chlorine Units	Chloride/Fluoride/Sulfate	TDS / Alkalinity	App III and Cat/An Metals (200.7)*	Appendix IV Metals (200.7/200.8)**	Radium 226 & Radium 228	Sample Comment
S-CA-DUP-2	WT	G			11-19-24	—	4			✓	✓	✓	✓	✓	
S-CA-FB-1	WT	G			11/18/24	1636	4			✓	✓	✓	✓	✓	
S-CA-FB-2	WT	G			11/20/24	1156	4			✓	✓	✓	✓	✓	
S-CA-MS-1	WT	G			11/20/24	1232	4			✓	✓	✓	✓	✓	
S-CA-MSD-1	WT	G			"	"	4			✓	✓	✓	✓	✓	Collected @ S-TP-4D

Additional Instructions from Pace®:
App III and Cat/An Metals - EPA 200.7: Fe, Mg, Mn, K, Na, Ca, B
**App IV Metals - EPA 200.7 -Ba, Li, Mo & 200.8 Metals - As,Cd,Cr,Se

Collected By: (Printed Name) John Rasmussen
Signature:

Customer Remarks / Special Conditions / Possible Hazards:

# Coolers:	Thermometer ID:	Correction Factor (°C):	Obs. Temp. (°C)	Corrected Temp. (°C)	On Ice:
7	T298	-0.1	1.4/0.2/2.2/1.7/2.8		

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Rocksmith	11/20/24 1530		11/21/24 0745
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:

Tracking Number: 10-5/18.7

Delivered by: [ ] In-Person [ ] Courier [ ] FedEx [ ] UPS [ ] Other

Page: 3 of 3

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1/2

Client: Rocksmith Geoeng

Profile/EZ # only print what you log.

Site:

Notes Attend to 60464699

COC Line Item	Matrix	VG9H	DG9H	DG9Q	VG9U	DG9U	DG9M	DG9B	BG1U	AG1H	AG1U	AG2U	AG3S	AG4U	AG5U	JGFU	WGKU	WGDU	BP1U	BP2U	BP3U	BP1N	BP3N	BP3F	BP3S	BP3B	BP3Z	WPDU	ZPLC	Other		
1	WT																		1			2	1									
2	WT																		1			2	1									
3																																
4	WT																		1			2	1									
5	WT																		1			2	1									
6																																
7																																
8	WT																		1			2	1									
9	WT																		1			2	1									
10																																
11																																
12																																

Container Codes

Glass			
DG9B	40mL bisulfate clear vial	WGKU	8oz clear soil jar
DG9H	40mL HCl amber voa vial	WGFU	4oz clear soil jar
DG9M	40mL MeOH clear vial	WG2U	2oz clear soil jar
DG9Q	40mL TSP amber vial	JGFU	4oz unpreserved amber wide
DG9S	40mL H2SO4 amber vial	AG0U	100mL unores amber glass
DG9T	40mL Na Thio amber vial	AG1H	1L HCl amber glass
DG9U	40mL amber unpreserved	AG1S	1L H2SO4 amber glass
VG9H	40mL HCl clear vial	AG1T	1L Na Thiosulfate clear/amber glass
VG9T	40mL Na Thio. clear vial	AG1U	1liter unpres amber glass
VG9U	40mL unpreserved clear vial	AG2N	500mL HNO3 amber glass
BG1S	1liter H2SO4 clear glass	AG2S	500mL H2SO4 amber glass
BG1U	1liter unpres glass	AG3S	250mL H2SO4 amber glass
BG3H	250mL HCL Clear glass	AG2U	500mL unpres amber glass
BG3U	250mL Unpres Clear glass	AG3U	250mL unpres amber glass
WGDU	16oz clear soil jar	AG4U	125mL unpres amber glass
		AG5U	100mL unpres amber glass

Plastic	
BP1B	1L NAOH plastic
BP1N	1L HNO3 plastic
BP1S	1L H2SO4 plastic
BP1U	1L unpreserved plastic
BP1Z	1L NaOH, Zn Acetate
BP2B	500mL NAOH plastic
BP2N	500mL HNO3 plastic
BP2S	500mL H2SO4 plastic
BP2U	500mL unpreserved plastic
BP2Z	500mL NaOH, Zn Acetate
BP3B	250mL NaOH plastic
BP3F	250mL HNO3 plastic - field filtered
BP3N	250mL HNO3 plastic
BP3U	250mL unpreserved plastic
BP3S	250mL H2SO4 plastic
BP3Z	250mL NaOH, Zn Acetate
BP4U	125mL unpreserved plastic
BP4N	125mL HNO3 plastic
BP4S	125mL H2SO4 plastic
WPDU	16oz unpresserved plstic

Misc.	
I	Wipe/Swab
SP5T	120mL Coliform Na Thiosulfate
ZPLC	Ziploc Bag
AF	Air Filter
C	Air Cassettes
R	Terracore Kit
U	Summa Can

Matrix	
WT	Water
SL	Solid
NAL	Non-aqueous Liquid
OL	OIL
WP	Wipe
DW	Drinking Water

Work Order Number: 60464699

2/3

Client: Locksmith Heveng

Profile/EZ #:

Site:

Notes: Append to 60464699

COC Line Item	Matrix	VG9H	DG9H	DG9Q	VG9U	DG9U	DG9M	DG9B	BG1U	AG1H	AG1U	AG2U	AG3S	AG4U	AG5U	JGFU	WGKU	WGDU	BP1U	BP2U	BP3U	BP1N	BP3N	BP3F	BP3S	BP3B	BP3Z	WPDU	ZPLC	Other		
1																																
2	WT																		1			2	1									
3	WT																		1			2	1									
4	WT																		3			2	3									
5																																
6																																
7																																
8	WT																		1			2	1									
9																																
10																																
11																																
12																																

Container Codes

Glass			
DG9B	40mL bisulfate clear vial	WGKU	8oz clear soil jar
DG9H	40mL HCl amber voa vial	WGFU	4oz clear soil jar
DG9M	40mL MeOH clear vial	WG2U	2oz clear soil jar
DG9Q	40mL TSP amber vial	JGFU	4oz unpreserved amber wide
DG9S	40mL H2SO4 amber vial	AG0U	100mL unores amber glass
DG9T	40mL Na Thio amber vial	AG1H	1L HCl amber glass
DG9U	40mL amber unpreserved	AG1S	1L H2SO4 amber glass
VG9H	40mL HCl clear vial	AG1T	1L Na Thiosulfate clear/amber glass
VG9T	40mL Na Thio. clear vial	AG1U	1liter unpres amber glass
VG9U	40mL unpreserved clear vial	AG2N	500mL HNO3 amber glass
BG1S	1liter H2SO4 clear glass	AG2S	500mL H2SO4 amber glass
BG1U	1liter unpres glass	AG3S	250mL H2SO4 amber glass
BG3H	250mL HCL Clear glass	AG2U	500mL unpres amber glass
BG3U	250mL Unpres Clear glass	AG3U	250mL unpres amber glass
WGDU	16oz clear soil jar	AG4U	125mL unpres amber glass
		AG5U	100mL unpres amber glass

Plastic	
BP1B	1L NAOH plastic
BP1N	1L HNO3 plastic
BP1S	1L H2SO4 plastic
BP1U	1L unpreserved plastic
BP1Z	1L NaOH, Zn Acetate
BP2B	500mL NAOH plastic
BP2N	500mL HNO3 plastic
BP2S	500mL H2SO4 plastic
BP2U	500mL unpreserved plastic
BP2Z	500mL NaOH, Zn Acetate
BP3B	250mL NaOH plastic
BP3F	250mL HNO3 plastic - field filtered
BP3N	250mL HNO3 plastic
BP3U	250mL unpreserved plastic
BP3S	250mL H2SO4 plastic
BP3Z	250mL NaOH, Zn Acetate
BP4U	125mL unpreserved plastic
BP4N	125mL HNO3 plastic
BP4S	125mL H2SO4 plastic
WPDU	16oz unpresserved plstic

Misc.	
I	Wipe/Swab
SP5T	120mL Coliform Na Thiosulfate
ZPLC	Ziploc Bag
AF	Air Filter
C	Air Cassettes
R	Terracore Kit
U	Summa Can

Matrix	
WT	Water
SL	Solid
NAL	Non-aqueous Liquid
OL	OIL
WP	Wipe
DW	Drinking Water

Work Order Number: 60464699

Client: Rocksmith Geoeng

Profile/EZ #:

Site:

Notes: Appeared to 60464699

COC Line Item	Matrix	VG9H	DG9H	DG9Q	VG9U	DG9U	DG9M	DG9B	BG1U	AG1H	AG1U	AG2U	AG3S	AG4U	AG5U	JGFU	WGKU	WGDU	BP1U	BP2U	BP3U	BP1N	BP3N	BP3F	BP3S	BP3B	BP3Z	WPDU	ZPLC	Other		
1	WT																		1			2	1									
2																			1			2	1									
3																			1			2	1									
4																						2										
5																						2		(ONly 109 RAD)								
6																																
7																																
8																																
9																																
10																																
11																																
12																																

Container Codes

Glass				Plastic		Misc.	
DG9B	40mL bisulfate clear vial	WGKU	8oz clear soil jar	BP1B	1L NAOH plastic	I	Wipe/Swab
DG9H	40mL HCl amber voa vial	WGFU	4oz clear soil jar	BP1N	1L HNO3 plastic	SP5T	120mL Coliform Na Thiosulfate
DG9M	40mL MeOH clear vial	WG2U	2oz clear soil jar	BP1S	1L H2SO4 plastic	ZPLC	Ziploc Bag
DG9Q	40mL TSP amber vial	JGFU	4oz unpreserved amber wide	BP1U	1L unpreserved plastic	AF	Air Filter
DG9S	40mL H2SO4 amber vial	AG0U	100mL unores amber glass	BP1Z	1L NaOH, Zn Acetate	C	Air Cassettes
DG9T	40mL Na Thio amber vial	AG1H	1L HCl amber glass	BP2B	500mL NAOH plastic	R	Terracore Kit
DG9U	40mL amber unpreserved	AG1S	1L H2SO4 amber glass	BP2N	500mL HNO3 plastic	U	Summa Can
VG9H	40mL HCl clear vial	AG1T	1L Na Thiosulfate clear/amber glass	BP2S	500mL H2SO4 plastic		
VG9T	40mL Na Thio. clear vial	AG1U	1liter unpres amber glass	BP2U	500mL unpreserved plastic		
VG9U	40mL unpreserved clear vial	AG2N	500mL HNO3 amber glass	BP2Z	500mL NaOH, Zn Acetate	Matrix	
BG1S	1liter H2SO4 clear glass	AG2S	500mL H2SO4 amber glass	BP3B	250mL NaOH plastic		
BG1U	1liter unpres glass	AG3S	250mL H2SO4 amber glass	BP3F	250mL HNO3 plastic - field filtered	WT	Water
BG3H	250mL HCL Clear glass	AG2U	500mL unpres amber glass	BP3N	250mL HNO3 plastic	SL	Solid
BG3U	250mL Unpres Clear glass	AG3U	250mL unpres amber glass	BP3U	250mL unpreserved plastic	NAL	Non-aqueous Liquid
WGDU	16oz clear soil ar	AG4U	125mL unpres amber glass	BP3S	250mL H2SO4 plastic	OL	OIL
		AG5U	100mL unpres amber glass	BP3Z	250mL NaOH, Zn Acetate	WP	Wipe
				BP4U	125mL unpreserved plastic	DW	Drinking Water
				BP4N	125mL HNO3 plastic		
				BP4S	125mL H2SO4 plastic		
				WPDU	16oz unpresserved plstic		

Work Order Number: 60464699

Internal Transfer Chain of Custody

☐ Rush Multiplier_____X
☐ Samples Pre-Logged into eCOC

State Of Origin: MO
Cert. Needed: ☒ Yes ☐ No
Owner Received Date: 11/15/2024 Results Requested By: 12/12/2024

Workorder: 60464699 **Workorder Name:** AMEREN SCPA-CA

Report To	Subcontract To
Jamie Church Pace Analytical Kansas 9608 Loiret Blvd. Lenexa, KS 66219 Phone 314-838-7223	Pace Analytical Pittsburgh 1638 Roseytown Road Suites 2,3, & 4 Greensburg, PA 15601 Phone (724)850-5600

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers HNO3						Requested Analysis Radium 226	Radium 228											LAB USE ONLY
1	SP-TP-5D	PS	11/14/2024 13:20	60464699001	Water	2						X	X											001
2	SP-TP-6S	PS	11/14/2024 14:27	60464699002	Water	2						X	X											002
3	S-UG-3	PS	11/14/2024 11:15	60464699003	Water	2						X	X											003
4	S-CA-DUP-1	PS	11/14/2024 08:00	60464699004	Water	2						X	X											004
5	S-LMW-1S	PS	11/14/2024 16:06	60464699005	Water	2						X	X											005
6	S-LMW-5S	PS	11/15/2024 13:40	60464699006	Water	2						X	X											006
7	S-LMW-6S	PS	11/15/2024 12:48	60464699007	Water	2						X	X											007
8	SP-TP-6D	PS	11/14/2024 15:10	60464699008	Water	2						X	X											008
9	S-PZ-1S	PS	11/18/2024 14:25	60464699009	Water	2						X	X											009
10	S-PZ-9D	PS	11/18/2024 12:05	60464699010	Water	2						X	X											010

Transfers	Released By	Date/Time	Received By	Date/Time
1	Carmen Tuyo	11/20 1802	Evan Laughlin	11/21/24 940
2				
3				

Comments
KS sample location: 60-R01-S4B

Cooler Temperature on Receipt ____ °C | **Custody Seal** Y or (N) | **Received on Ice** Y or (N) | **Samples Intact** (Y) or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.*

WO# : 30736349

30736349

DC#_Title: ENV-FRM-GBUR-0088 v07_Sample Condition Upon Receipt-Greensburg

Effective Date: 01/04/2024

WO# : 30736349

PM: MAR Due Date: 12/16/24

CLIENT: PACE_GO_LEKS

Client Name: Pace-KS

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other

Tracking Number: 4033 6453 0955

Initial / Date

Examined By: PS 11/21/24

Labeled By: PS 11/22/24

Temped By:

Custody Seal on Cooler/Box Present: ☐ Yes ☑ No **Seals Intact:** ☐ Yes ☐ No

Thermometer Used: — **Type of Ice:** Wet Blue (None)

Cooler Temperature: Observed Temp — °C Correction Factor: — °C Final Temp: — °C

Temp should be above freezing to 6°C

pH paper Lot# 100104 | D.P.D. Residual Chlorine Lot # —

Comments:	Yes	No	NA	
Chain of Custody Present	✓			1.
Chain of Custody Filled Out:	✓			2.
-Were client corrections present on COC		✓		
Chain of Custody Relinquished	✓			3.
Sampler Name & Signature on COC:		✓		4.
Sample Labels match COC:	✓			5.
-Includes date/time/ID				
Matrix:	WT			
Samples Arrived within Hold Time:	✓			6.
Short Hold Time Analysis (<72hr remaining):		✓		7.
Rush Turn Around Time Requested:		✓		8.
Sufficient Volume:	✓			9.
Correct Containers Used:	✓			10.
-Pace Containers Used	✓			
Containers Intact:	✓			11.
Orthophosphate field filtered:			✓	12.
Hex Cr Aqueous samples field filtered:			✓	13.
Organic Samples checked for dichlorination			✓	14:
Filtered volume received for dissolved tests:			✓	15:
All containers checked for preservation:	✓			16. added 5.0mL HNO3 to sample 02 bottle 1 of 2.
exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, non-aqueous matrix				
All containers meet method preservation requirements:		✓		Initial when completed: PS Date/Time of Preservation: 11/21/24 16:40 Lot# of added Preservative: 30209709
8260C/D: Headspace in VOA Vials (> 6mm)			✓	17.
624.1: Headspace in VOA Vials (0mm)			✓	18.
Radon: Headspace in RAD Vials (0mm)			✓	19.
Trip Blank Present:			✓	Trip blank custody seal present? YES or NO
Rad Samples Screened <.05 mrem/hr.	✓			Initial when completed: PS Date: 11/21/24 Survey Meter SN: 25014380

Comments:

Note: For NC compliance samples with discrepancies, a copy of this form must be sent to the DEHNR Certification office.
PM Review is documented electronically in LIMS through the SRF Review schedule in the Workorder Edit Screen.

Qualtrax ID: 55680

Memorandum

January 22, 2025

To:	Project File Rocksmith Geoengineering, LLC	**Project Number:**	23009-24
CC:	Mark Haddock, Jeffrey Ingram		
From:	Grant Morey	**Email:**	grant.morey@rocksmithgeo.com
RE:	**Data Validation Summary, Sioux Energy Center – SCPA-CA – Data Package 60464699**		

The following is a summary of instances where quality control criteria in the functional guidelines were not met and data qualification was required:

- When a compound was detected in a blank (i.e. method, field), and the blank comparison criterion was not met, associated sample results were qualified as estimates (J) or non-detects (U).
- When a compound was detected in a sample result between the Method Detection Limit (MDL) and Practical Quantification Limit (PQL), the results were recorded at the detection value and qualified as estimates (J).
- When a duplicate criterion was not met, the associated sample result was qualified as an estimate (J for detects, UJ for non-detects).
- When a matrix spike/matrix spike duplicate (MS/MSD) criterion was not met, the associated sample result was qualified as an estimate (J, J+ for estimates based high, and J- for estimates based low).
- When a compound was analyzed outside of hold time controls, the sample result was qualified as an estimate (J for detects, UJ for non-detects).
- When an initial laboratory calibration was outside of method control limits, the sample result was qualified as an estimate (J for detects, UJ for non-detects).

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Company Name: Rocksmith Geoengineering
Project Manager: J. Ingram
Project Name: Ameren SCPA-CA
Project Number: 23009-24
Reviewer: G. Morey
Validation Date: 01/22/2025

Laboratory: Pace Analytical
SDG #: 60464699
Analytical Method (type and no.): EPA 200.7/200.8 (Total Metals); SM 2320B (Alkalinity); SM 2540C (TDS); EPA 300.0 (Anions);
Matrix: ☐ Air ☐ Soil/Sed. ■ Water ☐ Waste ☐ EPA 903.1/904.0 (Radium 226+228)
Sample Names S-TP-5D, S-TP-6S, S-UG-3, S-CA-DUP-1, S-LMW-1S, S-LMW-5S, S-LMW-6S, S-TP-6D, S-PZ-1S, S-PZ-9D, S-BMW-1S, S-BMW-3S, S-LMW-2S, S-LMW-4S, S-AM-1S, S-AM-1D, S-TP-2D, S-TP-3D, S-TP-4D, S-TP-8D, S-CA-DUP-2, S-CA-FB-1, S-CA-FB-2, S-CA-MS-1, S-CA-MSD-1

NOTE: Please provide calculation in Comment areas or on the back (if on the back please indicate in comment areas).

Field Information	YES	NO	NA	COMMENTS
a) Sampling dates noted?	x			11/14/24 - 11/20/24
b) Sampling team indicated?	x			GTM/JTA/JDQ
c) Sample location noted?	x			
d) Sample depth indicated (Soils)?			x	
e) Sample type indicated (grab/composite)?	x			Grab
f) Field QC noted?	x			See Notes
g) Field parameters collected (note types)?	x			pH, Spec Cond, Turb, Temp, DO, ORP
h) Field Calibration within control limits?	x			
i) Notations of unacceptable field conditions/performances from field logs or field notes?		x		
j) Does the laboratory narrative indicate deficiencies?			x	No lab narrative.

Note Deficiencies:

Chain-of-Custody (COC)	YES	NO	NA	COMMENTS
a) Was the COC properly completed?	x			
b) Was the COC signed by both field and laboratory personnel?	x			
c) Were samples received in good condition?	x			

General (reference QAPP or Method)	YES	NO	NA	COMMENTS
a) Were hold times met for sample pretreatment?		x		See Notes
b) Were hold times met for sample analysis?		x		See Notes
c) Were the correct preservatives used?	x			
d) Was the correct method used?	x			
e) Were appropriate reporting limits achieved?	x			
f) Were any sample dilutions noted?	x			See Notes
g) Were any matrix problems noted?		x		

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Blanks	YES	NO	NA	COMMENTS
a) Were analytes detected in the method blank(s)?	x			See Notes
b) Were analytes detected in the field blank(s)?	x			See Notes
c) Were analytes detected in the equipment blank(s)?			x	S-CA-FB-1 @ S-TP-8D
d) Were analytes detected in the trip blank(s)?			x	S-CA-FB-2 @ S-TP-3D

Laboratory Control Sample (LCS)	YES	NO	NA	COMMENTS
a) Was a LCS analyzed once per SDG?	x			
b) Were the proper analytes included in the LCS?	x			
c) Was the LCS accuracy criteria met?	x			

Duplicates	YES	NO	NA	COMMENTS
a) Were field duplicates collected (note original and duplicate sample names)?				S-CA-DUP-1 @ S-TP-6S
	x			S-CA-DUP-2 @ S-AM-1S
b) Were field dup. precision criteria met (note RPD)?		x		See Notes
c) Were lab duplicates analyzed (note original and duplicate samples)?				
	x			
d) Were lab dup. precision criteria met (note RPD)?	x			

Blind Standards	YES	NO	NA	COMMENTS
a) Was a blind standard used (indicate name,			x	
analytes included and concentrations)?				
b) Was the %D within control limits?			x	

Matrix Spike/Matrix Spike Duplicate (MS/MSD)	YES	NO	NA	COMMENTS
a) Was MS accuracy criteria met?		x		See Notes
Recovery could not be calculated since sample contained high concentration of analyte?			x	
b) Was MSD accuracy criteria met?		x		See Notes
Recovery could not be calculated since sample contained high concentration of analyte?			x	
c) Were MS/MSD precision criteria met?		x		See Notes

Comments/Notes:

General:

Radiochemistry samples did not meet preservation requirements for S-TP-6S, results qualified as estimates.

Chloride, fluoride, sulfate and TDS analyzed outside hold time for some samples. Iinitial calibration outside method control limits for fluoride for several samples, results qualified as estimates.

Alkalinity, chloride and/or sulfate were diluted in several samples; no qualification necessary.

QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

Comments/Notes:

Method Blanks:

3629486: iron (43.4J) and manganese (2.4J), associated with samples -001 through -004. -002 and -004 iron results > than RL < 10x blank, qualified as estimates. -003 iron result < RL, qualified as non-detect. Manganese results > 10x blank, no qualification necessary.

3630720: potassium (252J) and sodium (316J), associated with samples -009 and -010. Potassium > than RL and < 10x blank at -009, result qualified as estimate. All other results > RL and 10x blank, no qualification necessary.

Field Blanks:

S-CA-FB-1 @ S-TP-8D: chromium (0.40J), result is a non-detect; no qualification necessary.

S-CA-FB-2 @ S-TP-3D: chromium (0.33J) and total dissolved solids (13.0). Chromium result < RL and 10x blank, result qualified as non-detect at RL. TDS > than RL and 10x blank, no qualification necessary.

Duplicates:

S-CA-DUP-1 @ S-TP-6S: field duplicate RPD exceeds control limit (20%) for cadmium (23%). Radium-228 detected in duplicate and non-detect in parent sample. Results qualified as estimates.

S-CA-DUP-2 @ S-AM-1S: chromium non-detect in parent sample, detected in duplicate; results qualified as estimates.

Max RPD for lab duplicates: 10% alkalinity and TDS; 15% for chloride, fluoride, and sulfate.

MS/MSD:

3629490: MS recovery low for sodium. Associated with unrelated sample, no qualification necessary.

3630189: MS recovery low for calcium. Associated with unrelated sample, no qualification necessary.

3630722/3630723: MSD recovery high for calcium. Associated with unrelated sample, no qualification necessary.

3631010/3631011: MS recovery low for calcium and sodium, MSD recovery low for sodium. Associated with unrelated sample, no qualification necessary.

3631012: MS recovery high for calcium. Associated with unrelated sample, no qualification necessary.

3632818/3632819: MS recovery high for calcium. Associated with sample -019; MSD and RPD within criteria, no qualification necessary.

3641952/3641953: MS/MSD recovery high for fluoride. Associated with sample -002; RPD within criteria, result qualified as estimate. MS recovery high for sulfate, RPD out of control limit, MSD within control; result qualified as estimate. MS/MSD recovery low for chloride, RPD within control, result qualified as estimate.

3642617/3642618: MS/MSD recovery high for fluoride, RPD out of control. MSD recovery high for sulfate, MS recovery and RPD within control limits; associated with unrelated sample, no qualification necessary.

3642620: MS recovery low for chloride. Associated with unrelated sample, no qualification necessary.

3642733: MS recovery high for fluoride. Associated with unrelated sample, no qualification necessary.

3629488/3629489: MS/MSD recovery high for sodium, RPD within criteria. Associated with unrelated sample, no qualification necessary.

3642730/3642731: MS/MSD recovery high for fluoride, RPD within control. Associated with sample - 019, result is non-detect, no qualification necessary.

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason
S-TP-6S	Radium-226	0.947	UJ	pH preservation requirements not met
"	Radium-228	0.798	UJ	"
S-PZ-1S	Potassium	1760	J	Result > RL and < method 10x blank
S-TP-3D	Chromium	1.0	U	Detected in field blank, result < RL
S-TP-6S	Chloride	8.9	J-	MS/MSD recovery low, RPD OK
S-CA-DUP-1	Cadmium	0.066	J	Field duplicate RPD exceeds control limit
S-TP-6S	"	0.083	J	"
S-CA-DUP-1	Radium-228	0.781	J	Detected in field duplicate, ND in parent sample
S-TP-6S	"	0.798	UJ	"
S-TP-6S	Sulfate	35.2	J	MS recovery high, RPD exceeds control limits
S-CA-DUP-2	Chromium	0.37	J	Detected in DUP and not in parent sample
S-AM-1S	"	0.30	UJ	"
S-TP-6S	Fluoride	0.44	J+	MS/MSD high, RPD OK
S-TP-5D	Chloride	44.1	J	Analyzed outside hold time controls
"	Fluoride	0.34	J	Analyzed outside hold time controls, initial calibration outside controls
"	Sulfate	242	J	Analyzed outside hold time controls
S-TP-6S	Chloride	8.9	J	"
"	Sulfate	35.2	J	"
S-UG-3	Chloride	19.7	J	"
"	Fluoride	0.47	J	Analyzed outside hold time controls, initial calibration outside controls
"	Sulfate	79.1	J	Analyzed outside hold time controls
S-CA-DUP-1	Chloride	8.9	J	"
"	Fluoride	0.44	J	Analyzed outside hold time controls, initial calibration outside controls
"	Sulfate	35.4	J	Analyzed outside hold time controls
S-LMW-1S	Chloride	175	J	"
"	Fluoride	0.34	J	Analyzed outside hold time controls, initial calibration outside controls
"	Sulfate	108	J	Analyzed outside hold time controls
S-LMW-5S	Chloride	10.6	J	"
"	Fluoride	0.37	J	Analyzed outside hold time controls, initial calibration outside controls
"	Sulfate	915	J	Analyzed outside hold time controls
S-LMW-6S	Chloride	6.4	J	"
"	Fluoride	0.33	J	Analyzed outside hold time controls, initial calibration outside controls
"	Sulfate	547	J	Analyzed outside hold time controls
S-LMW-2S	TDS	892	J	"

QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason
S-LMW-4S	TDS	785	J	Analyzed outside hold time controls
S-AM-1S	"	324	J	"
S-AM-1D	"	387	J	"
S-TP-5D	Fluoride	0.34	J	Analyzed outside hold time controls, initial calibration outside controls
S-TP-6D	Fluoride	0.41	J	"
"	Chloride	15.0	J	Analyzed outside hold time controls
"	Sulfate	55.7	J	"
S-TP-6S	Iron	251	J	Detected in method blank, result < 10x blank
S-UG-3	"	50.0	U	Detected in method blank, result < RL
S-CA-DUP-1	"	271	J	Detected in method blank, result < 10x blank

Signature: Grant Morey Date: 01/22/2025

Appendix B

November 2023 Assessment Monitoring Statistical Evaluation

Memorandum
March 21, 2024

To:	Bill Kutosky – Ameren Missouri	**Project Number:**	23009
CC:	Ameren Missouri - Susan Knowles, Craig Giesmann, Charlie Henderson		
From:	Rocksmith Geoengineering - Mark Haddock, P.E., Jeff Ingram, R.G., Grant Morey	**Email:**	Jeff.Ingram@rocksmithgeo.com
RE:	**Assessment Monitoring Statistical Evaluation, SCPA Surface Impoundment Sioux Energy Center, St. Charles County, Missouri**		

1.0 INTRODUCTION

This Technical Memorandum provides the results of the Assessment Monitoring Statistical Evaluation for the November 2023 sampling event at the SCPA Surface Impoundment at the Sioux Energy Center located in St. Charles County, Missouri. Included in the memorandum is a summary of constituents that are present at a Statistically Significant Level (SSL), a list of site-specific Groundwater Protection Standards (**Table 1**), and the Sanitas Technologies™ (Sanitas) statistical software output for each of the Appendix IV parameters (**Appendix A and Appendix B**).

2.0 STATISTICAL EVALUATION

The Appendix IV constituents were evaluated for SSLs using the methods and procedures outlined in the Statistical Analysis Plan (SAP). An outlier analysis was performed on all results within the SCPA monitoring network, inclusive of November 2023 data. No new outliers were identified and removed prior to the calculation of confidence limits.

An analysis of the outliers removed to-date was completed and three statistical outliers that were previously removed were added back into the dataset prior to the calculation of confidence limits.

- Barium
    - S-UMW-6D at 152 and 182 micrograms per liter (µg/L) on 5/14/2018 and 11/14/2018, respectively: removed during the statistical evaluations for the November 2021 and August 2019 sampling events because the results were statistically higher than other barium results at the same monitoring well. Based on subsequent sampling results, the high results were confirmed, and the results are no longer outliers.

- Fluoride
    - S-UMW-6D at 0.21 milligrams per liter (mg/L) on 4/6/2018: removed during the statistical evaluation for the November 2018 sampling event because the result was statistically lower than other fluoride results at the same monitoring well. Based on subsequent sampling results, the low result was confirmed, and is no longer an outlier.

Based on the results from the confidence interval and trend analysis, no new SSLs were noted. SSLs at the SCPA Surface Impoundment as of November 2023 continue to be:

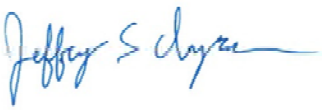
- Molybdenum at S-UMW-2D, S-UMW-3D, S-UMW-4D, and S-UMW-5D

3.0 CLOSING

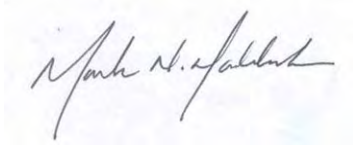
Rocksmith Appreciates this opportunity to provide hydrogeological and engineering support services to Ameren. If you have any questions or comments regarding the information provided, please contact the undersigned.

Sincerely,

Rocksmith Geoengineering, LLC



Jeff Ingram, R.G.
Senior Geologist, Partner



Mark Haddock, P.E., R.G.
Principal Engineer, Senior Partner

Attachments

Tables

Table 1 – SCPA Groundwater Protection Standards

Appendices

Appendix A – Sanitas Confidence Interval Statistical Output

Appendix B – Sanitas Trending Confidence Bands Statistical Output

Tables

Table 1 - SCPA Groundwater Protection Standards
SCPA Surface Impoundment
Sioux Energy Center, St. Charles County, MO

Parameter	Units	MCL or Health Based GWPS	Site GWPS	Value to Return to Detection Monitoring[6]
Antimony	µg/L	6	6	DQR
Arsenic	µg/L	10	10	0.6556
Barium	µg/L	2000	2000	699
Beryllium	µg/L	4	4	DQR
Cadmium	µg/L	5	5	DQR
Chromium	µg/L	100	100	DQR
Cobalt	µg/L	6	6	DQR
Fluoride	mg/L	4	4	0.44
Lead	µg/L	15	15	DQR
Lithium	µg/L	40	40	27.91
Mercury	µg/L	2	2	DQR
Molybdenum	µg/L	100	100	DQR
Radium 226 + 228	pCi/L	5	5	2.537
Selenium	µg/L	50	50	DQR
Thallium	µg/L	2	2	DQR

Notes:
1. µg/L - micrograms per liter.
2. mg/L - milligrams per liter.
3. pCi/L - picocuries per liter.
4. MCL - Maximum Contaminant Level. MCLs from United States Environmental Protection Agency (USEPA) 2012 Edition of the Drinking Water Standards and Health Advisories. Updated January 9, 2023 at http://water.epa.gov/drink/contaminants/index.cfm.
5. Health Based Groundwater Protection Standards (GWPS) were adoped for Appendix IV parameters without an MCL (i.e. cobalt, lithium, molybdenum, and lead). Information available at https://www.epa.gov/coalash/coal-ash-rule.
6. Values were calculated using statistical methods outlined for Detection Monitoring and are used for returning to Detection Monitoring based on available data to date.
7. DQR - Double Quantification Rule. If all baseline data are less than the Practical Quantitation Limit (PQL), then the DQR will be used. More information on the DQR is provided in the Statistical Analysis Plan.
8. Site GWPS is either the MCL/Health Based GWPS or based on background levels (calculated as described in the Statistical Analysis Plan for Assessment Monitoring), whichever is higher.
9. GWPS and background values calculated using results through May 2023 from monitoring wells BMW-1D and BMW-3D.

ROCKSMITH GEOENGINEERING

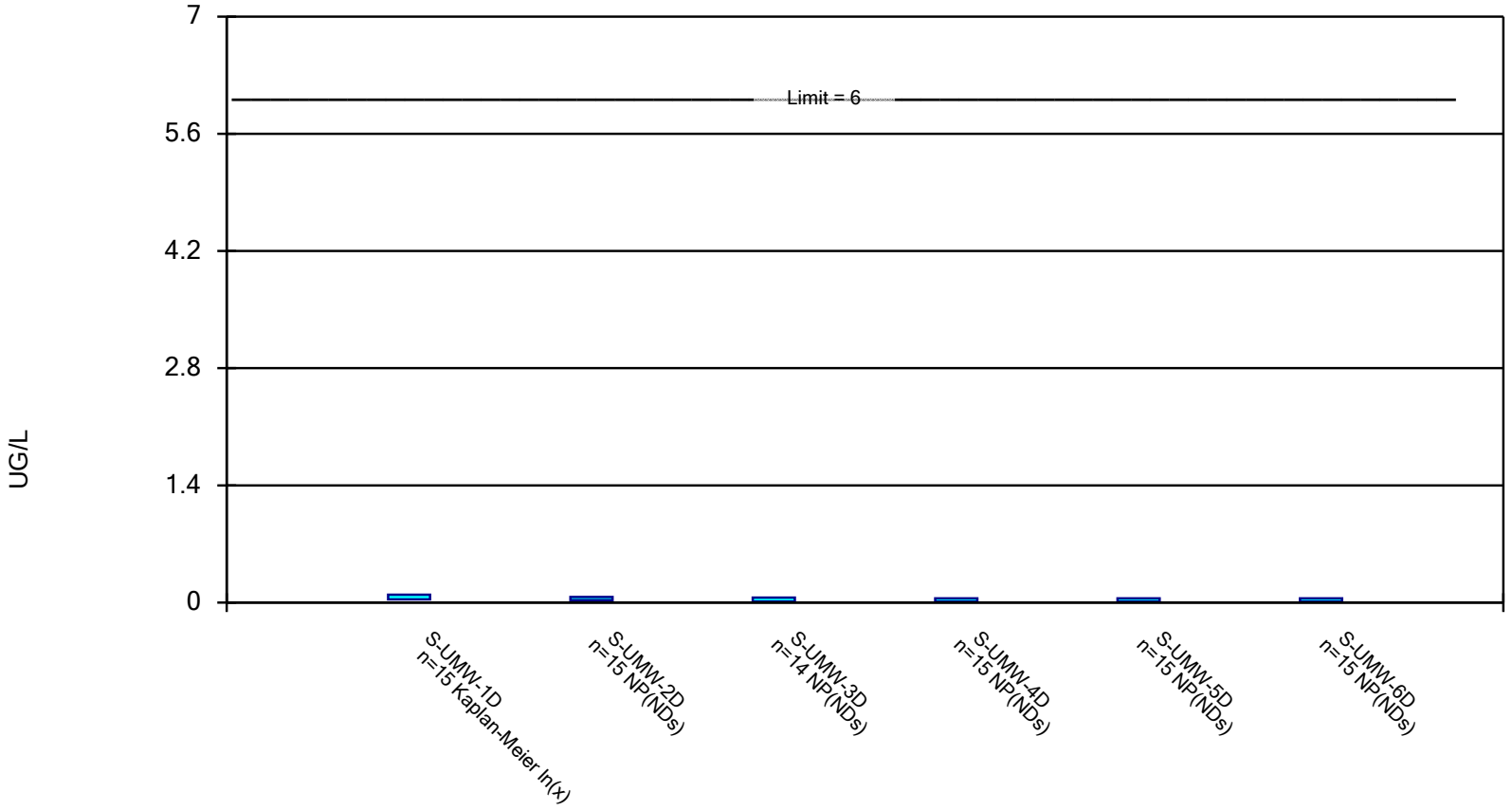
Prepared by: GTM
Checked by: JSI
Reviewed by: MNH

Appendix A
Sanitas Confidence Interval Statistical Output

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG

Parametric and Non-Parametric (NP) Confidence Interval

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



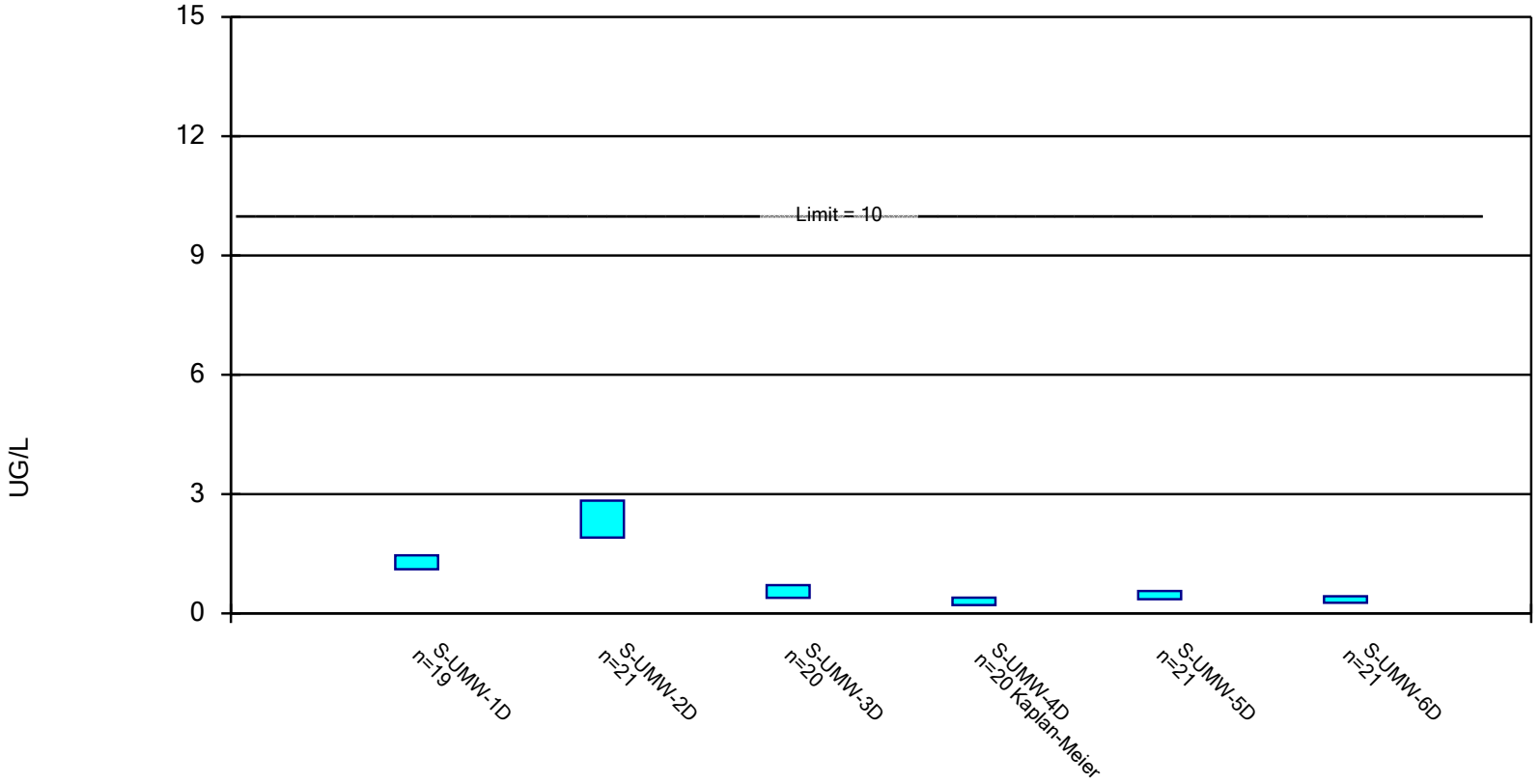
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Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG

Parametric Confidence Interval

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



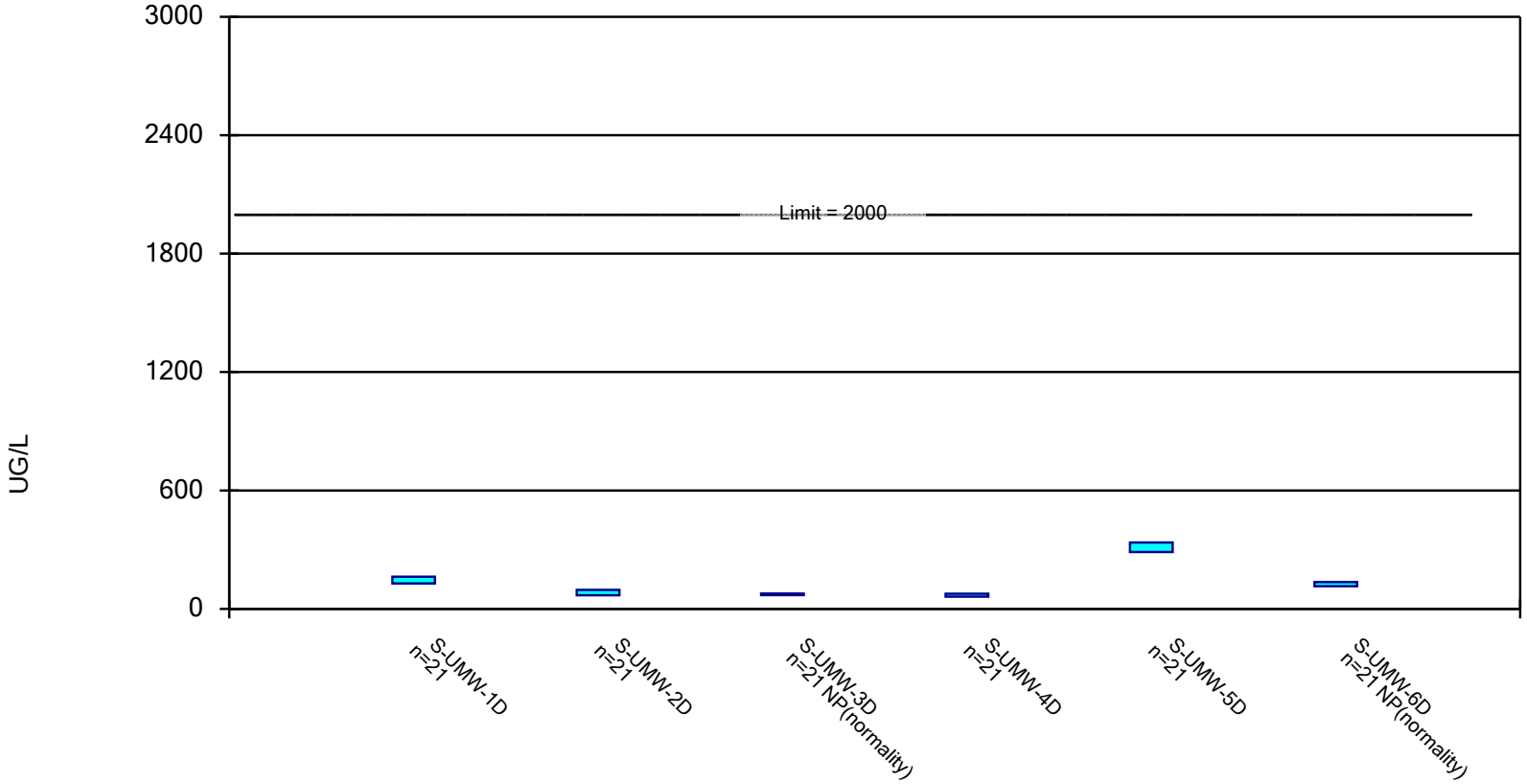
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Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG

Parametric and Non-Parametric (NP) Confidence Interval

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



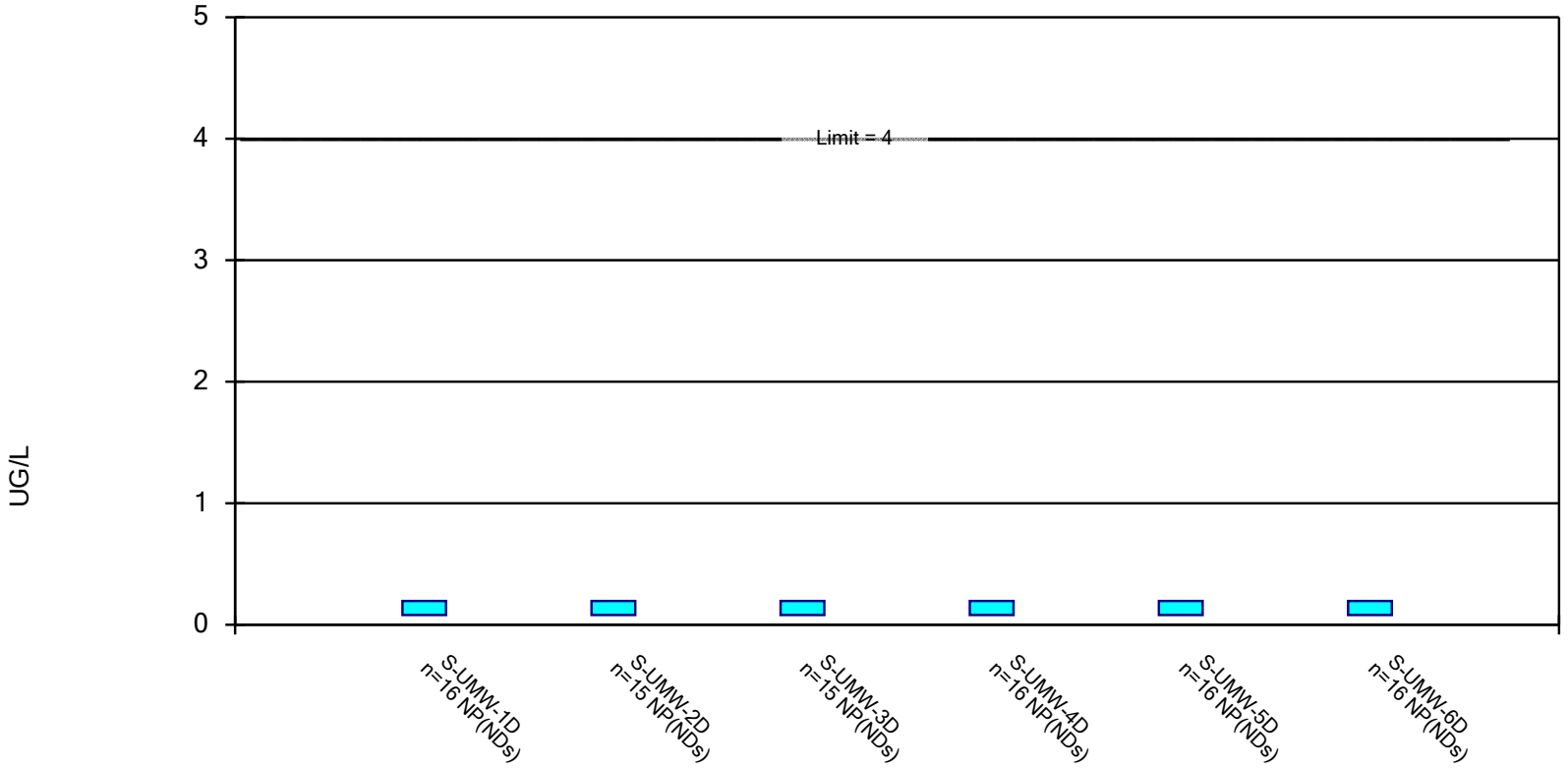
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Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



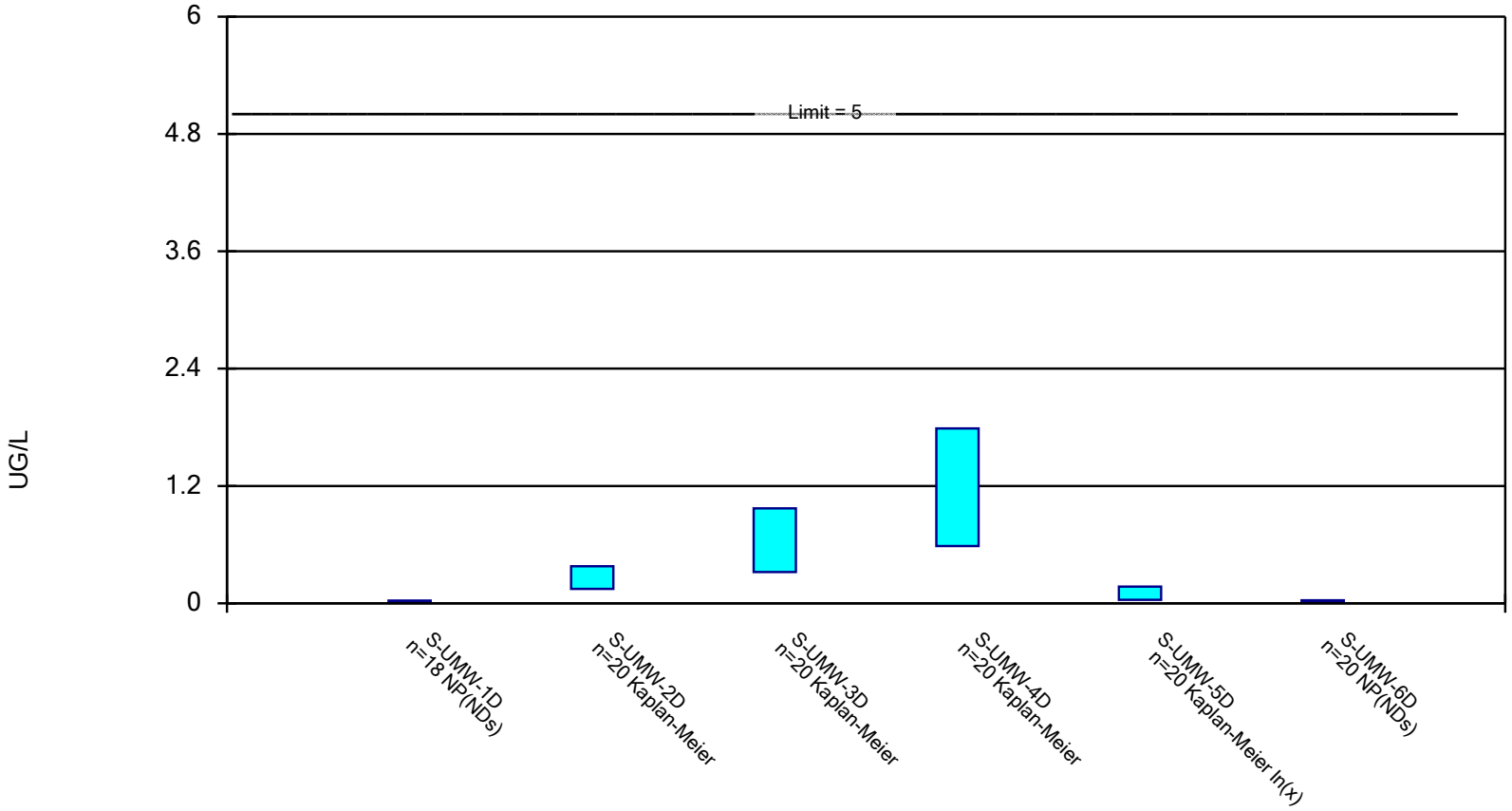
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Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG

Parametric and Non-Parametric (NP) Confidence Interval

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



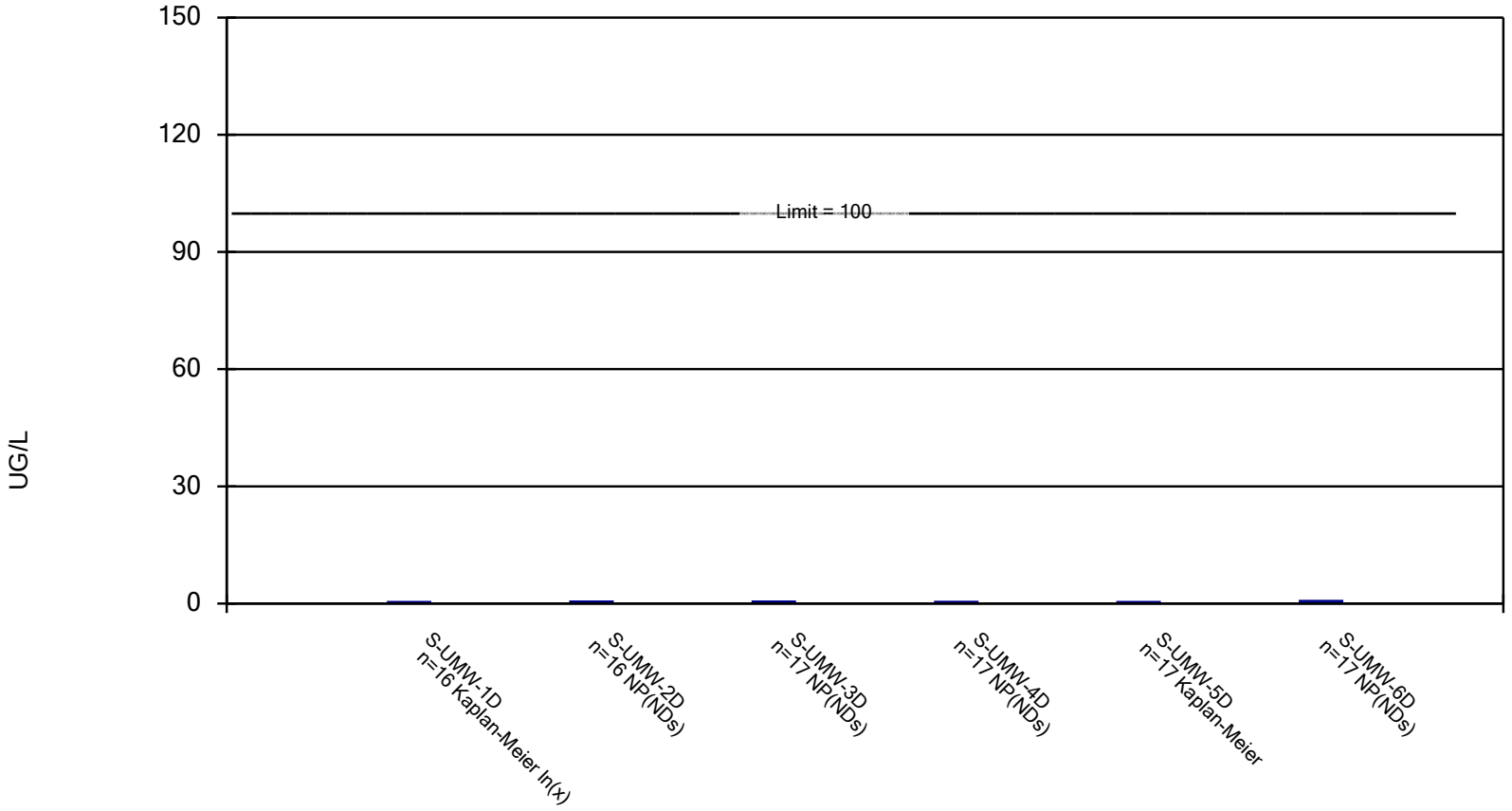
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Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG

Parametric and Non-Parametric (NP) Confidence Interval

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



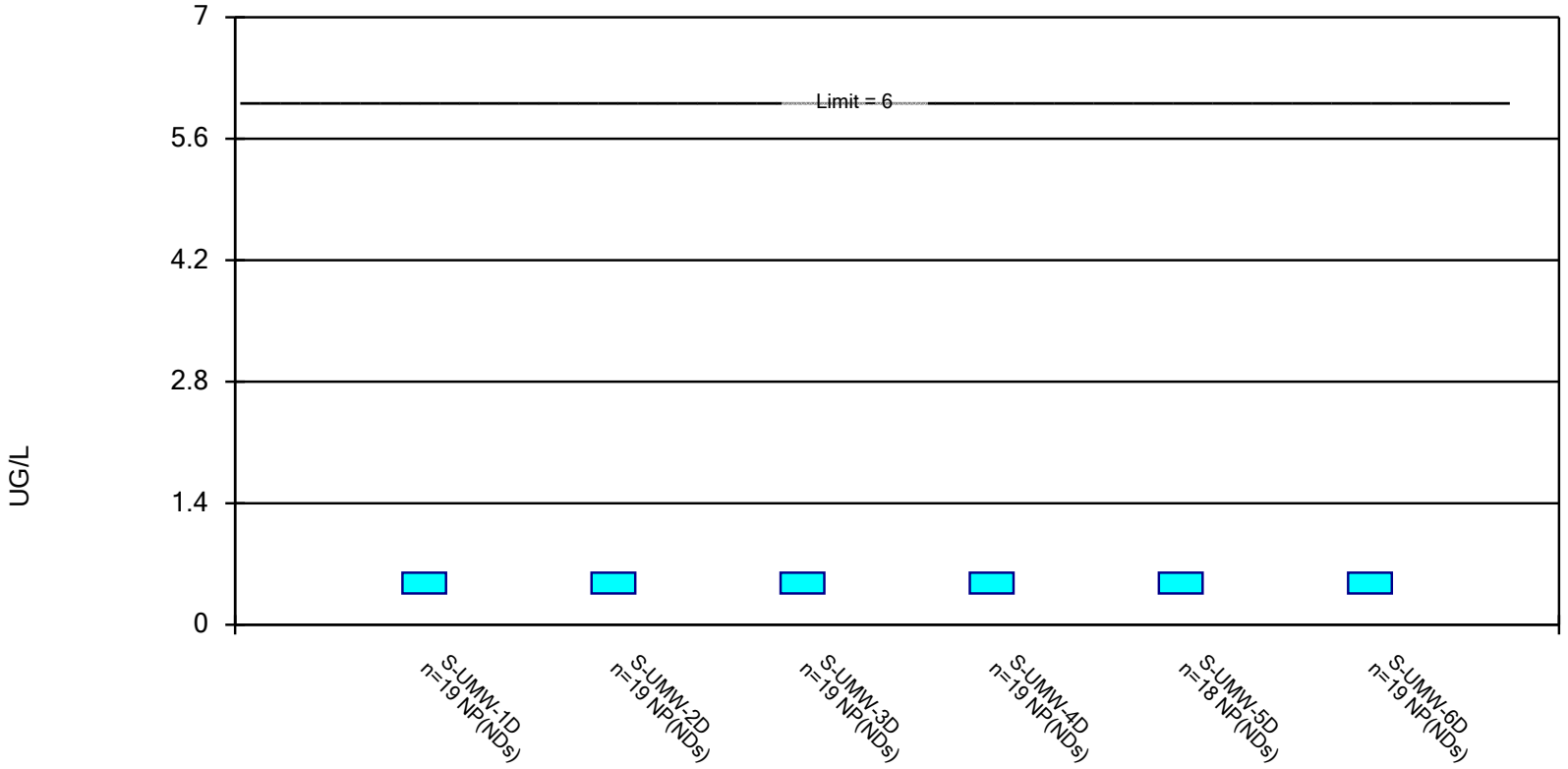
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Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG

Non-Parametric Confidence Interval

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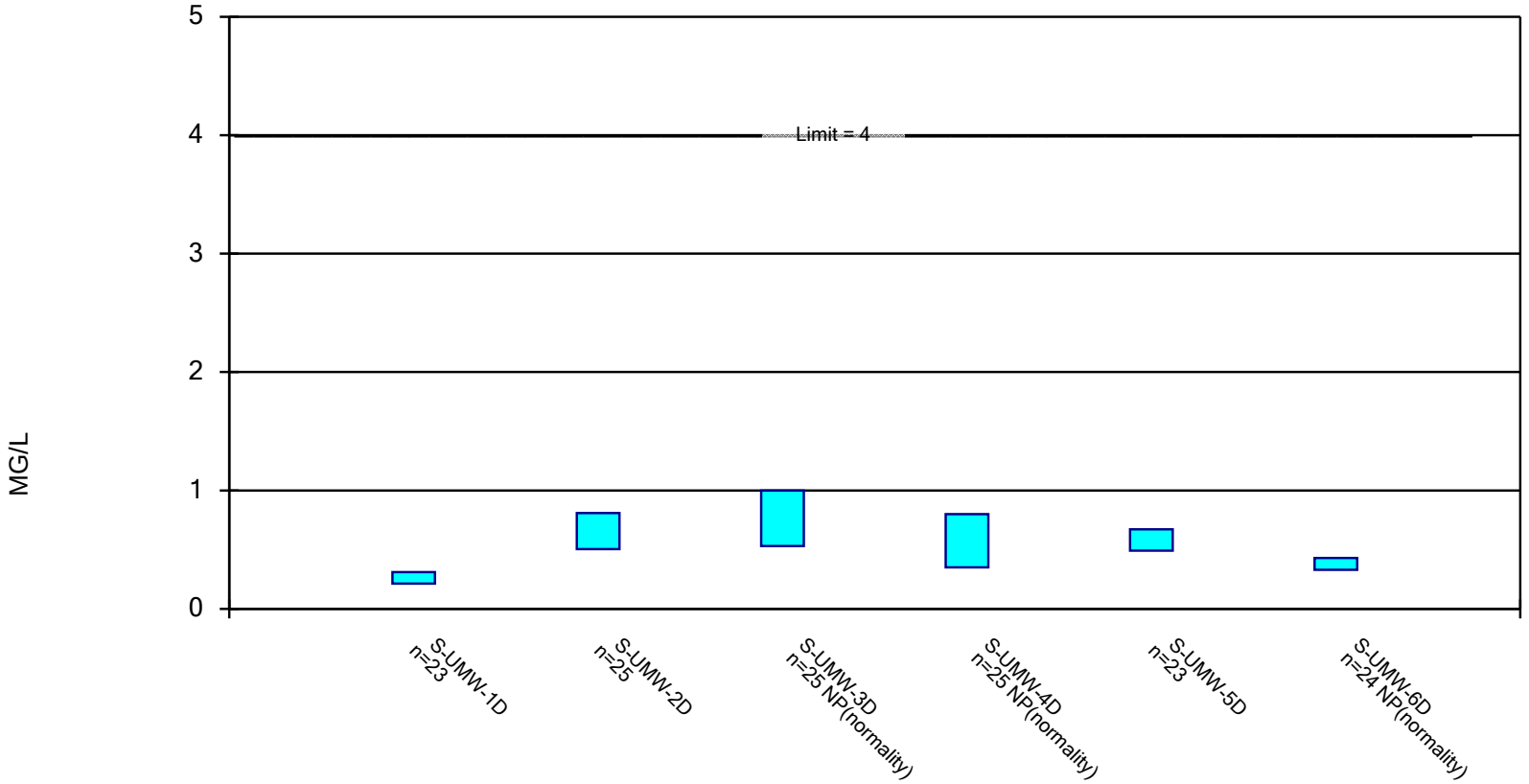
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Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG

Parametric and Non-Parametric (NP) Confidence Interval

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



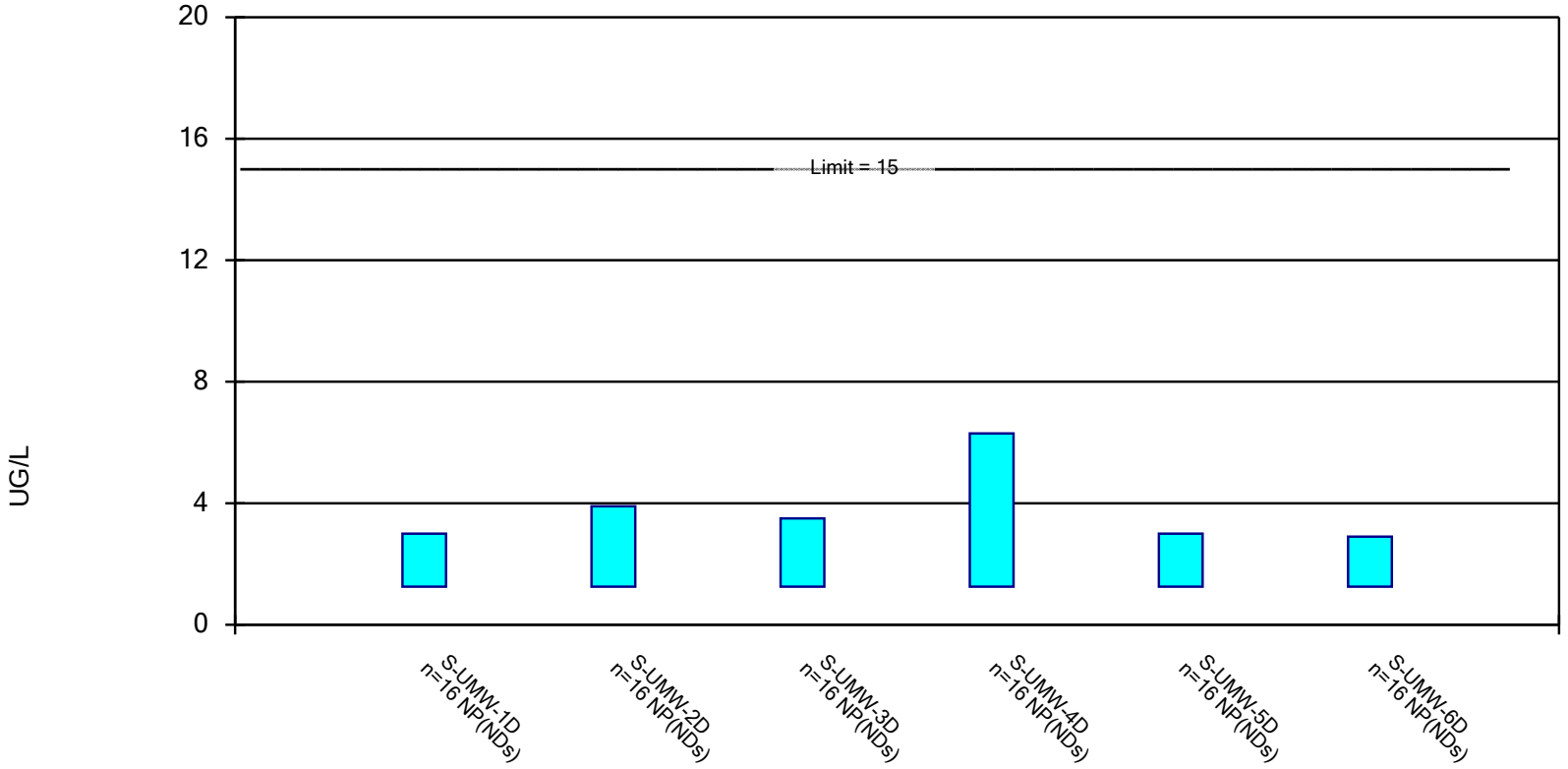
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Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG

Non-Parametric Confidence Interval

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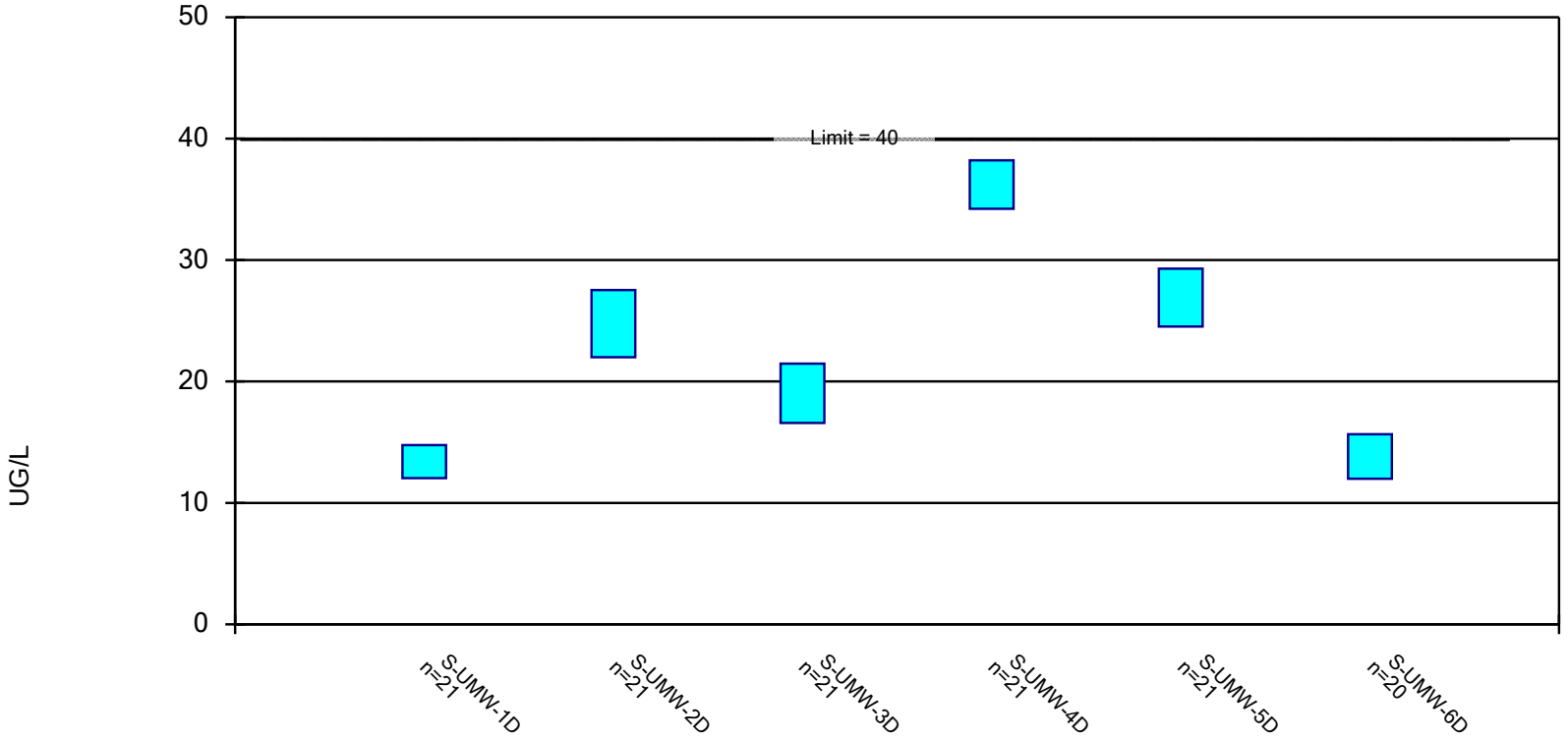
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Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG

Parametric Confidence Interval

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



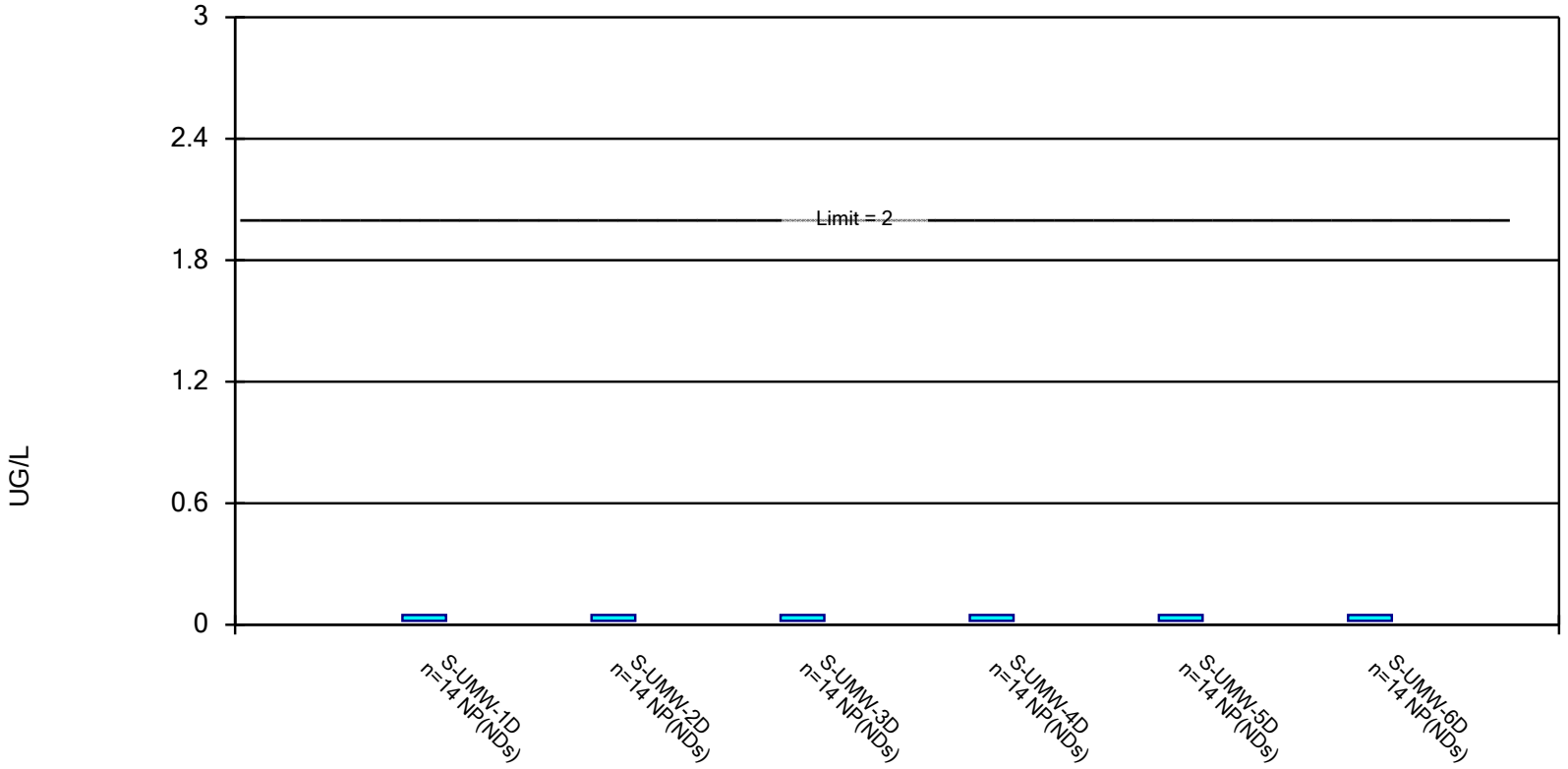
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Sioux E.C. Client: Ameren Data: SEC DATA

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Non-Parametric Confidence Interval

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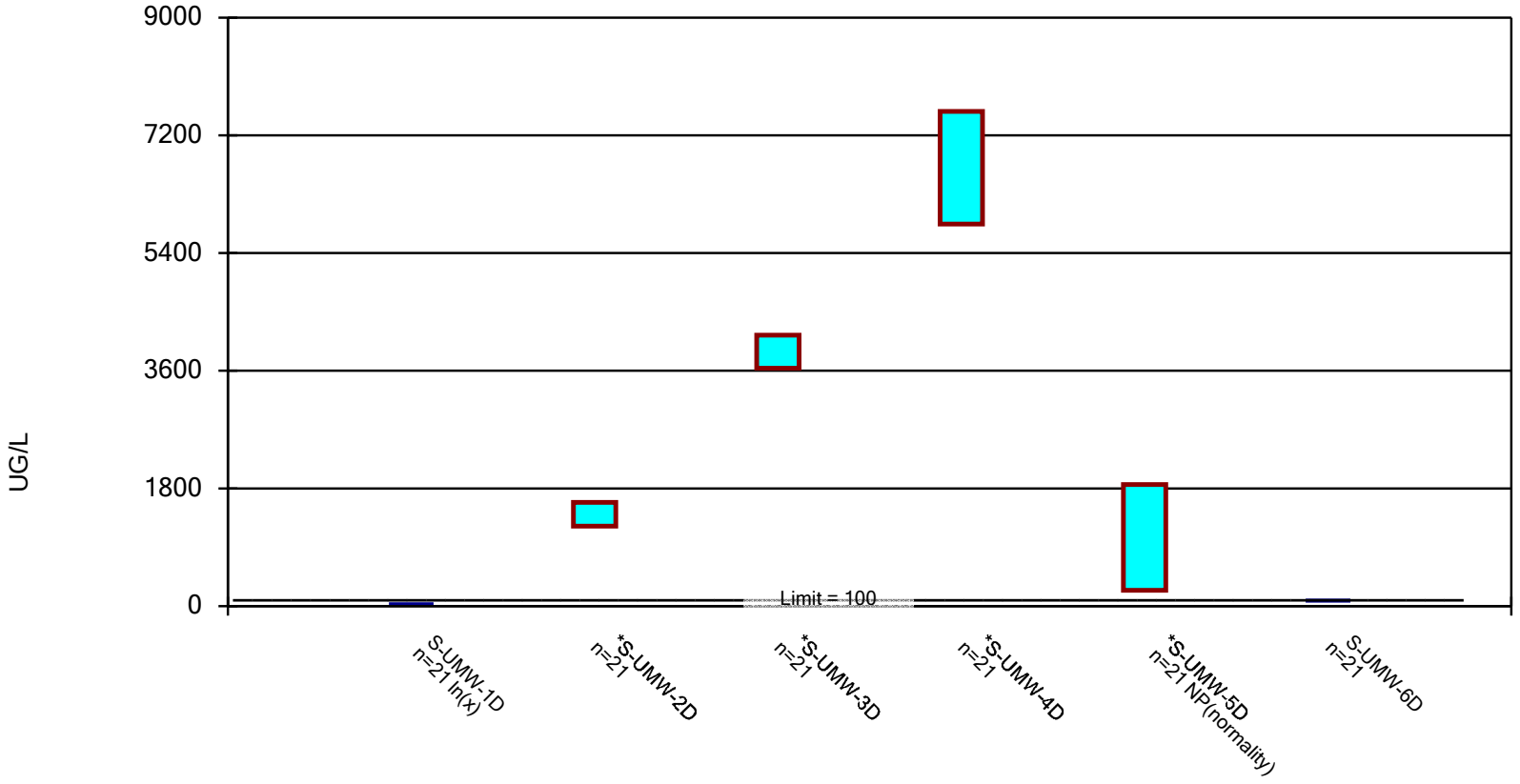
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Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG

Parametric and Non-Parametric (NP) Confidence Interval

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



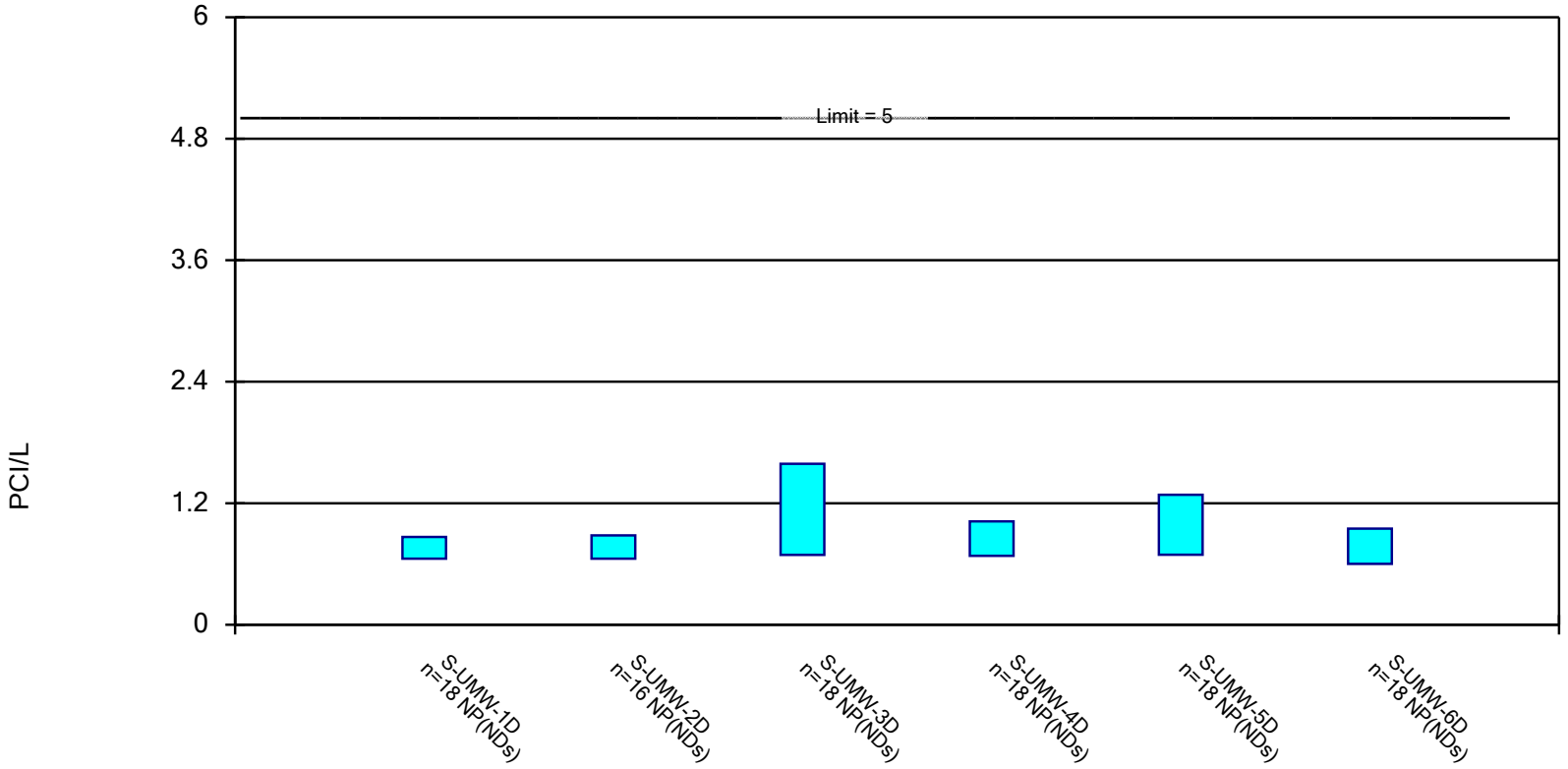
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Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG

Non-Parametric Confidence Interval

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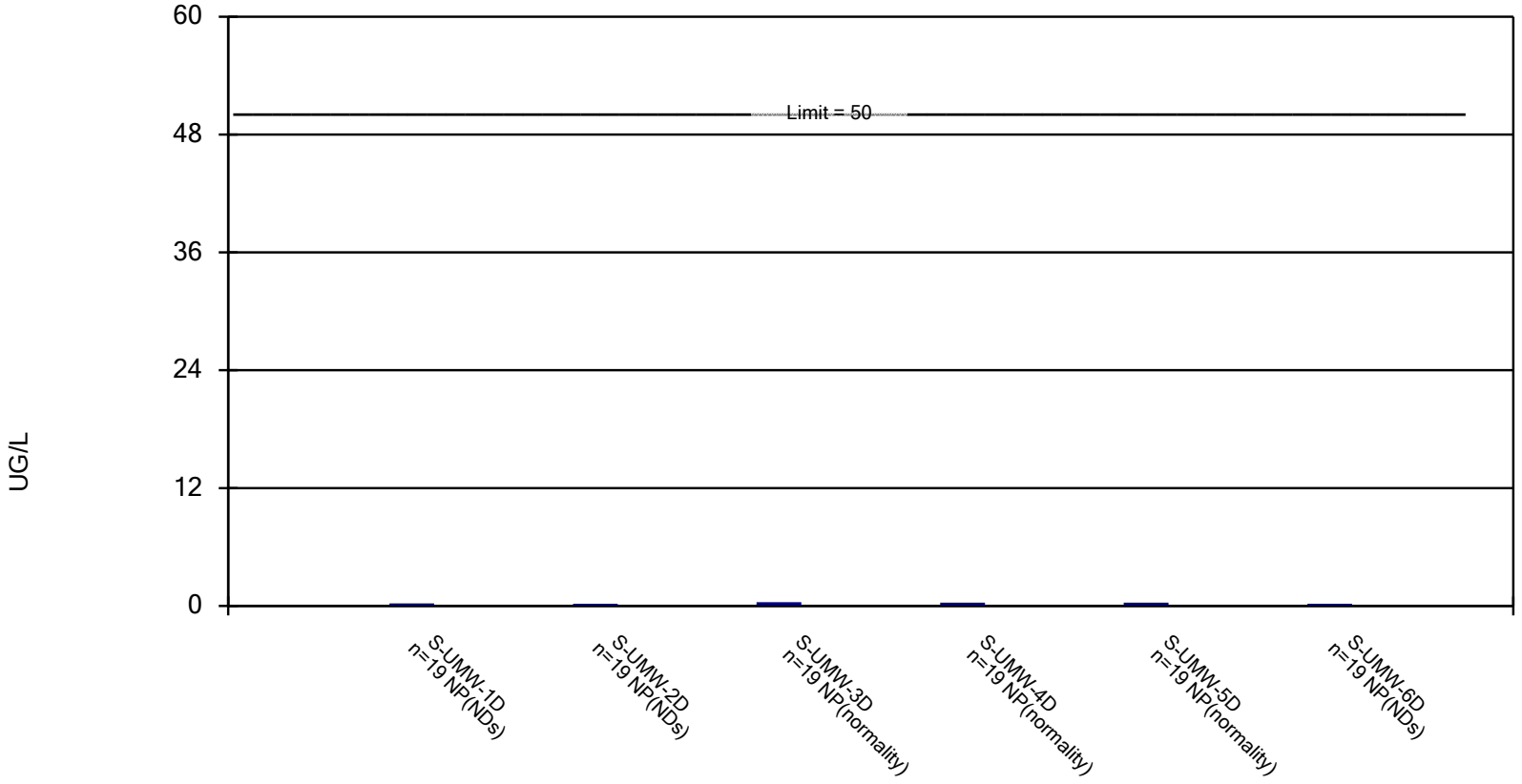
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Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG

Non-Parametric Confidence Interval

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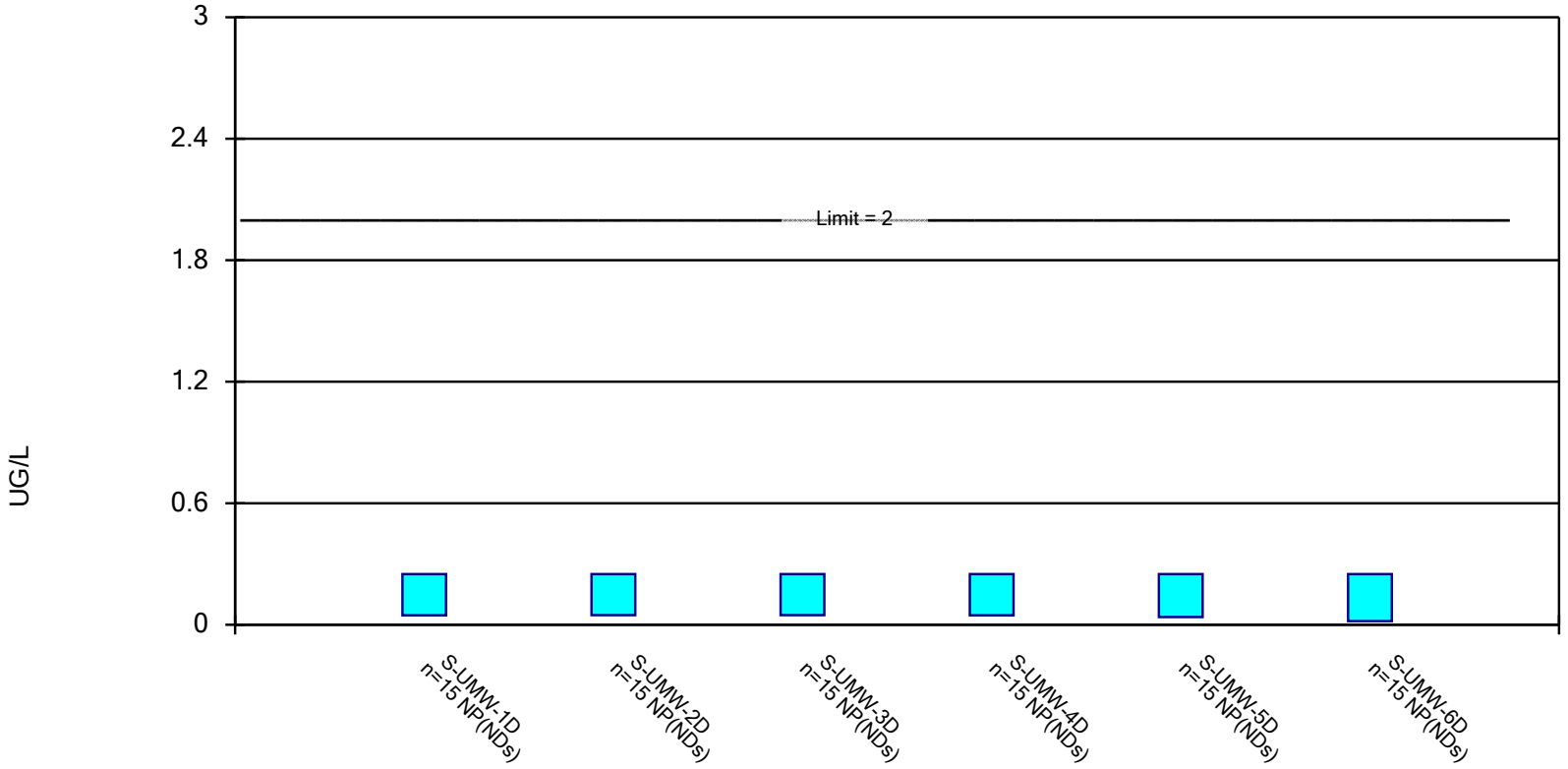
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Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: THALLIUM, TOTAL Analysis Run 3/13/2024 9:51 AM View: Assessment

Sioux E.C. Client: Ameren Data: SEC DATA

Confidence Interval

Sioux E.C. Client: Ameren Data: SEC DATA Printed 3/13/2024, 9:52 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
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ANTIMONY, TOTAL (UG/L)	S-UMW-3D	0.06	0.013	6	No	14	85.71	No	0.01	NP (NDs)
ANTIMONY, TOTAL (UG/L)	S-UMW-4D	0.05	0.013	6	No	15	93.33	No	0.01	NP (NDs)
ANTIMONY, TOTAL (UG/L)	S-UMW-5D	0.05	0.013	6	No	15	100	No	0.01	NP (NDs)
ANTIMONY, TOTAL (UG/L)	S-UMW-6D	0.05	0.013	6	No	15	100	No	0.01	NP (NDs)
ARSENIC, TOTAL (UG/L)	S-UMW-1D	1.462	1.111	10	No	19	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-UMW-2D	2.834	1.906	10	No	21	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-UMW-3D	0.7102	0.3904	10	No	20	10	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-UMW-4D	0.3939	0.2099	10	No	20	20	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-UMW-5D	0.5627	0.355	10	No	21	9.524	No	0.01	Param.
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BARIUM, TOTAL (UG/L)	S-UMW-1D	162.9	128.7	2000	No	21	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-UMW-2D	96.01	68.86	2000	No	21	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-UMW-3D	77.8	70.1	2000	No	21	0	No	0.01	NP (normality)
BARIUM, TOTAL (UG/L)	S-UMW-4D	76.68	62.16	2000	No	21	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-UMW-5D	336.4	288	2000	No	21	0	No	0.01	Param.
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BERYLLIUM, TOTAL (UG/L)	S-UMW-1D	0.195	0.08	4	No	16	100	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-UMW-2D	0.195	0.08	4	No	15	93.33	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-UMW-3D	0.195	0.08	4	No	15	100	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-UMW-4D	0.195	0.08	4	No	16	100	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-UMW-5D	0.195	0.08	4	No	16	100	No	0.01	NP (NDs)
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CHROMIUM, TOTAL (UG/L)	S-UMW-6D	0.67	0.039	100	No	17	58.82	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	S-UMW-1D	0.6	0.36	6	No	19	100	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	S-UMW-2D	0.6	0.36	6	No	19	100	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	S-UMW-3D	0.6	0.36	6	No	19	100	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	S-UMW-4D	0.6	0.36	6	No	19	100	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	S-UMW-5D	0.6	0.36	6	No	18	100	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	S-UMW-6D	0.6	0.36	6	No	19	100	No	0.01	NP (NDs)
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Confidence Interval

Sioux E.C. Client: Ameren Data: SEC DATA Printed 3/13/2024, 9:52 AM

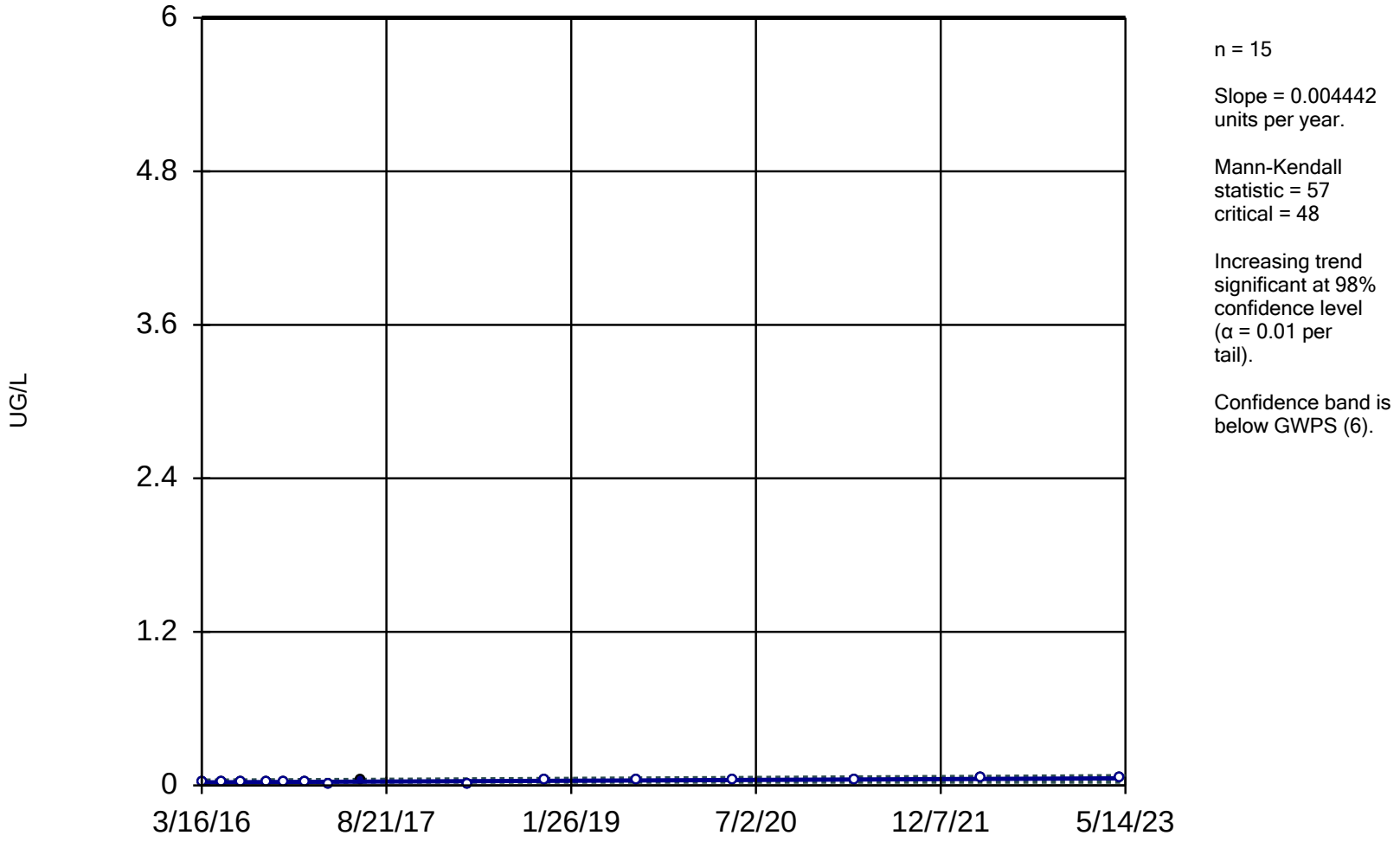
Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
LEAD, TOTAL (UG/L)	S-UMW-3D	3.5	1.25	15	No	16	62.5	No	0.01	NP (NDs)
LEAD, TOTAL (UG/L)	S-UMW-4D	6.3	1.25	15	No	16	56.25	No	0.01	NP (NDs)
LEAD, TOTAL (UG/L)	S-UMW-5D	3	1.25	15	No	16	81.25	No	0.01	NP (NDs)
LEAD, TOTAL (UG/L)	S-UMW-6D	2.9	1.25	15	No	16	87.5	No	0.01	NP (NDs)
LITHIUM, TOTAL (UG/L)	S-UMW-1D	14.77	12.04	40	No	21	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-UMW-2D	27.53	22	40	No	21	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-UMW-3D	21.47	16.58	40	No	21	4.762	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-UMW-4D	38.22	34.22	40	No	21	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-UMW-5D	29.28	24.53	40	No	21	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-UMW-6D	15.66	11.98	40	No	20	0	No	0.01	Param.
MERCURY, TOTAL (UG/L)	S-UMW-1D	0.048	0.0195	2	No	14	100	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	S-UMW-2D	0.048	0.0195	2	No	14	100	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	S-UMW-3D	0.048	0.0195	2	No	14	100	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	S-UMW-4D	0.048	0.0195	2	No	14	100	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	S-UMW-5D	0.048	0.0195	2	No	14	100	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	S-UMW-6D	0.048	0.0195	2	No	14	100	No	0.01	NP (NDs)
MOLYBDENUM, TOTAL (UG/L)	S-UMW-1D	41.4	28.56	100	No	21	0	ln(x)	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	**S-UMW-2D**	**1588**	**1223**	**100**	**Yes**	**21**	**0**	**No**	**0.01**	**Param.**
MOLYBDENUM, TOTAL (UG/L)	**S-UMW-3D**	**4145**	**3637**	**100**	**Yes**	**21**	**0**	**No**	**0.01**	**Param.**
MOLYBDENUM, TOTAL (UG/L)	**S-UMW-4D**	**7566**	**5844**	**100**	**Yes**	**21**	**0**	**No**	**0.01**	**Param.**
MOLYBDENUM, TOTAL (UG/L)	**S-UMW-5D**	**1860**	**242**	**100**	**Yes**	**21**	**0**	**No**	**0.01**	**NP (normality)**
MOLYBDENUM, TOTAL (UG/L)	S-UMW-6D	97.71	71.17	100	No	21	0	No	0.01	Param.
RADIUM [226 + 228] (PCI/L)	S-UMW-1D	0.8665	0.6525	5	No	18	100	No	0.01	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-UMW-2D	0.8825	0.652	5	No	16	100	No	0.01	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-UMW-3D	1.59	0.69	5	No	18	72.22	No	0.01	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-UMW-4D	1.02	0.681	5	No	18	83.33	No	0.01	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-UMW-5D	1.283	0.6915	5	No	18	72.22	No	0.01	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-UMW-6D	0.949	0.6005	5	No	18	94.44	No	0.01	NP (NDs)
SELENIUM, TOTAL (UG/L)	S-UMW-1D	0.13	0.043	50	No	19	84.21	No	0.01	NP (NDs)
SELENIUM, TOTAL (UG/L)	S-UMW-2D	0.094	0.043	50	No	19	78.95	No	0.01	NP (NDs)
SELENIUM, TOTAL (UG/L)	S-UMW-3D	0.26	0.09	50	No	19	26.32	No	0.01	NP (normality)
SELENIUM, TOTAL (UG/L)	S-UMW-4D	0.21	0.09	50	No	19	31.58	No	0.01	NP (normality)
SELENIUM, TOTAL (UG/L)	S-UMW-5D	0.21	0.09	50	No	19	31.58	No	0.01	NP (normality)
SELENIUM, TOTAL (UG/L)	S-UMW-6D	0.09	0.043	50	No	19	100	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-UMW-1D	0.25	0.0465	2	No	15	93.33	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-UMW-2D	0.25	0.047	2	No	15	86.67	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-UMW-3D	0.25	0.047	2	No	15	86.67	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-UMW-4D	0.25	0.0465	2	No	15	86.67	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-UMW-5D	0.25	0.038	2	No	15	93.33	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-UMW-6D	0.25	0.018	2	No	15	100	No	0.01	NP (NDs)

Appendix B
Sanitas Trending Confidence Bands Statistical Output

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG
Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

S-UMW-4D



n = 15

Slope = 0.004442 units per year.

Mann-Kendall statistic = 57
critical = 48

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (6).

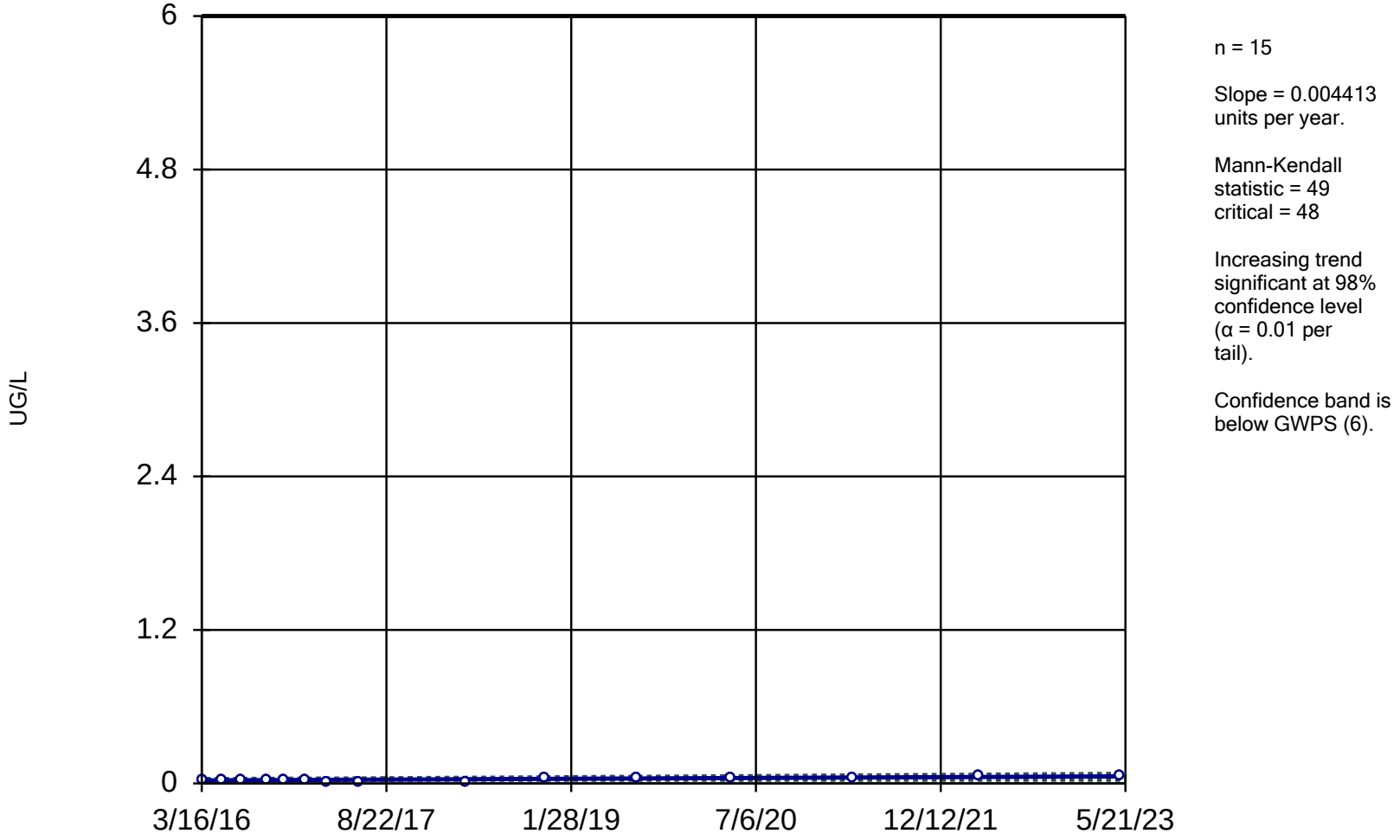
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Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG
Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

S-UMW-5D



n = 15

Slope = 0.004413 units per year.

Mann-Kendall statistic = 49
critical = 48

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (6).

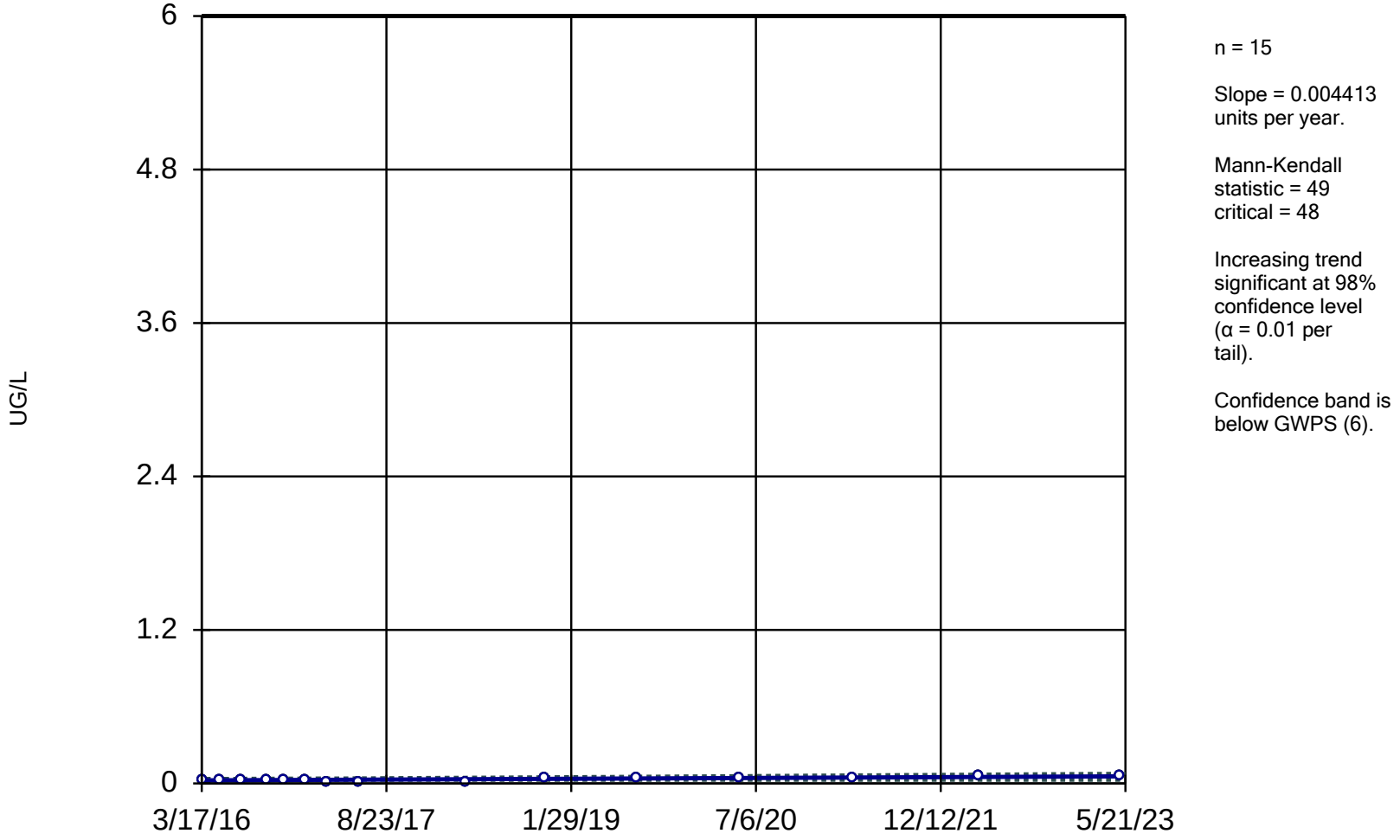
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Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG
Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

S-UMW-6D



n = 15

Slope = 0.004413 units per year.

Mann-Kendall statistic = 49
critical = 48

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (6).

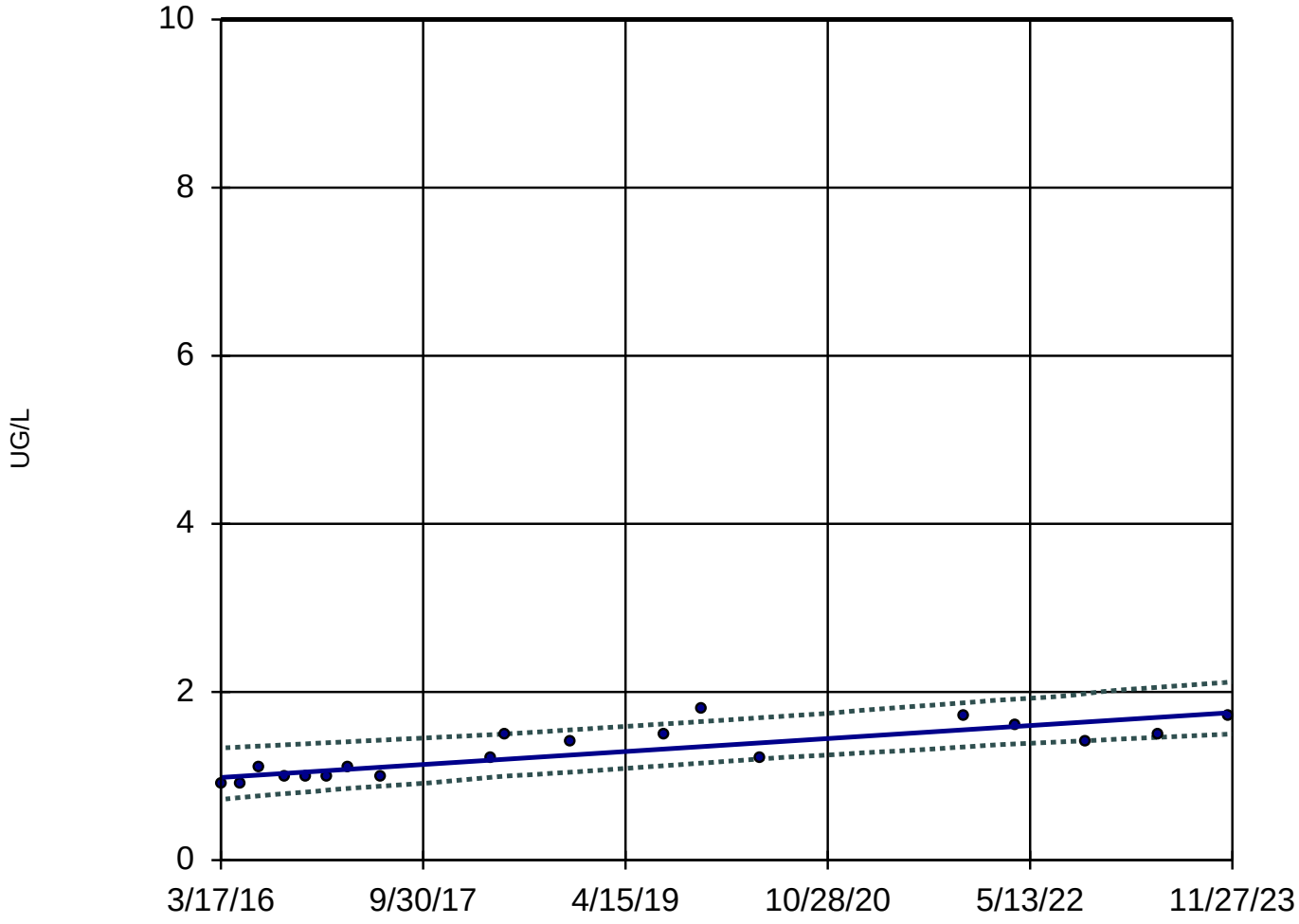
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Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG

Sen's Slope and 95% Confidence Band

S-UMW-1D



n = 19

Slope = 0.1002 units per year.

Mann-Kendall statistic = 112 critical = 68

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (10).

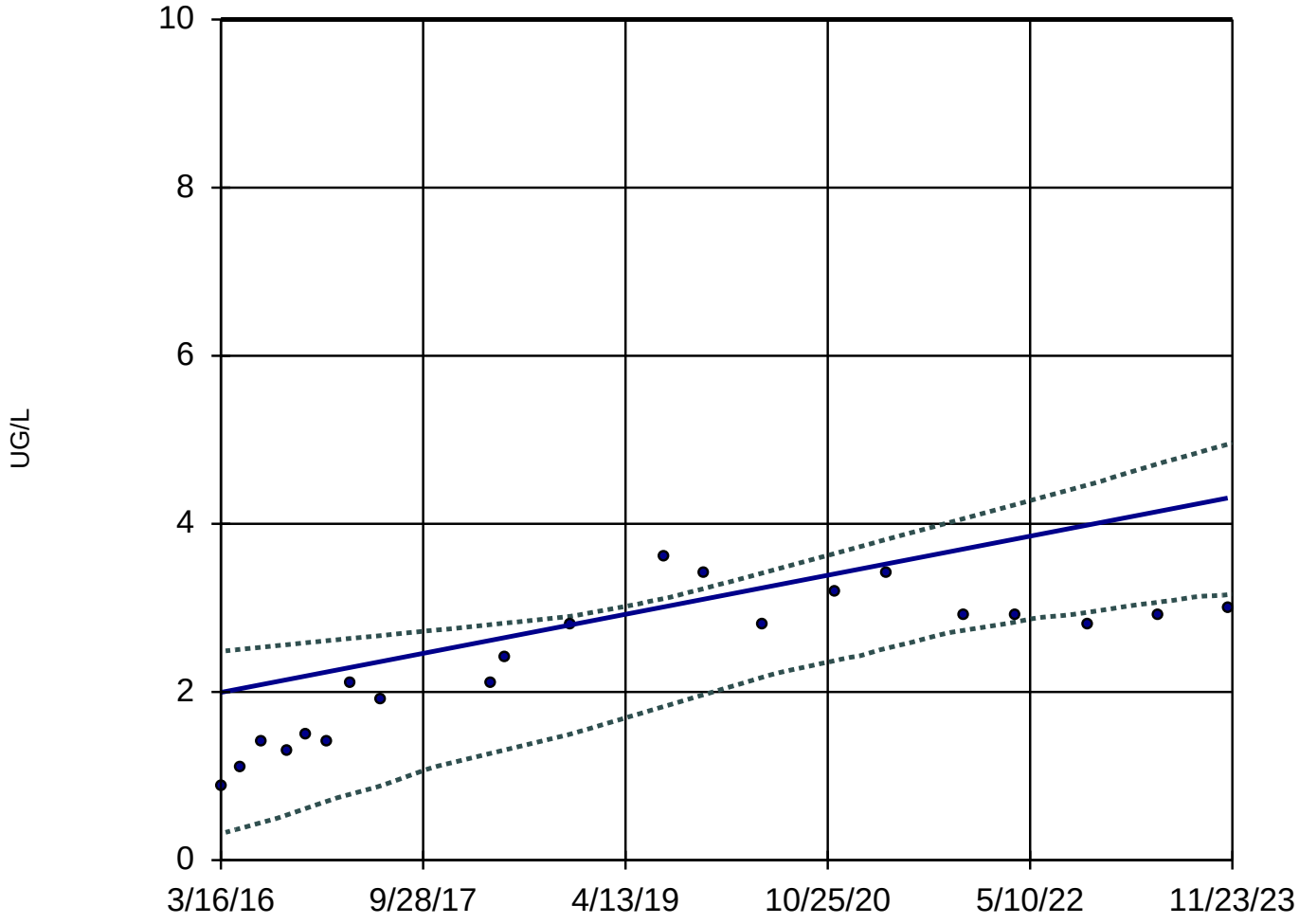
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Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG

Sen's Slope and 95% Confidence Band

S-UMW-2D



n = 21

Slope = 0.302 units per year.

Mann-Kendall statistic = 139 critical = 78

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (10).

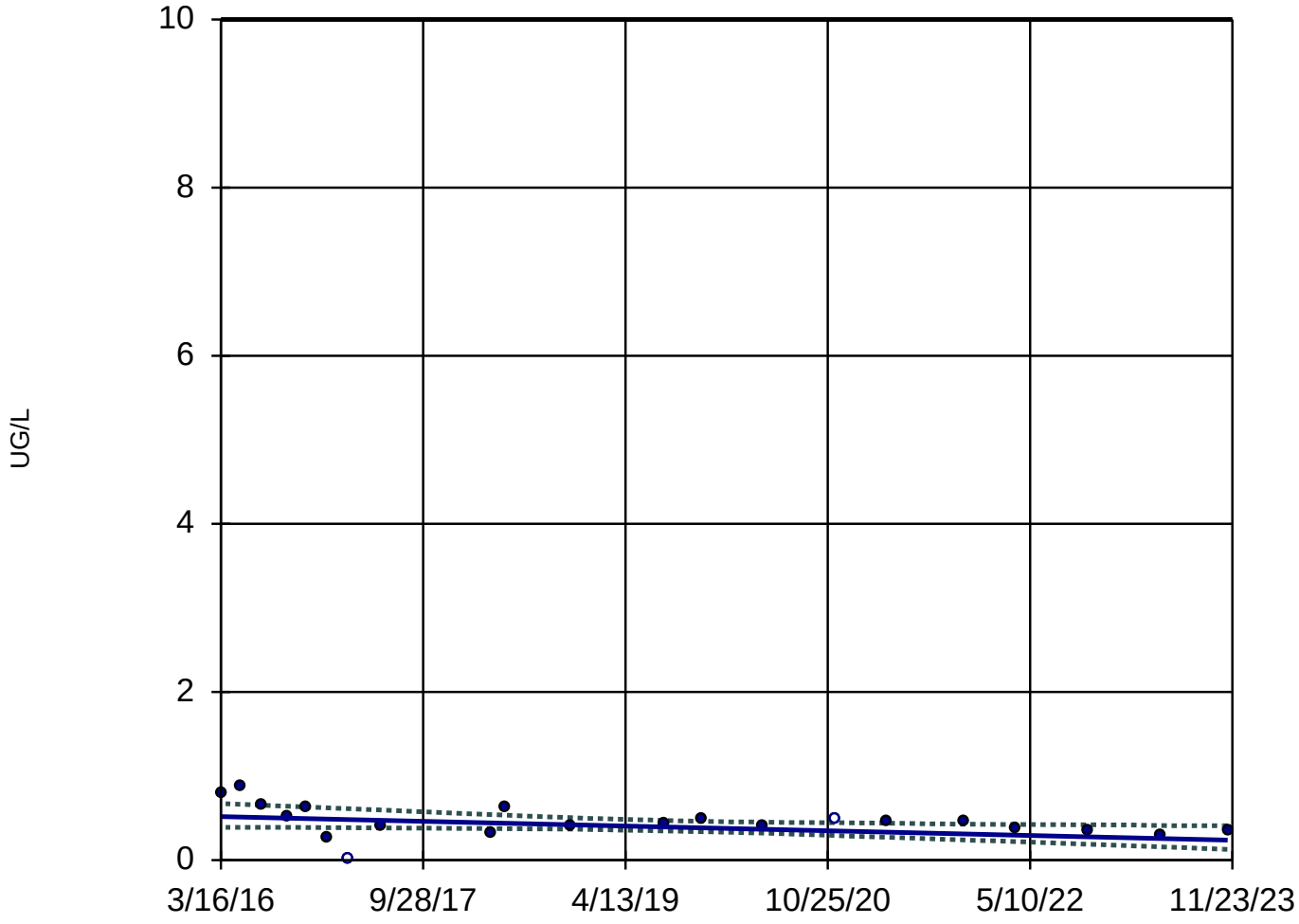
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Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG
Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

S-UMW-5D



n = 21

Slope = -0.03653 units per year.

Mann-Kendall statistic = -85
critical = -78

Decreasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (10).

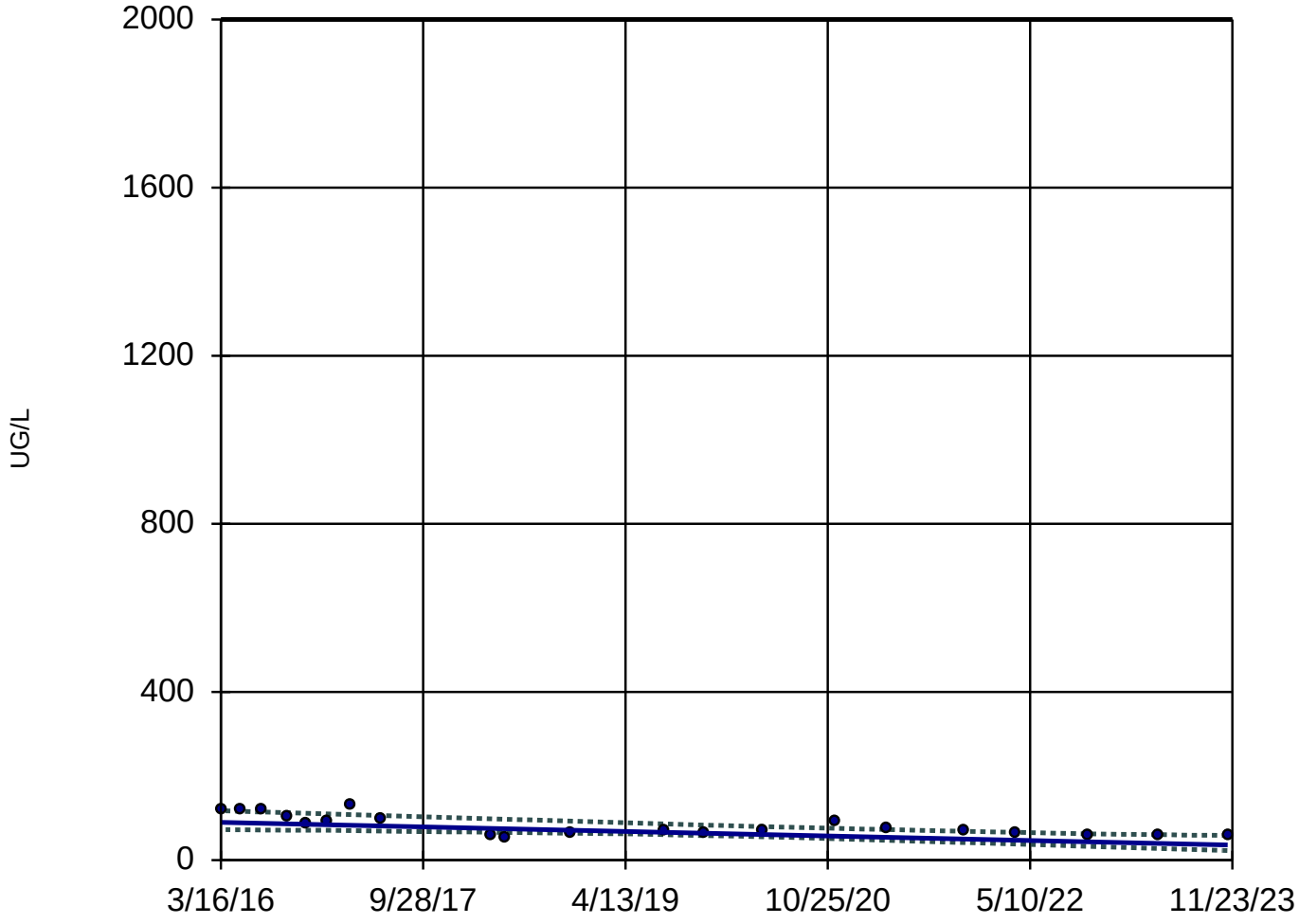
Constituent: ARSENIC, TOTAL Analysis Run 3/13/2024 9:55 AM View: Assessment

Sioux E.C. Client: Ameren Data: SEC DATA

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Sen's Slope and 95% Confidence Band

S-UMW-2D



n = 21

Slope = -7.011 units per year.

Mann-Kendall statistic = -118 critical = -78

Decreasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (2000).

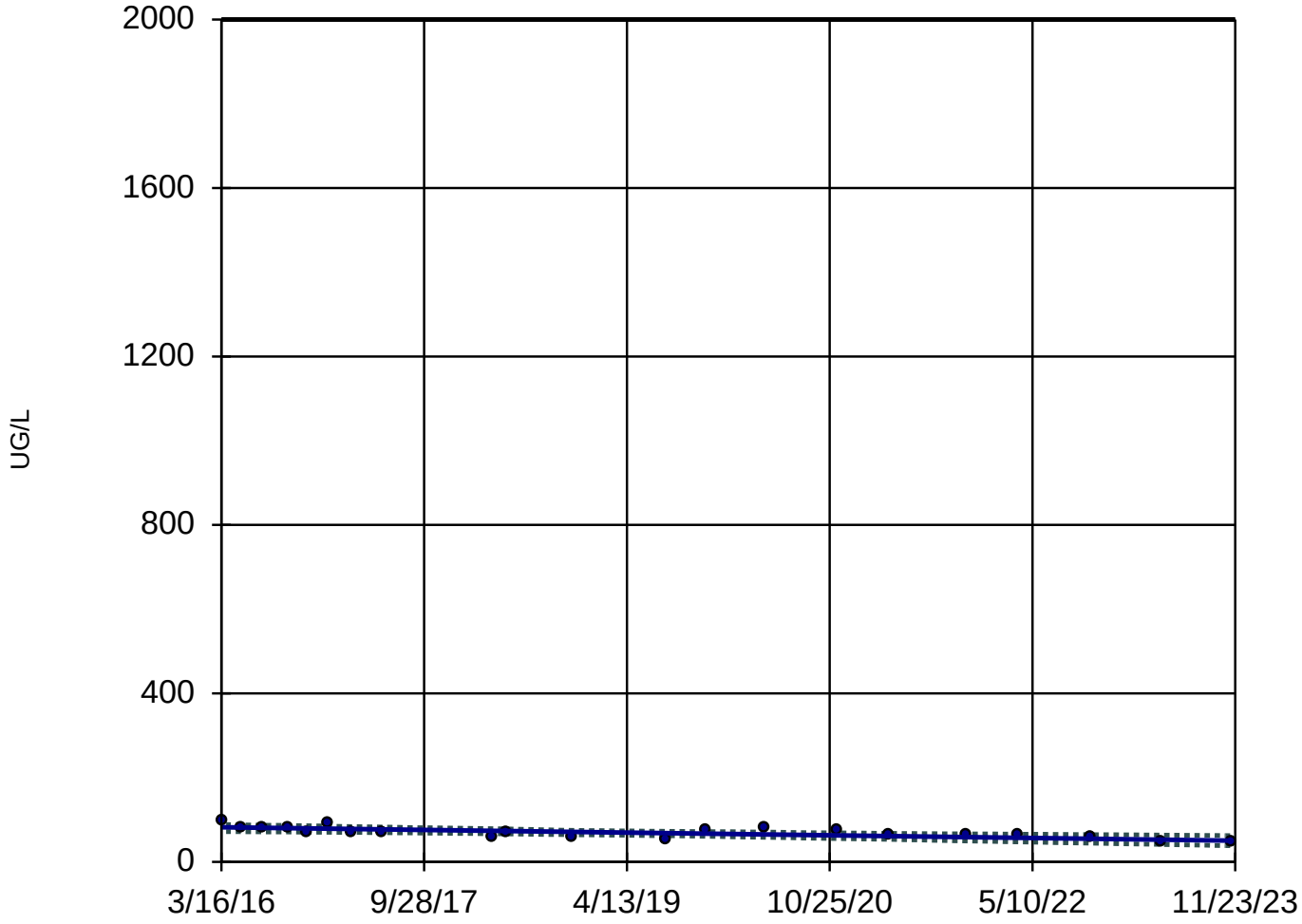
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Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG

Sen's Slope and 95% Confidence Band

S-UMW-4D



n = 21

Slope = -4.154 units per year.

Mann-Kendall statistic = -122 critical = -78

Decreasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (2000).

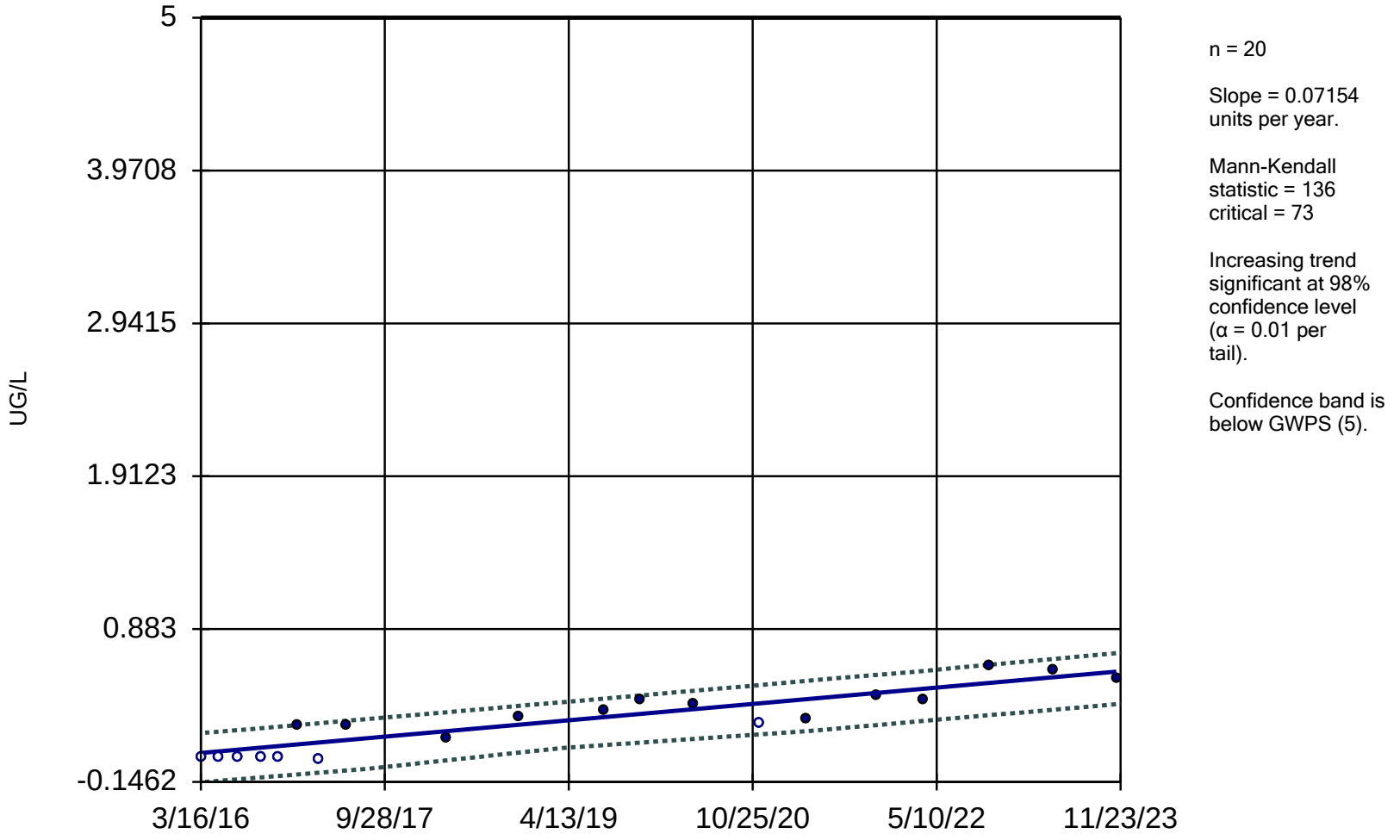
Constituent: BARIUM, TOTAL Analysis Run 3/13/2024 9:55 AM View: Assessment

Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG
Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

S-UMW-2D



n = 20

Slope = 0.07154 units per year.

Mann-Kendall statistic = 136
critical = 73

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (5).

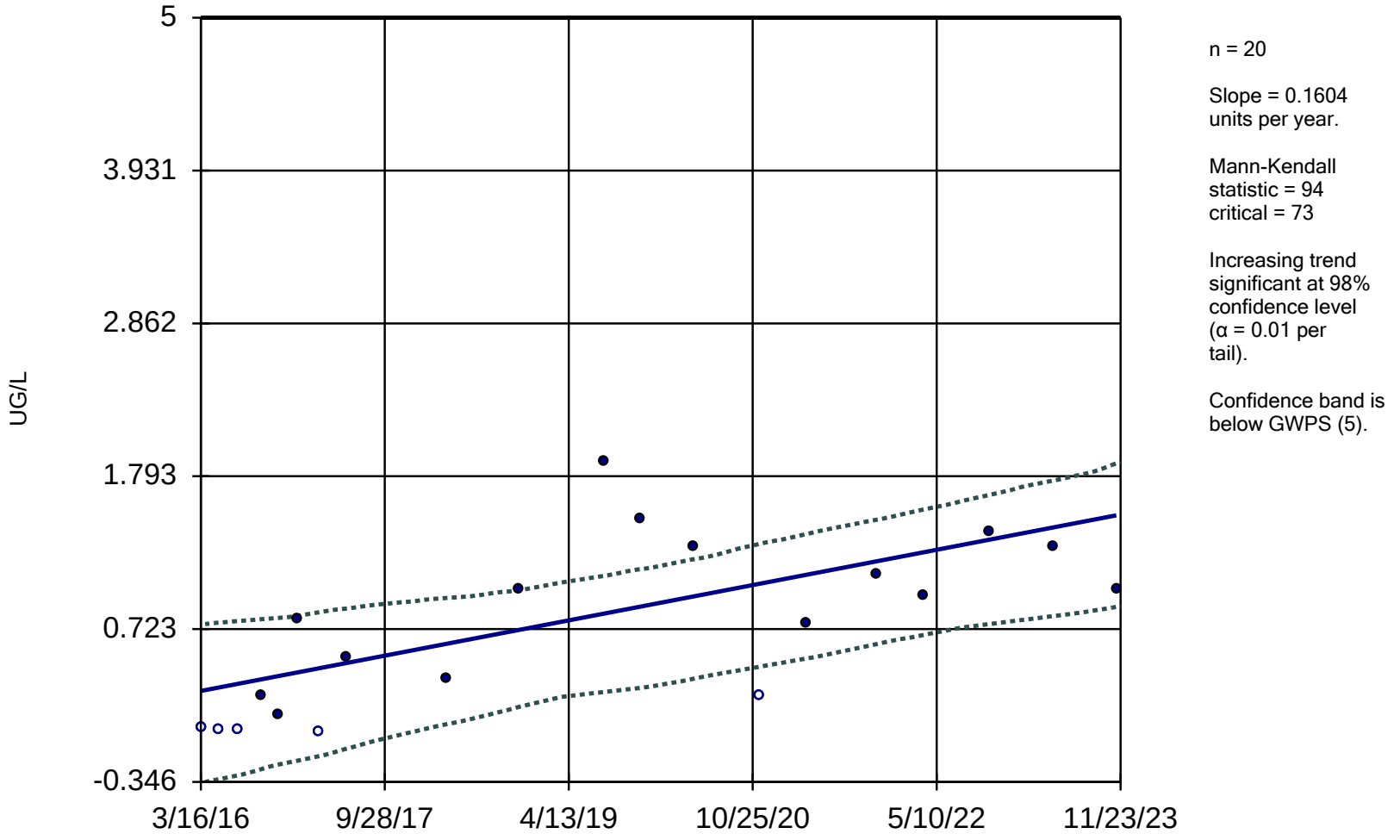
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Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG
Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

S-UMW-3D



n = 20

Slope = 0.1604 units per year.

Mann-Kendall statistic = 94
critical = 73

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (5).

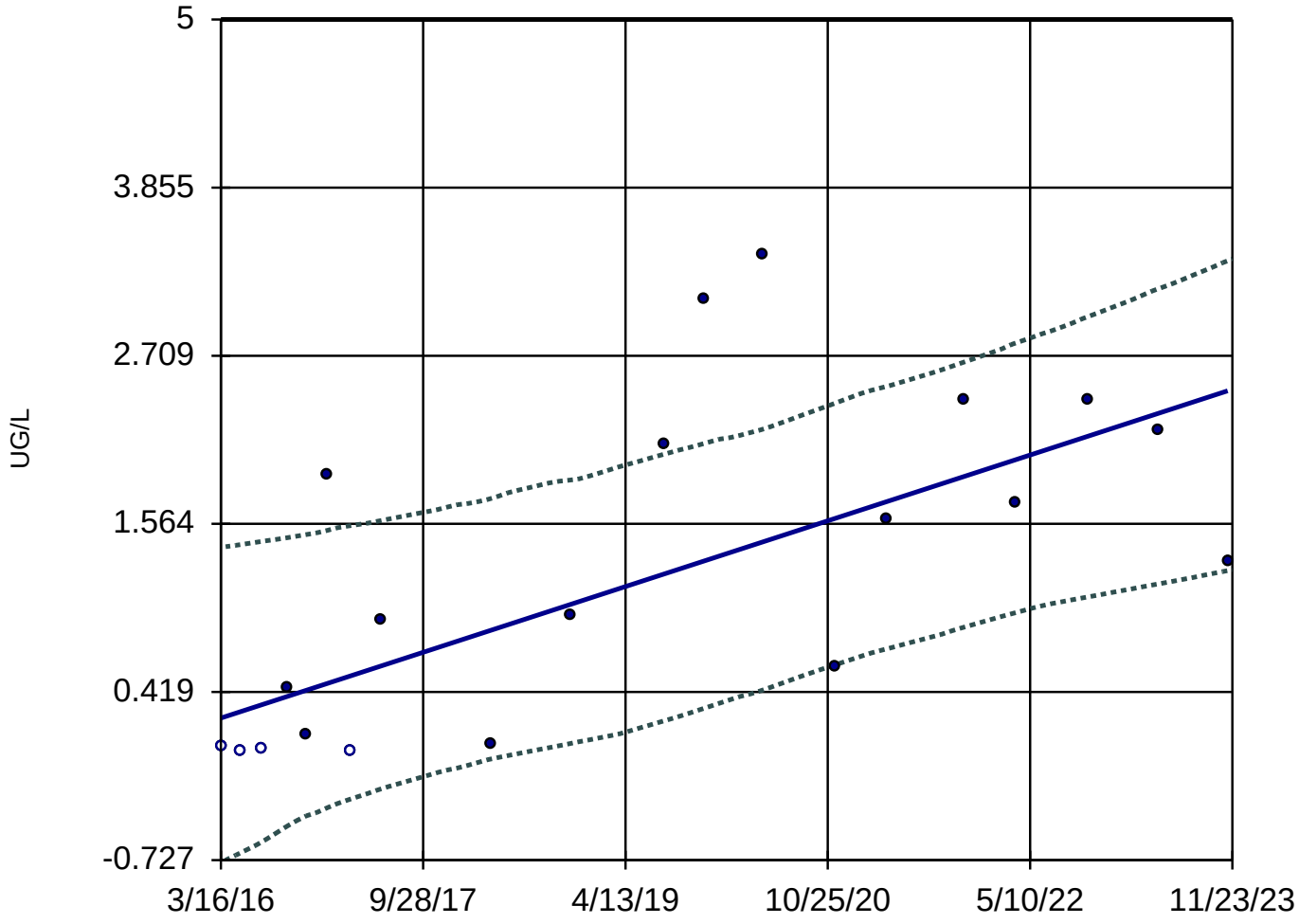
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Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG
Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

S-UMW-4D



n = 20

Slope = 0.2911 units per year.

Mann-Kendall statistic = 95
critical = 73

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (5).

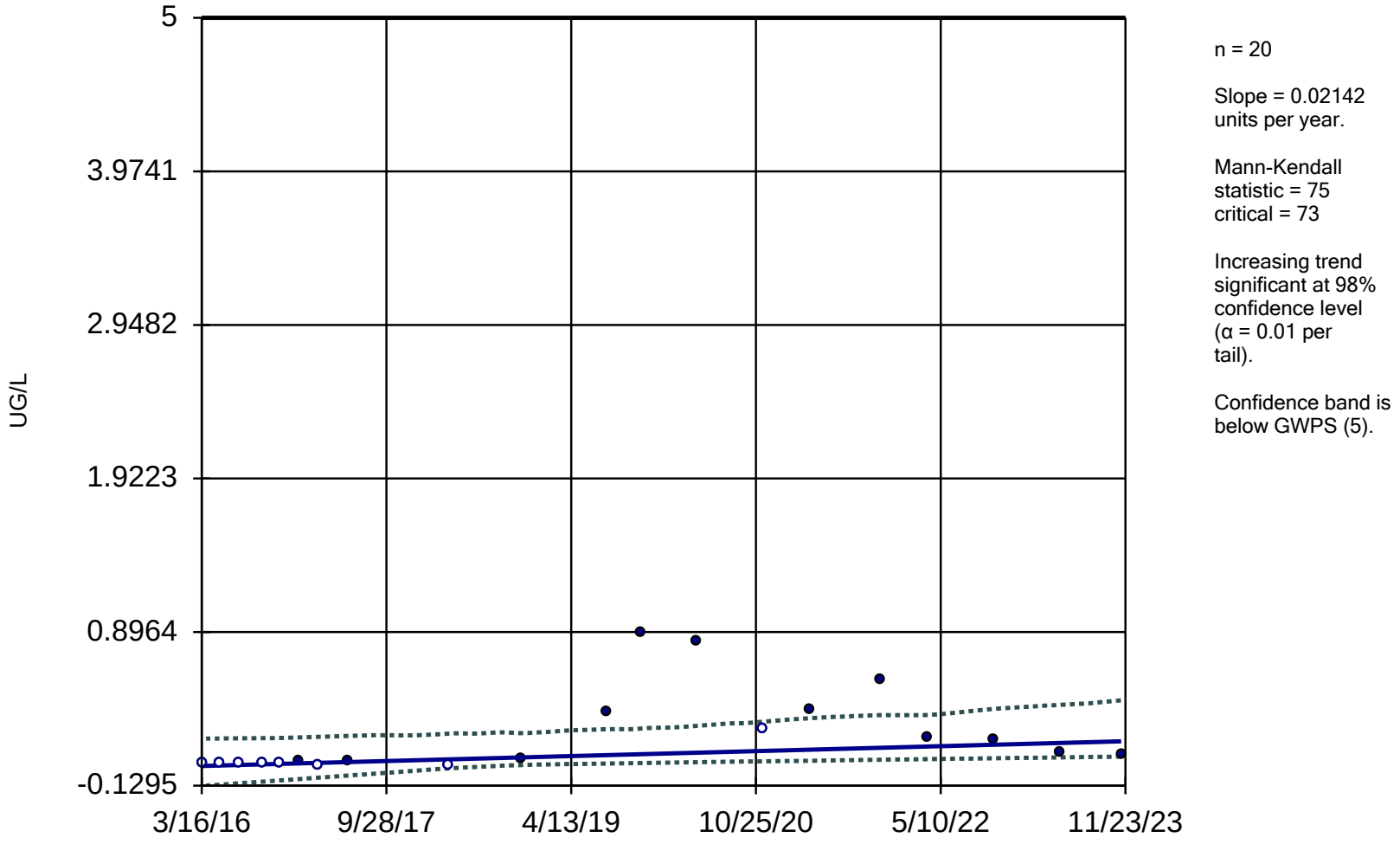
Constituent: CADMIUM, TOTAL Analysis Run 3/13/2024 9:55 AM View: Assessment

Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG
Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

S-UMW-5D



n = 20

Slope = 0.02142 units per year.

Mann-Kendall statistic = 75
critical = 73

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (5).

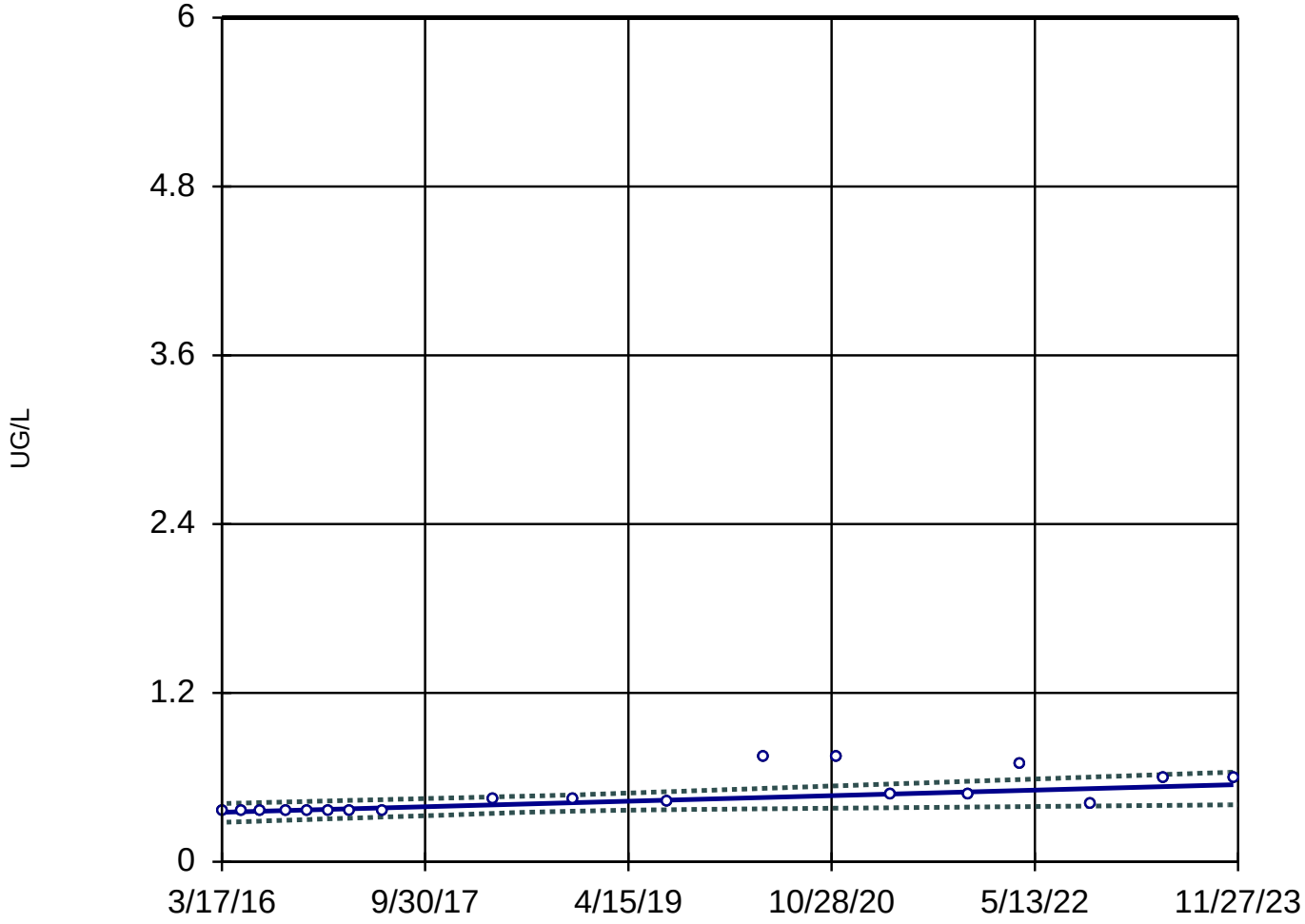
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Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG
Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

S-UMW-1D



n = 19

Slope = 0.02554 units per year.

Mann-Kendall statistic = 107
critical = 68

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (6).

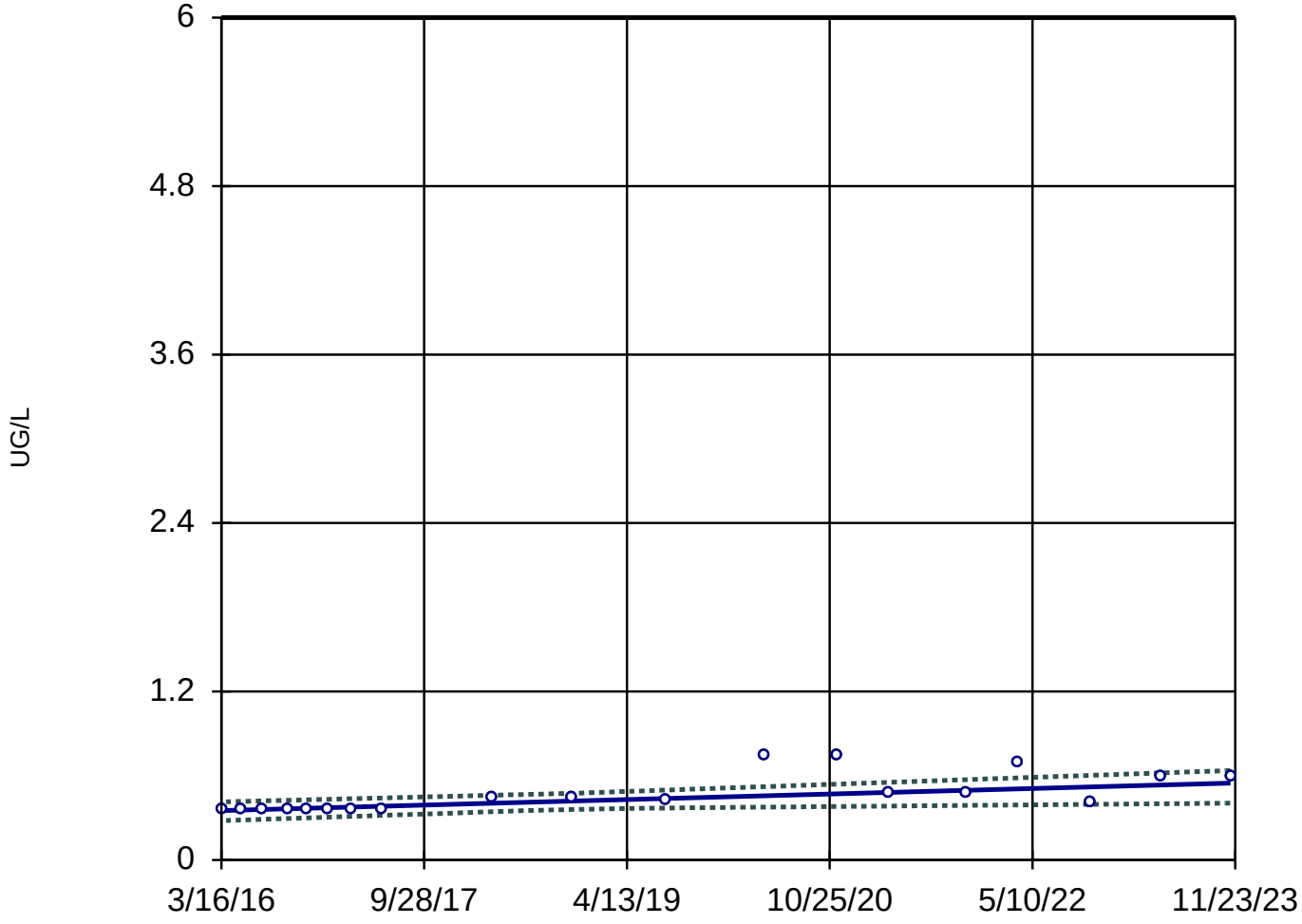
Constituent: COBALT, TOTAL Analysis Run 3/13/2024 9:55 AM View: Assessment

Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG
Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

S-UMW-2D



n = 19

Slope = 0.02557 units per year.

Mann-Kendall statistic = 107
critical = 68

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (6).

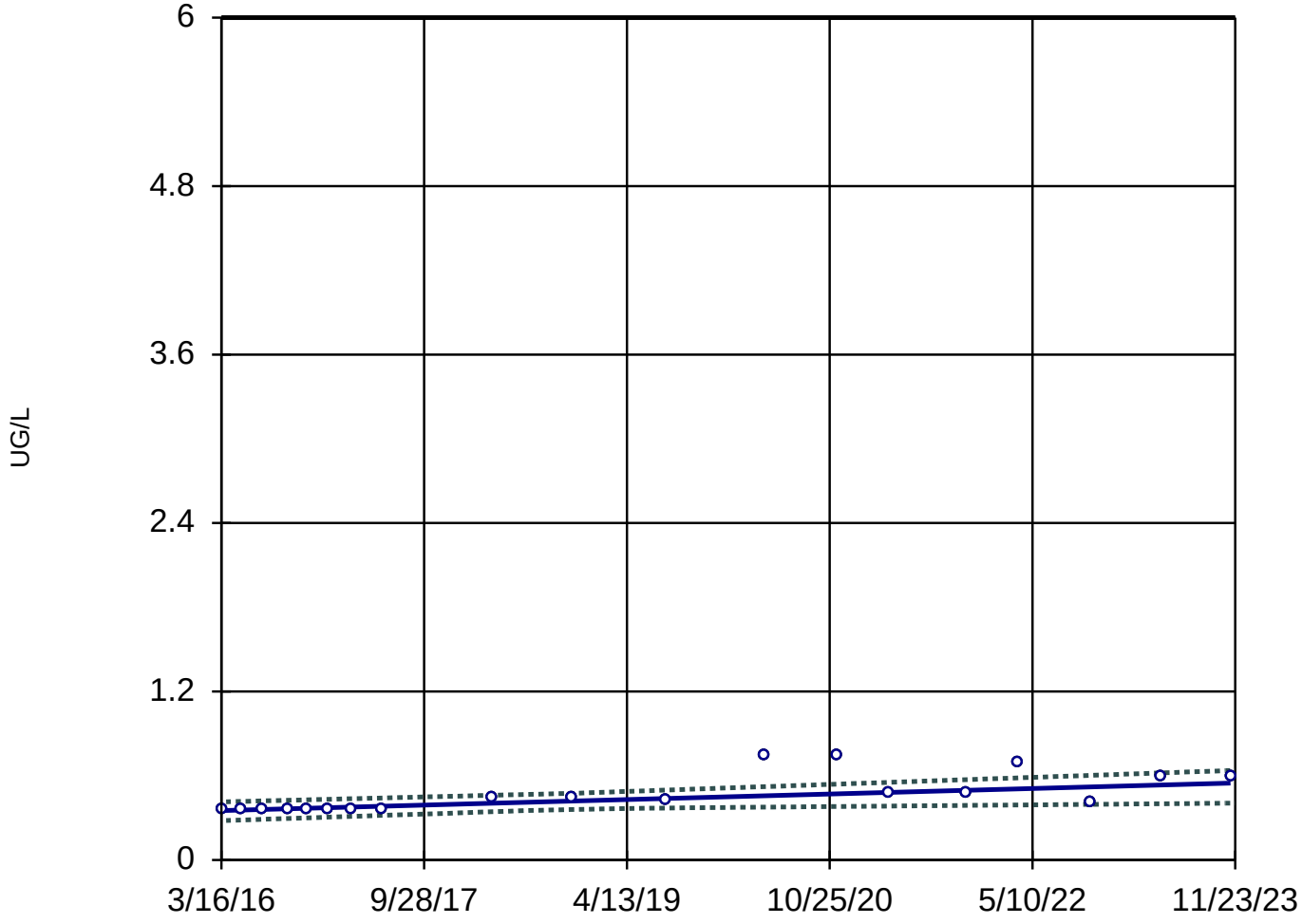
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Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG
Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

S-UMW-3D



n = 19

Slope = 0.02557 units per year.

Mann-Kendall statistic = 107 critical = 68

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (6).

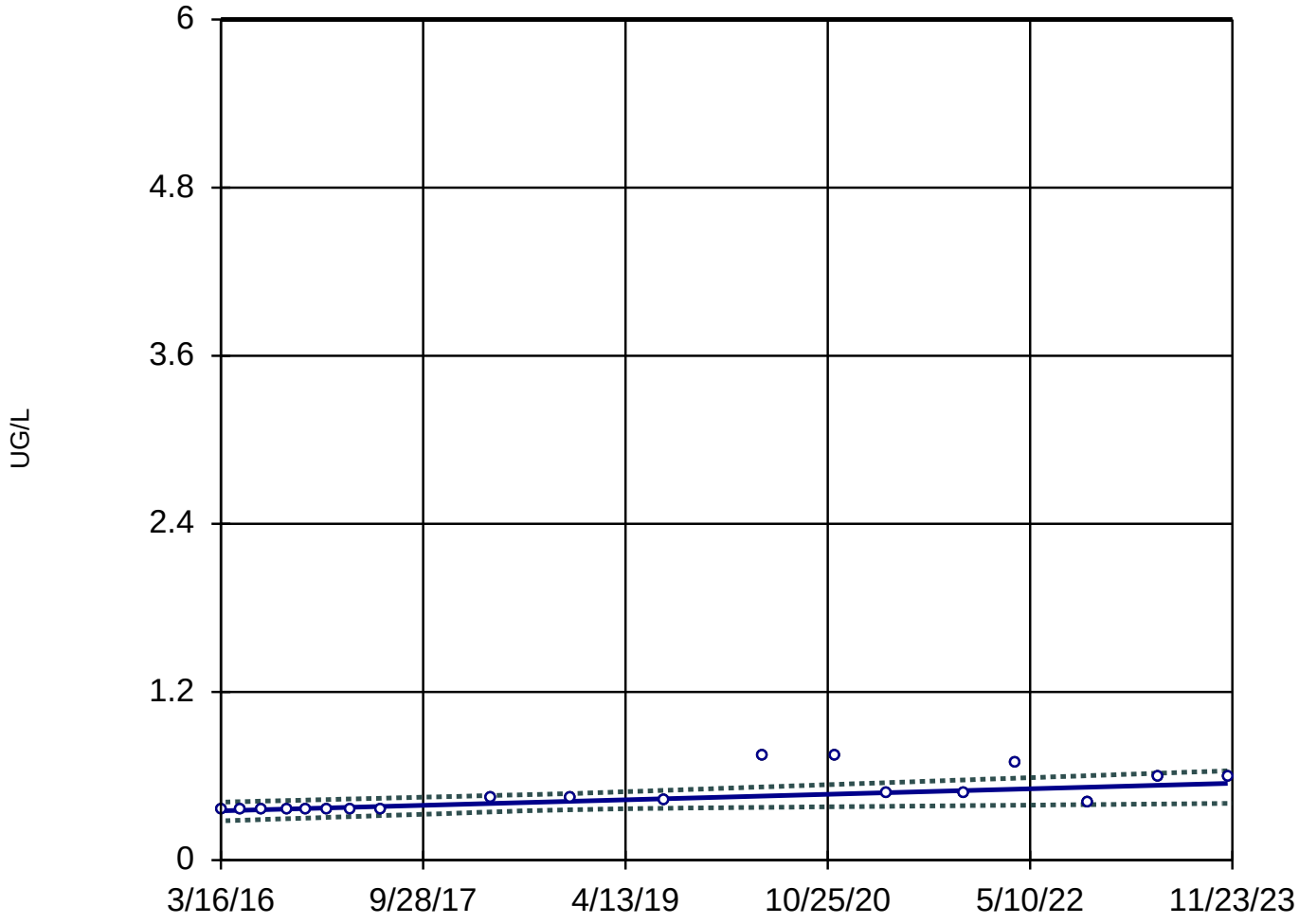
Constituent: COBALT, TOTAL Analysis Run 3/13/2024 9:55 AM View: Assessment

Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG
Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

S-UMW-4D



n = 19

Slope = 0.02557 units per year.

Mann-Kendall statistic = 107
critical = 68

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (6).

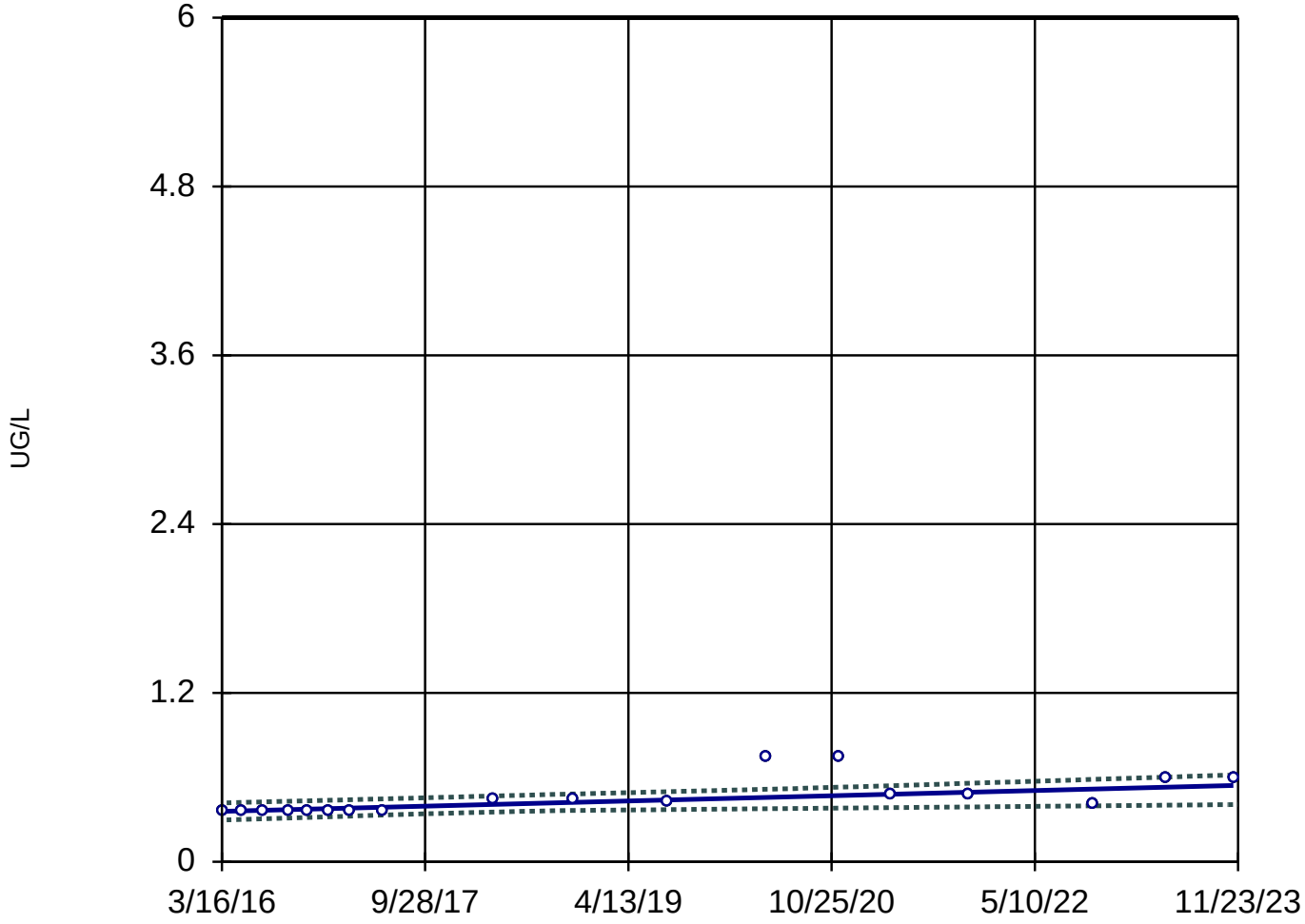
Constituent: COBALT, TOTAL Analysis Run 3/13/2024 9:55 AM View: Assessment

Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG
Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

S-UMW-5D



n = 18

Slope = 0.02413 units per year.

Mann-Kendall statistic = 99
critical = 63

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (6).

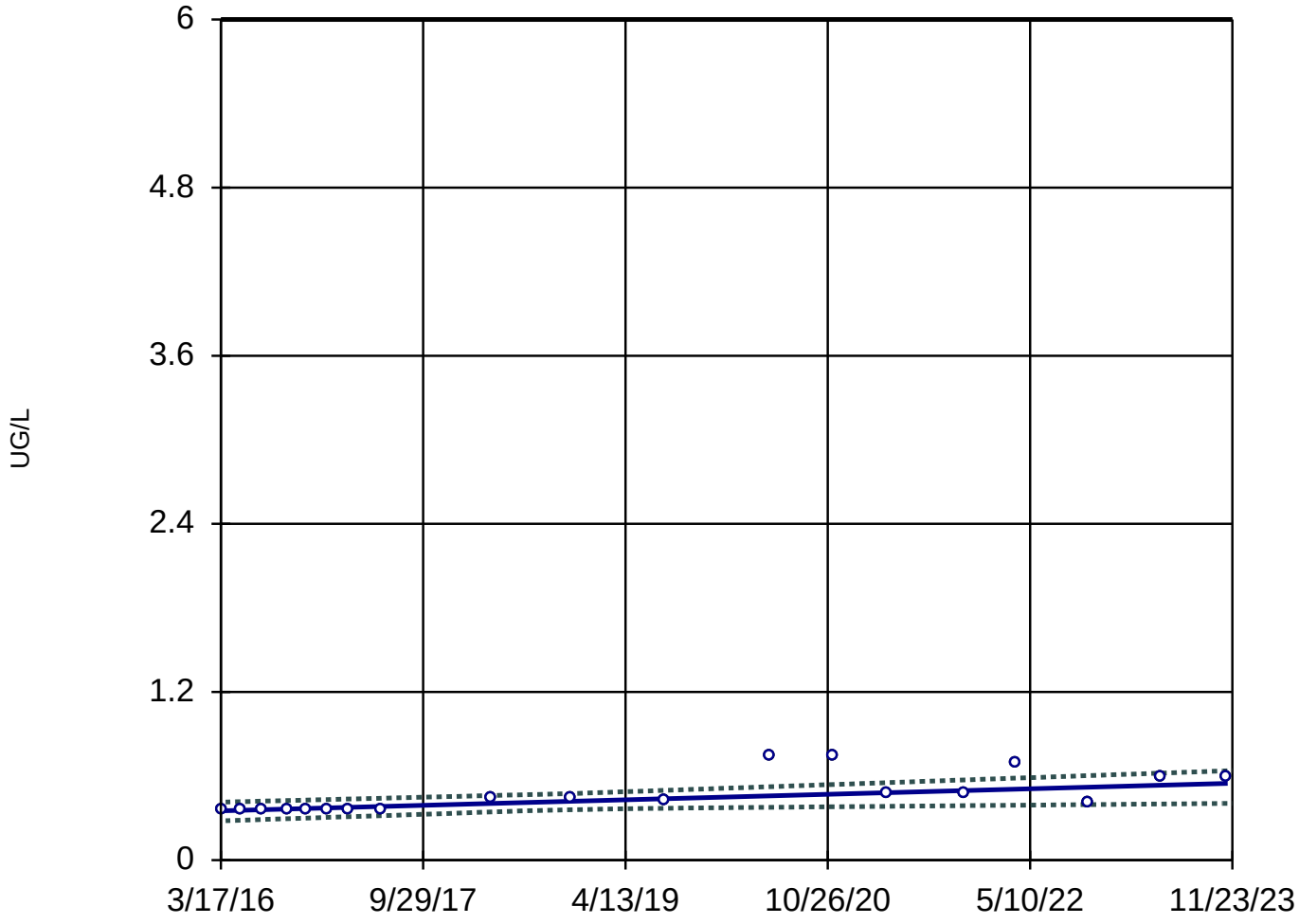
Constituent: COBALT, TOTAL Analysis Run 3/13/2024 9:55 AM View: Assessment

Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG
Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

S-UMW-6D



n = 19

Slope = 0.02551 units per year.

Mann-Kendall statistic = 107
critical = 68

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (6).

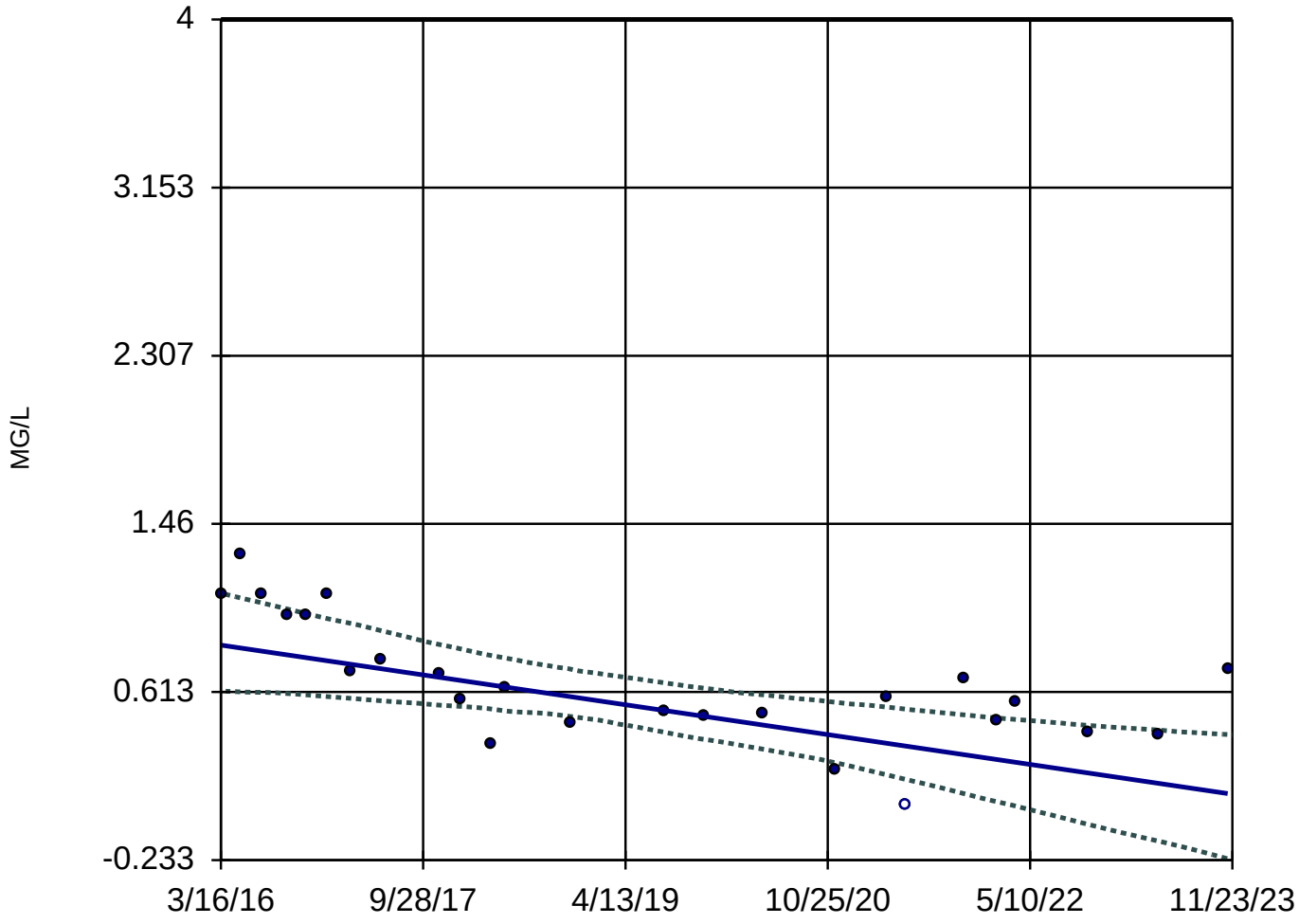
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Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG
Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

S-UMW-2D



n = 25

Slope = -0.09762 units per year.

Mann-Kendall statistic = -164
critical = -101

Decreasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (4).

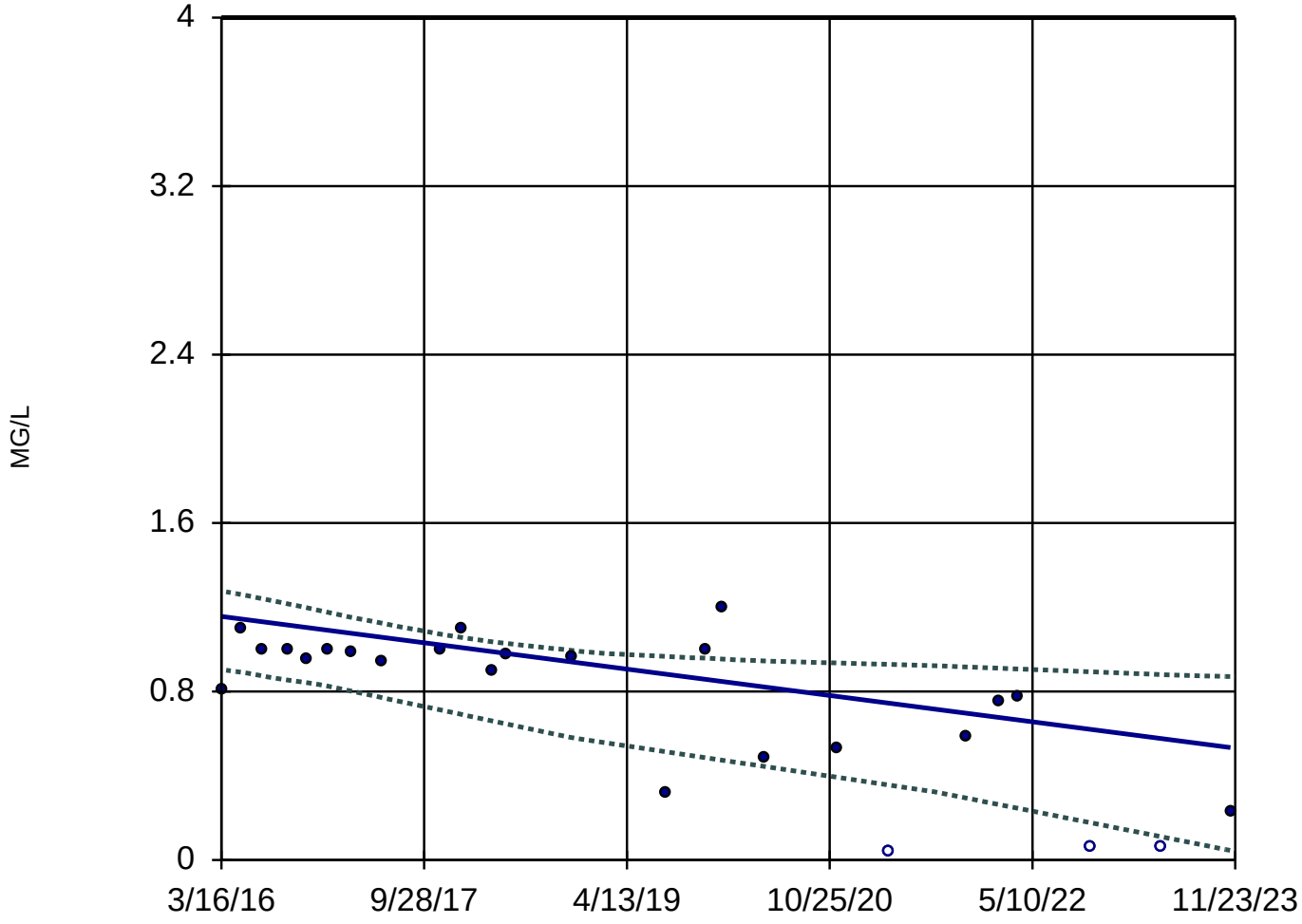
Constituent: FLUORIDE, TOTAL Analysis Run 3/13/2024 9:55 AM View: Assessment

Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG
Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

S-UMW-3D



n = 25

Slope = -0.08129 units per year.

Mann-Kendall statistic = -136
critical = -101

Decreasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (4).

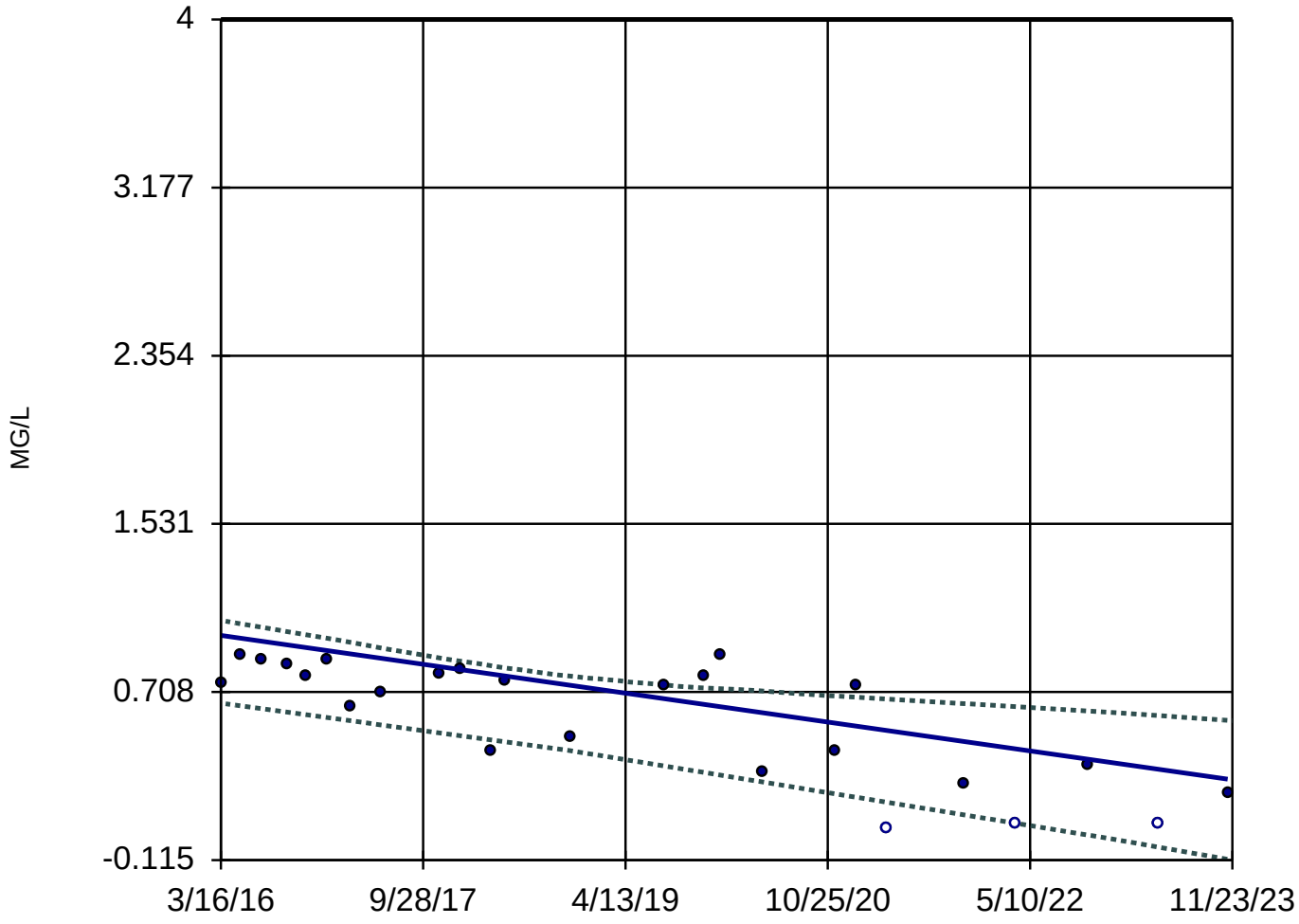
Constituent: FLUORIDE, TOTAL Analysis Run 3/13/2024 9:55 AM View: Assessment

Sioux E.C. Client: Ameren Data: SEC DATA

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Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

S-UMW-4D



n = 25

Slope = -0.09182 units per year.

Mann-Kendall statistic = -165
critical = -101

Decreasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (4).

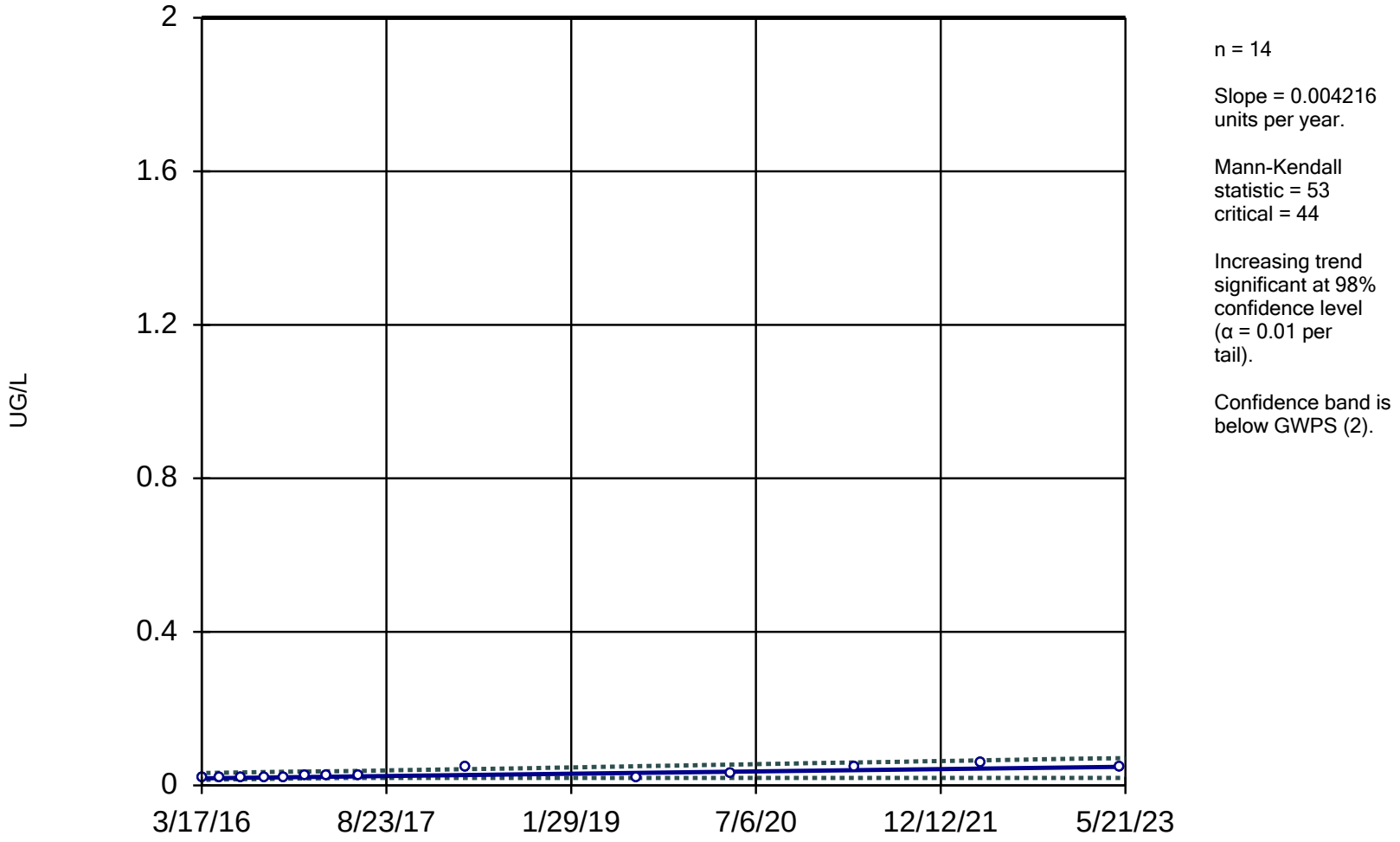
Constituent: FLUORIDE, TOTAL Analysis Run 3/13/2024 9:55 AM View: Assessment

Sioux E.C. Client: Ameren Data: SEC DATA

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Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

S-UMW-1D



n = 14

Slope = 0.004216 units per year.

Mann-Kendall statistic = 53
critical = 44

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (2).

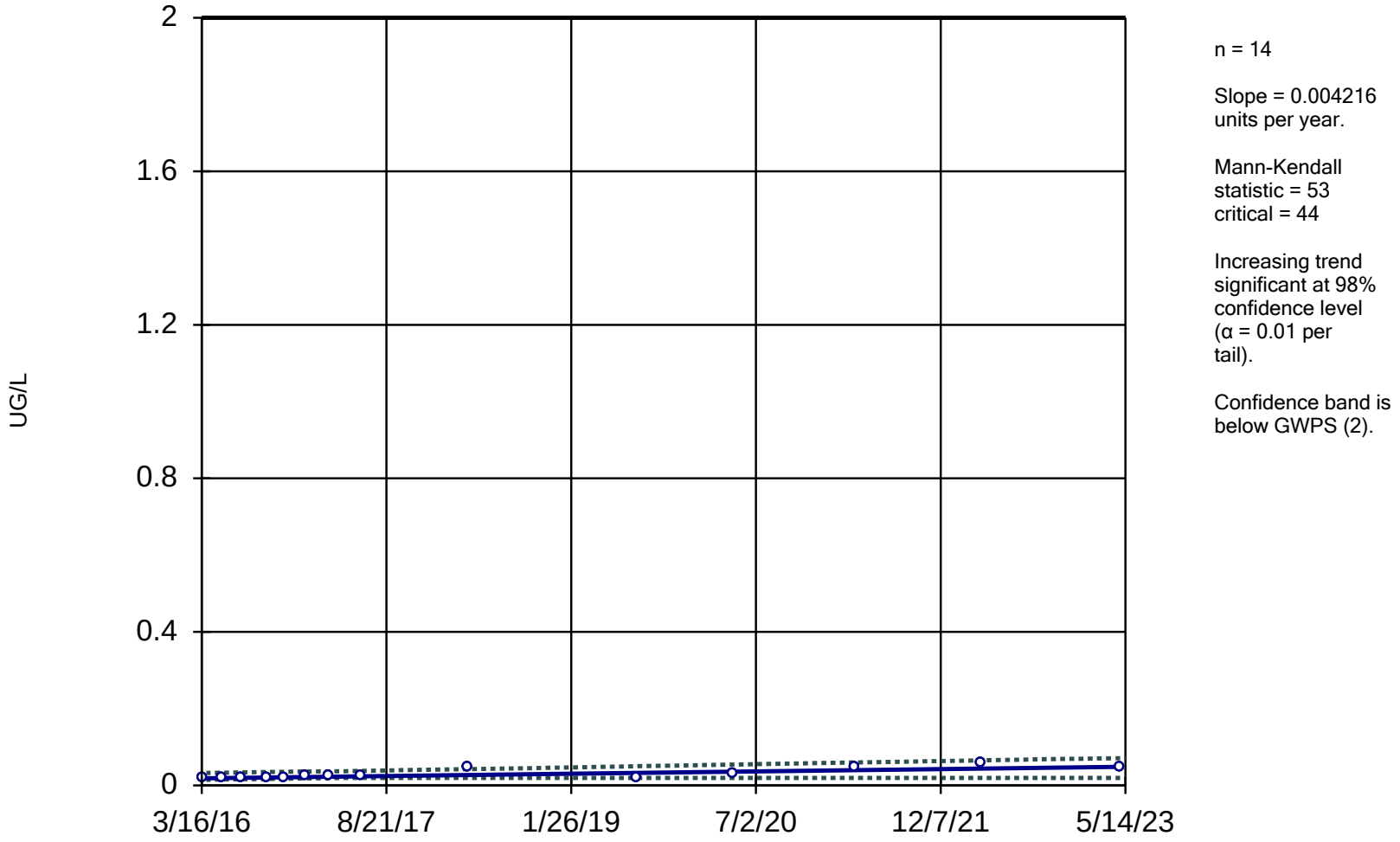
Constituent: MERCURY, TOTAL Analysis Run 3/13/2024 9:56 AM View: Assessment

Sioux E.C. Client: Ameren Data: SEC DATA

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Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

S-UMW-2D



n = 14

Slope = 0.004216 units per year.

Mann-Kendall statistic = 53
critical = 44

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (2).

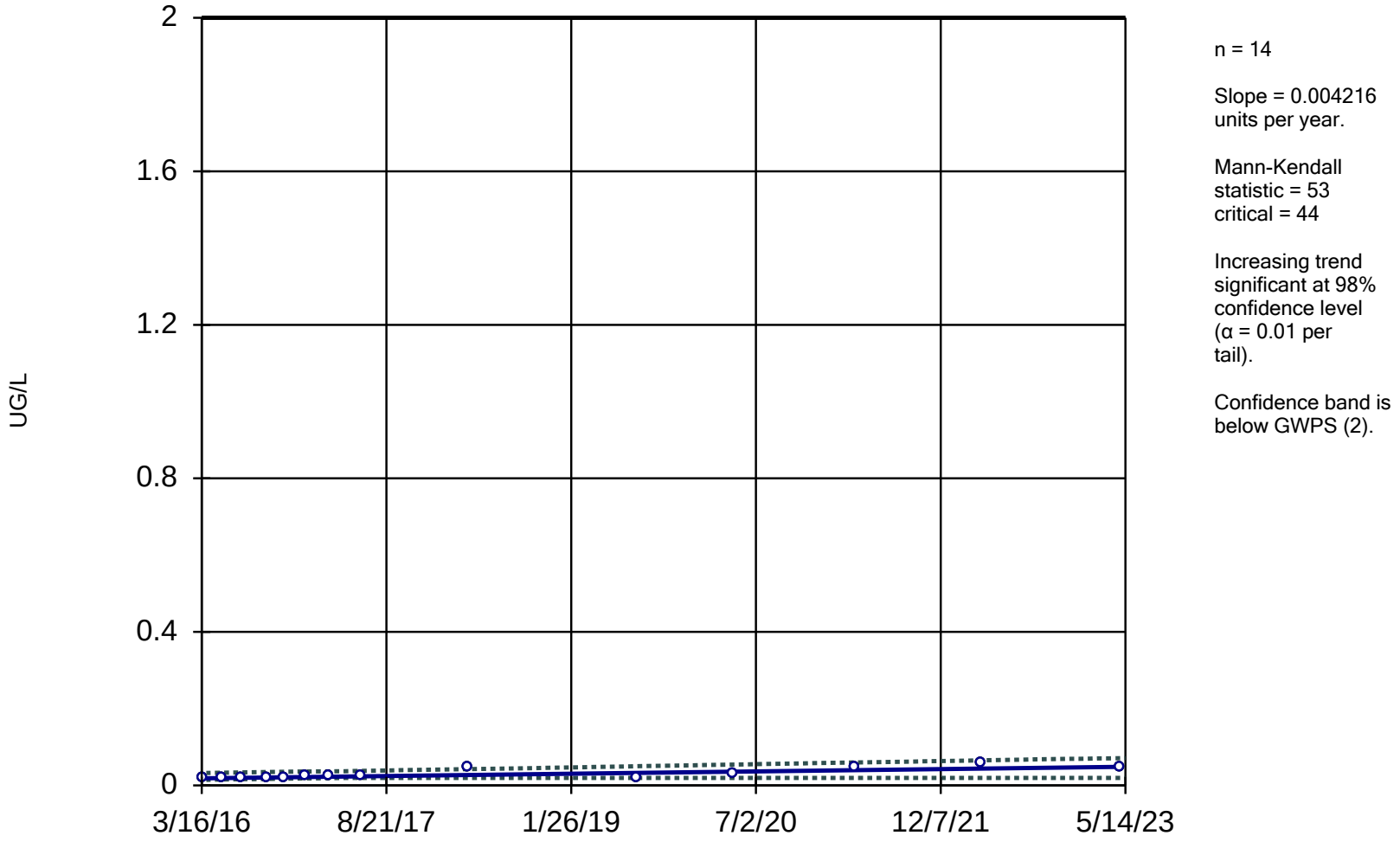
Constituent: MERCURY, TOTAL Analysis Run 3/13/2024 9:56 AM View: Assessment

Sioux E.C. Client: Ameren Data: SEC DATA

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Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

S-UMW-3D



n = 14

Slope = 0.004216 units per year.

Mann-Kendall statistic = 53
critical = 44

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (2).

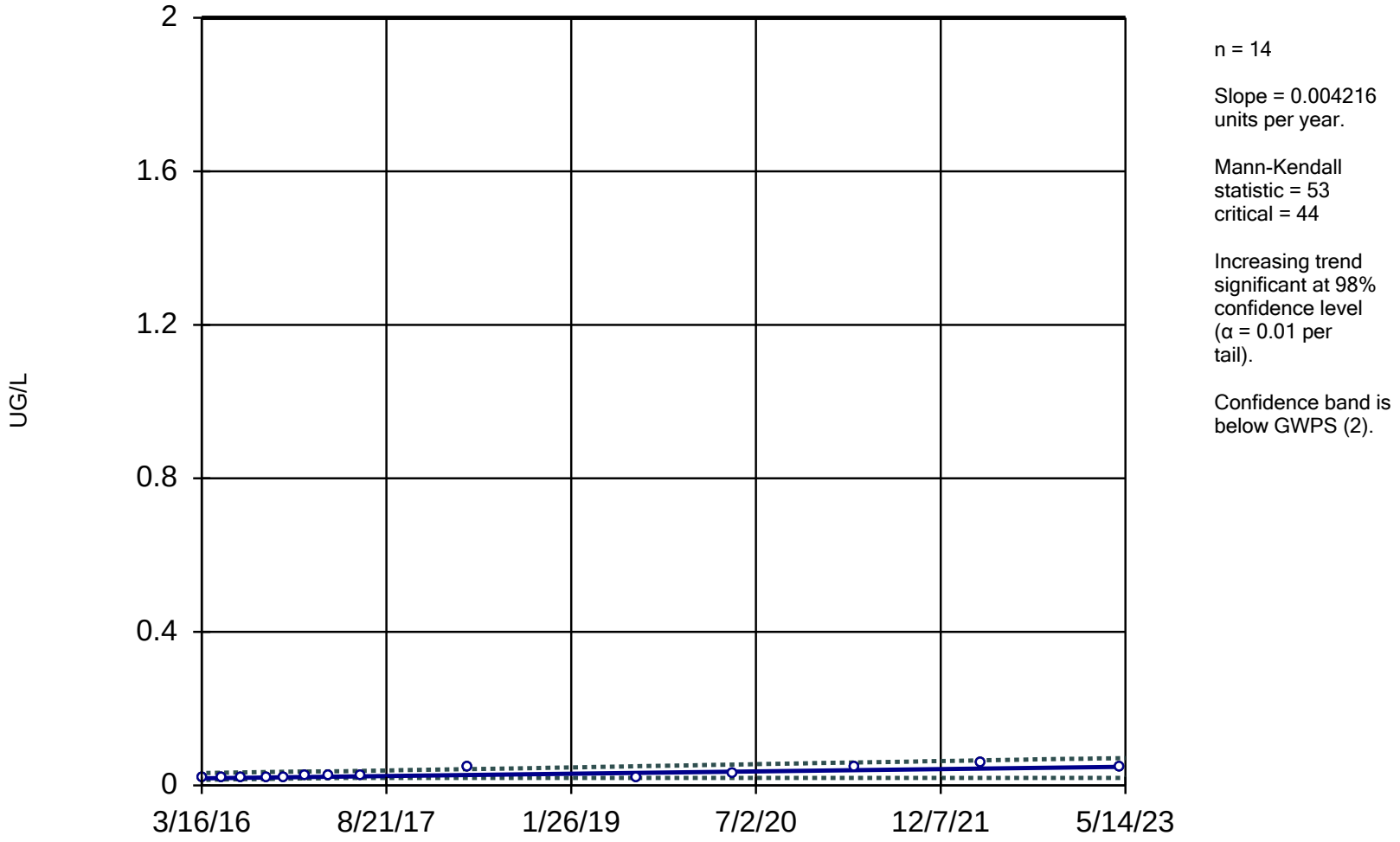
Constituent: MERCURY, TOTAL Analysis Run 3/13/2024 9:56 AM View: Assessment

Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG
Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

S-UMW-4D



n = 14

Slope = 0.004216 units per year.

Mann-Kendall statistic = 53
critical = 44

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (2).

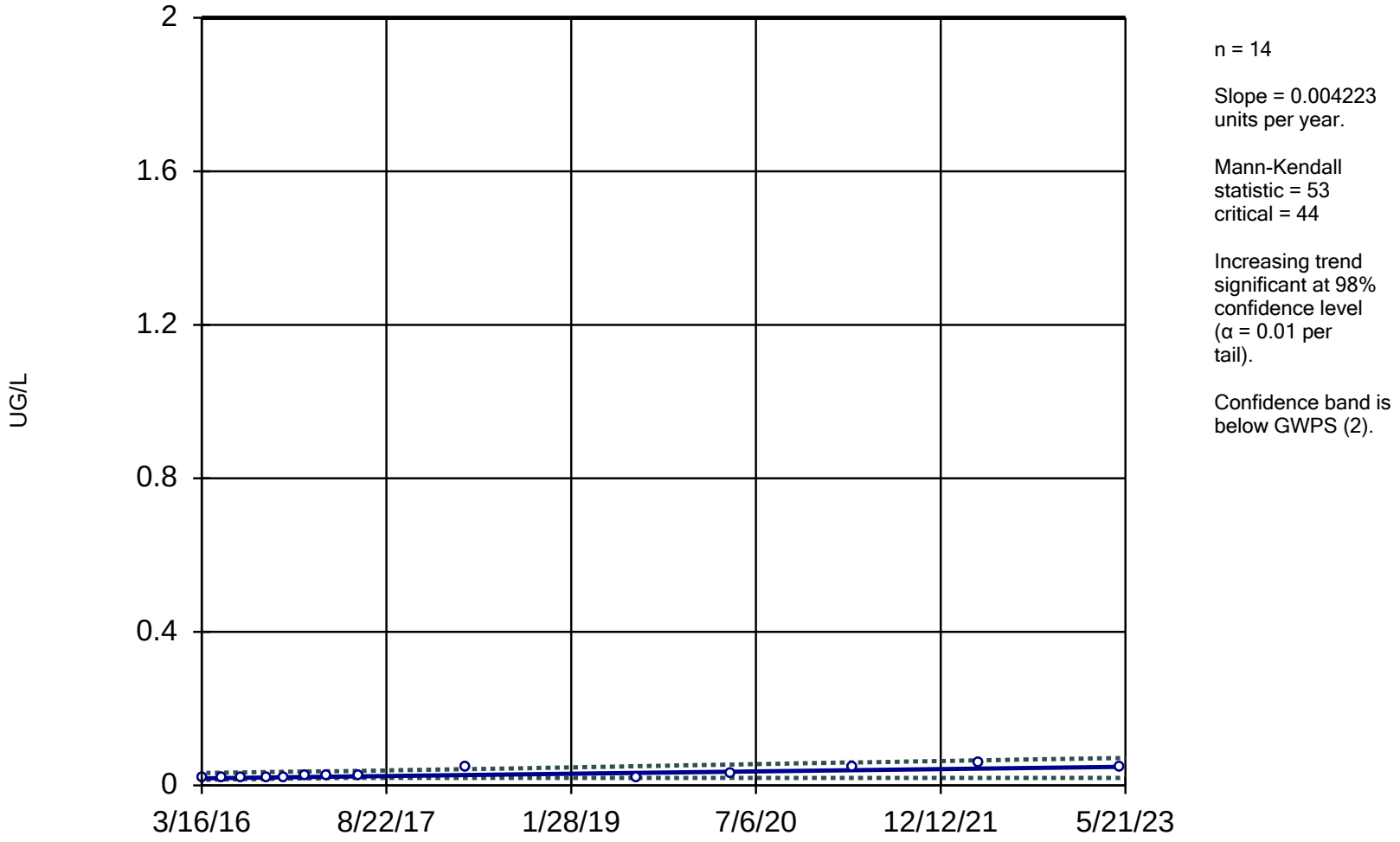
Constituent: MERCURY, TOTAL Analysis Run 3/13/2024 9:56 AM View: Assessment

Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG
Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

S-UMW-5D



n = 14

Slope = 0.004223 units per year.

Mann-Kendall statistic = 53
critical = 44

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (2).

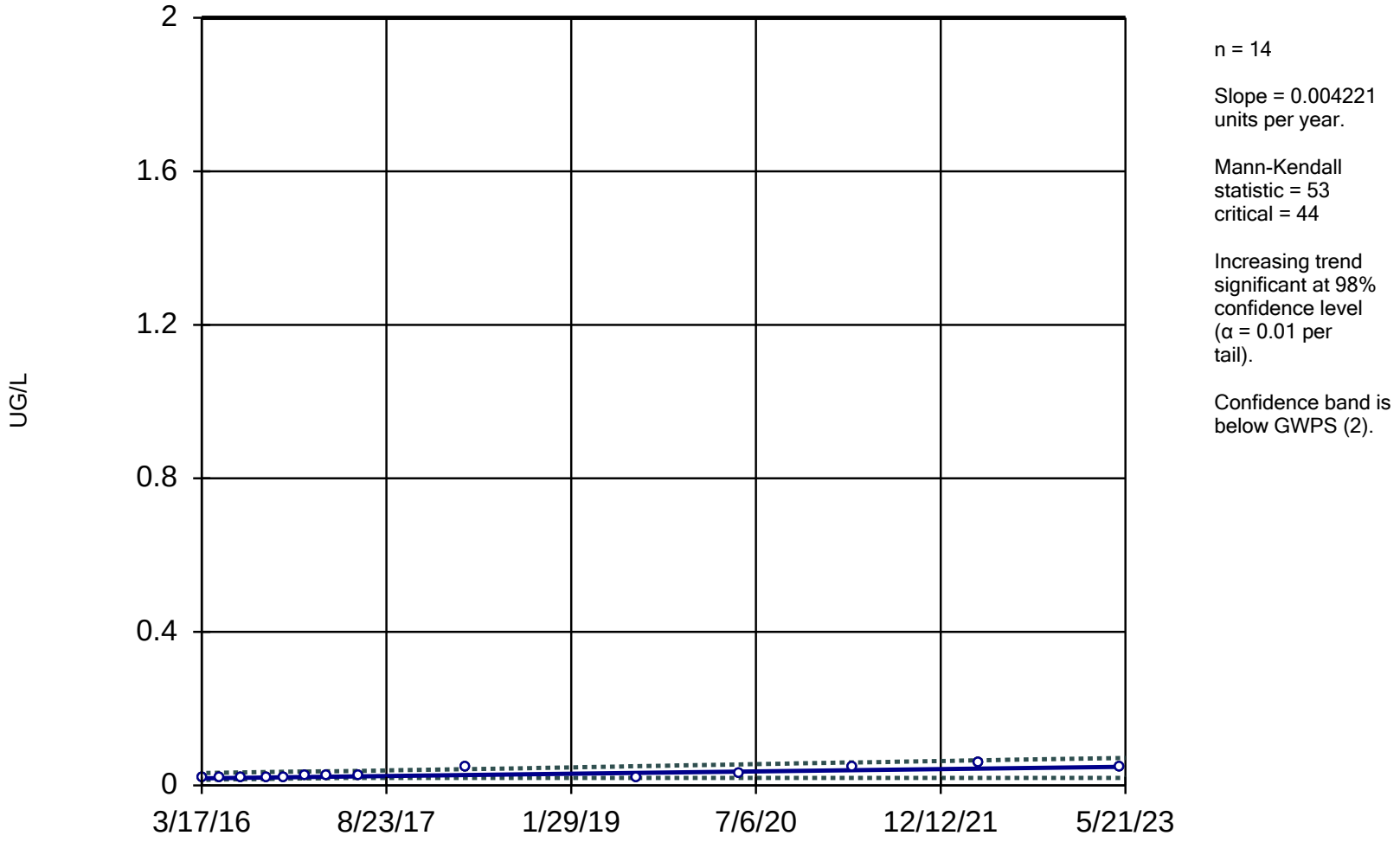
Constituent: MERCURY, TOTAL Analysis Run 3/13/2024 9:56 AM View: Assessment

Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG
Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

S-UMW-6D



n = 14

Slope = 0.004221 units per year.

Mann-Kendall statistic = 53
critical = 44

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (2).

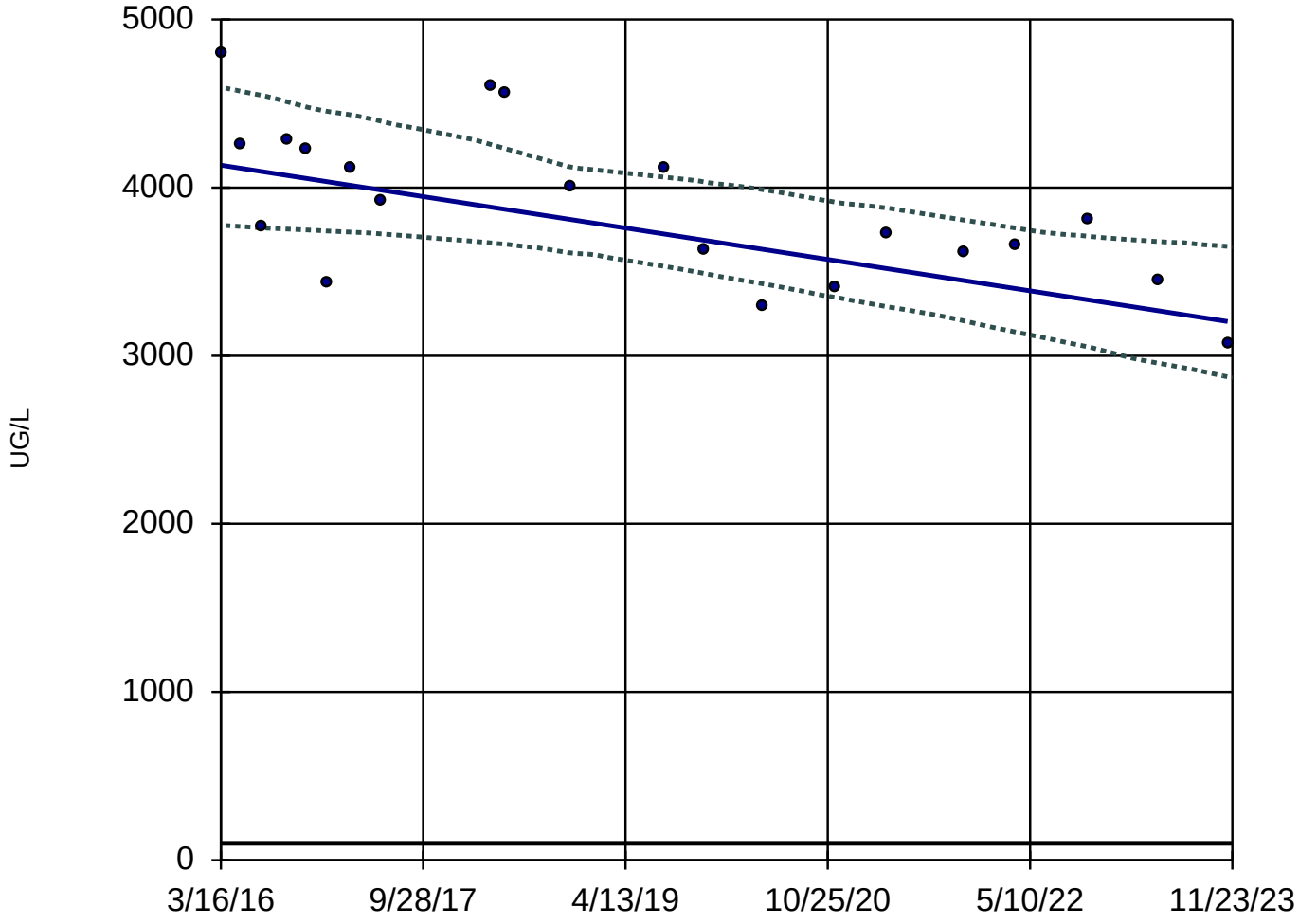
Constituent: MERCURY, TOTAL Analysis Run 3/13/2024 9:56 AM View: Assessment

Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG

Sen's Slope and 95% Confidence Band

S-UMW-3D



n = 21

Slope = -121.4 units per year.

Mann-Kendall statistic = -103
critical = -78

Decreasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is above GWPS (100).

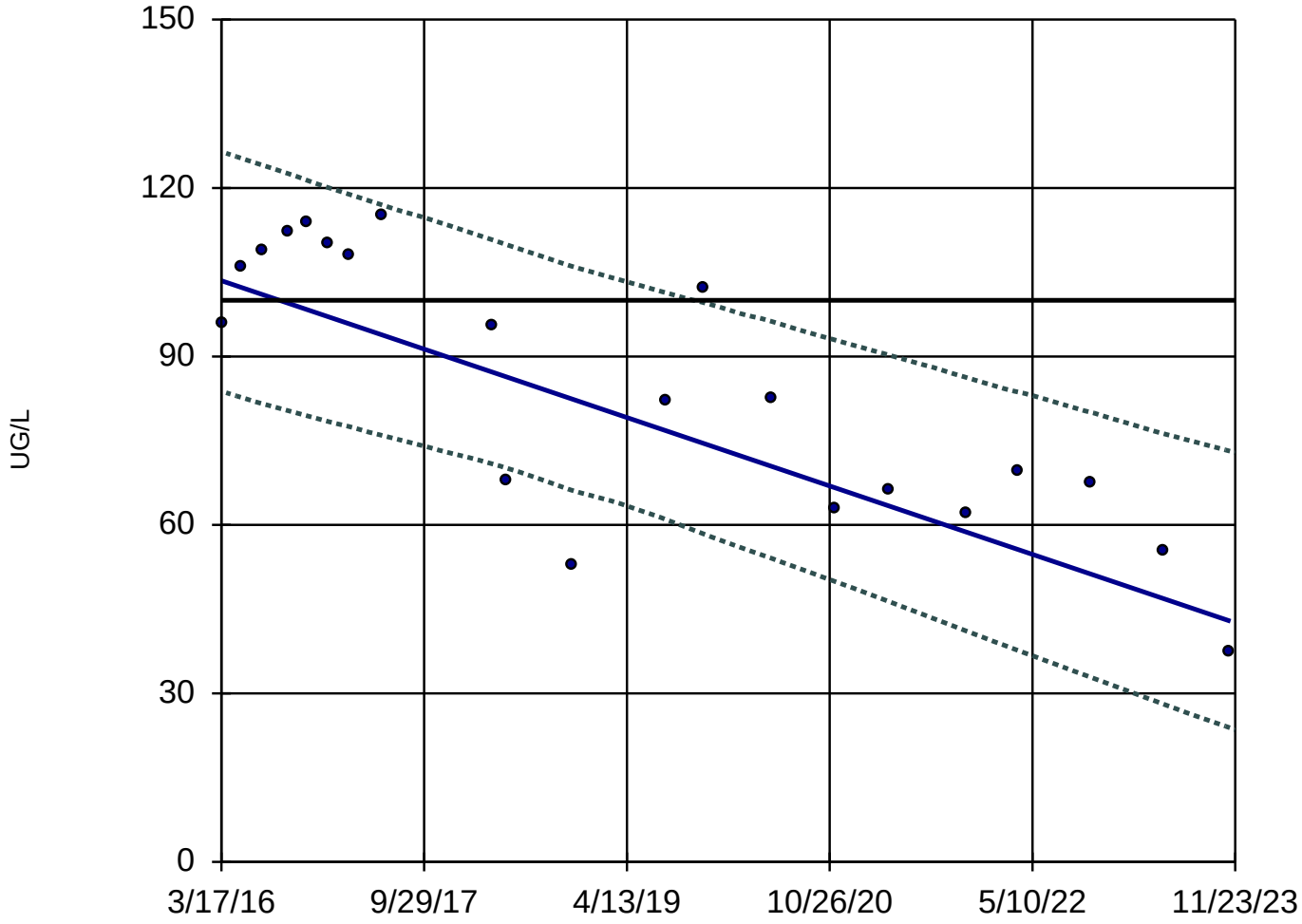
Constituent: MOLYBDENUM, TOTAL Analysis Run 3/13/2024 10:00 AM View: Assessment

Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG

Sen's Slope and 95% Confidence Band

S-UMW-6D



n = 21

Slope = -7.923
units per year.

Mann-Kendall
statistic = -118
critical = -78

Decreasing trend
significant at 98%
confidence level
(α = 0.01 per
tail).

Confidence band intersects
GWPS (100) on 11/04/19.

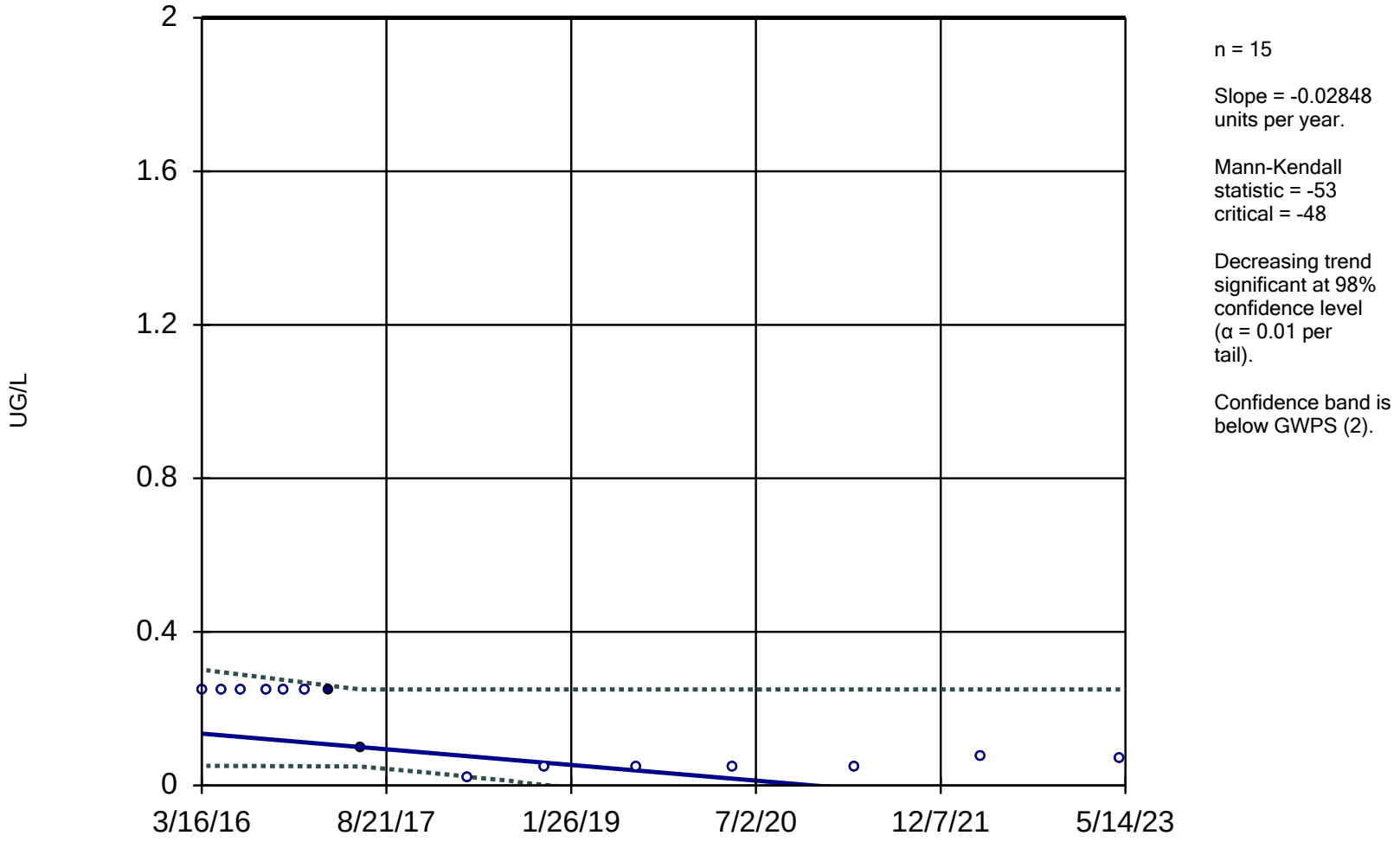
Constituent: MOLYBDENUM, TOTAL Analysis Run 3/13/2024 9:59 AM View: Assessment

Sioux E.C. Client: Ameren Data: SEC DATA

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Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

S-UMW-2D



n = 15

Slope = -0.02848 units per year.

Mann-Kendall statistic = -53
critical = -48

Decreasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (2).

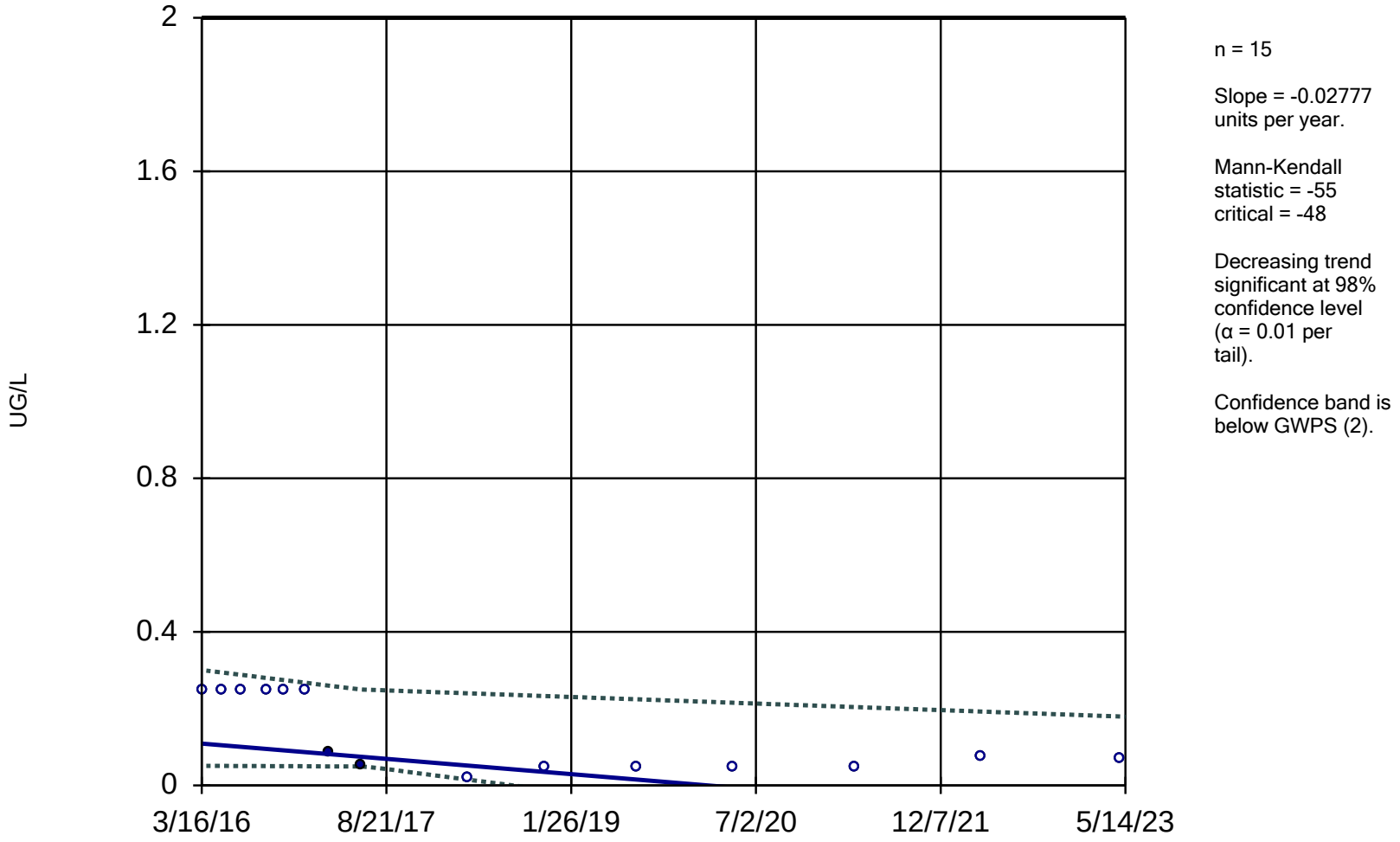
Constituent: THALLIUM, TOTAL Analysis Run 3/13/2024 9:56 AM View: Assessment

Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG
Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

S-UMW-3D



n = 15

Slope = -0.02777 units per year.

Mann-Kendall statistic = -55
critical = -48

Decreasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (2).

Constituent: THALLIUM, TOTAL Analysis Run 3/13/2024 9:56 AM View: Assessment

Sioux E.C. Client: Ameren Data: SEC DATA

Trend Test

Sioux E.C. Client: Ameren Data: SEC DATA Printed 3/13/2024, 9:57 AM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
ANTIMONY, TOTAL (UG/L)	S-UMW-1D	-0.00108	-5	-48	No	15	46.67	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	S-UMW-2D	0.002711	25	48	No	15	66.67	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	S-UMW-3D	0.004573	38	44	No	14	85.71	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	**S-UMW-4D**	**0.004442**	**57**	**48**	**Yes**	**15**	**93.33**	**n/a**	**n/a**	**0.02**	**NP**
ANTIMONY, TOTAL (UG/L)	**S-UMW-5D**	**0.004413**	**49**	**48**	**Yes**	**15**	**100**	**n/a**	**n/a**	**0.02**	**NP**
ANTIMONY, TOTAL (UG/L)	**S-UMW-6D**	**0.004413**	**49**	**48**	**Yes**	**15**	**100**	**n/a**	**n/a**	**0.02**	**NP**
ARSENIC, TOTAL (UG/L)	**S-UMW-1D**	**0.1002**	**112**	**68**	**Yes**	**19**	**0**	**n/a**	**n/a**	**0.02**	**NP**
ARSENIC, TOTAL (UG/L)	**S-UMW-2D**	**0.302**	**139**	**78**	**Yes**	**21**	**0**	**n/a**	**n/a**	**0.02**	**NP**
ARSENIC, TOTAL (UG/L)	S-UMW-3D	0.0593	57	73	No	20	10	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	S-UMW-4D	0.01543	39	73	No	20	20	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	**S-UMW-5D**	**-0.03653**	**-85**	**-78**	**Yes**	**21**	**9.524**	**n/a**	**n/a**	**0.02**	**NP**
ARSENIC, TOTAL (UG/L)	S-UMW-6D	0.02776	77	78	No	21	9.524	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	S-UMW-1D	0.7634	7	78	No	21	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	**S-UMW-2D**	**-7.011**	**-118**	**-78**	**Yes**	**21**	**0**	**n/a**	**n/a**	**0.02**	**NP**
BARIUM, TOTAL (UG/L)	S-UMW-3D	-0.4119	-28	-78	No	21	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	**S-UMW-4D**	**-4.154**	**-122**	**-78**	**Yes**	**21**	**0**	**n/a**	**n/a**	**0.02**	**NP**
BARIUM, TOTAL (UG/L)	S-UMW-5D	4.208	35	78	No	21	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	S-UMW-6D	-0.1817	-6	-78	No	21	0	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	S-UMW-1D	0	-16	-53	No	16	100	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	S-UMW-2D	0	13	48	No	15	93.33	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	S-UMW-3D	0	-14	-48	No	15	100	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	S-UMW-4D	0	-16	-53	No	16	100	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	S-UMW-5D	0	-16	-53	No	16	100	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	S-UMW-6D	0	-16	-53	No	16	100	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	S-UMW-1D	0.001534	48	63	No	18	88.89	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	**S-UMW-2D**	**0.07154**	**136**	**73**	**Yes**	**20**	**35**	**n/a**	**n/a**	**0.02**	**NP**
CADMIUM, TOTAL (UG/L)	**S-UMW-3D**	**0.1604**	**94**	**73**	**Yes**	**20**	**25**	**n/a**	**n/a**	**0.02**	**NP**
CADMIUM, TOTAL (UG/L)	**S-UMW-4D**	**0.2911**	**95**	**73**	**Yes**	**20**	**20**	**n/a**	**n/a**	**0.02**	**NP**
CADMIUM, TOTAL (UG/L)	**S-UMW-5D**	**0.02142**	**75**	**73**	**Yes**	**20**	**40**	**n/a**	**n/a**	**0.02**	**NP**
CADMIUM, TOTAL (UG/L)	S-UMW-6D	0.001518	45	73	No	20	80	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	S-UMW-1D	-0.00...	-4	-53	No	16	50	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	S-UMW-2D	-0.00...	-12	-53	No	16	56.25	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	S-UMW-3D	-0.00901	-18	-58	No	17	52.94	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	S-UMW-4D	0	-1	-58	No	17	58.82	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	S-UMW-5D	-0.01744	-20	-58	No	17	47.06	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	S-UMW-6D	0.001695	5	58	No	17	58.82	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	**S-UMW-1D**	**0.02554**	**107**	**68**	**Yes**	**19**	**100**	**n/a**	**n/a**	**0.02**	**NP**
COBALT, TOTAL (UG/L)	**S-UMW-2D**	**0.02557**	**107**	**68**	**Yes**	**19**	**100**	**n/a**	**n/a**	**0.02**	**NP**
COBALT, TOTAL (UG/L)	**S-UMW-3D**	**0.02557**	**107**	**68**	**Yes**	**19**	**100**	**n/a**	**n/a**	**0.02**	**NP**
COBALT, TOTAL (UG/L)	**S-UMW-4D**	**0.02557**	**107**	**68**	**Yes**	**19**	**100**	**n/a**	**n/a**	**0.02**	**NP**
COBALT, TOTAL (UG/L)	**S-UMW-5D**	**0.02413**	**99**	**63**	**Yes**	**18**	**100**	**n/a**	**n/a**	**0.02**	**NP**
COBALT, TOTAL (UG/L)	**S-UMW-6D**	**0.02551**	**107**	**68**	**Yes**	**19**	**100**	**n/a**	**n/a**	**0.02**	**NP**
FLUORIDE, TOTAL (MG/L)	S-UMW-1D	-0.01238	-60	-89	No	23	8.696	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	**S-UMW-2D**	**-0.09762**	**-164**	**-101**	**Yes**	**25**	**4**	**n/a**	**n/a**	**0.02**	**NP**
FLUORIDE, TOTAL (MG/L)	**S-UMW-3D**	**-0.08129**	**-136**	**-101**	**Yes**	**25**	**12**	**n/a**	**n/a**	**0.02**	**NP**
FLUORIDE, TOTAL (MG/L)	**S-UMW-4D**	**-0.09182**	**-165**	**-101**	**Yes**	**25**	**12**	**n/a**	**n/a**	**0.02**	**NP**
FLUORIDE, TOTAL (MG/L)	S-UMW-5D	-0.01555	-34	-89	No	23	0	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	S-UMW-6D	-0.00...	-11	-95	No	24	8.333	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	S-UMW-1D	0.1485	53	53	No	16	87.5	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	S-UMW-2D	0.1447	49	53	No	16	75	n/a	n/a	0.02	NP

Trend Test

Sioux E.C. Client: Ameren Data: SEC DATA Printed 3/13/2024, 9:57 AM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
LEAD, TOTAL (UG/L)	S-UMW-3D	0.05135	5	53	No	16	62.5	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	S-UMW-4D	0.09421	12	53	No	16	56.25	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	S-UMW-5D	0.08388	13	53	No	16	81.25	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	S-UMW-6D	0.1488	53	53	No	16	87.5	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-UMW-1D	0.06238	10	78	No	21	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-UMW-2D	-0.2318	-20	-78	No	21	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-UMW-3D	-0.06933	-7	-78	No	21	4.762	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-UMW-4D	-0.5324	-54	-78	No	21	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-UMW-5D	-0.7916	-59	-78	No	21	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-UMW-6D	0.2974	16	73	No	20	0	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	**S-UMW-1D**	**0.004216**	**53**	**44**	**Yes**	**14**	**100**	**n/a**	**n/a**	**0.02**	**NP**
MERCURY, TOTAL (UG/L)	**S-UMW-2D**	**0.004216**	**53**	**44**	**Yes**	**14**	**100**	**n/a**	**n/a**	**0.02**	**NP**
MERCURY, TOTAL (UG/L)	**S-UMW-3D**	**0.004216**	**53**	**44**	**Yes**	**14**	**100**	**n/a**	**n/a**	**0.02**	**NP**
MERCURY, TOTAL (UG/L)	**S-UMW-4D**	**0.004216**	**53**	**44**	**Yes**	**14**	**100**	**n/a**	**n/a**	**0.02**	**NP**
MERCURY, TOTAL (UG/L)	**S-UMW-5D**	**0.004223**	**53**	**44**	**Yes**	**14**	**100**	**n/a**	**n/a**	**0.02**	**NP**
MERCURY, TOTAL (UG/L)	**S-UMW-6D**	**0.004221**	**53**	**44**	**Yes**	**14**	**100**	**n/a**	**n/a**	**0.02**	**NP**
MOLYBDENUM, TOTAL (UG/L)	S-UMW-1D	1.117	30	78	No	21	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	S-UMW-2D	30.86	39	78	No	21	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	**S-UMW-3D**	**-121.4**	**-103**	**-78**	**Yes**	**21**	**0**	**n/a**	**n/a**	**0.02**	**NP**
MOLYBDENUM, TOTAL (UG/L)	S-UMW-4D	-173.1	-42	-78	No	21	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	S-UMW-5D	14.3	18	78	No	21	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	**S-UMW-6D**	**-7.923**	**-118**	**-78**	**Yes**	**21**	**0**	**n/a**	**n/a**	**0.02**	**NP**
RADIUM [226 + 228] (PCI/L)	S-UMW-1D	0.0206	35	63	No	18	100	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	S-UMW-2D	0.01531	22	53	No	16	100	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	S-UMW-3D	0.02968	29	63	No	18	72.22	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	S-UMW-4D	0.02751	37	63	No	18	83.33	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	S-UMW-5D	0.02768	23	63	No	18	72.22	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	S-UMW-6D	0.0224	36	63	No	18	94.44	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-UMW-1D	0	19	68	No	19	84.21	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-UMW-2D	0	-6	-68	No	19	78.95	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-UMW-3D	-0.0115	-55	-68	No	19	26.32	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-UMW-4D	-0.00...	-33	-68	No	19	31.58	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-UMW-5D	0	-12	-68	No	19	31.58	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-UMW-6D	0	4	68	No	19	100	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	S-UMW-1D	-0.02964	-46	-48	No	15	93.33	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	**S-UMW-2D**	**-0.02848**	**-53**	**-48**	**Yes**	**15**	**86.67**	**n/a**	**n/a**	**0.02**	**NP**
THALLIUM, TOTAL (UG/L)	**S-UMW-3D**	**-0.02777**	**-55**	**-48**	**Yes**	**15**	**86.67**	**n/a**	**n/a**	**0.02**	**NP**
THALLIUM, TOTAL (UG/L)	S-UMW-4D	-0.02639	-45	-48	No	15	86.67	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	S-UMW-5D	-0.02572	-32	-48	No	15	93.33	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	S-UMW-6D	-0.02572	-32	-48	No	15	100	n/a	n/a	0.02	NP

Appendix C

May 2024 Assessment Monitoring Statistical Evaluation

Memorandum
September 24, 2024

To:	Bill Kutosky – Ameren Missouri	**Project Number:**	23009-24
CC:	Ameren Missouri - Susan Knowles, Craig Giesmann, Charlie Henderson		
From:	Rocksmith Geoengineering - Mark Haddock, P.E., Jeff Ingram, R.G., Grant Morey	**Email:**	jeff.ingram@rocksmithgeo.com
RE:	**Assessment Monitoring Statistical Evaluation, SCPA Surface Impoundment Sioux Energy Center, St. Charles County, Missouri**		

1.0 INTRODUCTION

This Technical Memorandum provides the results of the Assessment Monitoring Statistical Evaluation for the May 2024 sampling event at the SCPA Surface Impoundment at the Sioux Energy Center located in St. Charles County, Missouri. Included in the memorandum is a summary of constituents that are present at a Statistically Significant Level (SSL), a list of site-specific Groundwater Protection Standards (**Table 1**), and the Sanitas Technologies™ (Sanitas) statistical software output for each of the Appendix IV parameters (**Appendix A and Appendix B**).

2.0 STATISTICAL EVALUATION

The Appendix IV constituents were evaluated for SSLs using the methods and procedures outlined in the Statistical Analysis Plan (SAP). An outlier analysis was performed on all results within the SCPA monitoring network, inclusive of May 2024 data. In addition to outliers noted in previous Assessment Monitoring statistical evaluations, the following outliers were removed from the dataset prior to the calculation of confidence limits:

- Arsenic
    - S-UMW-5D at non-detect [<0.052 micrograms per liter (µg/L)] on 3/8/2017: result is statistically lower than other arsenic values at the same monitoring well. This low result is not consistent with previous or subsequent arsenic results at the well and is an outlier.
- Fluoride
    - S-UMW-2D at 2.6 J milligrams per liter (mg/L) on 2/8/2024: result is statistically higher than other fluoride values at the same monitoring well. This high result is not consistent with previous or subsequent fluoride results at the well and is an outlier.

An analysis of the outliers removed to-date was completed and one statistical outlier that was previously removed was added back into the dataset prior to the calculation of confidence limits:

- Arsenic
    - S-UMW-1D at 2.7 µg/L on 4/14/2021: removed during the statistical evaluation for the October 2022 sampling event because the result was statistically higher than other arsenic values at the same monitoring well. Based on subsequent sampling results, the high result was confirmed and is no longer an outlier.

Based on the results from the confidence interval and trend analysis, no new SSLs were noted. SSLs at the SCPA Surface Impoundment as of May 2024 continue to be:

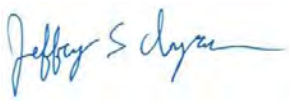
- Molybdenum at S-UMW-2D, S-UMW-3D, S-UMW-4D, and S-UMW-5D

3.0 CLOSING

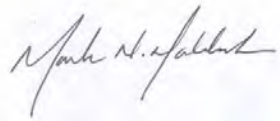
Rocksmith Appreciates this opportunity to provide hydrogeological and engineering support services to Ameren. If you have any questions or comments regarding the information provided, please contact the undersigned.

Sincerely,

Rocksmith Geoengineering, LLC



Jeff Ingram, R.G.
Senior Geologist, Partner



Mark Haddock, P.E., R.G.
Principal Engineer, Senior Partner

Attachments

Tables

Table 1 – SCPA Groundwater Protection Standards

Appendices

Appendix A – Sanitas Confidence Interval Statistical Output

Appendix B – Sanitas Trending Confidence Bands Statistical Output

Tables

Table 1 - SCPA Groundwater Protection Standards
SCPA Surface Impoundment
Sioux Energy Center, St. Charles County, MO

Parameter	Units	MCL or Health Based GWPS	Site GWPS	Value to Return to Detection Monitoring[6]
Antimony	µg/L	6	6	DQR
Arsenic	µg/L	10	10	0.6556
Barium	µg/L	2000	2000	699
Beryllium	µg/L	4	4	DQR
Cadmium	µg/L	5	5	DQR
Chromium	µg/L	100	100	DQR
Cobalt	µg/L	6	6	DQR
Fluoride	mg/L	4	4	0.44
Lead	µg/L	15	15	DQR
Lithium	µg/L	40	40	27.91
Mercury	µg/L	2	2	DQR
Molybdenum	µg/L	100	100	DQR
Radium 226 + 228	pCi/L	5	5	2.537
Selenium	µg/L	50	50	DQR
Thallium	µg/L	2	2	DQR

Notes:
1. µg/L - micrograms per liter.
2. mg/L - milligrams per liter.
3. pCi/L - picocuries per liter.
4. MCL - Maximum Contaminant Level. MCLs from United States Environmental Protection Agency (USEPA) 2012 Edition of the Drinking Water Standards and Health Advisories. Updated January 9, 2023 at http://water.epa.gov/drink/contaminants/index.cfm.
5. Health Based Groundwater Protection Standards (GWPS) were adoped for Appendix IV parameters without an MCL (i.e. cobalt, lithium, molybdenum, and lead). Information available at https://www.epa.gov/coalash/coal-ash-rule.
6. Values were calculated using statistical methods outlined for Detection Monitoring and are used for returning to Detection Monitoring based on available data to date.
7. DQR - Double Quantification Rule. If all baseline data are less than the Practical Quantitation Limit (PQL), then the DQR will be used. More information on the DQR is provided in the Statistical Analysis Plan.
8. Site GWPS is either the MCL/Health Based GWPS or based on background levels (calculated as described in the Statistical Analysis Plan for Assessment Monitoring), whichever is higher.
9. GWPS and background values calculated using results through May 2023 from monitoring wells BMW-1D and BMW-3D.

ROCKSMITH GEOENGINEERING

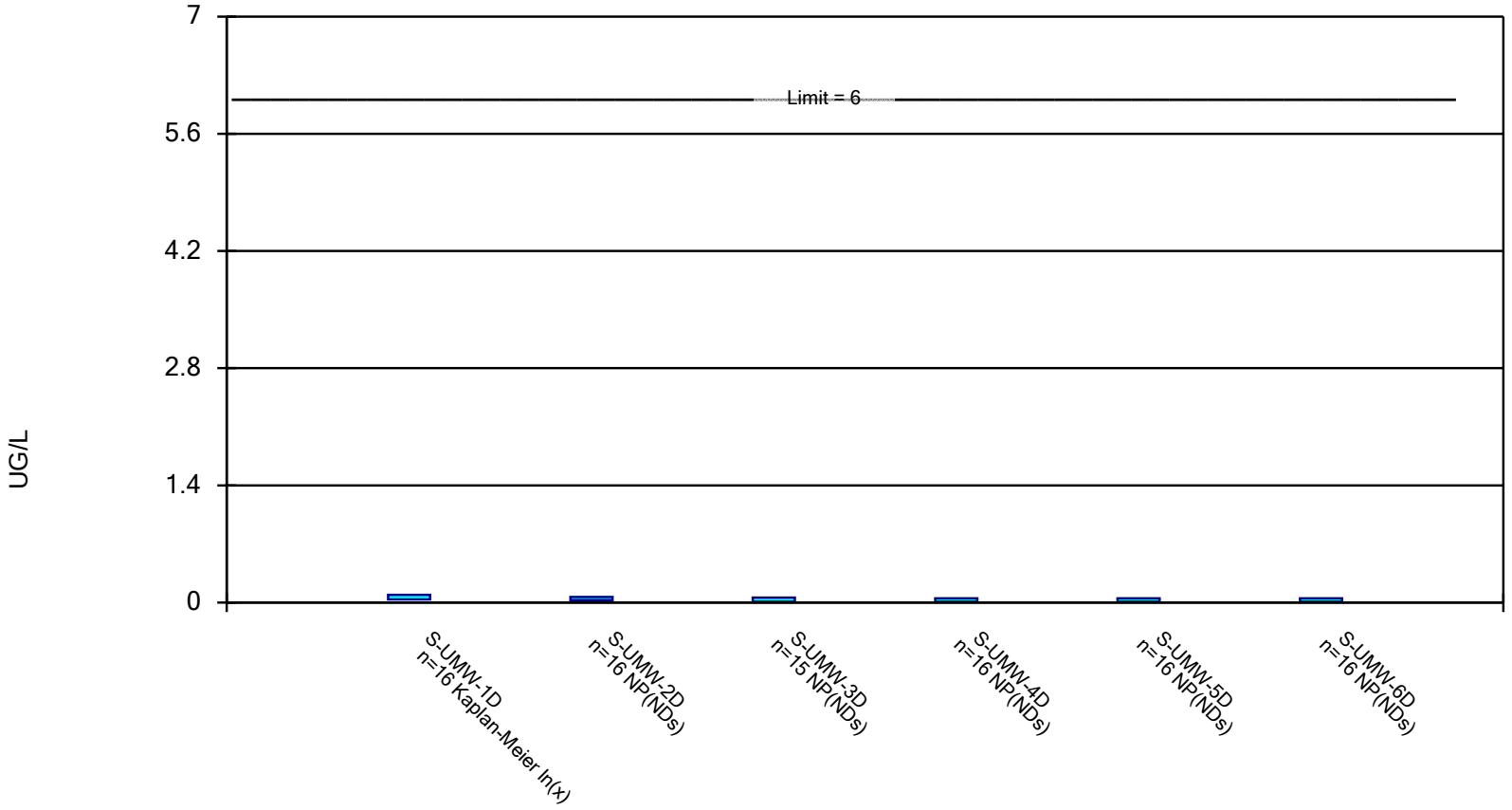
Prepared by: GTM
Checked by: JSI
Reviewed by: MNH

Appendix A
Sanitas Confidence Interval Statistical Output

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG

Parametric and Non-Parametric (NP) Confidence Interval

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



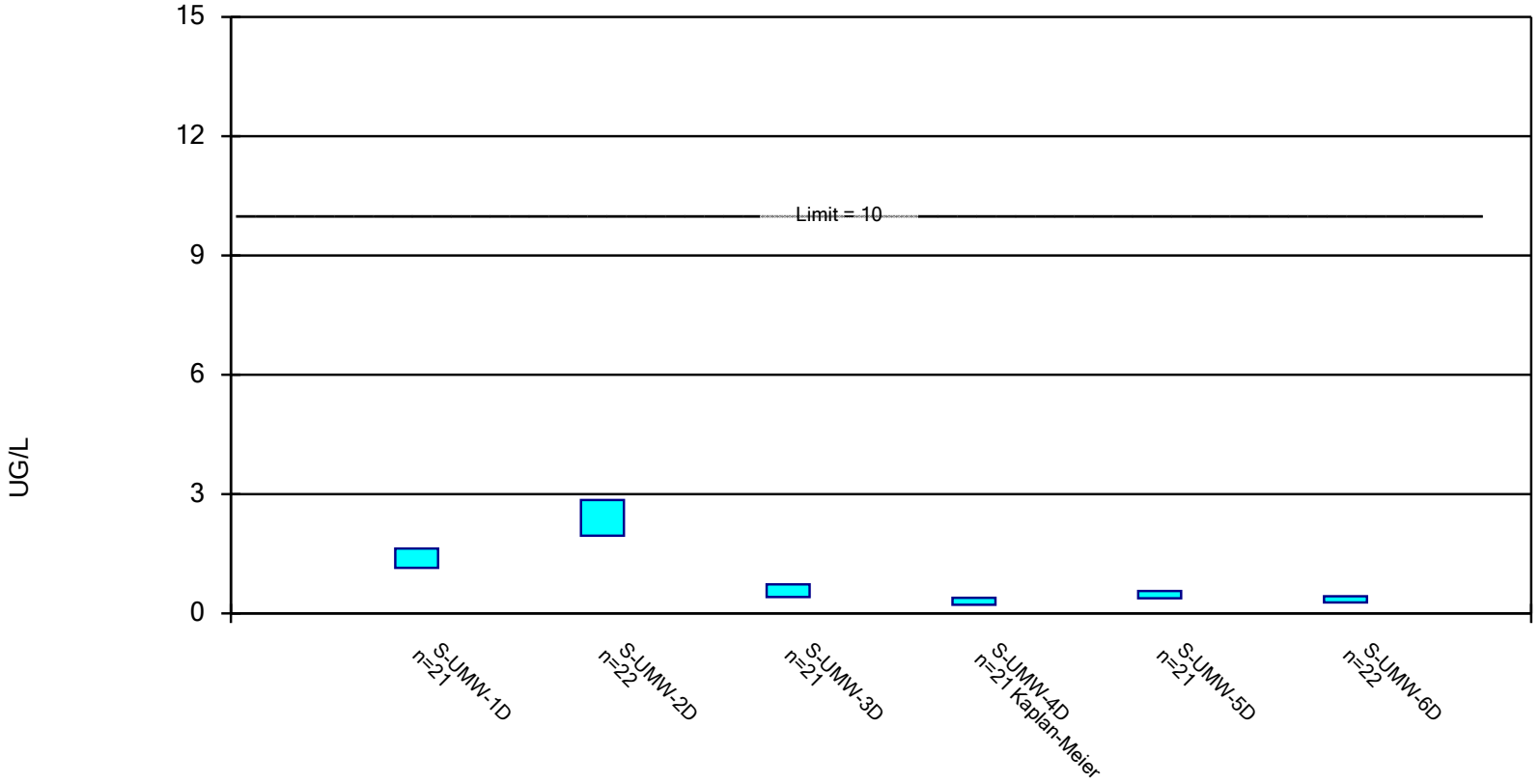
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Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG

Parametric Confidence Interval

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



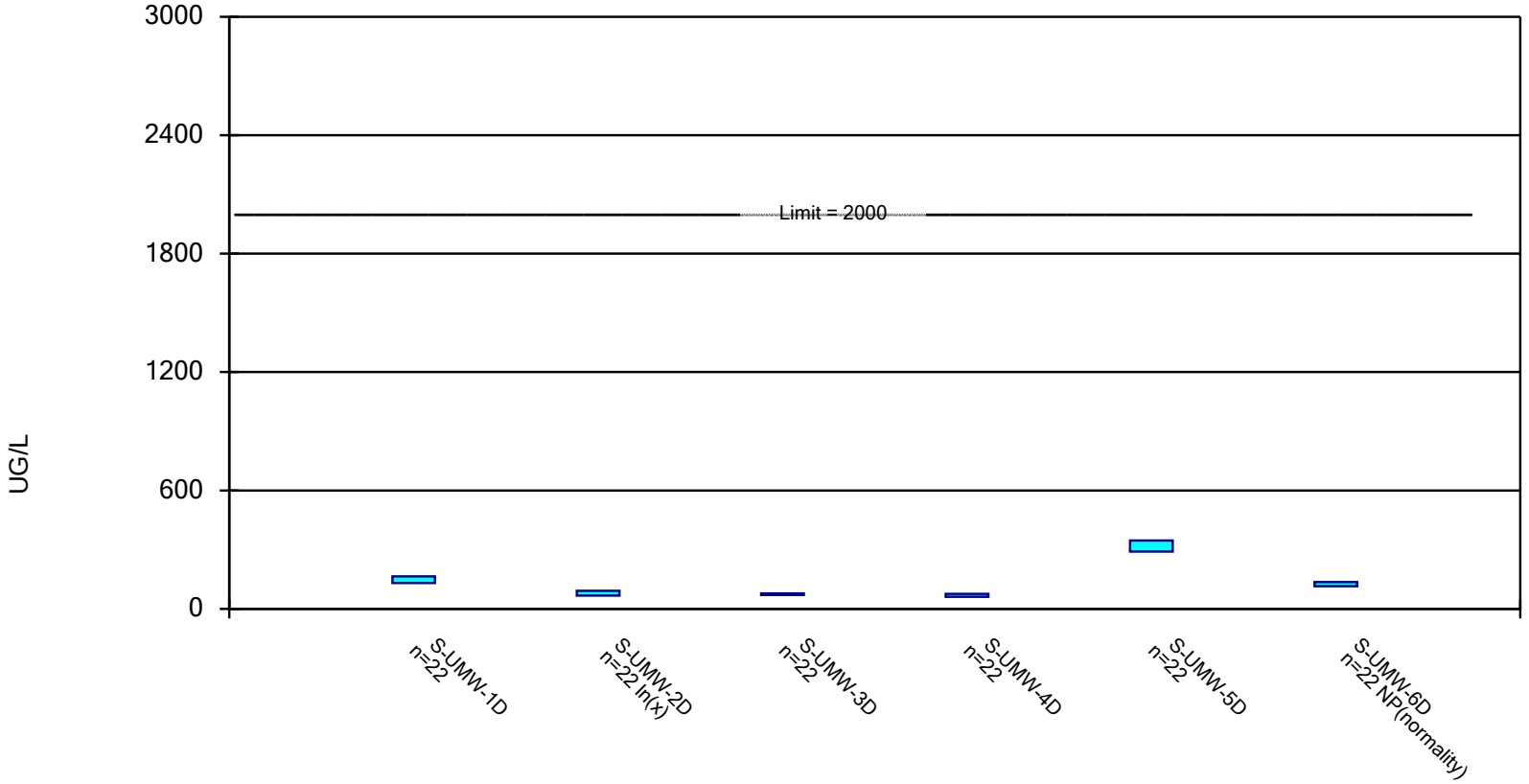
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Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG

Parametric and Non-Parametric (NP) Confidence Interval

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



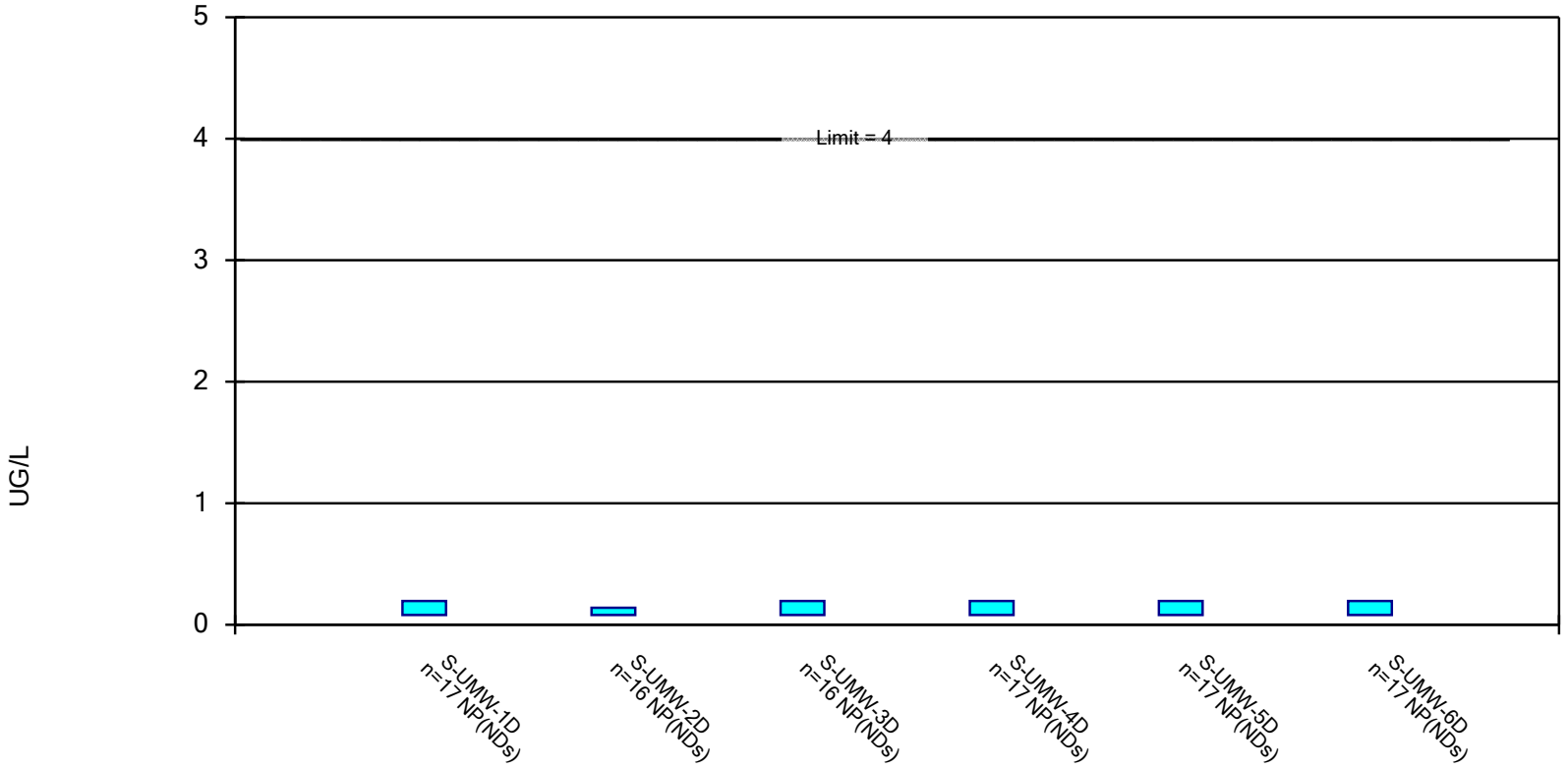
Constituent: BARIUM, TOTAL Analysis Run 8/29/2024 10:14 AM View: Assessment Monitoring

Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



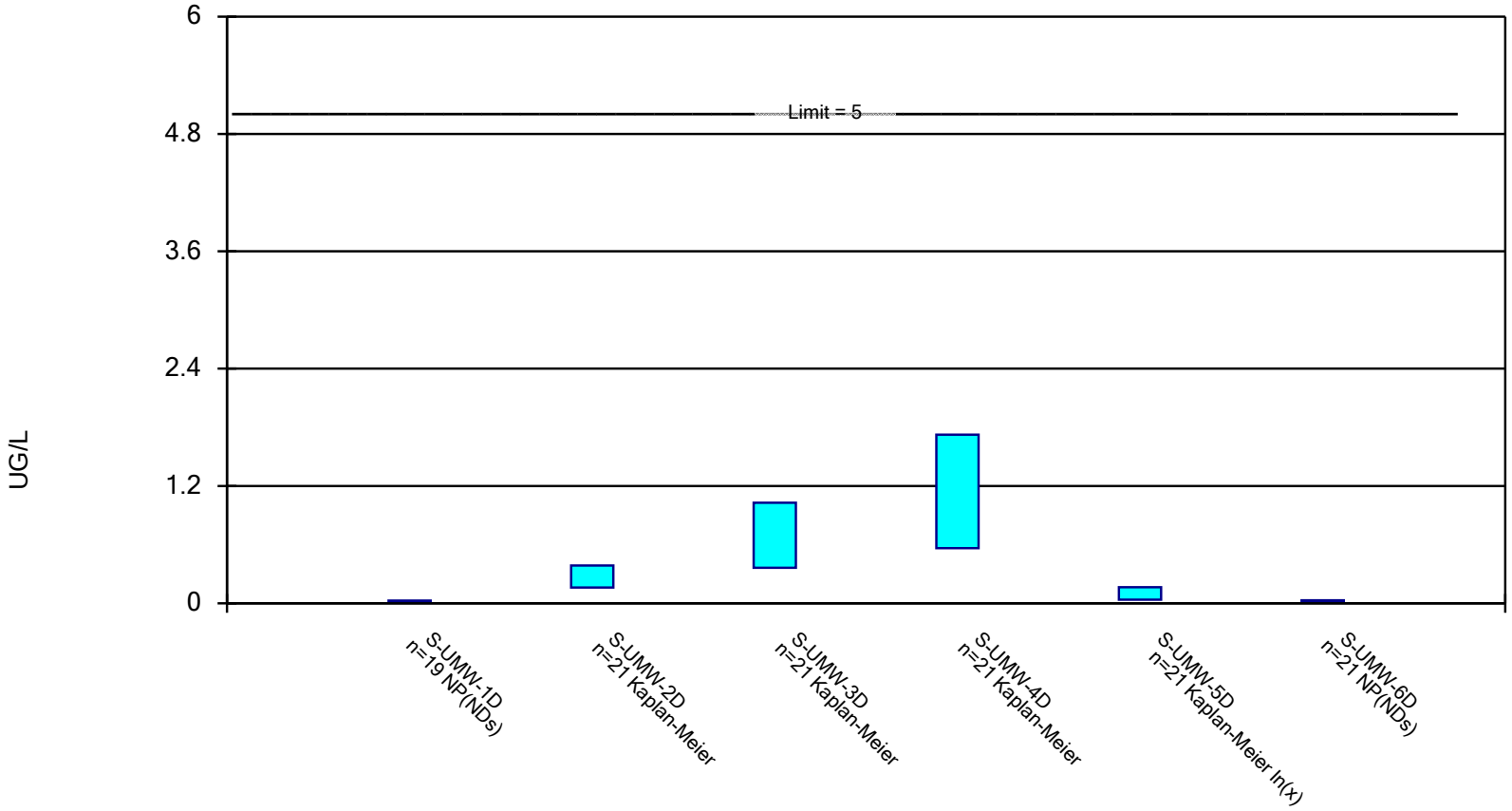
Constituent: BERYLLIUM, TOTAL Analysis Run 8/29/2024 10:14 AM View: Assessment Monitoring

Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG

Parametric and Non-Parametric (NP) Confidence Interval

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



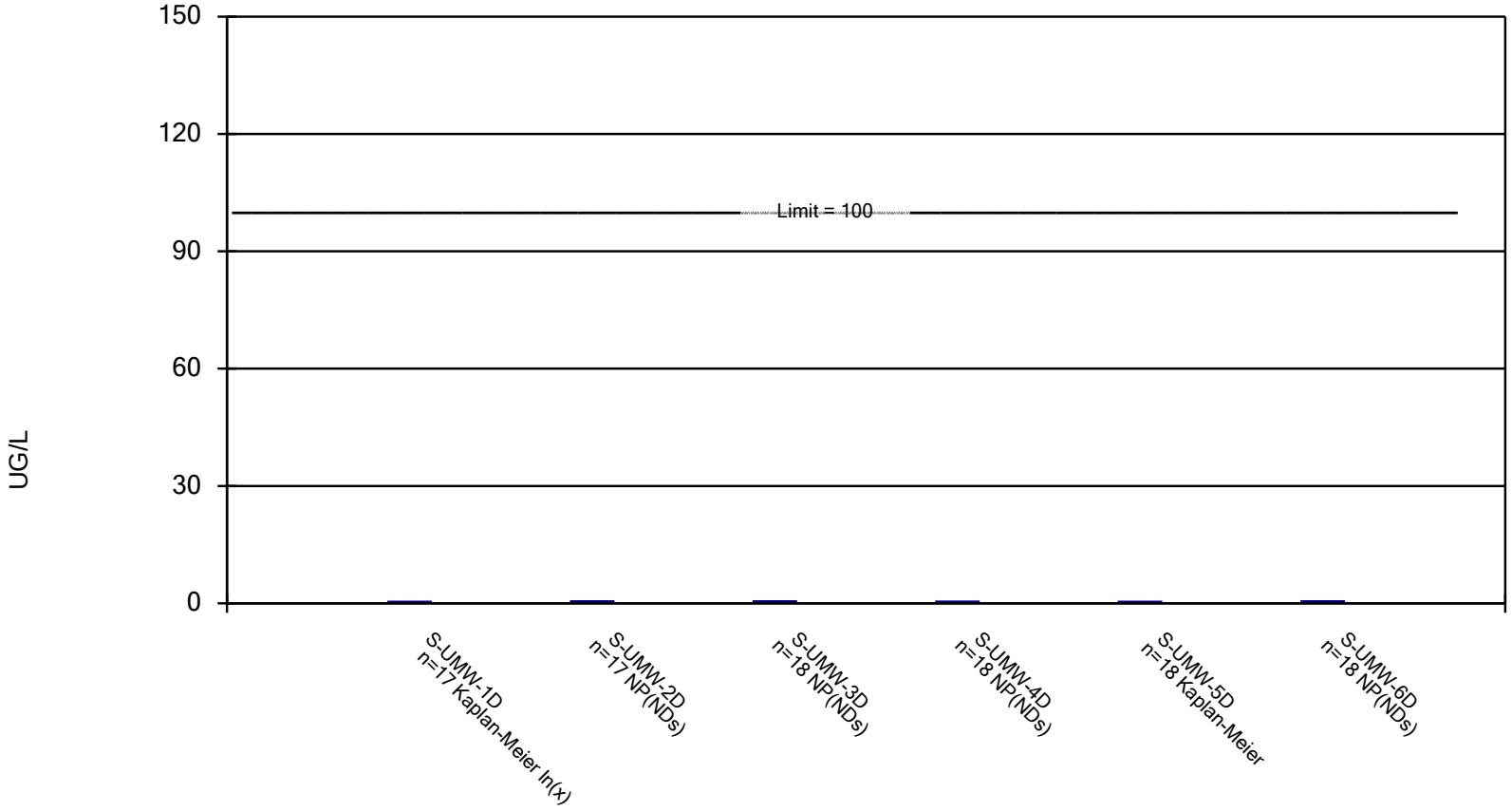
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Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG

Parametric and Non-Parametric (NP) Confidence Interval

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



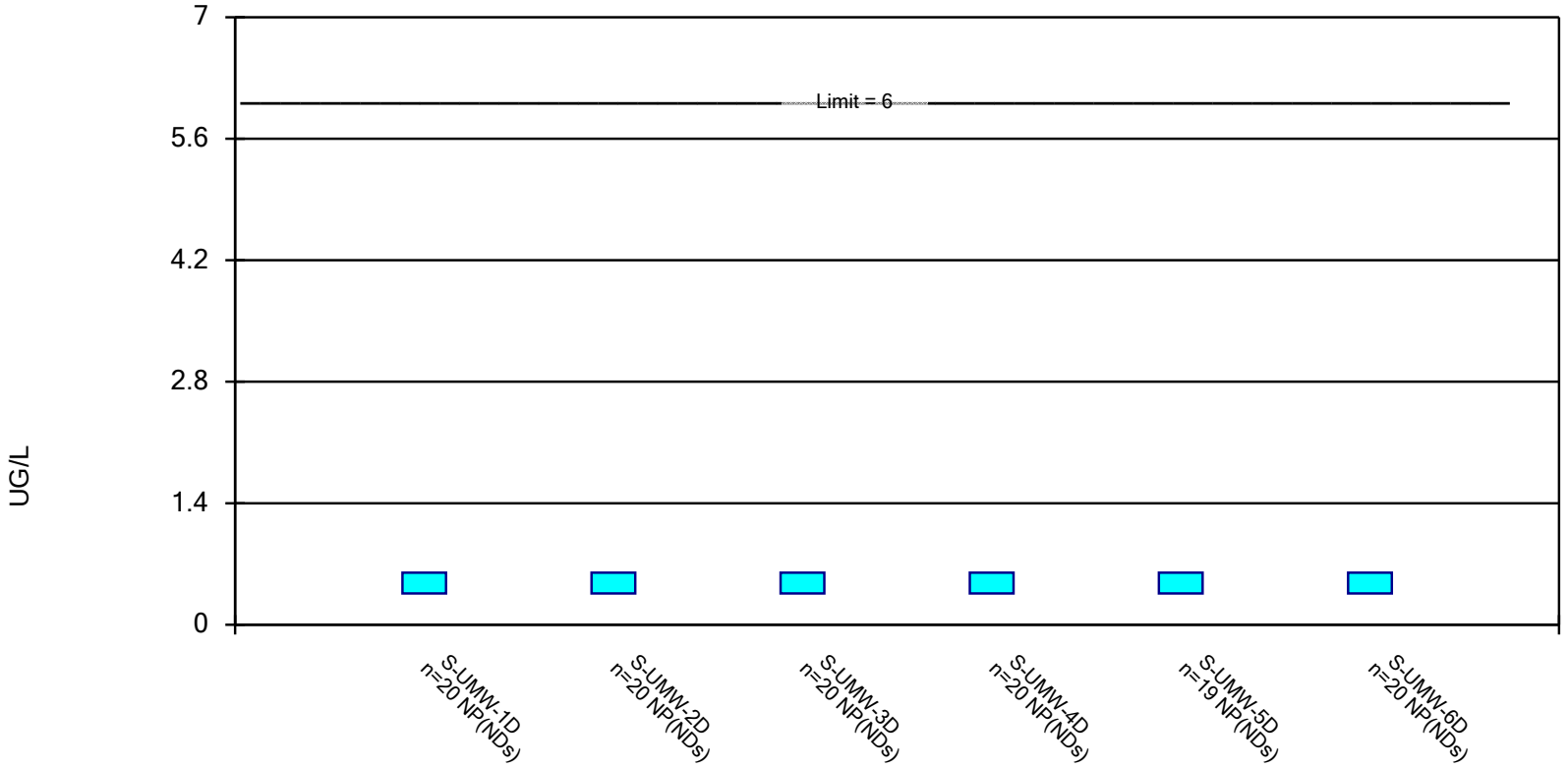
Constituent: CHROMIUM, TOTAL Analysis Run 8/29/2024 10:14 AM View: Assessment Monitoring

Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



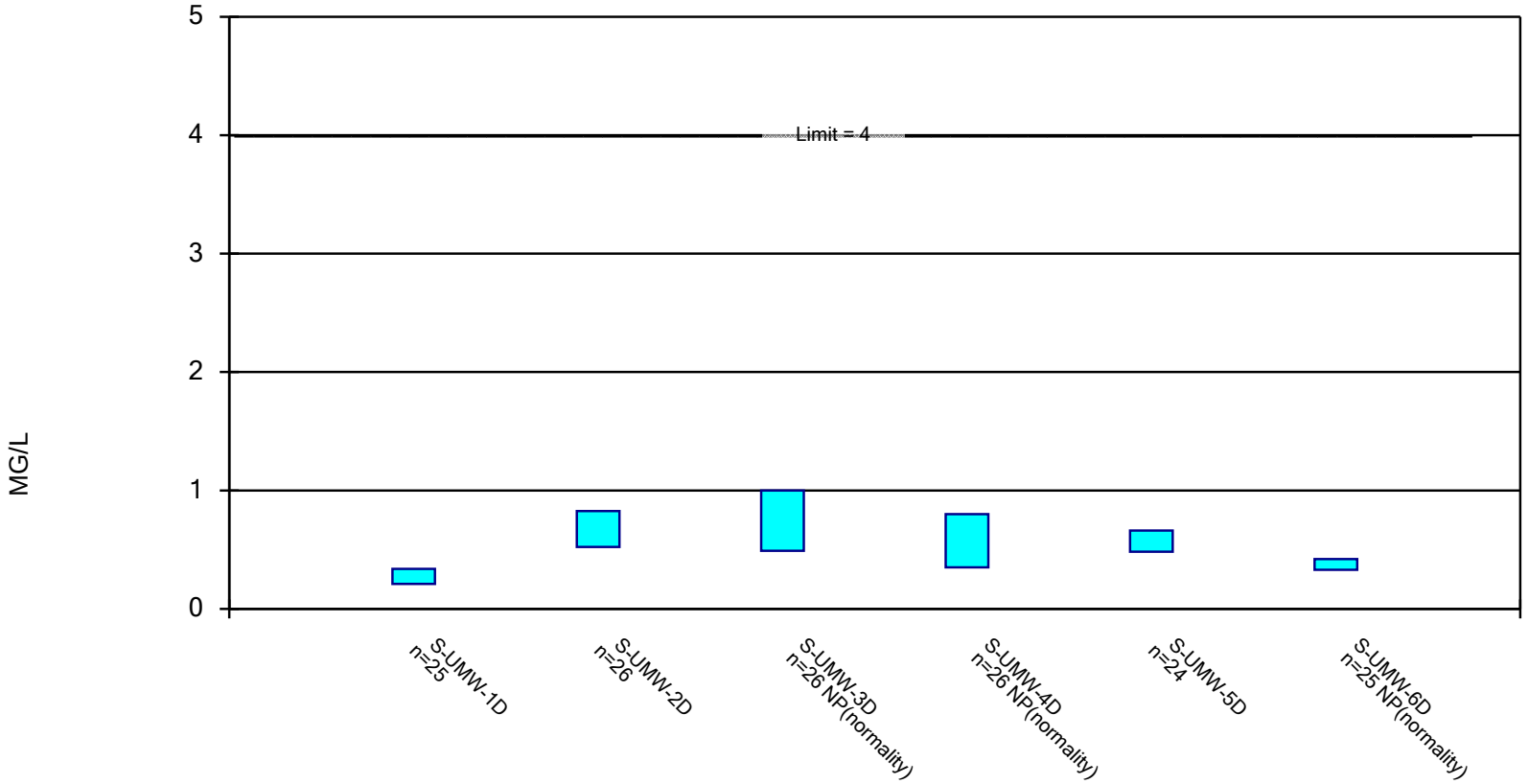
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Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG

Parametric and Non-Parametric (NP) Confidence Interval

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



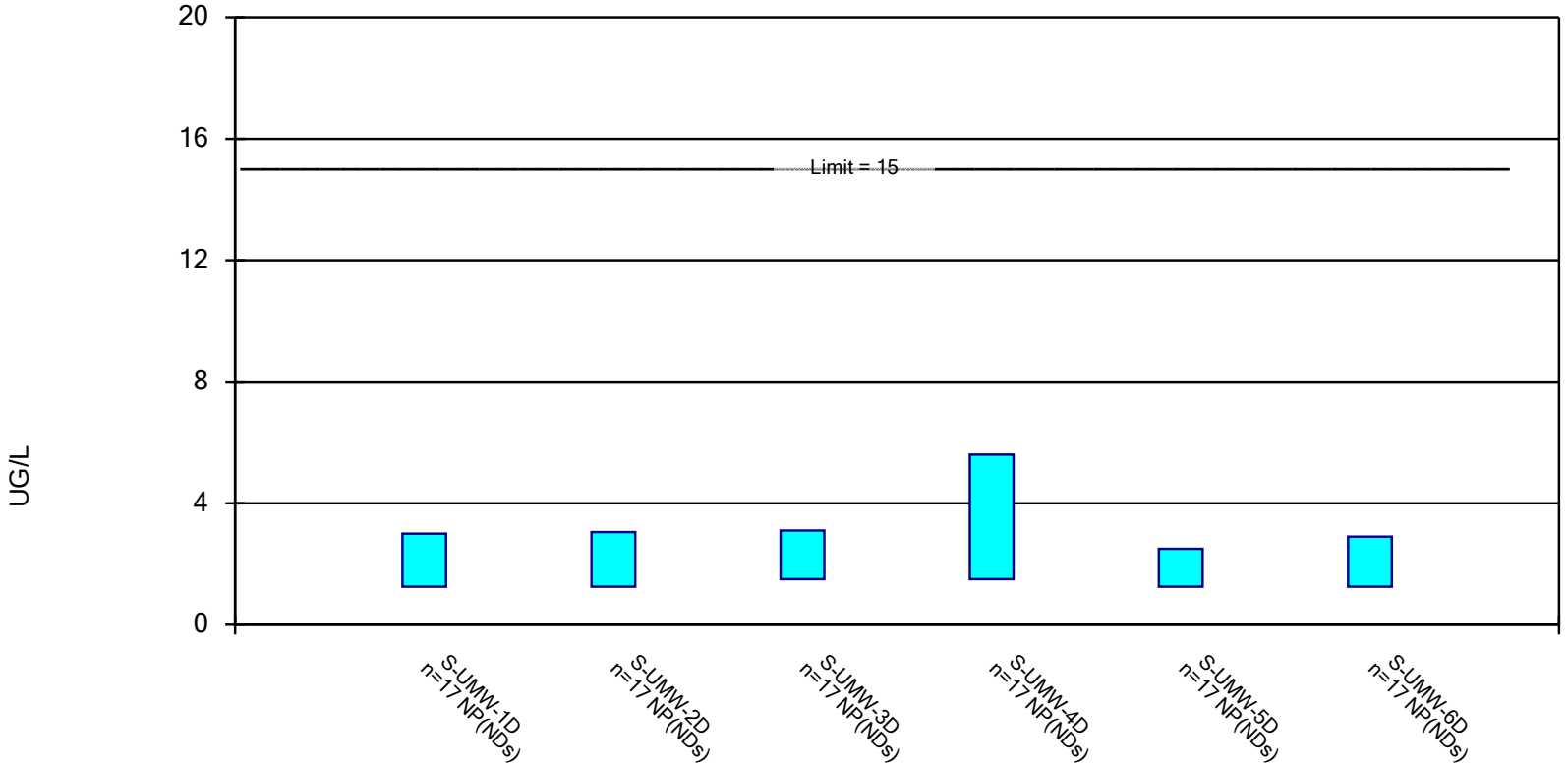
Constituent: FLUORIDE, TOTAL Analysis Run 8/29/2024 10:14 AM View: Assessment Monitoring

Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



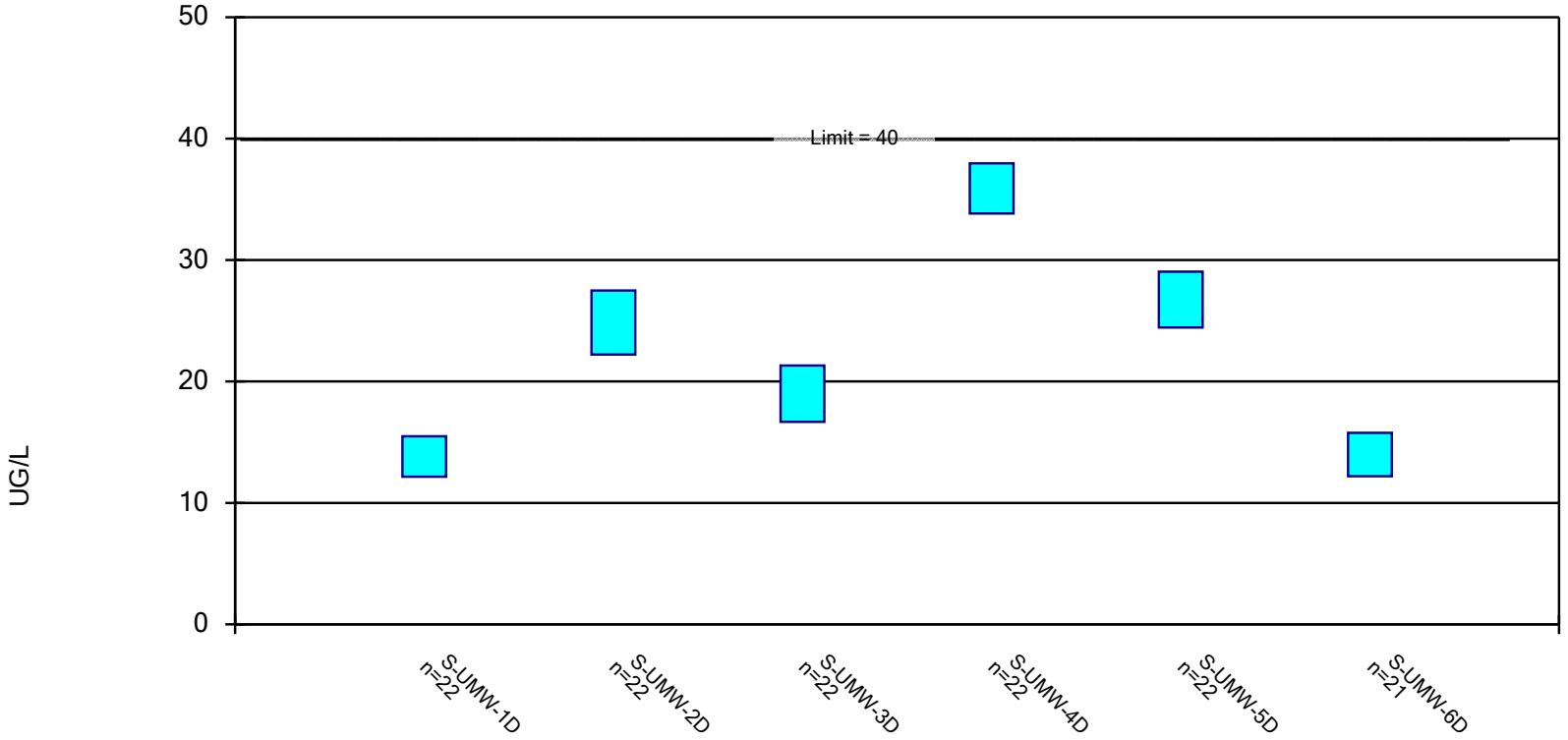
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Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG

Parametric Confidence Interval

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



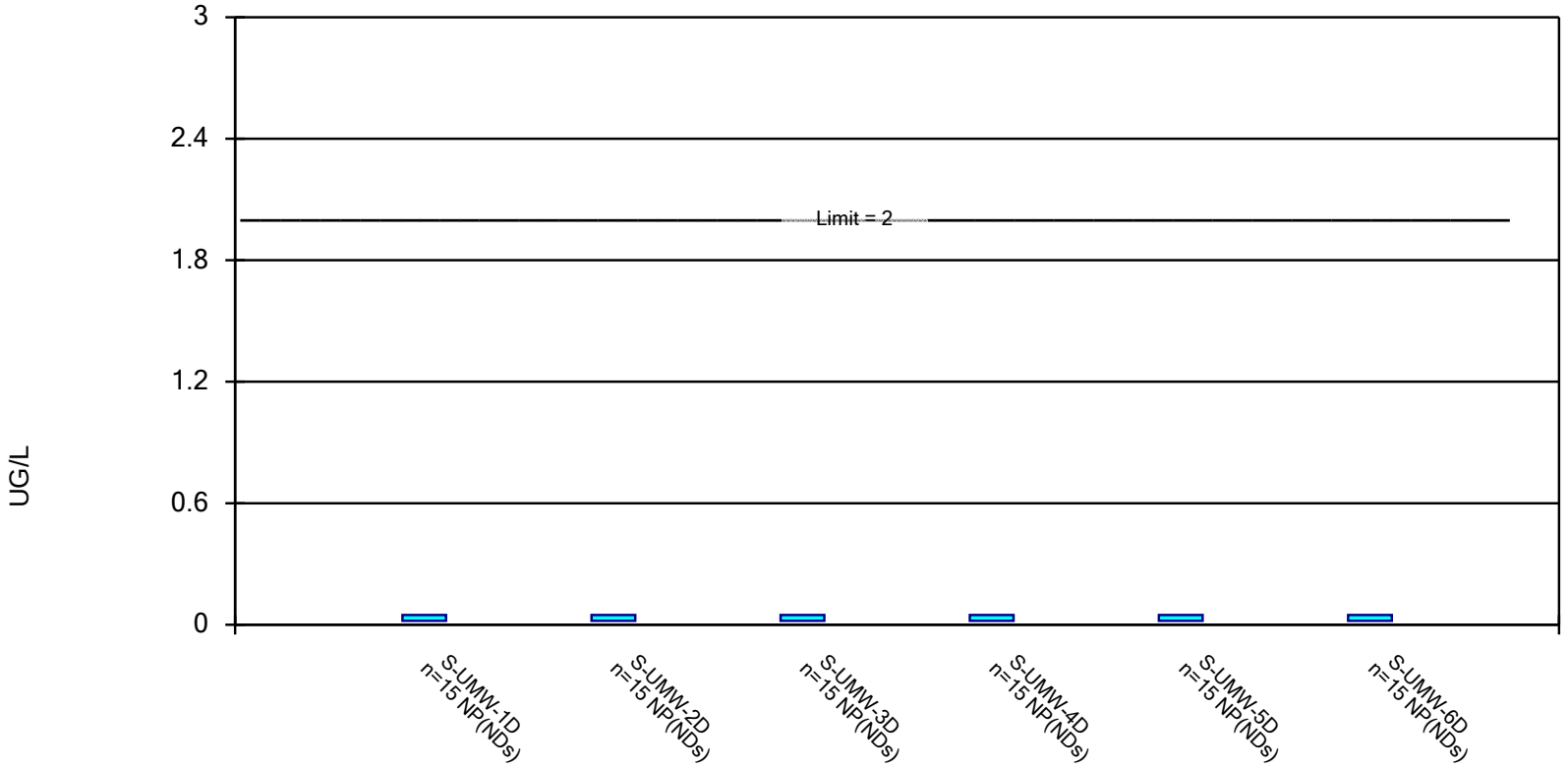
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Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



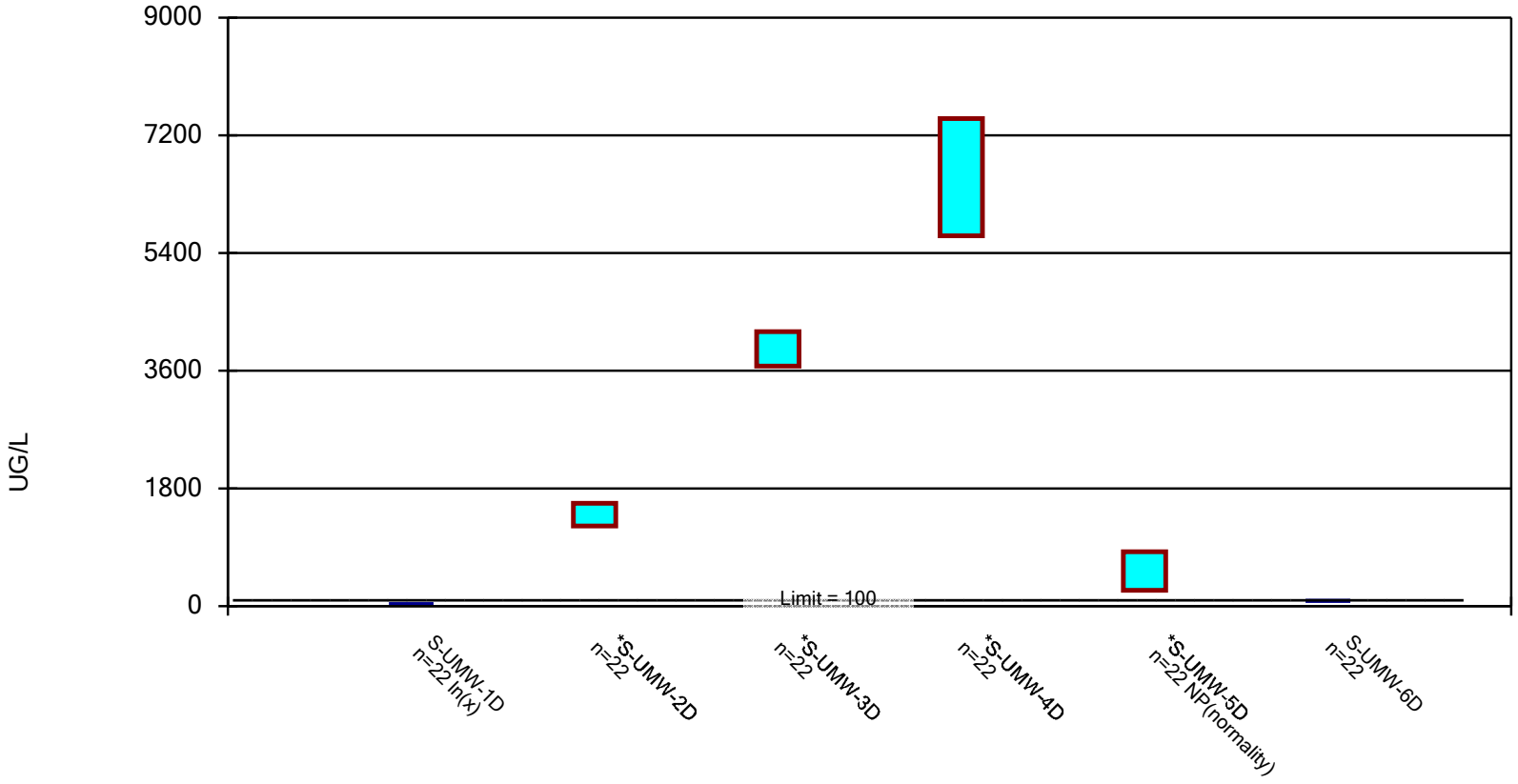
Constituent: MERCURY, TOTAL Analysis Run 8/29/2024 10:14 AM View: Assessment Monitoring

Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG

Parametric and Non-Parametric (NP) Confidence Interval

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



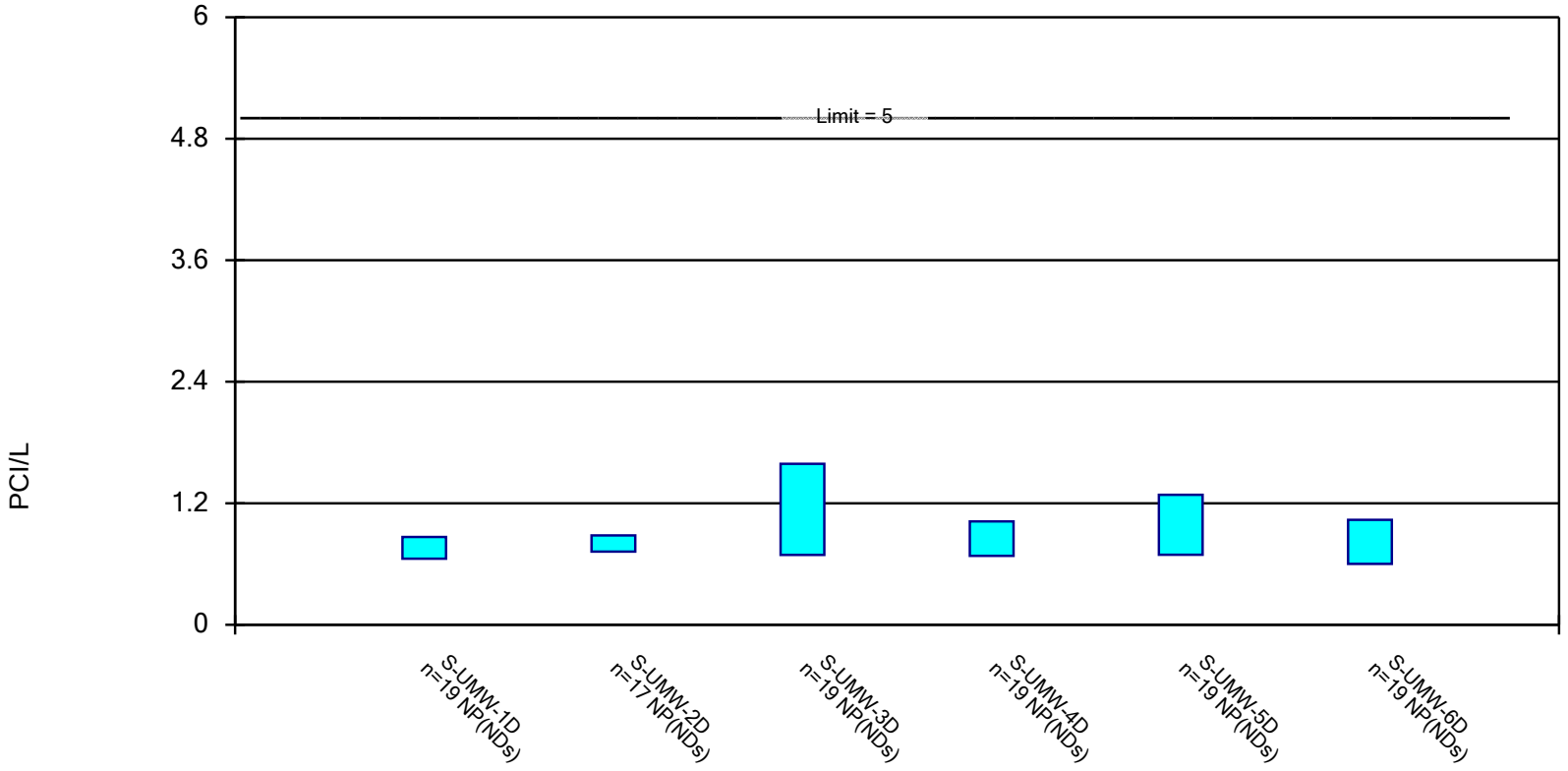
Constituent: MOLYBDENUM, TOTAL Analysis Run 8/29/2024 10:14 AM View: Assessment Monitoring

Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



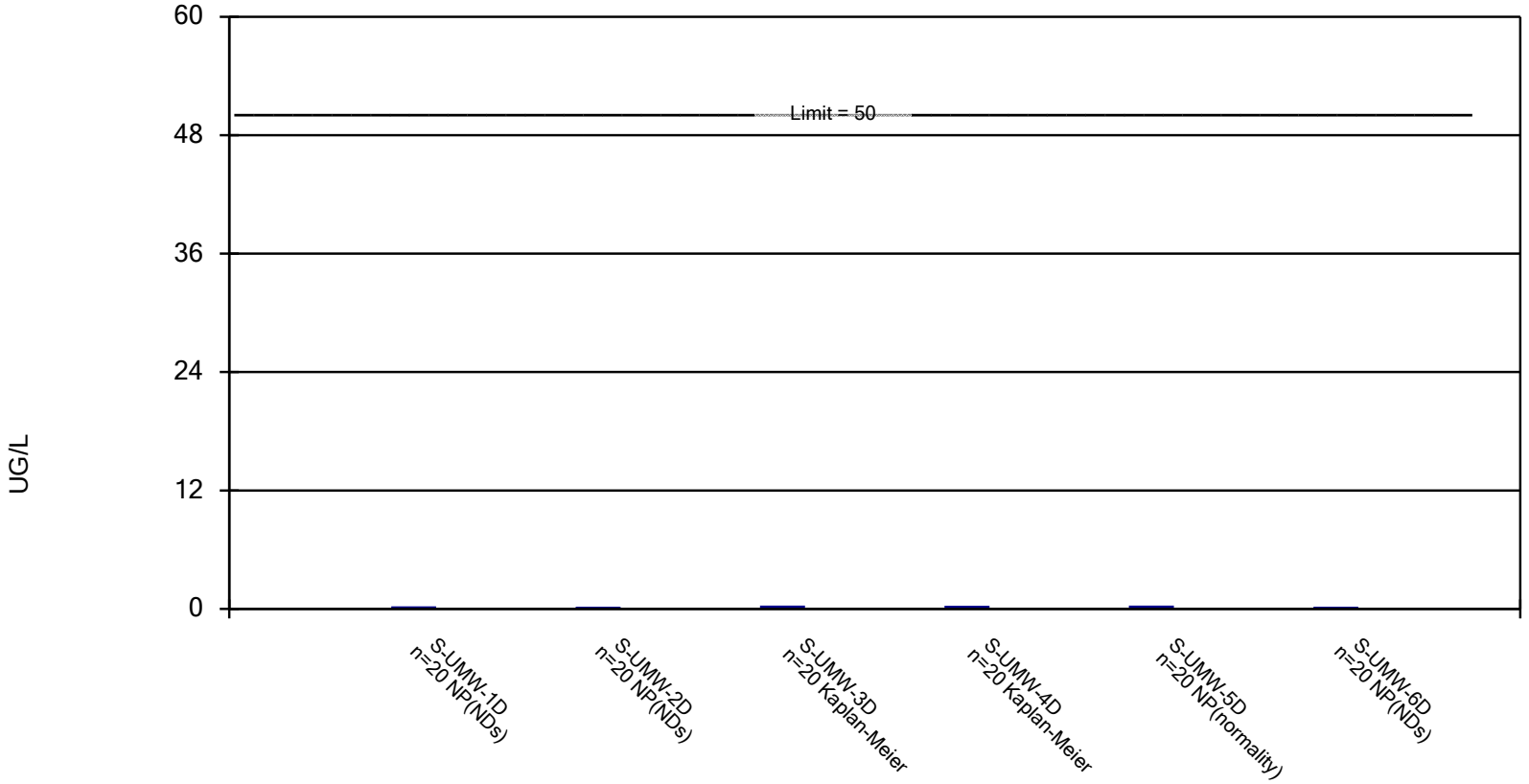
Constituent: RADIUM [226 + 228] Analysis Run 8/29/2024 10:14 AM View: Assessment Monitoring

Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG

Parametric and Non-Parametric (NP) Confidence Interval

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



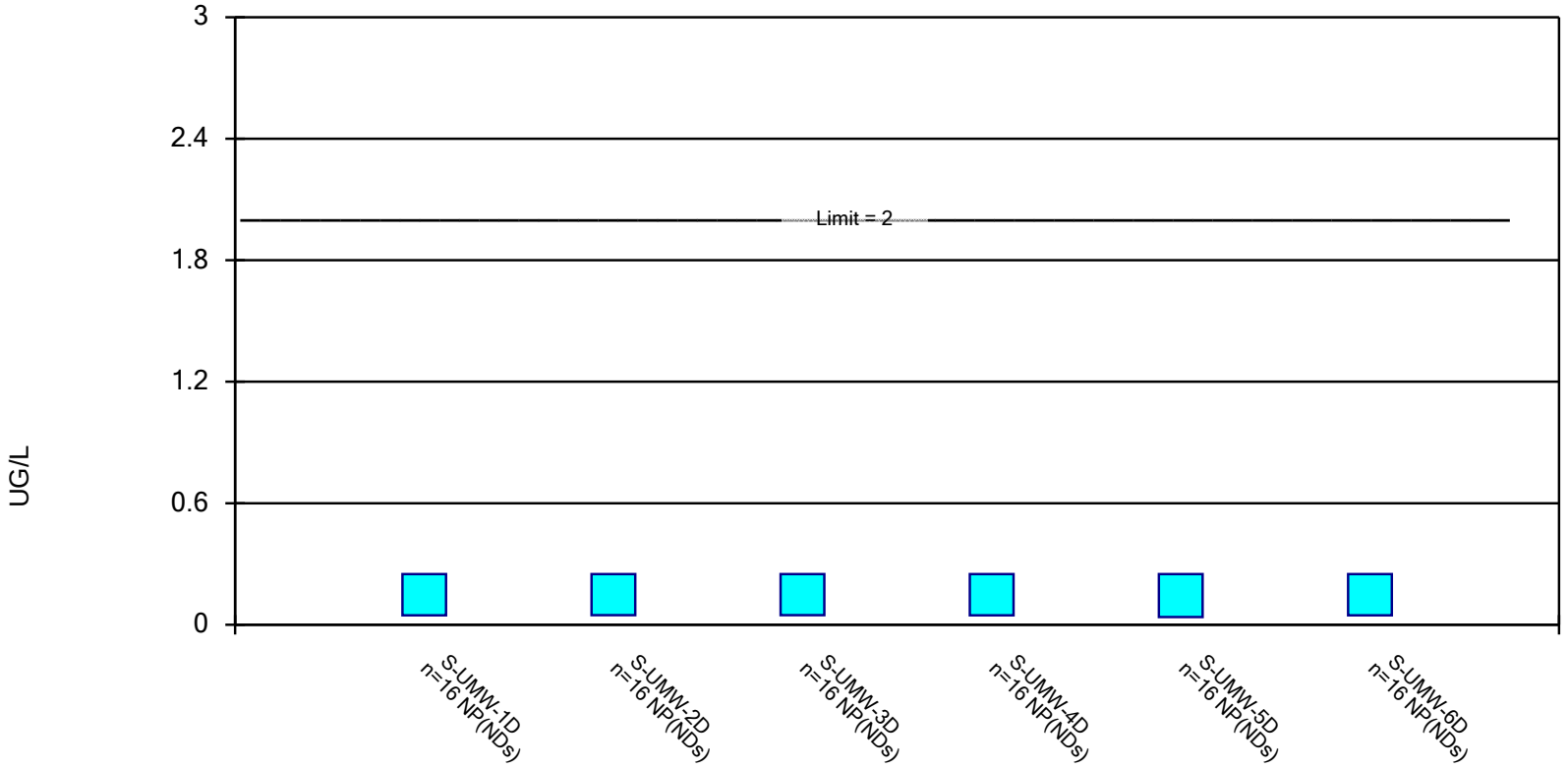
Constituent: SELENIUM, TOTAL Analysis Run 8/29/2024 10:14 AM View: Assessment Monitoring

Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: THALLIUM, TOTAL Analysis Run 8/29/2024 10:14 AM View: Assessment Monitoring

Sioux E.C. Client: Ameren Data: SEC DATA

Confidence Interval

Sioux E.C. Client: Ameren Data: SEC DATA Printed 8/29/2024, 10:17 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
ANTIMONY, TOTAL (UG/L)	S-UMW-1D	0.09137	0.03829	6	No	16	50	ln(x)	0.01	Param.
ANTIMONY, TOTAL (UG/L)	S-UMW-2D	0.067	0.029	6	No	16	68.75	No	0.01	NP (NDs)
ANTIMONY, TOTAL (UG/L)	S-UMW-3D	0.06	0.013	6	No	15	86.67	No	0.01	NP (NDs)
ANTIMONY, TOTAL (UG/L)	S-UMW-4D	0.05	0.013	6	No	16	93.75	No	0.01	NP (NDs)
ANTIMONY, TOTAL (UG/L)	S-UMW-5D	0.05	0.013	6	No	16	100	No	0.01	NP (NDs)
ANTIMONY, TOTAL (UG/L)	S-UMW-6D	0.05	0.013	6	No	16	100	No	0.01	NP (NDs)
ARSENIC, TOTAL (UG/L)	S-UMW-1D	1.631	1.144	10	No	21	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-UMW-2D	2.851	1.955	10	No	22	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-UMW-3D	0.7282	0.4105	10	No	21	9.524	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-UMW-4D	0.3899	0.2157	10	No	21	19.05	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-UMW-5D	0.5628	0.381	10	No	21	4.762	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-UMW-6D	0.431	0.2741	10	No	22	9.091	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-UMW-1D	164.4	130.7	2000	No	22	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-UMW-2D	91.16	67.29	2000	No	22	0	ln(x)	0.01	Param.
BARIUM, TOTAL (UG/L)	S-UMW-3D	78.56	70.6	2000	No	22	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-UMW-4D	75.75	60.87	2000	No	22	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-UMW-5D	346.7	290.6	2000	No	22	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-UMW-6D	136	115	2000	No	22	0	No	0.01	NP (normality)
BERYLLIUM, TOTAL (UG/L)	S-UMW-1D	0.195	0.08	4	No	17	100	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-UMW-2D	0.14	0.08	4	No	16	93.75	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-UMW-3D	0.195	0.08	4	No	16	100	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-UMW-4D	0.195	0.08	4	No	17	100	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-UMW-5D	0.195	0.08	4	No	17	100	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-UMW-6D	0.195	0.08	4	No	17	100	No	0.01	NP (NDs)
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CADMIUM, TOTAL (UG/L)	S-UMW-6D	0.031	0.0145	5	No	21	80.95	No	0.01	NP (NDs)
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CHROMIUM, TOTAL (UG/L)	S-UMW-3D	0.5	0.11	100	No	18	55.56	No	0.01	NP (NDs)
CHROMIUM, TOTAL (UG/L)	S-UMW-4D	0.4	0.08	100	No	18	55.56	No	0.01	NP (NDs)
CHROMIUM, TOTAL (UG/L)	S-UMW-5D	0.3659	0.1162	100	No	18	50	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	S-UMW-6D	0.5	0.039	100	No	18	55.56	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	S-UMW-1D	0.6	0.36	6	No	20	100	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	S-UMW-2D	0.6	0.36	6	No	20	100	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	S-UMW-3D	0.6	0.36	6	No	20	100	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	S-UMW-4D	0.6	0.36	6	No	20	100	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	S-UMW-5D	0.6	0.36	6	No	19	100	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	S-UMW-6D	0.6	0.36	6	No	20	100	No	0.01	NP (NDs)
FLUORIDE, TOTAL (MG/L)	S-UMW-1D	0.3382	0.2106	4	No	25	8	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	S-UMW-2D	0.8253	0.5226	4	No	26	3.846	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	S-UMW-3D	1	0.49	4	No	26	15.38	No	0.01	NP (normality)
FLUORIDE, TOTAL (MG/L)	S-UMW-4D	0.8	0.35	4	No	26	11.54	No	0.01	NP (normality)
FLUORIDE, TOTAL (MG/L)	S-UMW-5D	0.6616	0.4826	4	No	24	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	S-UMW-6D	0.42	0.33	4	No	25	12	No	0.01	NP (normality)
LEAD, TOTAL (UG/L)	S-UMW-1D	3	1.25	15	No	17	88.24	No	0.01	NP (NDs)
LEAD, TOTAL (UG/L)	S-UMW-2D	3.05	1.25	15	No	17	76.47	No	0.01	NP (NDs)

Confidence Interval

Sioux E.C. Client: Ameren Data: SEC DATA Printed 8/29/2024, 10:17 AM

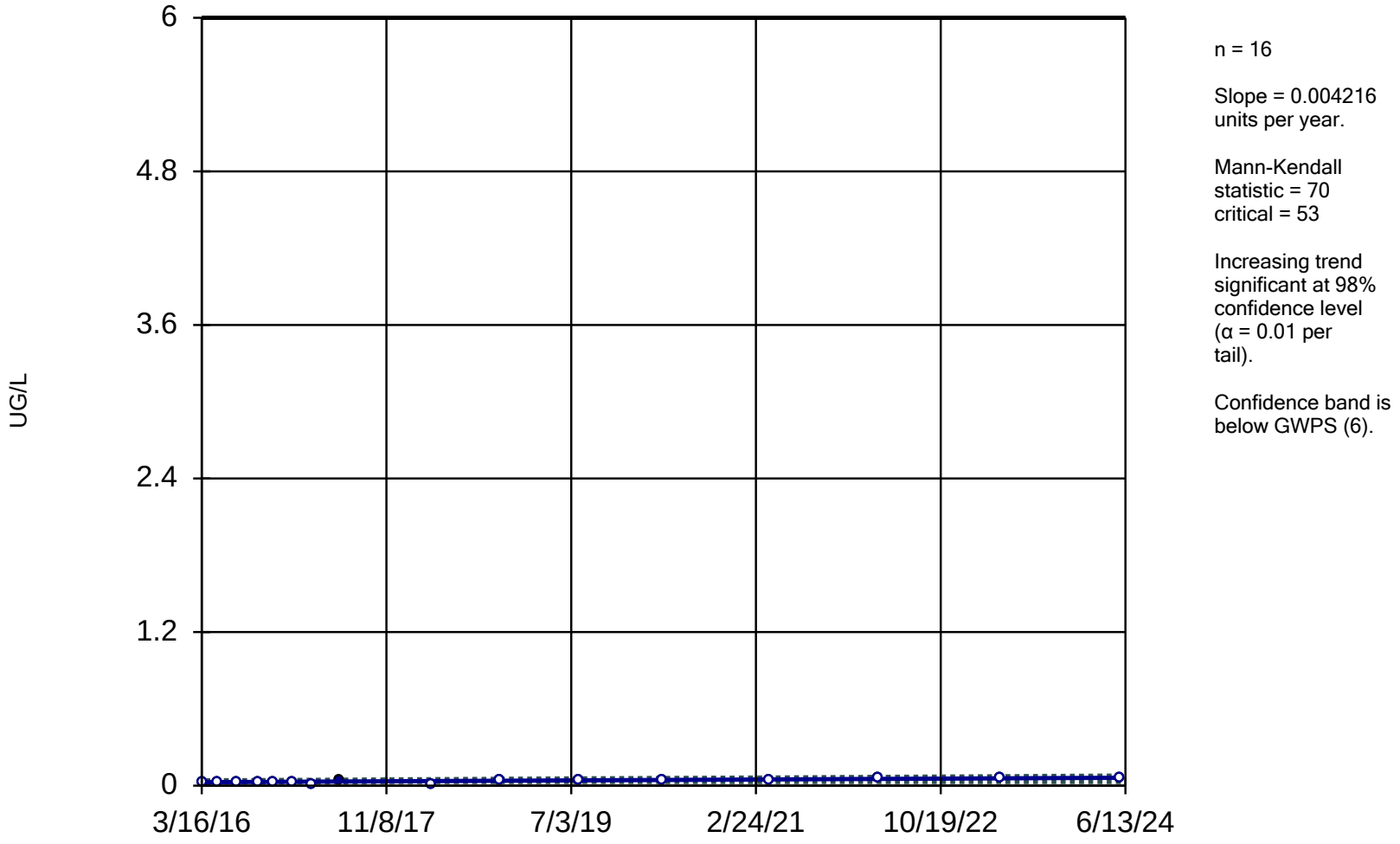
Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
LEAD, TOTAL (UG/L)	S-UMW-3D	3.1	1.5	15	No	17	64.71	No	0.01	NP (NDs)
LEAD, TOTAL (UG/L)	S-UMW-4D	5.6	1.5	15	No	17	58.82	No	0.01	NP (NDs)
LEAD, TOTAL (UG/L)	S-UMW-5D	2.5	1.25	15	No	17	82.35	No	0.01	NP (NDs)
LEAD, TOTAL (UG/L)	S-UMW-6D	2.9	1.25	15	No	17	88.24	No	0.01	NP (NDs)
LITHIUM, TOTAL (UG/L)	S-UMW-1D	15.49	12.16	40	No	22	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-UMW-2D	27.48	22.22	40	No	22	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-UMW-3D	21.32	16.67	40	No	22	4.545	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-UMW-4D	37.96	33.84	40	No	22	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-UMW-5D	29.04	24.45	40	No	22	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-UMW-6D	15.77	12.2	40	No	21	0	No	0.01	Param.
MERCURY, TOTAL (UG/L)	S-UMW-1D	0.048	0.0195	2	No	15	100	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	S-UMW-2D	0.048	0.0195	2	No	15	100	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	S-UMW-3D	0.048	0.0195	2	No	15	100	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	S-UMW-4D	0.048	0.0195	2	No	15	100	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	S-UMW-5D	0.048	0.0195	2	No	15	100	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	S-UMW-6D	0.048	0.0195	2	No	15	100	No	0.01	NP (NDs)
MOLYBDENUM, TOTAL (UG/L)	S-UMW-1D	44.38	29.17	100	No	22	0	ln(x)	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	**S-UMW-2D**	**1573**	**1226**	**100**	**Yes**	**22**	**0**	**No**	**0.01**	**Param.**
MOLYBDENUM, TOTAL (UG/L)	**S-UMW-3D**	**4198**	**3670**	**100**	**Yes**	**22**	**0**	**No**	**0.01**	**Param.**
MOLYBDENUM, TOTAL (UG/L)	**S-UMW-4D**	**7456**	**5664**	**100**	**Yes**	**22**	**0**	**No**	**0.01**	**Param.**
MOLYBDENUM, TOTAL (UG/L)	**S-UMW-5D**	**832**	**242**	**100**	**Yes**	**22**	**0**	**No**	**0.01**	**NP (normality)**
MOLYBDENUM, TOTAL (UG/L)	S-UMW-6D	96.03	67.73	100	No	22	0	No	0.01	Param.
RADIUM [226 + 228] (PCI/L)	S-UMW-1D	0.8665	0.6525	5	No	19	100	No	0.01	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-UMW-2D	0.8825	0.723	5	No	17	100	No	0.01	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-UMW-3D	1.59	0.69	5	No	19	73.68	No	0.01	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-UMW-4D	1.02	0.681	5	No	19	84.21	No	0.01	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-UMW-5D	1.283	0.6915	5	No	19	73.68	No	0.01	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-UMW-6D	1.036	0.6005	5	No	19	94.74	No	0.01	NP (NDs)
SELENIUM, TOTAL (UG/L)	S-UMW-1D	0.13	0.043	50	No	20	85	No	0.01	NP (NDs)
SELENIUM, TOTAL (UG/L)	S-UMW-2D	0.094	0.043	50	No	20	80	No	0.01	NP (NDs)
SELENIUM, TOTAL (UG/L)	S-UMW-3D	0.2151	0.1551	50	No	20	30	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	S-UMW-4D	0.192	0.143	50	No	20	35	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	S-UMW-5D	0.21	0.09	50	No	20	35	No	0.01	NP (normality)
SELENIUM, TOTAL (UG/L)	S-UMW-6D	0.09	0.043	50	No	20	100	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-UMW-1D	0.25	0.0465	2	No	16	93.75	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-UMW-2D	0.25	0.047	2	No	16	87.5	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-UMW-3D	0.25	0.047	2	No	16	87.5	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-UMW-4D	0.25	0.0465	2	No	16	87.5	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-UMW-5D	0.25	0.038	2	No	16	93.75	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-UMW-6D	0.25	0.0465	2	No	16	100	No	0.01	NP (NDs)

Appendix B
Sanitas Trending Confidence Bands Statistical Output

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG
Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

S-UMW-4D



n = 16

Slope = 0.004216 units per year.

Mann-Kendall statistic = 70
critical = 53

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (6).

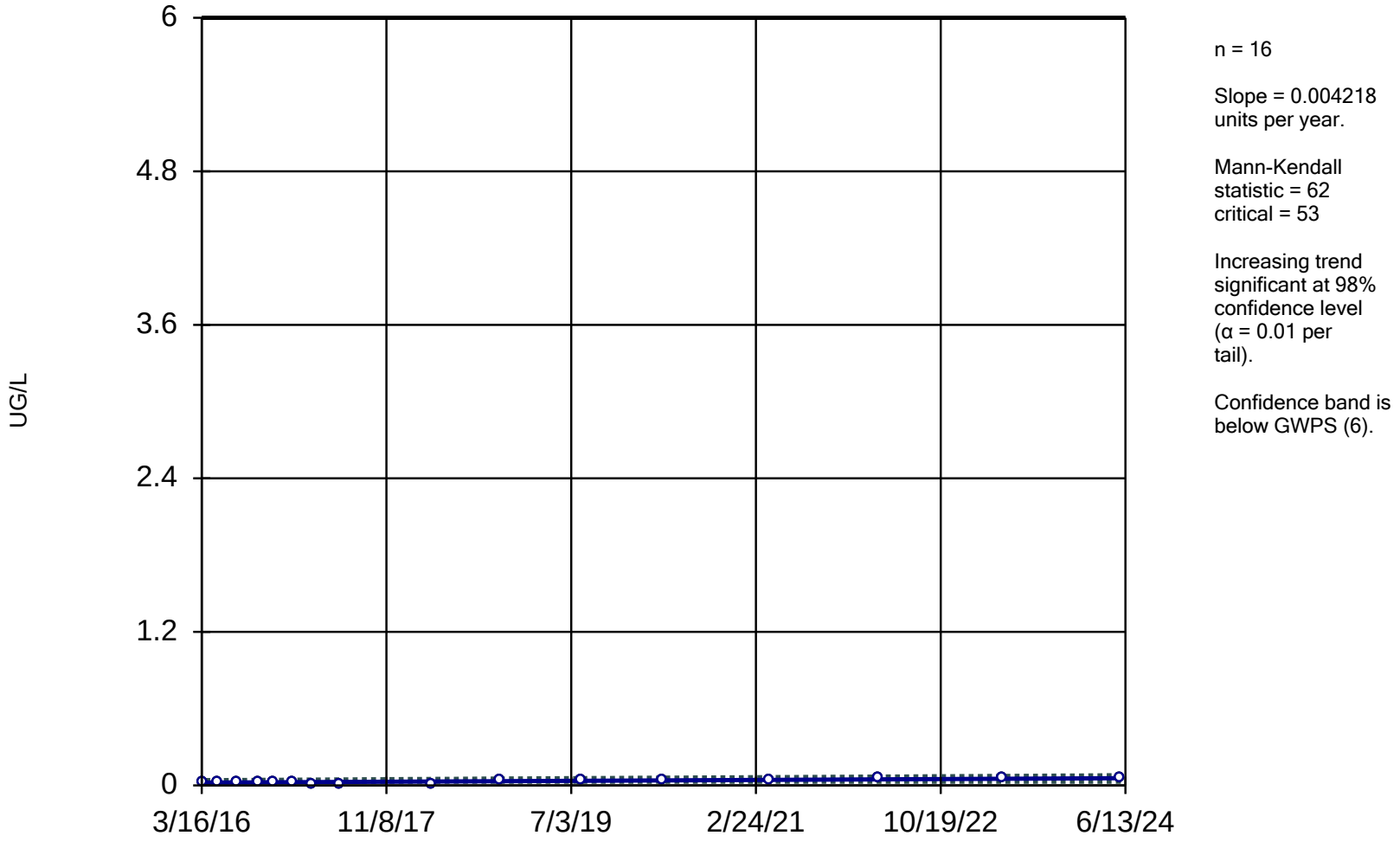
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Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG
Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

S-UMW-5D



n = 16

Slope = 0.004218 units per year.

Mann-Kendall statistic = 62
critical = 53

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (6).

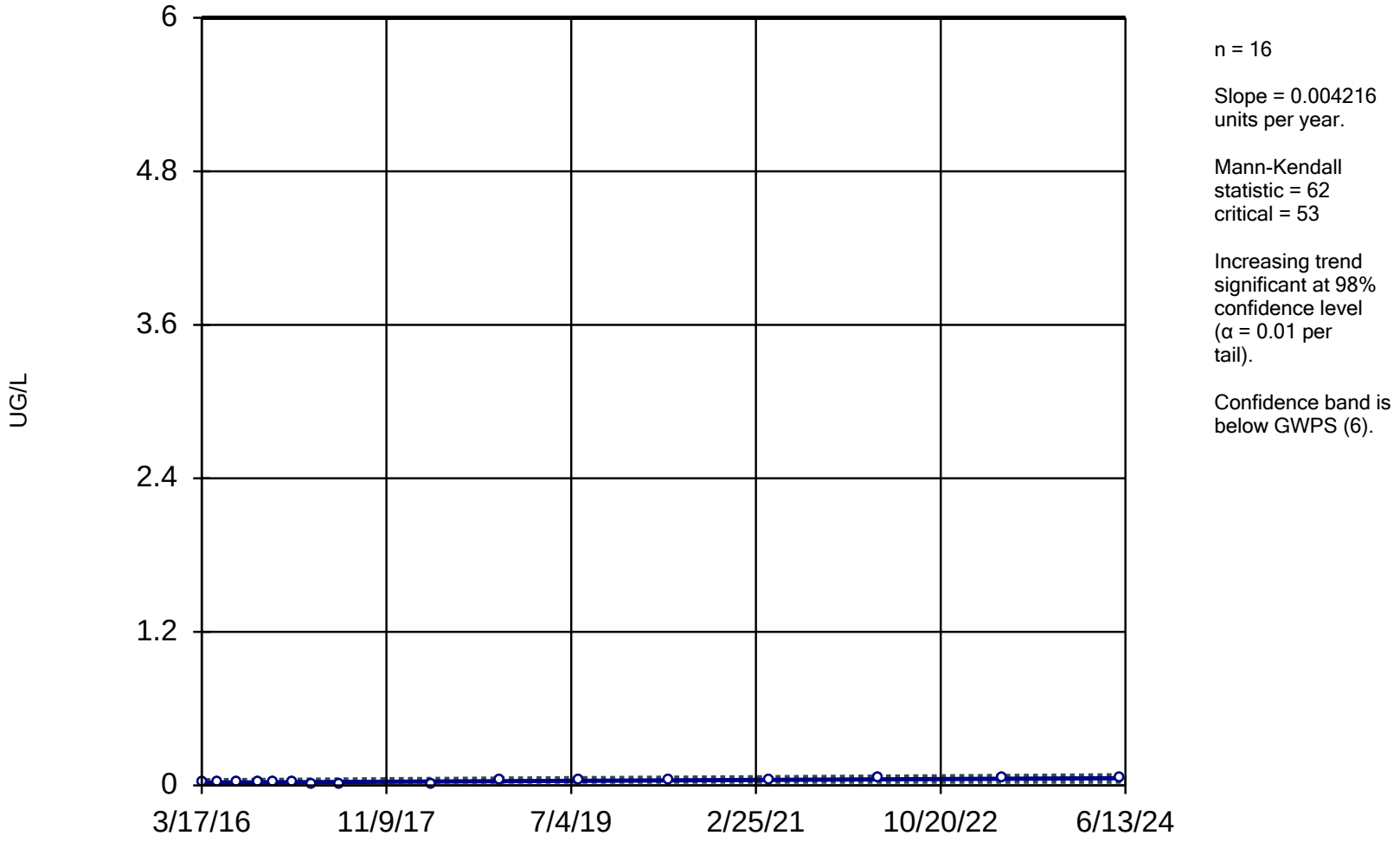
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Sioux E.C. Client: Ameren Data: SEC DATA

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Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

S-UMW-6D



n = 16

Slope = 0.004216 units per year.

Mann-Kendall statistic = 62
critical = 53

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (6).

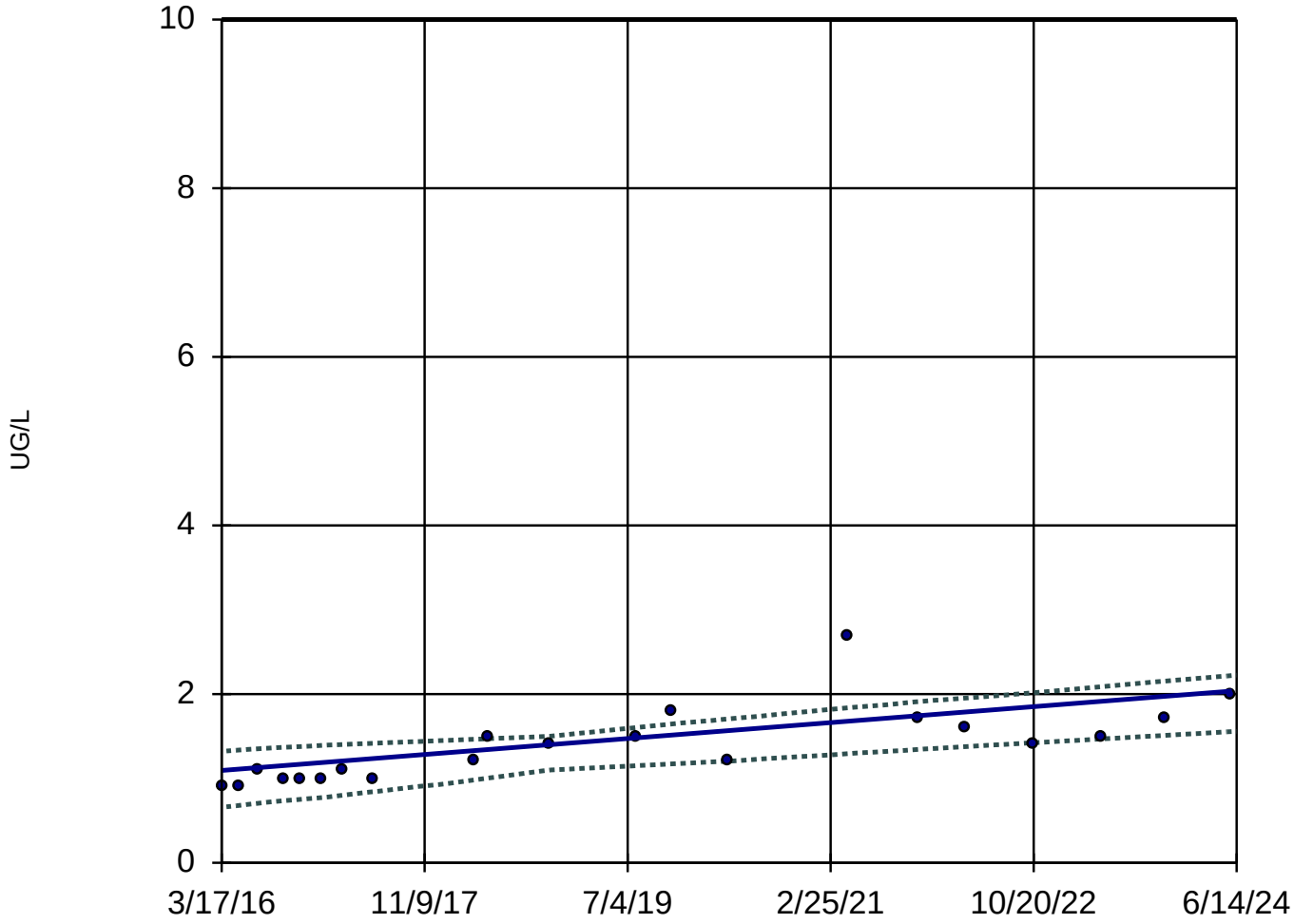
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Sioux E.C. Client: Ameren Data: SEC DATA

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Sen's Slope and 95% Confidence Band

S-UMW-1D



n = 21

Slope = 0.1147 units per year.

Mann-Kendall statistic = 139 critical = 78

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (10).

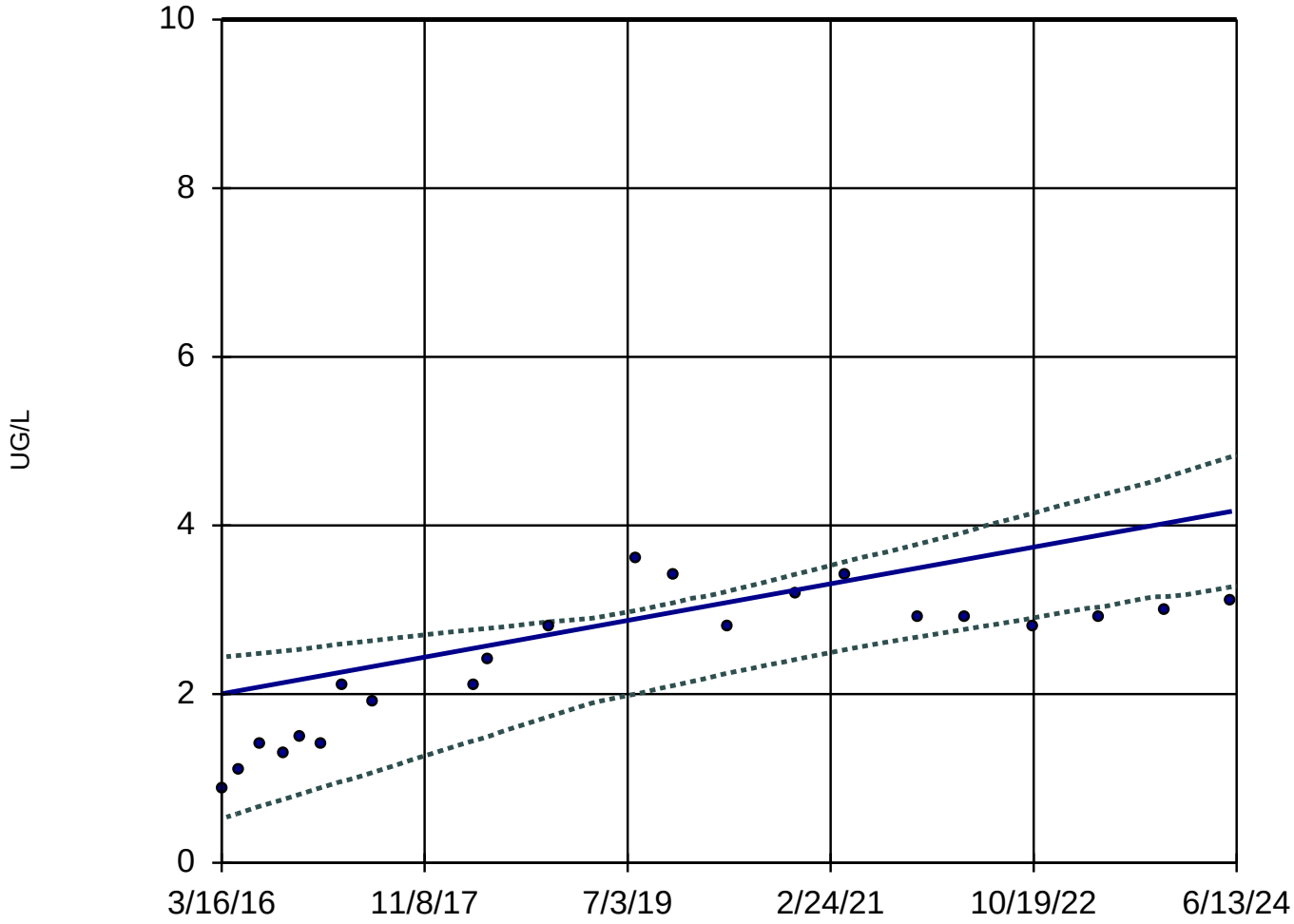
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Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG

Sen's Slope and 95% Confidence Band

S-UMW-2D



n = 22

Slope = 0.2637 units per year.

Mann-Kendall statistic = 152 critical = 84

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (10).

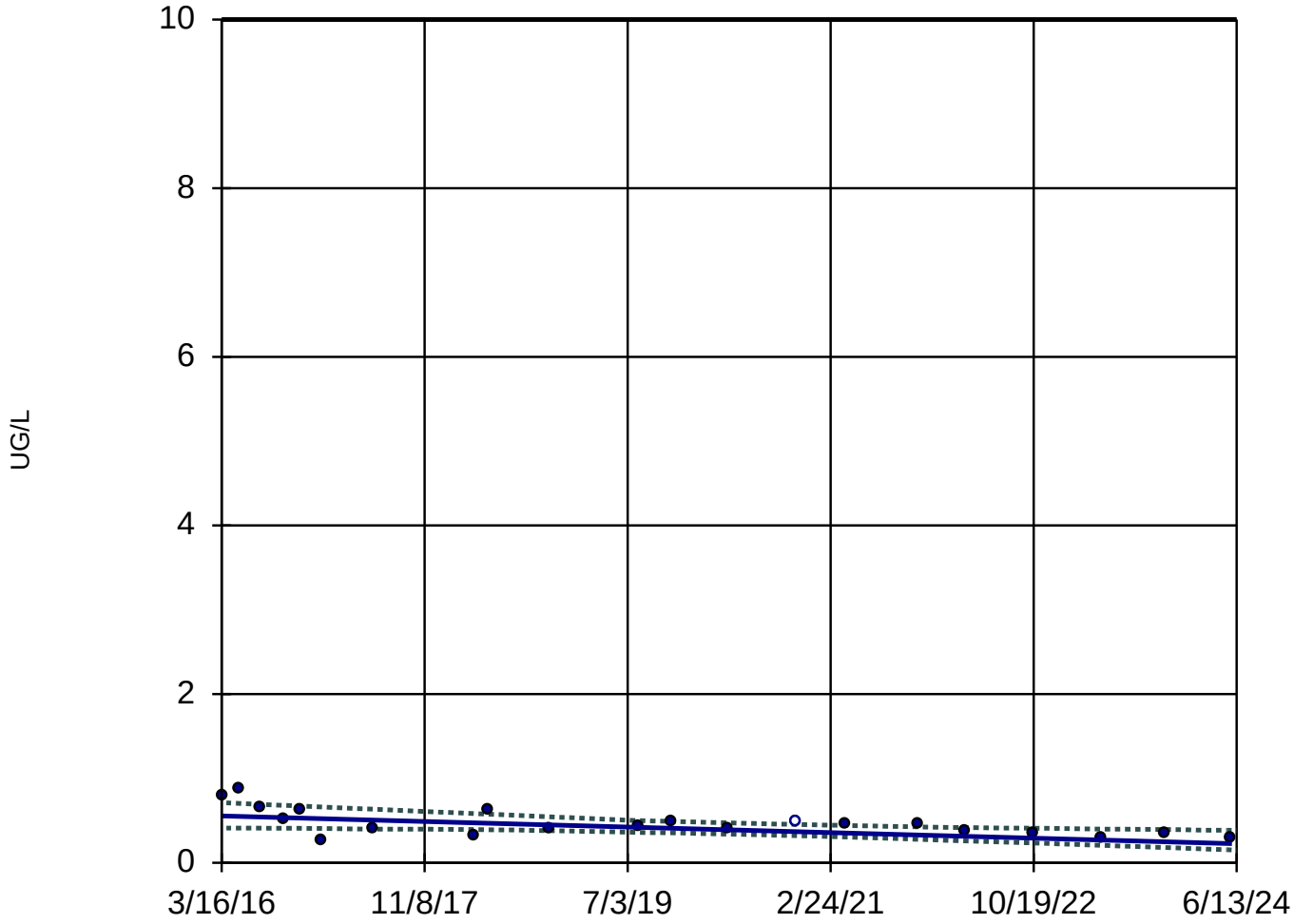
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Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG
Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

S-UMW-5D



n = 21

Slope = -0.04 units per year.

Mann-Kendall statistic = -110
critical = -78

Decreasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (10).

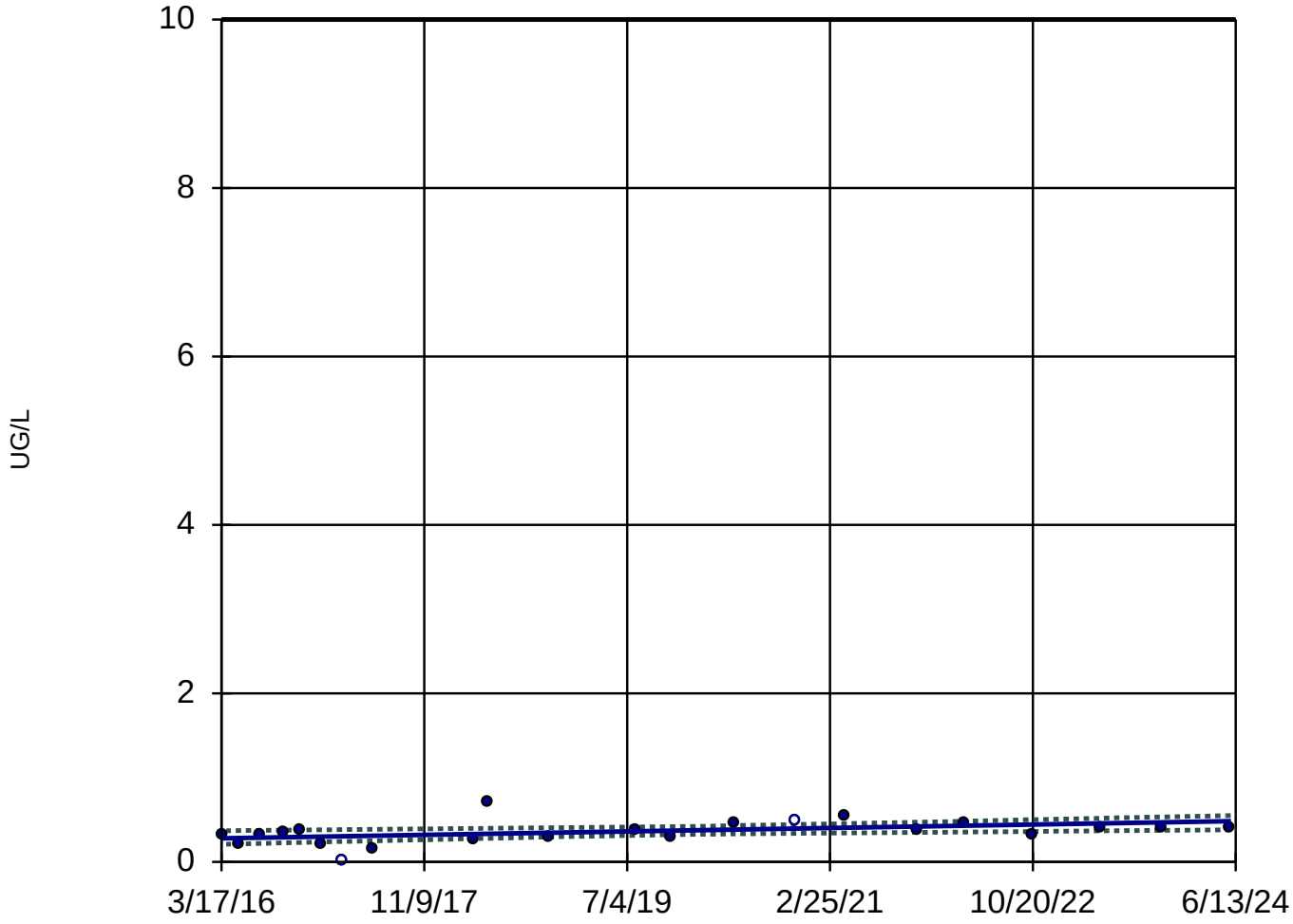
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Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG
Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

S-UMW-6D



n = 22

Slope = 0.02491 units per year.

Mann-Kendall statistic = 86
critical = 84

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (10).

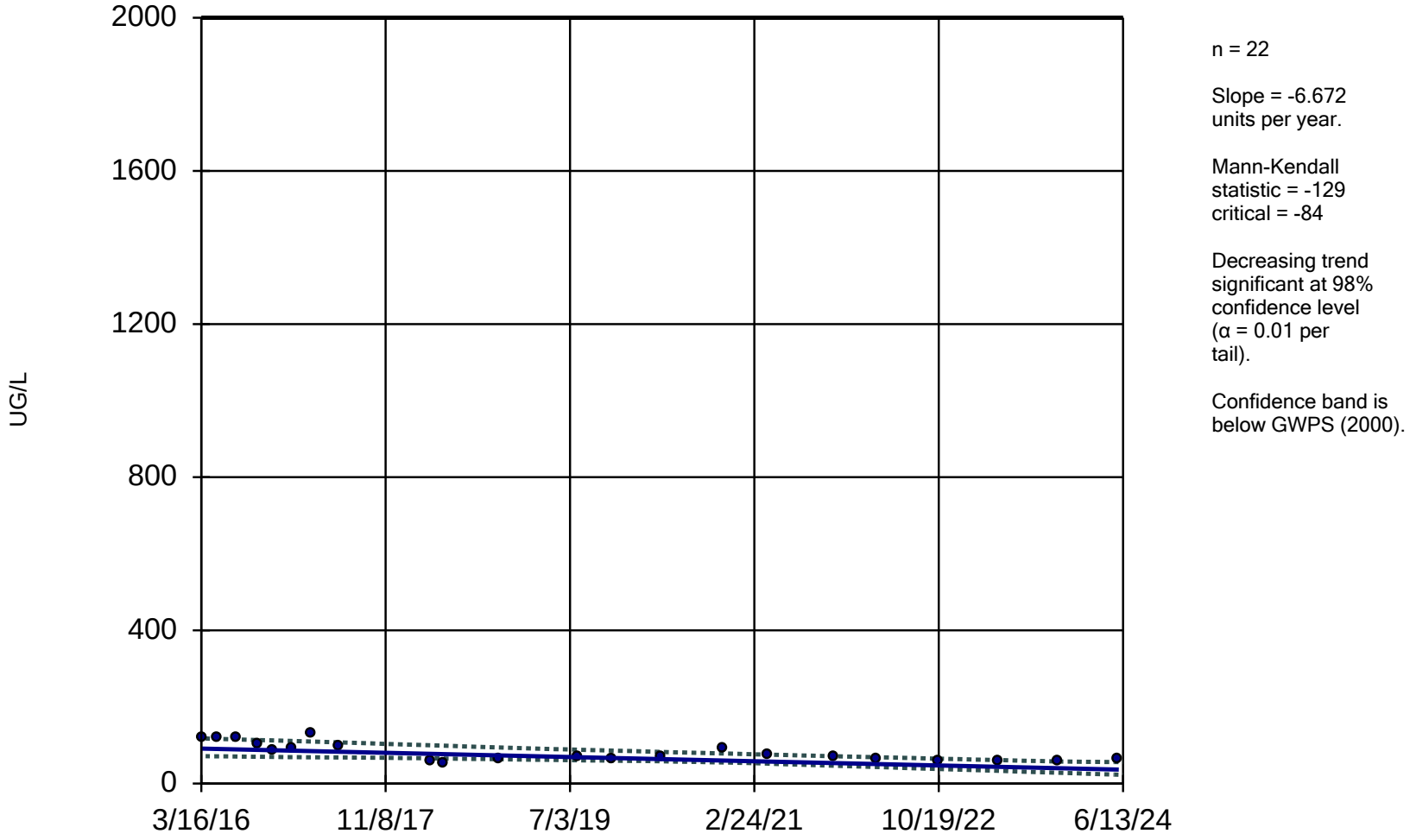
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Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG

Sen's Slope and 95% Confidence Band

S-UMW-2D



n = 22

Slope = -6.672 units per year.

Mann-Kendall statistic = -129 critical = -84

Decreasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (2000).

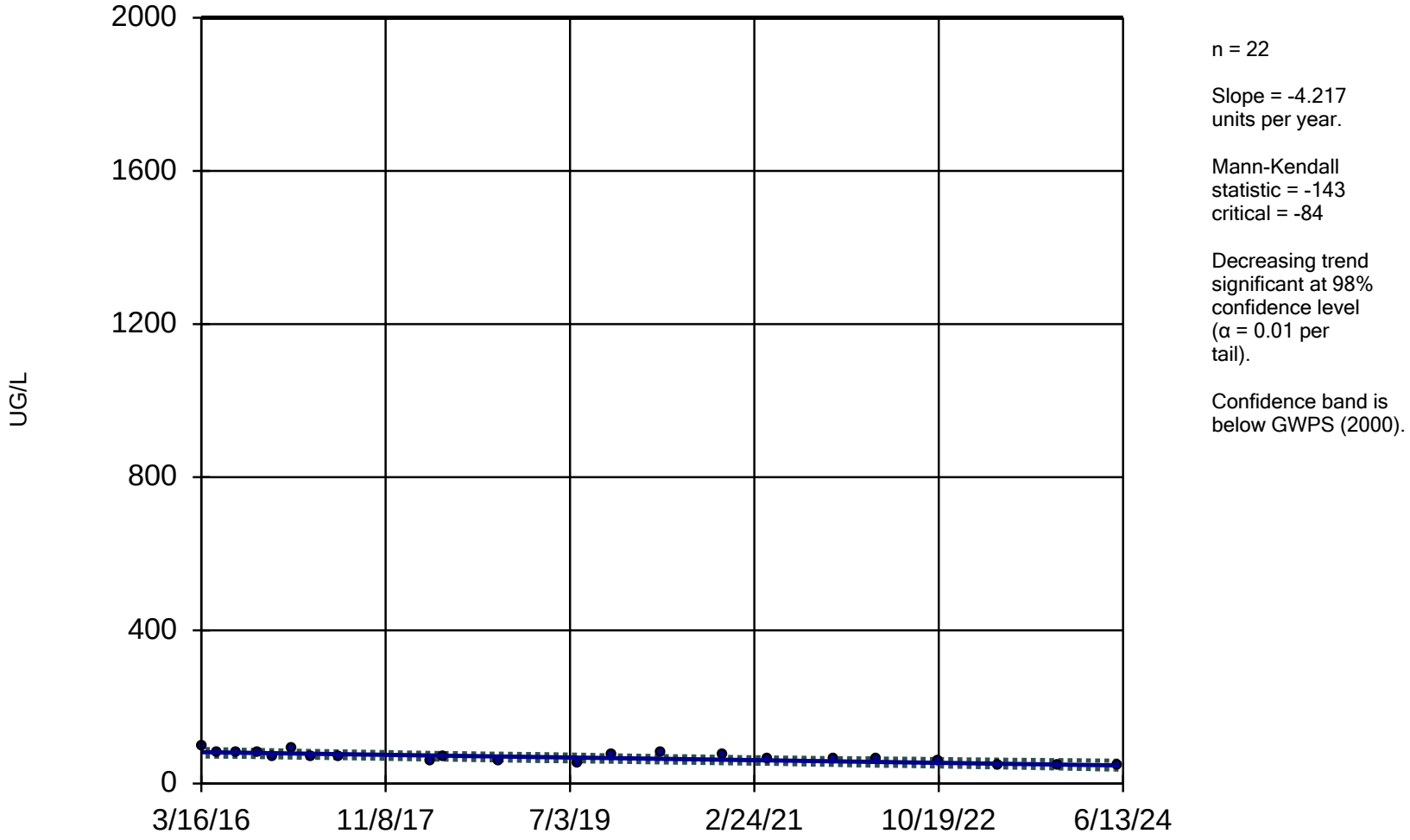
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Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG

Sen's Slope and 95% Confidence Band

S-UMW-4D



n = 22

Slope = -4.217 units per year.

Mann-Kendall statistic = -143 critical = -84

Decreasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (2000).

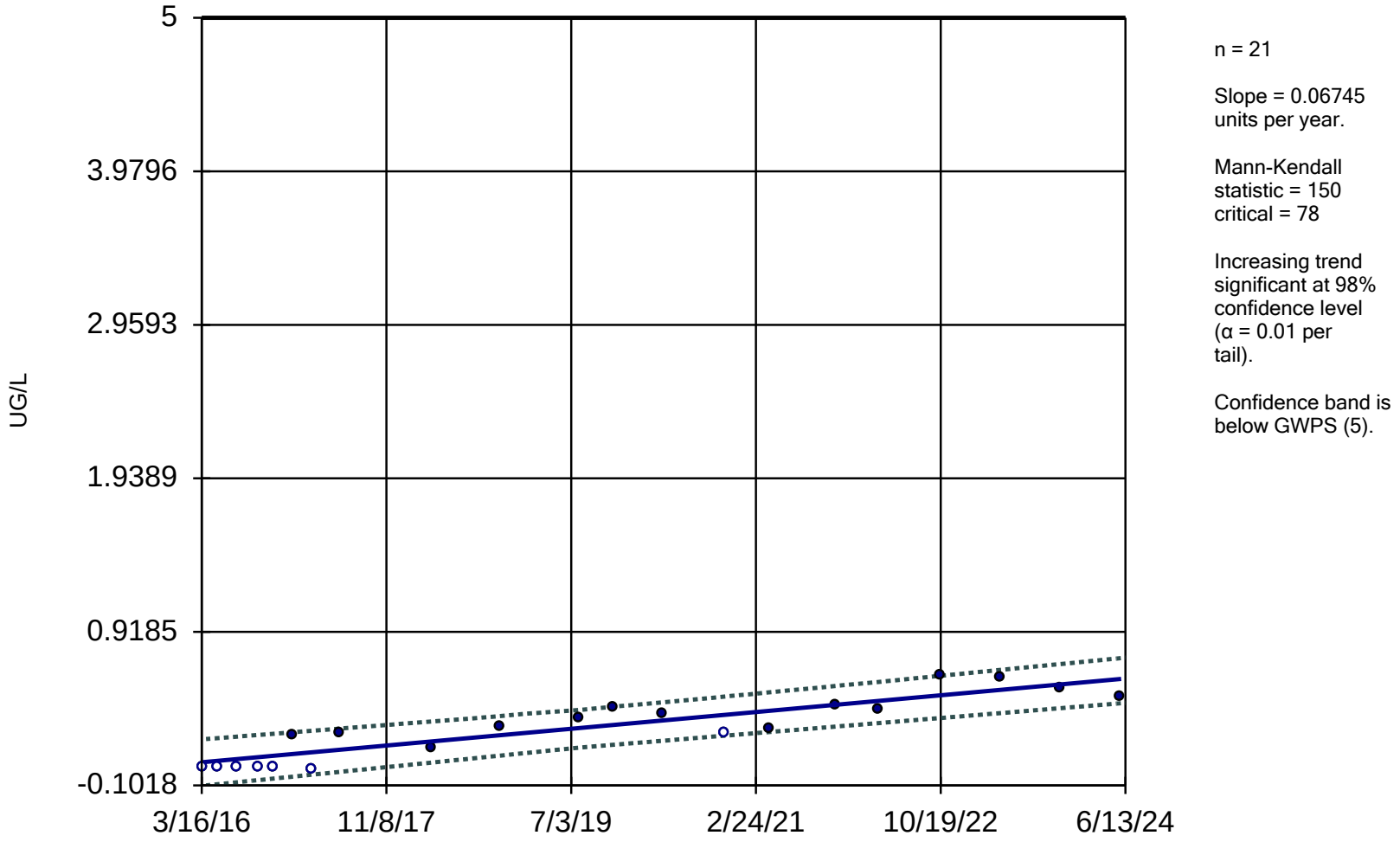
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Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG
Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

S-UMW-2D



n = 21

Slope = 0.06745 units per year.

Mann-Kendall statistic = 150
critical = 78

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (5).

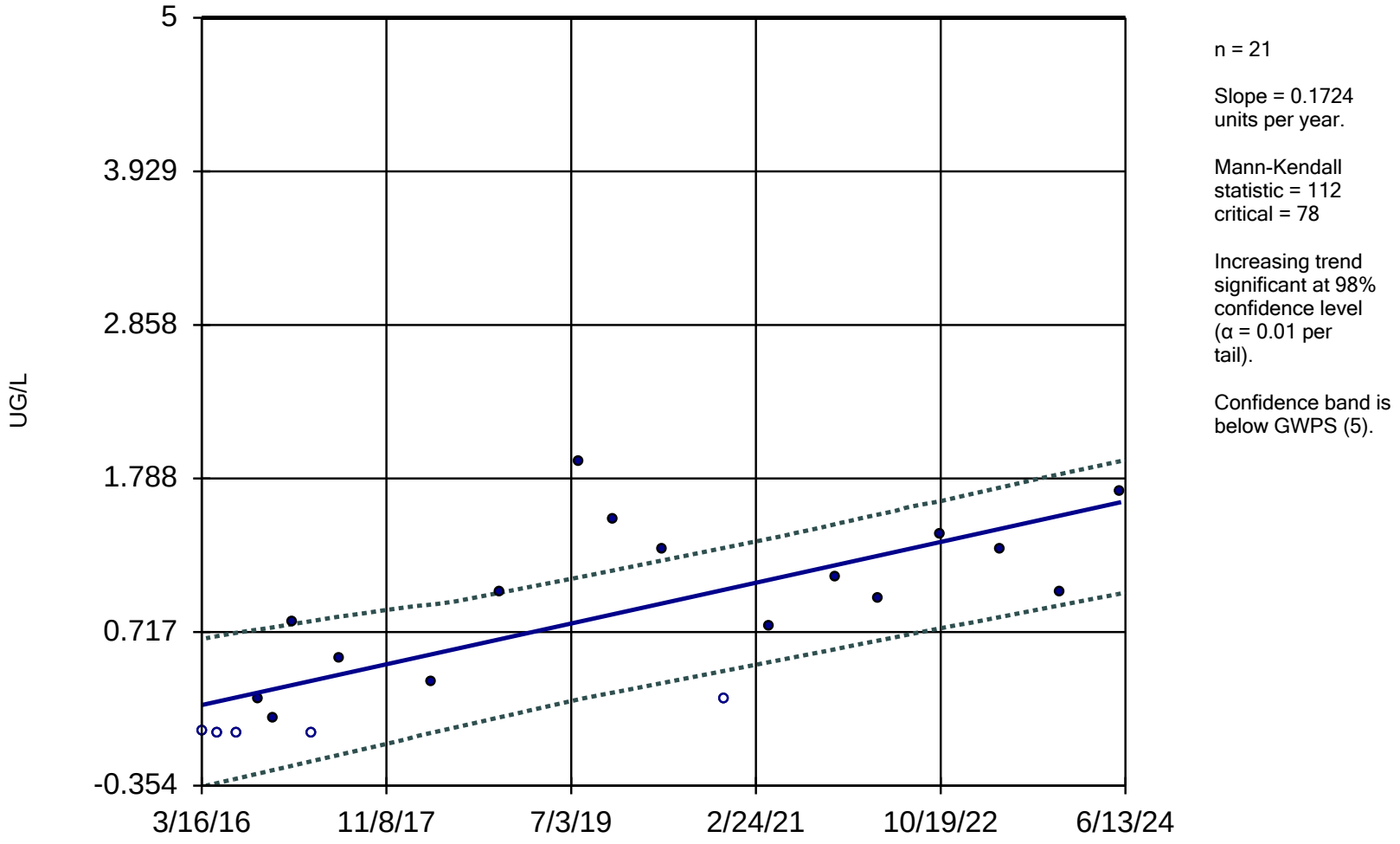
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Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG
Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

S-UMW-3D



n = 21

Slope = 0.1724 units per year.

Mann-Kendall statistic = 112
critical = 78

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (5).

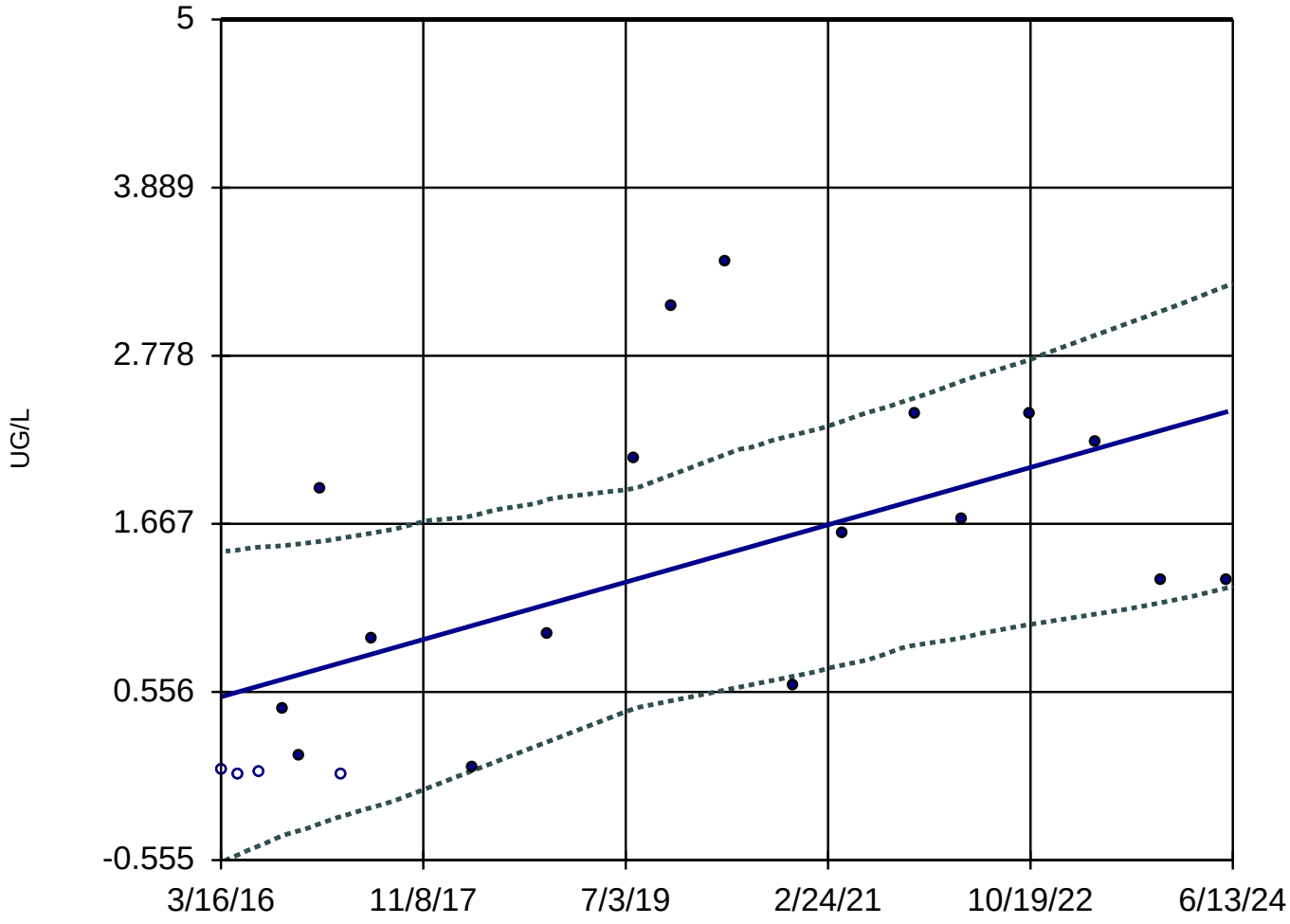
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Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG
Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

S-UMW-4D



n = 21

Slope = 0.2297 units per year.

Mann-Kendall statistic = 96
critical = 78

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (5).

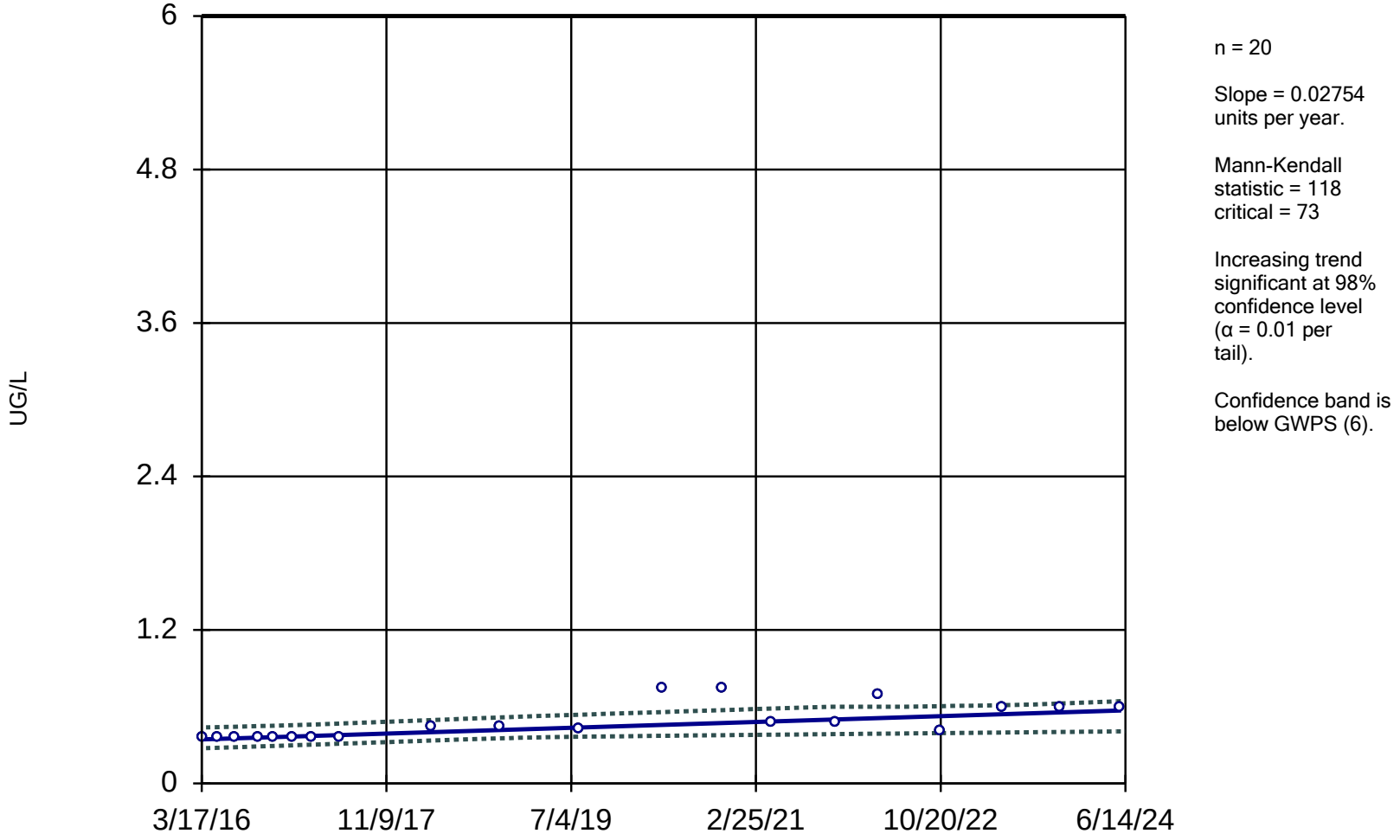
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Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG
Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

S-UMW-1D



n = 20

Slope = 0.02754 units per year.

Mann-Kendall statistic = 118
critical = 73

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (6).

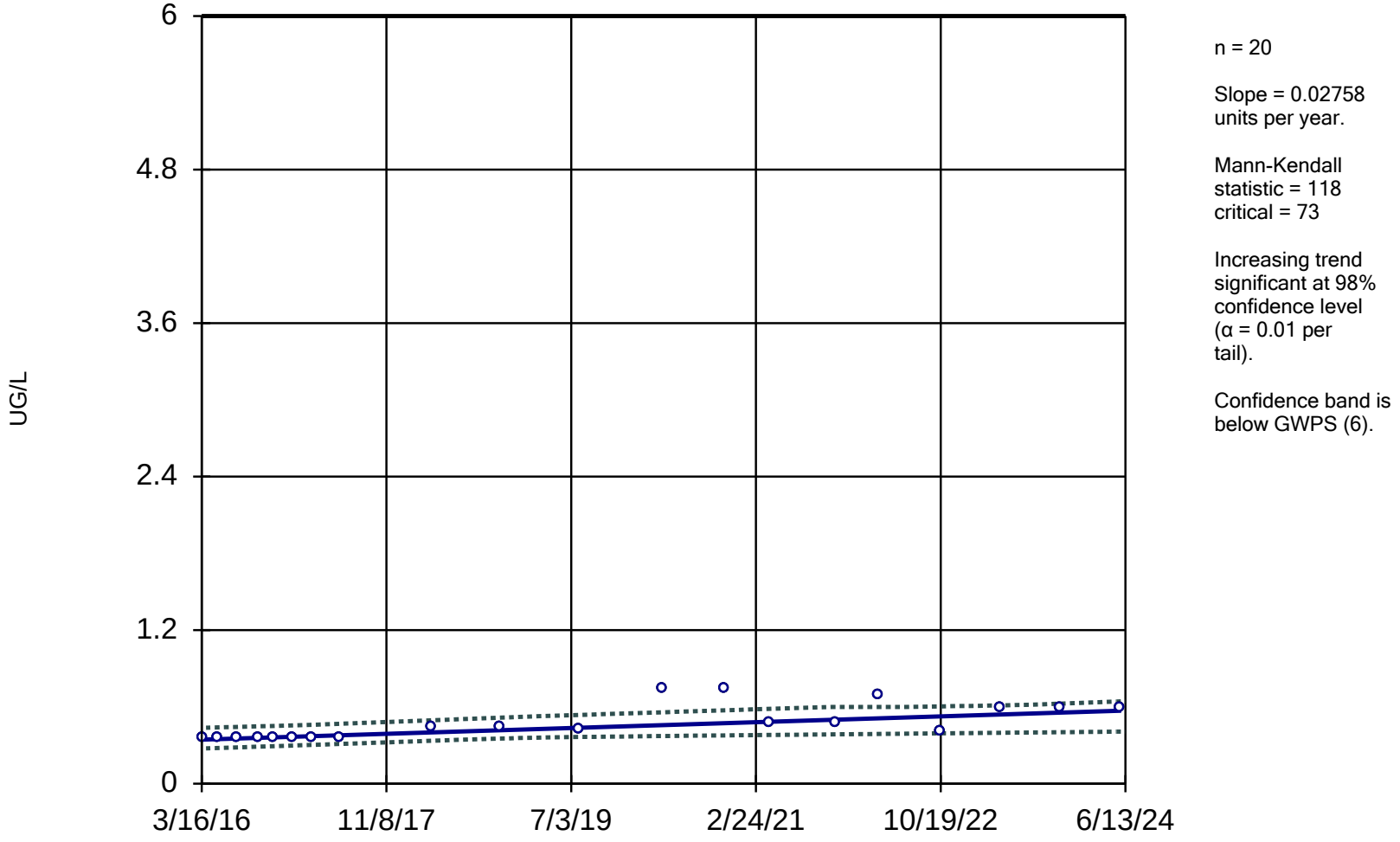
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Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG
Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

S-UMW-2D



n = 20

Slope = 0.02758 units per year.

Mann-Kendall statistic = 118
critical = 73

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (6).

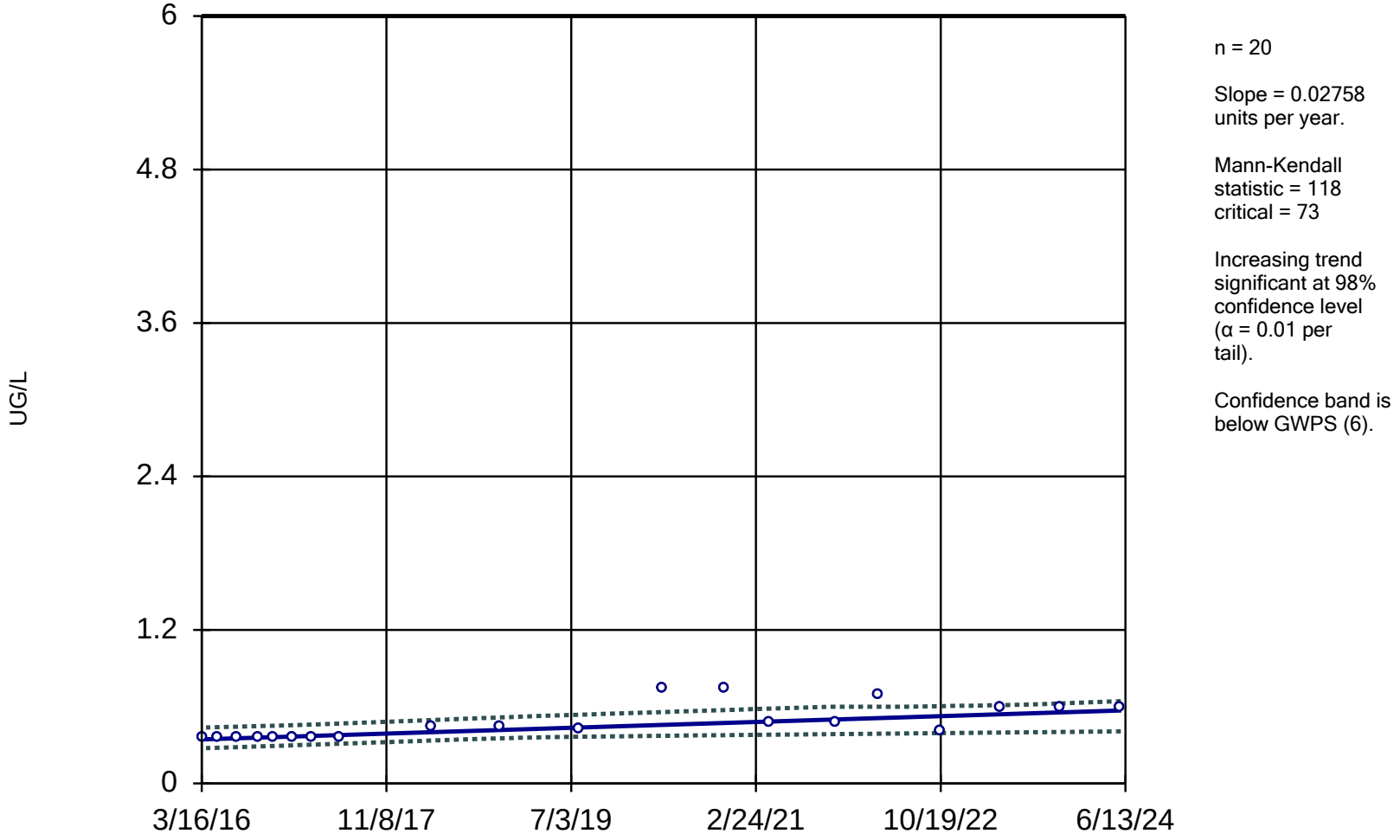
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Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG
Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

S-UMW-3D



n = 20

Slope = 0.02758 units per year.

Mann-Kendall statistic = 118
critical = 73

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (6).

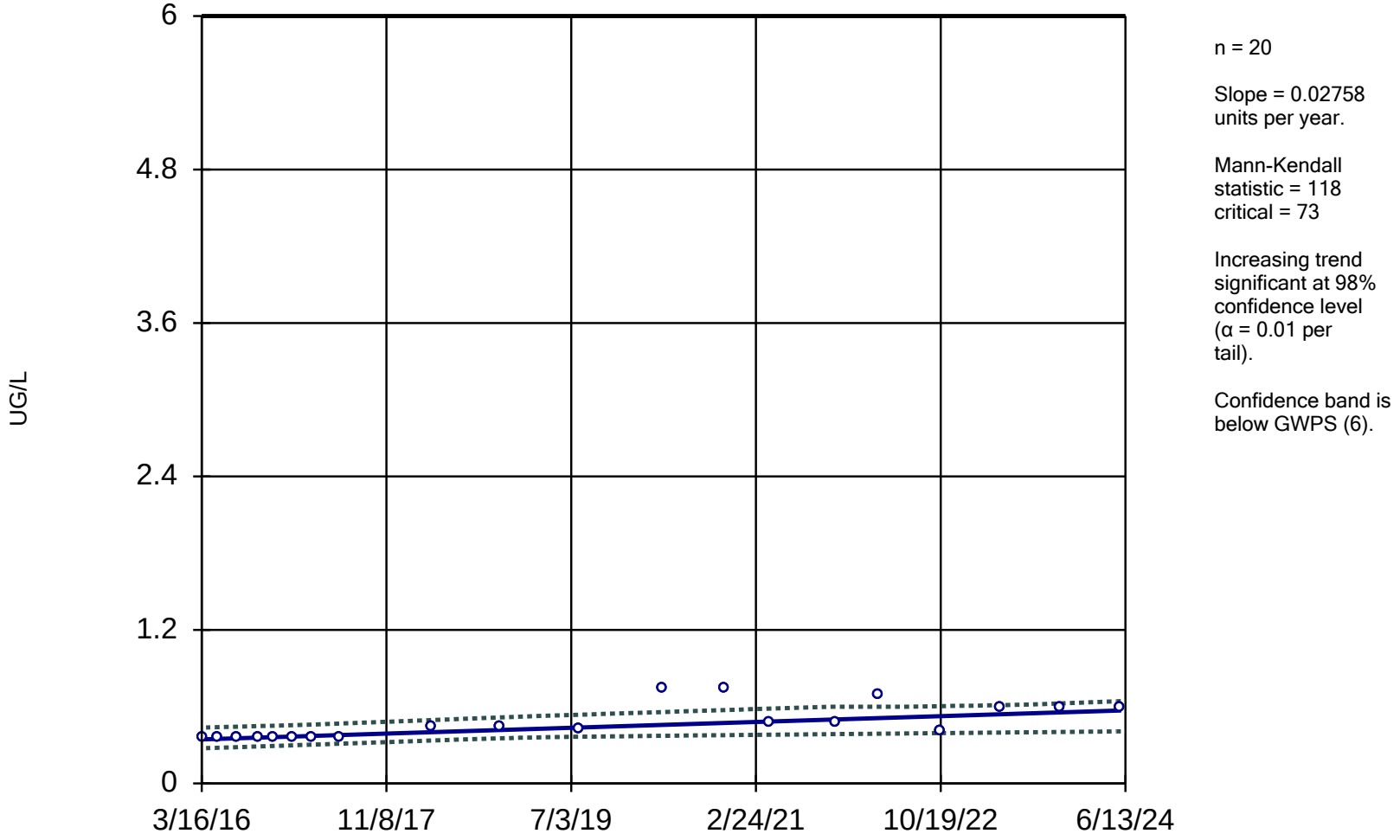
Constituent: COBALT, TOTAL Analysis Run 8/29/2024 10:22 AM View: Assessment Monitoring

Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG
Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

S-UMW-4D



n = 20

Slope = 0.02758 units per year.

Mann-Kendall statistic = 118
critical = 73

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (6).

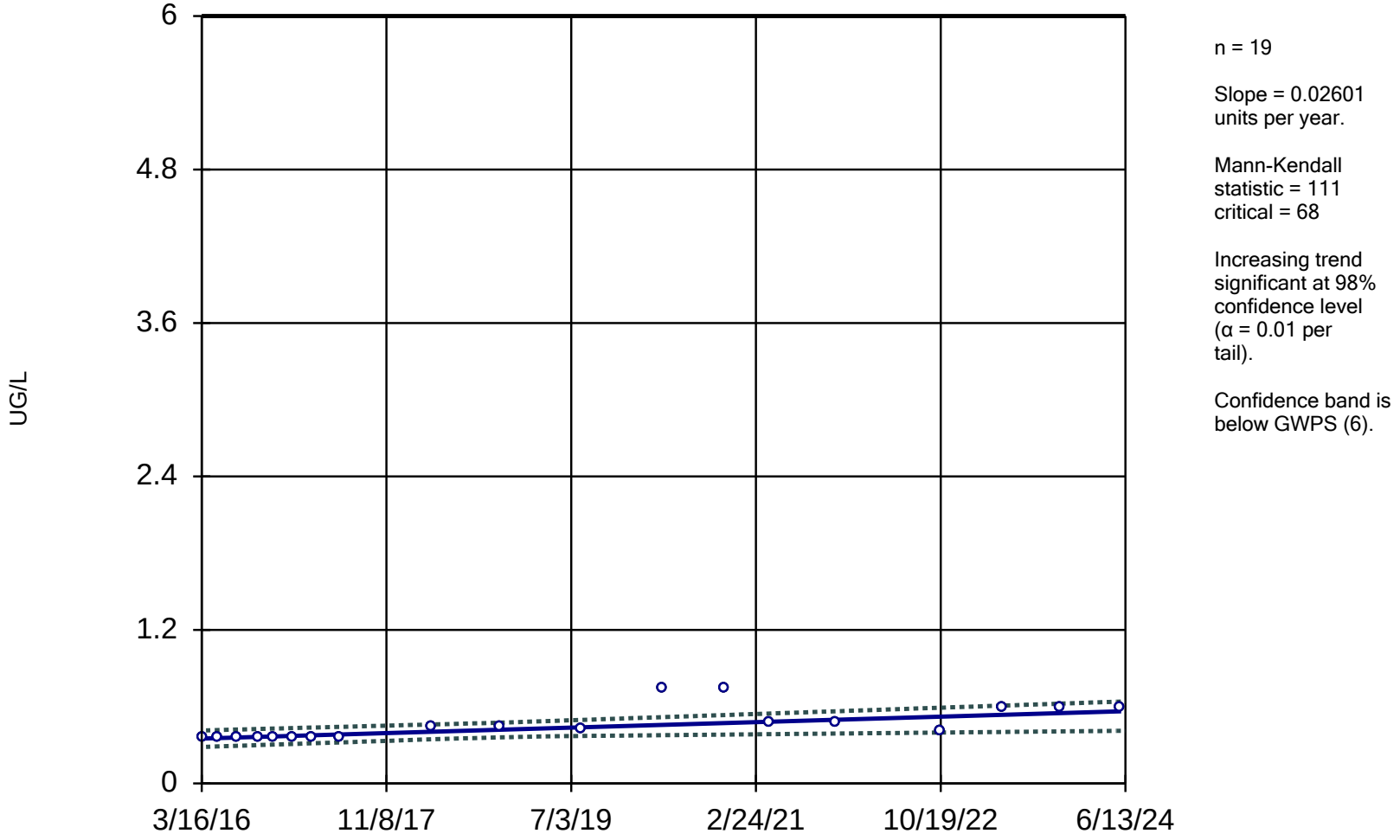
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Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG
Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

S-UMW-5D



n = 19

Slope = 0.02601 units per year.

Mann-Kendall statistic = 111
critical = 68

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (6).

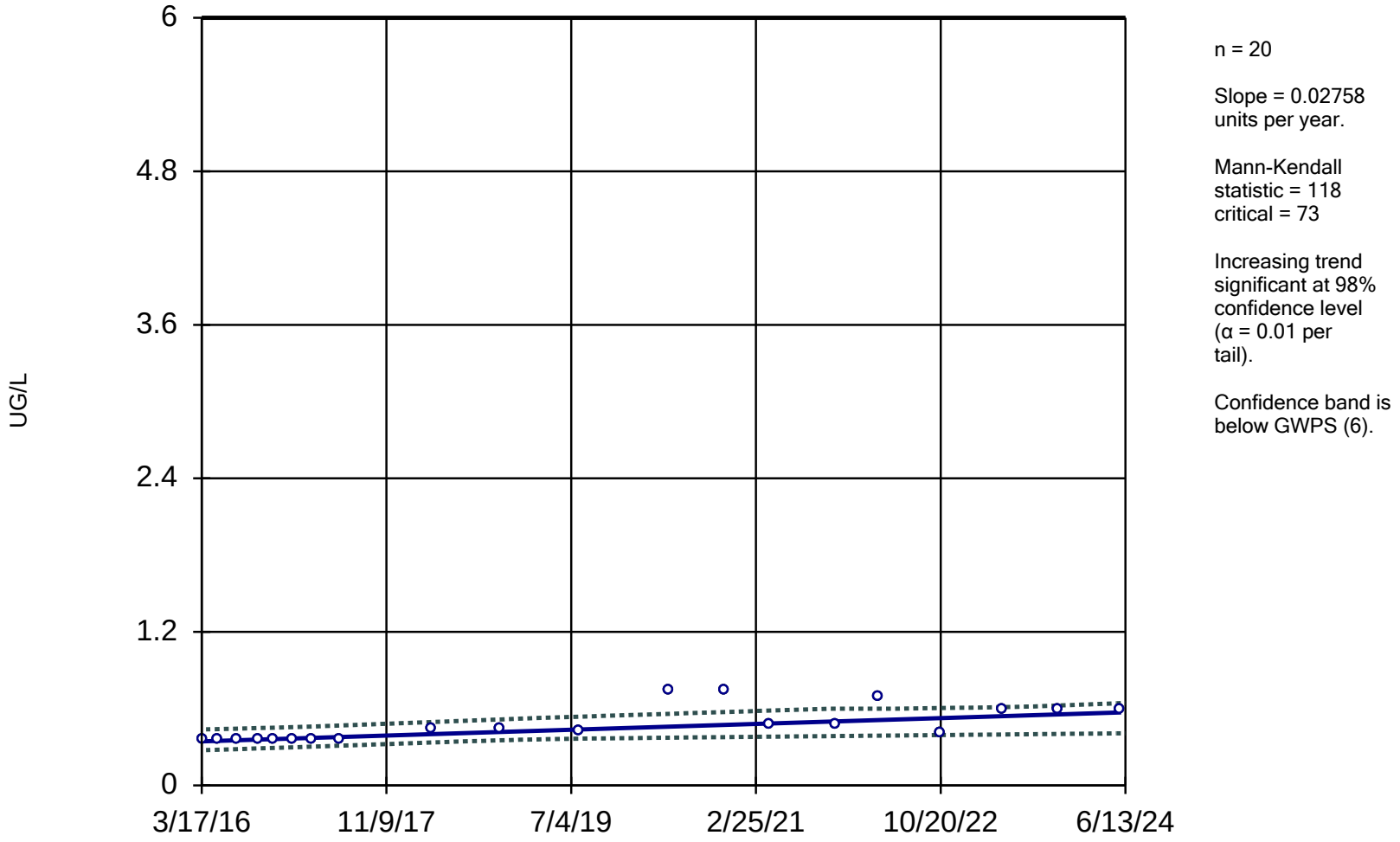
Constituent: COBALT, TOTAL Analysis Run 8/29/2024 10:22 AM View: Assessment Monitoring

Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG
Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

S-UMW-6D



n = 20

Slope = 0.02758 units per year.

Mann-Kendall statistic = 118
critical = 73

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (6).

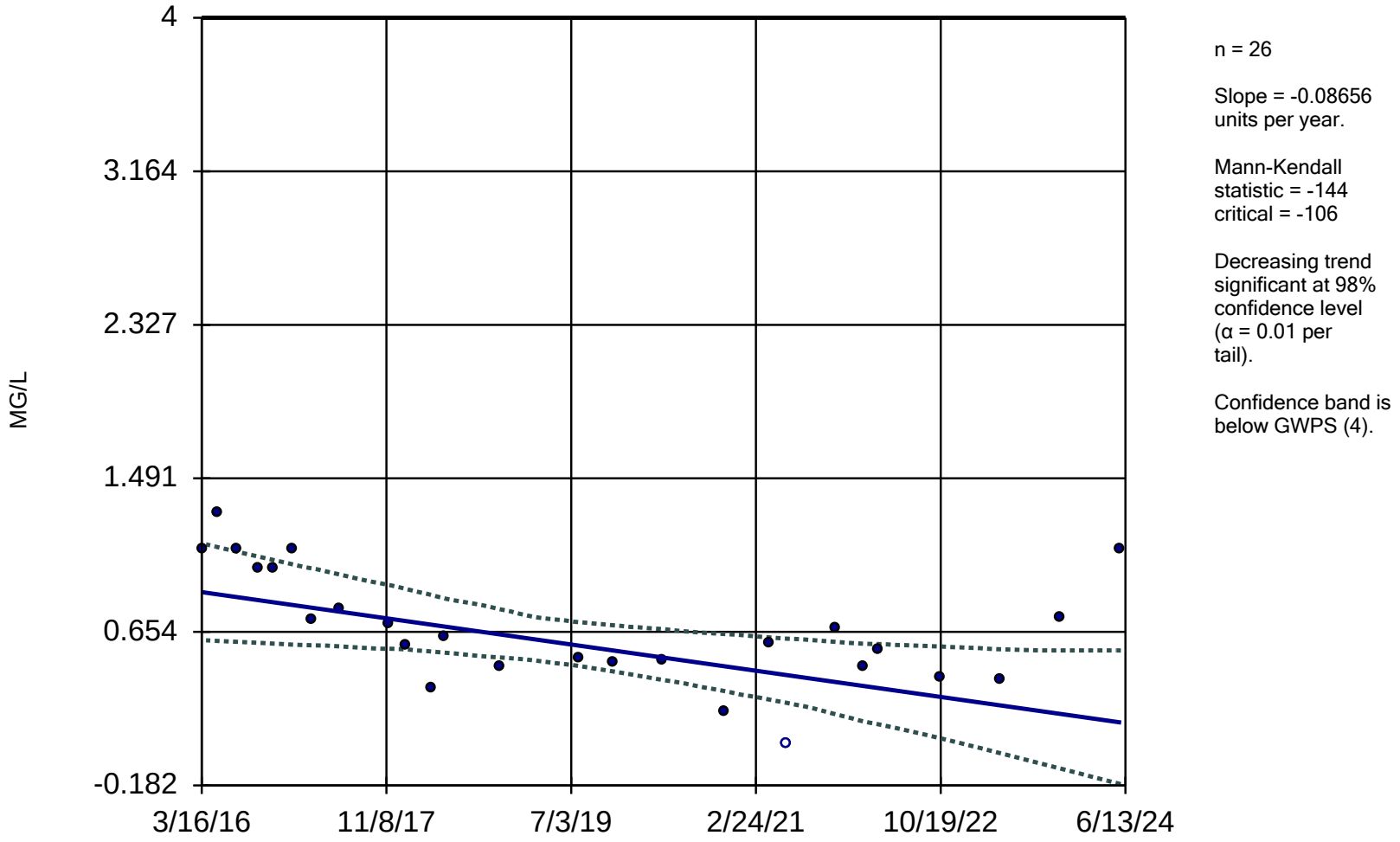
Constituent: COBALT, TOTAL Analysis Run 8/29/2024 10:22 AM View: Assessment Monitoring

Sioux E.C. Client: Ameren Data: SEC DATA

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Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

S-UMW-2D



n = 26

Slope = -0.08656 units per year.

Mann-Kendall statistic = -144
critical = -106

Decreasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (4).

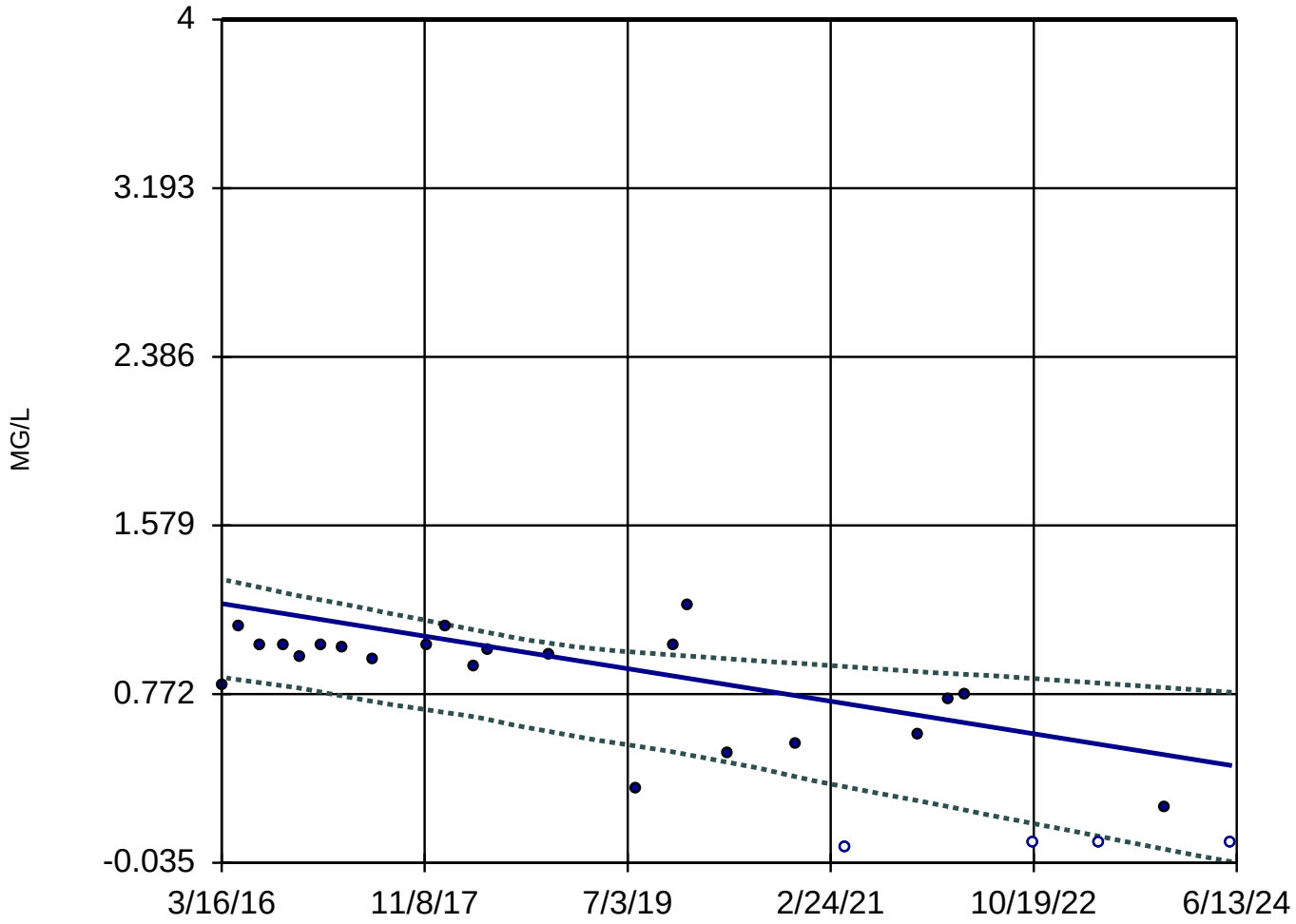
Constituent: FLUORIDE, TOTAL Analysis Run 8/29/2024 10:22 AM View: Assessment Monitoring

Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG
Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

S-UMW-3D



n = 26

Slope = -0.09438 units per year.

Mann-Kendall statistic = -157
critical = -106

Decreasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (4).

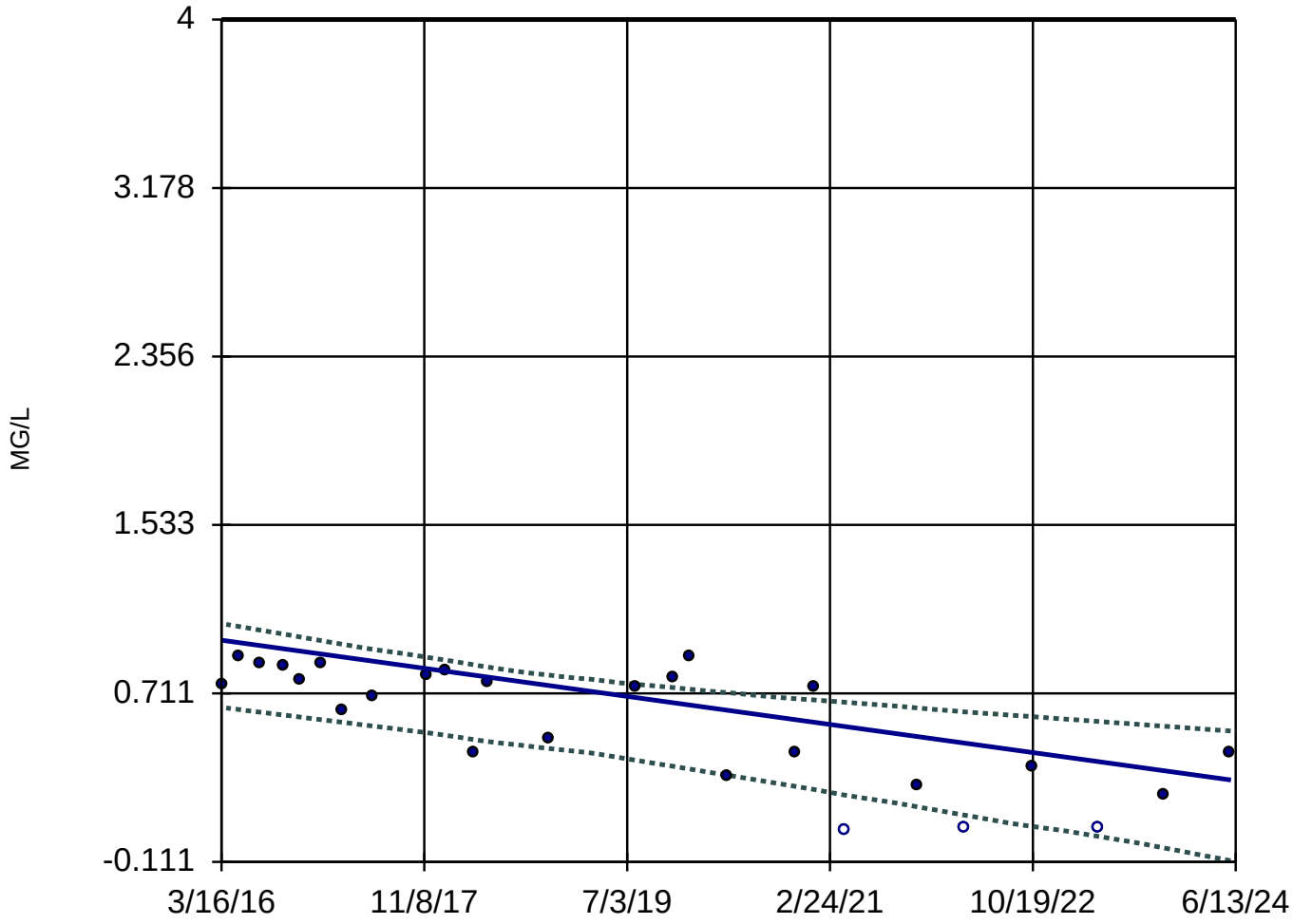
Constituent: FLUORIDE, TOTAL Analysis Run 8/29/2024 10:22 AM View: Assessment Monitoring

Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG
Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

S-UMW-4D



n = 26

Slope = -0.08311 units per year.

Mann-Kendall statistic = -174
critical = -106

Decreasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (4).

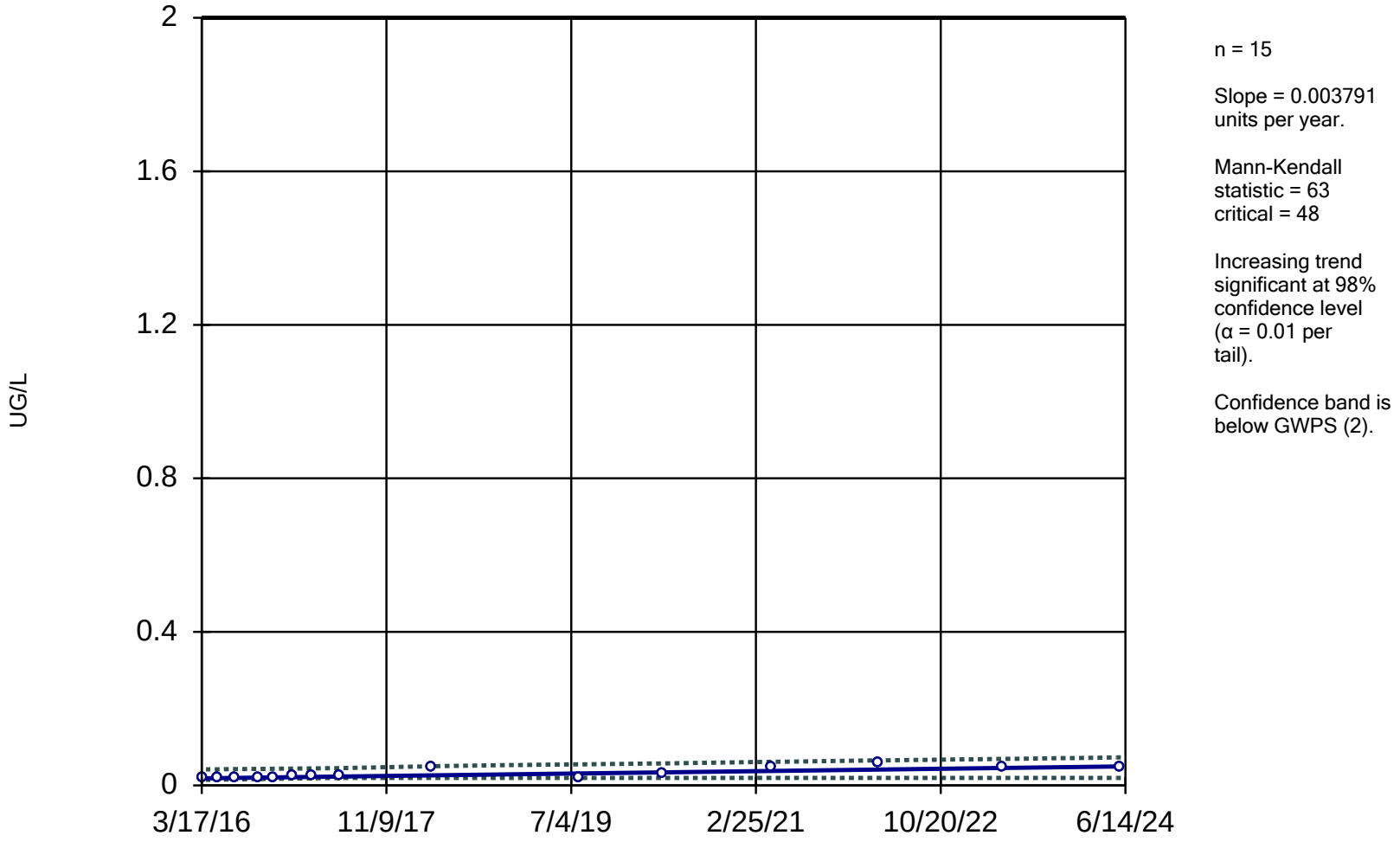
Constituent: FLUORIDE, TOTAL Analysis Run 8/29/2024 10:22 AM View: Assessment Monitoring

Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG
Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

S-UMW-1D



n = 15

Slope = 0.003791 units per year.

Mann-Kendall statistic = 63
critical = 48

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (2).

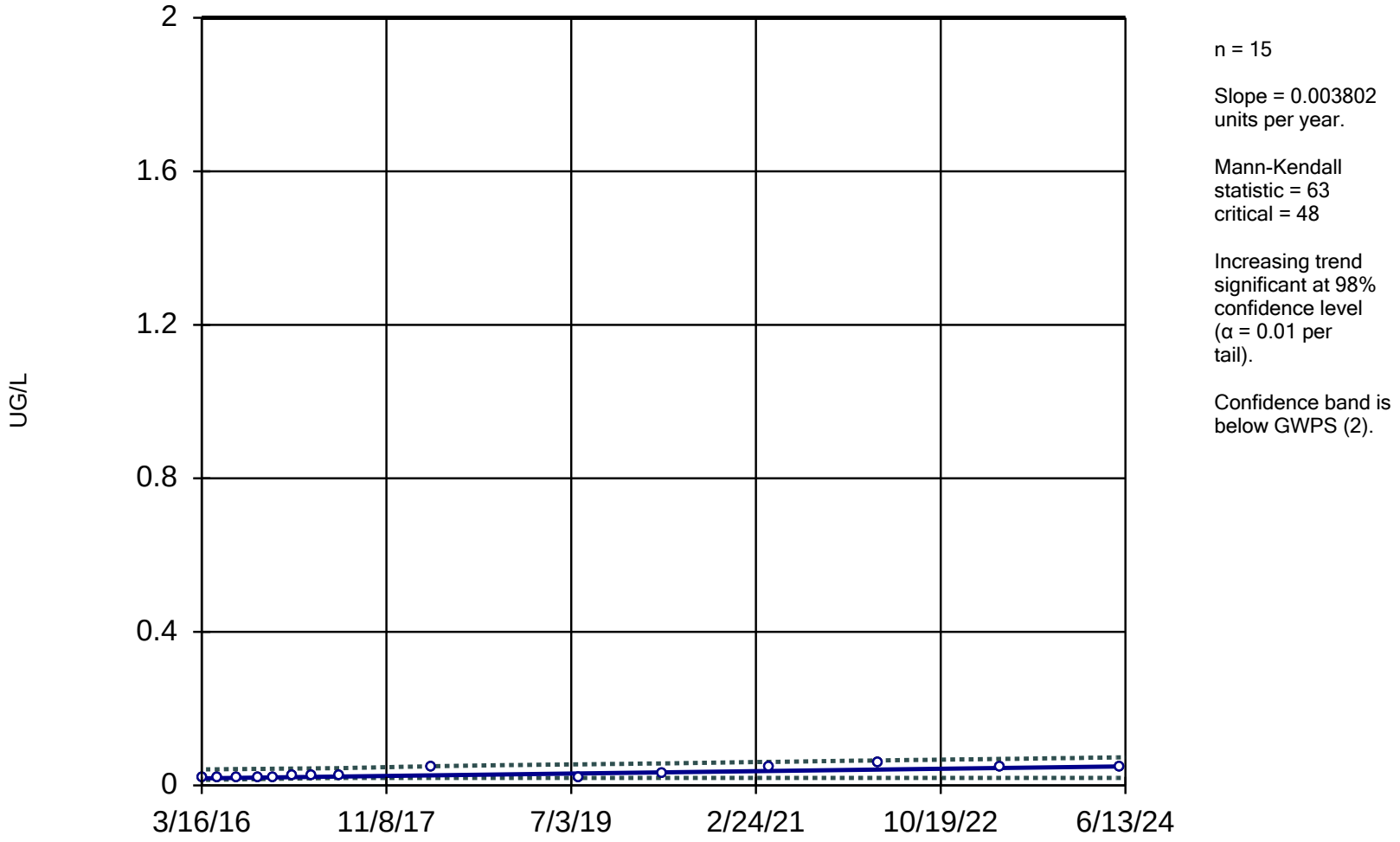
Constituent: MERCURY, TOTAL Analysis Run 8/29/2024 10:22 AM View: Assessment Monitoring

Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG
Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

S-UMW-2D



n = 15

Slope = 0.003802 units per year.

Mann-Kendall statistic = 63
critical = 48

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (2).

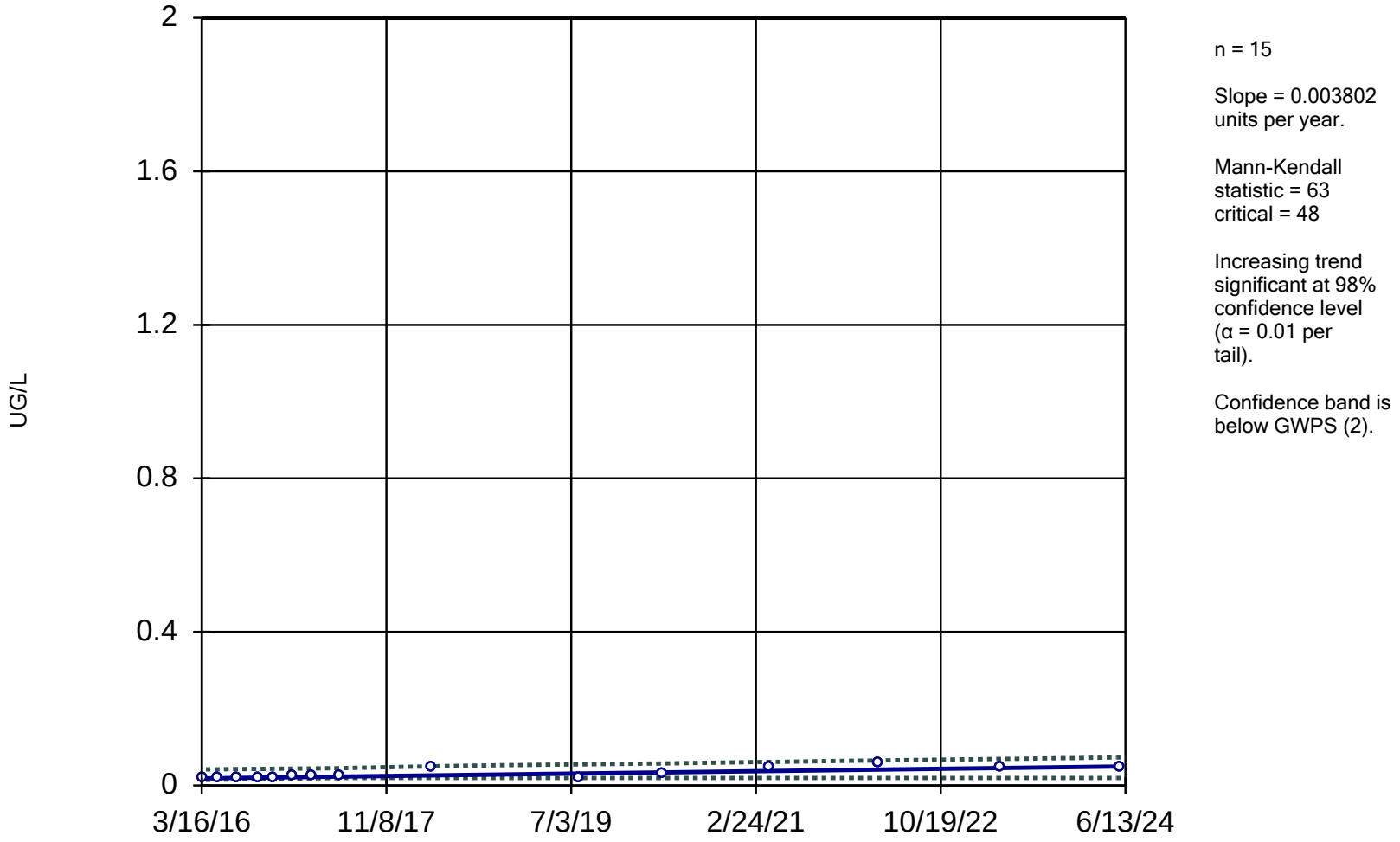
Constituent: MERCURY, TOTAL Analysis Run 8/29/2024 10:22 AM View: Assessment Monitoring

Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG
Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

S-UMW-3D



n = 15

Slope = 0.003802 units per year.

Mann-Kendall statistic = 63
critical = 48

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (2).

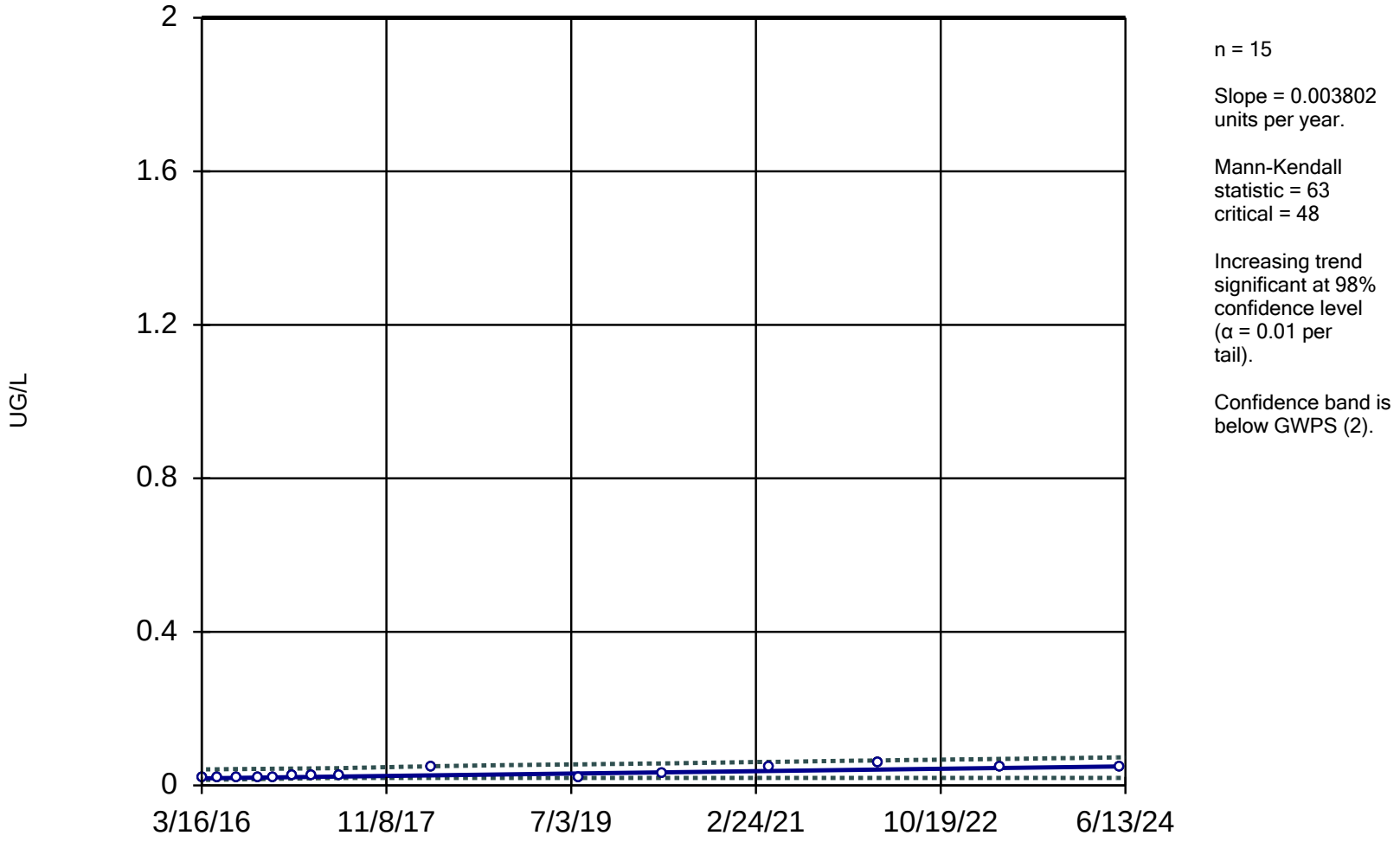
Constituent: MERCURY, TOTAL Analysis Run 8/29/2024 10:22 AM View: Assessment Monitoring

Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG
Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

S-UMW-4D



n = 15

Slope = 0.003802 units per year.

Mann-Kendall statistic = 63
critical = 48

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (2).

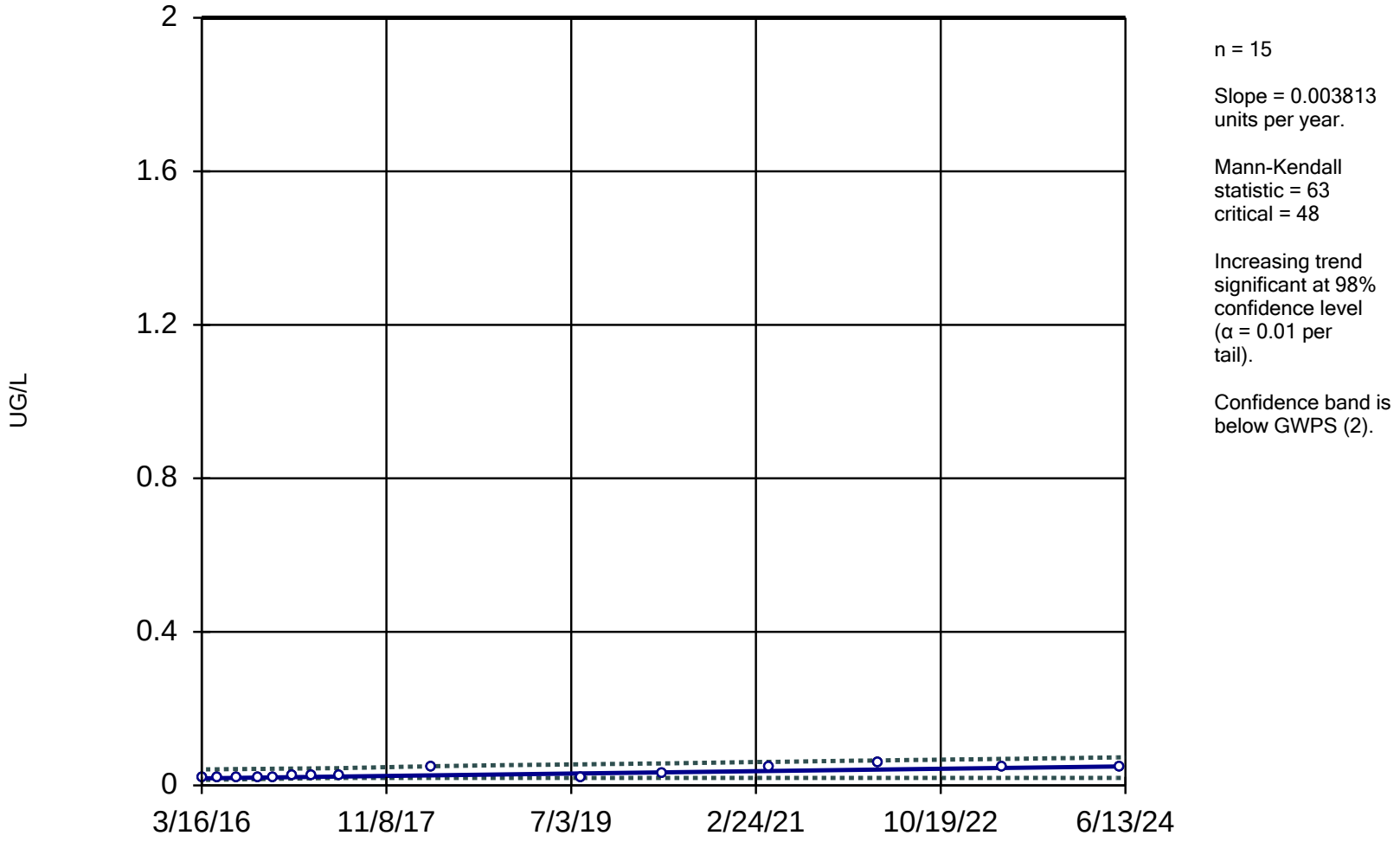
Constituent: MERCURY, TOTAL Analysis Run 8/29/2024 10:22 AM View: Assessment Monitoring

Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG
Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

S-UMW-5D



n = 15

Slope = 0.003813 units per year.

Mann-Kendall statistic = 63
critical = 48

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (2).

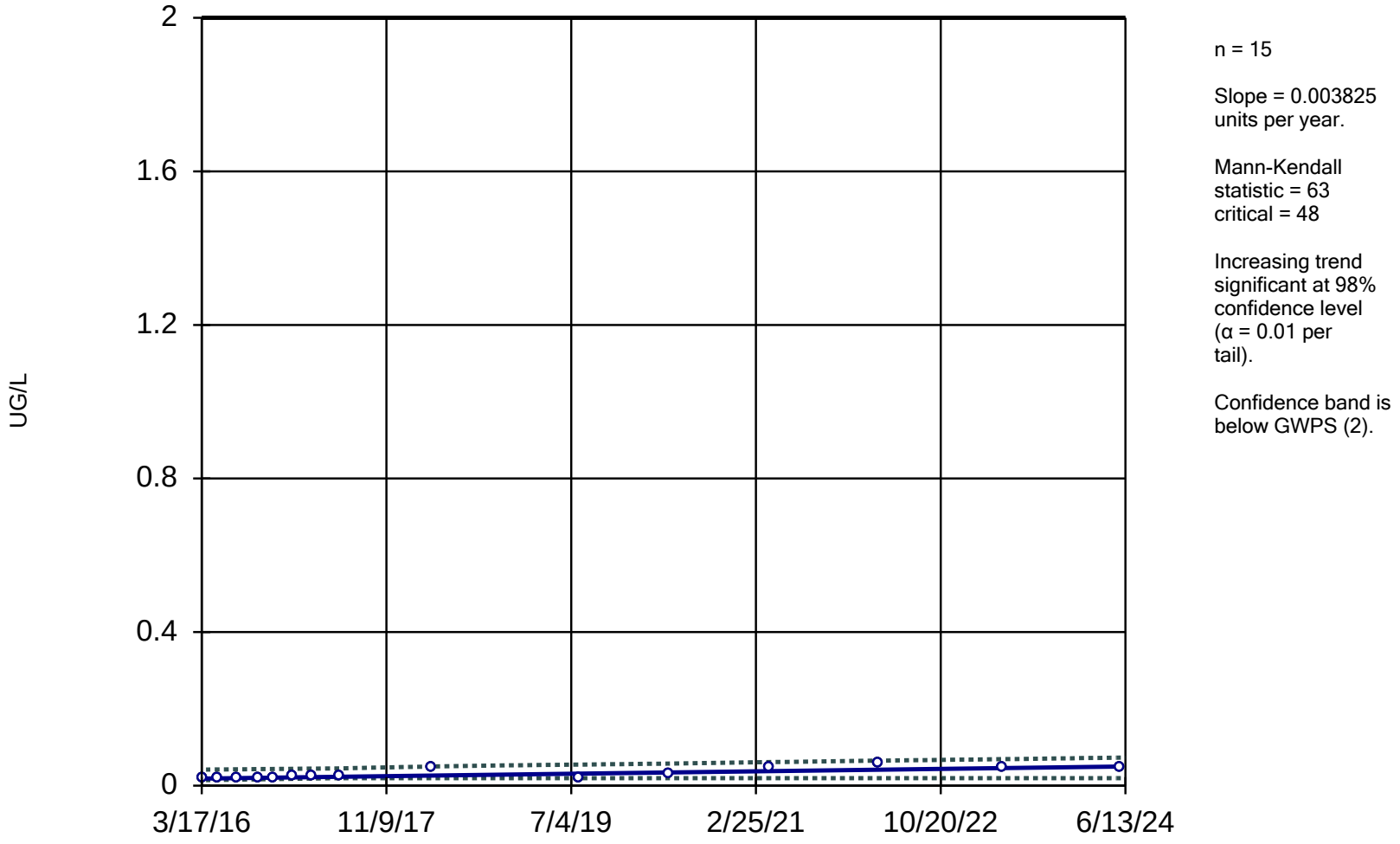
Constituent: MERCURY, TOTAL Analysis Run 8/29/2024 10:22 AM View: Assessment Monitoring

Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG
Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

S-UMW-6D



n = 15

Slope = 0.003825 units per year.

Mann-Kendall statistic = 63
critical = 48

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (2).

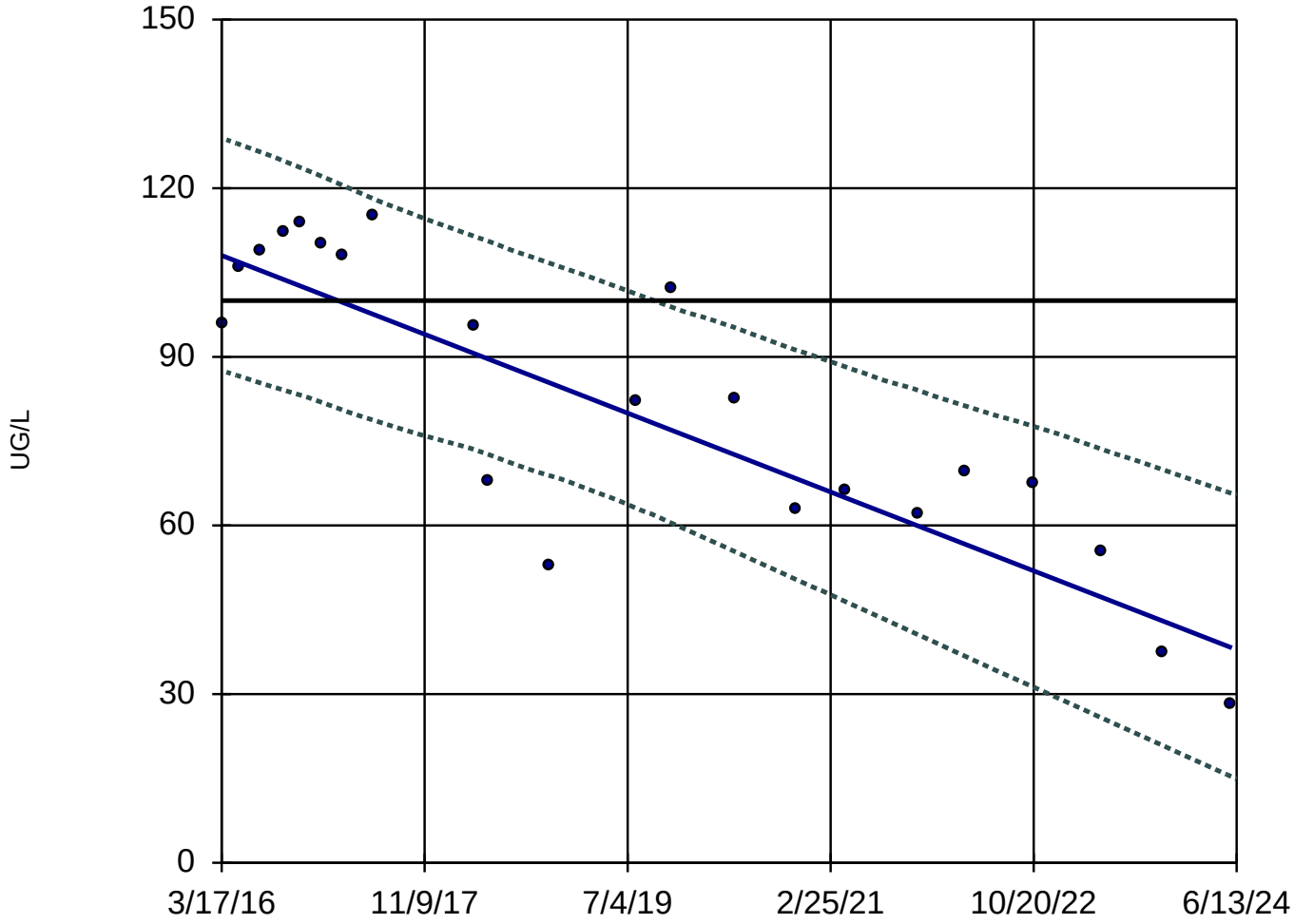
Constituent: MERCURY, TOTAL Analysis Run 8/29/2024 10:22 AM View: Assessment Monitoring

Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG

Sen's Slope and 95% Confidence Band

S-UMW-6D



n = 22

Slope = -8.504
units per year.

Mann-Kendall
statistic = -139
critical = -84

Decreasing trend
significant at 98%
confidence level
(α = 0.01 per
tail).

Confidence band intersects
GWPS (100) on 10/11/19.

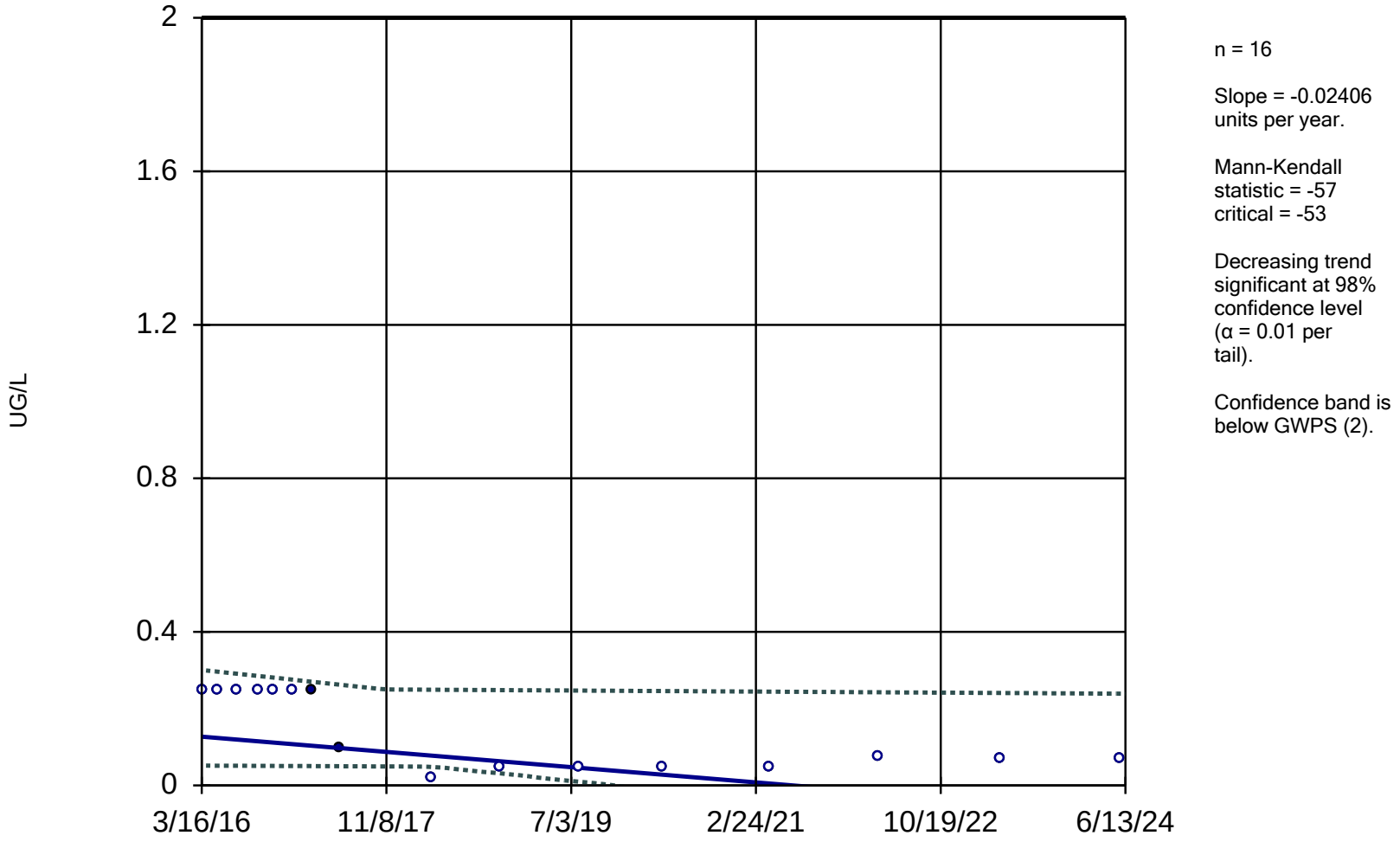
Constituent: MOLYBDENUM, TOTAL Analysis Run 8/29/2024 10:30 AM View: Assessment Monitoring

Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG
Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

S-UMW-2D



n = 16

Slope = -0.02406 units per year.

Mann-Kendall statistic = -57
critical = -53

Decreasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (2).

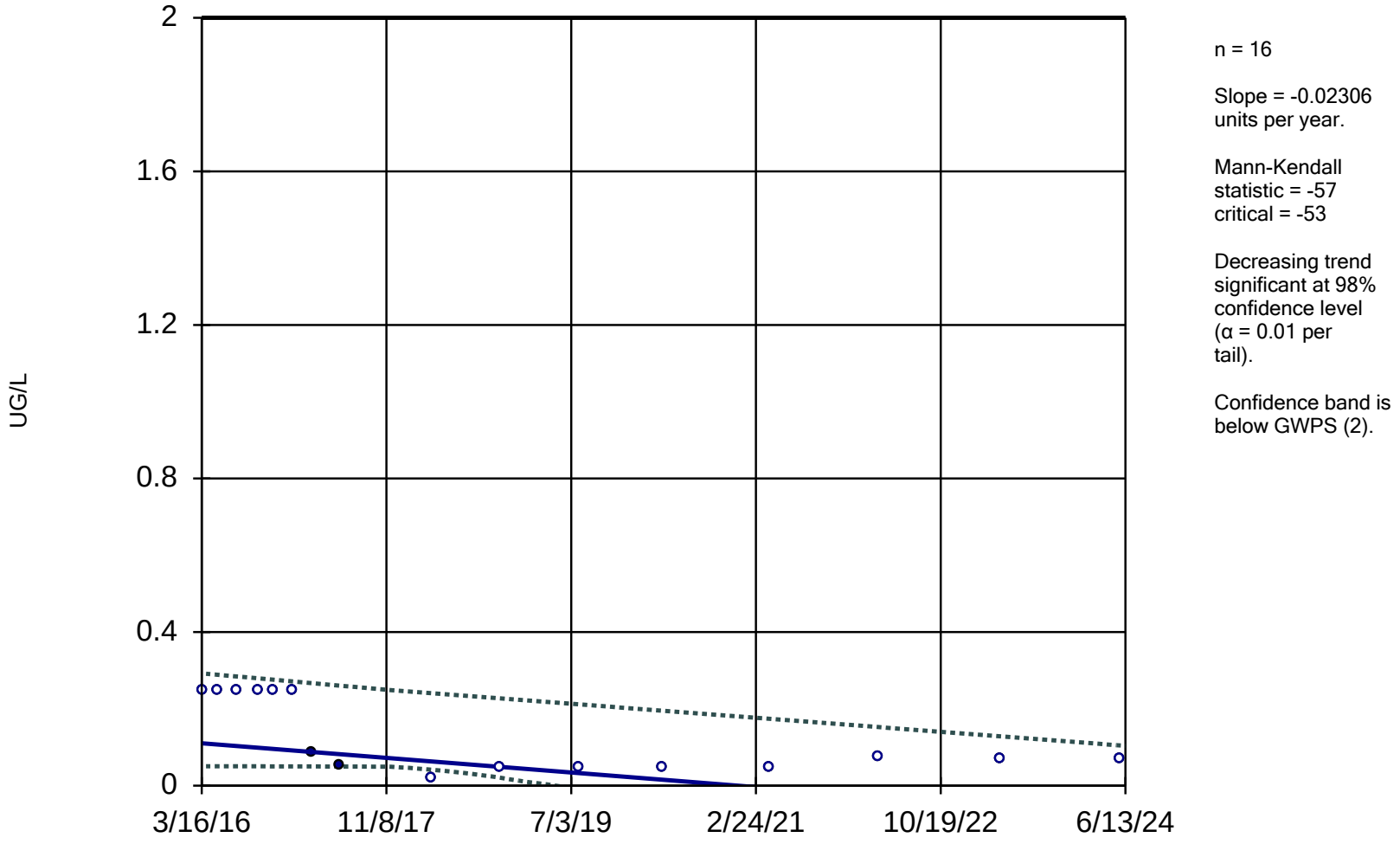
Constituent: THALLIUM, TOTAL Analysis Run 8/29/2024 10:23 AM View: Assessment Monitoring

Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG
Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

S-UMW-3D



n = 16

Slope = -0.02306 units per year.

Mann-Kendall statistic = -57
critical = -53

Decreasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (2).

Constituent: THALLIUM, TOTAL Analysis Run 8/29/2024 10:23 AM View: Assessment Monitoring

Sioux E.C. Client: Ameren Data: SEC DATA

Trend Test

Sioux E.C. Client: Ameren Data: SEC DATA Printed 8/29/2024, 10:25 AM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
ANTIMONY, TOTAL (UG/L)	S-UMW-1D	-0.00...	-4	-53	No	16	50	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	S-UMW-2D	0.002761	32	53	No	16	68.75	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	S-UMW-3D	0.004244	48	48	No	15	86.67	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	**S-UMW-4D**	**0.004216**	**70**	**53**	**Yes**	**16**	**93.75**	**n/a**	**n/a**	**0.02**	**NP**
ANTIMONY, TOTAL (UG/L)	**S-UMW-5D**	**0.004218**	**62**	**53**	**Yes**	**16**	**100**	**n/a**	**n/a**	**0.02**	**NP**
ANTIMONY, TOTAL (UG/L)	**S-UMW-6D**	**0.004216**	**62**	**53**	**Yes**	**16**	**100**	**n/a**	**n/a**	**0.02**	**NP**
ARSENIC, TOTAL (UG/L)	**S-UMW-1D**	**0.1147**	**139**	**78**	**Yes**	**21**	**0**	**n/a**	**n/a**	**0.02**	**NP**
ARSENIC, TOTAL (UG/L)	**S-UMW-2D**	**0.2637**	**152**	**84**	**Yes**	**22**	**0**	**n/a**	**n/a**	**0.02**	**NP**
ARSENIC, TOTAL (UG/L)	S-UMW-3D	0.06927	75	78	No	21	9.524	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	S-UMW-4D	0.01495	39	78	No	21	19.05	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	**S-UMW-5D**	**-0.04**	**-110**	**-78**	**Yes**	**21**	**4.762**	**n/a**	**n/a**	**0.02**	**NP**
ARSENIC, TOTAL (UG/L)	**S-UMW-6D**	**0.02491**	**86**	**84**	**Yes**	**22**	**9.091**	**n/a**	**n/a**	**0.02**	**NP**
BARIUM, TOTAL (UG/L)	S-UMW-1D	1.715	24	84	No	22	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	**S-UMW-2D**	**-6.672**	**-129**	**-84**	**Yes**	**22**	**0**	**n/a**	**n/a**	**0.02**	**NP**
BARIUM, TOTAL (UG/L)	S-UMW-3D	-0.5931	-49	-84	No	22	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	**S-UMW-4D**	**-4.217**	**-143**	**-84**	**Yes**	**22**	**0**	**n/a**	**n/a**	**0.02**	**NP**
BARIUM, TOTAL (UG/L)	S-UMW-5D	7.699	56	84	No	22	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	S-UMW-6D	0.4722	9	84	No	22	0	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	S-UMW-1D	-0.00...	-31	-58	No	17	100	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	S-UMW-2D	0	-2	-53	No	16	93.75	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	S-UMW-3D	-0.00...	-28	-53	No	16	100	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	S-UMW-4D	-0.00...	-31	-58	No	17	100	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	S-UMW-5D	-0.00...	-31	-58	No	17	100	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	S-UMW-6D	-0.00...	-31	-58	No	17	100	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	S-UMW-1D	0.001426	50	68	No	19	89.47	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	**S-UMW-2D**	**0.06745**	**150**	**78**	**Yes**	**21**	**33.33**	**n/a**	**n/a**	**0.02**	**NP**
CADMIUM, TOTAL (UG/L)	**S-UMW-3D**	**0.1724**	**112**	**78**	**Yes**	**21**	**23.81**	**n/a**	**n/a**	**0.02**	**NP**
CADMIUM, TOTAL (UG/L)	**S-UMW-4D**	**0.2297**	**96**	**78**	**Yes**	**21**	**19.05**	**n/a**	**n/a**	**0.02**	**NP**
CADMIUM, TOTAL (UG/L)	S-UMW-5D	0.01416	77	78	No	21	38.1	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	S-UMW-6D	0.00138	43	78	No	21	80.95	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	S-UMW-1D	0.0106	8	58	No	17	47.06	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	S-UMW-2D	-0.00...	-17	-58	No	17	58.82	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	S-UMW-3D	-0.00...	-25	-63	No	18	55.56	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	S-UMW-4D	0.001322	6	63	No	18	55.56	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	S-UMW-5D	-0.00...	-8	-63	No	18	50	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	S-UMW-6D	0.004994	10	63	No	18	55.56	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	**S-UMW-1D**	**0.02754**	**118**	**73**	**Yes**	**20**	**100**	**n/a**	**n/a**	**0.02**	**NP**
COBALT, TOTAL (UG/L)	**S-UMW-2D**	**0.02758**	**118**	**73**	**Yes**	**20**	**100**	**n/a**	**n/a**	**0.02**	**NP**
COBALT, TOTAL (UG/L)	**S-UMW-3D**	**0.02758**	**118**	**73**	**Yes**	**20**	**100**	**n/a**	**n/a**	**0.02**	**NP**
COBALT, TOTAL (UG/L)	**S-UMW-4D**	**0.02758**	**118**	**73**	**Yes**	**20**	**100**	**n/a**	**n/a**	**0.02**	**NP**
COBALT, TOTAL (UG/L)	**S-UMW-5D**	**0.02601**	**111**	**68**	**Yes**	**19**	**100**	**n/a**	**n/a**	**0.02**	**NP**
COBALT, TOTAL (UG/L)	**S-UMW-6D**	**0.02758**	**118**	**73**	**Yes**	**20**	**100**	**n/a**	**n/a**	**0.02**	**NP**
FLUORIDE, TOTAL (MG/L)	S-UMW-1D	-0.00...	-57	-101	No	25	8	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	**S-UMW-2D**	**-0.08656**	**-144**	**-106**	**Yes**	**26**	**3.846**	**n/a**	**n/a**	**0.02**	**NP**
FLUORIDE, TOTAL (MG/L)	**S-UMW-3D**	**-0.09438**	**-157**	**-106**	**Yes**	**26**	**15.38**	**n/a**	**n/a**	**0.02**	**NP**
FLUORIDE, TOTAL (MG/L)	**S-UMW-4D**	**-0.08311**	**-174**	**-106**	**Yes**	**26**	**11.54**	**n/a**	**n/a**	**0.02**	**NP**
FLUORIDE, TOTAL (MG/L)	S-UMW-5D	-0.02208	-53	-95	No	24	0	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	S-UMW-6D	-0.00...	-33	-101	No	25	12	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	S-UMW-1D	0.1145	58	58	No	17	88.24	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	S-UMW-2D	0.1045	52	58	No	17	76.47	n/a	n/a	0.02	NP

Trend Test

Sioux E.C. Client: Ameren Data: SEC DATA Printed 8/29/2024, 10:25 AM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
LEAD, TOTAL (UG/L)	S-UMW-3D	0	2	58	No	17	64.71	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	S-UMW-4D	0.06533	9	58	No	17	58.82	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	S-UMW-5D	0.05905	15	58	No	17	82.35	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	S-UMW-6D	0.1146	58	58	No	17	88.24	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-UMW-1D	0.3149	31	84	No	22	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-UMW-2D	-0.2239	-19	-84	No	22	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-UMW-3D	-0.06667	-10	-84	No	22	4.545	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-UMW-4D	-0.6807	-75	-84	No	22	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-UMW-5D	-0.7956	-68	-84	No	22	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-UMW-6D	0.3975	26	78	No	21	0	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	**S-UMW-1D**	**0.003791**	**63**	**48**	**Yes**	**15**	**100**	**n/a**	**n/a**	**0.02**	**NP**
MERCURY, TOTAL (UG/L)	**S-UMW-2D**	**0.003802**	**63**	**48**	**Yes**	**15**	**100**	**n/a**	**n/a**	**0.02**	**NP**
MERCURY, TOTAL (UG/L)	**S-UMW-3D**	**0.003802**	**63**	**48**	**Yes**	**15**	**100**	**n/a**	**n/a**	**0.02**	**NP**
MERCURY, TOTAL (UG/L)	**S-UMW-4D**	**0.003802**	**63**	**48**	**Yes**	**15**	**100**	**n/a**	**n/a**	**0.02**	**NP**
MERCURY, TOTAL (UG/L)	**S-UMW-5D**	**0.003813**	**63**	**48**	**Yes**	**15**	**100**	**n/a**	**n/a**	**0.02**	**NP**
MERCURY, TOTAL (UG/L)	**S-UMW-6D**	**0.003825**	**63**	**48**	**Yes**	**15**	**100**	**n/a**	**n/a**	**0.02**	**NP**
MOLYBDENUM, TOTAL (UG/L)	S-UMW-1D	1.936	51	84	No	22	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	S-UMW-2D	22.67	30	84	No	22	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	S-UMW-3D	-109	-82	-84	No	22	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	S-UMW-4D	-267.6	-63	-84	No	22	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	S-UMW-5D	2.143	5	84	No	22	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	**S-UMW-6D**	**-8.504**	**-139**	**-84**	**Yes**	**22**	**0**	**n/a**	**n/a**	**0.02**	**NP**
RADIUM [226 + 228] (PCI/L)	S-UMW-1D	0.01508	25	68	No	19	100	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	S-UMW-2D	0.01709	36	58	No	17	100	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	S-UMW-3D	0.02196	33	68	No	19	73.68	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	S-UMW-4D	0.02476	39	68	No	19	84.21	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	S-UMW-5D	0.02263	25	68	No	19	73.68	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	S-UMW-6D	0.0327	50	68	No	19	94.74	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-UMW-1D	0	19	73	No	20	85	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-UMW-2D	0	-9	-73	No	20	80	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-UMW-3D	-0.01271	-69	-73	No	20	30	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-UMW-4D	-0.00...	-46	-73	No	20	35	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-UMW-5D	-0.00...	-25	-73	No	20	35	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-UMW-6D	0	9	73	No	20	100	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	S-UMW-1D	-0.02475	-48	-53	No	16	93.75	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	**S-UMW-2D**	**-0.02406**	**-57**	**-53**	**Yes**	**16**	**87.5**	**n/a**	**n/a**	**0.02**	**NP**
THALLIUM, TOTAL (UG/L)	**S-UMW-3D**	**-0.02306**	**-57**	**-53**	**Yes**	**16**	**87.5**	**n/a**	**n/a**	**0.02**	**NP**
THALLIUM, TOTAL (UG/L)	S-UMW-4D	-0.02305	-47	-53	No	16	87.5	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	S-UMW-5D	-0.02213	-32	-53	No	16	93.75	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	S-UMW-6D	-0.01323	-32	-53	No	16	100	n/a	n/a	0.02	NP

Appendix D

November 2023 Corrective Action Statistical Evaluation

Memorandum

March 19, 2024

To:	Bill Kutosky – Ameren Missouri	**Project Number:**	23009
CC:	Ameren Missouri - Susan Knowles, Craig Giesmann, Charlie Henderson		
From:	Rocksmith Geoengineering - Mark Haddock, P.E., Jeff Ingram, R.G., Grant Morey	**Email:**	Jeff.Ingram@Rocksmithgeo.com
RE:	**Corrective Action Statistical Evaluation, SCPA Surface Impoundment, Sioux Energy Center, St. Charles County, Missouri**		

1.0 INTRODUCTION

This Technical Memorandum provides the results of the Corrective Action Monitoring statistical analyses from the November 2023 sampling event for the SCPA Surface Impoundment at the Sioux Energy Center (SEC) located in St. Charles County, Missouri. As outlined in the remedy selection report for the SCPA, Corrective Action at the SCPA consists of two phases, as follows:

1) Source control, stabilization, and containment of CCR by installation of a low-permeability geomembrane cap.
2) Once source control is achieved, monitor the natural attenuation (MNA) of groundwater concentrations to address limited and localized CCR-related impacts. Ongoing monitoring and modeling evaluations to document concentration trends following Corrective Action.

In addition to MNA as a Corrective Measure, Ameren has also initiated a supplemental corrective measure consisting of groundwater extraction, treatment, and re-injection using ex-situ treatment technologies with chemical precipitation and selective ion exchange.

Phase 1 of Corrective Action commenced on January 20, 2021, and was substantially completed on April 10, 2022 with the installation of a low permeability cover system. The SCPA unit was certified closed on October 14, 2022 and thus the SCPA has transitioned into the post-closure care requirements of the CCR rule effective October 2022 and Phase 2 of Corrective Action has begun. Included in this memorandum is a summary of constituents that are currently in exceedance of the groundwater protection standard (GWPS), a list of site-specific Groundwater Protection Standards (**Table 1**), and the Sanitas Technologies™ (Sanitas) statistical software output for each of the Appendix IV parameters (**Appendix A and Appendix B**).

The initial Corrective Action sampling event was completed in April 2020, and a total of nine sampling events have been completed for the Corrective Action Program at the SCPA to-date. This analysis uses results collected since the beginning of Corrective Action monitoring (April 2020) for the determination of constituents exceeding the GWPS. Data collected prior to this time was collected during active conditions of the SCPA, prior to the cessation of CCR disposal in the SCPA and are not representative of groundwater conditions since the initiation of closure.

Trend tests using the Sen's Slope/Mann-Kendall method require a minimum of eight independent results, as outlined in the USEPA Unified Guidance. Therefore, trend tests were completed for the following Appendix IV constituents: arsenic, barium, cadmium, cobalt, fluoride, lithium, molybdenum, radium 226 + 228, and selenium.

Several constituents were reported at concentrations below the Practical Quantitation Limit (PQL) during the spring 2020, 2021, 2022, and/or 2023 sampling events, including antimony, beryllium, chromium, lead, mercury, and thallium. When these constituents were not detected during the initial Corrective Action sampling event, they were not sampled/tested during the subsequent semi-annual sampling events in each calendar year. As a result, there are fewer results available, and Sen's Slope/Mann-Kendall analyses cannot yet be completed for these Appendix IV constituents.

2.0 STATISTICAL EVALUATION

The Appendix IV constituents were evaluated for exceedances above the GWPS using the methods and procedures outlined in the Corrective Action Groundwater Monitoring Plan's (CAGMP's) Statistical Analysis Plan (SAP). An outlier analysis was completed as the first step of the statistical evaluation. The outlier analysis was performed only on the results collected as a part of the Corrective Action Monitoring Program. In addition to outliers noted in previous SCPA Corrective Action evaluations, the following outliers were removed prior to the calculation of confidence limits:

- Arsenic
    - S-LMW-2S at non-detect [<1 micrograms per liter (µg/L)] on 11/12/2020: result is statistically lower than other arsenic results at the same monitoring well. This low result is not consistent with previous or subsequent arsenic results at the well and is an outlier.
- Molybdenum
    - S-LMW-4S at 593 µg/L on 11/14/2023: result is statistically and significantly higher than other molybdenum results at the same monitoring well. This high result is not consistent with previous molybdenum results at the well and is an outlier. As this is the most recent molybdenum result at this well, the result will be closely evaluated following the next sampling event to determine if it remains an outlier.
    - S-LMW-6S at 12.1 J µg/L on 5/9/2023: result is statistically higher than other molybdenum results at the same monitoring well. This high result is not consistent with previous or subsequent molybdenum results at the well and is an outlier.
    - S-TP-8D at 11.5 J µg/L on 5/9/2023: result is statistically higher than other molybdenum results at the same monitoring well. This high result is not consistent with previous or subsequent molybdenum results at the well and is an outlier.

An analysis of the outliers removed to date was completed and the following statistical outliers that were previously removed were added back into the dataset prior to the calculation of confidence limits:

- Cobalt
    - S-TP-8D at 2.1 J µg/L on 4/4/2022: removed during the statistical evaluation for the October 2022 sampling event because the result was statistically higher than other cobalt results at the same

monitoring well. Based on subsequent sampling results, the high result was confirmed, and the result is no longer an outlier.

- Molybdenum
    - S-LMW-6S at 2.4 J µg/L on 11/11/2020: removed during the statistical evaluation for the October 2022 sampling event because the result was statistically higher than other molybdenum results at the same monitoring well. Based on subsequent sampling results, the high result was confirmed, and the result is no longer an outlier.
    - S-TP-2D at 2.4 J µg/L on 4/29/2020: removed during the statistical evaluation for the April 2022 sampling event because the result was statistically higher than other molybdenum results at the same monitoring well. Based on subsequent sampling results, the high result was confirmed, and the result is no longer an outlier.
- Radium 226 + 228
    - S-TP-8D at 1.493 picocuries per liter (pCi/L) on 4/14/2021: removed during the statistical evaluation for the April 2022 sampling event because the result was statistically higher than other radium results at the same monitoring well. Based on subsequent sampling results, the high result was confirmed, and the result is no longer an outlier.

Following the outlier analysis, the second step in the statistical analysis was to calculate confidence intervals and compare those to the site-specific GWPS (**Appendix A**). Confidence interval evaluation was supplemented with Sen's Slope/Mann-Kendall analyses on constituents that have eight independent sampling results at a given well, per the USEPA Unified Guidance (**Appendix B**). The Sen's Slope/Mann-Kendall analysis identifies well-analyte pairs that have statistically significant trends and calculates confidence bands that vary with time. The upper confidence band, in relation to the GWPS for a given constituent, is used to determine exceedances, as outlined in the CAGMP. As discussed previously, antimony, beryllium, chromium, lead, mercury, and thallium do not have the requisite quantity of results to perform Sen's Slope/Mann-Kendall analyses, so only confidence intervals were produced for those constituents.

Using these corrective action statistical methods, as of November 2023, the wells with constituents exceeding the GWPS are as follows:

- Cobalt at S-LMW-6S
- Lithium at S-LMW-5S, S-TP-2D, and S-TP-6S
- Molybdenum at S-LMW-1S, S-LMW-2S, S-LMW-5S, S-AM-1D, S-AM-1S, S-TP-5D, and S-PZ-1S

Molybdenum at S-LMW-1S is a new exceedance as of November 2023. This was identified as an exceedance in previous statistical evaluations, but it was determined to no longer be an exceedance following the May 2023 sampling event due to Sen's Slope/Mann-Kendall analysis. Incorporating the November 2023 result, the results no longer display a statistically significant trend using the Sen's Slope/Mann-Kendall analysis, therefore, S-LMW-1S is again an exceedance. All other cobalt, lithium, and molybdenum exceedances previously identified in May 2023 remain as of this evaluation.

Variability in the initial groundwater sampling results during and directly after the closure of the SCPA is expected, especially at wells nearest the CCR unit, where closure grading and disturbance activities were greatest. The concentrations reported in these results following closure are expected to be variable but are expected to decrease over time as stabilization occurs and supplemental corrective measures are put into service, such as the groundwater treatment system.

3.0 CLOSING

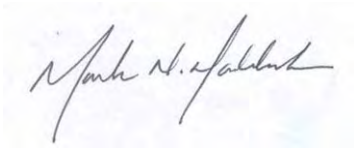
Rocksmith appreciates this opportunity to provide hydrogeological and engineering support services to Ameren. If you have any questions or comments regarding the information provided, please contact the undersigned.

Sincerely,

Rocksmith Geoengineering, LLC



Jeff Ingram, R.G.
Senior Geologist, Partner



Mark Haddock, P.E., R.G.
Principal Engineer, Senior Partner

Attachments

Tables

Table 1 – SCPA Groundwater Protection Standards

Appendices

Appendix A – Sanitas Confidence Interval Statistical Output

Appendix B – Sanitas Trending Confidence Bands Statistical Output

Tables

Table 1 - SCPA Groundwater Protection Standards
SCPA Surface Impoundment
Sioux Energy Center, St. Charles County, MO

Parameter	Units	MCL or Health Based GWPS	Site GWPS	Value to Return to Detection Monitoring[6]
Antimony	µg/L	6	6	DQR
Arsenic	µg/L	10	10	0.6556
Barium	µg/L	2000	2000	699
Beryllium	µg/L	4	4	DQR
Cadmium	µg/L	5	5	DQR
Chromium	µg/L	100	100	DQR
Cobalt	µg/L	6	6	DQR
Fluoride	mg/L	4	4	0.44
Lead	µg/L	15	15	DQR
Lithium	µg/L	40	40	27.91
Mercury	µg/L	2	2	DQR
Molybdenum	µg/L	100	100	DQR
Radium 226 + 228	pCi/L	5	5	2.537
Selenium	µg/L	50	50	DQR
Thallium	µg/L	2	2	DQR

Notes:
1. µg/L - micrograms per liter.
2. mg/L - milligrams per liter.
3. pCi/L - picocuries per liter.
4. MCL - Maximum Contaminant Level. MCLs from United States Environmental Protection Agency (USEPA) 2012 Edition of the Drinking Water Standards and Health Advisories. Updated January 9, 2023 at http://water.epa.gov/drink/contaminants/index.cfm.
5. Health Based Groundwater Protection Standards (GWPS) were adoped for Appendix IV parameters without an MCL (i.e. cobalt, lithium, molybdenum, and lead). Information available at https://www.epa.gov/coalash/coal-ash-rule.
6. Values were calculated using statistical methods outlined for Detection Monitoring and are used for returning to Detection Monitoring based on available data to date.
7. DQR - Double Quantification Rule. If all baseline data are less than the Practical Quantitation Limit (PQL), then the DQR will be used. More information on the DQR is provided in the Statistical Analysis Plan.
8. Site GWPS is either the MCL/Health Based GWPS or based on background levels (calculated as described in the Statistical Analysis Plan for Assessment Monitoring), whichever is higher.
9. GWPS and background values calculated using results through May 2023 from monitoring wells BMW-1D and BMW-3D.

ROCKSMITH GEOENGINEERING

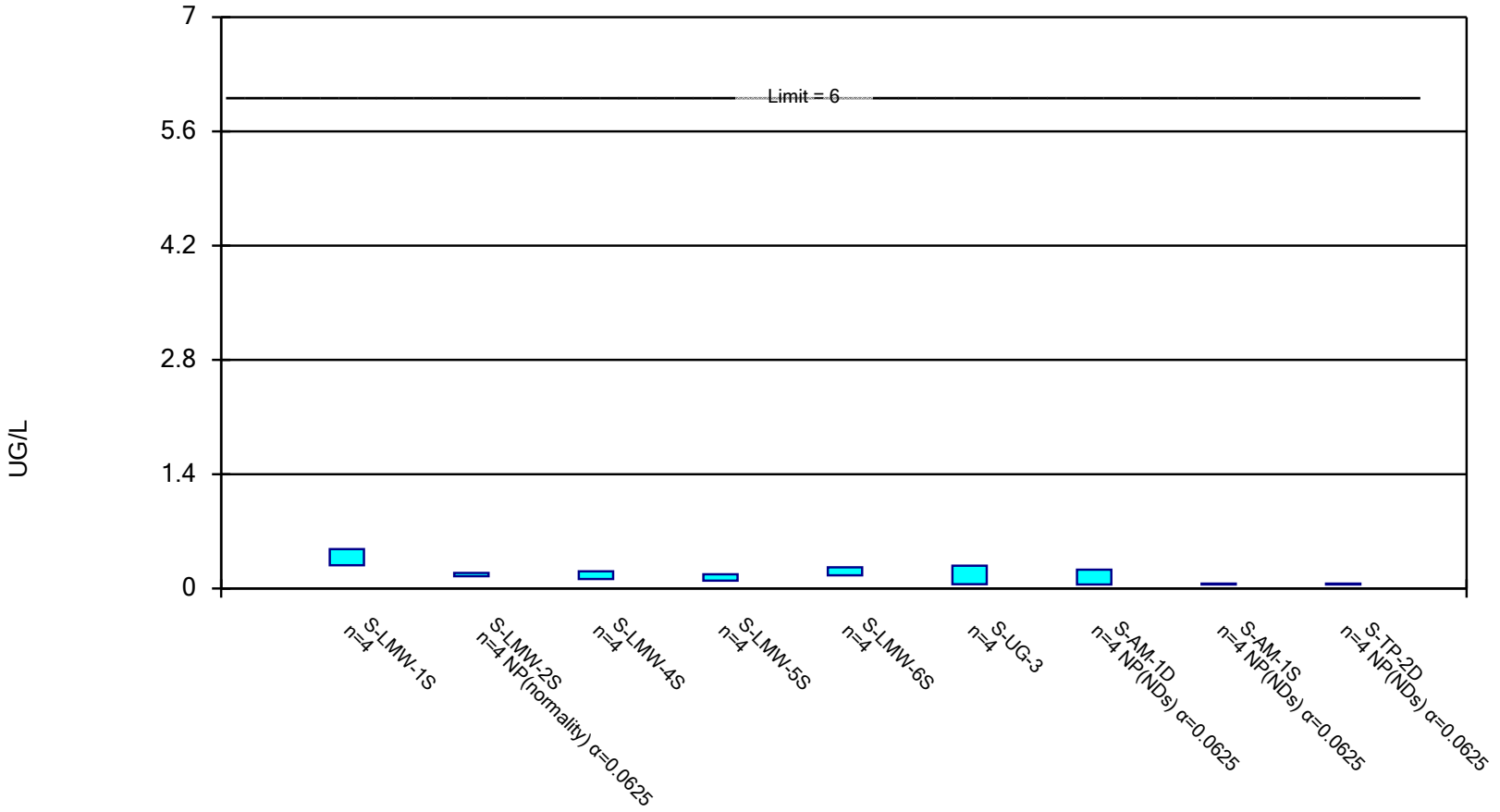
Prepared by: GTM
Checked by: JSI
Reviewed by: MNH

Appendix A
Sanitas Confidence Interval Statistical Output

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG

Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

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



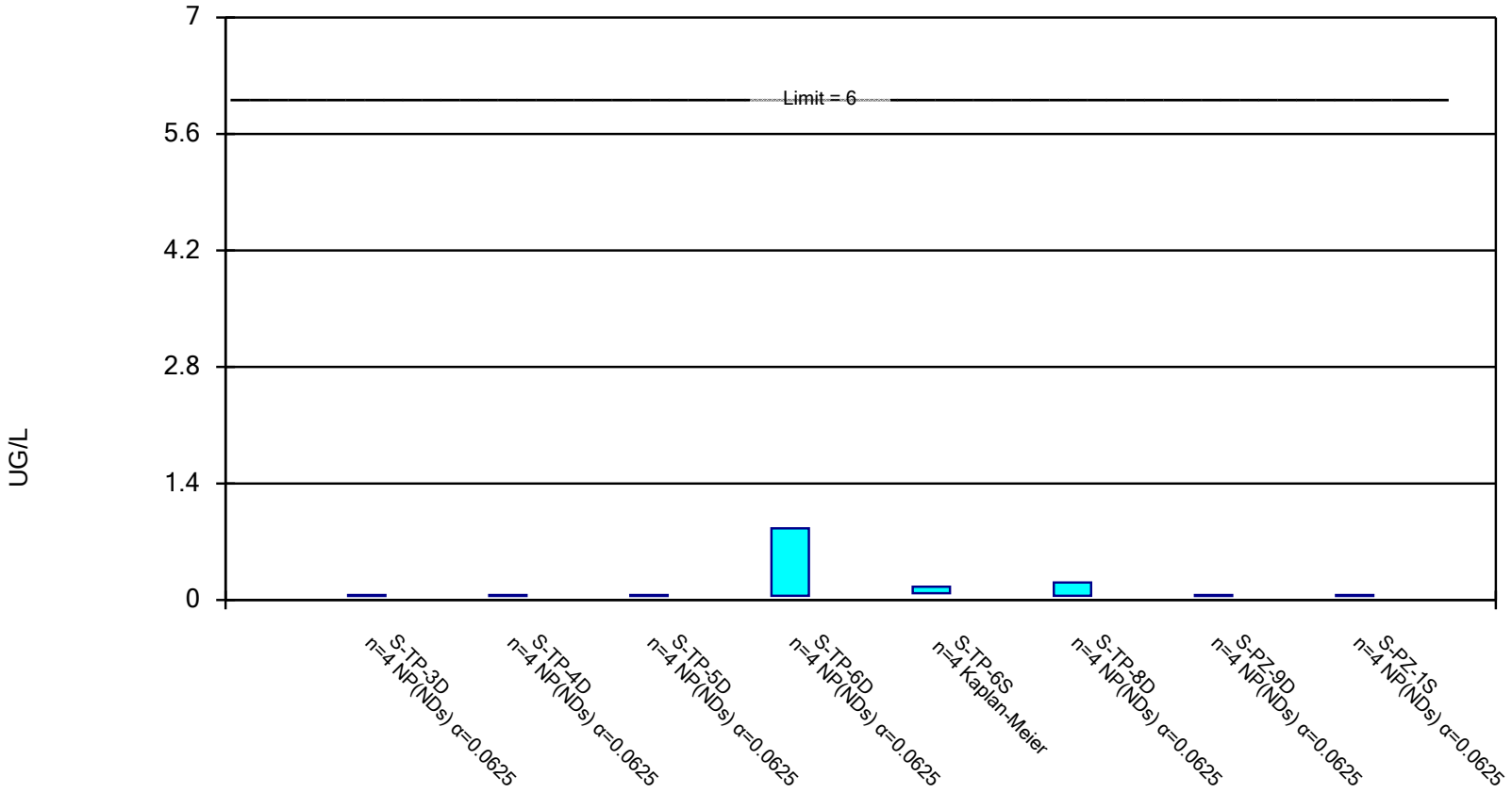
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Sioux E.C. Client: Ameren Data: SEC DATA

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Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

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



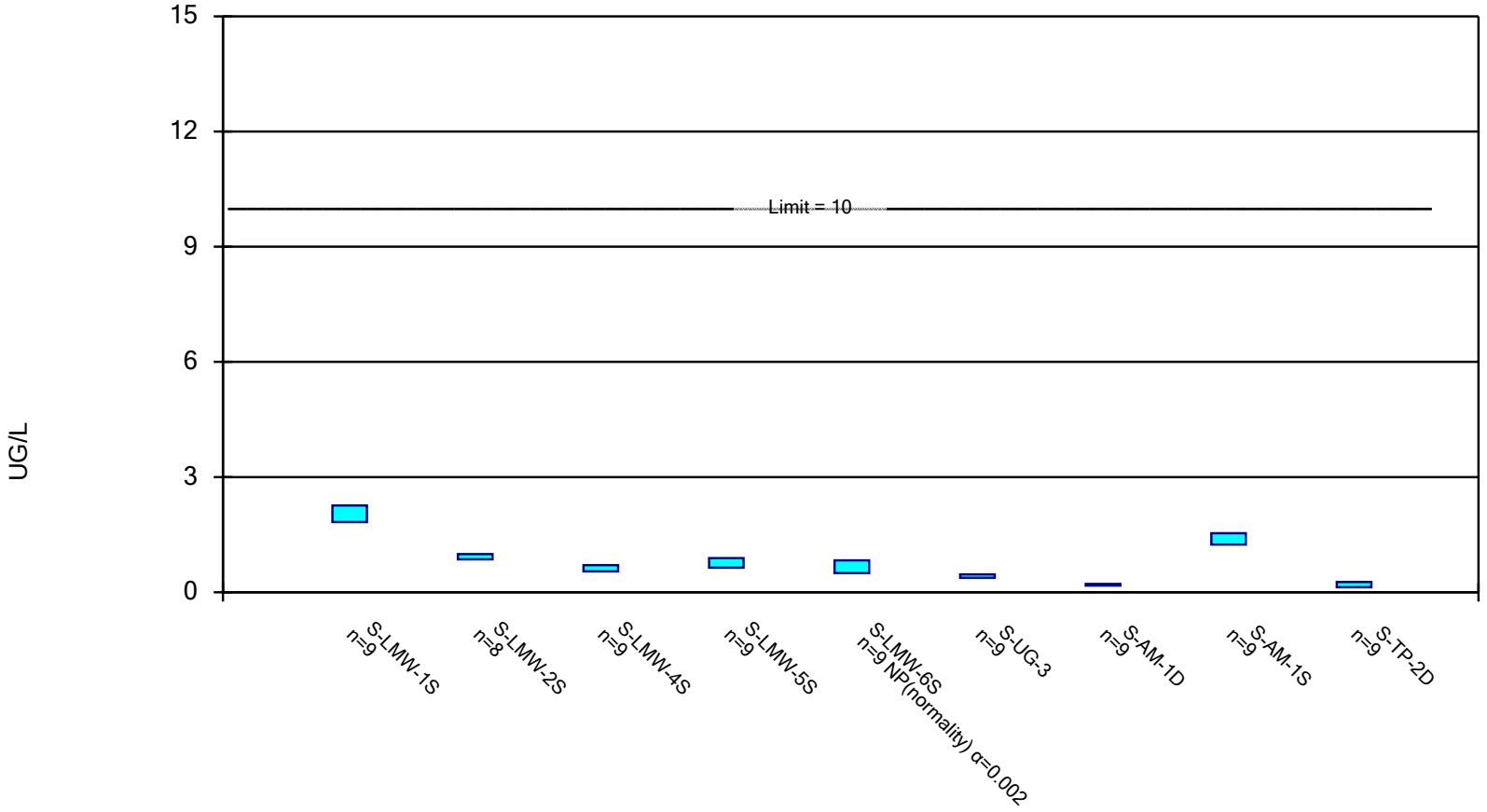
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Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

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



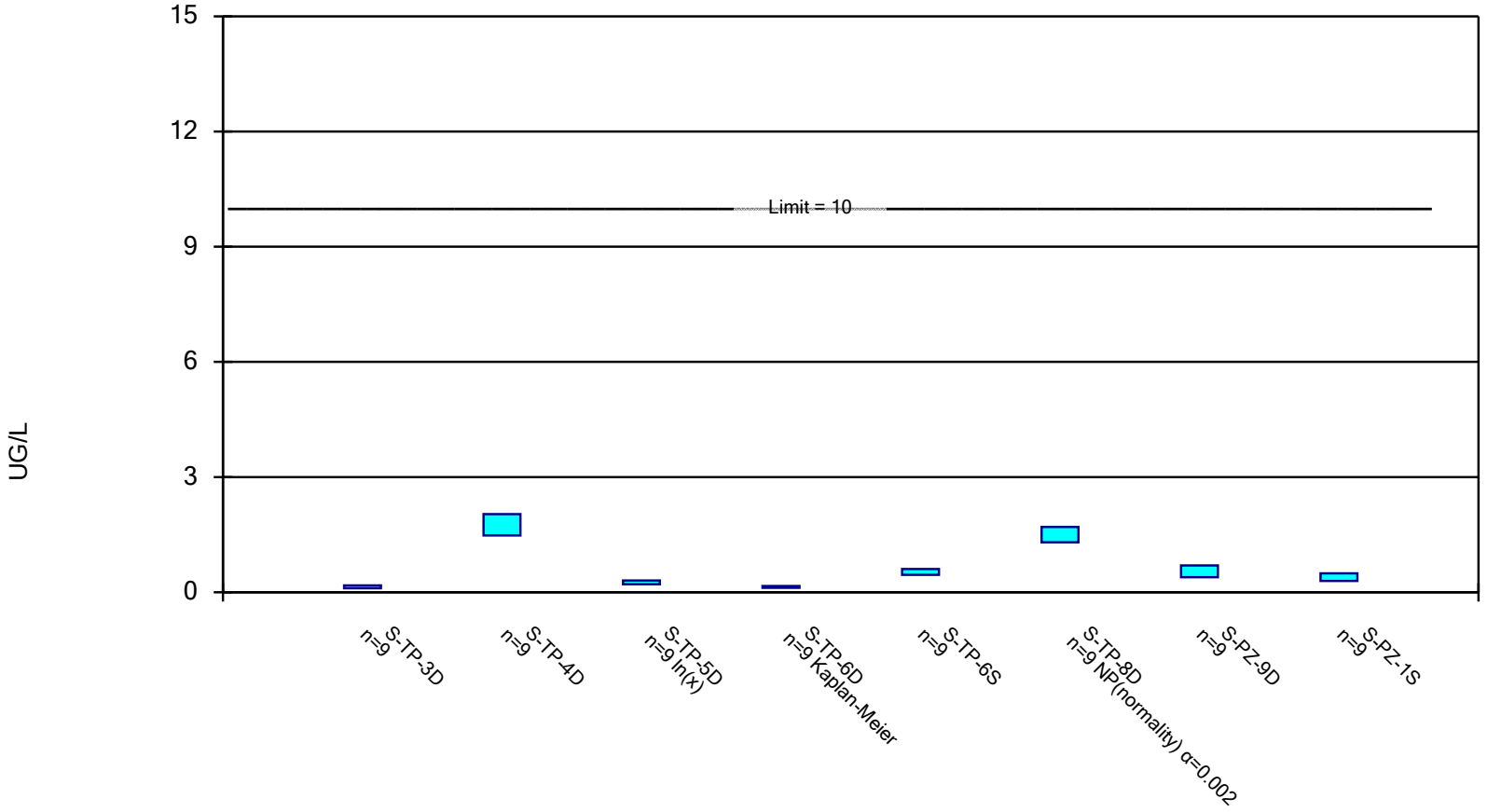
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Sioux E.C. Client: Ameren Data: SEC DATA

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Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

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



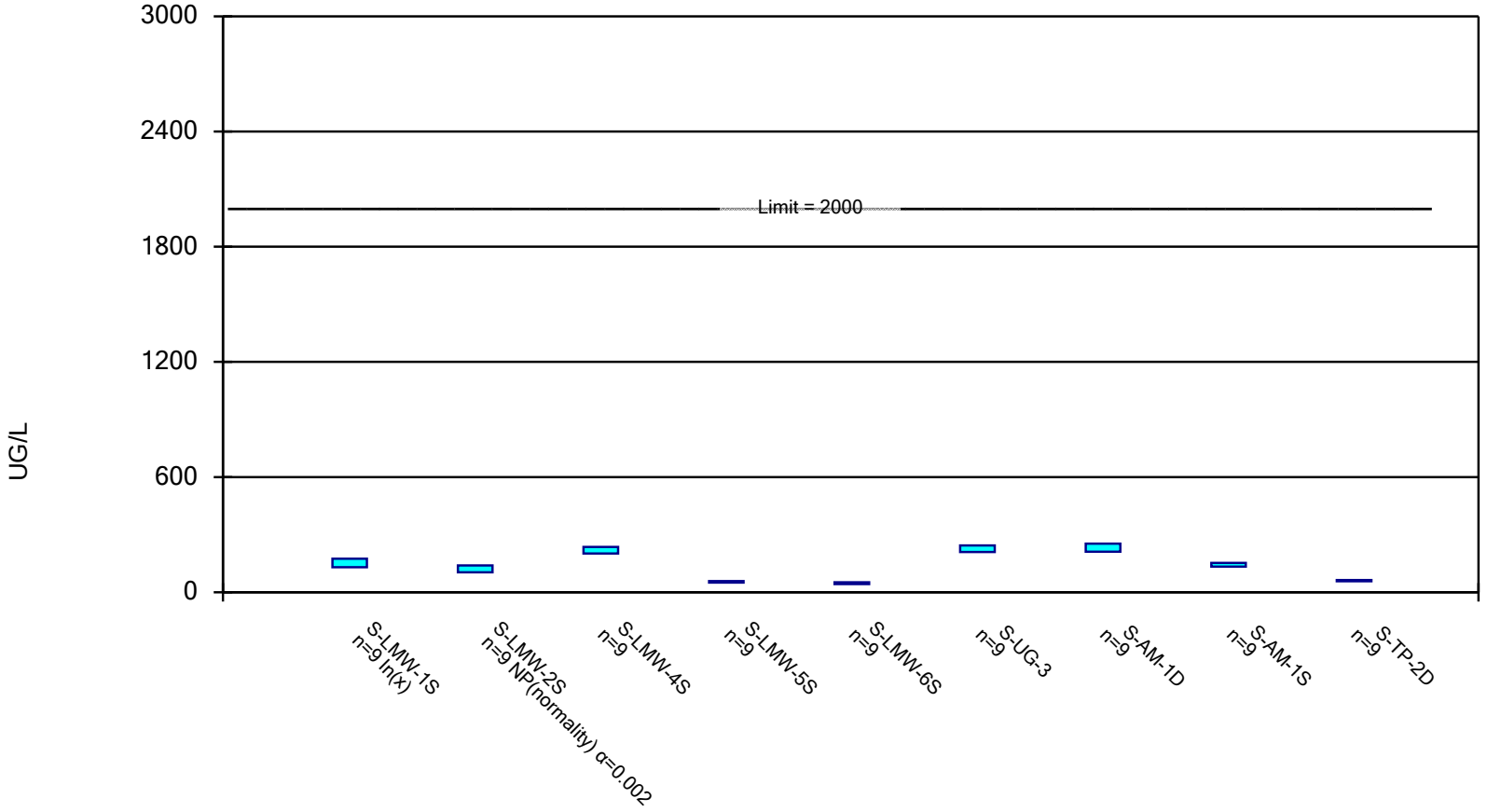
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Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



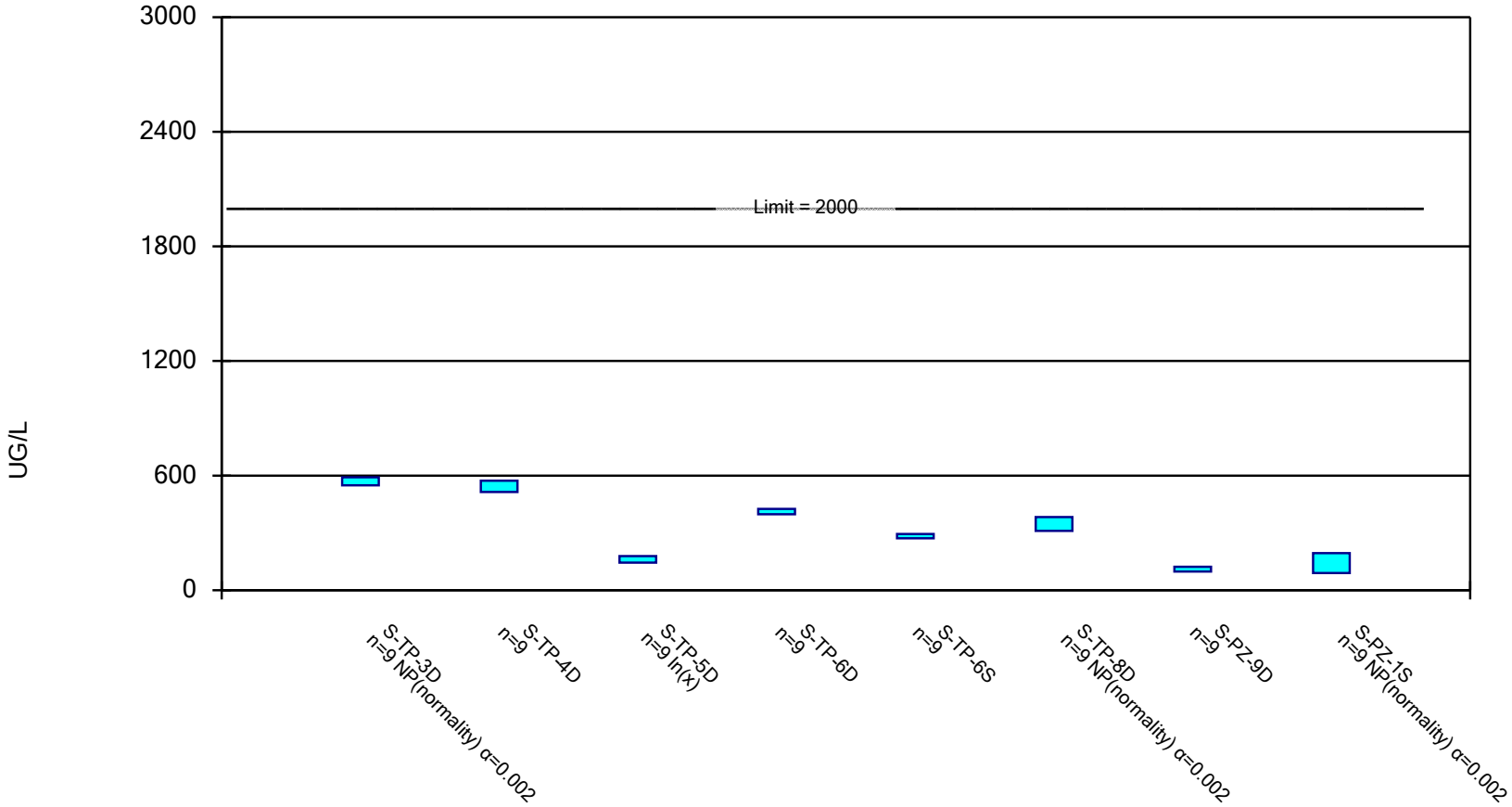
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Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

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



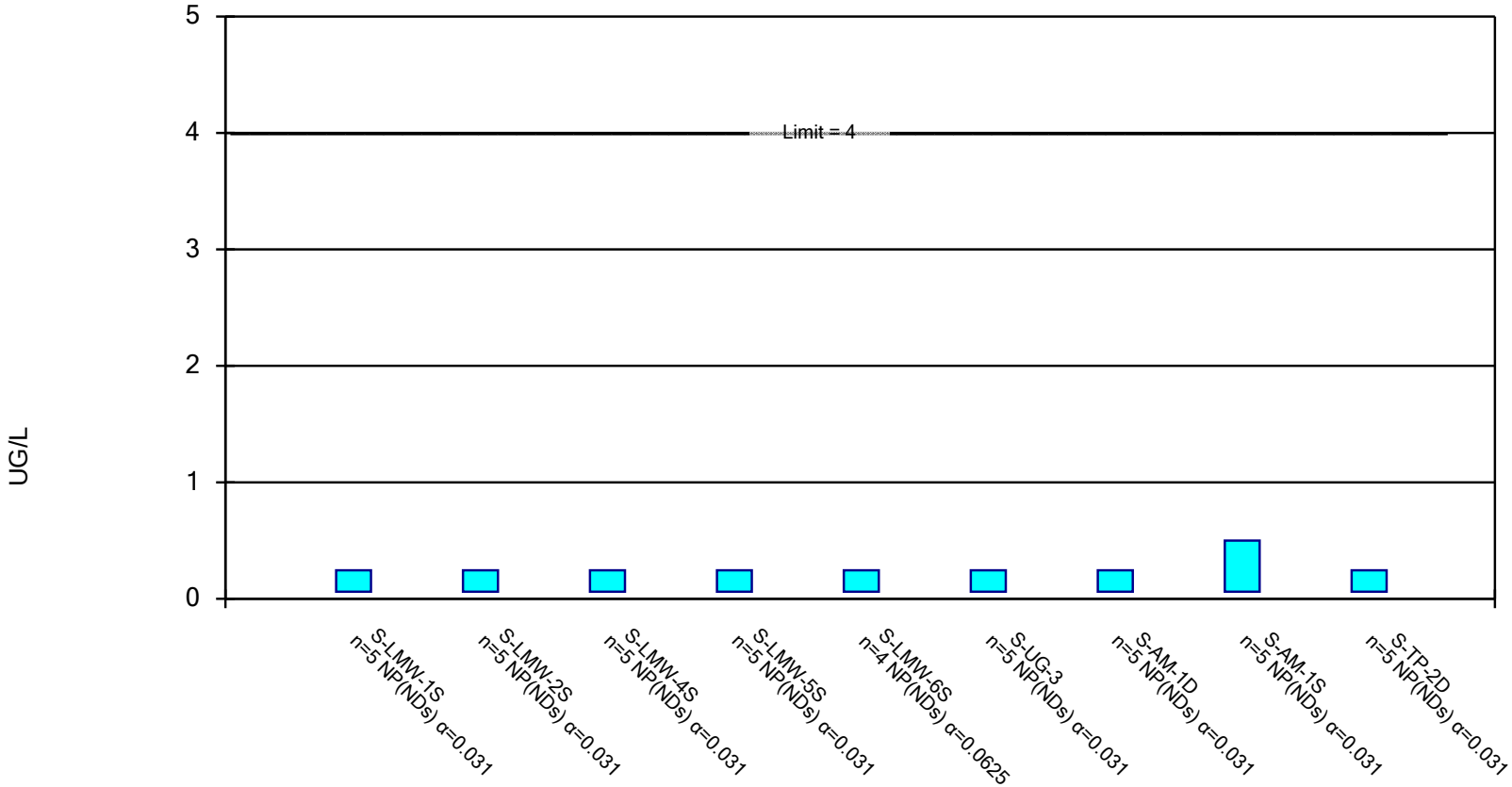
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Sioux E.C. Client: Ameren Data: SEC DATA

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Non-Parametric Confidence Interval, Corrective Action Mode

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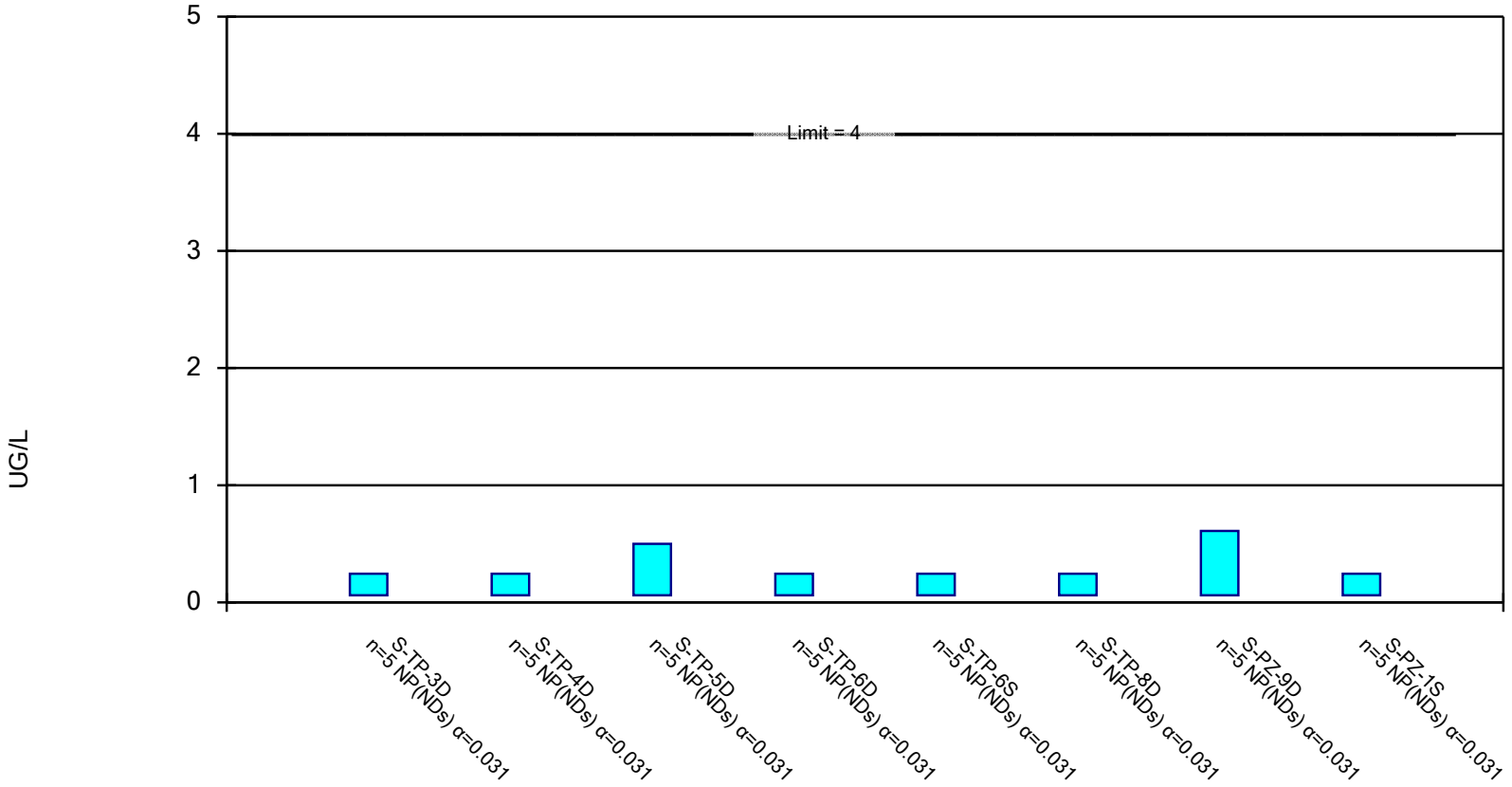
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Sioux E.C. Client: Ameren Data: SEC DATA

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Non-Parametric Confidence Interval, Corrective Action Mode

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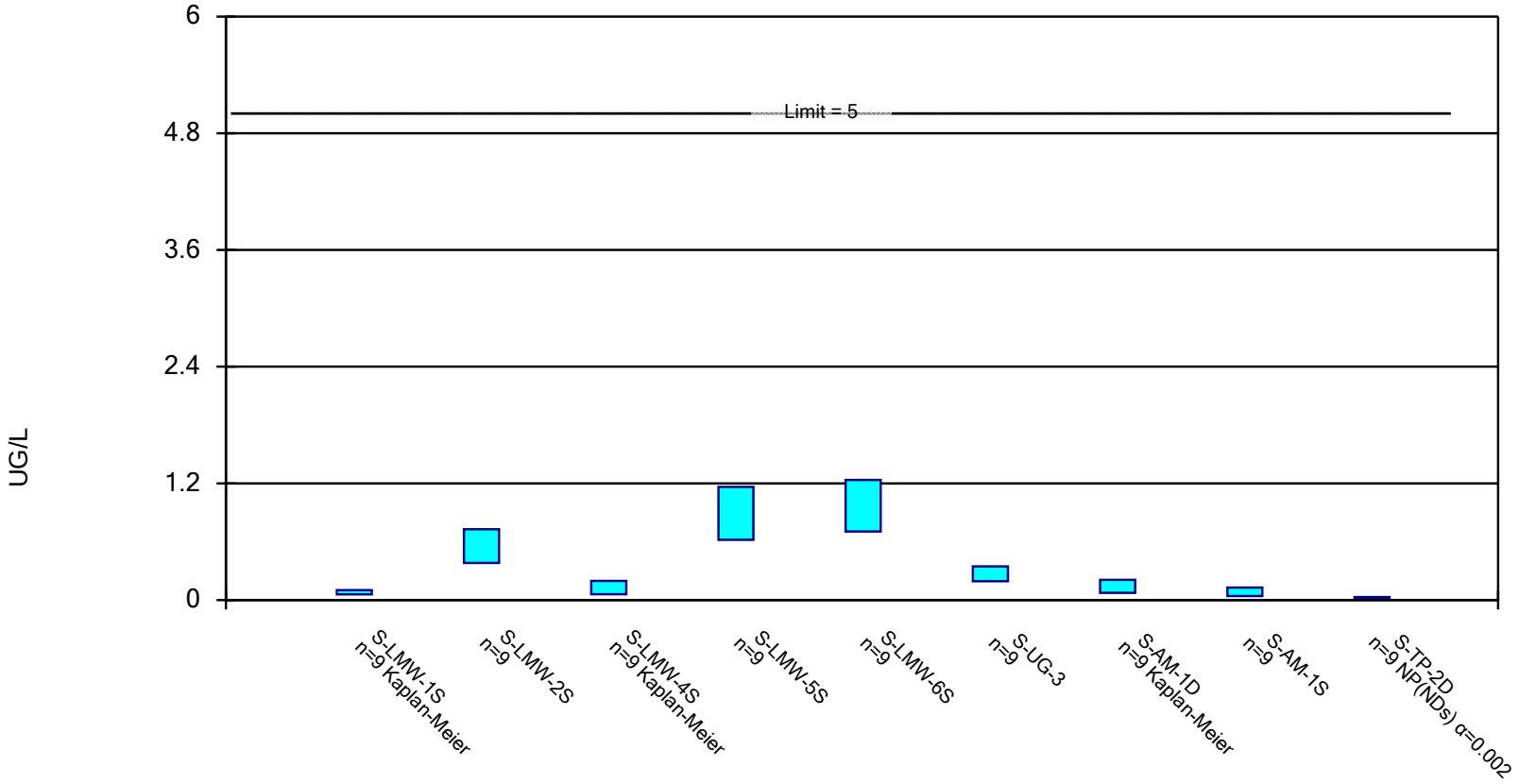
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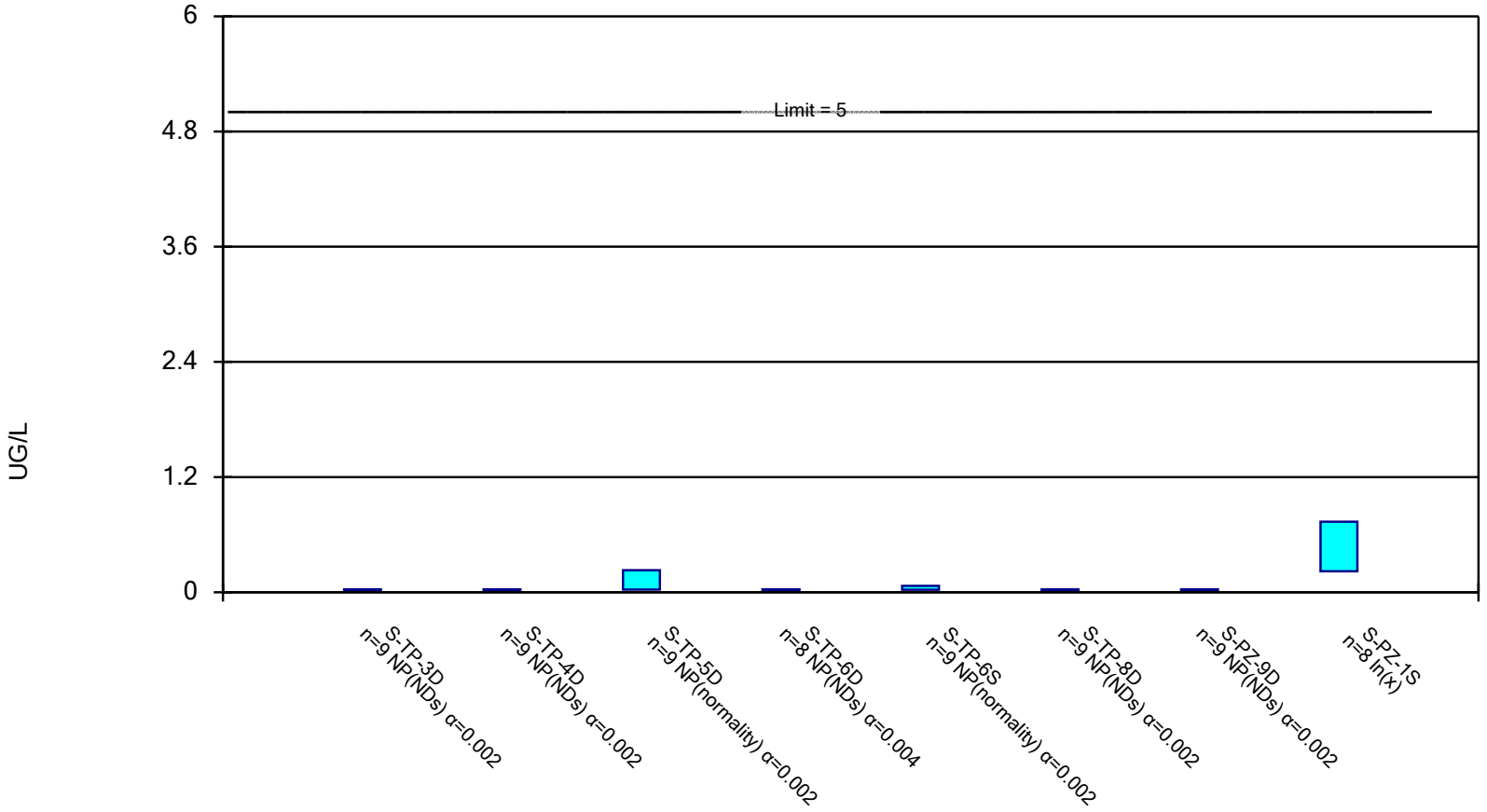
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Sioux E.C. Client: Ameren Data: SEC DATA

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Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

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



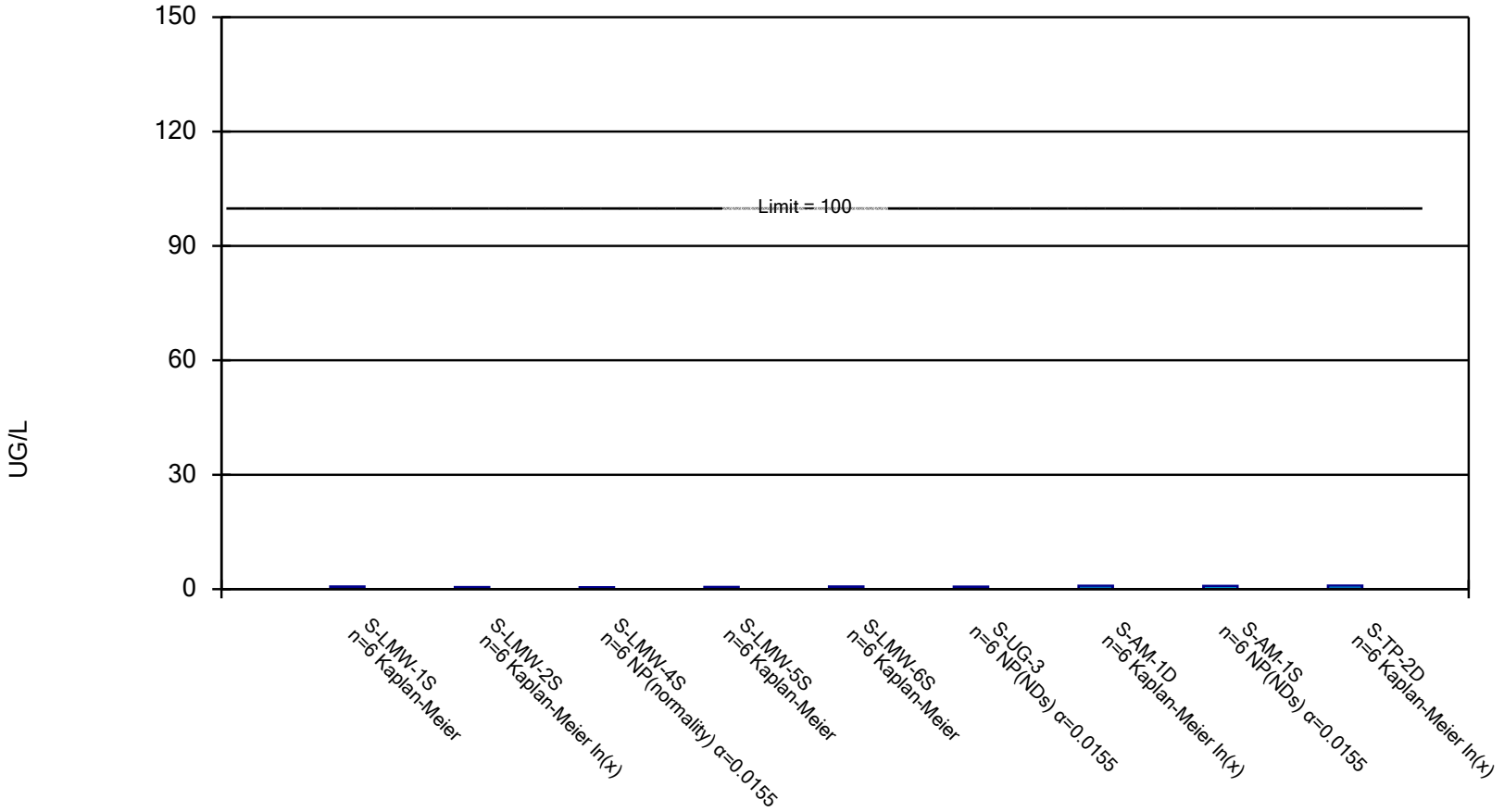
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Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG

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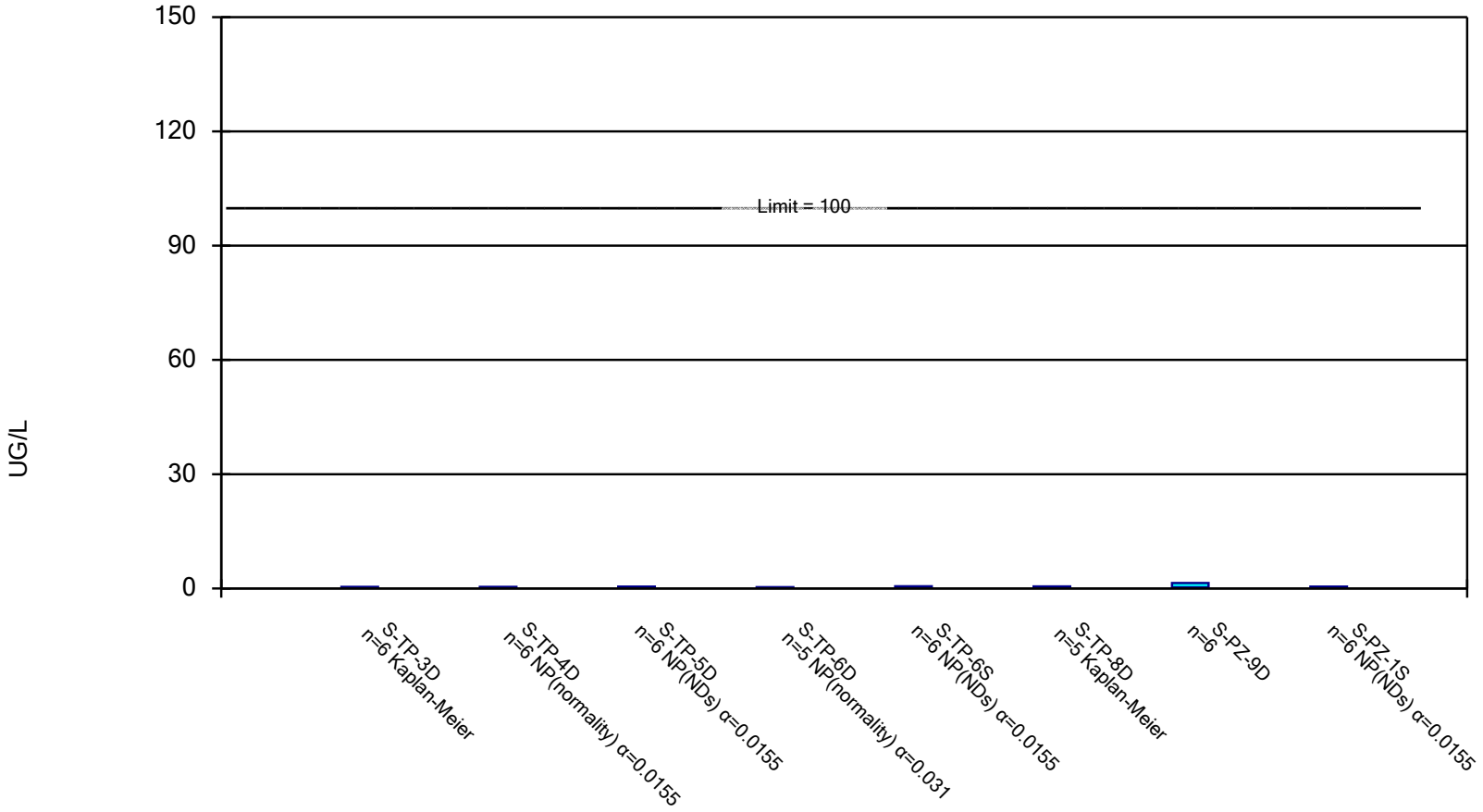


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Sioux E.C. Client: Ameren Data: SEC DATA

Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

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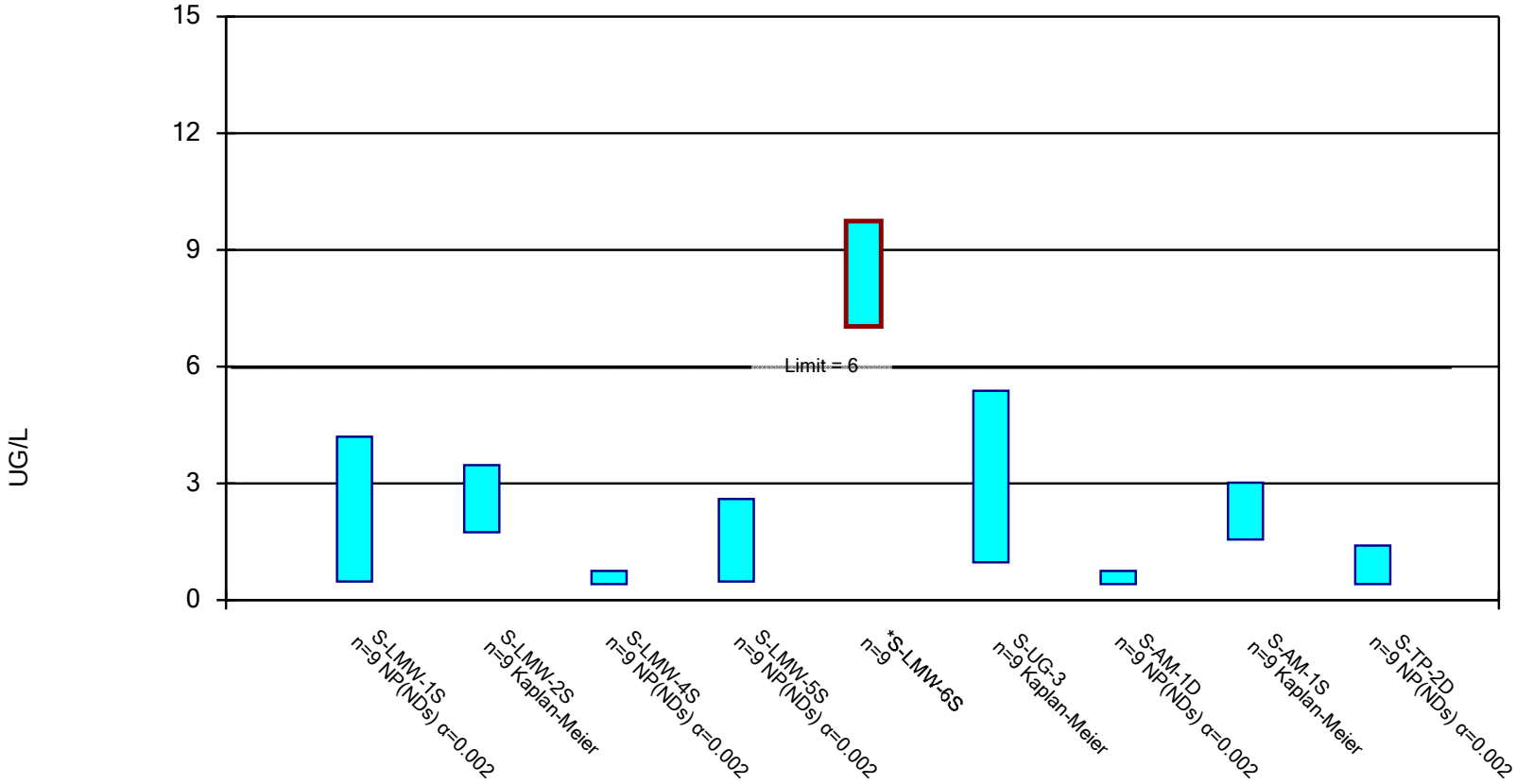
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Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG

Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

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



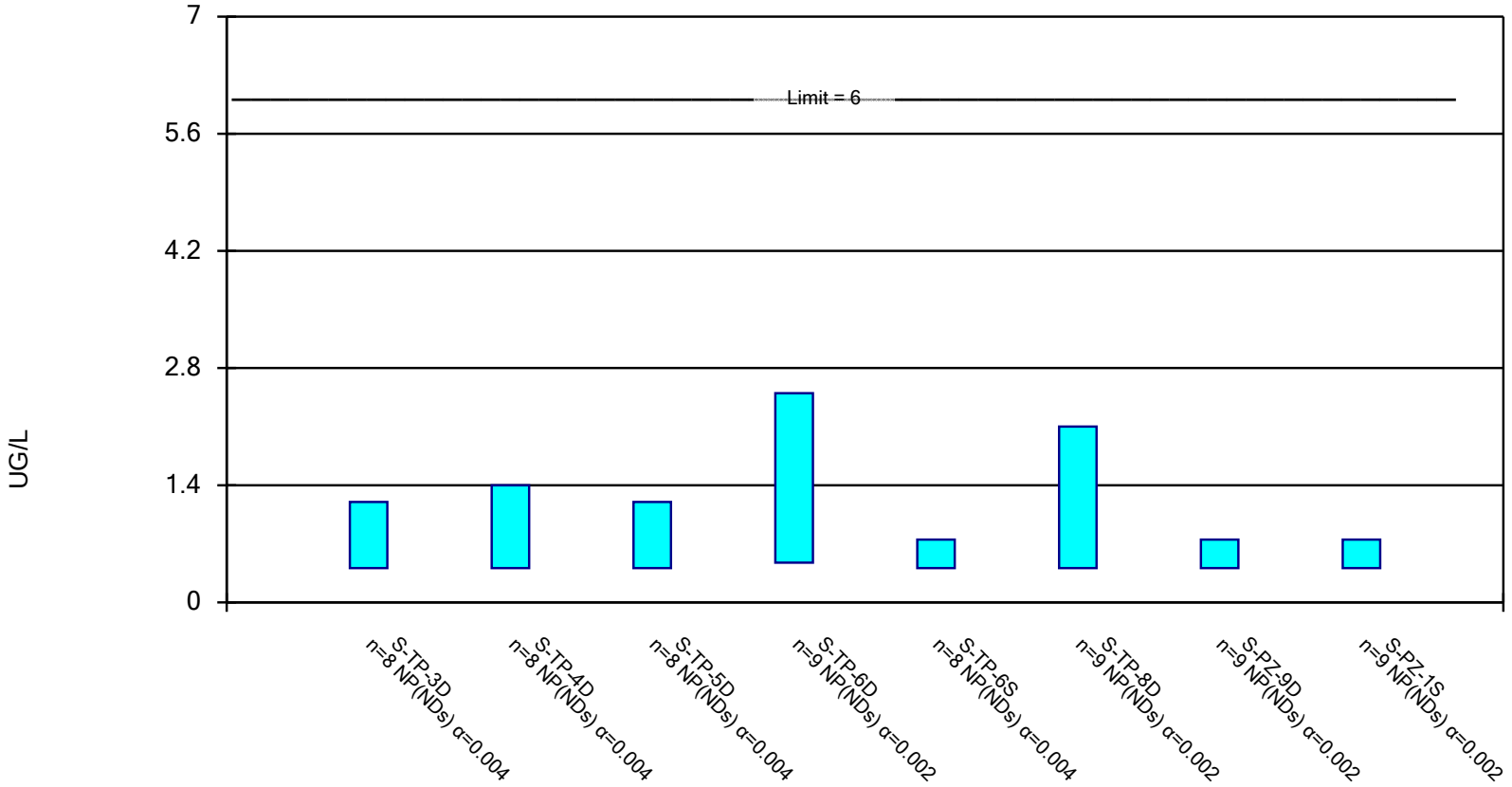
Constituent: COBALT, TOTAL Analysis Run 3/12/2024 5:41 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

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Non-Parametric Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded.

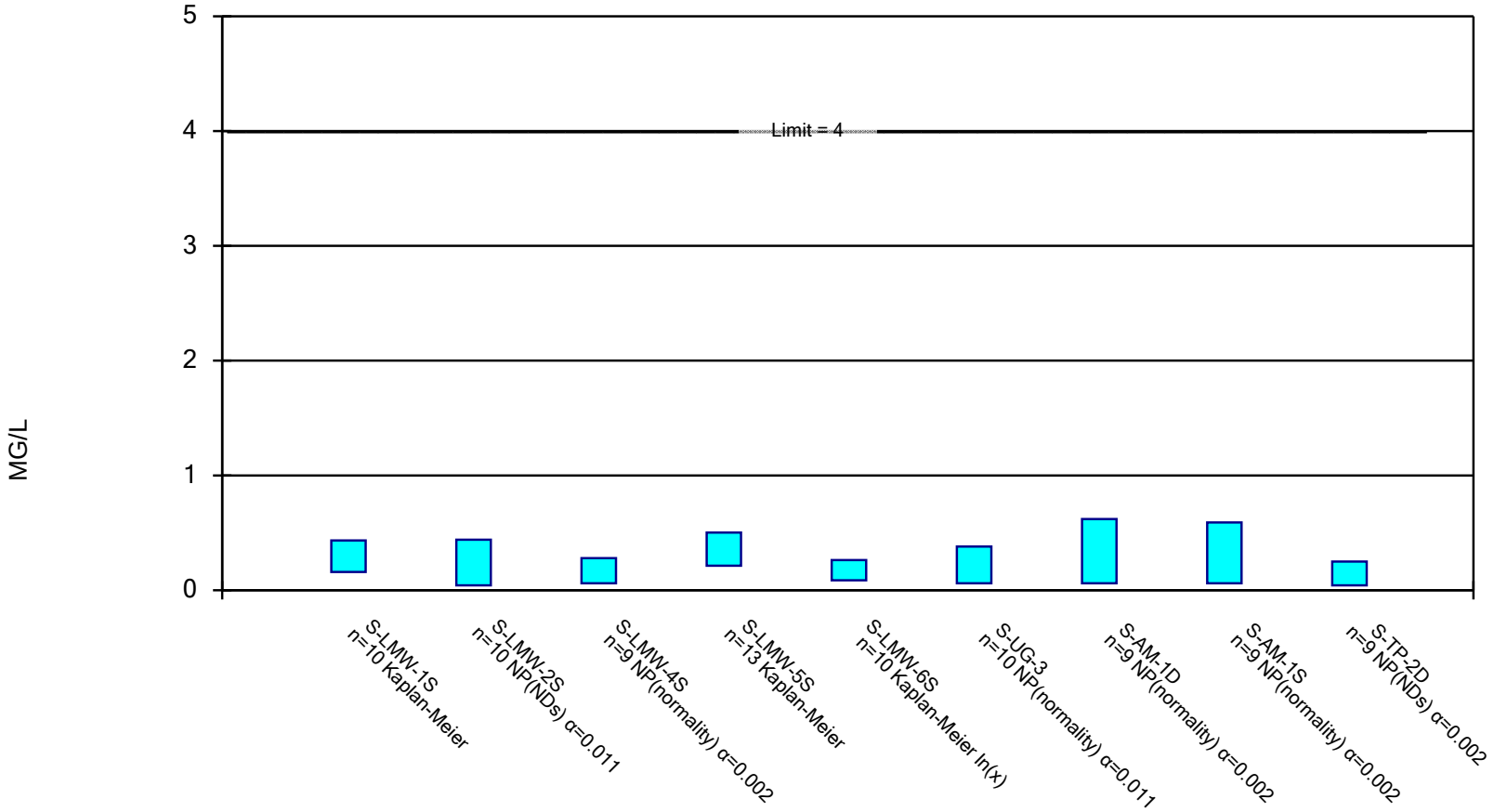


Constituent: COBALT, TOTAL Analysis Run 3/12/2024 5:41 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

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



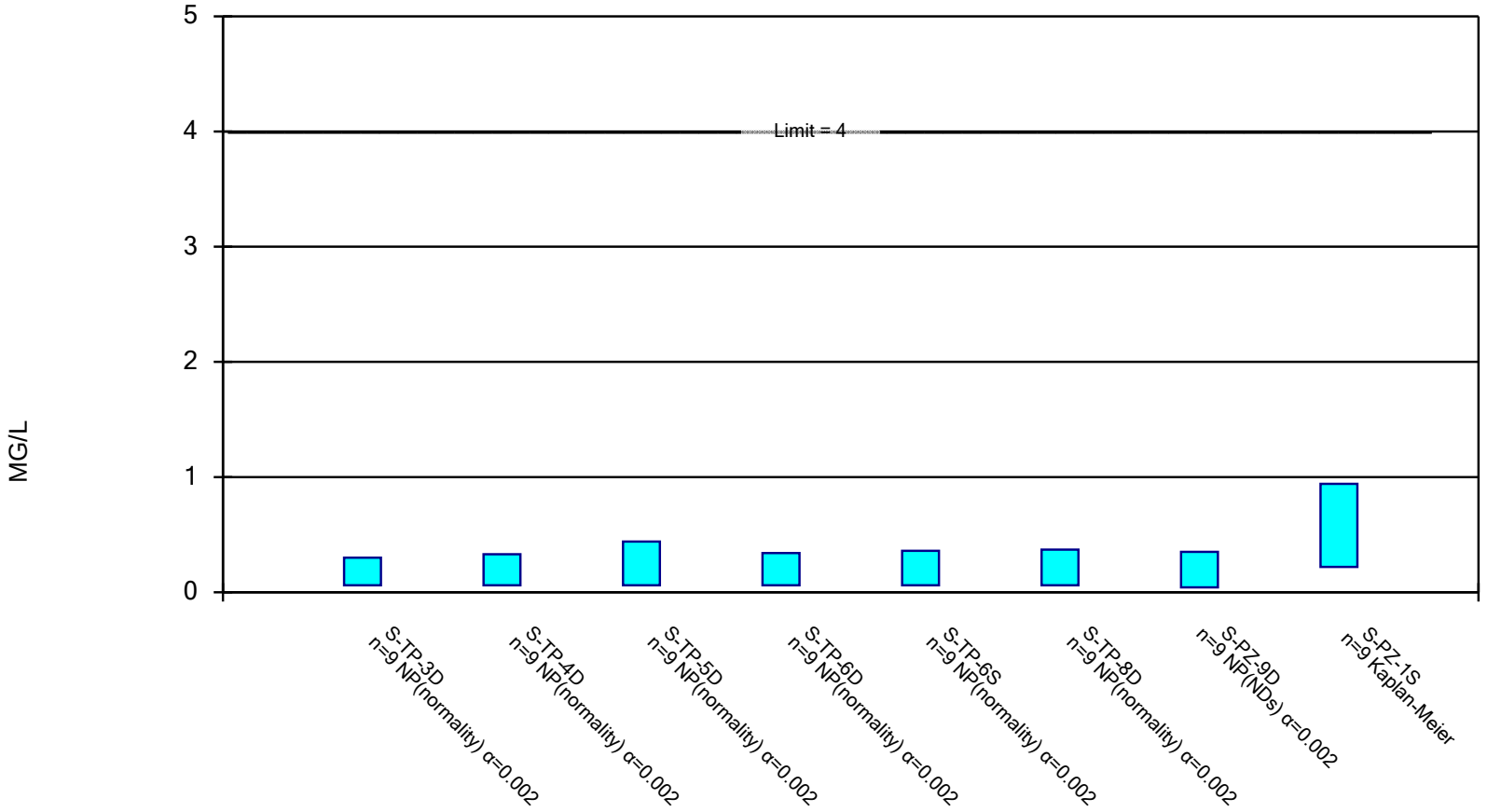
Constituent: FLUORIDE, TOTAL Analysis Run 3/12/2024 5:41 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

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Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

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



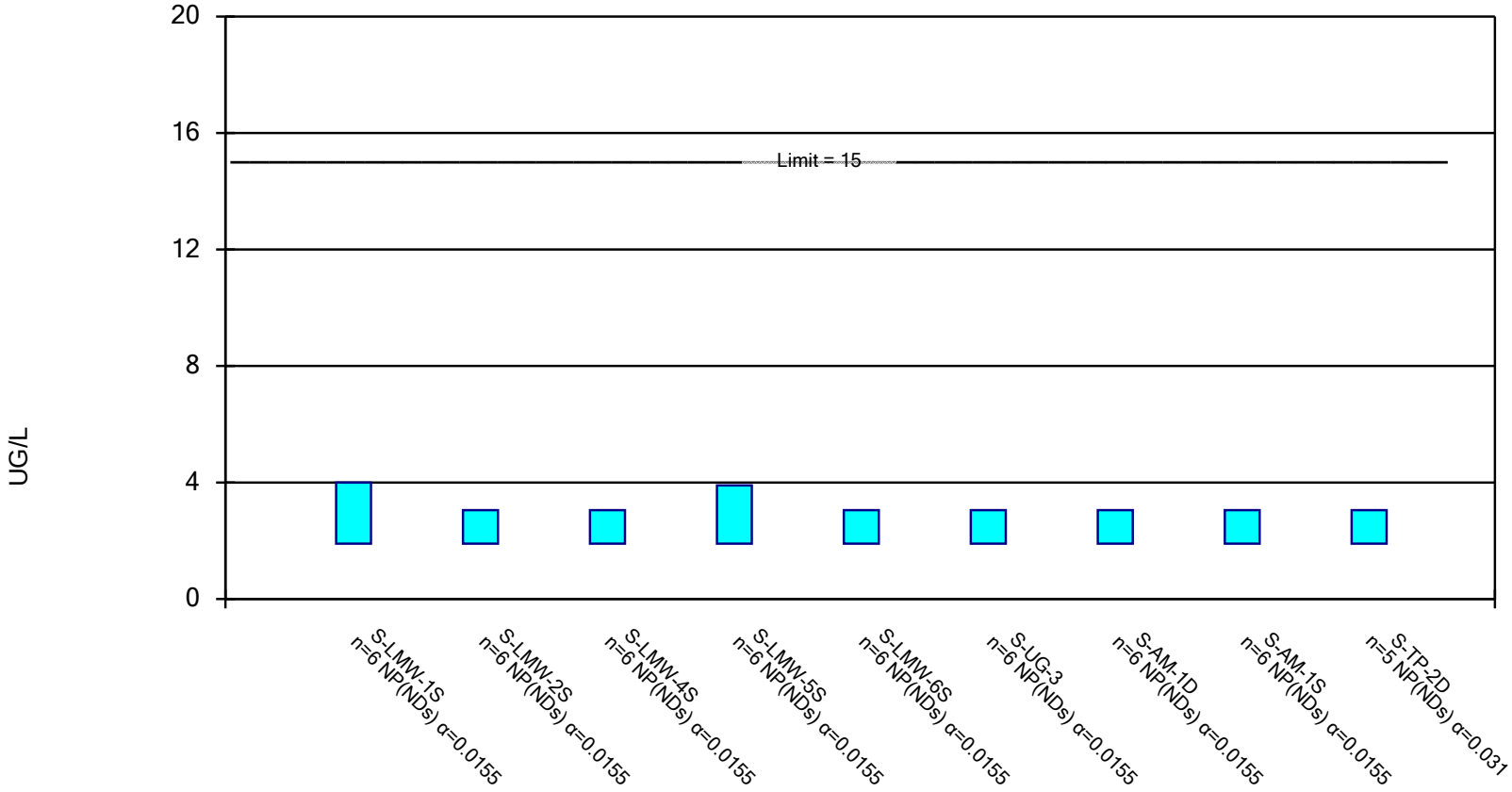
Constituent: FLUORIDE, TOTAL Analysis Run 3/12/2024 5:41 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

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Non-Parametric Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded.



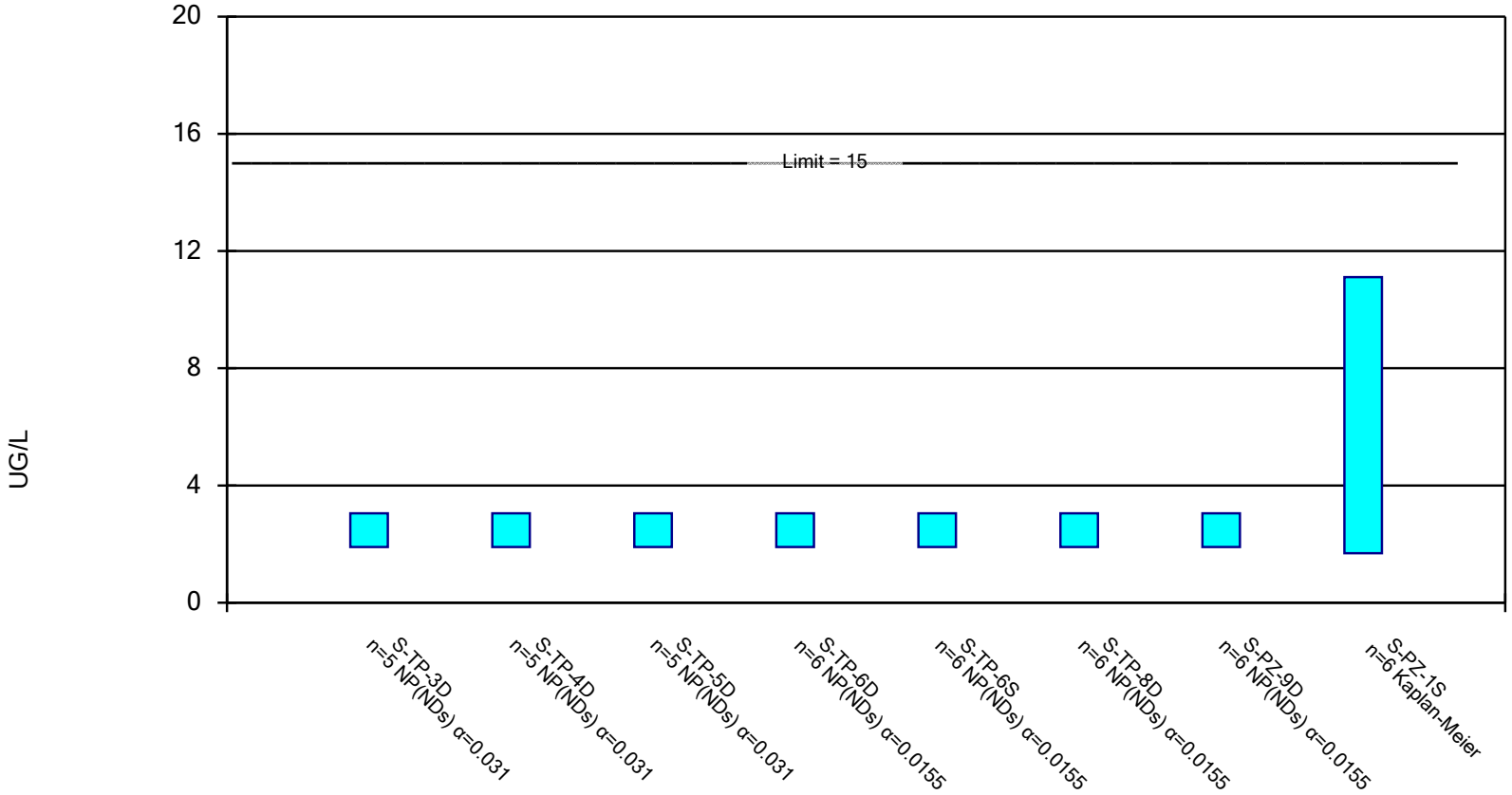
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Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG

Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

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



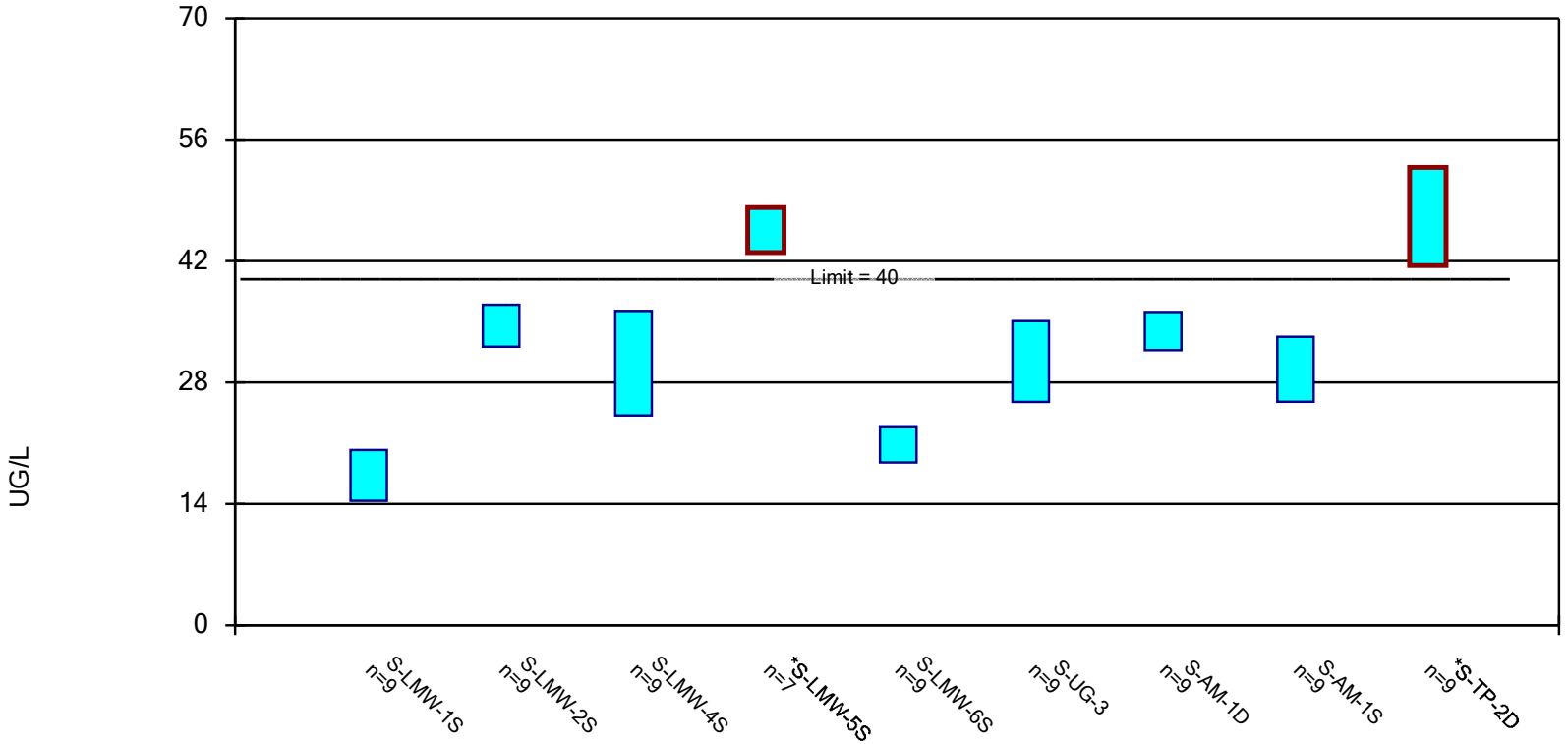
Constituent: LEAD, TOTAL Analysis Run 3/12/2024 5:41 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG

Parametric Confidence Interval, Corrective Action Mode

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



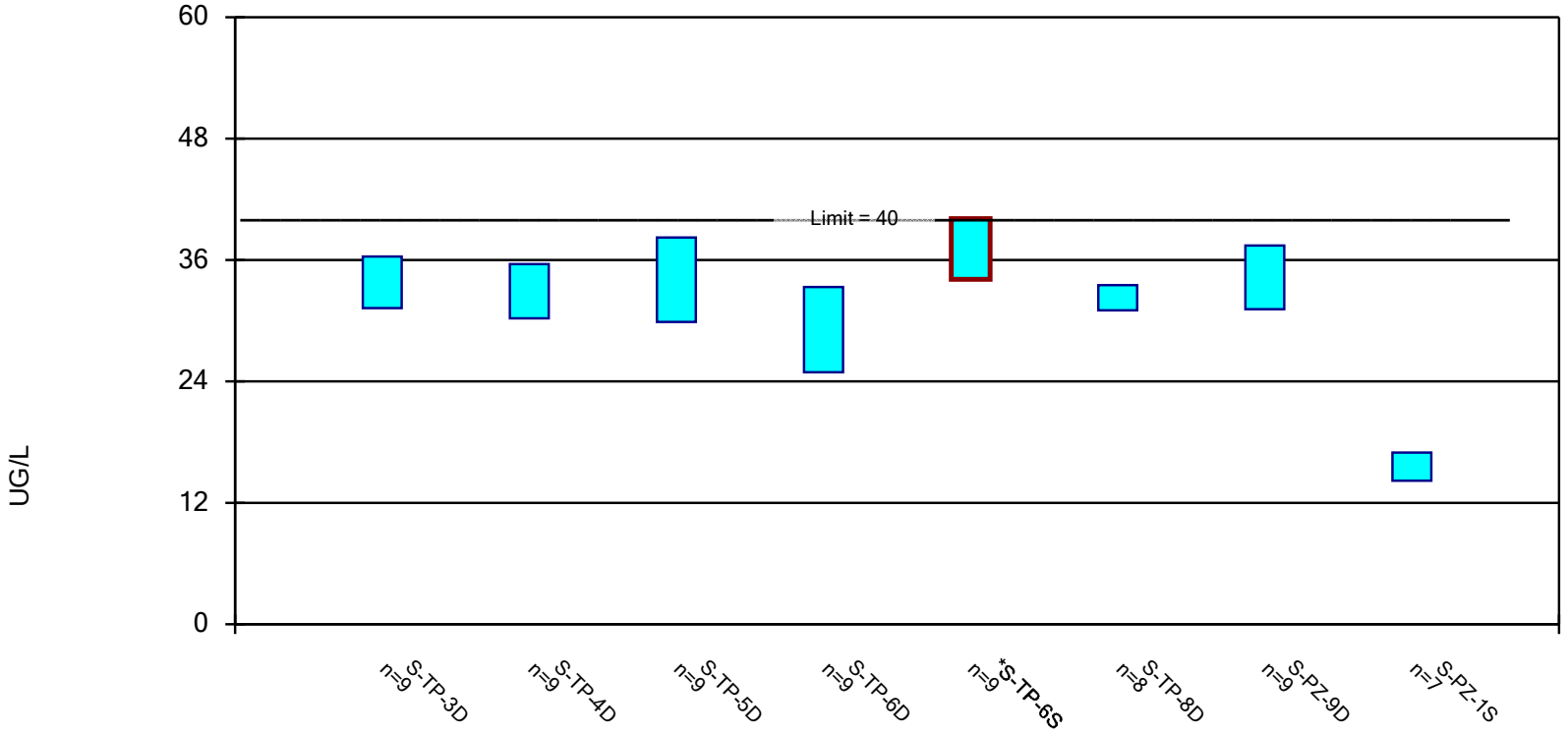
Constituent: LITHIUM, TOTAL Analysis Run 3/12/2024 5:41 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG

Parametric Confidence Interval, Corrective Action Mode

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

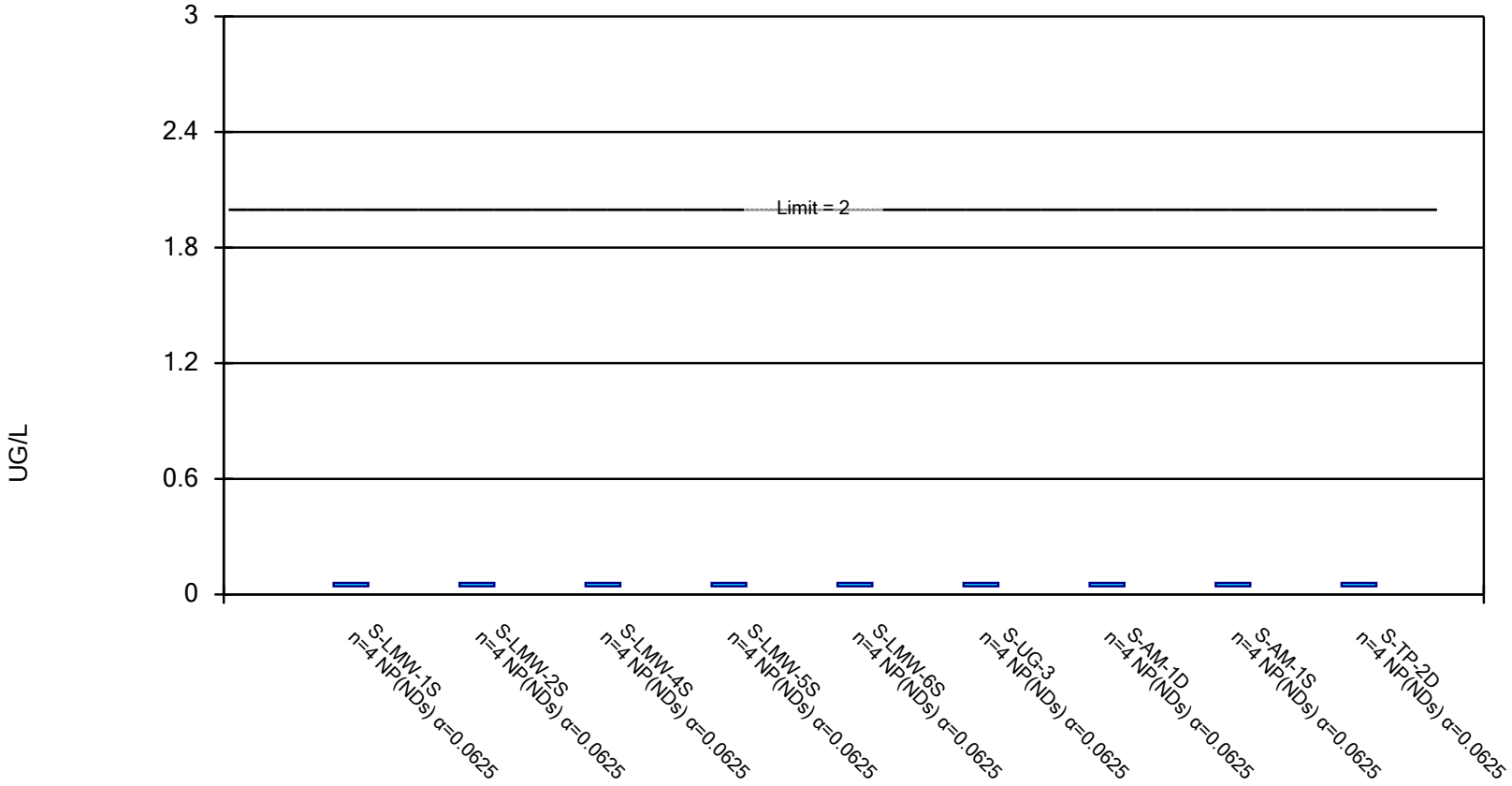


Constituent: LITHIUM, TOTAL Analysis Run 3/12/2024 5:41 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

Non-Parametric Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded.

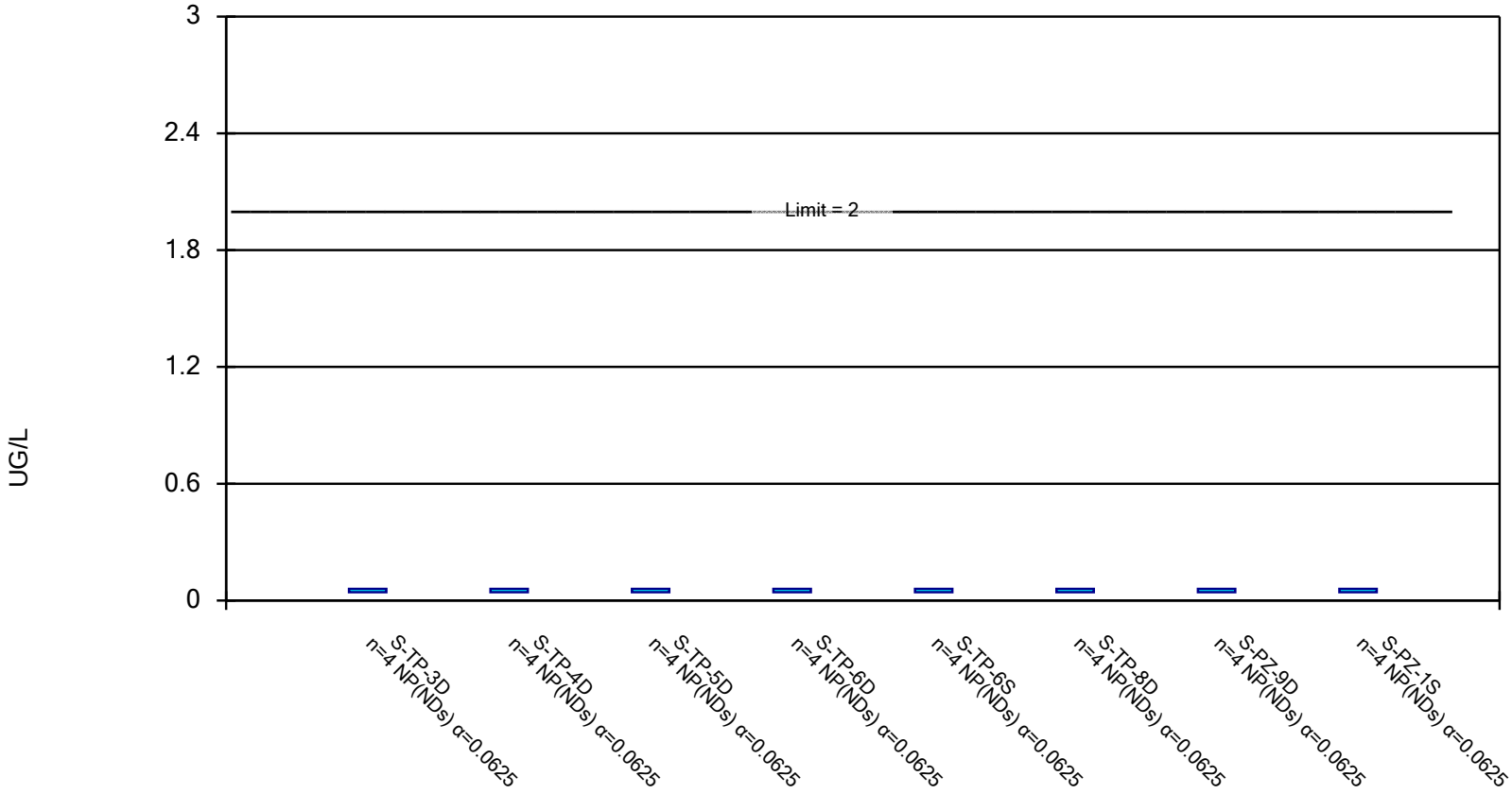


Constituent: MERCURY, TOTAL Analysis Run 3/12/2024 5:41 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

Non-Parametric Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded.



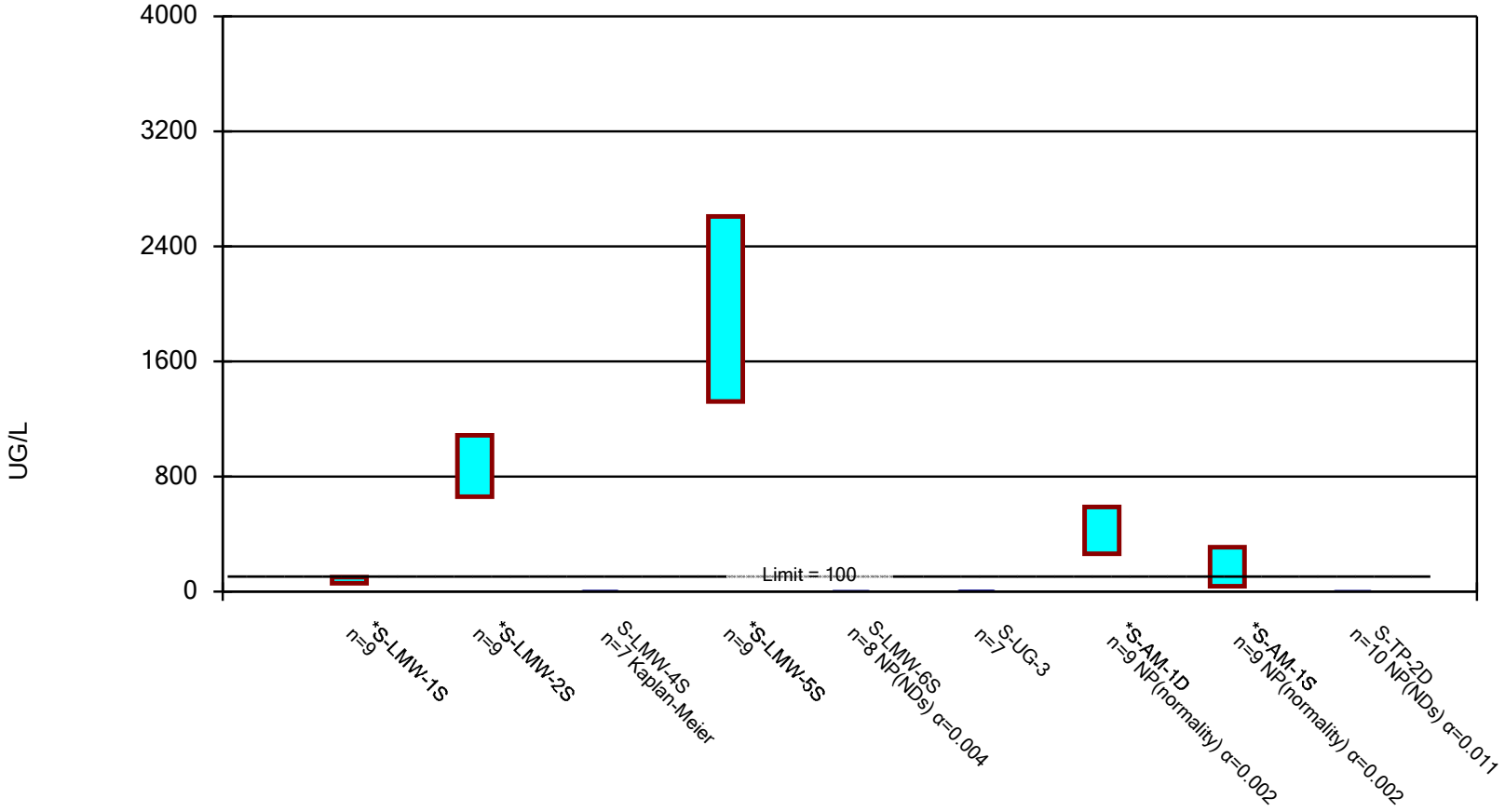
Constituent: MERCURY, TOTAL Analysis Run 3/12/2024 5:41 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

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Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

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



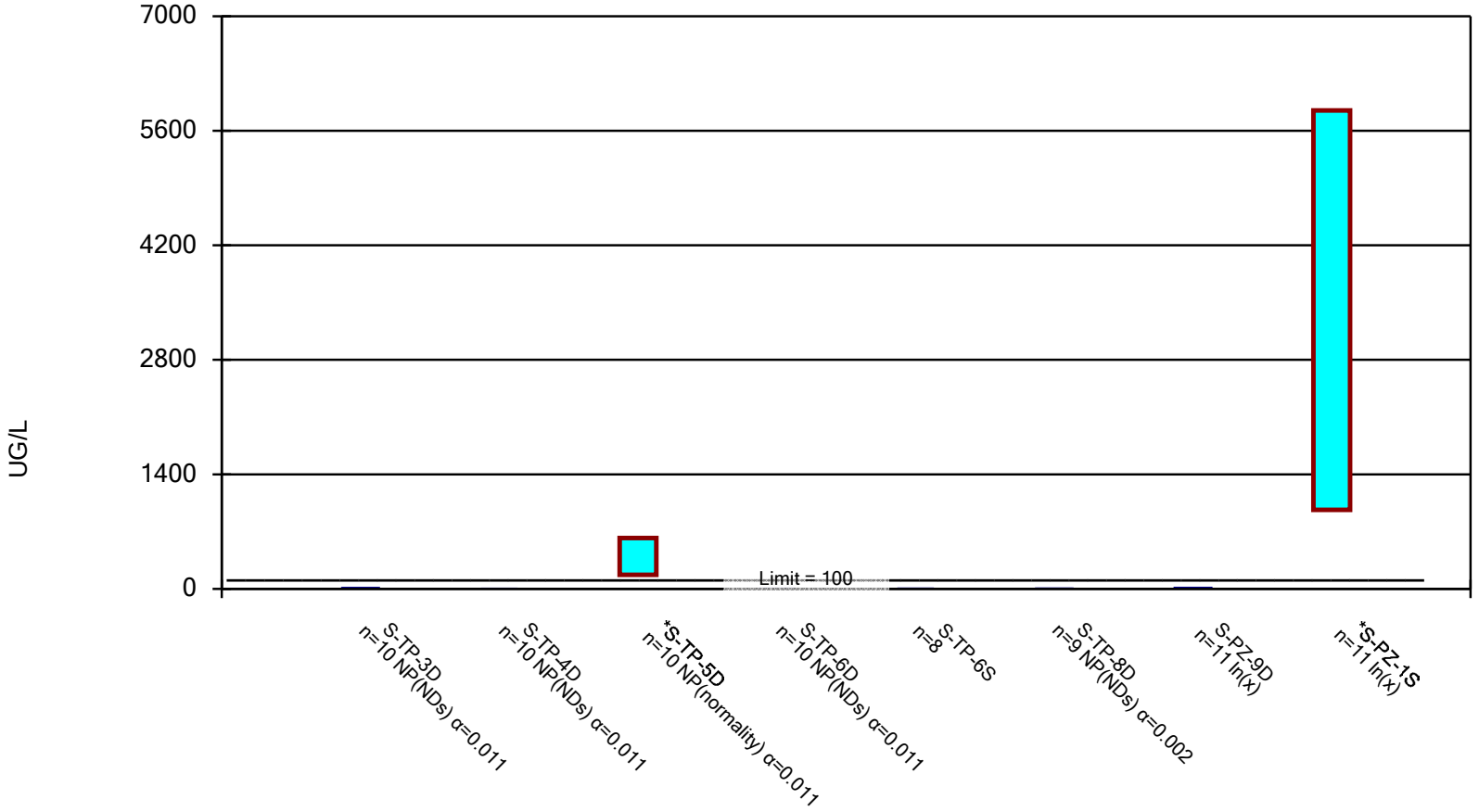
Constituent: MOLYBDENUM, TOTAL Analysis Run 3/12/2024 5:41 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

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Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

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



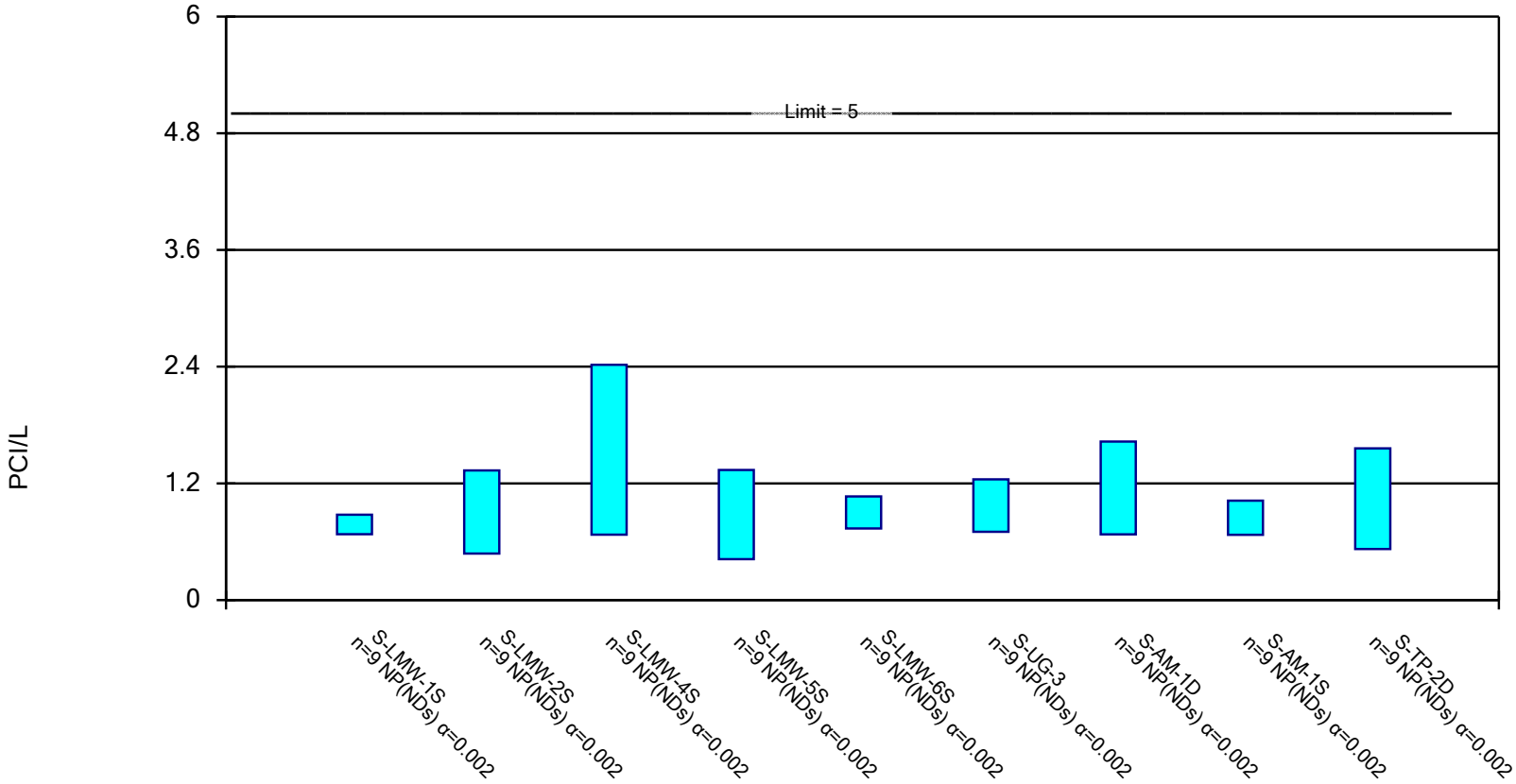
Constituent: MOLYBDENUM, TOTAL Analysis Run 3/12/2024 5:41 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG

Non-Parametric Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded.



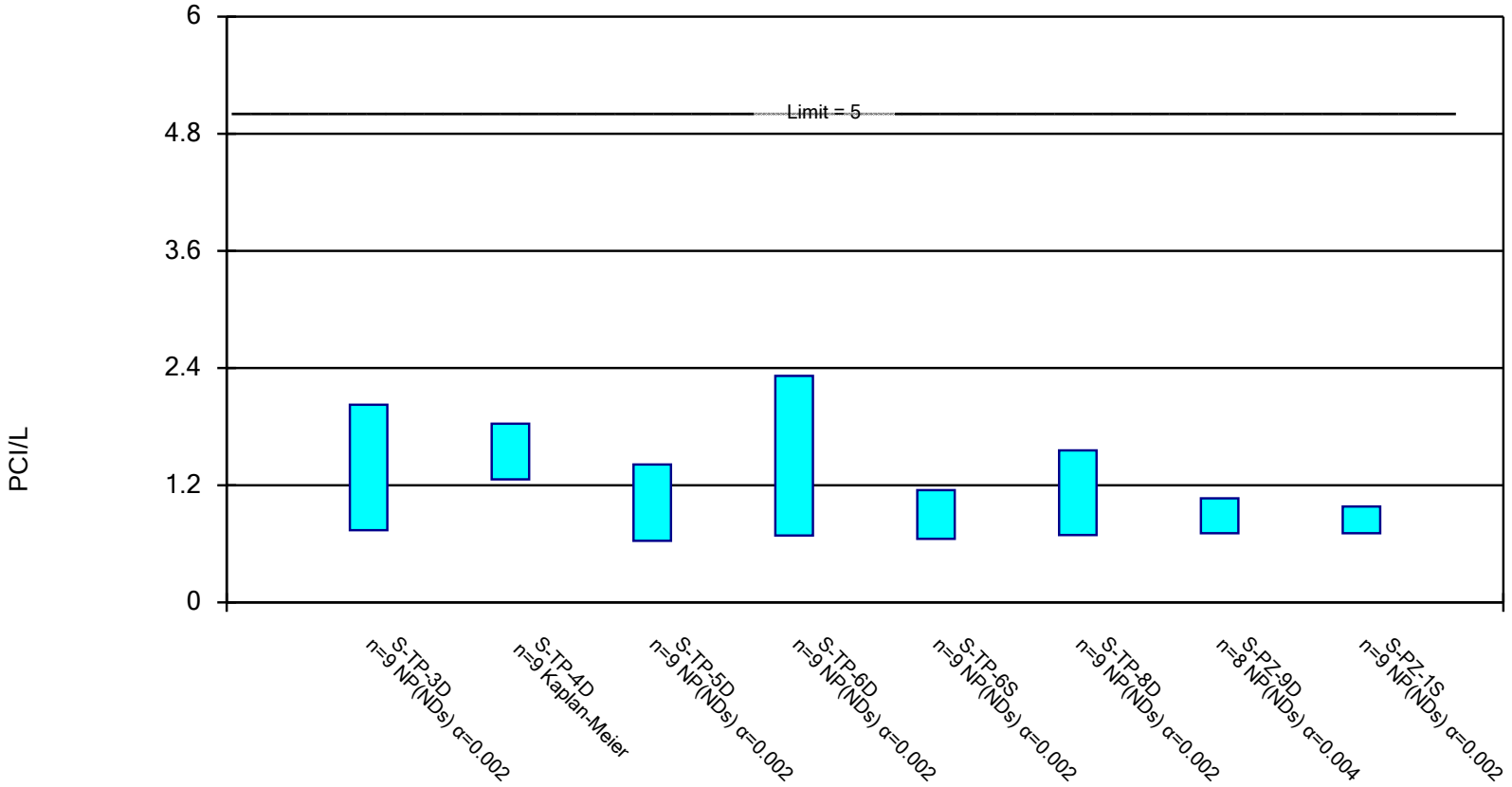
Constituent: RADIUM [226 + 228] Analysis Run 3/12/2024 5:41 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG

Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

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



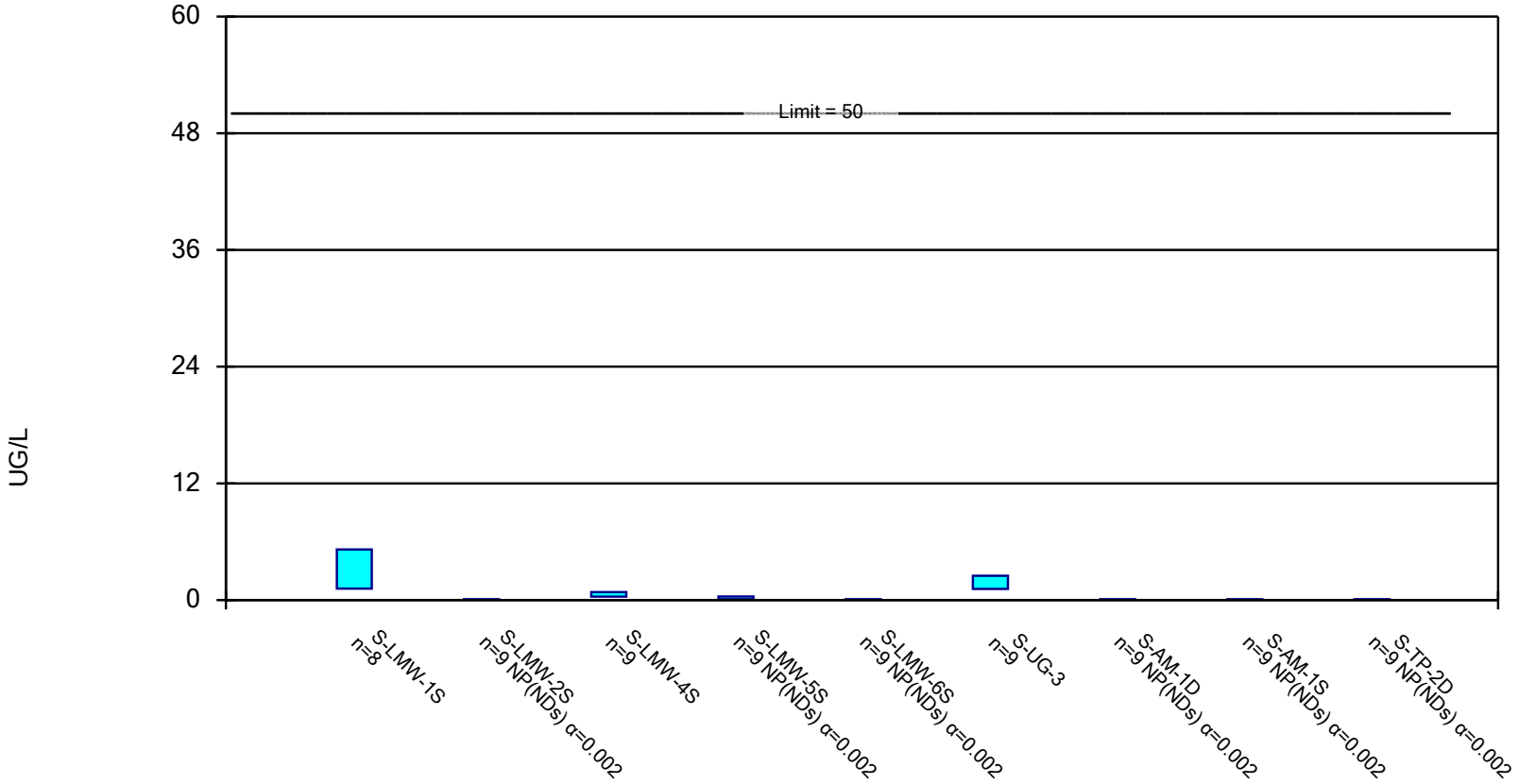
Constituent: RADIUM [226 + 228] Analysis Run 3/12/2024 5:42 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG

Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

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



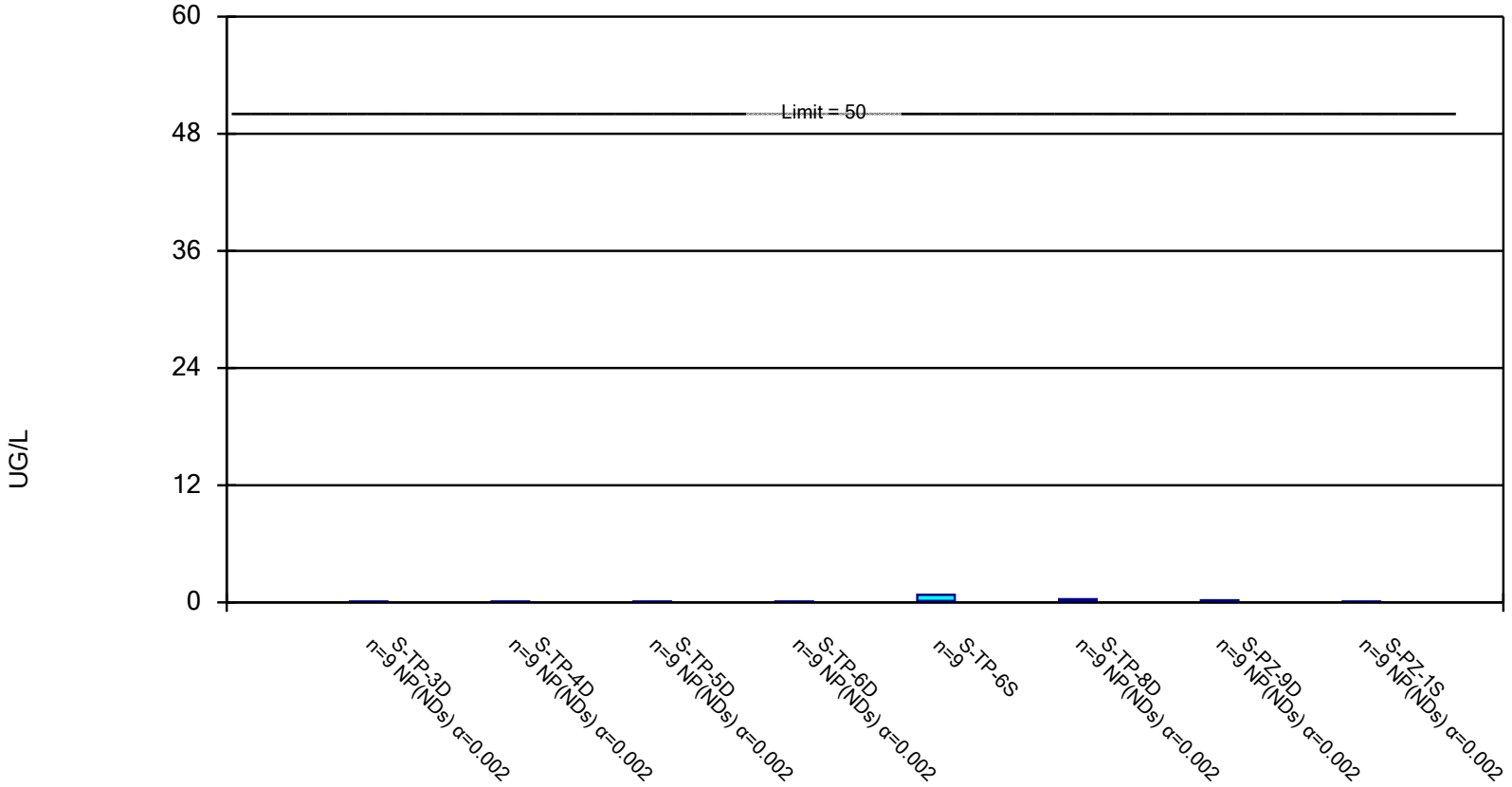
Constituent: SELENIUM, TOTAL Analysis Run 3/12/2024 5:42 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

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Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

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



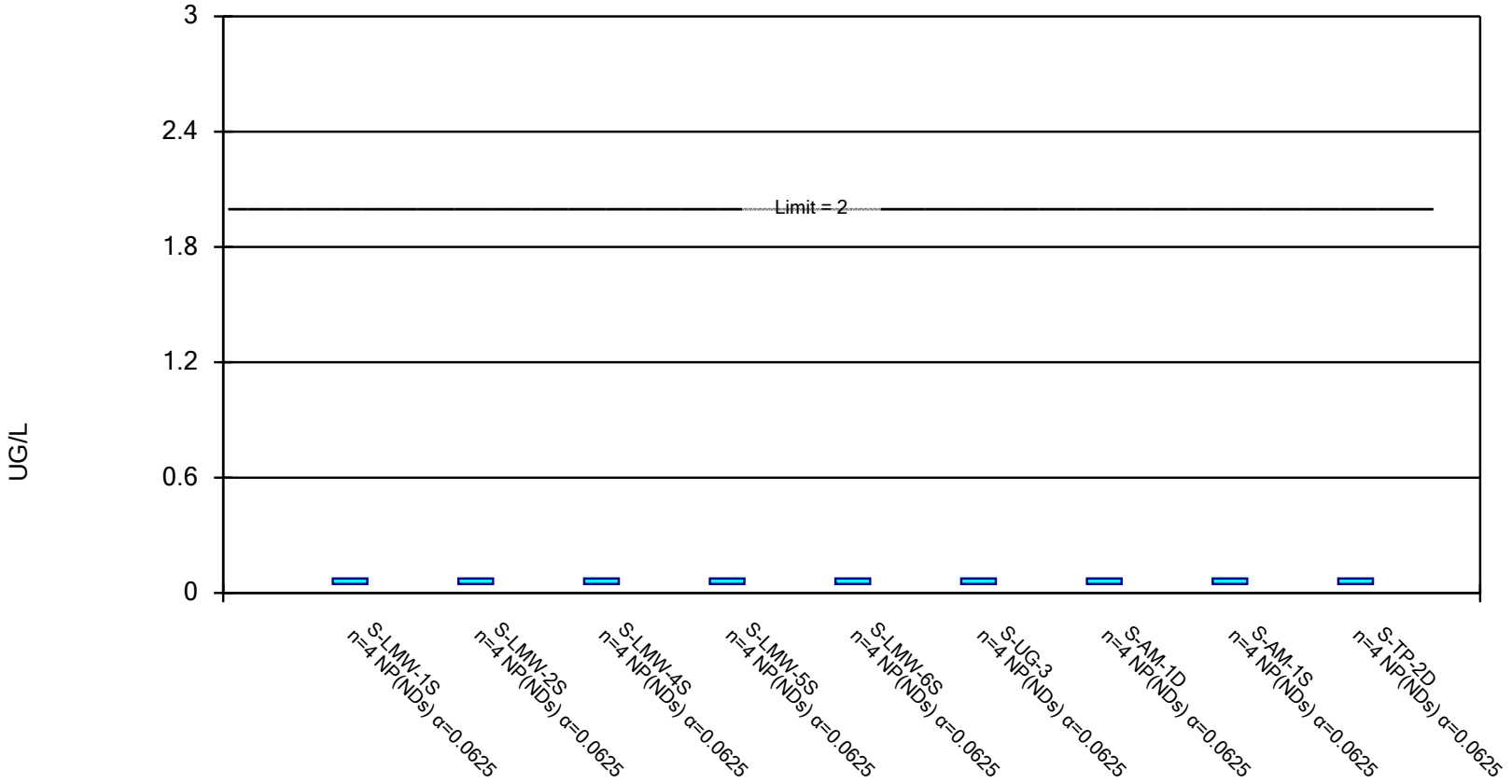
Constituent: SELENIUM, TOTAL Analysis Run 3/12/2024 5:42 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG

Non-Parametric Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded.



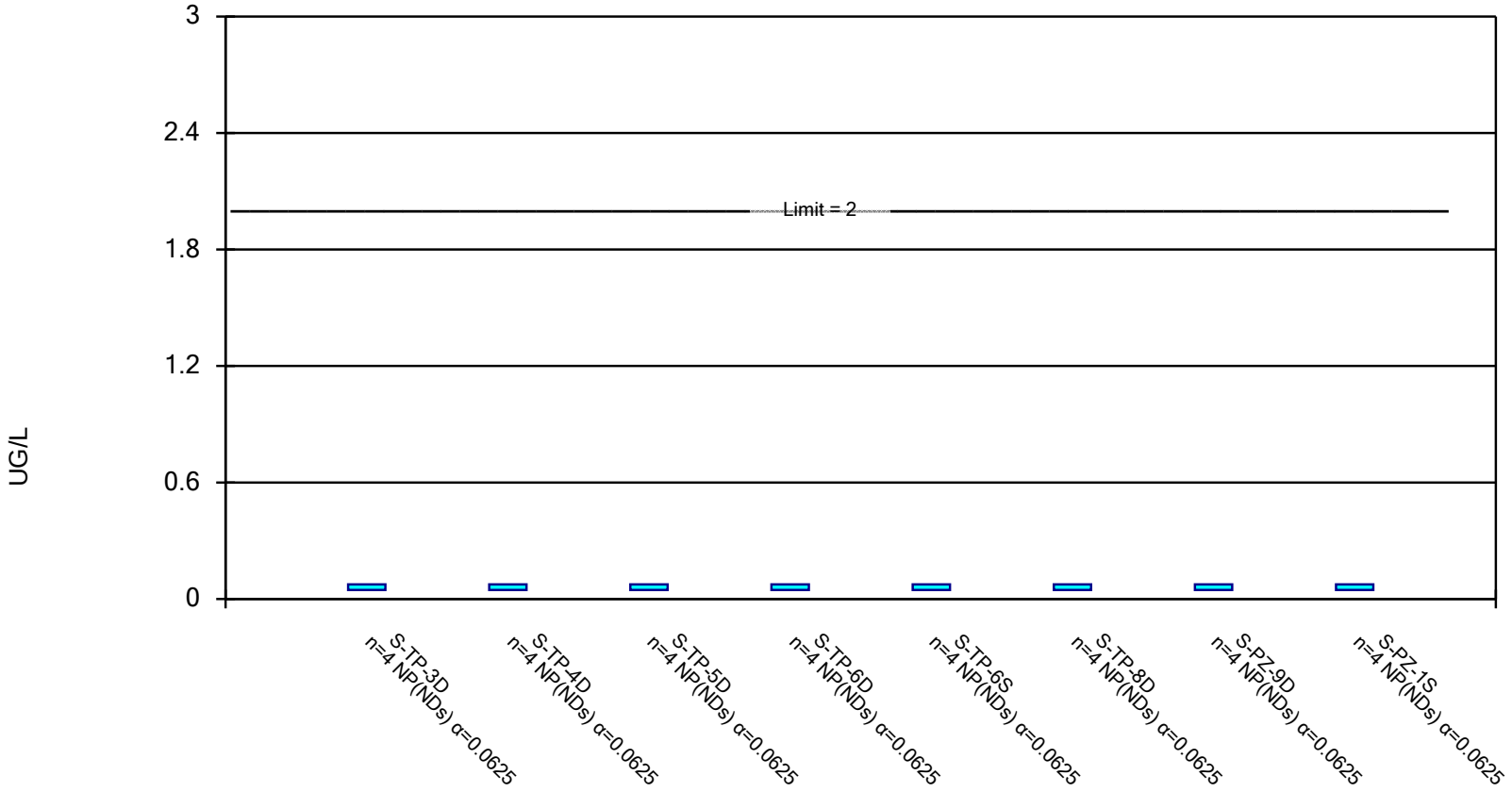
Constituent: THALLIUM, TOTAL Analysis Run 3/12/2024 5:42 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

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Non-Parametric Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded.



Constituent: THALLIUM, TOTAL Analysis Run 3/12/2024 5:42 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

Confidence Interval

Sioux E.C. Client: Ameren Data: SEC DATA Printed 3/12/2024, 5:42 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
ANTIMONY, TOTAL (UG/L)	S-LMW-1S	0.4812	0.2838	6	No	4	0	No	0.01	Param.
ANTIMONY, TOTAL (UG/L)	S-LMW-2S	0.19	0.15	6	No	4	0	No	0.0625	NP (normality)
ANTIMONY, TOTAL (UG/L)	S-LMW-4S	0.2093	0.1157	6	No	4	0	No	0.01	Param.
ANTIMONY, TOTAL (UG/L)	S-LMW-5S	0.1743	0.09568	6	No	4	0	No	0.01	Param.
ANTIMONY, TOTAL (UG/L)	S-LMW-6S	0.259	0.161	6	No	4	0	No	0.01	Param.
ANTIMONY, TOTAL (UG/L)	S-UG-3	0.2785	0.05148	6	No	4	0	No	0.01	Param.
ANTIMONY, TOTAL (UG/L)	S-AM-1D	0.23	0.0485	6	No	4	75	No	0.0625	NP (NDs)
ANTIMONY, TOTAL (UG/L)	S-AM-1S	0.06	0.0485	6	No	4	100	No	0.0625	NP (NDs)
ANTIMONY, TOTAL (UG/L)	S-TP-2D	0.06	0.0485	6	No	4	100	No	0.0625	NP (NDs)
ANTIMONY, TOTAL (UG/L)	S-TP-3D	0.06	0.0485	6	No	4	100	No	0.0625	NP (NDs)
ANTIMONY, TOTAL (UG/L)	S-TP-4D	0.06	0.0485	6	No	4	100	No	0.0625	NP (NDs)
ANTIMONY, TOTAL (UG/L)	S-TP-5D	0.06	0.0485	6	No	4	100	No	0.0625	NP (NDs)
ANTIMONY, TOTAL (UG/L)	S-TP-6D	0.86	0.05	6	No	4	75	No	0.0625	NP (NDs)
ANTIMONY, TOTAL (UG/L)	S-TP-6S	0.1593	0.08068	6	No	4	50	No	0.01	Param.
ANTIMONY, TOTAL (UG/L)	S-TP-8D	0.21	0.05	6	No	4	75	No	0.0625	NP (NDs)
ANTIMONY, TOTAL (UG/L)	S-PZ-9D	0.06	0.0485	6	No	4	100	No	0.0625	NP (NDs)
ANTIMONY, TOTAL (UG/L)	S-PZ-1S	0.06	0.0485	6	No	4	100	No	0.0625	NP (NDs)
ARSENIC, TOTAL (UG/L)	S-LMW-1S	2.261	1.828	10	No	9	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-LMW-2S	0.9939	0.8561	10	No	8	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-LMW-4S	0.7053	0.5414	10	No	9	11.11	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-LMW-5S	0.887	0.6419	10	No	9	11.11	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-LMW-6S	0.83	0.5	10	No	9	11.11	No	0.002	NP (normality)
ARSENIC, TOTAL (UG/L)	S-UG-3	0.4672	0.3773	10	No	9	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-AM-1D	0.2161	0.175	10	No	9	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-AM-1S	1.537	1.241	10	No	9	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-TP-2D	0.2674	0.1326	10	No	9	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-TP-3D	0.1786	0.1036	10	No	9	11.11	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-TP-4D	2.033	1.478	10	No	9	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-TP-5D	0.3052	0.2102	10	No	9	0	ln(x)	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-TP-6D	0.1603	0.1148	10	No	9	22.22	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-TP-6S	0.605	0.4528	10	No	9	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-TP-8D	1.7	1.3	10	No	9	0	No	0.002	NP (normality)
ARSENIC, TOTAL (UG/L)	S-PZ-9D	0.6999	0.3912	10	No	9	11.11	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-PZ-1S	0.4912	0.2932	10	No	9	11.11	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-LMW-1S	174.3	130.4	2000	No	9	0	ln(x)	0.01	Param.
BARIUM, TOTAL (UG/L)	S-LMW-2S	140	104	2000	No	9	0	No	0.002	NP (normality)
BARIUM, TOTAL (UG/L)	S-LMW-4S	236	201.6	2000	No	9	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-LMW-5S	58.44	50.54	2000	No	9	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-LMW-6S	51.99	42.3	2000	No	9	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-UG-3	244.2	209.4	2000	No	9	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-AM-1D	253.1	211.5	2000	No	9	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-AM-1S	153.2	133.7	2000	No	9	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-TP-2D	63.32	57.13	2000	No	9	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-TP-3D	591	549	2000	No	9	0	No	0.002	NP (normality)
BARIUM, TOTAL (UG/L)	S-TP-4D	573.3	514.5	2000	No	9	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-TP-5D	178.8	144	2000	No	9	0	ln(x)	0.01	Param.
BARIUM, TOTAL (UG/L)	S-TP-6D	425.6	397.9	2000	No	9	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-TP-6S	294.1	271.9	2000	No	9	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-TP-8D	383	311	2000	No	9	0	No	0.002	NP (normality)
BARIUM, TOTAL (UG/L)	S-PZ-9D	122.8	97.61	2000	No	9	0	No	0.01	Param.

Confidence Interval

Sioux E.C. Client: Ameren Data: SEC DATA Printed 3/12/2024, 5:42 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
BARIUM, TOTAL (UG/L)	S-PZ-1S	194	89.8	2000	No	9	0	No	0.002	NP (normality)
BERYLLIUM, TOTAL (UG/L)	S-LMW-1S	0.245	0.06	4	No	5	100	No	0.031	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-LMW-2S	0.245	0.06	4	No	5	100	No	0.031	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-LMW-4S	0.245	0.06	4	No	5	100	No	0.031	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-LMW-5S	0.245	0.06	4	No	5	100	No	0.031	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-LMW-6S	0.245	0.06	4	No	4	100	No	0.0625	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-UG-3	0.245	0.06	4	No	5	100	No	0.031	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-AM-1D	0.245	0.06	4	No	5	100	No	0.031	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-AM-1S	0.5	0.06	4	No	5	100	No	0.031	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-TP-2D	0.245	0.06	4	No	5	100	No	0.031	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-TP-3D	0.245	0.06	4	No	5	100	No	0.031	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-TP-4D	0.245	0.06	4	No	5	100	No	0.031	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-TP-5D	0.5	0.06	4	No	5	100	No	0.031	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-TP-6D	0.245	0.06	4	No	5	100	No	0.031	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-TP-6S	0.245	0.06	4	No	5	100	No	0.031	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-TP-8D	0.245	0.06	4	No	5	100	No	0.031	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-PZ-9D	0.61	0.06	4	No	5	80	No	0.031	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-PZ-1S	0.245	0.06	4	No	5	100	No	0.031	NP (NDs)
CADMIUM, TOTAL (UG/L)	S-LMW-1S	0.1022	0.05894	5	No	9	22.22	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	S-LMW-2S	0.7289	0.3822	5	No	9	11.11	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	S-LMW-4S	0.1974	0.05987	5	No	9	44.44	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	S-LMW-5S	1.163	0.619	5	No	9	0	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	S-LMW-6S	1.235	0.7048	5	No	9	0	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	S-UG-3	0.3459	0.1941	5	No	9	0	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	S-AM-1D	0.2079	0.07432	5	No	9	22.22	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	S-AM-1S	0.1287	0.04216	5	No	9	11.11	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	S-TP-2D	0.031	0.025	5	No	9	100	No	0.002	NP (NDs)
CADMIUM, TOTAL (UG/L)	S-TP-3D	0.031	0.025	5	No	9	100	No	0.002	NP (NDs)
CADMIUM, TOTAL (UG/L)	S-TP-4D	0.031	0.025	5	No	9	100	No	0.002	NP (NDs)
CADMIUM, TOTAL (UG/L)	S-TP-5D	0.23	0.028	5	No	9	33.33	No	0.002	NP (normality)
CADMIUM, TOTAL (UG/L)	S-TP-6D	0.031	0.025	5	No	8	100	No	0.004	NP (NDs)
CADMIUM, TOTAL (UG/L)	S-TP-6S	0.066	0.0265	5	No	9	44.44	No	0.002	NP (normality)
CADMIUM, TOTAL (UG/L)	S-TP-8D	0.031	0.025	5	No	9	100	No	0.002	NP (NDs)
CADMIUM, TOTAL (UG/L)	S-PZ-9D	0.031	0.025	5	No	9	100	No	0.002	NP (NDs)
CADMIUM, TOTAL (UG/L)	S-PZ-1S	0.7342	0.2195	5	No	8	12.5	ln(x)	0.01	Param.
CHROMIUM, TOTAL (UG/L)	S-LMW-1S	0.6851	0.2049	100	No	6	16.67	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	S-LMW-2S	0.5456	0.1814	100	No	6	50	ln(x)	0.01	Param.
CHROMIUM, TOTAL (UG/L)	S-LMW-4S	0.5	0.11	100	No	6	50	No	0.0155	NP (normality)
CHROMIUM, TOTAL (UG/L)	S-LMW-5S	0.5735	0.1865	100	No	6	33.33	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	S-LMW-6S	0.6745	0.1488	100	No	6	16.67	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	S-UG-3	0.65	0.11	100	No	6	83.33	No	0.0155	NP (NDs)
CHROMIUM, TOTAL (UG/L)	S-AM-1D	0.8933	0.1469	100	No	6	50	ln(x)	0.01	Param.
CHROMIUM, TOTAL (UG/L)	S-AM-1S	0.83	0.11	100	No	6	66.67	No	0.0155	NP (NDs)
CHROMIUM, TOTAL (UG/L)	S-TP-2D	0.927	0.1395	100	No	6	50	ln(x)	0.01	Param.
CHROMIUM, TOTAL (UG/L)	S-TP-3D	0.4273	0.1827	100	No	6	50	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	S-TP-4D	0.43	0.11	100	No	6	50	No	0.0155	NP (normality)
CHROMIUM, TOTAL (UG/L)	S-TP-5D	0.5	0.11	100	No	6	83.33	No	0.0155	NP (NDs)
CHROMIUM, TOTAL (UG/L)	S-TP-6D	0.35	0.15	100	No	5	40	No	0.031	NP (normality)
CHROMIUM, TOTAL (UG/L)	S-TP-6S	0.59	0.11	100	No	6	66.67	No	0.0155	NP (NDs)
CHROMIUM, TOTAL (UG/L)	S-TP-8D	0.5186	0.1574	100	No	5	40	No	0.01	Param.

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Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
CHROMIUM, TOTAL (UG/L)	S-PZ-9D	1.419	0.291	100	No	6	0	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	S-PZ-1S	0.5	0.11	100	No	6	83.33	No	0.0155	NP (NDs)
COBALT, TOTAL (UG/L)	S-LMW-1S	4.2	0.475	6	No	9	55.56	No	0.002	NP (NDs)
COBALT, TOTAL (UG/L)	S-LMW-2S	3.468	1.743	6	No	9	22.22	No	0.01	Param.
COBALT, TOTAL (UG/L)	S-LMW-4S	0.75	0.41	6	No	9	100	No	0.002	NP (NDs)
COBALT, TOTAL (UG/L)	S-LMW-5S	2.6	0.475	6	No	9	66.67	No	0.002	NP (NDs)
COBALT, TOTAL (UG/L)	**S-LMW-6S**	**9.744**	**7.033**	**6**	**Yes**	**9**	**0**	**No**	**0.01**	**Param.**
COBALT, TOTAL (UG/L)	S-UG-3	5.378	0.9716	6	No	9	22.22	No	0.01	Param.
COBALT, TOTAL (UG/L)	S-AM-1D	0.75	0.41	6	No	9	100	No	0.002	NP (NDs)
COBALT, TOTAL (UG/L)	S-AM-1S	3.019	1.559	6	No	9	22.22	No	0.01	Param.
COBALT, TOTAL (UG/L)	S-TP-2D	1.4	0.41	6	No	9	88.89	No	0.002	NP (NDs)
COBALT, TOTAL (UG/L)	S-TP-3D	1.2	0.41	6	No	8	87.5	No	0.004	NP (NDs)
COBALT, TOTAL (UG/L)	S-TP-4D	1.4	0.41	6	No	8	87.5	No	0.004	NP (NDs)
COBALT, TOTAL (UG/L)	S-TP-5D	1.2	0.41	6	No	8	87.5	No	0.004	NP (NDs)
COBALT, TOTAL (UG/L)	S-TP-6D	2.5	0.475	6	No	9	88.89	No	0.002	NP (NDs)
COBALT, TOTAL (UG/L)	S-TP-6S	0.75	0.41	6	No	8	100	No	0.004	NP (NDs)
COBALT, TOTAL (UG/L)	S-TP-8D	2.1	0.41	6	No	9	77.78	No	0.002	NP (NDs)
COBALT, TOTAL (UG/L)	S-PZ-9D	0.75	0.41	6	No	9	100	No	0.002	NP (NDs)
COBALT, TOTAL (UG/L)	S-PZ-1S	0.75	0.41	6	No	9	100	No	0.002	NP (NDs)
FLUORIDE, TOTAL (MG/L)	S-LMW-1S	0.434	0.1584	4	No	10	30	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	S-LMW-2S	0.44	0.043	4	No	10	60	No	0.011	NP (NDs)
FLUORIDE, TOTAL (MG/L)	S-LMW-4S	0.28	0.06	4	No	9	44.44	No	0.002	NP (normality)
FLUORIDE, TOTAL (MG/L)	S-LMW-5S	0.5024	0.2127	4	No	13	23.08	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	S-LMW-6S	0.2623	0.08623	4	No	10	50	ln(x)	0.01	Param.
FLUORIDE, TOTAL (MG/L)	S-UG-3	0.38	0.06	4	No	10	30	No	0.011	NP (normality)
FLUORIDE, TOTAL (MG/L)	S-AM-1D	0.62	0.06	4	No	9	11.11	No	0.002	NP (normality)
FLUORIDE, TOTAL (MG/L)	S-AM-1S	0.59	0.06	4	No	9	11.11	No	0.002	NP (normality)
FLUORIDE, TOTAL (MG/L)	S-TP-2D	0.25	0.043	4	No	9	55.56	No	0.002	NP (NDs)
FLUORIDE, TOTAL (MG/L)	S-TP-3D	0.3	0.06	4	No	9	22.22	No	0.002	NP (normality)
FLUORIDE, TOTAL (MG/L)	S-TP-4D	0.33	0.06	4	No	9	22.22	No	0.002	NP (normality)
FLUORIDE, TOTAL (MG/L)	S-TP-5D	0.44	0.06	4	No	9	22.22	No	0.002	NP (normality)
FLUORIDE, TOTAL (MG/L)	S-TP-6D	0.34	0.06	4	No	9	33.33	No	0.002	NP (normality)
FLUORIDE, TOTAL (MG/L)	S-TP-6S	0.36	0.06	4	No	9	33.33	No	0.002	NP (normality)
FLUORIDE, TOTAL (MG/L)	S-TP-8D	0.37	0.06	4	No	9	33.33	No	0.002	NP (normality)
FLUORIDE, TOTAL (MG/L)	S-PZ-9D	0.35	0.043	4	No	9	55.56	No	0.002	NP (NDs)
FLUORIDE, TOTAL (MG/L)	S-PZ-1S	0.9407	0.2193	4	No	9	33.33	No	0.01	Param.
LEAD, TOTAL (UG/L)	S-LMW-1S	4	1.9	15	No	6	83.33	No	0.0155	NP (NDs)
LEAD, TOTAL (UG/L)	S-LMW-2S	3.05	1.9	15	No	6	100	No	0.0155	NP (NDs)
LEAD, TOTAL (UG/L)	S-LMW-4S	3.05	1.9	15	No	6	100	No	0.0155	NP (NDs)
LEAD, TOTAL (UG/L)	S-LMW-5S	3.9	1.9	15	No	6	83.33	No	0.0155	NP (NDs)
LEAD, TOTAL (UG/L)	S-LMW-6S	3.05	1.9	15	No	6	100	No	0.0155	NP (NDs)
LEAD, TOTAL (UG/L)	S-UG-3	3.05	1.9	15	No	6	100	No	0.0155	NP (NDs)
LEAD, TOTAL (UG/L)	S-AM-1D	3.05	1.9	15	No	6	100	No	0.0155	NP (NDs)
LEAD, TOTAL (UG/L)	S-AM-1S	3.05	1.9	15	No	6	100	No	0.0155	NP (NDs)
LEAD, TOTAL (UG/L)	S-TP-2D	3.05	1.9	15	No	5	100	No	0.031	NP (NDs)
LEAD, TOTAL (UG/L)	S-TP-3D	3.05	1.9	15	No	5	100	No	0.031	NP (NDs)
LEAD, TOTAL (UG/L)	S-TP-4D	3.05	1.9	15	No	5	100	No	0.031	NP (NDs)
LEAD, TOTAL (UG/L)	S-TP-5D	3.05	1.9	15	No	5	100	No	0.031	NP (NDs)
LEAD, TOTAL (UG/L)	S-TP-6D	3.05	1.9	15	No	6	100	No	0.0155	NP (NDs)
LEAD, TOTAL (UG/L)	S-TP-6S	3.05	1.9	15	No	6	100	No	0.0155	NP (NDs)

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Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
LEAD, TOTAL (UG/L)	S-TP-8D	3.05	1.9	15	No	6	100	No	0.0155	NP (NDs)
LEAD, TOTAL (UG/L)	S-PZ-9D	3.05	1.9	15	No	6	100	No	0.0155	NP (NDs)
LEAD, TOTAL (UG/L)	S-PZ-1S	11.11	1.688	15	No	6	50	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-LMW-1S	20.22	14.36	40	No	9	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-LMW-2S	36.95	32.12	40	No	9	11.11	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-LMW-4S	36.26	24.2	40	No	9	11.11	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	**S-LMW-5S**	**48.17**	**42.97**	**40**	**Yes**	**7**	**0**	**No**	**0.01**	**Param.**
LITHIUM, TOTAL (UG/L)	S-LMW-6S	22.94	18.77	40	No	9	11.11	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-UG-3	35.08	25.75	40	No	9	11.11	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-AM-1D	36.13	31.72	40	No	9	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-AM-1S	33.27	25.78	40	No	9	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	**S-TP-2D**	**52.78**	**41.47**	**40**	**Yes**	**9**	**11.11**	**No**	**0.01**	**Param.**
LITHIUM, TOTAL (UG/L)	S-TP-3D	36.34	31.25	40	No	9	11.11	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-TP-4D	35.6	30.24	40	No	9	11.11	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-TP-5D	38.23	29.87	40	No	9	11.11	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-TP-6D	33.33	24.9	40	No	9	11.11	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	**S-TP-6S**	**40.08**	**34.08**	**40**	**Yes**	**9**	**11.11**	**No**	**0.01**	**Param.**
LITHIUM, TOTAL (UG/L)	S-TP-8D	33.52	31.03	40	No	8	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-PZ-9D	37.44	31.13	40	No	9	11.11	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-PZ-1S	16.96	14.18	40	No	7	0	No	0.01	Param.
MERCURY, TOTAL (UG/L)	S-LMW-1S	0.06	0.0425	2	No	4	100	No	0.0625	NP (NDs)
MERCURY, TOTAL (UG/L)	S-LMW-2S	0.06	0.0425	2	No	4	100	No	0.0625	NP (NDs)
MERCURY, TOTAL (UG/L)	S-LMW-4S	0.06	0.0425	2	No	4	100	No	0.0625	NP (NDs)
MERCURY, TOTAL (UG/L)	S-LMW-5S	0.06	0.0425	2	No	4	100	No	0.0625	NP (NDs)
MERCURY, TOTAL (UG/L)	S-LMW-6S	0.06	0.0425	2	No	4	100	No	0.0625	NP (NDs)
MERCURY, TOTAL (UG/L)	S-UG-3	0.06	0.0425	2	No	4	100	No	0.0625	NP (NDs)
MERCURY, TOTAL (UG/L)	S-AM-1D	0.06	0.0425	2	No	4	100	No	0.0625	NP (NDs)
MERCURY, TOTAL (UG/L)	S-AM-1S	0.06	0.0425	2	No	4	100	No	0.0625	NP (NDs)
MERCURY, TOTAL (UG/L)	S-TP-2D	0.06	0.0425	2	No	4	100	No	0.0625	NP (NDs)
MERCURY, TOTAL (UG/L)	S-TP-3D	0.06	0.0425	2	No	4	100	No	0.0625	NP (NDs)
MERCURY, TOTAL (UG/L)	S-TP-4D	0.06	0.0425	2	No	4	100	No	0.0625	NP (NDs)
MERCURY, TOTAL (UG/L)	S-TP-5D	0.06	0.0425	2	No	4	100	No	0.0625	NP (NDs)
MERCURY, TOTAL (UG/L)	S-TP-6D	0.06	0.0425	2	No	4	100	No	0.0625	NP (NDs)
MERCURY, TOTAL (UG/L)	S-TP-6S	0.06	0.0425	2	No	4	100	No	0.0625	NP (NDs)
MERCURY, TOTAL (UG/L)	S-TP-8D	0.06	0.0425	2	No	4	100	No	0.0625	NP (NDs)
MERCURY, TOTAL (UG/L)	S-PZ-9D	0.06	0.0425	2	No	4	100	No	0.0625	NP (NDs)
MERCURY, TOTAL (UG/L)	S-PZ-1S	0.06	0.0425	2	No	4	100	No	0.0625	NP (NDs)
MOLYBDENUM, TOTAL (UG/L)	**S-LMW-1S**	**100.5**	**57.79**	**100**	**Yes**	**9**	**0**	**No**	**0.01**	**Param.**
MOLYBDENUM, TOTAL (UG/L)	**S-LMW-2S**	**1086**	**659.8**	**100**	**Yes**	**9**	**0**	**No**	**0.01**	**Param.**
MOLYBDENUM, TOTAL (UG/L)	S-LMW-4S	2.548	1.315	100	No	7	42.86	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	**S-LMW-5S**	**2608**	**1322**	**100**	**Yes**	**9**	**0**	**No**	**0.01**	**Param.**
MOLYBDENUM, TOTAL (UG/L)	S-LMW-6S	2.4	0.85	100	No	8	62.5	No	0.004	NP (NDs)
MOLYBDENUM, TOTAL (UG/L)	S-UG-3	4.06	2.283	100	No	7	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	**S-AM-1D**	**588**	**263**	**100**	**Yes**	**9**	**0**	**No**	**0.002**	**NP (normality)**
MOLYBDENUM, TOTAL (UG/L)	**S-AM-1S**	**308**	**37**	**100**	**Yes**	**9**	**0**	**No**	**0.002**	**NP (normality)**
MOLYBDENUM, TOTAL (UG/L)	S-TP-2D	2.4	0.5	100	No	10	80	No	0.011	NP (NDs)
MOLYBDENUM, TOTAL (UG/L)	S-TP-3D	10	0.85	100	No	10	60	No	0.011	NP (NDs)
MOLYBDENUM, TOTAL (UG/L)	S-TP-4D	1.3	0.85	100	No	10	80	No	0.011	NP (NDs)
MOLYBDENUM, TOTAL (UG/L)	**S-TP-5D**	**622**	**171**	**100**	**Yes**	**10**	**0**	**No**	**0.011**	**NP (normality)**
MOLYBDENUM, TOTAL (UG/L)	S-TP-6D	1.1	0.5	100	No	10	90	No	0.011	NP (NDs)

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Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
MOLYBDENUM, TOTAL (UG/L)	S-TP-6S	3.791	2.534	100	No	8	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	S-TP-8D	2.9	0.85	100	No	9	55.56	No	0.002	NP (NDs)
MOLYBDENUM, TOTAL (UG/L)	S-PZ-9D	12.09	5.198	100	No	11	9.091	ln(x)	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	**S-PZ-1S**	**5847**	**966.3**	**100**	**Yes**	**11**	**0**	**ln(x)**	**0.01**	**Param.**
RADIUM [226 + 228] (PCI/L)	S-LMW-1S	0.877	0.677	5	No	9	100	No	0.002	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-LMW-2S	1.333	0.478	5	No	9	77.78	No	0.002	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-LMW-4S	2.419	0.673	5	No	9	77.78	No	0.002	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-LMW-5S	1.337	0.42	5	No	9	88.89	No	0.002	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-LMW-6S	1.065	0.737	5	No	9	100	No	0.002	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-UG-3	1.24	0.7015	5	No	9	100	No	0.002	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-AM-1D	1.63	0.675	5	No	9	100	No	0.002	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-AM-1S	1.023	0.6705	5	No	9	100	No	0.002	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-TP-2D	1.56	0.5245	5	No	9	88.89	No	0.002	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-TP-3D	2.025	0.739	5	No	9	77.78	No	0.002	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-TP-4D	1.831	1.26	5	No	9	44.44	No	0.01	Param.
RADIUM [226 + 228] (PCI/L)	S-TP-5D	1.412	0.63	5	No	9	88.89	No	0.002	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-TP-6D	2.319	0.6855	5	No	9	55.56	No	0.002	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-TP-6S	1.149	0.651	5	No	9	100	No	0.002	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-TP-8D	1.557	0.689	5	No	9	77.78	No	0.002	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-PZ-9D	1.066	0.709	5	No	8	100	No	0.004	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-PZ-1S	0.982	0.7075	5	No	9	100	No	0.002	NP (NDs)
SELENIUM, TOTAL (UG/L)	S-LMW-1S	5.197	1.183	50	No	8	0	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	S-LMW-2S	0.09	0.09	50	No	9	100	No	0.002	NP (NDs)
SELENIUM, TOTAL (UG/L)	S-LMW-4S	0.8165	0.3479	50	No	9	11.11	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	S-LMW-5S	0.37	0.09	50	No	9	88.89	No	0.002	NP (NDs)
SELENIUM, TOTAL (UG/L)	S-LMW-6S	0.09	0.09	50	No	9	100	No	0.002	NP (NDs)
SELENIUM, TOTAL (UG/L)	S-UG-3	2.496	1.149	50	No	9	0	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	S-AM-1D	0.09	0.09	50	No	9	100	No	0.002	NP (NDs)
SELENIUM, TOTAL (UG/L)	S-AM-1S	0.09	0.09	50	No	9	100	No	0.002	NP (NDs)
SELENIUM, TOTAL (UG/L)	S-TP-2D	0.09	0.09	50	No	9	100	No	0.002	NP (NDs)
SELENIUM, TOTAL (UG/L)	S-TP-3D	0.09	0.09	50	No	9	100	No	0.002	NP (NDs)
SELENIUM, TOTAL (UG/L)	S-TP-4D	0.09	0.09	50	No	9	100	No	0.002	NP (NDs)
SELENIUM, TOTAL (UG/L)	S-TP-5D	0.09	0.09	50	No	9	100	No	0.002	NP (NDs)
SELENIUM, TOTAL (UG/L)	S-TP-6D	0.09	0.09	50	No	9	100	No	0.002	NP (NDs)
SELENIUM, TOTAL (UG/L)	S-TP-6S	0.7692	0.1464	50	No	9	11.11	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	S-TP-8D	0.33	0.09	50	No	9	88.89	No	0.002	NP (NDs)
SELENIUM, TOTAL (UG/L)	S-PZ-9D	0.21	0.09	50	No	9	88.89	No	0.002	NP (NDs)
SELENIUM, TOTAL (UG/L)	S-PZ-1S	0.09	0.09	50	No	9	100	No	0.002	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-LMW-1S	0.075	0.0465	2	No	4	100	No	0.0625	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-LMW-2S	0.075	0.0465	2	No	4	100	No	0.0625	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-LMW-4S	0.075	0.0465	2	No	4	100	No	0.0625	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-LMW-5S	0.075	0.0465	2	No	4	100	No	0.0625	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-LMW-6S	0.075	0.0465	2	No	4	100	No	0.0625	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-UG-3	0.075	0.0465	2	No	4	100	No	0.0625	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-AM-1D	0.075	0.0465	2	No	4	100	No	0.0625	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-AM-1S	0.075	0.0465	2	No	4	100	No	0.0625	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-TP-2D	0.075	0.0465	2	No	4	100	No	0.0625	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-TP-3D	0.075	0.0465	2	No	4	100	No	0.0625	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-TP-4D	0.075	0.0465	2	No	4	100	No	0.0625	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-TP-5D	0.075	0.0465	2	No	4	100	No	0.0625	NP (NDs)

Confidence Interval

Sioux E.C. Client: Ameren Data: SEC DATA Printed 3/12/2024, 5:42 PM

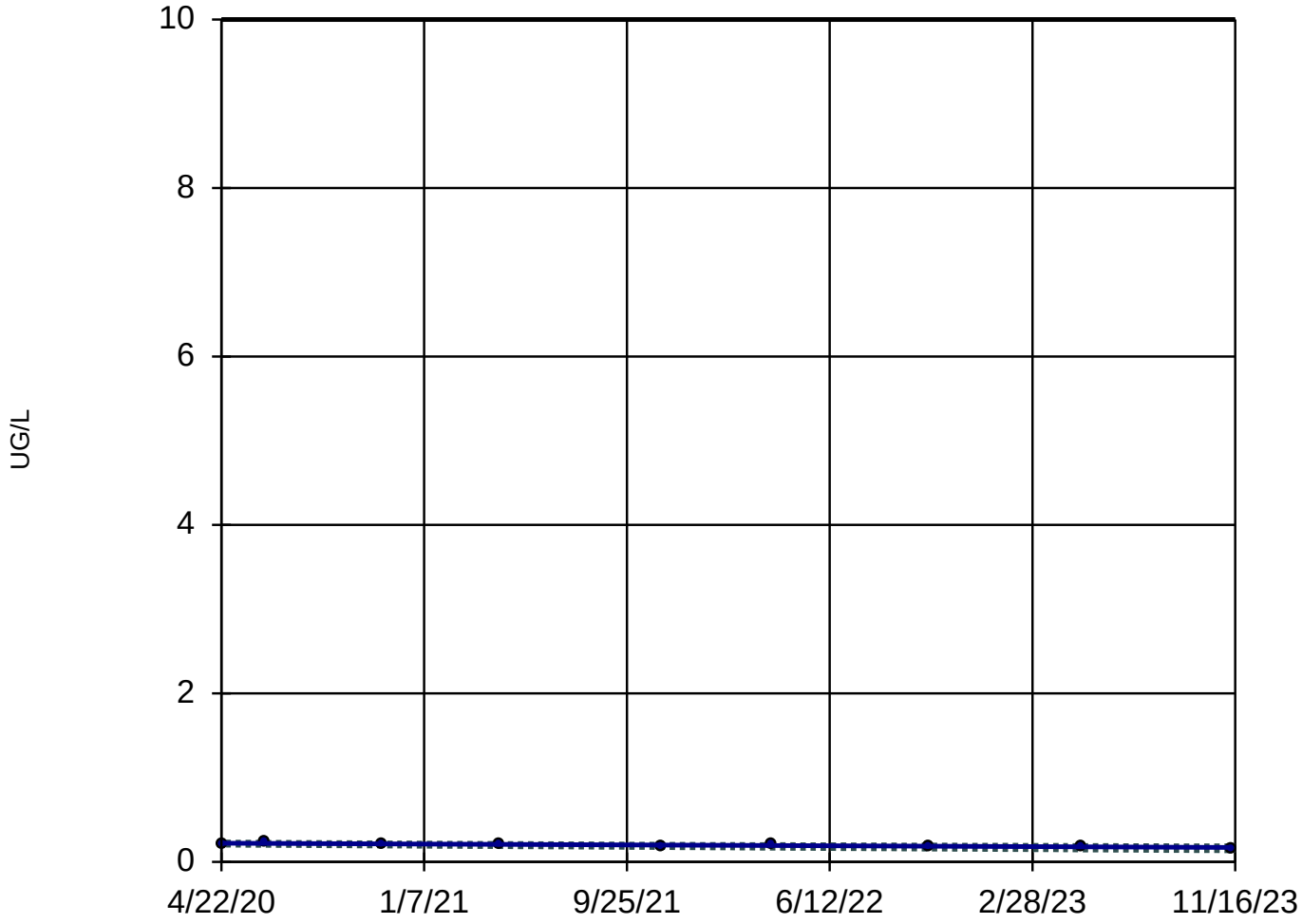
Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
THALLIUM, TOTAL (UG/L)	S-TP-6D	0.075	0.0465	2	No	4	100	No	0.0625	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-TP-6S	0.075	0.0465	2	No	4	100	No	0.0625	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-TP-8D	0.075	0.0465	2	No	4	100	No	0.0625	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-PZ-9D	0.075	0.0465	2	No	4	100	No	0.0625	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-PZ-1S	0.075	0.0465	2	No	4	100	No	0.0625	NP (NDs)

Appendix B
Sanitas Trending Confidence Bands Statistical Output

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG

Sen's Slope and 95% Confidence Band

S-AM-1D



n = 9

Slope = -0.01451 units per year.

Mann-Kendall statistic = -27
critical = -23

Decreasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (10).

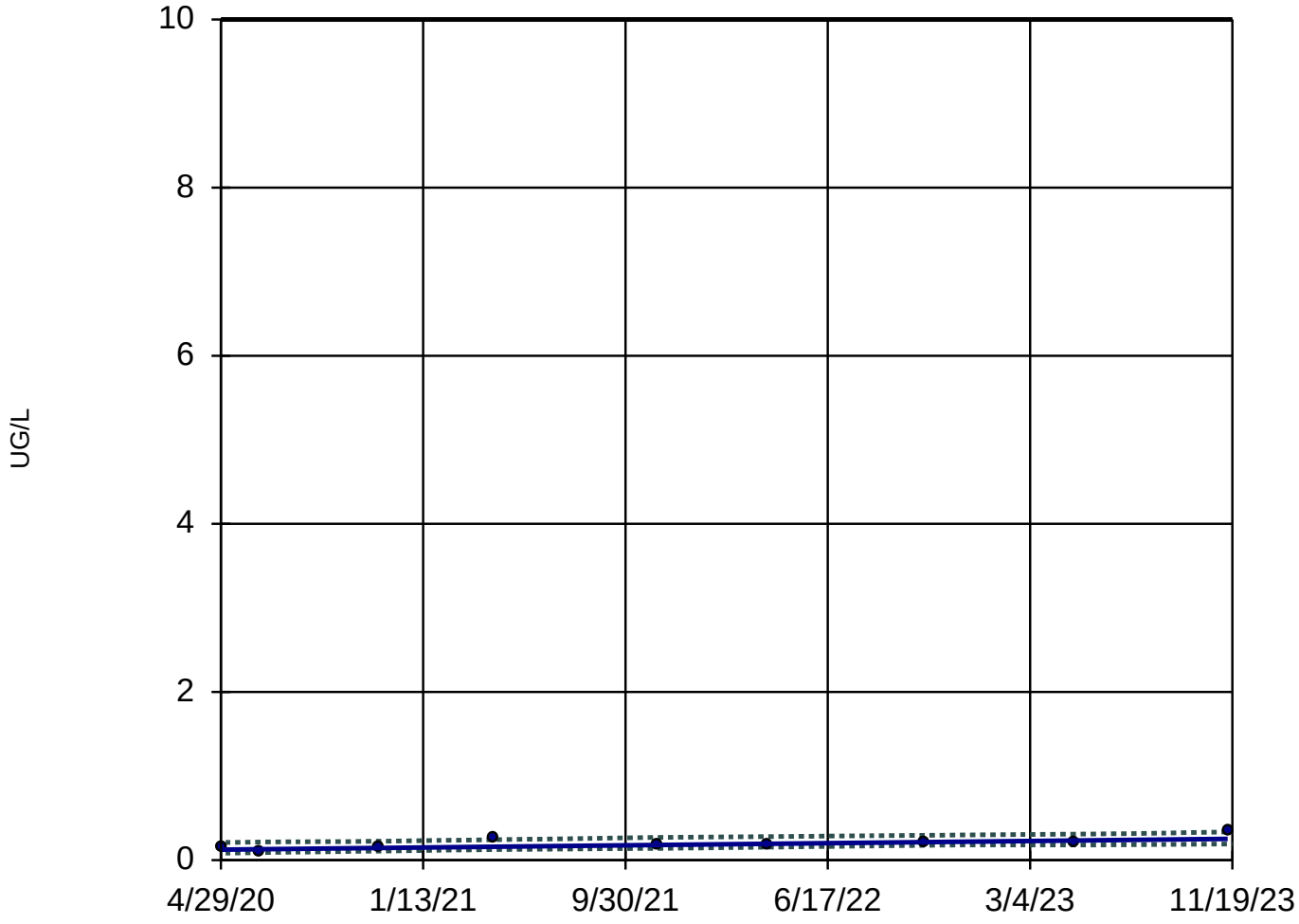
Constituent: ARSENIC, TOTAL Analysis Run 3/14/2024 8:39 AM View: Corrective Action Stats

Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG

Sen's Slope and 95% Confidence Band

S-TP-2D



n = 9

Slope = 0.03614 units per year.

Mann-Kendall statistic = 25
critical = 23

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (10).

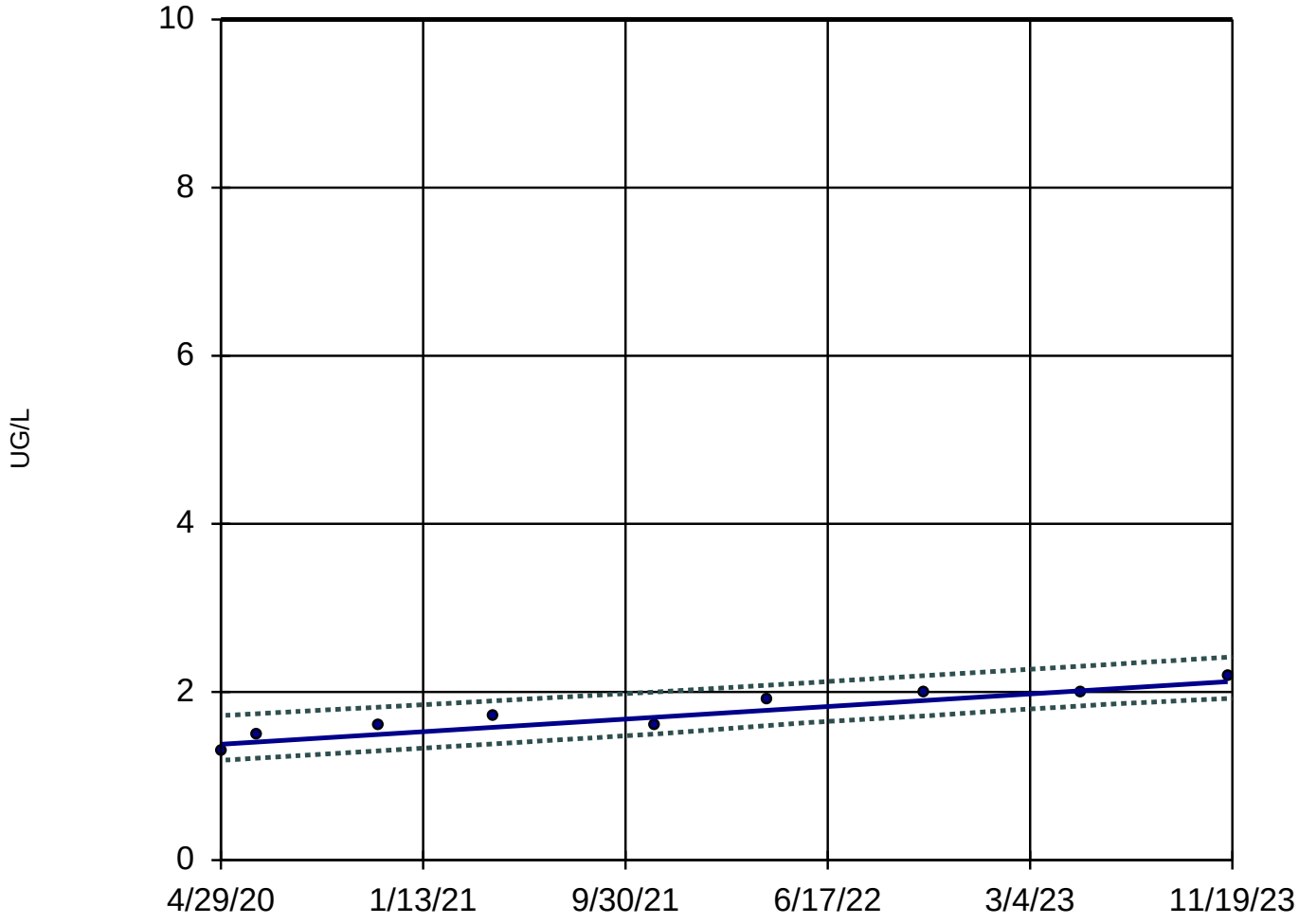
Constituent: ARSENIC, TOTAL Analysis Run 3/14/2024 8:39 AM View: Corrective Action Stats

Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG

Sen's Slope and 95% Confidence Band

S-TP-4D



n = 9

Slope = 0.2103 units per year.

Mann-Kendall statistic = 32
critical = 23

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (10).

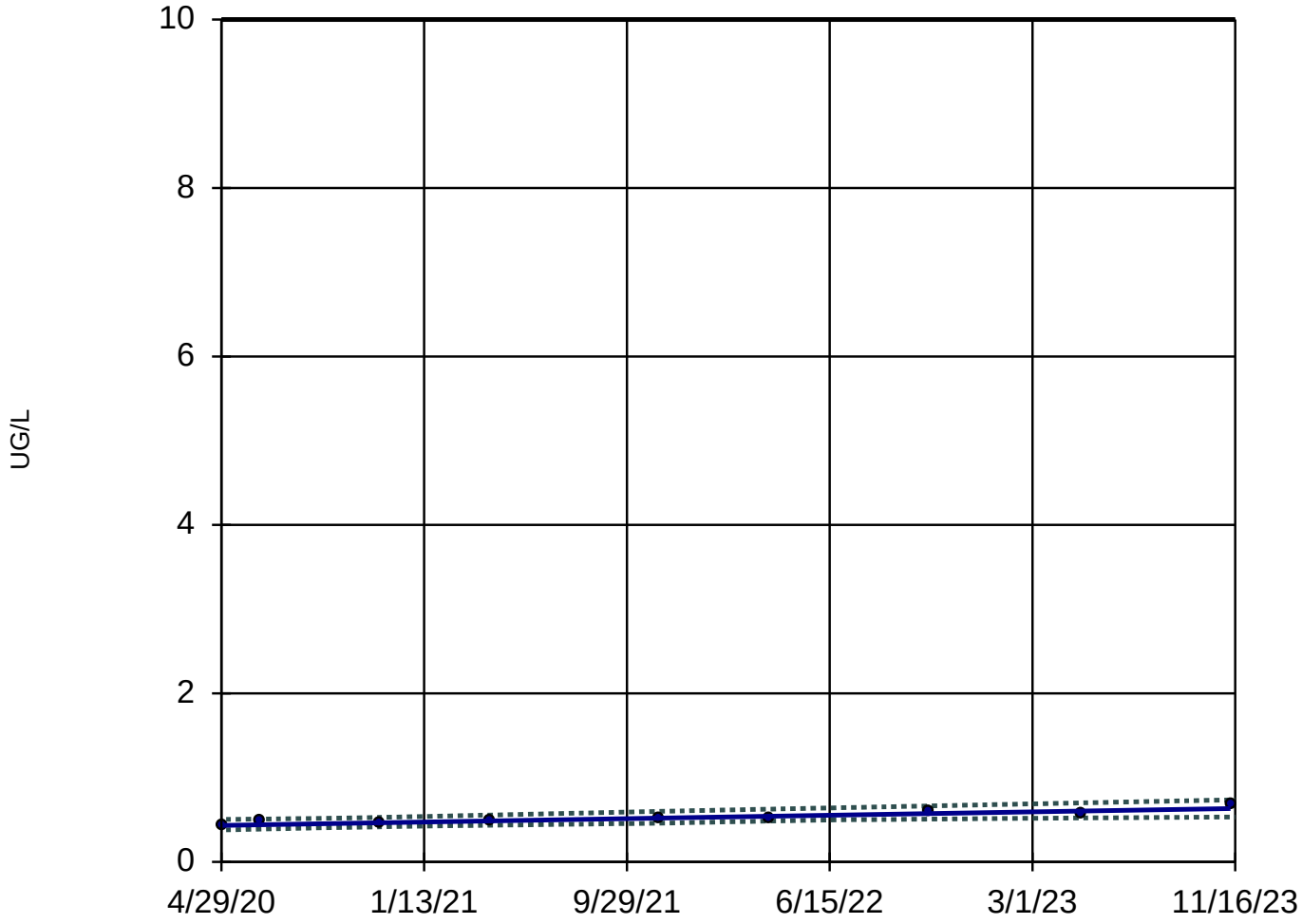
Constituent: ARSENIC, TOTAL Analysis Run 3/14/2024 8:39 AM View: Corrective Action Stats

Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG

Sen's Slope and 95% Confidence Band

S-TP-6S



n = 9

Slope = 0.05657 units per year.

Mann-Kendall statistic = 30
critical = 23

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (10).

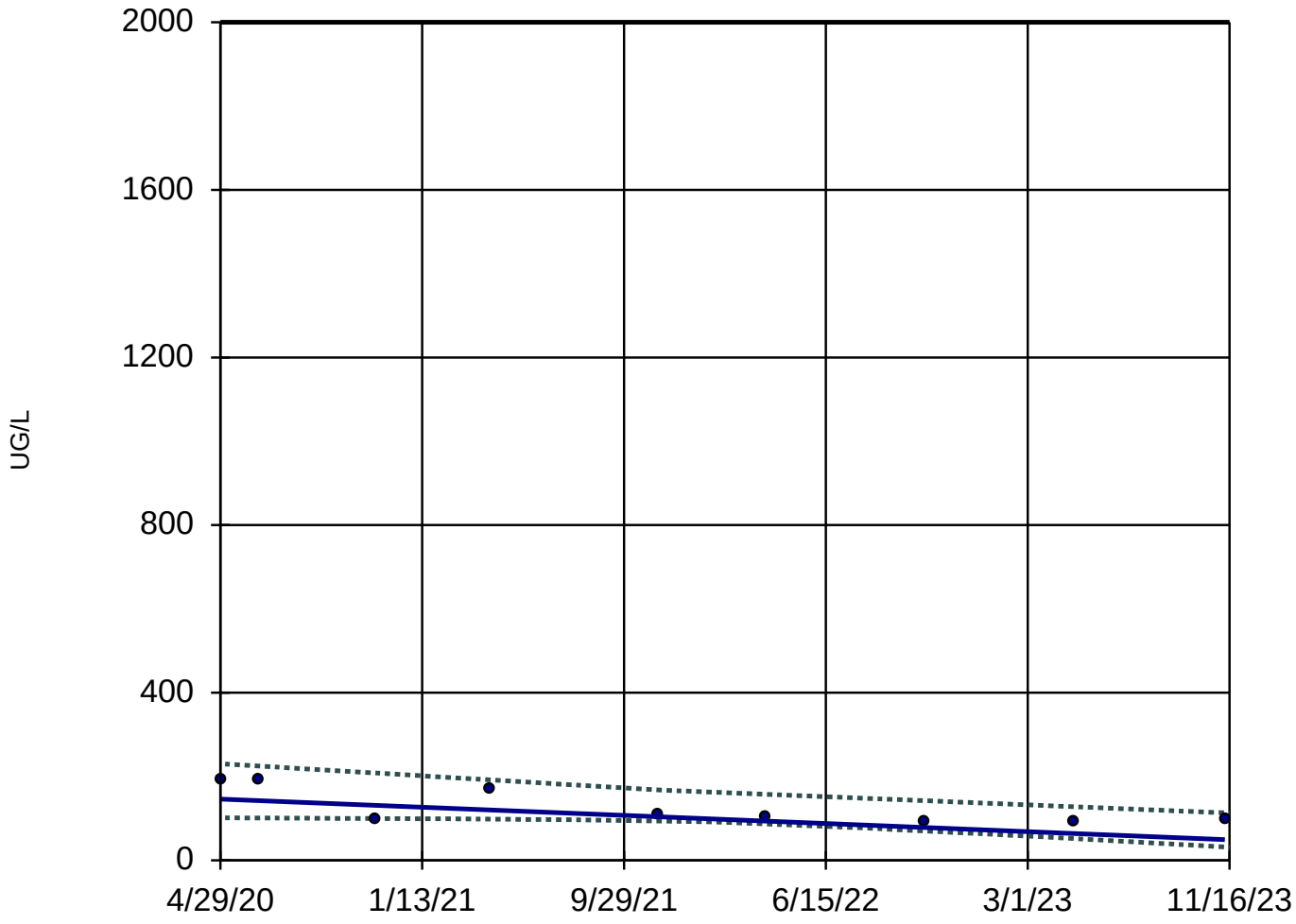
Constituent: ARSENIC, TOTAL Analysis Run 3/14/2024 8:39 AM View: Corrective Action Stats

Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG

Sen's Slope and 95% Confidence Band

S-PZ-1S



n = 9

Slope = -27.33 units per year.

Mann-Kendall statistic = -26
critical = -23

Decreasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (2000).

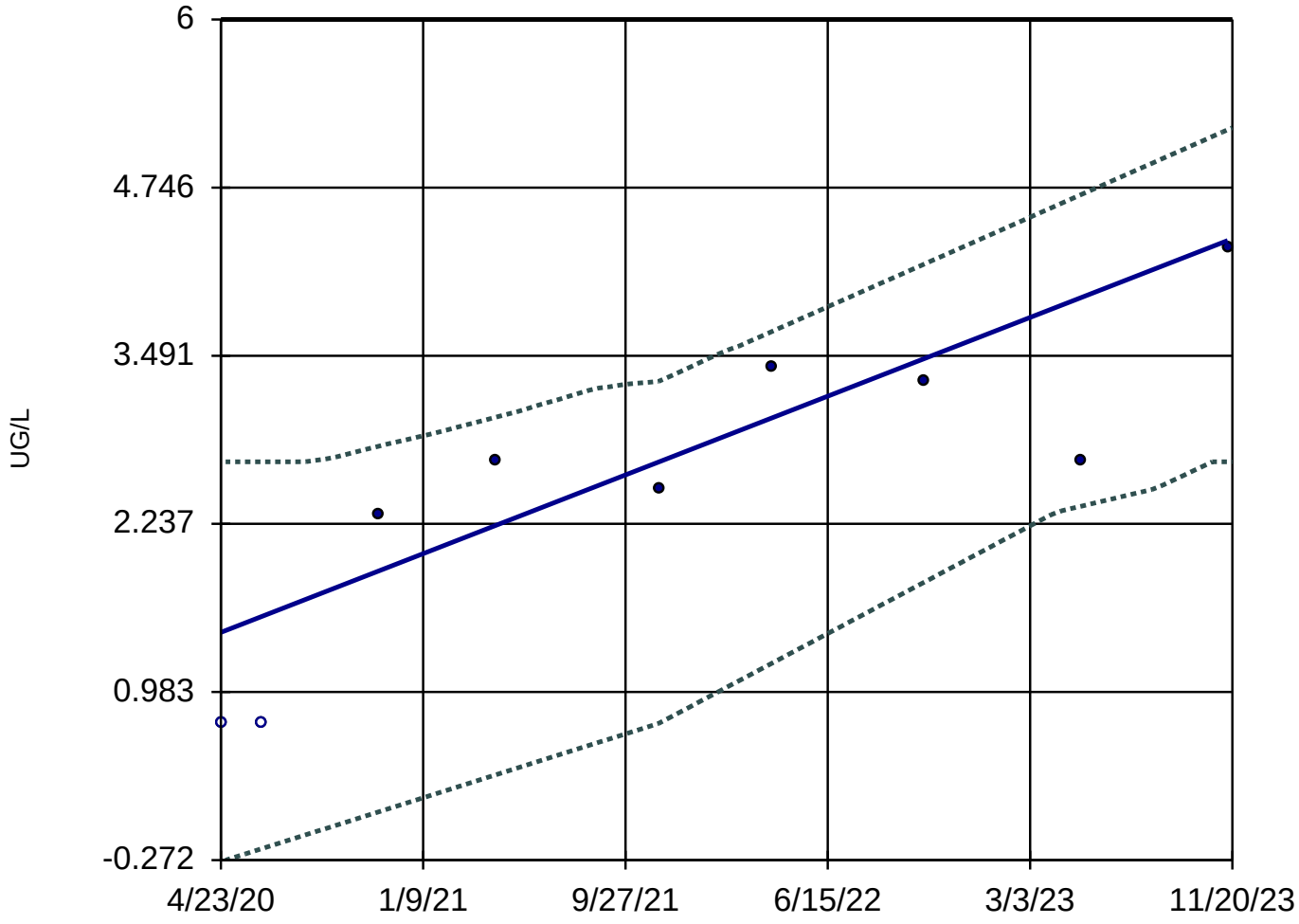
Constituent: BARIUM, TOTAL Analysis Run 3/14/2024 8:39 AM View: Corrective Action Stats

Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG
Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

S-LMW-2S



n = 9

Slope = 0.8208 units per year.

Mann-Kendall statistic = 26
critical = 23

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (6).

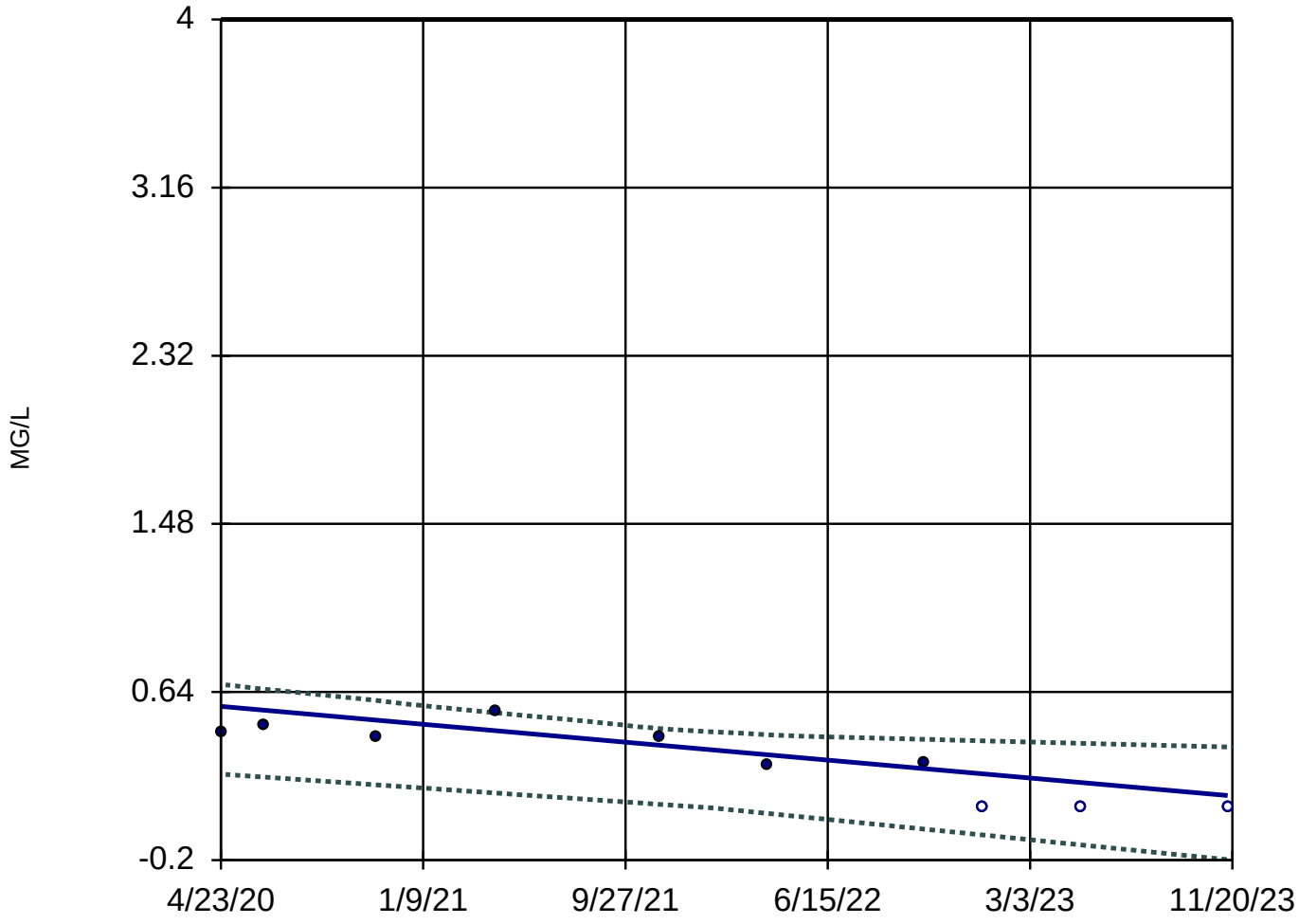
Constituent: COBALT, TOTAL Analysis Run 3/14/2024 8:39 AM View: Corrective Action Stats

Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG
Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

S-LMW-1S



n = 10

Slope = -0.125 units per year.

Mann-Kendall statistic = -31
critical = -27

Decreasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (4).

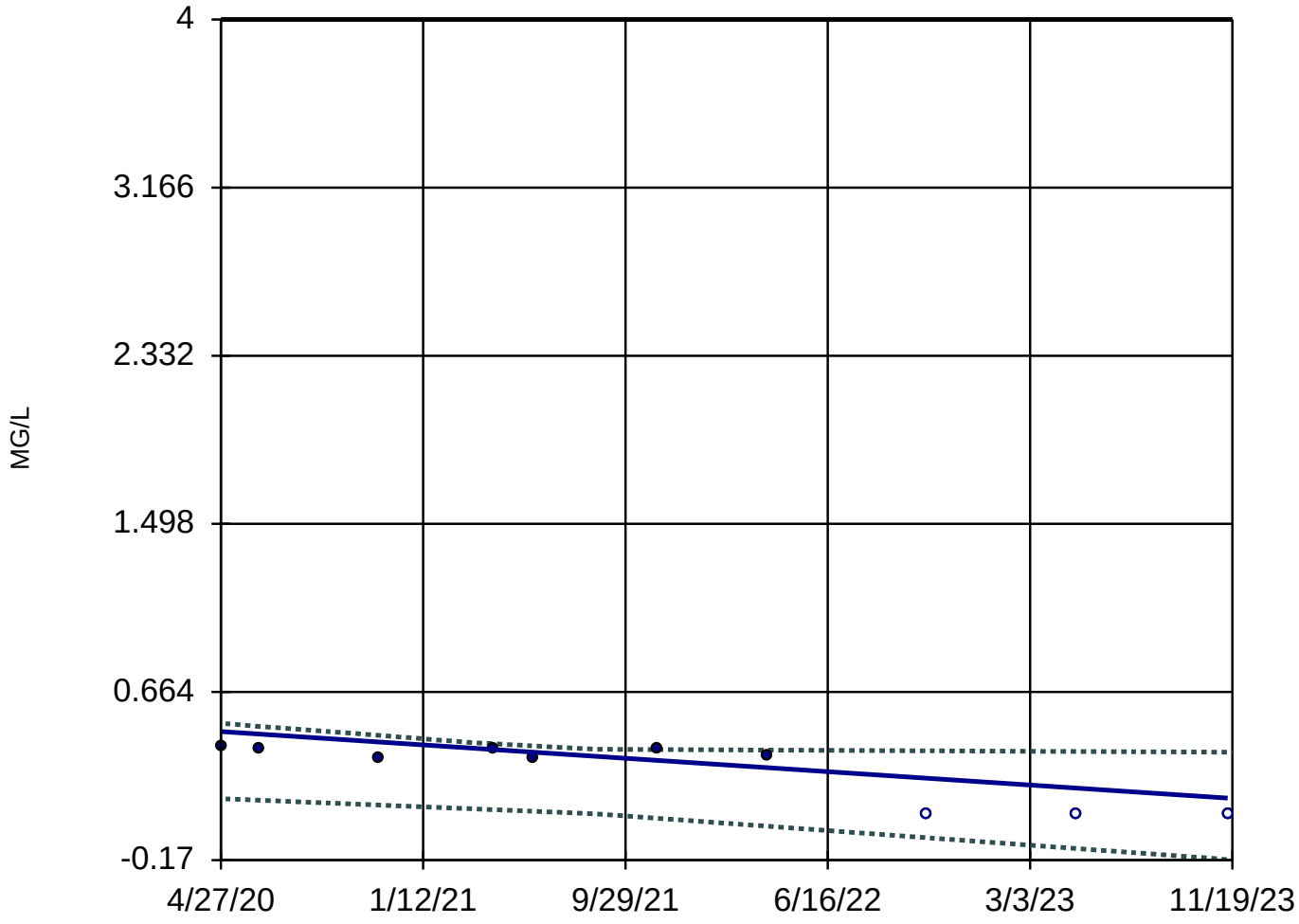
Constituent: FLUORIDE, TOTAL Analysis Run 3/14/2024 8:40 AM View: Corrective Action Stats

Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG
Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

S-UG-3



n = 10

Slope = -0.09301 units per year.

Mann-Kendall statistic = -29
critical = -27

Decreasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (4).

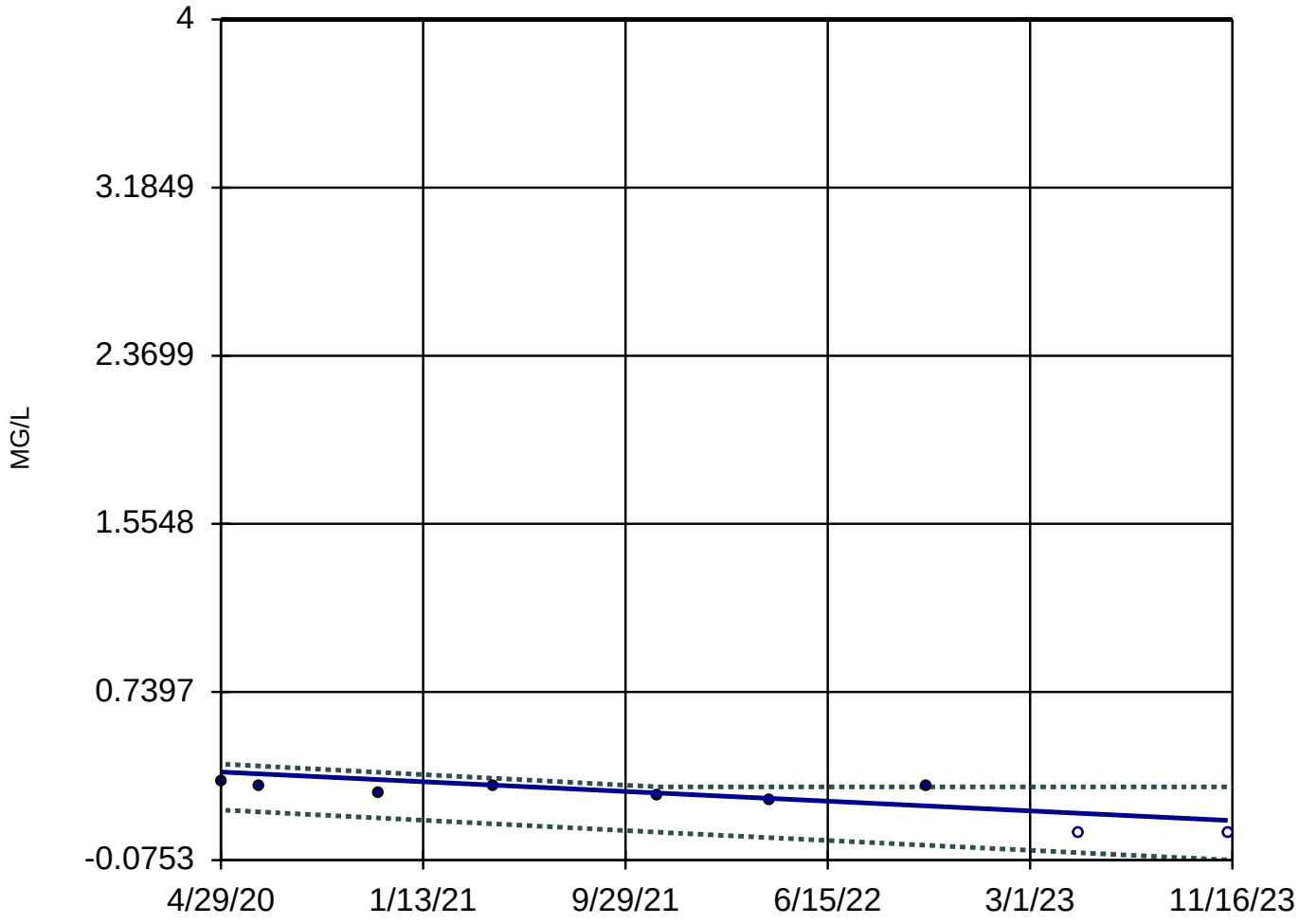
Constituent: FLUORIDE, TOTAL Analysis Run 3/14/2024 8:40 AM View: Corrective Action Stats

Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG
Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

S-TP-3D



n = 9

Slope = -0.06633 units per year.

Mann-Kendall statistic = -24
critical = -23

Decreasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (4).

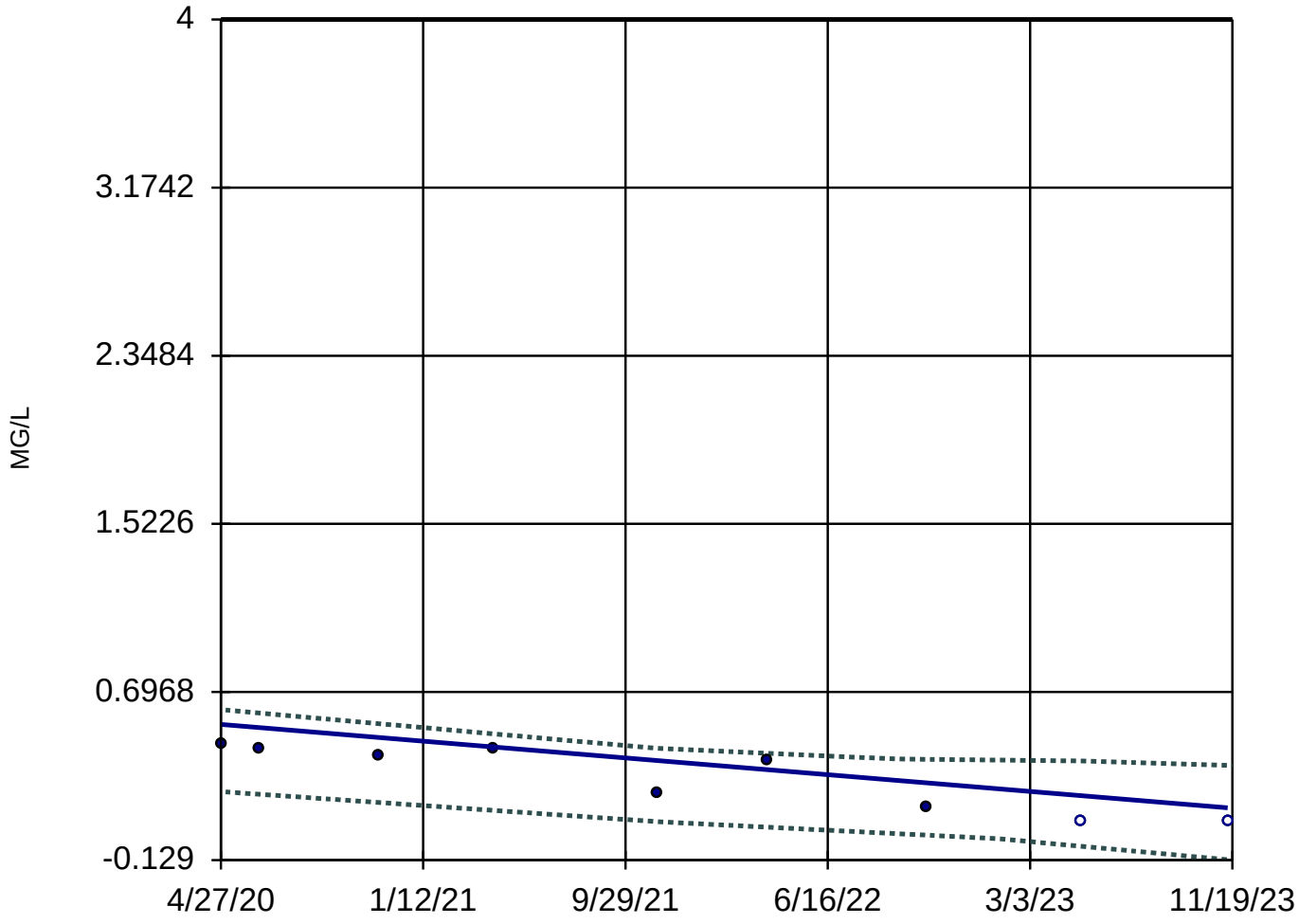
Constituent: FLUORIDE, TOTAL Analysis Run 3/14/2024 8:40 AM View: Corrective Action Stats

Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG
Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

S-TP-5D



n = 9

Slope = -0.1154 units per year.

Mann-Kendall statistic = -30
critical = -23

Decreasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (4).

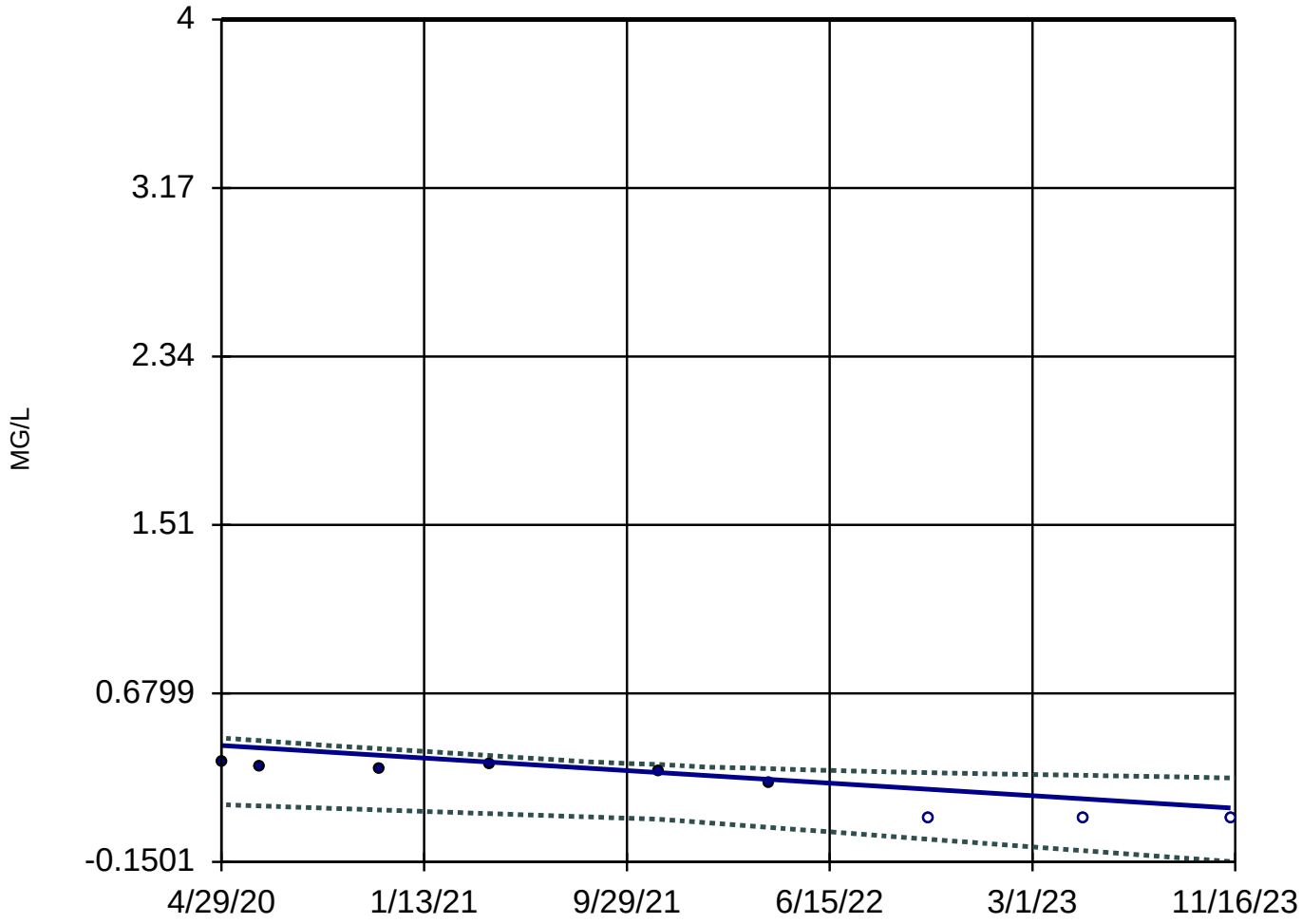
Constituent: FLUORIDE, TOTAL Analysis Run 3/14/2024 8:40 AM View: Corrective Action Stats

Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG
Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

S-TP-6D



n = 9

Slope = -0.08696 units per year.

Mann-Kendall statistic = -29
critical = -23

Decreasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (4).

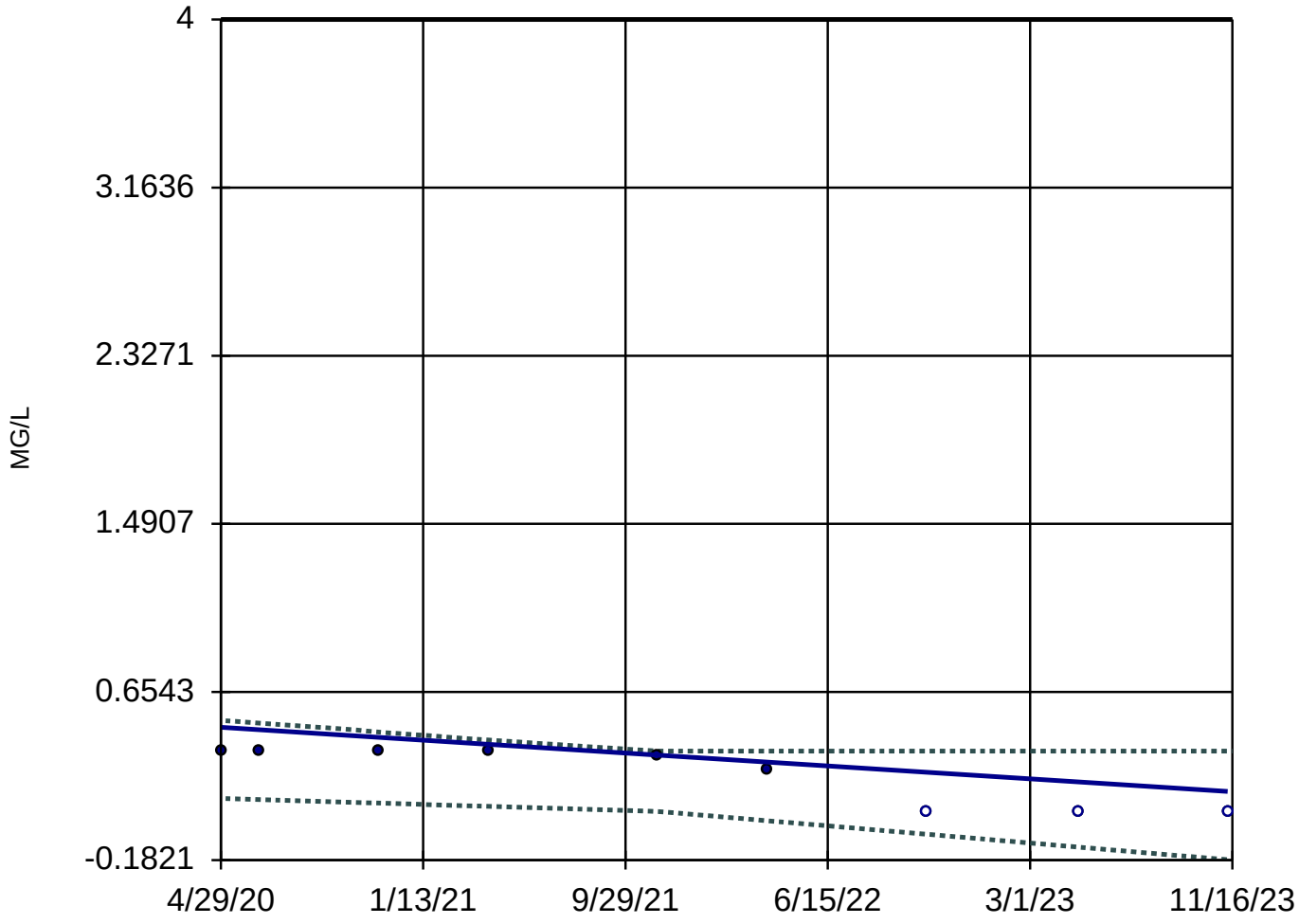
Constituent: FLUORIDE, TOTAL Analysis Run 3/14/2024 8:40 AM View: Corrective Action Stats

Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG
Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

S-TP-6S



n = 9

Slope = -0.09035 units per year.

Mann-Kendall statistic = -27
critical = -23

Decreasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (4).

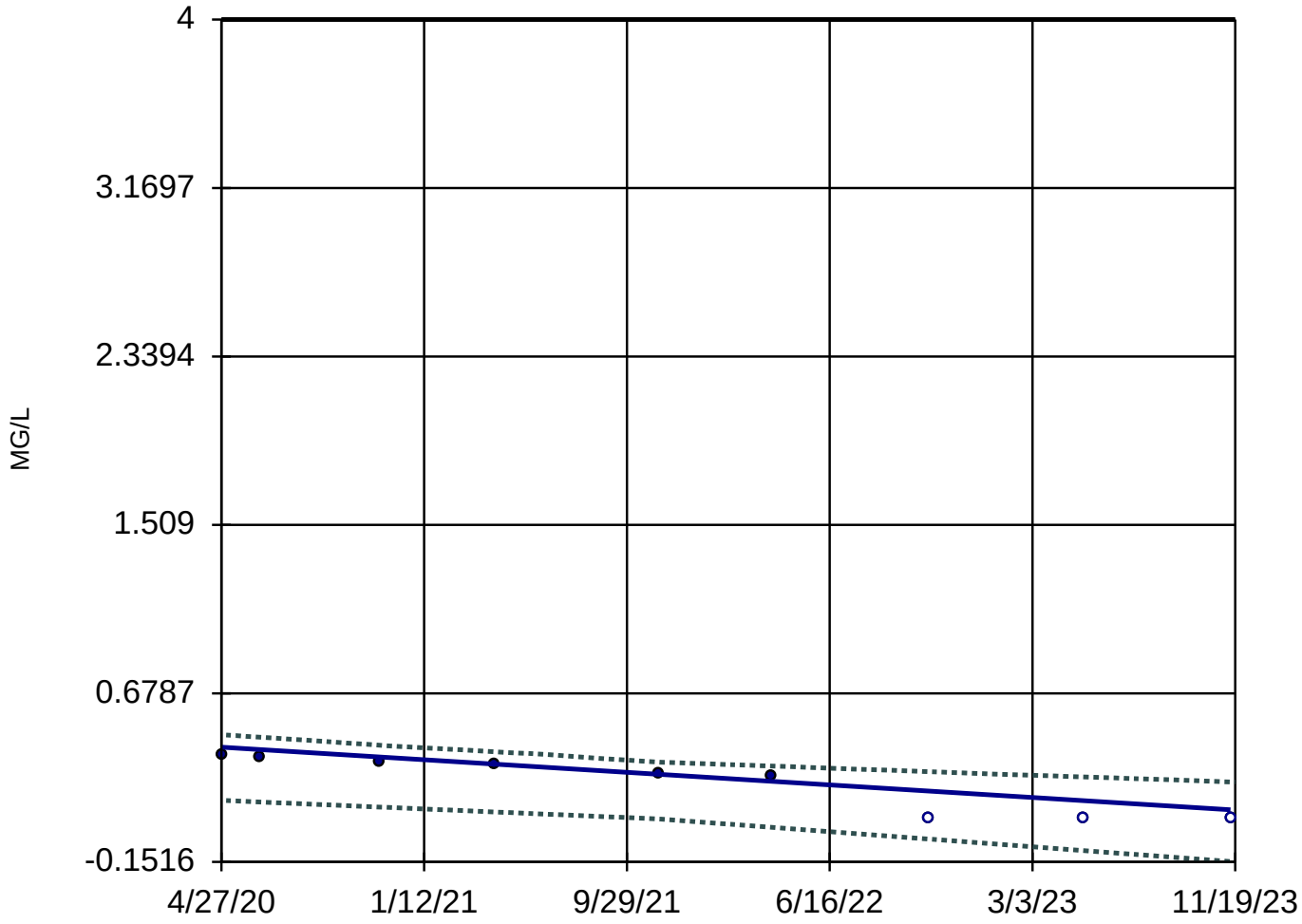
Constituent: FLUORIDE, TOTAL Analysis Run 3/14/2024 8:40 AM View: Corrective Action Stats

Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG
Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

S-TP-8D



n = 9

Slope = -0.08714 units per year.

Mann-Kendall statistic = -33
critical = -23

Decreasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (4).

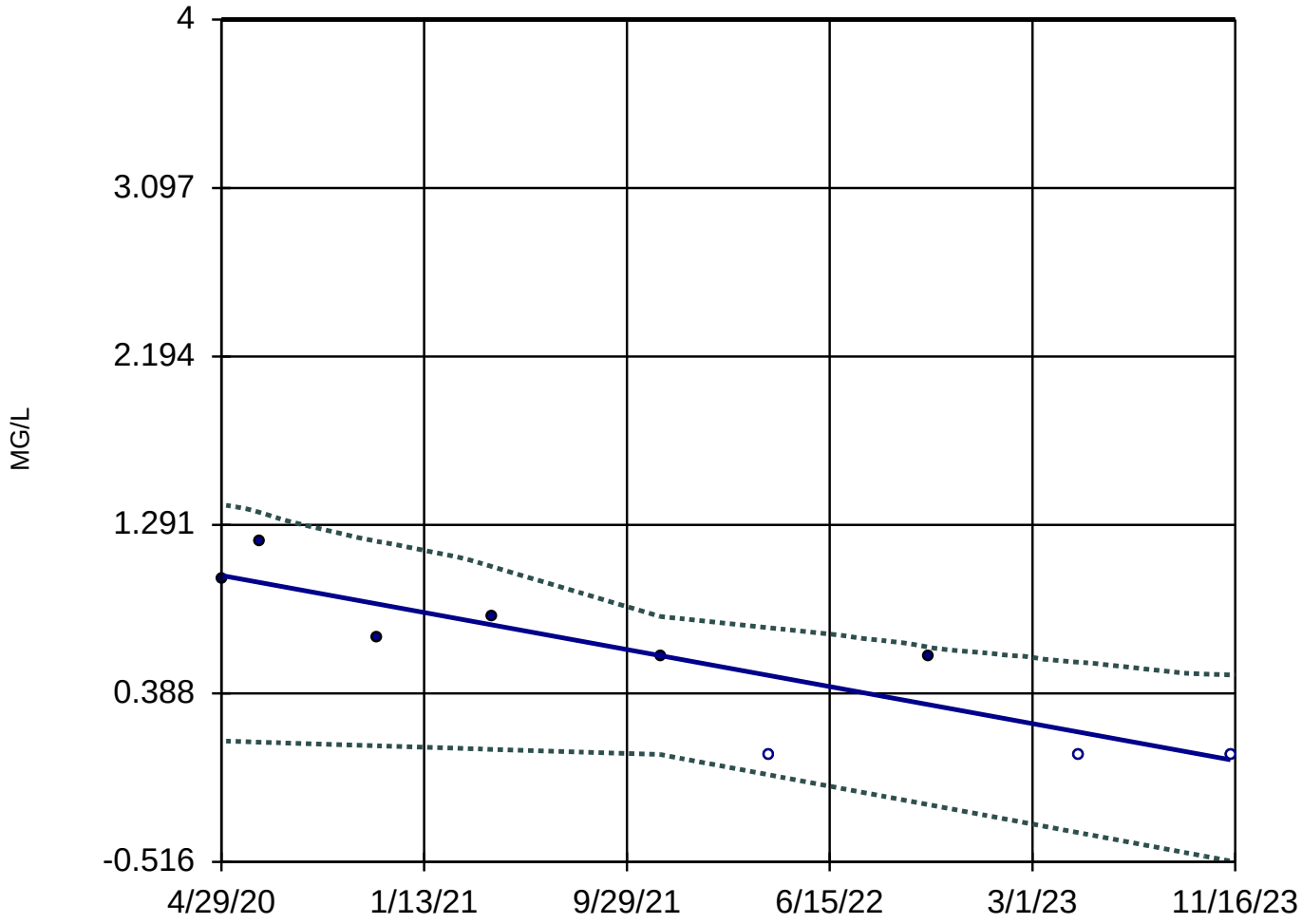
Constituent: FLUORIDE, TOTAL Analysis Run 3/14/2024 8:40 AM View: Corrective Action Stats

Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG
Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

S-PZ-1S



n = 9

Slope = -0.2795 units per year.

Mann-Kendall statistic = -25
critical = -23

Decreasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (4).

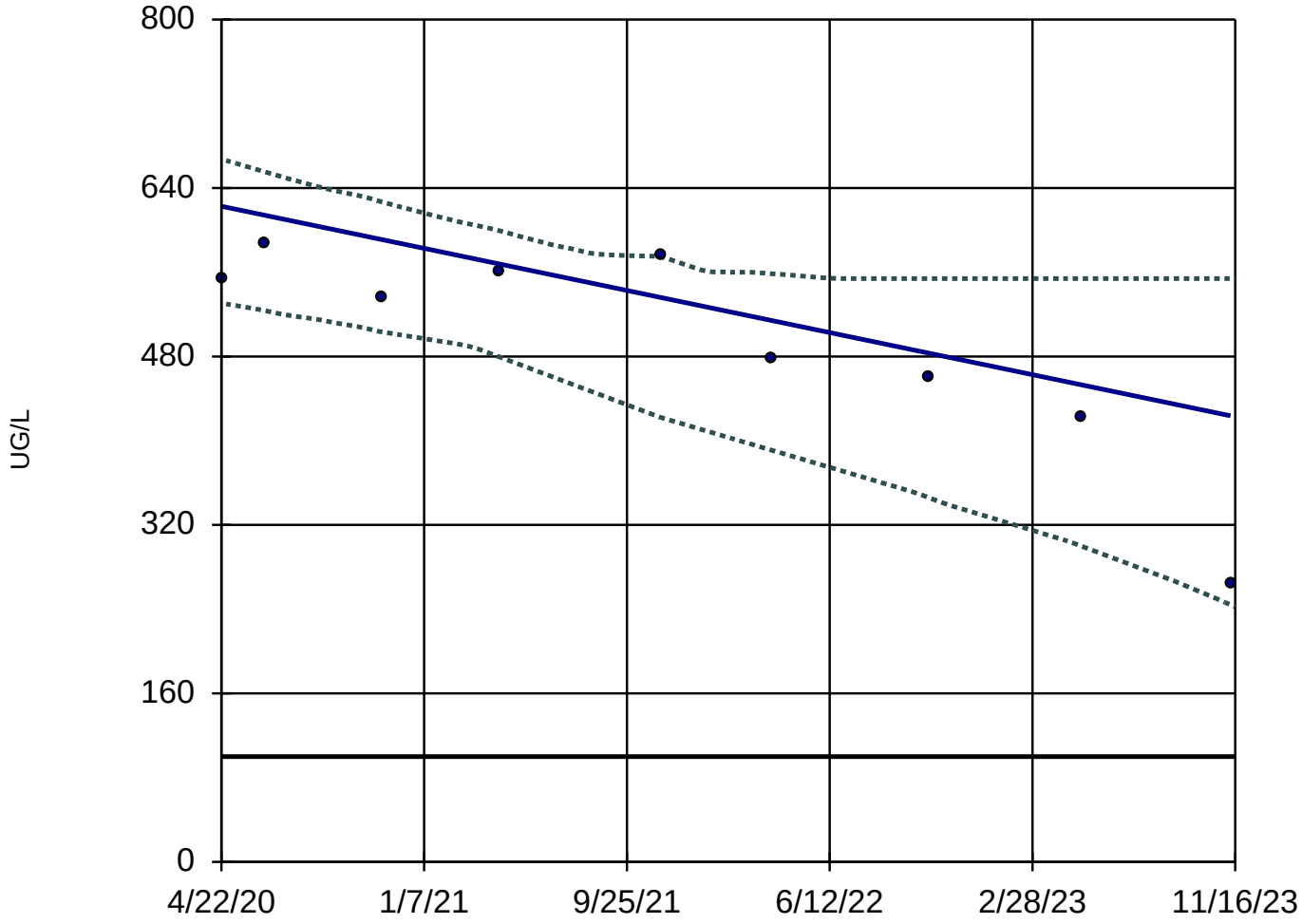
Constituent: FLUORIDE, TOTAL Analysis Run 3/14/2024 8:40 AM View: Corrective Action Stats

Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG

Sen's Slope and 95% Confidence Band

S-AM-1D



n = 9

Slope = -55.99 units per year.

Mann-Kendall statistic = -24
critical = -23

Decreasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is above GWPS (100).

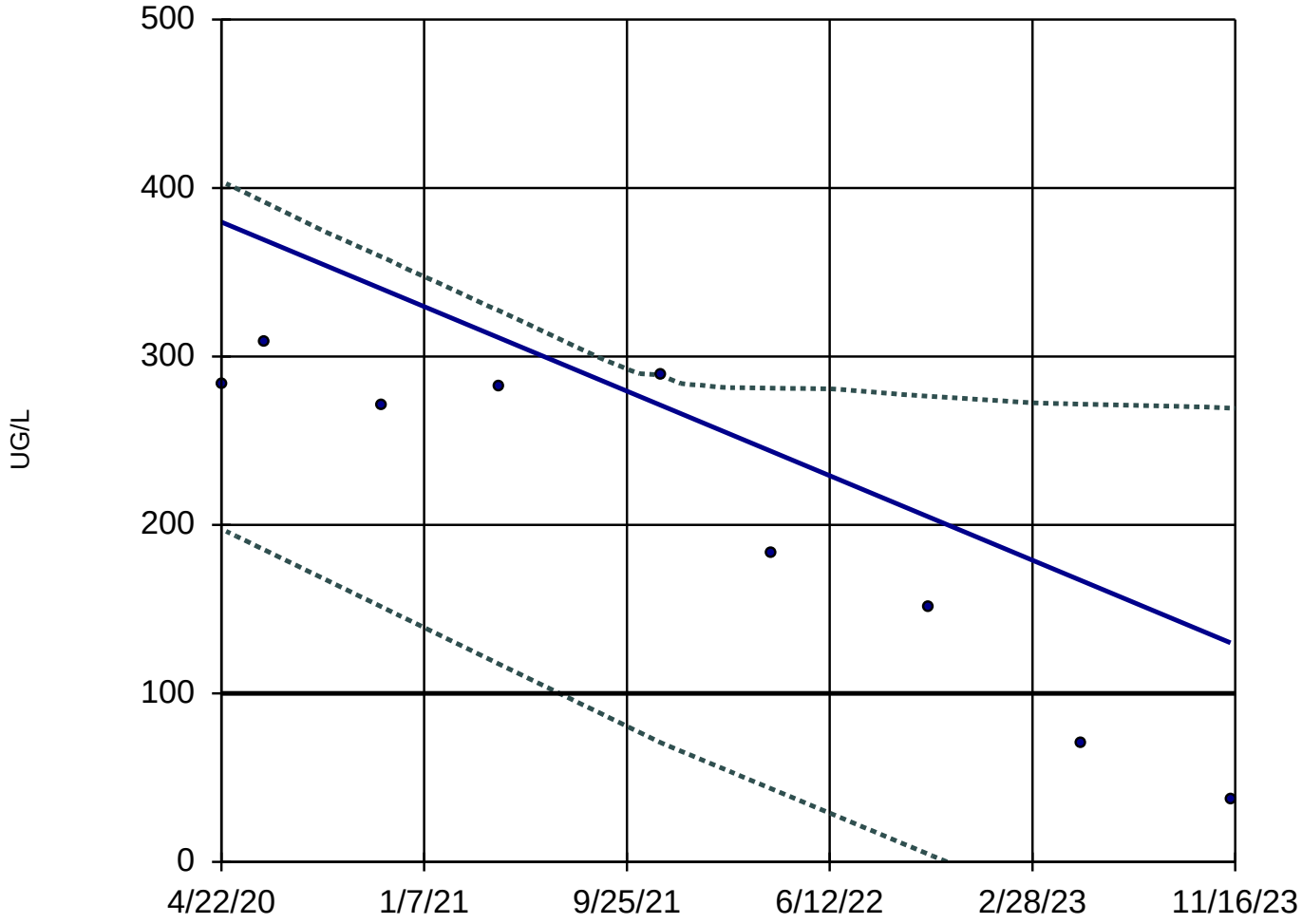
Constituent: MOLYBDENUM, TOTAL Analysis Run 3/12/2024 5:53 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG

Sen's Slope and 95% Confidence Band

S-AM-1S



n = 9

Slope = -70.27 units per year.

Mann-Kendall statistic = -26
critical = -23

Decreasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band intersects GWPS (100) on 07/13/21.

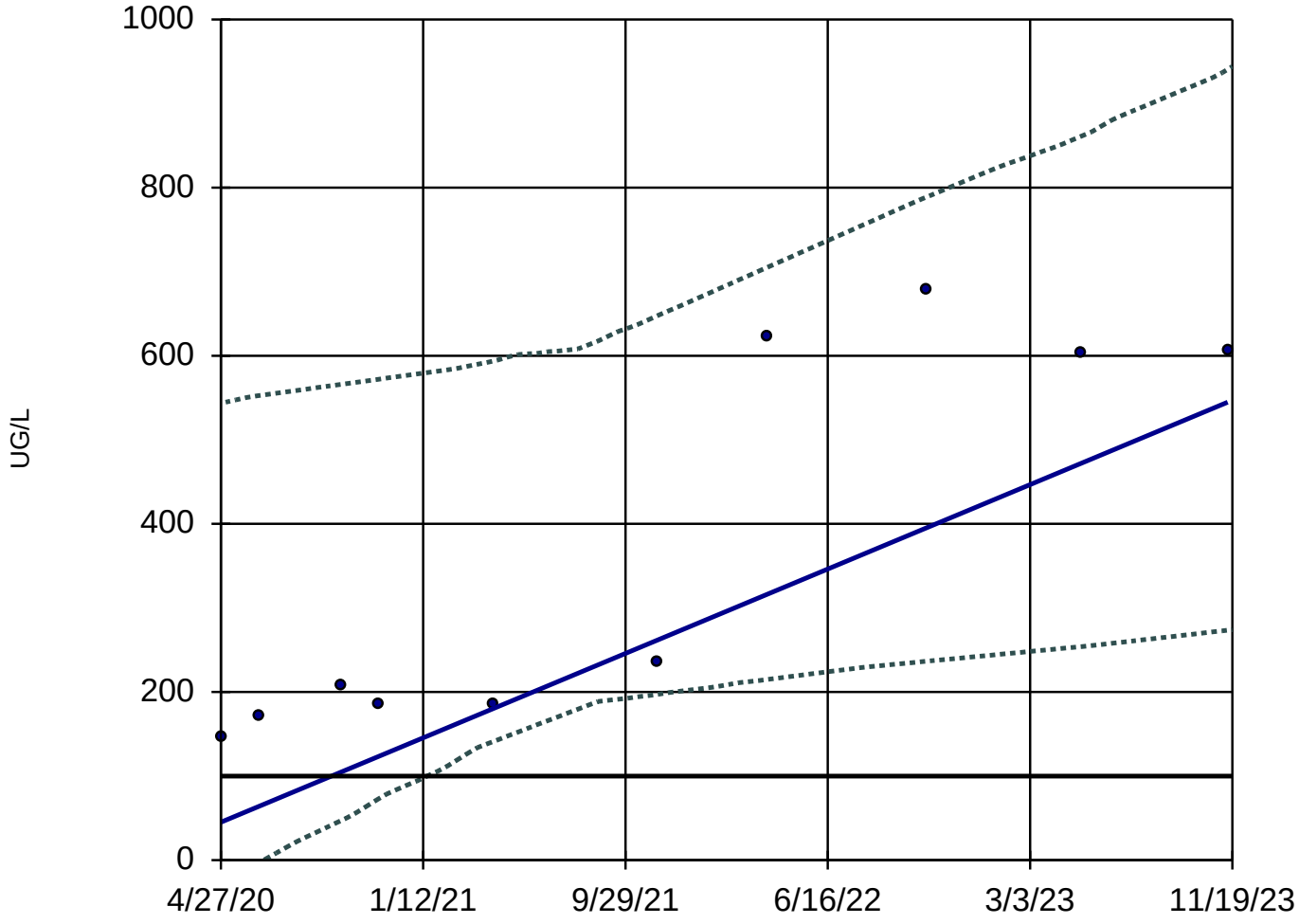
Constituent: MOLYBDENUM, TOTAL Analysis Run 3/12/2024 5:55 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG

Sen's Slope and 95% Confidence Band

S-TP-5D



n = 10

Slope = 140.8 units per year.

Mann-Kendall statistic = 32
critical = 27

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band intersects GWPS (100) on 01/30/21.

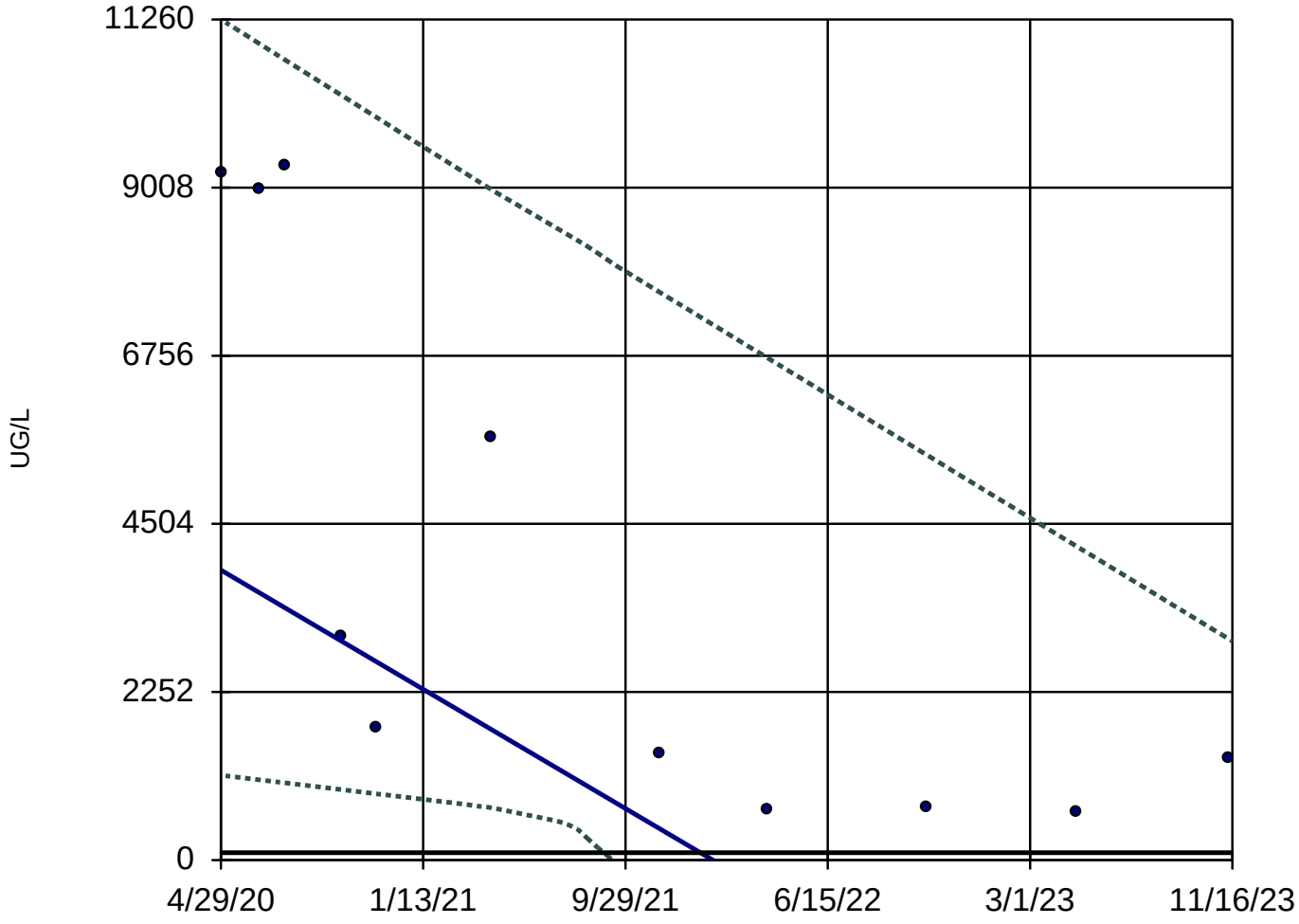
Constituent: MOLYBDENUM, TOTAL Analysis Run 3/12/2024 5:56 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG

Sen's Slope and 95% Confidence Band

S-PZ-1S



n = 11

Slope = -2249
units per year.

Mann-Kendall
statistic = -39
critical = -31

Decreasing trend
significant at 98%
confidence level
(α = 0.01 per
tail).

Confidence band intersects
GWPS (100) on 09/07/21.

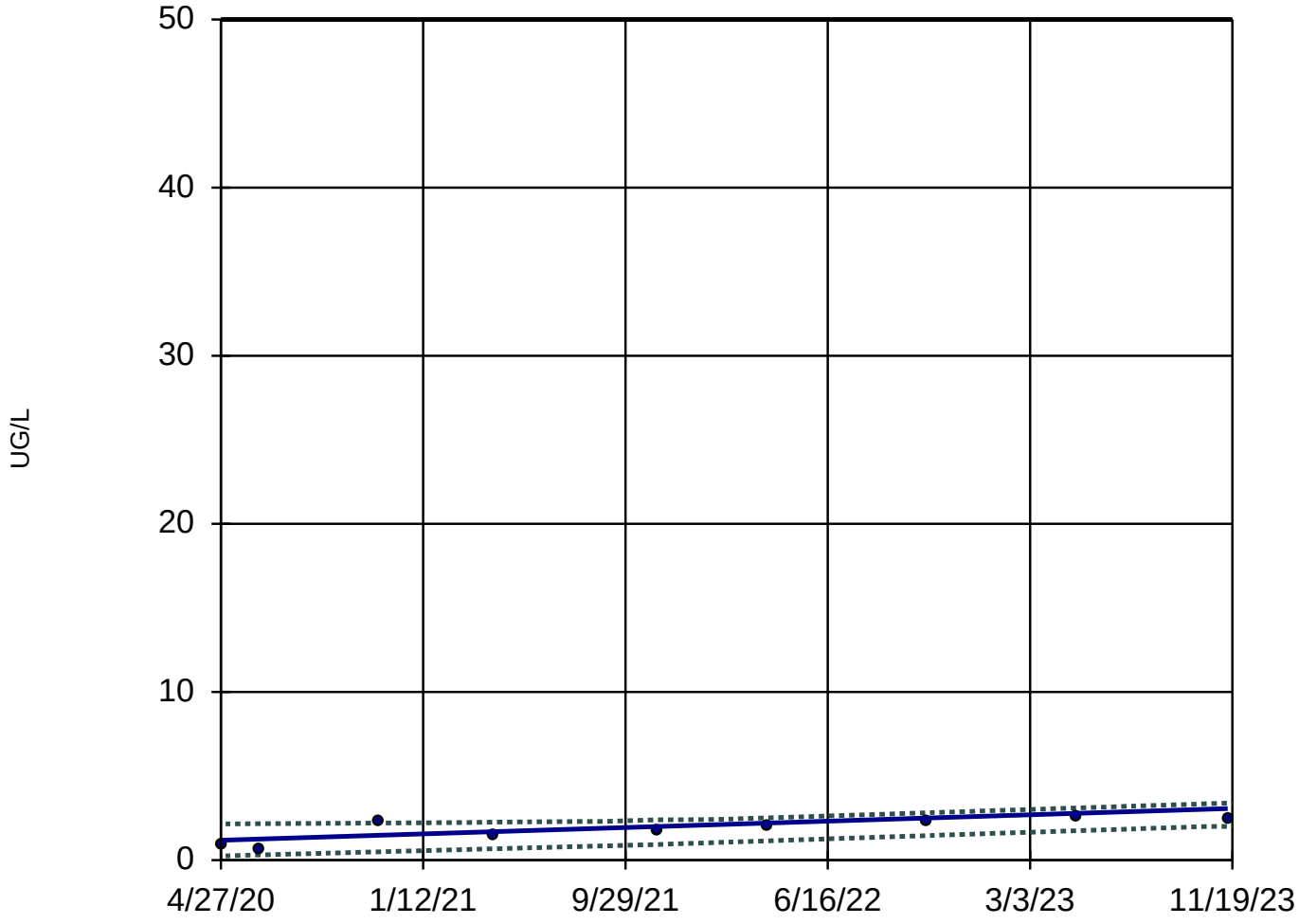
Constituent: MOLYBDENUM, TOTAL Analysis Run 3/14/2024 8:40 AM View: Corrective Action Stats

Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG

Sen's Slope and 95% Confidence Band

S-UG-3



n = 9

Slope = 0.531 units per year.

Mann-Kendall statistic = 25
critical = 23

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (50).

Constituent: SELENIUM, TOTAL Analysis Run 3/14/2024 8:40 AM View: Corrective Action Stats

Sioux E.C. Client: Ameren Data: SEC DATA

Trend Test

Sioux E.C. Client: Ameren Data: SEC DATA Printed 3/14/2024, 8:41 AM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
ARSENIC, TOTAL (UG/L)	S-LMW-1S	0	0	23	No	9	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	S-LMW-2S	0.01572	6	20	No	8	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	S-LMW-4S	0.02198	11	23	No	9	11.11	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	S-LMW-5S	0.006661	5	23	No	9	11.11	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	S-LMW-6S	0.03225	12	23	No	9	11.11	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	S-UG-3	0.009237	3	23	No	9	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	**S-AM-1D**	**-0.01451**	**-27**	**-23**	**Yes**	**9**	**0**	**n/a**	**n/a**	**0.02**	**NP**
ARSENIC, TOTAL (UG/L)	S-AM-1S	-0.033	-6	-23	No	9	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	**S-TP-2D**	**0.03614**	**25**	**23**	**Yes**	**9**	**0**	**n/a**	**n/a**	**0.02**	**NP**
ARSENIC, TOTAL (UG/L)	S-TP-3D	0.0102	11	23	No	9	11.11	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	**S-TP-4D**	**0.2103**	**32**	**23**	**Yes**	**9**	**0**	**n/a**	**n/a**	**0.02**	**NP**
ARSENIC, TOTAL (UG/L)	S-TP-5D	0.02334	16	23	No	9	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	S-TP-6D	0.00349	3	23	No	9	22.22	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	**S-TP-6S**	**0.05657**	**30**	**23**	**Yes**	**9**	**0**	**n/a**	**n/a**	**0.02**	**NP**
ARSENIC, TOTAL (UG/L)	S-TP-8D	-0.06545	-15	-23	No	9	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	S-PZ-9D	0.04804	10	23	No	9	11.11	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	S-PZ-1S	-0.06938	-21	-23	No	9	11.11	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	S-LMW-1S	9.048	11	23	No	9	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	S-LMW-2S	-0.4452	-3	-23	No	9	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	S-LMW-4S	6.652	12	23	No	9	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	S-LMW-5S	-2.22	-22	-23	No	9	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	S-LMW-6S	-3.107	-22	-23	No	9	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	S-UG-3	-3.065	-5	-23	No	9	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	S-AM-1D	-8.792	-11	-23	No	9	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	S-AM-1S	3.925	8	23	No	9	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	S-TP-2D	-0.5457	-10	-23	No	9	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	S-TP-3D	1.254	5	23	No	9	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	S-TP-4D	-8.451	-8	-23	No	9	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	S-TP-5D	5.393	10	23	No	9	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	S-TP-6D	-2.059	-6	-23	No	9	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	S-TP-6S	-1.417	-3	-23	No	9	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	S-TP-8D	13.74	16	23	No	9	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	S-PZ-9D	-5.244	-18	-23	No	9	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	**S-PZ-1S**	**-27.33**	**-26**	**-23**	**Yes**	**9**	**0**	**n/a**	**n/a**	**0.02**	**NP**
CADMIUM, TOTAL (UG/L)	S-LMW-1S	0.008898	8	23	No	9	22.22	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	S-LMW-2S	0.055	11	23	No	9	11.11	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	S-LMW-4S	0.03897	10	23	No	9	44.44	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	S-LMW-5S	-0.05789	-8	-23	No	9	0	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	S-LMW-6S	-0.0661	-8	-23	No	9	0	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	S-UG-3	0.004065	2	23	No	9	0	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	S-AM-1D	0.0196	3	23	No	9	22.22	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	S-AM-1S	-0.03063	-16	-23	No	9	11.11	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	S-TP-2D	-0.00...	-18	-23	No	9	100	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	S-TP-3D	-0.00...	-18	-23	No	9	100	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	S-TP-4D	-0.00...	-18	-23	No	9	100	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	S-TP-5D	0.05706	16	23	No	9	33.33	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	S-TP-6D	-0.00...	-11	-20	No	8	100	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	S-TP-6S	-0.00...	-3	-23	No	9	44.44	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	S-TP-8D	-0.00...	-18	-23	No	9	100	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	S-PZ-9D	-0.00...	-18	-23	No	9	100	n/a	n/a	0.02	NP

Trend Test

Sioux E.C. Client: Ameren Data: SEC DATA Printed 3/14/2024, 8:41 AM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
CADMIUM, TOTAL (UG/L)	S-PZ-1S	-0.05919	-7	-20	No	8	12.5	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	S-LMW-1S	0.1215	5	23	No	9	55.56	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	**S-LMW-2S**	**0.8208**	**26**	**23**	**Yes**	**9**	**22.22**	**n/a**	**n/a**	**0.02**	**NP**
COBALT, TOTAL (UG/L)	S-LMW-4S	-0.04331	-15	-23	No	9	100	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	S-LMW-5S	0.1322	8	23	No	9	66.67	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	S-LMW-6S	-0.7986	-18	-23	No	9	0	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	S-UG-3	1.414	20	23	No	9	22.22	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	S-AM-1D	-0.04349	-15	-23	No	9	100	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	S-AM-1S	0.7517	22	23	No	9	22.22	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	S-TP-2D	-0.02699	-6	-23	No	9	88.89	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	S-TP-3D	-0.04345	-8	-20	No	8	87.5	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	S-TP-4D	-0.04336	-8	-20	No	8	87.5	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	S-TP-5D	-0.02134	-4	-20	No	8	87.5	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	S-TP-6D	0	-1	-23	No	9	88.89	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	S-TP-6S	-0.04697	-11	-20	No	8	100	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	S-TP-8D	0	-2	-23	No	9	77.78	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	S-PZ-9D	-0.04344	-15	-23	No	9	100	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	S-PZ-1S	-0.0433	-15	-23	No	9	100	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	**S-LMW-1S**	**-0.125**	**-31**	**-27**	**Yes**	**10**	**30**	**n/a**	**n/a**	**0.02**	**NP**
FLUORIDE, TOTAL (MG/L)	S-LMW-2S	-0.1071	-12	-27	No	10	60	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	S-LMW-4S	-0.05963	-21	-23	No	9	44.44	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	S-LMW-5S	-0.09598	-22	-39	No	13	23.08	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	S-LMW-6S	-0.04599	-12	-27	No	10	50	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	**S-UG-3**	**-0.09301**	**-29**	**-27**	**Yes**	**10**	**30**	**n/a**	**n/a**	**0.02**	**NP**
FLUORIDE, TOTAL (MG/L)	S-AM-1D	-0.03182	-9	-23	No	9	11.11	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	S-AM-1S	-0.0629	-12	-23	No	9	11.11	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	S-TP-2D	-0.05214	-16	-23	No	9	55.56	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	**S-TP-3D**	**-0.06633**	**-24**	**-23**	**Yes**	**9**	**22.22**	**n/a**	**n/a**	**0.02**	**NP**
FLUORIDE, TOTAL (MG/L)	S-TP-4D	-0.07031	-23	-23	No	9	22.22	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	**S-TP-5D**	**-0.1154**	**-30**	**-23**	**Yes**	**9**	**22.22**	**n/a**	**n/a**	**0.02**	**NP**
FLUORIDE, TOTAL (MG/L)	**S-TP-6D**	**-0.08696**	**-29**	**-23**	**Yes**	**9**	**33.33**	**n/a**	**n/a**	**0.02**	**NP**
FLUORIDE, TOTAL (MG/L)	**S-TP-6S**	**-0.09035**	**-27**	**-23**	**Yes**	**9**	**33.33**	**n/a**	**n/a**	**0.02**	**NP**
FLUORIDE, TOTAL (MG/L)	**S-TP-8D**	**-0.08714**	**-33**	**-23**	**Yes**	**9**	**33.33**	**n/a**	**n/a**	**0.02**	**NP**
FLUORIDE, TOTAL (MG/L)	S-PZ-9D	-0.08233	-13	-23	No	9	55.56	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	**S-PZ-1S**	**-0.2795**	**-25**	**-23**	**Yes**	**9**	**33.33**	**n/a**	**n/a**	**0.02**	**NP**
LITHIUM, TOTAL (UG/L)	S-LMW-1S	1.027	6	23	No	9	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-LMW-2S	0.06784	5	23	No	9	11.11	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-LMW-4S	2.32	14	23	No	9	11.11	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-LMW-5S	0.03867	1	17	No	7	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-LMW-6S	0.4226	7	23	No	9	11.11	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-UG-3	0.4588	2	23	No	9	11.11	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-AM-1D	-1.121	-20	-23	No	9	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-AM-1S	-2.214	-20	-23	No	9	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-TP-2D	0.9875	4	23	No	9	11.11	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-TP-3D	1.335	20	23	No	9	11.11	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-TP-4D	-0.2165	-6	-23	No	9	11.11	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-TP-5D	2.726	22	23	No	9	11.11	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-TP-6D	0.572	2	23	No	9	11.11	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-TP-6S	-1.083	-8	-23	No	9	11.11	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-TP-8D	0.5048	11	20	No	8	0	n/a	n/a	0.02	NP

Trend Test

Sioux E.C. Client: Ameren Data: SEC DATA Printed 3/14/2024, 8:41 AM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
LITHIUM, TOTAL (UG/L)	S-PZ-9D	-0.06966	0	23	No	9	11.11	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-PZ-1S	0.5805	12	17	No	7	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	S-LMW-1S	-19.28	-20	-23	No	9	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	S-LMW-2S	-120.5	-14	-23	No	9	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	S-LMW-4S	0	0	17	No	7	42.86	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	S-LMW-5S	-419.8	-22	-23	No	9	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	S-LMW-6S	0.2091	12	20	No	8	62.5	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	S-UG-3	0.3088	9	17	No	7	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	**S-AM-1D**	**-55.99**	**-24**	**-23**	**Yes**	**9**	**0**	**n/a**	**n/a**	**0.02**	**NP**
MOLYBDENUM, TOTAL (UG/L)	**S-AM-1S**	**-70.27**	**-26**	**-23**	**Yes**	**9**	**0**	**n/a**	**n/a**	**0.02**	**NP**
MOLYBDENUM, TOTAL (UG/L)	S-TP-2D	-0.1028	-5	-27	No	10	80	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	S-TP-3D	0.1445	20	27	No	10	60	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	S-TP-4D	0.1315	16	27	No	10	80	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	**S-TP-5D**	**140.8**	**32**	**27**	**Yes**	**10**	**0**	**n/a**	**n/a**	**0.02**	**NP**
MOLYBDENUM, TOTAL (UG/L)	S-TP-6D	0	6	27	No	10	90	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	S-TP-6S	0.2626	9	20	No	8	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	S-TP-8D	0.3087	20	23	No	9	55.56	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	S-PZ-9D	1.694	21	31	No	11	9.091	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	**S-PZ-1S**	**-2249**	**-39**	**-31**	**Yes**	**11**	**0**	**n/a**	**n/a**	**0.02**	**NP**
RADIUM [226 + 228] (PCI/L)	S-LMW-1S	-0.00...	-4	-23	No	9	100	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	S-LMW-2S	-0.07781	-8	-23	No	9	77.78	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	S-LMW-4S	-0.02763	-4	-23	No	9	77.78	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	S-LMW-5S	-0.07269	-16	-23	No	9	88.89	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	S-LMW-6S	0.009275	2	23	No	9	100	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	S-UG-3	0.008529	4	23	No	9	100	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	S-AM-1D	0.08868	10	23	No	9	100	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	S-AM-1S	0.04811	10	23	No	9	100	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	S-TP-2D	-0.113	-8	-23	No	9	88.89	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	S-TP-3D	0.05679	8	23	No	9	77.78	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	S-TP-4D	-0.03648	-4	-23	No	9	44.44	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	S-TP-5D	0.02738	4	23	No	9	88.89	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	S-TP-6D	-0.05236	-4	-23	No	9	55.56	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	S-TP-6S	0.03173	6	23	No	9	100	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	S-TP-8D	0.06009	10	23	No	9	77.78	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	S-PZ-9D	0.008873	0	20	No	8	100	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	S-PZ-1S	-0.00...	0	23	No	9	100	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-LMW-1S	-1.145	-12	-20	No	8	0	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-LMW-2S	0	0	23	No	9	100	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-LMW-4S	-0.00...	0	23	No	9	11.11	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-LMW-5S	0	0	23	No	9	88.89	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-LMW-6S	0	0	23	No	9	100	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	**S-UG-3**	**0.531**	**25**	**23**	**Yes**	**9**	**0**	**n/a**	**n/a**	**0.02**	**NP**
SELENIUM, TOTAL (UG/L)	S-AM-1D	0	0	23	No	9	100	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-AM-1S	0	0	23	No	9	100	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-TP-2D	0	0	23	No	9	100	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-TP-3D	0	0	23	No	9	100	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-TP-4D	0	0	23	No	9	100	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-TP-5D	0	0	23	No	9	100	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-TP-6D	0	0	23	No	9	100	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-TP-6S	-0.1764	-23	-23	No	9	11.11	n/a	n/a	0.02	NP

Trend Test

Sioux E.C. Client: Ameren Data: SEC DATA Printed 3/14/2024, 8:41 AM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
SELENIUM, TOTAL (UG/L)	S-TP-8D	0	0	23	No	9	88.89	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-PZ-9D	0	-2	-23	No	9	88.89	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-PZ-1S	0	0	23	No	9	100	n/a	n/a	0.02	NP

Appendix E

May 2024 Corrective Action Statistical Evaluation

Memorandum

September 24, 2024

To:	Bill Kutosky – Ameren Missouri	**Project Number:**	23009-24
CC:	Ameren Missouri - Susan Knowles, Craig Giesmann, Charlie Henderson		
From:	Rocksmith Geoengineering - Mark Haddock, P.E., Jeff Ingram, R.G., Grant Morey	**Email:**	jeff.ingram@rocksmithgeo.com
RE:	**Corrective Action Statistical Evaluation, SCPA Surface Impoundment, Sioux Energy Center, St. Charles County, Missouri**		

1.0 INTRODUCTION

This Technical Memorandum provides the results of the Corrective Action Monitoring statistical analyses from the May 2024 sampling event for the SCPA Surface Impoundment at the Sioux Energy Center (SEC) located in St. Charles County, Missouri. As outlined in the remedy selection report for the SCPA, Corrective Action at the SCPA consists of two phases, as follows:

1) Source control, stabilization, and containment of CCR by installation of a low-permeability geomembrane cap.
2) Once source control is achieved, monitor the natural attenuation (MNA) of groundwater concentrations to address limited and localized CCR-related impacts. Ongoing monitoring and modeling evaluations to document concentration trends following Corrective Action.

In addition to MNA as a Corrective Measure, Ameren has also initiated a supplemental corrective measure consisting of groundwater extraction, treatment, and re-injection using ex-situ treatment technologies with chemical precipitation and selective ion exchange. This treatment system became fully operational in February 2023 and began achieving target flow rates in September 2023. In July 2024, Haley & Aldrich produced a Supplemental Remedy Selection Report for the SEC, documenting that these corrective measures are effectively contributing to constituent mass reductions in groundwater near the SCPA. The supplemental corrective measures are ongoing.

Phase 1 of Corrective Action commenced on January 20, 2021, and was substantially completed on April 10, 2022 with the installation of a low permeability cover system. The SCPA unit was certified closed on October 14, 2022 and thus the SCPA has transitioned into the post-closure care requirements of the CCR rule effective October 2022 and Phase 2 of Corrective Action has begun. Included in this memorandum is a summary of constituents that are currently in exceedance of the groundwater protection standard (GWPS), a list of site-specific Groundwater Protection Standards (**Table 1**), and the Sanitas Technologies™ (Sanitas) statistical software output for each of the Appendix IV parameters (**Appendix A and Appendix B**).

The initial Corrective Action sampling event was completed in April 2020, and a total of 10 sampling events have been completed for the Corrective Action Program at the SCPA to-date. This analysis uses results collected since the beginning of Corrective Action monitoring (April 2020) for the determination of constituents exceeding the

GWPS. Data collected prior to this time was collected during active conditions of the SCPA, prior to the cessation of CCR disposal in the SCPA and are not representative of groundwater conditions since the initiation of closure.

Trend tests using the Sen's Slope/Mann-Kendall method require a minimum of eight independent results, as outlined in the USEPA Unified Guidance. Therefore, trend tests were completed for the following Appendix IV constituents: arsenic, barium, cadmium, cobalt, fluoride, lithium, molybdenum, radium 226 + 228, and selenium.

Several constituents were reported at concentrations below the Practical Quantitation Limit (PQL) during the spring 2020, 2021, 2022, 2023, and/or 2024 sampling events, including antimony, beryllium, chromium, lead, mercury, and thallium. When these constituents were not detected during the initial Corrective Action sampling event, they were not sampled/tested during the subsequent semi-annual sampling events in each calendar year. As a result, there are fewer results available, and Sen's Slope/Mann-Kendall analyses cannot yet be completed for these Appendix IV constituents.

2.0 STATISTICAL EVALUATION

The Appendix IV constituents were evaluated for exceedances above the GWPS using the methods and procedures outlined in the Corrective Action Groundwater Monitoring Plan's (CAGMP's) Statistical Analysis Plan (SAP). An outlier analysis was completed as the first step of the statistical evaluation. The outlier analysis was performed only on the results collected as a part of the Corrective Action Monitoring Program. In addition to outliers noted in previous SCPA Corrective Action evaluations, the following outliers were removed from the dataset prior to the calculation of confidence limits:

- Barium
    - S-LMW-4S at 179 micrograms per liter (µg/L) on 11/14/2023: result is statistically lower than other barium results at the same monitoring well. This low result is not consistent with previous or subsequent barium results at the well and is an outlier.
- Cadmium
    - S-LMW-2S at non-detect (<0.50 µg/L) on 11/12/2020: result is statistically lower than other cadmium results at the same monitoring well. This low result is not consistent with previous or subsequent cadmium results at the well and is an outlier.
- Cobalt
    - S-TP-2D at 1.4 J µg/L on 11/13/2023: result is statistically higher than other cobalt results at the same monitoring well. This high result is not consistent with previous or subsequent cobalt results at the well and is an outlier.
    - S-TP-4D at 1.4 J µg/L on 11/8/2021: result is statistically higher than other cobalt results at the same monitoring well. This high result is not consistent with previous or subsequent cobalt results at the well and is an outlier.
- Radium 226 + 228
    - S-LMW-4S at 2.419 picocuries per liter (pCi/L) and 1.660 J pCi/L on 11/12/2020 and 4/4/2022, respectively: results are statistically higher than other radium results at the same monitoring well.

These high results are not consistent with previous or subsequent radium results at the well and are outliers.

An analysis of the outliers removed to-date was completed and the following statistical outliers that were previously removed were added back into the dataset prior to the calculation of confidence limits:

- Lithium
    - S-PZ-1S at 21.6 µg/L on 4/29/2020: removed during the statistical evaluation for the April 2022 sampling event because the result was statistically higher than other lithium results at the same monitoring well. Based on subsequent sampling results, the high result was confirmed, and the result is no longer an outlier.
- Molybdenum
    - S-BMW-1S at non-detect (<20.0 µg/L) on 11/16/2020 and 11/8/2021: removed during the statistical evaluations for the October 2022 and April 2022 sampling events because the results were statistically higher than other molybdenum results at the same monitoring well. This was due to the high detection limits reported following data validation procedures. Based on subsequent sampling results, the high results were confirmed, and the results are no longer outliers.
    - S-BMW-1S at 5.3 J µg/L on 5/2/2023: removed during the statistical evaluation for the November 2023 sampling event because the result was statistically higher than other molybdenum results at the same monitoring well. Based on subsequent sampling results, the high result was confirmed, and the result is no longer an outlier.
    - S-BMW-3S at non-detect (<20.0 µg/L) on 11/16/2020 and 11/8/2021: removed during the statistical evaluations for the October 2022 and April 2022 sampling events because the results were statistically higher than other molybdenum results at the same monitoring well. This was due to the high detection limits reported following data validation procedures. Based on subsequent sampling results, the high results were confirmed, and the results are no longer outliers.
    - S-LMW-6S at 12.1 J µg/L on 5/9/2023: removed during the statistical evaluation for the November 2023 sampling event because the result was statistically higher than other molybdenum results at the same monitoring well. Based on subsequent sampling results, the high result was confirmed, and the result is no longer an outlier.
    - S-TP-6S at non-detect (<20.0 µg/L) on 11/16/2020 and 6.9 J on 11/10/2021: removed during the statistical evaluation for the October 2022 and April 2022 sampling events because the results were statistically higher than other molybdenum results at the same monitoring well. Based on subsequent sampling results, the high results were confirmed, and the results are no longer outliers.
    - S-TP-8D at 11.5 J on 5/9/2023: removed during the statistical evaluation for the November 2023 sampling event because the result was statistically higher than other molybdenum results at the

same monitoring well. Based on subsequent sampling results, the high result was confirmed, and the result is no longer an outlier.

- S-UG-3 at non-detect (<20.0 µg/L) on 11/17/2020 and 11/9/2021: removed during the statistical evaluations for the October 2022 and April 2022 sampling events because the results were statistically higher than other molybdenum results at the same monitoring well. This was due to the high detection limits reported following data validation procedures. Based on subsequent sampling results, the high results were confirmed, and the results are no longer outliers.

Following the outlier analysis, the second step in the statistical analysis was to calculate confidence intervals and compare those to the site-specific GWPS (**Appendix A**). Confidence interval evaluation was supplemented with Sen's Slope/Mann-Kendall analyses on constituents that have eight independent sampling results at a given well, per the USEPA Unified Guidance (**Appendix B**). The Sen's Slope/Mann-Kendall analysis identifies well-analyte pairs that have statistically significant trends and calculates confidence bands that vary with time. The upper confidence band, in relation to the GWPS for a given constituent, is used to determine exceedances, as outlined in the CAGMP. As discussed previously, antimony, beryllium, chromium, lead, mercury, and thallium do not have the requisite quantity of results to perform Sen's Slope/Mann-Kendall analyses, so only confidence intervals were produced for those constituents.

Using these corrective action statistical methods, as of May 2024, the wells with constituents exceeding the GWPS are as follows:

- Cobalt at S-LMW-6S
- Lithium at S-LMW-5S and S-TP-2D
- Molybdenum at S-LMW-2S, S-LMW-5S, S-AM-1D, S-AM-1S, S-TP-5D, and S-PZ-1S

Lithium at S-TP-6S and molybdenum at S-LMW-1S are no longer exceedances as of this statistical evaluation, as the upper confidence limits for these constituents are now below their respective GWPS. All other cobalt, lithium, and molybdenum exceedances identified in the statistical evaluation for the November 2023 sampling event remain as of May 2024.

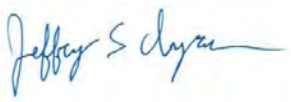
Variability in the initial groundwater sampling results during and directly after the closure of the SCPA is expected, especially at wells nearest the CCR unit, where closure grading and disturbance activities were greatest. The concentrations reported in these results following closure are expected to be variable but are expected to decrease over time as stabilization and natural attenuation occur and the groundwater treatment system continues to operate.

3.0 CLOSING

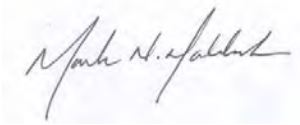
Rocksmith appreciates this opportunity to provide hydrogeological and engineering support services to Ameren. If you have any questions or comments regarding the information provided, please contact the undersigned.

Sincerely,

Rocksmith Geoengineering, LLC



Jeff Ingram, R.G.
Senior Geologist, Partner



Mark Haddock, P.E., R.G.
Principal Engineer, Senior Partner

Attachments

Tables

Table 1 – SCPA Groundwater Protection Standards

Appendices

Appendix A – Sanitas Confidence Interval Statistical Output

Appendix B – Sanitas Trending Confidence Bands Statistical Output

Tables

Table 1 - SCPA Groundwater Protection Standards
SCPA Surface Impoundment
Sioux Energy Center, St. Charles County, MO

Parameter	Units	MCL or Health Based GWPS	Site GWPS	Value to Return to Detection Monitoring[6]
Antimony	µg/L	6	6	DQR
Arsenic	µg/L	10	10	0.6556
Barium	µg/L	2000	2000	699
Beryllium	µg/L	4	4	DQR
Cadmium	µg/L	5	5	DQR
Chromium	µg/L	100	100	DQR
Cobalt	µg/L	6	6	DQR
Fluoride	mg/L	4	4	0.44
Lead	µg/L	15	15	DQR
Lithium	µg/L	40	40	27.91
Mercury	µg/L	2	2	DQR
Molybdenum	µg/L	100	100	DQR
Radium 226 + 228	pCi/L	5	5	2.537
Selenium	µg/L	50	50	DQR
Thallium	µg/L	2	2	DQR

Notes:
1. µg/L - micrograms per liter.
2. mg/L - milligrams per liter.
3. pCi/L - picocuries per liter.
4. MCL - Maximum Contaminant Level. MCLs from United States Environmental Protection Agency (USEPA) 2012 Edition of the Drinking Water Standards and Health Advisories. Updated January 9, 2023 at http://water.epa.gov/drink/contaminants/index.cfm.
5. Health Based Groundwater Protection Standards (GWPS) were adoped for Appendix IV parameters without an MCL (i.e. cobalt, lithium, molybdenum, and lead). Information available at https://www.epa.gov/coalash/coal-ash-rule.
6. Values were calculated using statistical methods outlined for Detection Monitoring and are used for returning to Detection Monitoring based on available data to date.
7. DQR - Double Quantification Rule. If all baseline data are less than the Practical Quantitation Limit (PQL), then the DQR will be used. More information on the DQR is provided in the Statistical Analysis Plan.
8. Site GWPS is either the MCL/Health Based GWPS or based on background levels (calculated as described in the Statistical Analysis Plan for Assessment Monitoring), whichever is higher.
9. GWPS and background values calculated using results through May 2023 from monitoring wells BMW-1D and BMW-3D.

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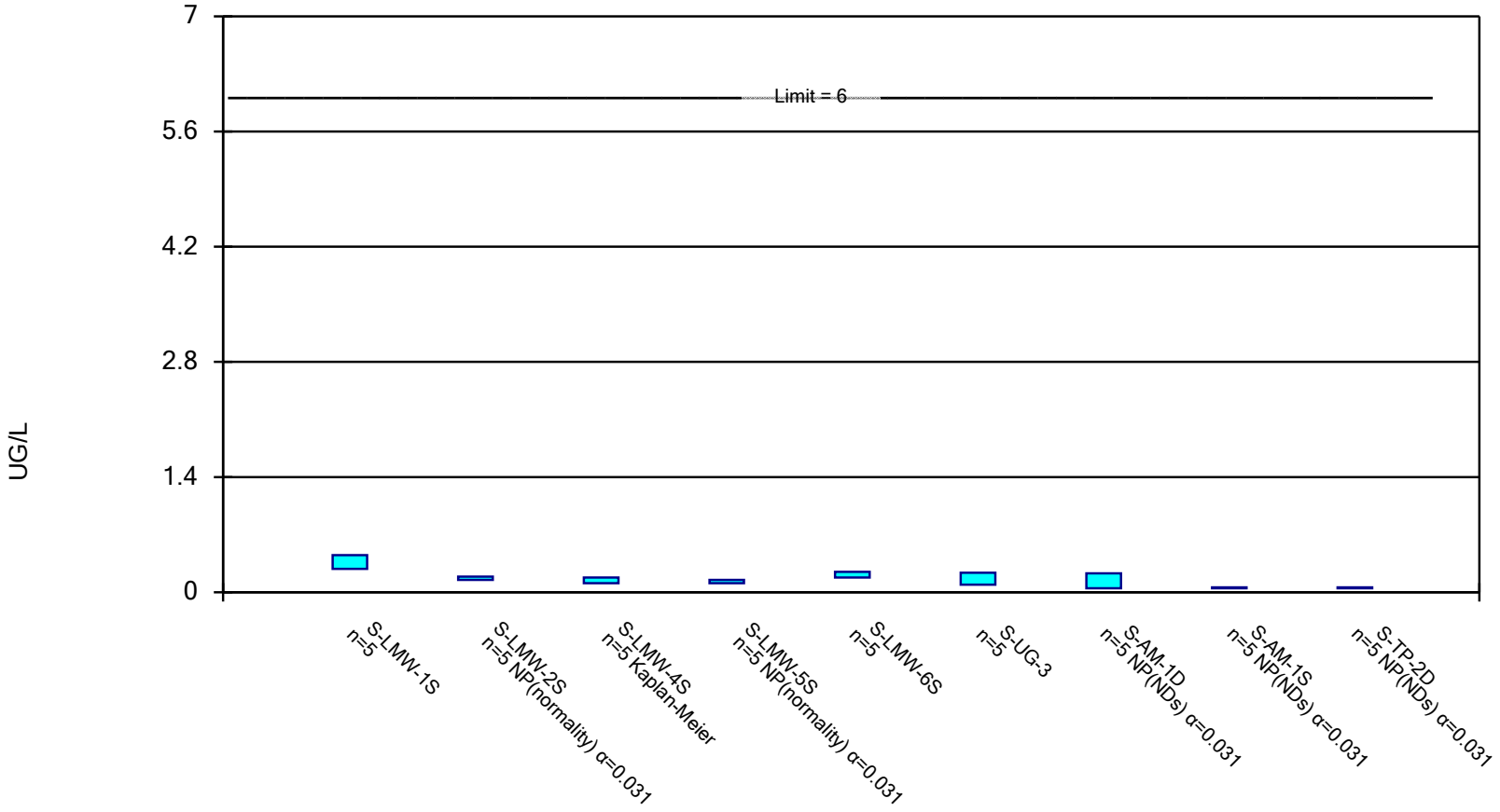
Prepared by: GTM
Checked by: JSI
Reviewed by: MNH

Appendix A
Sanitas Confidence Interval Statistical Output

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG

Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

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



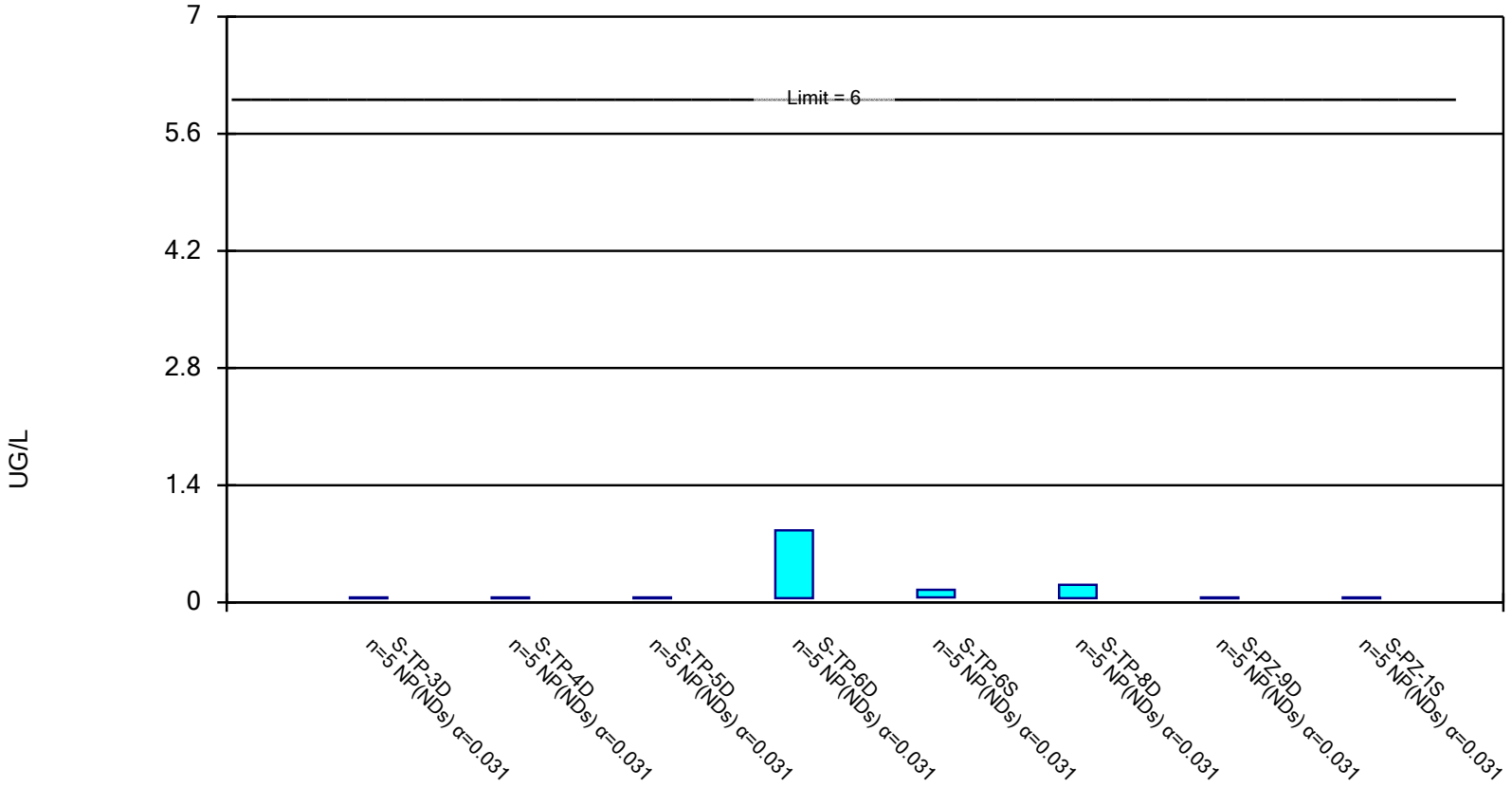
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Sioux E.C. Client: Ameren Data: SEC DATA

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Non-Parametric Confidence Interval, Corrective Action Mode

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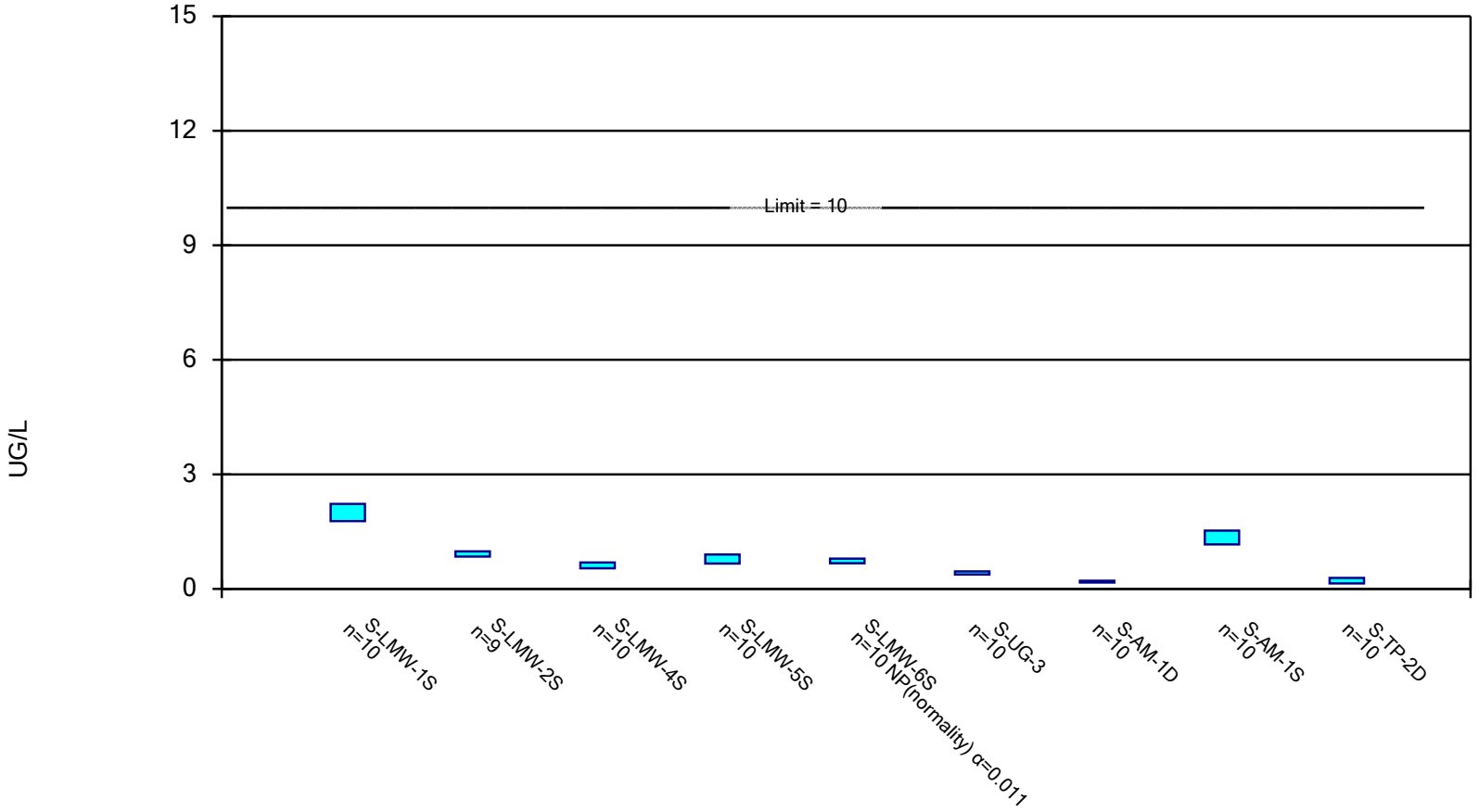
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Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

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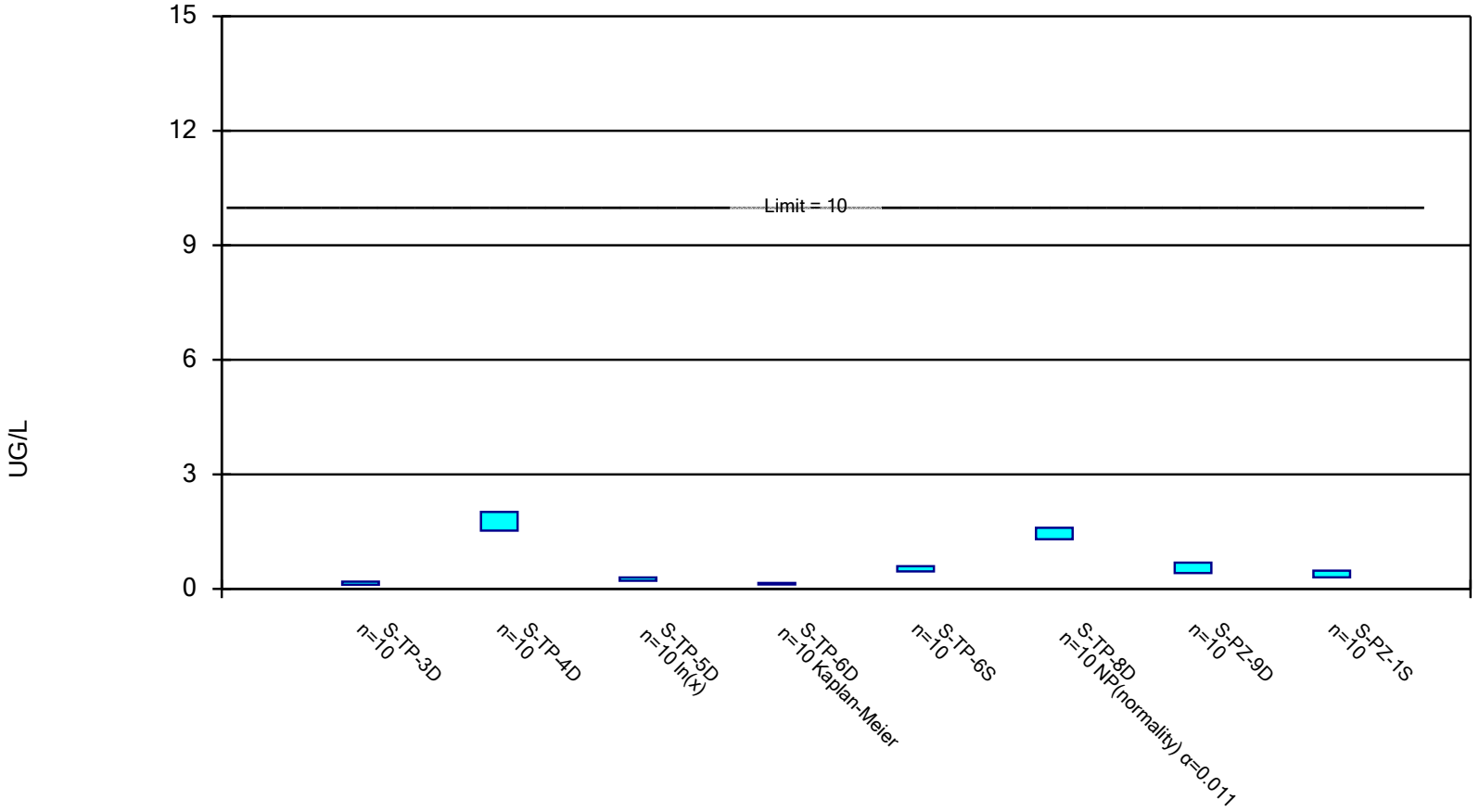
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Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

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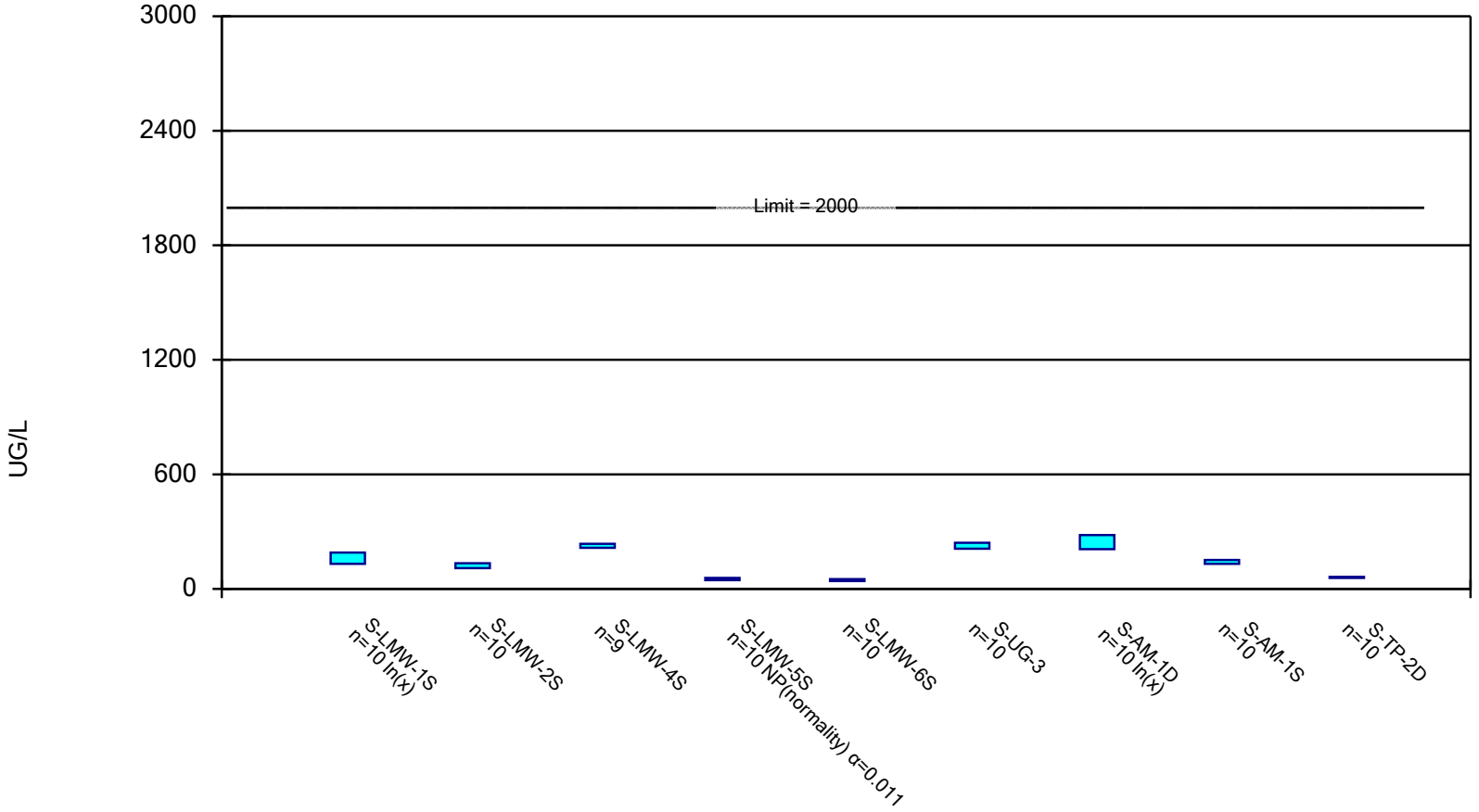
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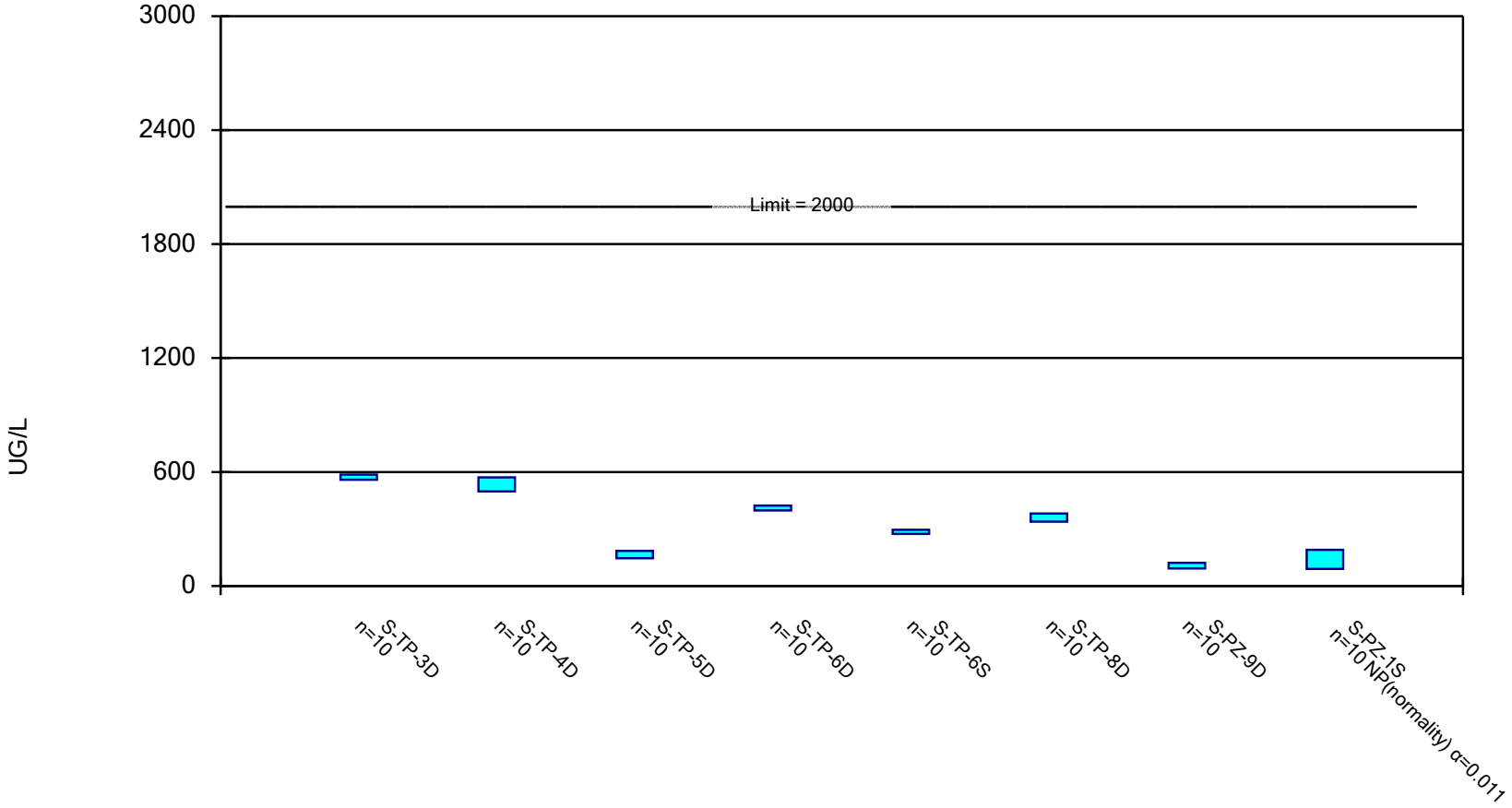
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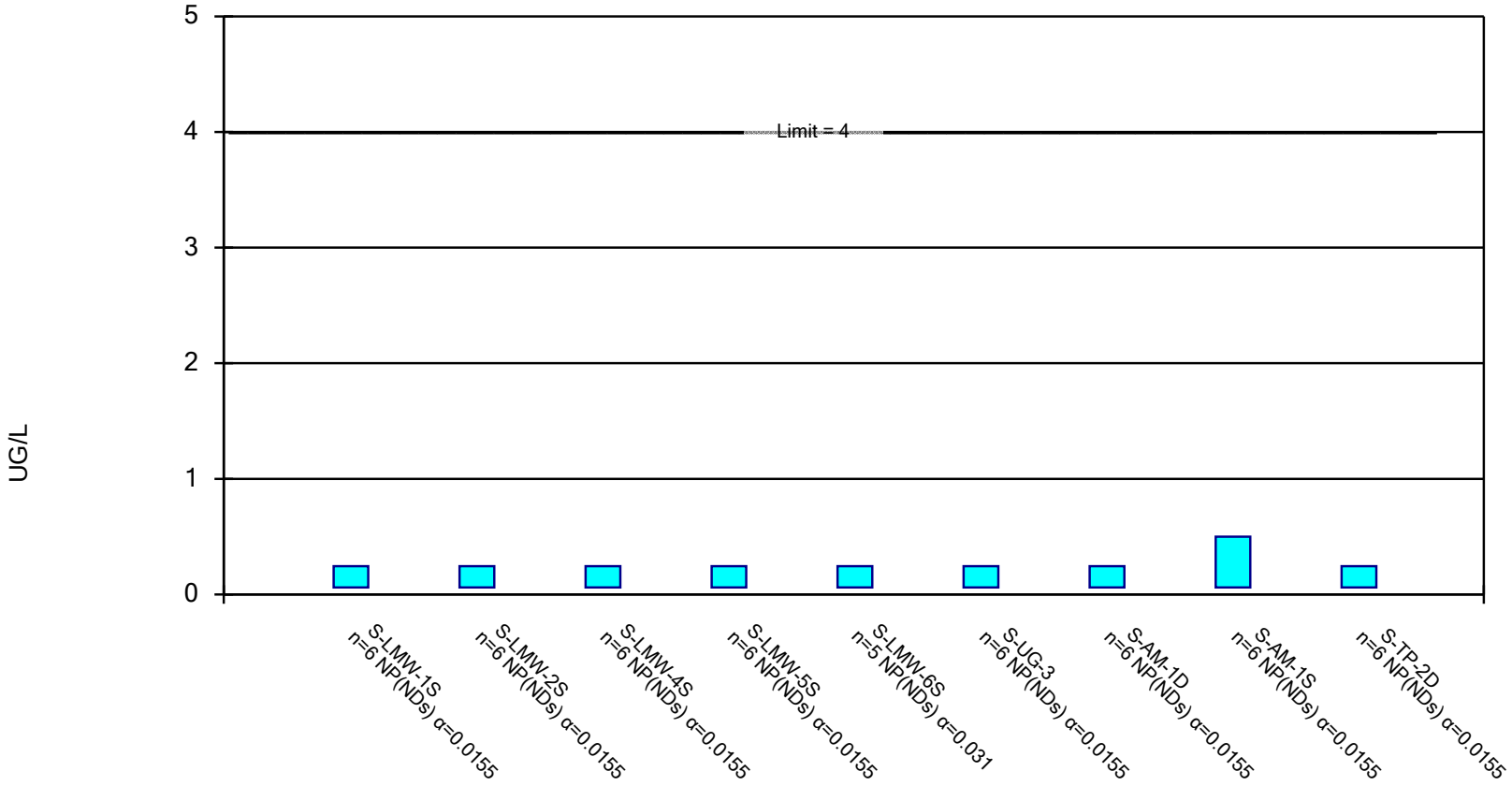
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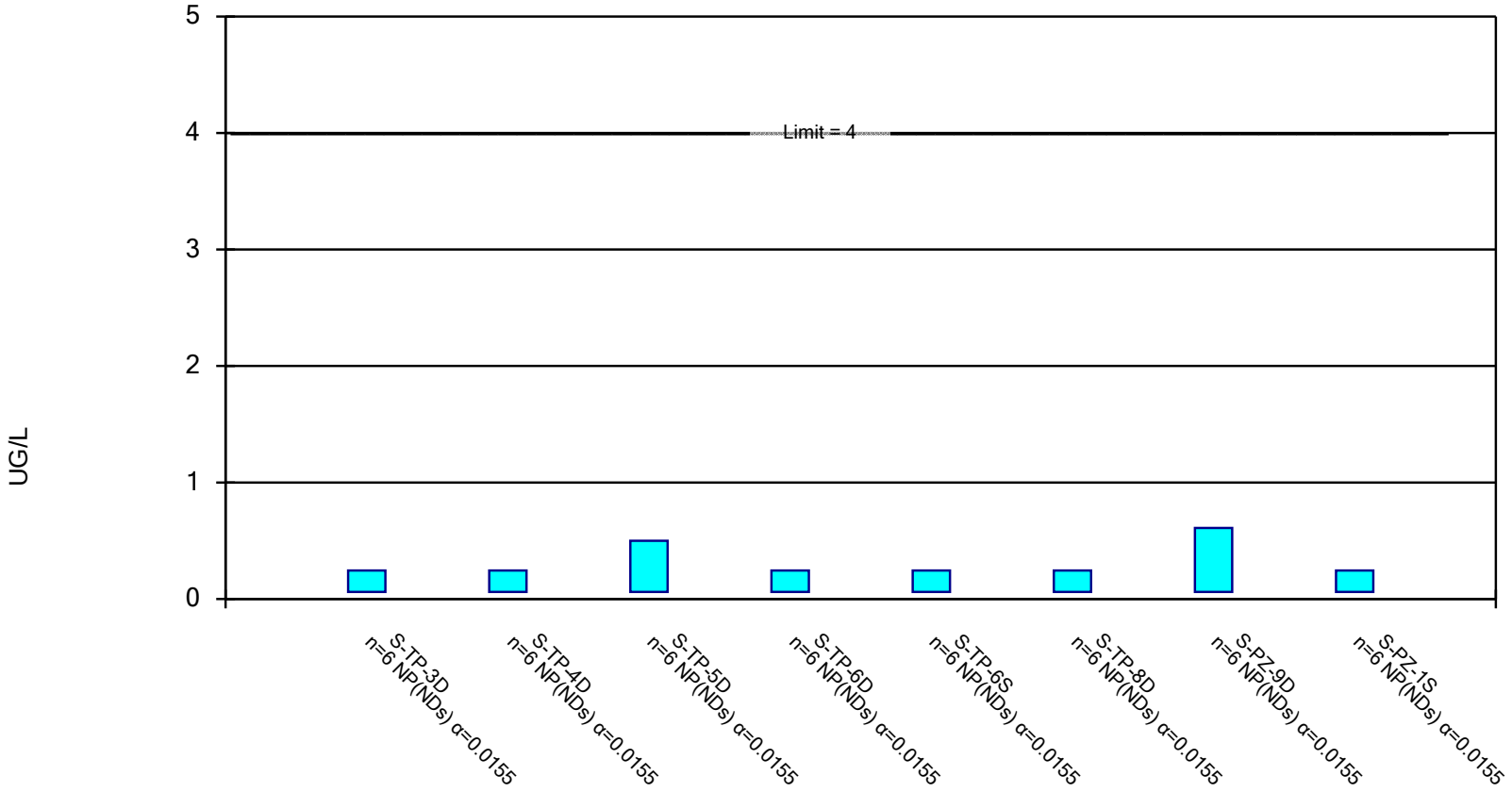
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Non-Parametric Confidence Interval, Corrective Action Mode

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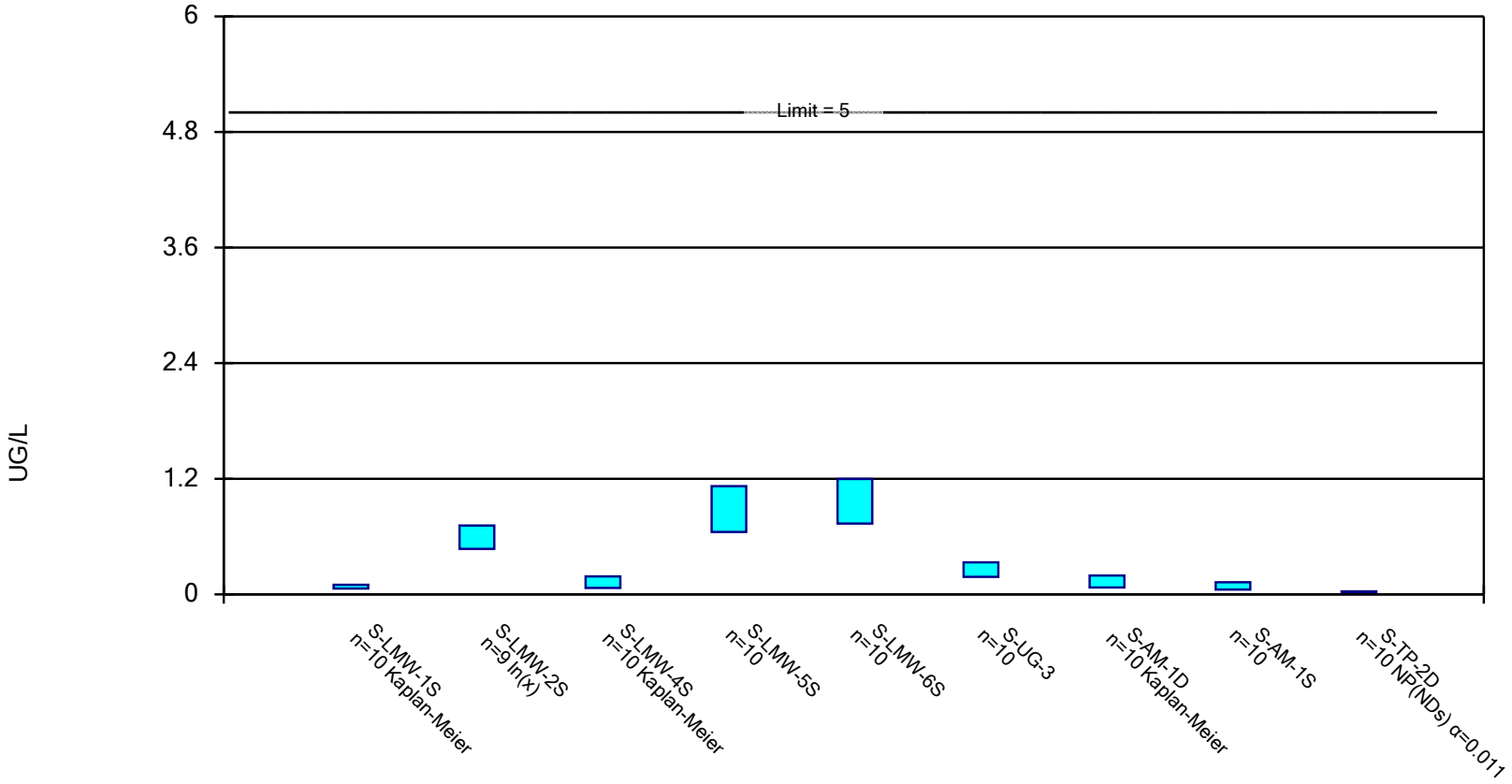
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Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

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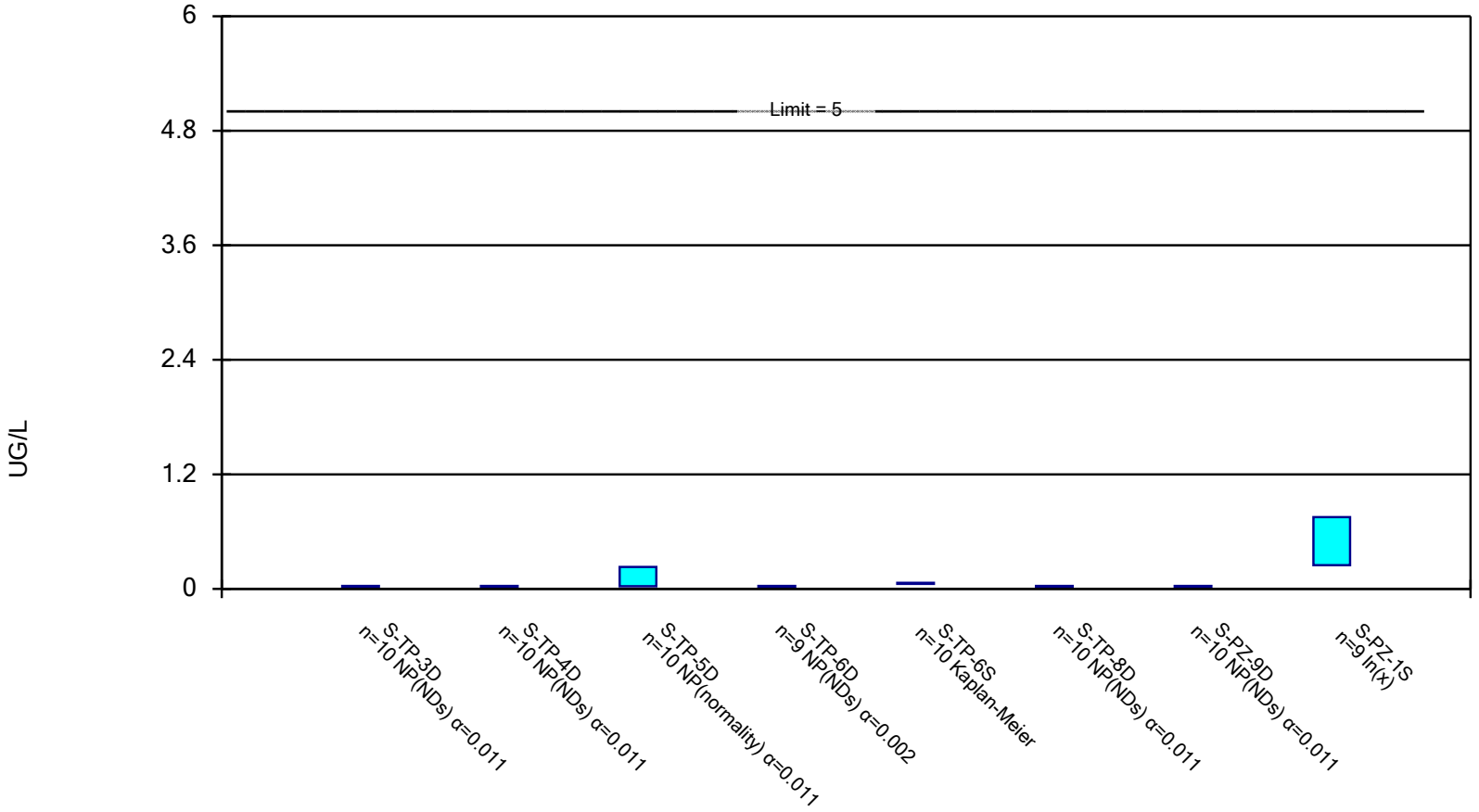
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Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

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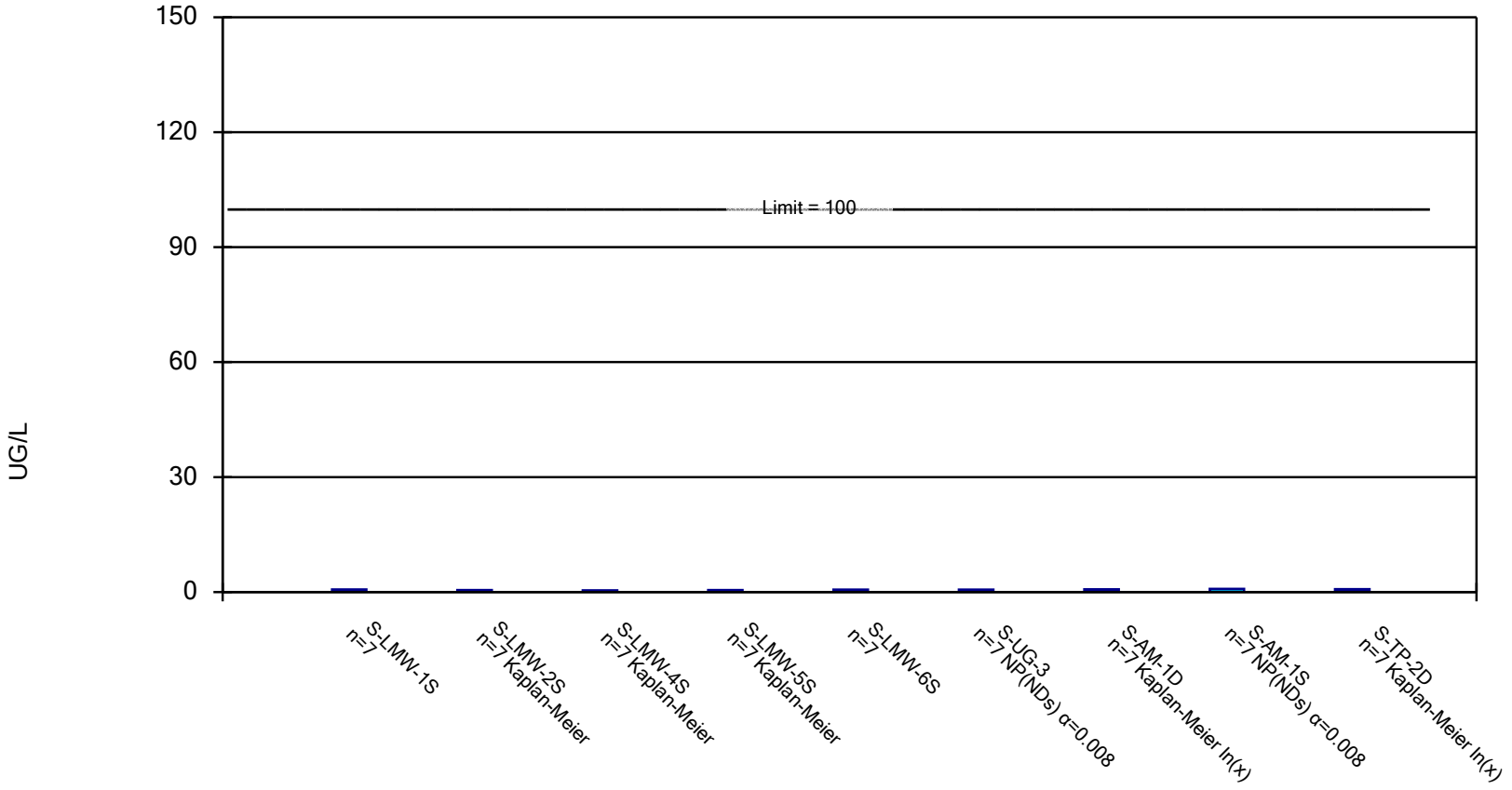
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Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

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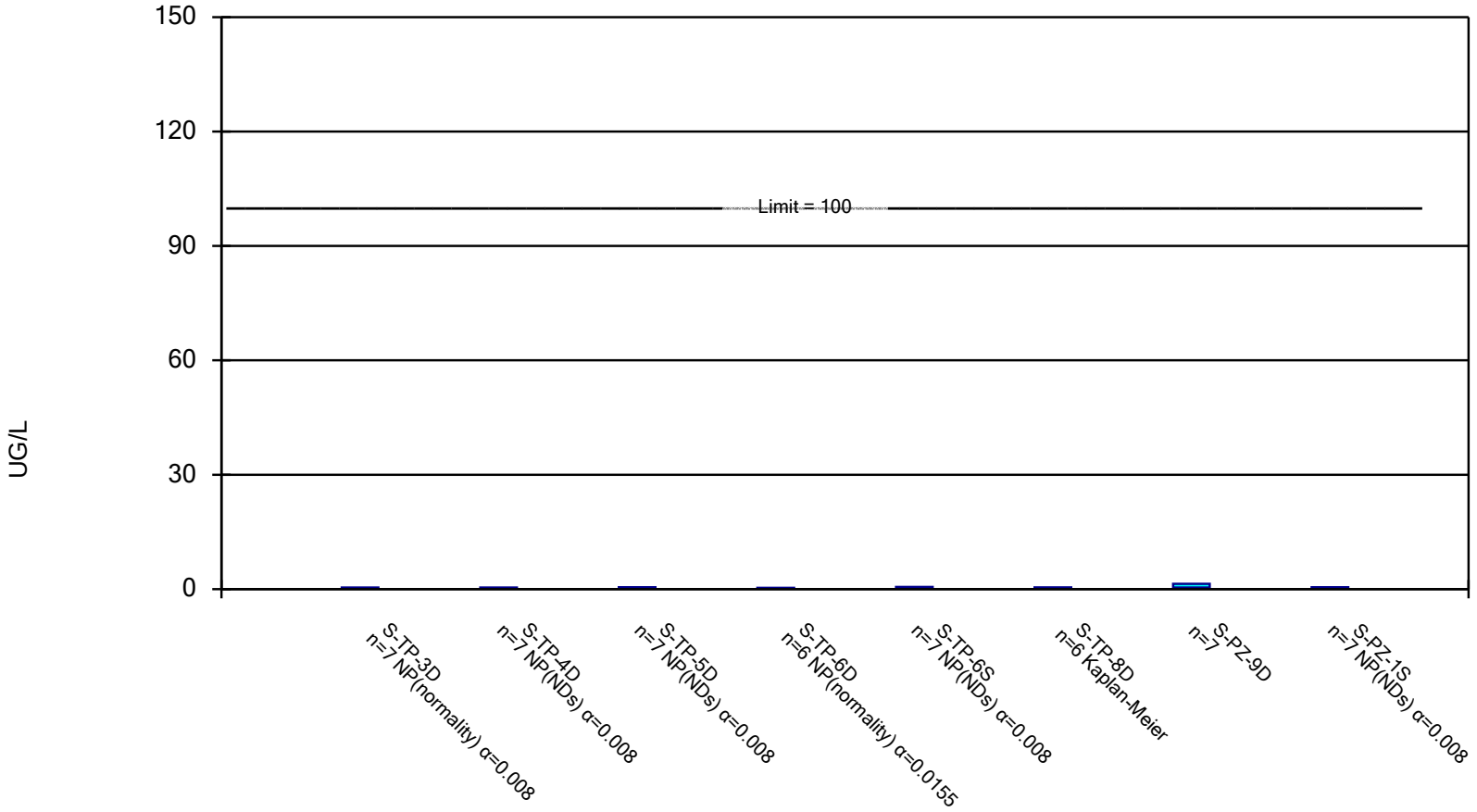
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Sioux E.C. Client: Ameren Data: SEC DATA

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Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

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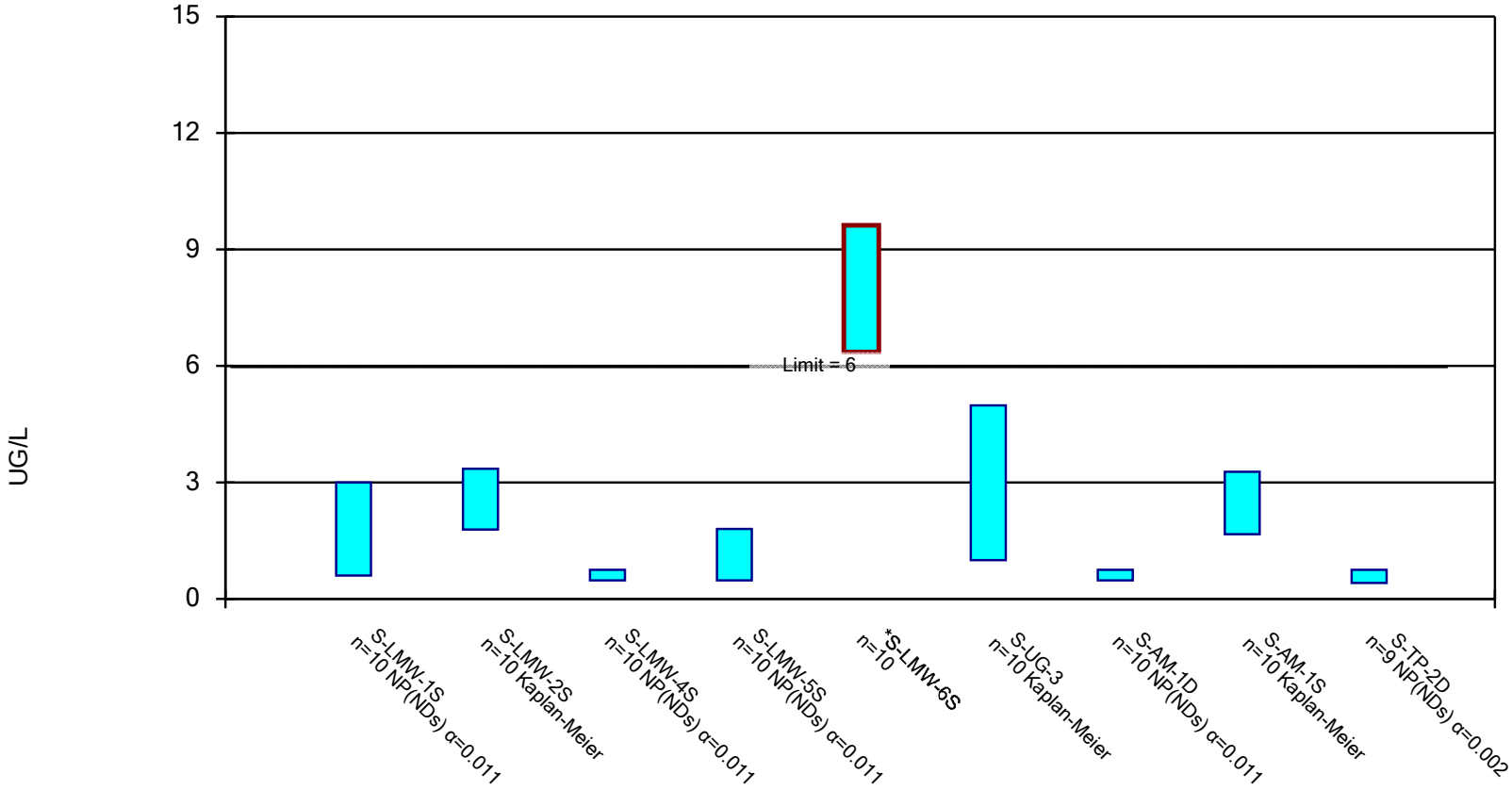
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Sioux E.C. Client: Ameren Data: SEC DATA

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Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

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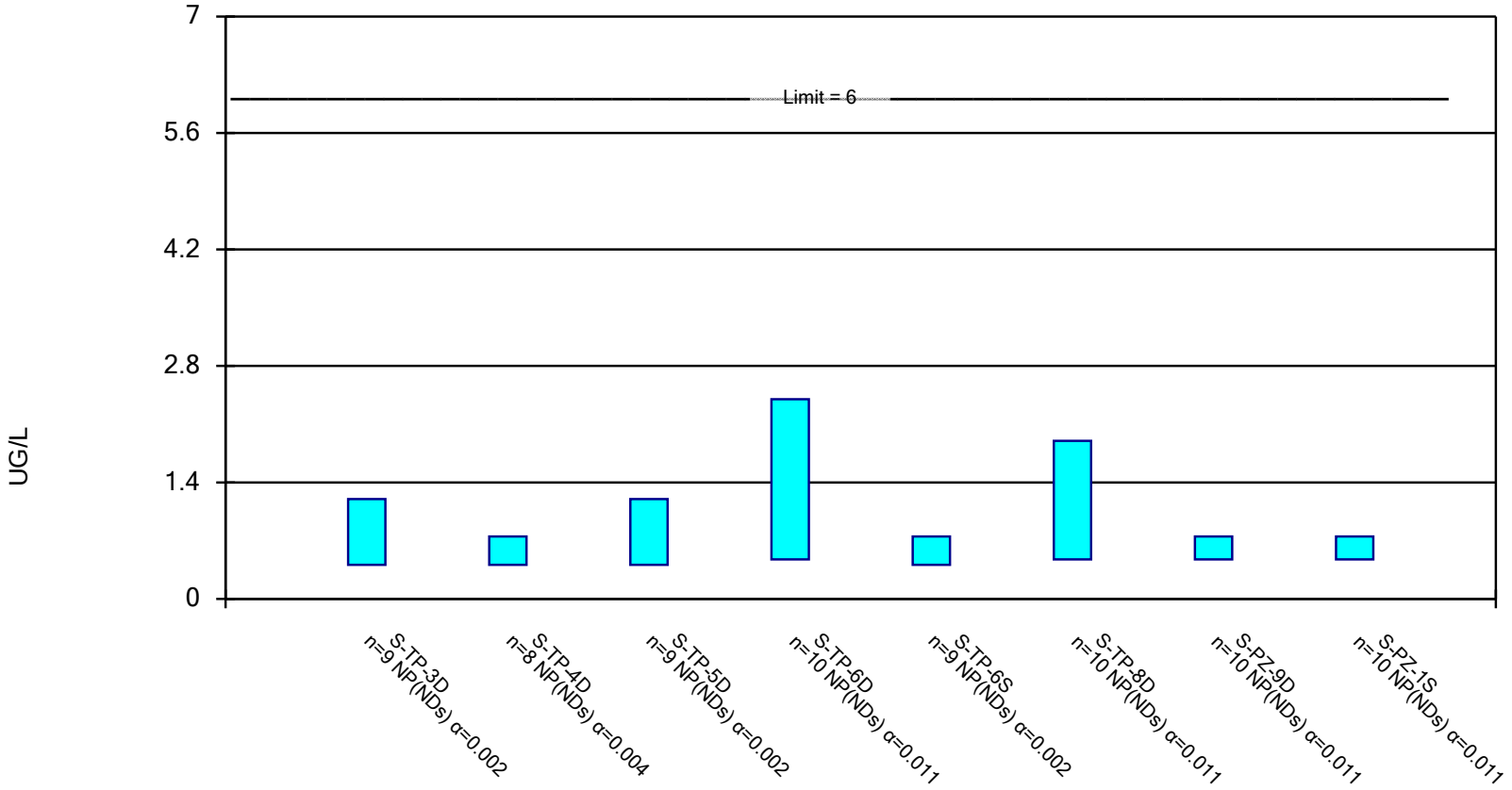
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Non-Parametric Confidence Interval, Corrective Action Mode

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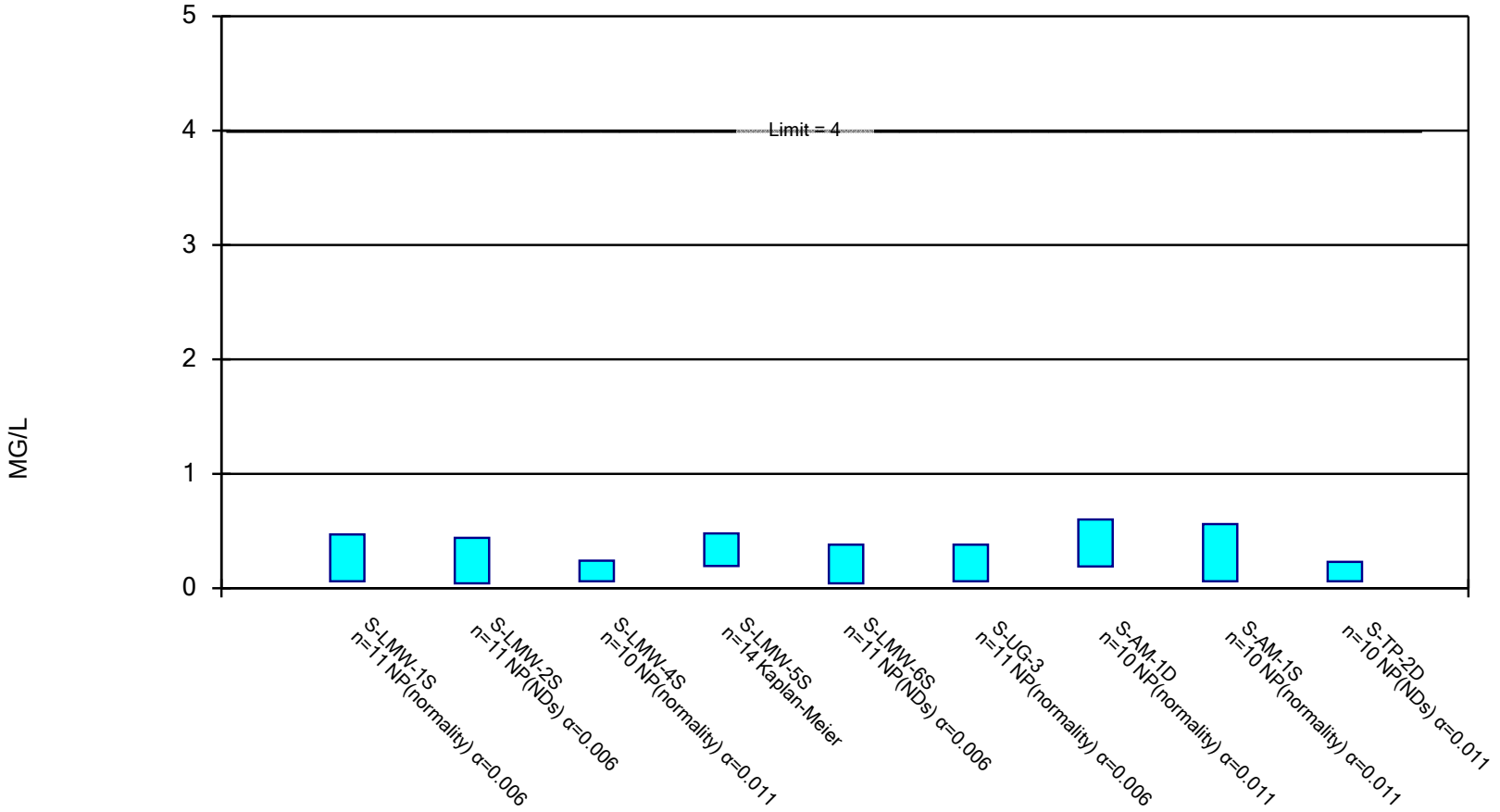
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Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

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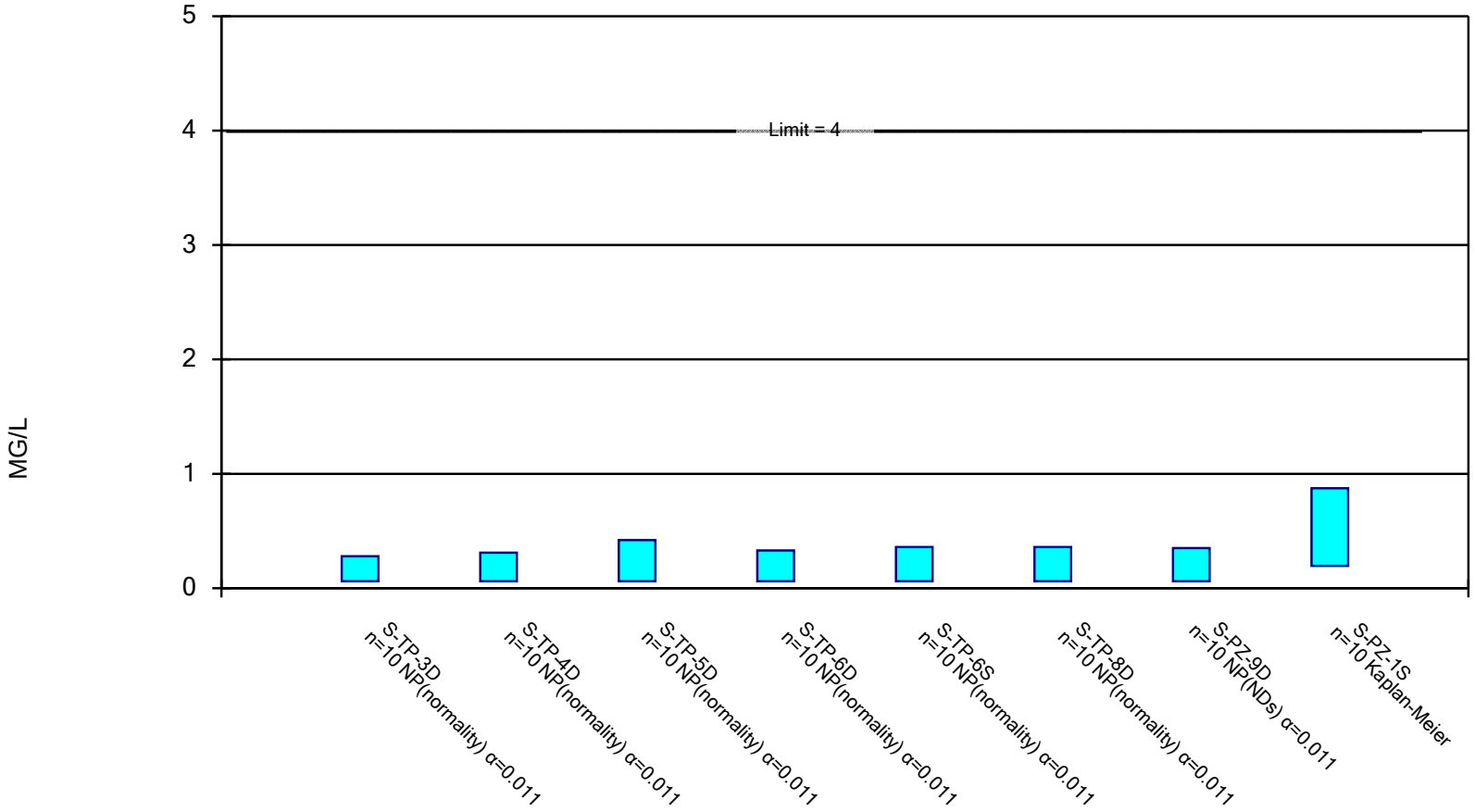
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Sioux E.C. Client: Ameren Data: SEC DATA

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Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

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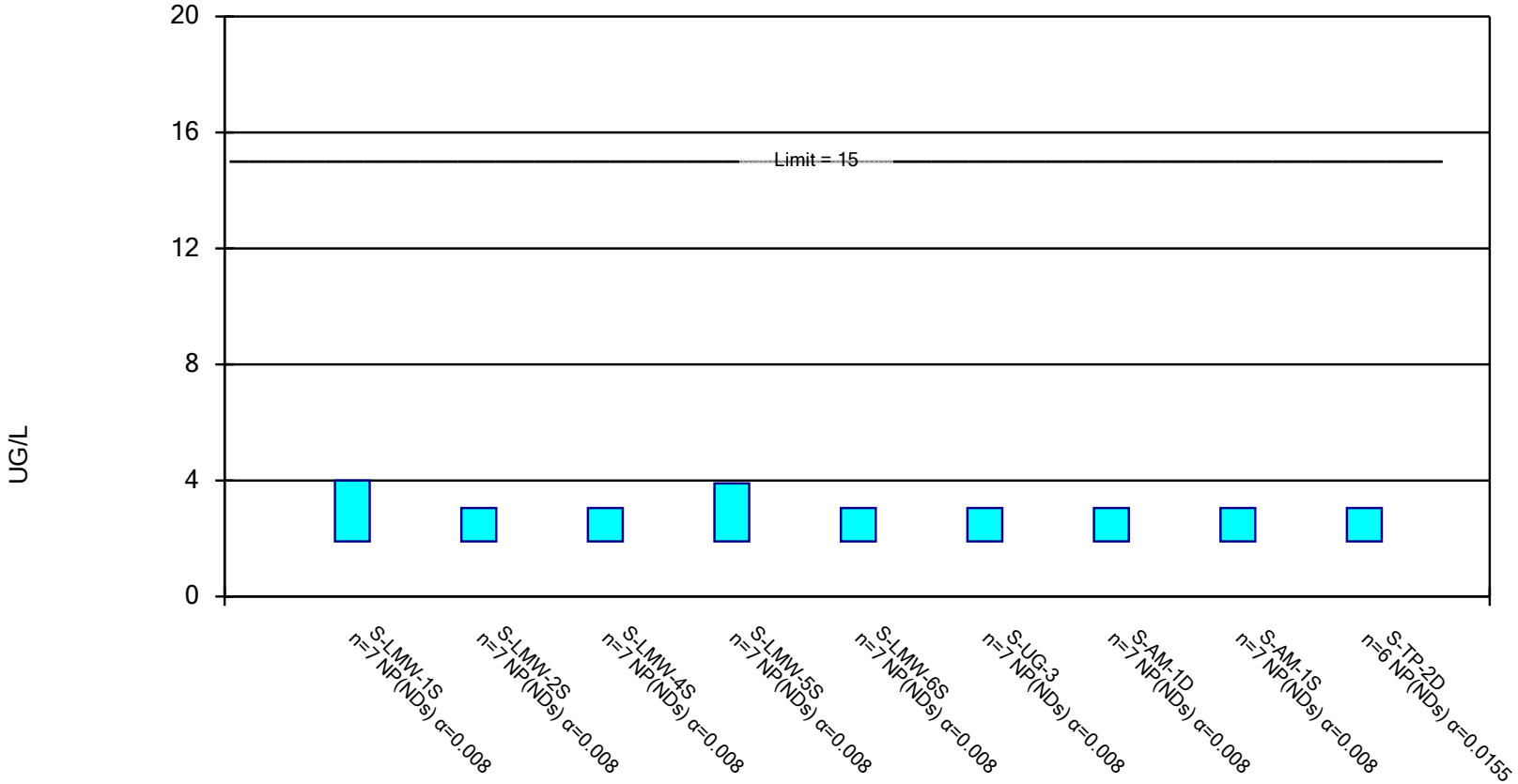
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Non-Parametric Confidence Interval, Corrective Action Mode

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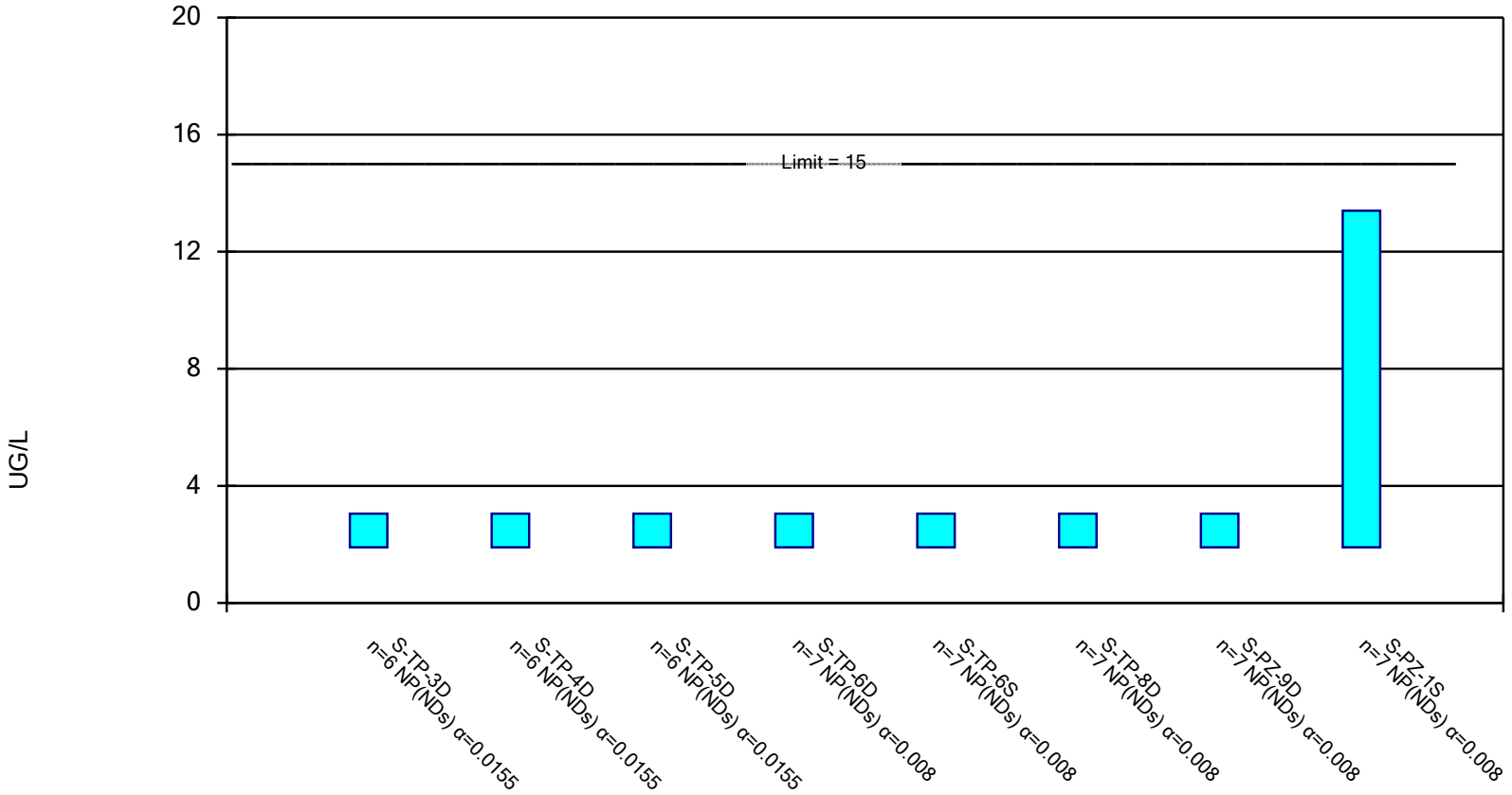
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Sioux E.C. Client: Ameren Data: SEC DATA

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Non-Parametric Confidence Interval, Corrective Action Mode

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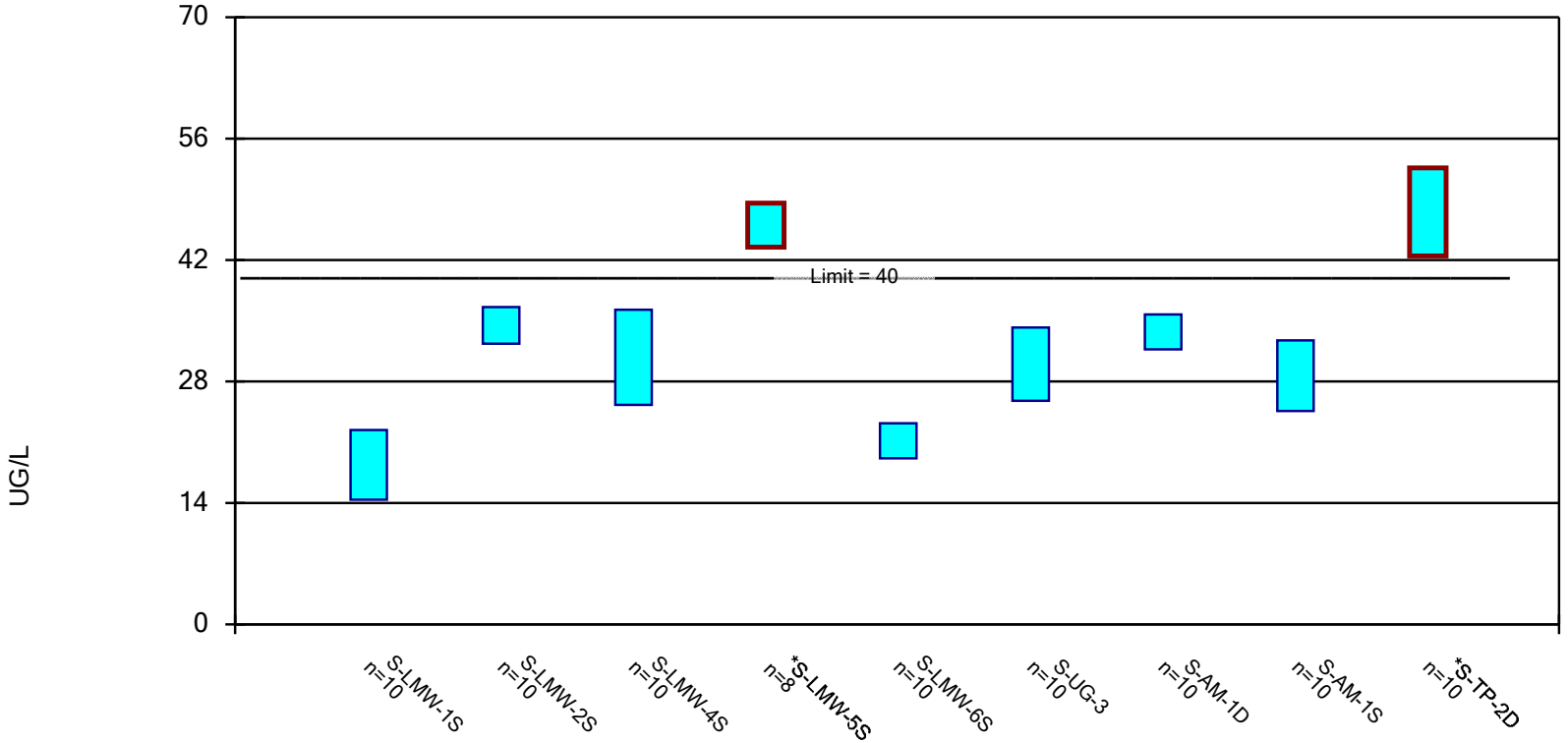
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Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG

Parametric Confidence Interval, Corrective Action Mode

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



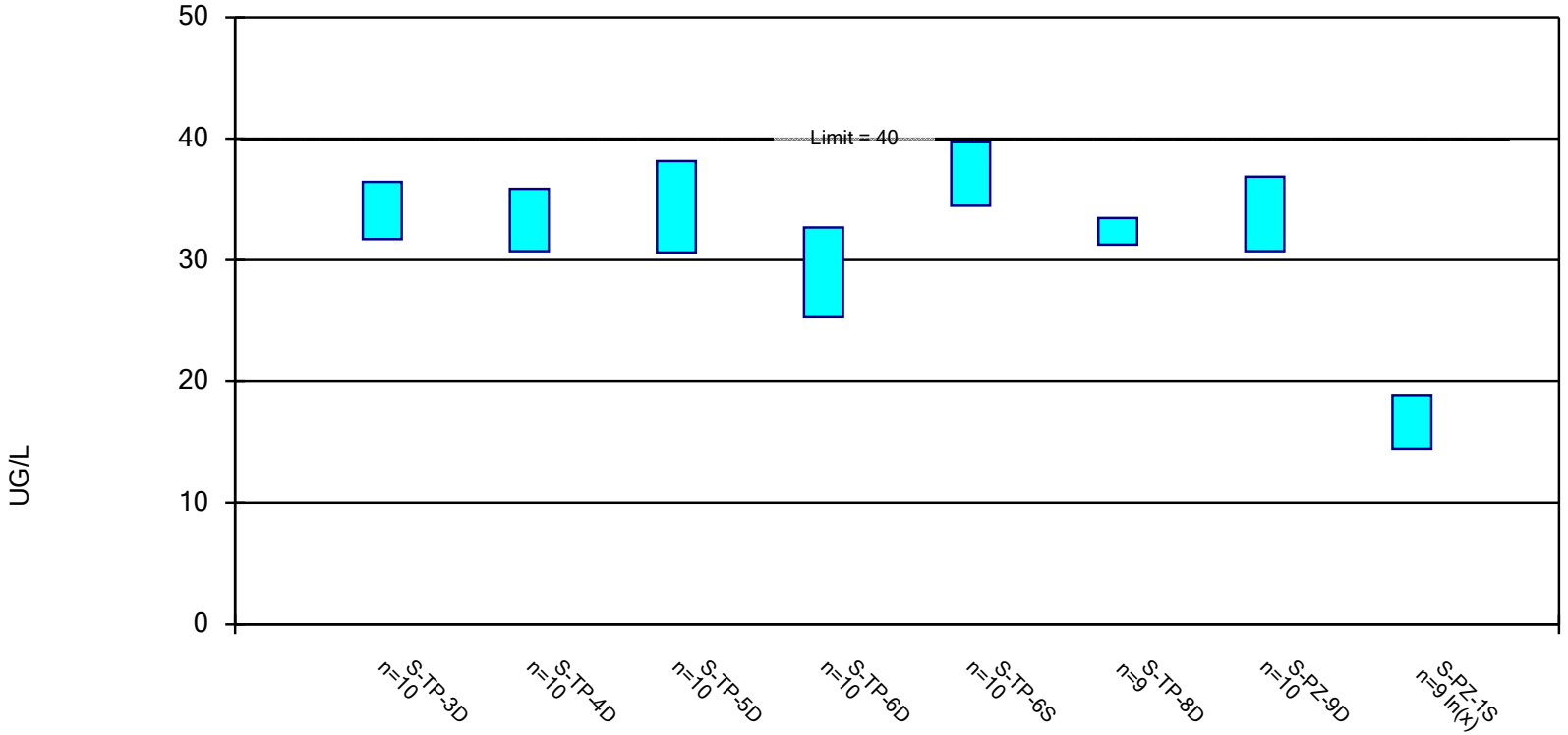
Constituent: LITHIUM, TOTAL Analysis Run 8/28/2024 3:47 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

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Parametric Confidence Interval, Corrective Action Mode

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

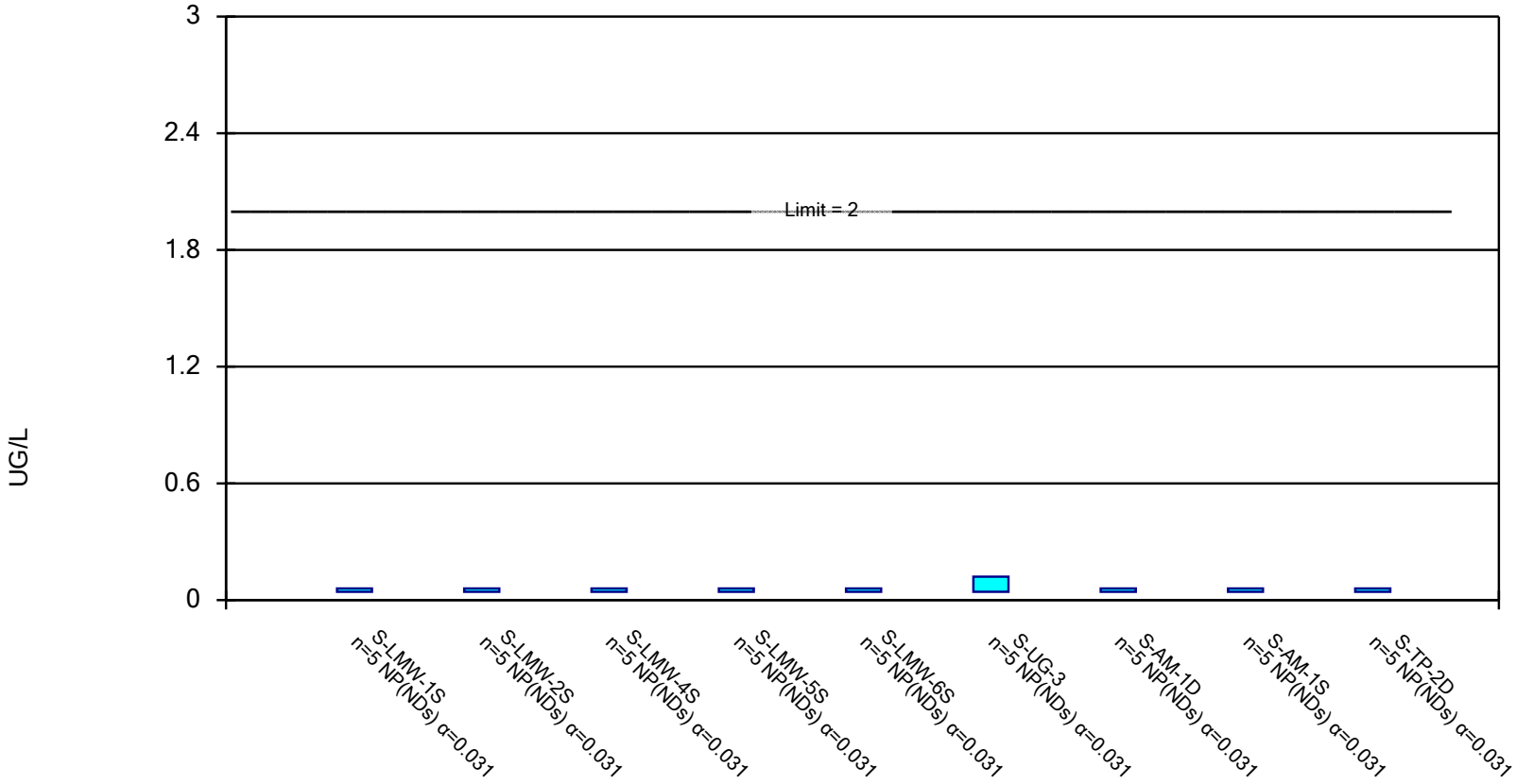


Constituent: LITHIUM, TOTAL Analysis Run 8/28/2024 3:47 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

Non-Parametric Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded.



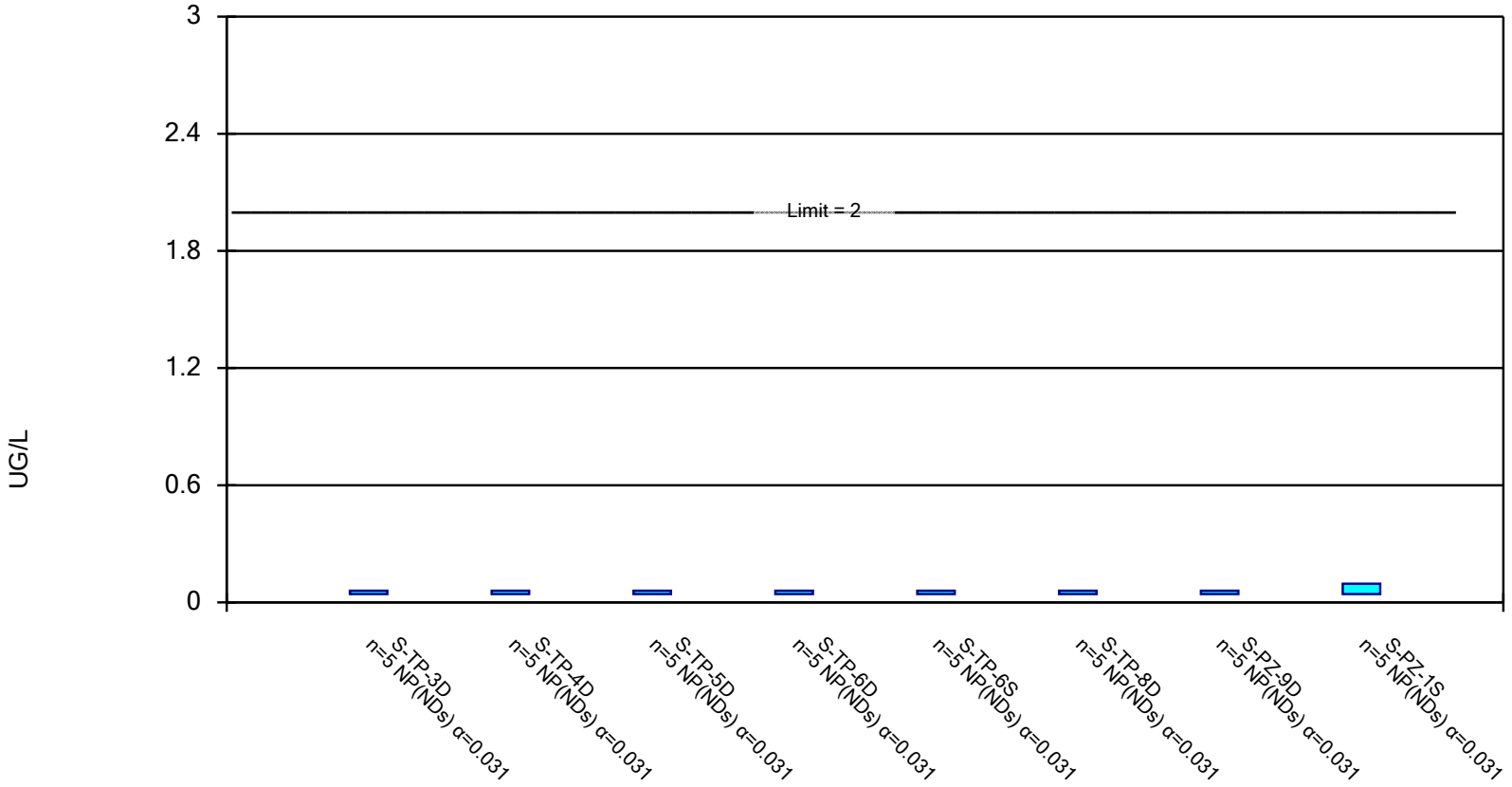
Constituent: MERCURY, TOTAL Analysis Run 8/28/2024 3:47 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

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Non-Parametric Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded.



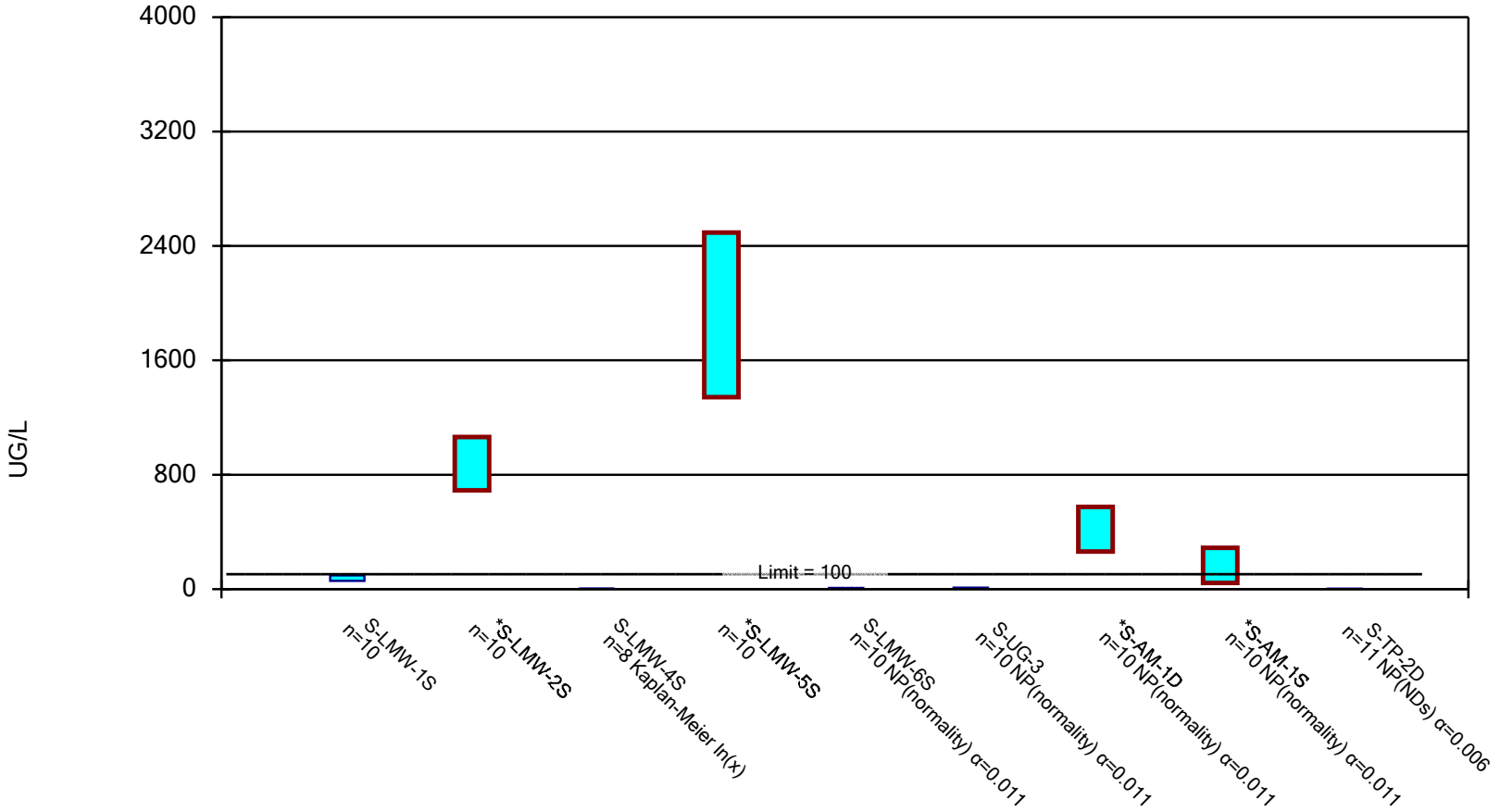
Constituent: MERCURY, TOTAL Analysis Run 8/28/2024 3:47 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

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Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

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



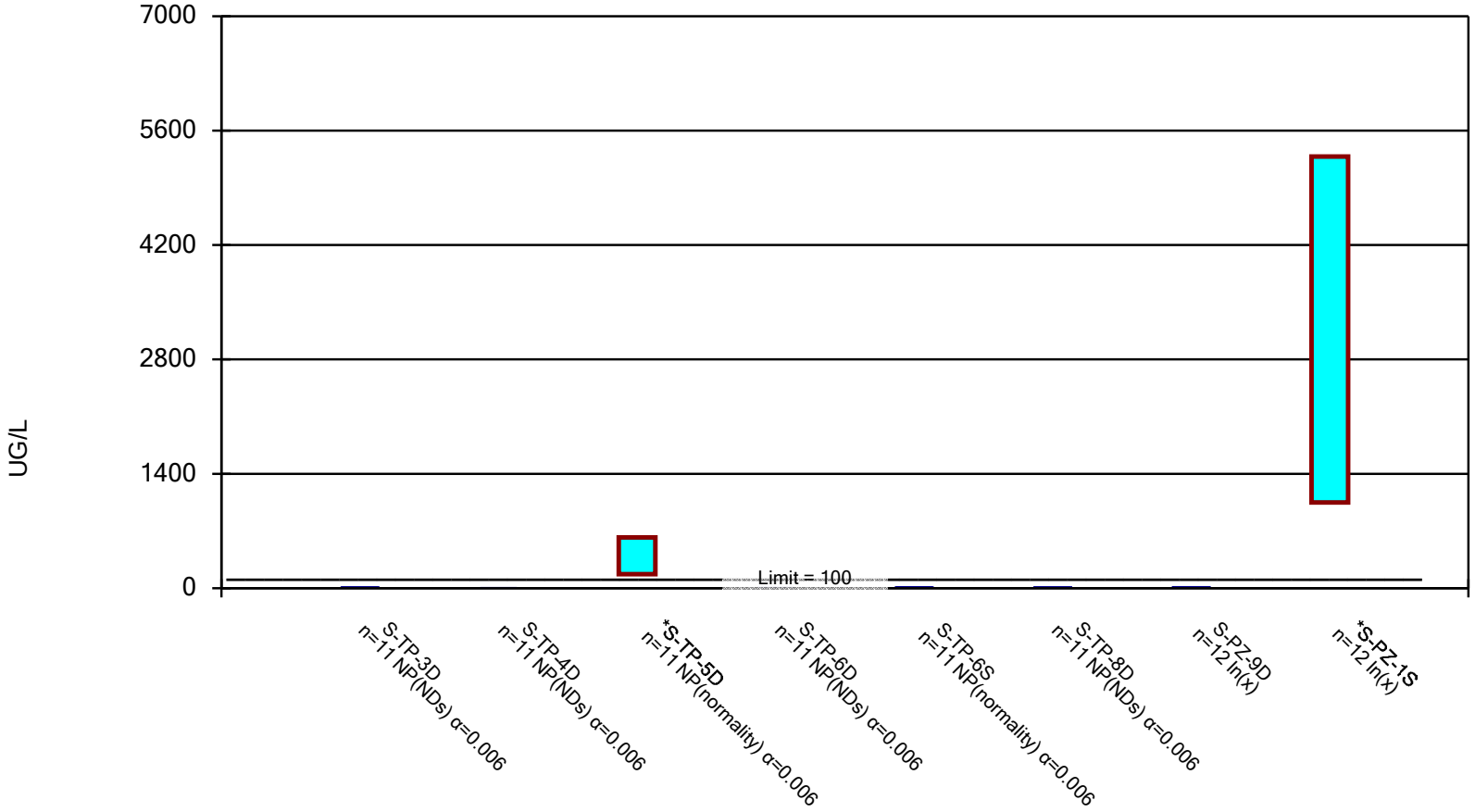
Constituent: MOLYBDENUM, TOTAL Analysis Run 8/28/2024 3:47 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

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Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

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



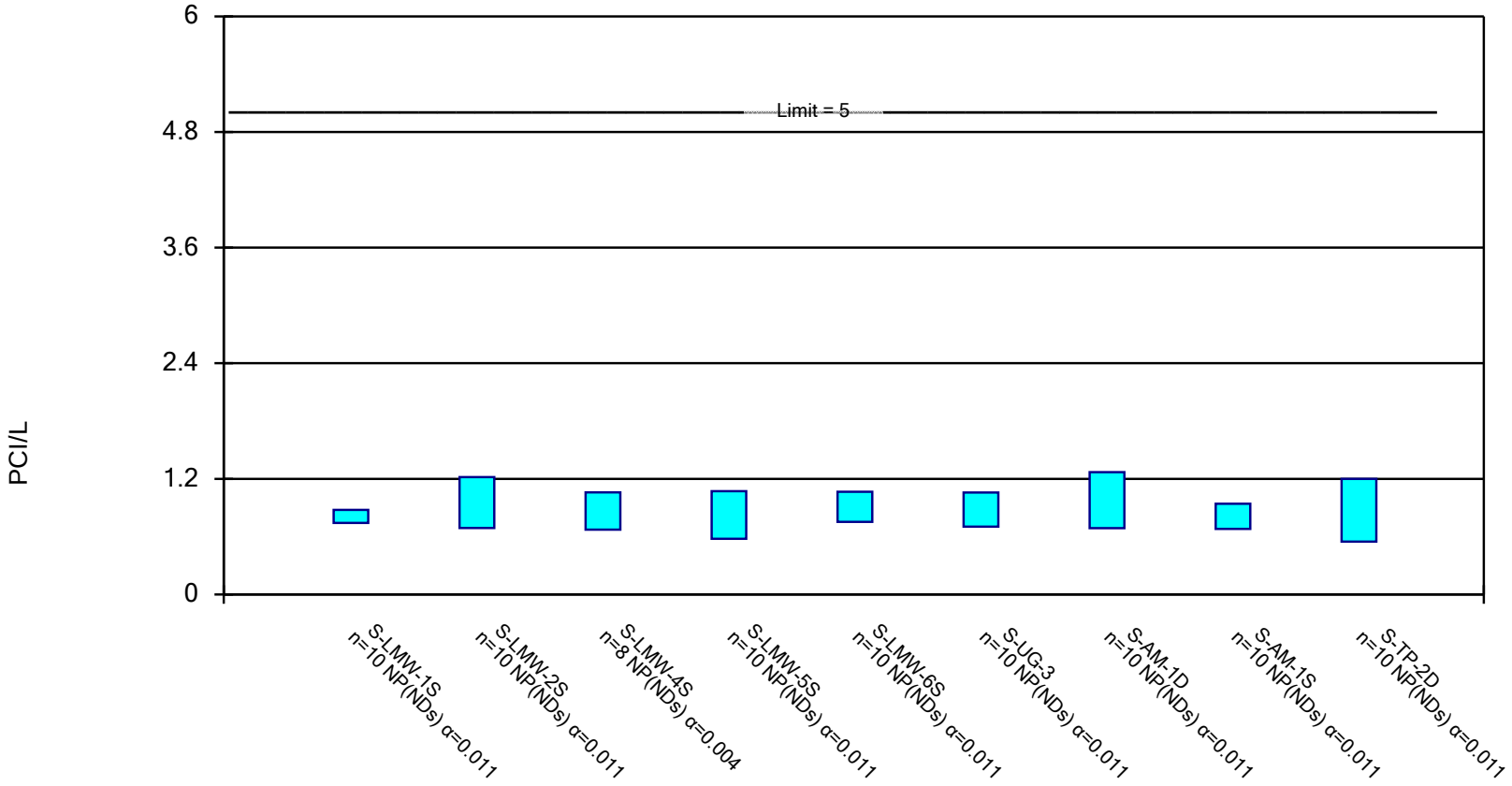
Constituent: MOLYBDENUM, TOTAL Analysis Run 8/28/2024 3:47 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

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Non-Parametric Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded.



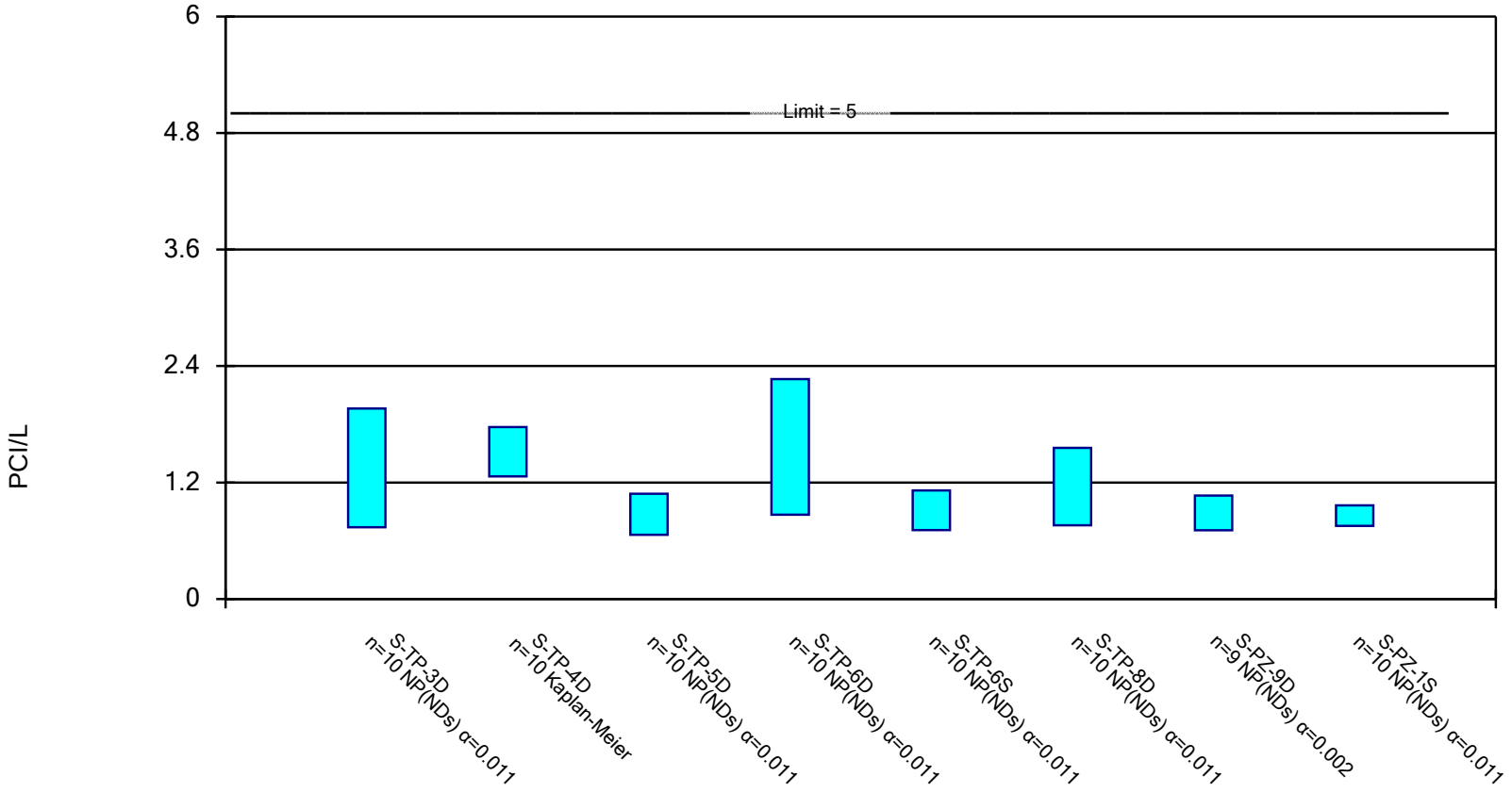
Constituent: RADIUM [226 + 228] Analysis Run 8/28/2024 3:47 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

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Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

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

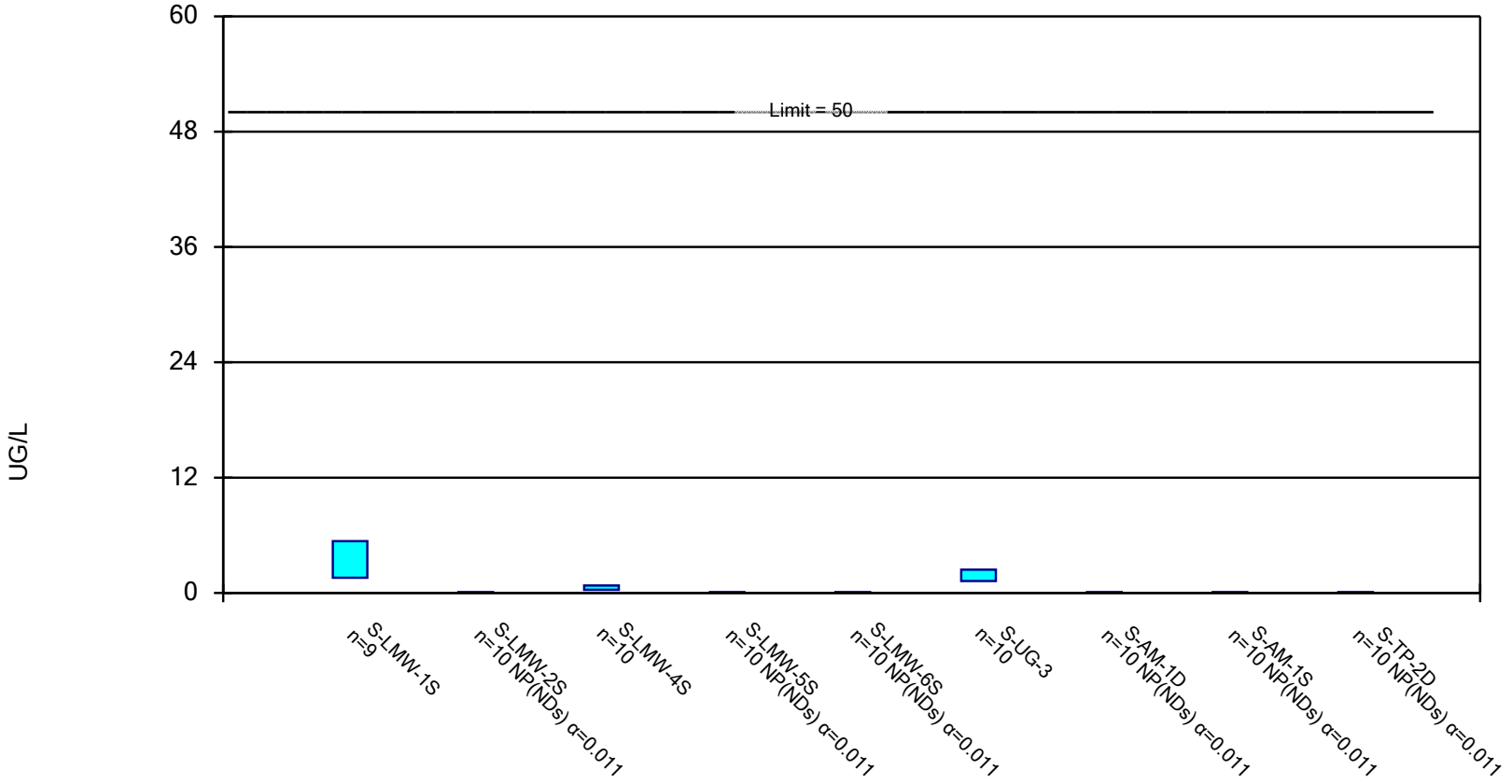


Constituent: RADIUM [226 + 228] Analysis Run 8/28/2024 3:47 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

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

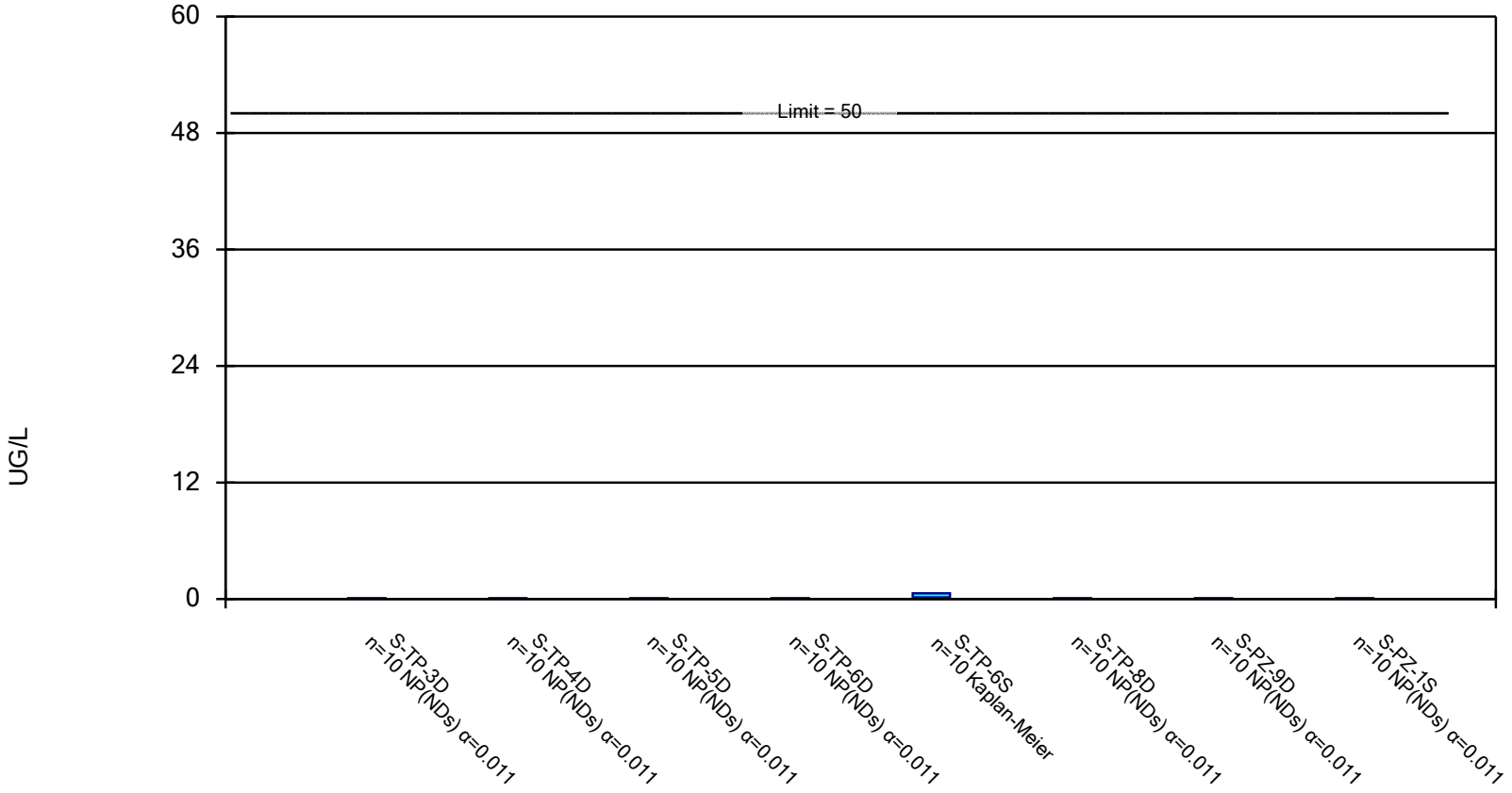


Constituent: SELENIUM, TOTAL Analysis Run 8/28/2024 3:47 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

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

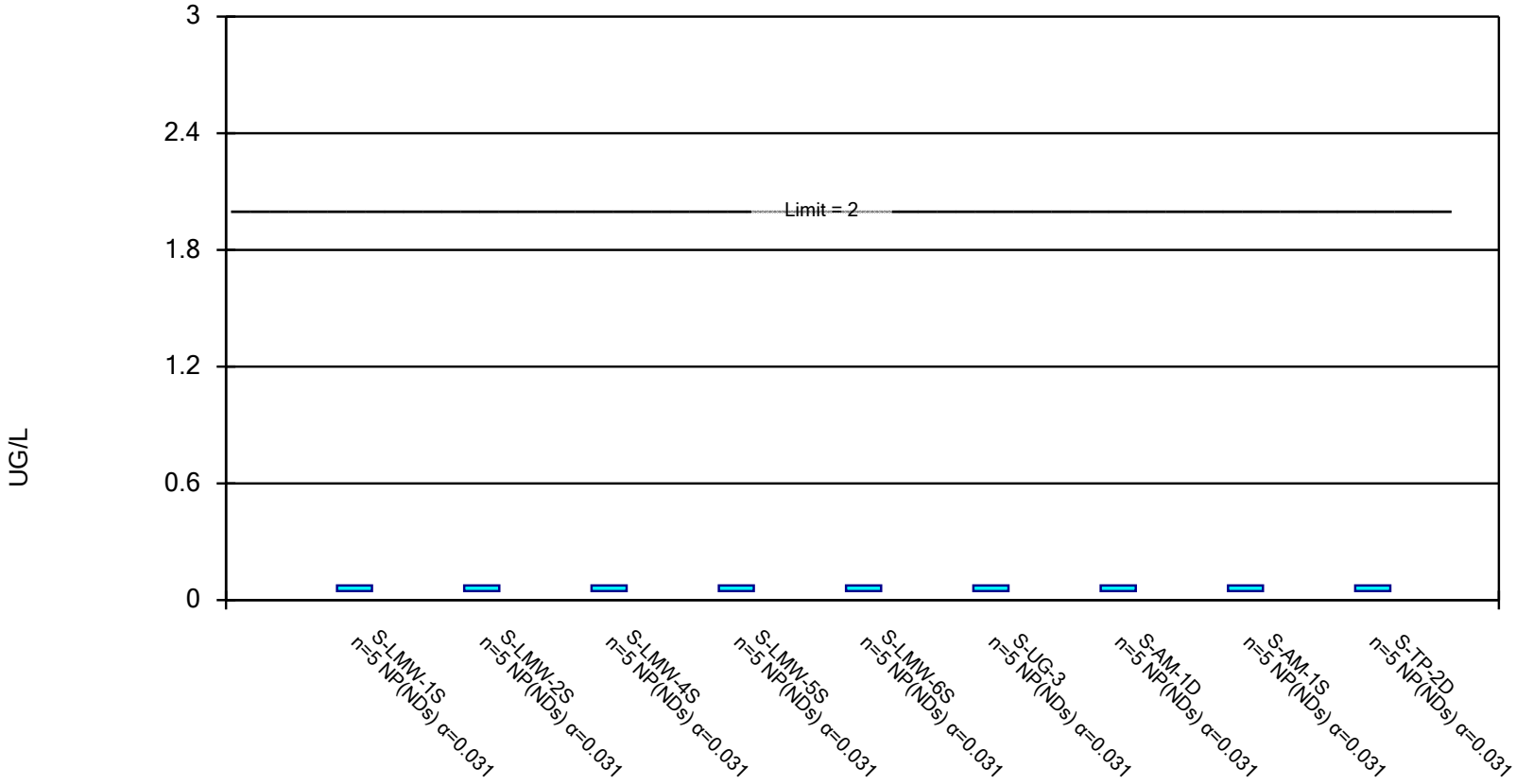


Constituent: SELENIUM, TOTAL Analysis Run 8/28/2024 3:47 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

Non-Parametric Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded.



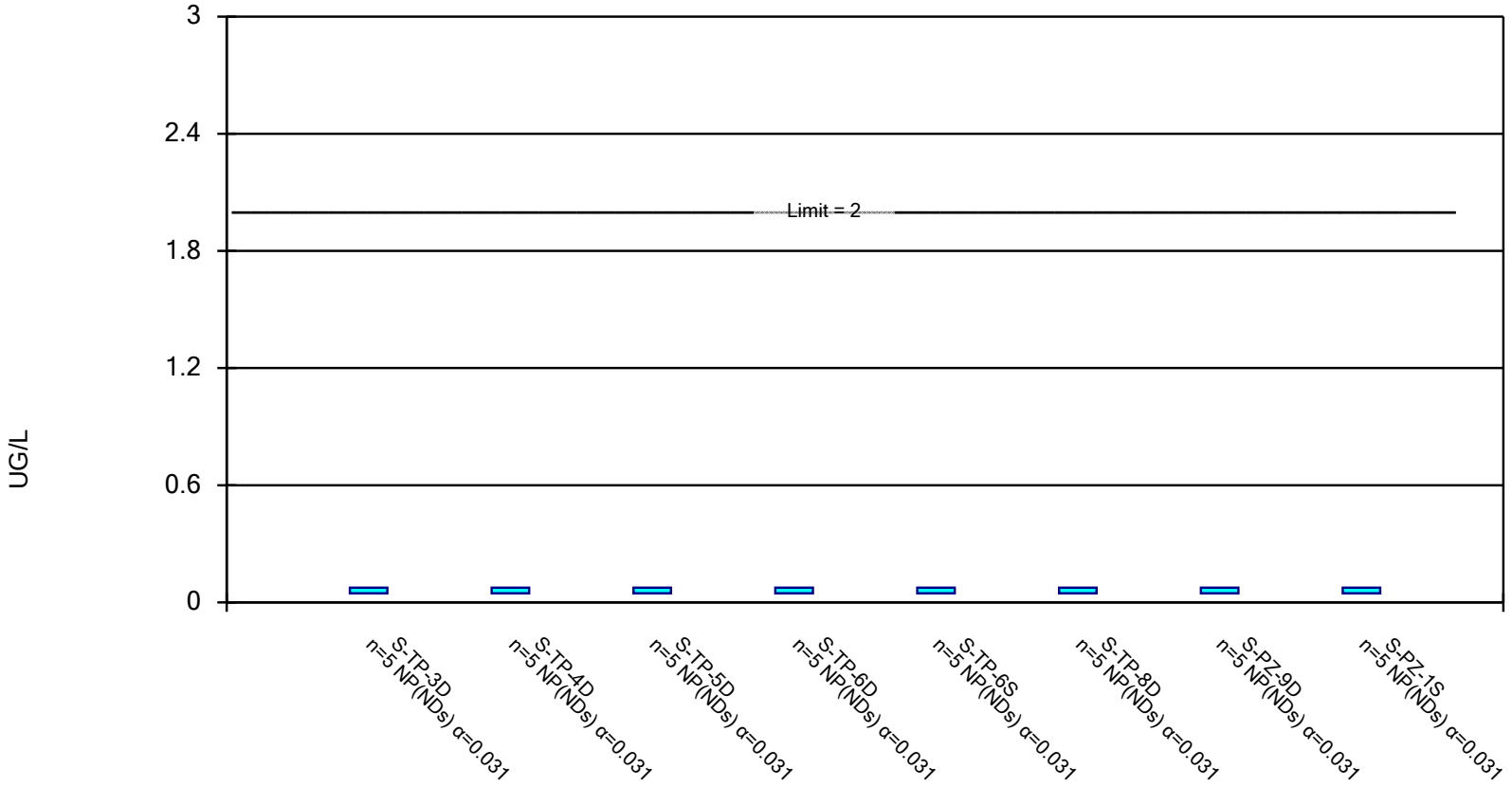
Constituent: THALLIUM, TOTAL Analysis Run 8/28/2024 3:47 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

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Non-Parametric Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded.



Constituent: THALLIUM, TOTAL Analysis Run 8/28/2024 3:47 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

Confidence Interval

Sioux E.C. Client: Ameren Data: SEC DATA Printed 8/28/2024, 3:49 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
ANTIMONY, TOTAL (UG/L)	S-LMW-1S	0.4513	0.2847	6	No	5	0	No	0.01	Param.
ANTIMONY, TOTAL (UG/L)	S-LMW-2S	0.19	0.15	6	No	5	0	No	0.031	NP (normality)
ANTIMONY, TOTAL (UG/L)	S-LMW-4S	0.1799	0.1108	6	No	5	20	No	0.01	Param.
ANTIMONY, TOTAL (UG/L)	S-LMW-5S	0.15	0.11	6	No	5	0	No	0.031	NP (normality)
ANTIMONY, TOTAL (UG/L)	S-LMW-6S	0.2487	0.1793	6	No	5	0	No	0.01	Param.
ANTIMONY, TOTAL (UG/L)	S-UG-3	0.2367	0.09134	6	No	5	0	No	0.01	Param.
ANTIMONY, TOTAL (UG/L)	S-AM-1D	0.23	0.0485	6	No	5	80	No	0.031	NP (NDs)
ANTIMONY, TOTAL (UG/L)	S-AM-1S	0.06	0.0485	6	No	5	100	No	0.031	NP (NDs)
ANTIMONY, TOTAL (UG/L)	S-TP-2D	0.06	0.0485	6	No	5	100	No	0.031	NP (NDs)
ANTIMONY, TOTAL (UG/L)	S-TP-3D	0.06	0.0485	6	No	5	100	No	0.031	NP (NDs)
ANTIMONY, TOTAL (UG/L)	S-TP-4D	0.06	0.0485	6	No	5	100	No	0.031	NP (NDs)
ANTIMONY, TOTAL (UG/L)	S-TP-5D	0.06	0.0485	6	No	5	100	No	0.031	NP (NDs)
ANTIMONY, TOTAL (UG/L)	S-TP-6D	0.86	0.05	6	No	5	80	No	0.031	NP (NDs)
ANTIMONY, TOTAL (UG/L)	S-TP-6S	0.15	0.06	6	No	5	60	No	0.031	NP (NDs)
ANTIMONY, TOTAL (UG/L)	S-TP-8D	0.21	0.05	6	No	5	80	No	0.031	NP (NDs)
ANTIMONY, TOTAL (UG/L)	S-PZ-9D	0.06	0.0485	6	No	5	100	No	0.031	NP (NDs)
ANTIMONY, TOTAL (UG/L)	S-PZ-1S	0.06	0.0485	6	No	5	100	No	0.031	NP (NDs)
ARSENIC, TOTAL (UG/L)	S-LMW-1S	2.226	1.774	10	No	10	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-LMW-2S	0.9811	0.8456	10	No	9	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-LMW-4S	0.6901	0.5379	10	No	10	10	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-LMW-5S	0.8997	0.6643	10	No	10	10	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-LMW-6S	0.79	0.67	10	No	10	10	No	0.011	NP (normality)
ARSENIC, TOTAL (UG/L)	S-UG-3	0.459	0.377	10	No	10	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-AM-1D	0.2138	0.1662	10	No	10	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-AM-1S	1.525	1.163	10	No	10	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-TP-2D	0.2848	0.1432	10	No	10	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-TP-3D	0.1886	0.1094	10	No	10	10	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-TP-4D	2.015	1.525	10	No	10	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-TP-5D	0.2966	0.214	10	No	10	0	ln(x)	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-TP-6D	0.1561	0.1142	10	No	10	30	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-TP-6S	0.5922	0.4578	10	No	10	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-TP-8D	1.6	1.3	10	No	10	0	No	0.011	NP (normality)
ARSENIC, TOTAL (UG/L)	S-PZ-9D	0.6863	0.4157	10	No	10	10	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	S-PZ-1S	0.4751	0.3009	10	No	10	10	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-LMW-1S	190.5	131.4	2000	No	10	0	ln(x)	0.01	Param.
BARIUM, TOTAL (UG/L)	S-LMW-2S	133.9	108.5	2000	No	10	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-LMW-4S	235.8	214.8	2000	No	9	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-LMW-5S	57.3	45.6	2000	No	10	0	No	0.011	NP (normality)
BARIUM, TOTAL (UG/L)	S-LMW-6S	51.29	40.77	2000	No	10	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-UG-3	241.3	210.7	2000	No	10	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-AM-1D	282.1	208.2	2000	No	10	0	ln(x)	0.01	Param.
BARIUM, TOTAL (UG/L)	S-AM-1S	151.6	131.2	2000	No	10	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-TP-2D	62.74	57.04	2000	No	10	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-TP-3D	586.7	559.3	2000	No	10	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-TP-4D	571.3	497.7	2000	No	10	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-TP-5D	185	146.2	2000	No	10	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-TP-6D	423.1	397.3	2000	No	10	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-TP-6S	295.7	273.9	2000	No	10	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-TP-8D	381.5	338.9	2000	No	10	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	S-PZ-9D	121.4	92.17	2000	No	10	0	No	0.01	Param.

Confidence Interval

Sioux E.C. Client: Ameren Data: SEC DATA Printed 8/28/2024, 3:49 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
BARIUM, TOTAL (UG/L)	S-PZ-1S	190	89.8	2000	No	10	0	No	0.011	NP (normality)
BERYLLIUM, TOTAL (UG/L)	S-LMW-1S	0.245	0.06	4	No	6	100	No	0.0155	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-LMW-2S	0.245	0.06	4	No	6	100	No	0.0155	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-LMW-4S	0.245	0.06	4	No	6	100	No	0.0155	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-LMW-5S	0.245	0.06	4	No	6	100	No	0.0155	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-LMW-6S	0.245	0.06	4	No	5	100	No	0.031	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-UG-3	0.245	0.06	4	No	6	100	No	0.0155	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-AM-1D	0.245	0.06	4	No	6	100	No	0.0155	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-AM-1S	0.5	0.06	4	No	6	100	No	0.0155	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-TP-2D	0.245	0.06	4	No	6	100	No	0.0155	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-TP-3D	0.245	0.06	4	No	6	100	No	0.0155	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-TP-4D	0.245	0.06	4	No	6	100	No	0.0155	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-TP-5D	0.5	0.06	4	No	6	100	No	0.0155	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-TP-6D	0.245	0.06	4	No	6	100	No	0.0155	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-TP-6S	0.245	0.06	4	No	6	100	No	0.0155	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-TP-8D	0.245	0.06	4	No	6	100	No	0.0155	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-PZ-9D	0.61	0.06	4	No	6	83.33	No	0.0155	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	S-PZ-1S	0.245	0.06	4	No	6	100	No	0.0155	NP (NDs)
CADMIUM, TOTAL (UG/L)	S-LMW-1S	0.09977	0.06036	5	No	10	20	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	S-LMW-2S	0.7145	0.472	5	No	9	0	ln(x)	0.01	Param.
CADMIUM, TOTAL (UG/L)	S-LMW-4S	0.1867	0.06642	5	No	10	40	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	S-LMW-5S	1.123	0.6473	5	No	10	0	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	S-LMW-6S	1.197	0.7346	5	No	10	0	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	S-UG-3	0.3326	0.1814	5	No	10	0	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	S-AM-1D	0.1955	0.07113	5	No	10	20	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	S-AM-1S	0.1262	0.04956	5	No	10	10	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	S-TP-2D	0.031	0.025	5	No	10	100	No	0.011	NP (NDs)
CADMIUM, TOTAL (UG/L)	S-TP-3D	0.031	0.025	5	No	10	100	No	0.011	NP (NDs)
CADMIUM, TOTAL (UG/L)	S-TP-4D	0.031	0.025	5	No	10	100	No	0.011	NP (NDs)
CADMIUM, TOTAL (UG/L)	S-TP-5D	0.23	0.028	5	No	10	30	No	0.011	NP (normality)
CADMIUM, TOTAL (UG/L)	S-TP-6D	0.031	0.025	5	No	9	100	No	0.002	NP (NDs)
CADMIUM, TOTAL (UG/L)	S-TP-6S	0.06283	0.05243	5	No	10	40	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	S-TP-8D	0.031	0.025	5	No	10	100	No	0.011	NP (NDs)
CADMIUM, TOTAL (UG/L)	S-PZ-9D	0.031	0.025	5	No	10	100	No	0.011	NP (NDs)
CADMIUM, TOTAL (UG/L)	S-PZ-1S	0.7521	0.2476	5	No	9	11.11	ln(x)	0.01	Param.
CHROMIUM, TOTAL (UG/L)	S-LMW-1S	0.6727	0.1931	100	No	7	14.29	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	S-LMW-2S	0.5298	0.1559	100	No	7	42.86	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	S-LMW-4S	0.4751	0.2049	100	No	7	42.86	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	S-LMW-5S	0.5266	0.1992	100	No	7	42.86	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	S-LMW-6S	0.6637	0.1506	100	No	7	14.29	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	S-UG-3	0.65	0.11	100	No	7	85.71	No	0.008	NP (NDs)
CHROMIUM, TOTAL (UG/L)	S-AM-1D	0.7243	0.1631	100	No	7	42.86	ln(x)	0.01	Param.
CHROMIUM, TOTAL (UG/L)	S-AM-1S	0.83	0.11	100	No	7	57.14	No	0.008	NP (NDs)
CHROMIUM, TOTAL (UG/L)	S-TP-2D	0.7535	0.1658	100	No	7	42.86	ln(x)	0.01	Param.
CHROMIUM, TOTAL (UG/L)	S-TP-3D	0.43	0.11	100	No	7	42.86	No	0.008	NP (normality)
CHROMIUM, TOTAL (UG/L)	S-TP-4D	0.43	0.11	100	No	7	57.14	No	0.008	NP (NDs)
CHROMIUM, TOTAL (UG/L)	S-TP-5D	0.5	0.11	100	No	7	85.71	No	0.008	NP (NDs)
CHROMIUM, TOTAL (UG/L)	S-TP-6D	0.35	0.15	100	No	6	50	No	0.0155	NP (normality)
CHROMIUM, TOTAL (UG/L)	S-TP-6S	0.59	0.11	100	No	7	71.43	No	0.008	NP (NDs)
CHROMIUM, TOTAL (UG/L)	S-TP-8D	0.4678	0.2089	100	No	6	33.33	No	0.01	Param.

Confidence Interval

Sioux E.C. Client: Ameren Data: SEC DATA Printed 8/28/2024, 3:49 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
CHROMIUM, TOTAL (UG/L)	S-PZ-9D	1.376	0.4329	100	No	7	0	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	S-PZ-1S	0.5	0.11	100	No	7	71.43	No	0.008	NP (NDs)
COBALT, TOTAL (UG/L)	S-LMW-1S	3	0.6	6	No	10	60	No	0.011	NP (NDs)
COBALT, TOTAL (UG/L)	S-LMW-2S	3.353	1.787	6	No	10	20	No	0.01	Param.
COBALT, TOTAL (UG/L)	S-LMW-4S	0.75	0.475	6	No	10	100	No	0.011	NP (NDs)
COBALT, TOTAL (UG/L)	S-LMW-5S	1.8	0.475	6	No	10	70	No	0.011	NP (NDs)
COBALT, TOTAL (UG/L)	**S-LMW-6S**	**9.621**	**6.359**	**6**	**Yes**	**10**	**0**	**No**	**0.01**	**Param.**
COBALT, TOTAL (UG/L)	S-UG-3	4.984	0.9964	6	No	10	20	No	0.01	Param.
COBALT, TOTAL (UG/L)	S-AM-1D	0.75	0.475	6	No	10	100	No	0.011	NP (NDs)
COBALT, TOTAL (UG/L)	S-AM-1S	3.273	1.667	6	No	10	20	No	0.01	Param.
COBALT, TOTAL (UG/L)	S-TP-2D	0.75	0.41	6	No	9	100	No	0.002	NP (NDs)
COBALT, TOTAL (UG/L)	S-TP-3D	1.2	0.41	6	No	9	88.89	No	0.002	NP (NDs)
COBALT, TOTAL (UG/L)	S-TP-4D	0.75	0.41	6	No	8	100	No	0.004	NP (NDs)
COBALT, TOTAL (UG/L)	S-TP-5D	1.2	0.41	6	No	9	88.89	No	0.002	NP (NDs)
COBALT, TOTAL (UG/L)	S-TP-6D	2.4	0.475	6	No	10	90	No	0.011	NP (NDs)
COBALT, TOTAL (UG/L)	S-TP-6S	0.75	0.41	6	No	9	100	No	0.002	NP (NDs)
COBALT, TOTAL (UG/L)	S-TP-8D	1.9	0.475	6	No	10	80	No	0.011	NP (NDs)
COBALT, TOTAL (UG/L)	S-PZ-9D	0.75	0.475	6	No	10	100	No	0.011	NP (NDs)
COBALT, TOTAL (UG/L)	S-PZ-1S	0.75	0.475	6	No	10	100	No	0.011	NP (NDs)
FLUORIDE, TOTAL (MG/L)	S-LMW-1S	0.47	0.06	4	No	11	36.36	No	0.006	NP (normality)
FLUORIDE, TOTAL (MG/L)	S-LMW-2S	0.44	0.043	4	No	11	63.64	No	0.006	NP (NDs)
FLUORIDE, TOTAL (MG/L)	S-LMW-4S	0.24	0.06	4	No	10	50	No	0.011	NP (normality)
FLUORIDE, TOTAL (MG/L)	S-LMW-5S	0.4793	0.1943	4	No	14	28.57	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	S-LMW-6S	0.38	0.043	4	No	11	54.55	No	0.006	NP (NDs)
FLUORIDE, TOTAL (MG/L)	S-UG-3	0.38	0.06	4	No	11	36.36	No	0.006	NP (normality)
FLUORIDE, TOTAL (MG/L)	S-AM-1D	0.6	0.19	4	No	10	10	No	0.011	NP (normality)
FLUORIDE, TOTAL (MG/L)	S-AM-1S	0.56	0.06	4	No	10	20	No	0.011	NP (normality)
FLUORIDE, TOTAL (MG/L)	S-TP-2D	0.23	0.06	4	No	10	60	No	0.011	NP (NDs)
FLUORIDE, TOTAL (MG/L)	S-TP-3D	0.28	0.06	4	No	10	30	No	0.011	NP (normality)
FLUORIDE, TOTAL (MG/L)	S-TP-4D	0.31	0.06	4	No	10	30	No	0.011	NP (normality)
FLUORIDE, TOTAL (MG/L)	S-TP-5D	0.42	0.06	4	No	10	30	No	0.011	NP (normality)
FLUORIDE, TOTAL (MG/L)	S-TP-6D	0.33	0.06	4	No	10	40	No	0.011	NP (normality)
FLUORIDE, TOTAL (MG/L)	S-TP-6S	0.36	0.06	4	No	10	40	No	0.011	NP (normality)
FLUORIDE, TOTAL (MG/L)	S-TP-8D	0.36	0.06	4	No	10	40	No	0.011	NP (normality)
FLUORIDE, TOTAL (MG/L)	S-PZ-9D	0.35	0.06	4	No	10	60	No	0.011	NP (NDs)
FLUORIDE, TOTAL (MG/L)	S-PZ-1S	0.8734	0.1946	4	No	10	40	No	0.01	Param.
LEAD, TOTAL (UG/L)	S-LMW-1S	4	1.9	15	No	7	85.71	No	0.008	NP (NDs)
LEAD, TOTAL (UG/L)	S-LMW-2S	3.05	1.9	15	No	7	100	No	0.008	NP (NDs)
LEAD, TOTAL (UG/L)	S-LMW-4S	3.05	1.9	15	No	7	100	No	0.008	NP (NDs)
LEAD, TOTAL (UG/L)	S-LMW-5S	3.9	1.9	15	No	7	85.71	No	0.008	NP (NDs)
LEAD, TOTAL (UG/L)	S-LMW-6S	3.05	1.9	15	No	7	100	No	0.008	NP (NDs)
LEAD, TOTAL (UG/L)	S-UG-3	3.05	1.9	15	No	7	100	No	0.008	NP (NDs)
LEAD, TOTAL (UG/L)	S-AM-1D	3.05	1.9	15	No	7	100	No	0.008	NP (NDs)
LEAD, TOTAL (UG/L)	S-AM-1S	3.05	1.9	15	No	7	100	No	0.008	NP (NDs)
LEAD, TOTAL (UG/L)	S-TP-2D	3.05	1.9	15	No	6	100	No	0.0155	NP (NDs)
LEAD, TOTAL (UG/L)	S-TP-3D	3.05	1.9	15	No	6	100	No	0.0155	NP (NDs)
LEAD, TOTAL (UG/L)	S-TP-4D	3.05	1.9	15	No	6	100	No	0.0155	NP (NDs)
LEAD, TOTAL (UG/L)	S-TP-5D	3.05	1.9	15	No	6	100	No	0.0155	NP (NDs)
LEAD, TOTAL (UG/L)	S-TP-6D	3.05	1.9	15	No	7	100	No	0.008	NP (NDs)
LEAD, TOTAL (UG/L)	S-TP-6S	3.05	1.9	15	No	7	100	No	0.008	NP (NDs)

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Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
LEAD, TOTAL (UG/L)	S-TP-8D	3.05	1.9	15	No	7	100	No	0.008	NP (NDs)
LEAD, TOTAL (UG/L)	S-PZ-9D	3.05	1.9	15	No	7	100	No	0.008	NP (NDs)
LEAD, TOTAL (UG/L)	S-PZ-1S	13.4	1.9	15	No	7	57.14	No	0.008	NP (NDs)
LITHIUM, TOTAL (UG/L)	S-LMW-1S	22.41	14.37	40	No	10	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-LMW-2S	36.58	32.35	40	No	10	10	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-LMW-4S	36.27	25.3	40	No	10	10	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	**S-LMW-5S**	**48.57**	**43.48**	**40**	**Yes**	**8**	**0**	**No**	**0.01**	**Param.**
LITHIUM, TOTAL (UG/L)	S-LMW-6S	23.19	19.15	40	No	10	10	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-UG-3	34.23	25.78	40	No	10	10	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-AM-1D	35.72	31.7	40	No	10	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-AM-1S	32.73	24.59	40	No	10	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	**S-TP-2D**	**52.63**	**42.48**	**40**	**Yes**	**10**	**10**	**No**	**0.01**	**Param.**
LITHIUM, TOTAL (UG/L)	S-TP-3D	36.43	31.72	40	No	10	10	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-TP-4D	35.86	30.73	40	No	10	10	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-TP-5D	38.14	30.63	40	No	10	10	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-TP-6D	32.68	25.29	40	No	10	10	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-TP-6S	39.7	34.47	40	No	10	10	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-TP-8D	33.46	31.27	40	No	9	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-PZ-9D	36.87	30.72	40	No	10	10	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	S-PZ-1S	18.85	14.44	40	No	9	0	ln(x)	0.01	Param.
MERCURY, TOTAL (UG/L)	S-LMW-1S	0.06	0.0425	2	No	5	100	No	0.031	NP (NDs)
MERCURY, TOTAL (UG/L)	S-LMW-2S	0.06	0.0425	2	No	5	100	No	0.031	NP (NDs)
MERCURY, TOTAL (UG/L)	S-LMW-4S	0.06	0.0425	2	No	5	100	No	0.031	NP (NDs)
MERCURY, TOTAL (UG/L)	S-LMW-5S	0.06	0.0425	2	No	5	100	No	0.031	NP (NDs)
MERCURY, TOTAL (UG/L)	S-LMW-6S	0.06	0.0425	2	No	5	100	No	0.031	NP (NDs)
MERCURY, TOTAL (UG/L)	S-UG-3	0.12	0.0425	2	No	5	80	No	0.031	NP (NDs)
MERCURY, TOTAL (UG/L)	S-AM-1D	0.06	0.0425	2	No	5	100	No	0.031	NP (NDs)
MERCURY, TOTAL (UG/L)	S-AM-1S	0.06	0.0425	2	No	5	100	No	0.031	NP (NDs)
MERCURY, TOTAL (UG/L)	S-TP-2D	0.06	0.0425	2	No	5	100	No	0.031	NP (NDs)
MERCURY, TOTAL (UG/L)	S-TP-3D	0.06	0.0425	2	No	5	100	No	0.031	NP (NDs)
MERCURY, TOTAL (UG/L)	S-TP-4D	0.06	0.0425	2	No	5	100	No	0.031	NP (NDs)
MERCURY, TOTAL (UG/L)	S-TP-5D	0.06	0.0425	2	No	5	100	No	0.031	NP (NDs)
MERCURY, TOTAL (UG/L)	S-TP-6D	0.06	0.0425	2	No	5	100	No	0.031	NP (NDs)
MERCURY, TOTAL (UG/L)	S-TP-6S	0.06	0.0425	2	No	5	100	No	0.031	NP (NDs)
MERCURY, TOTAL (UG/L)	S-TP-8D	0.06	0.0425	2	No	5	100	No	0.031	NP (NDs)
MERCURY, TOTAL (UG/L)	S-PZ-9D	0.06	0.0425	2	No	5	100	No	0.031	NP (NDs)
MERCURY, TOTAL (UG/L)	S-PZ-1S	0.095	0.0425	2	No	5	100	No	0.031	NP (NDs)
MOLYBDENUM, TOTAL (UG/L)	S-LMW-1S	96.57	57.51	100	No	10	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	**S-LMW-2S**	**1063**	**691.1**	**100**	**Yes**	**10**	**0**	**No**	**0.01**	**Param.**
MOLYBDENUM, TOTAL (UG/L)	S-LMW-4S	2.368	1.491	100	No	8	50	ln(x)	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	**S-LMW-5S**	**2494**	**1343**	**100**	**Yes**	**10**	**0**	**No**	**0.01**	**Param.**
MOLYBDENUM, TOTAL (UG/L)	S-LMW-6S	10.6	0.85	100	No	10	50	No	0.011	NP (normality)
MOLYBDENUM, TOTAL (UG/L)	S-UG-3	10	2.5	100	No	10	30	No	0.011	NP (normality)
MOLYBDENUM, TOTAL (UG/L)	**S-AM-1D**	**575**	**263**	**100**	**Yes**	**10**	**0**	**No**	**0.011**	**NP (normality)**
MOLYBDENUM, TOTAL (UG/L)	**S-AM-1S**	**289**	**42.9**	**100**	**Yes**	**10**	**0**	**No**	**0.011**	**NP (normality)**
MOLYBDENUM, TOTAL (UG/L)	S-TP-2D	2.4	0.5	100	No	11	81.82	No	0.006	NP (NDs)
MOLYBDENUM, TOTAL (UG/L)	S-TP-3D	10	0.85	100	No	11	63.64	No	0.006	NP (NDs)
MOLYBDENUM, TOTAL (UG/L)	S-TP-4D	1.3	0.85	100	No	11	72.73	No	0.006	NP (NDs)
MOLYBDENUM, TOTAL (UG/L)	**S-TP-5D**	**622**	**171**	**100**	**Yes**	**11**	**0**	**No**	**0.006**	**NP (normality)**
MOLYBDENUM, TOTAL (UG/L)	S-TP-6D	1.4	0.5	100	No	11	90.91	No	0.006	NP (NDs)

Confidence Interval

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Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
MOLYBDENUM, TOTAL (UG/L)	S-TP-6S	10	2.5	100	No	11	18.18	No	0.006	NP (normality)
MOLYBDENUM, TOTAL (UG/L)	S-TP-8D	10	0.85	100	No	11	54.55	No	0.006	NP (NDs)
MOLYBDENUM, TOTAL (UG/L)	S-PZ-9D	12.49	5.573	100	No	12	8.333	ln(x)	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	**S-PZ-1S**	**5283**	**1048**	**100**	**Yes**	**12**	**0**	**ln(x)**	**0.01**	**Param.**
RADIUM [226 + 228] (PCI/L)	S-LMW-1S	0.877	0.742	5	No	10	100	No	0.011	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-LMW-2S	1.218	0.689	5	No	10	80	No	0.011	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-LMW-4S	1.06	0.673	5	No	8	100	No	0.004	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-LMW-5S	1.072	0.578	5	No	10	90	No	0.011	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-LMW-6S	1.065	0.7535	5	No	10	100	No	0.011	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-UG-3	1.059	0.7035	5	No	10	100	No	0.011	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-AM-1D	1.269	0.6875	5	No	10	100	No	0.011	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-AM-1S	0.941	0.681	5	No	10	100	No	0.011	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-TP-2D	1.2	0.5485	5	No	10	90	No	0.011	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-TP-3D	1.963	0.74	5	No	10	70	No	0.011	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-TP-4D	1.771	1.263	5	No	10	40	No	0.01	Param.
RADIUM [226 + 228] (PCI/L)	S-TP-5D	1.084	0.6615	5	No	10	90	No	0.011	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-TP-6D	2.266	0.8685	5	No	10	60	No	0.011	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-TP-6S	1.118	0.7105	5	No	10	100	No	0.011	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-TP-8D	1.557	0.759	5	No	10	70	No	0.011	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-PZ-9D	1.066	0.709	5	No	9	100	No	0.002	NP (NDs)
RADIUM [226 + 228] (PCI/L)	S-PZ-1S	0.9645	0.754	5	No	10	100	No	0.011	NP (NDs)
SELENIUM, TOTAL (UG/L)	S-LMW-1S	5.385	1.575	50	No	9	0	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	S-LMW-2S	0.09	0.09	50	No	10	100	No	0.011	NP (NDs)
SELENIUM, TOTAL (UG/L)	S-LMW-4S	0.7736	0.3244	50	No	10	10	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	S-LMW-5S	0.09	0.09	50	No	10	90	No	0.011	NP (NDs)
SELENIUM, TOTAL (UG/L)	S-LMW-6S	0.09	0.09	50	No	10	100	No	0.011	NP (NDs)
SELENIUM, TOTAL (UG/L)	S-UG-3	2.417	1.243	50	No	10	0	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	S-AM-1D	0.09	0.09	50	No	10	100	No	0.011	NP (NDs)
SELENIUM, TOTAL (UG/L)	S-AM-1S	0.09	0.09	50	No	10	100	No	0.011	NP (NDs)
SELENIUM, TOTAL (UG/L)	S-TP-2D	0.09	0.09	50	No	10	100	No	0.011	NP (NDs)
SELENIUM, TOTAL (UG/L)	S-TP-3D	0.09	0.09	50	No	10	100	No	0.011	NP (NDs)
SELENIUM, TOTAL (UG/L)	S-TP-4D	0.09	0.09	50	No	10	100	No	0.011	NP (NDs)
SELENIUM, TOTAL (UG/L)	S-TP-5D	0.09	0.09	50	No	10	100	No	0.011	NP (NDs)
SELENIUM, TOTAL (UG/L)	S-TP-6D	0.09	0.09	50	No	10	100	No	0.011	NP (NDs)
SELENIUM, TOTAL (UG/L)	S-TP-6S	0.5873	0.1605	50	No	10	20	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	S-TP-8D	0.09	0.09	50	No	10	90	No	0.011	NP (NDs)
SELENIUM, TOTAL (UG/L)	S-PZ-9D	0.09	0.09	50	No	10	90	No	0.011	NP (NDs)
SELENIUM, TOTAL (UG/L)	S-PZ-1S	0.09	0.09	50	No	10	100	No	0.011	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-LMW-1S	0.075	0.0465	2	No	5	100	No	0.031	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-LMW-2S	0.075	0.0465	2	No	5	100	No	0.031	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-LMW-4S	0.075	0.0465	2	No	5	100	No	0.031	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-LMW-5S	0.075	0.0465	2	No	5	100	No	0.031	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-LMW-6S	0.075	0.0465	2	No	5	100	No	0.031	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-UG-3	0.075	0.0465	2	No	5	100	No	0.031	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-AM-1D	0.075	0.0465	2	No	5	100	No	0.031	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-AM-1S	0.075	0.0465	2	No	5	100	No	0.031	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-TP-2D	0.075	0.0465	2	No	5	100	No	0.031	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-TP-3D	0.075	0.0465	2	No	5	100	No	0.031	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-TP-4D	0.075	0.0465	2	No	5	100	No	0.031	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-TP-5D	0.075	0.0465	2	No	5	100	No	0.031	NP (NDs)

Confidence Interval

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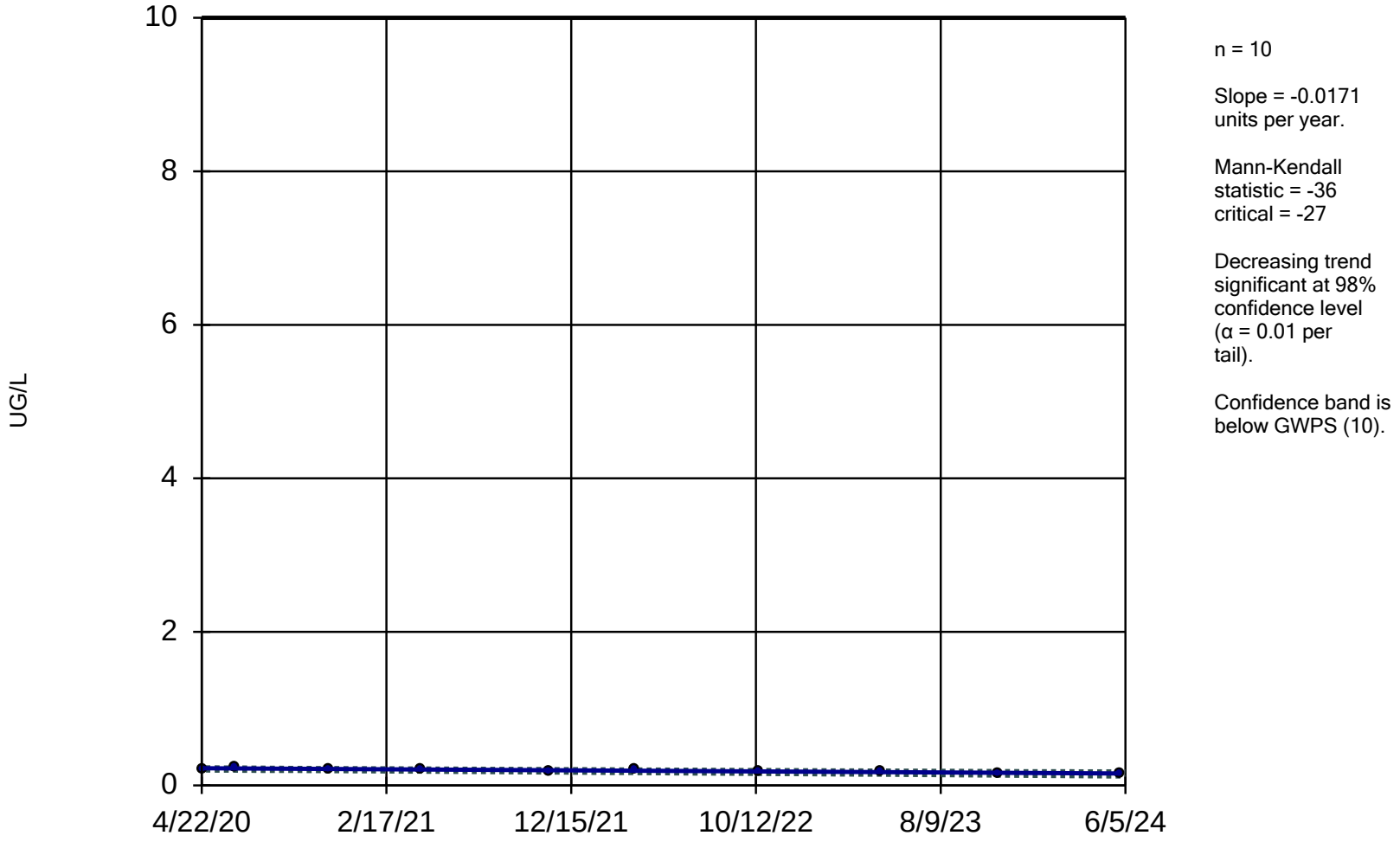
Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
THALLIUM, TOTAL (UG/L)	S-TP-6D	0.075	0.0465	2	No	5	100	No	0.031	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-TP-6S	0.075	0.0465	2	No	5	100	No	0.031	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-TP-8D	0.075	0.0465	2	No	5	100	No	0.031	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-PZ-9D	0.075	0.0465	2	No	5	100	No	0.031	NP (NDs)
THALLIUM, TOTAL (UG/L)	S-PZ-1S	0.075	0.0465	2	No	5	100	No	0.031	NP (NDs)

Appendix B
Sanitas Trending Confidence Bands Statistical Output

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG

Sen's Slope and 95% Confidence Band

S-AM-1D



n = 10

Slope = -0.0171 units per year.

Mann-Kendall statistic = -36
critical = -27

Decreasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (10).

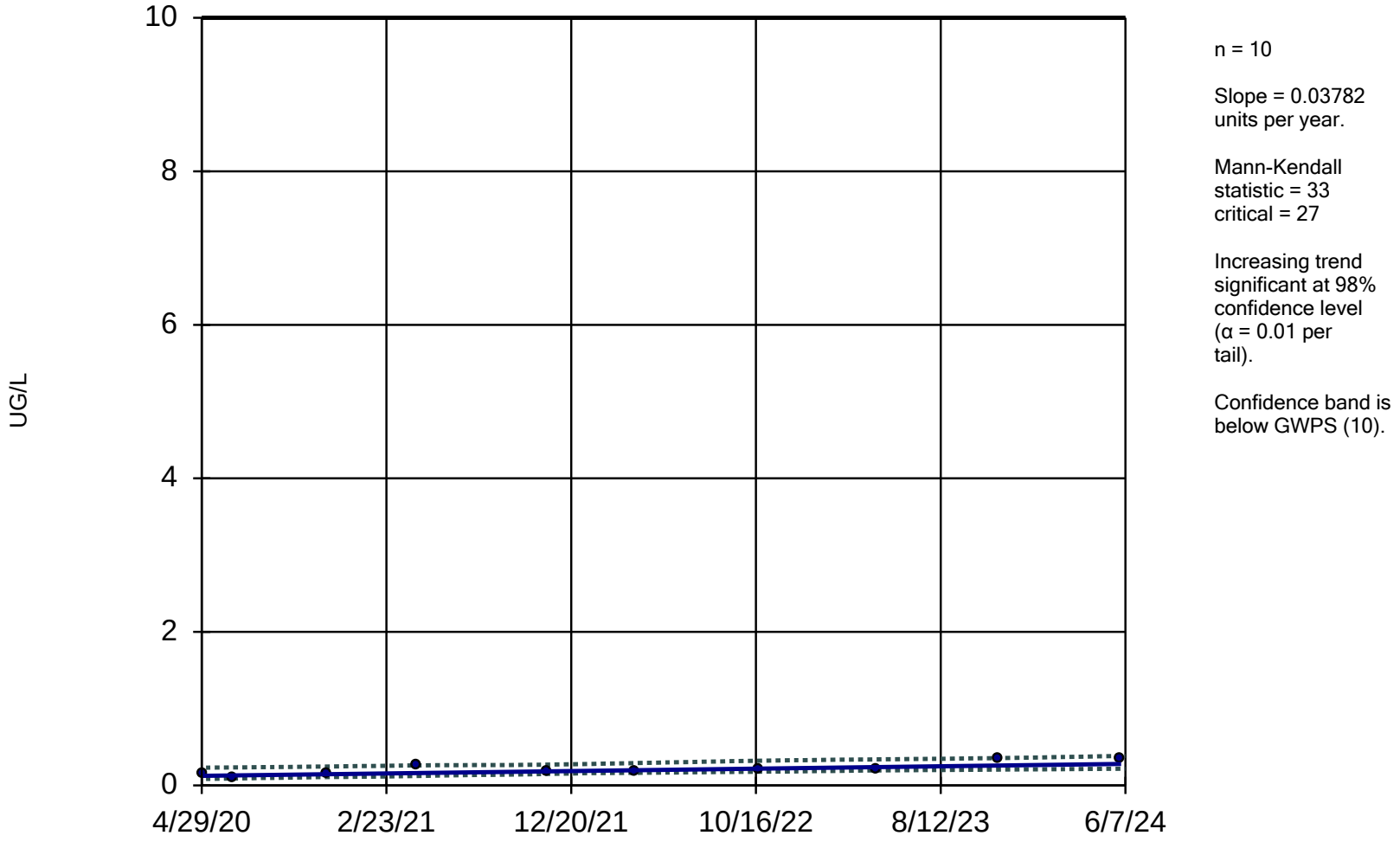
Constituent: ARSENIC, TOTAL Analysis Run 8/28/2024 4:06 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

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Sen's Slope and 95% Confidence Band

S-TP-2D



n = 10

Slope = 0.03782 units per year.

Mann-Kendall statistic = 33
critical = 27

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (10).

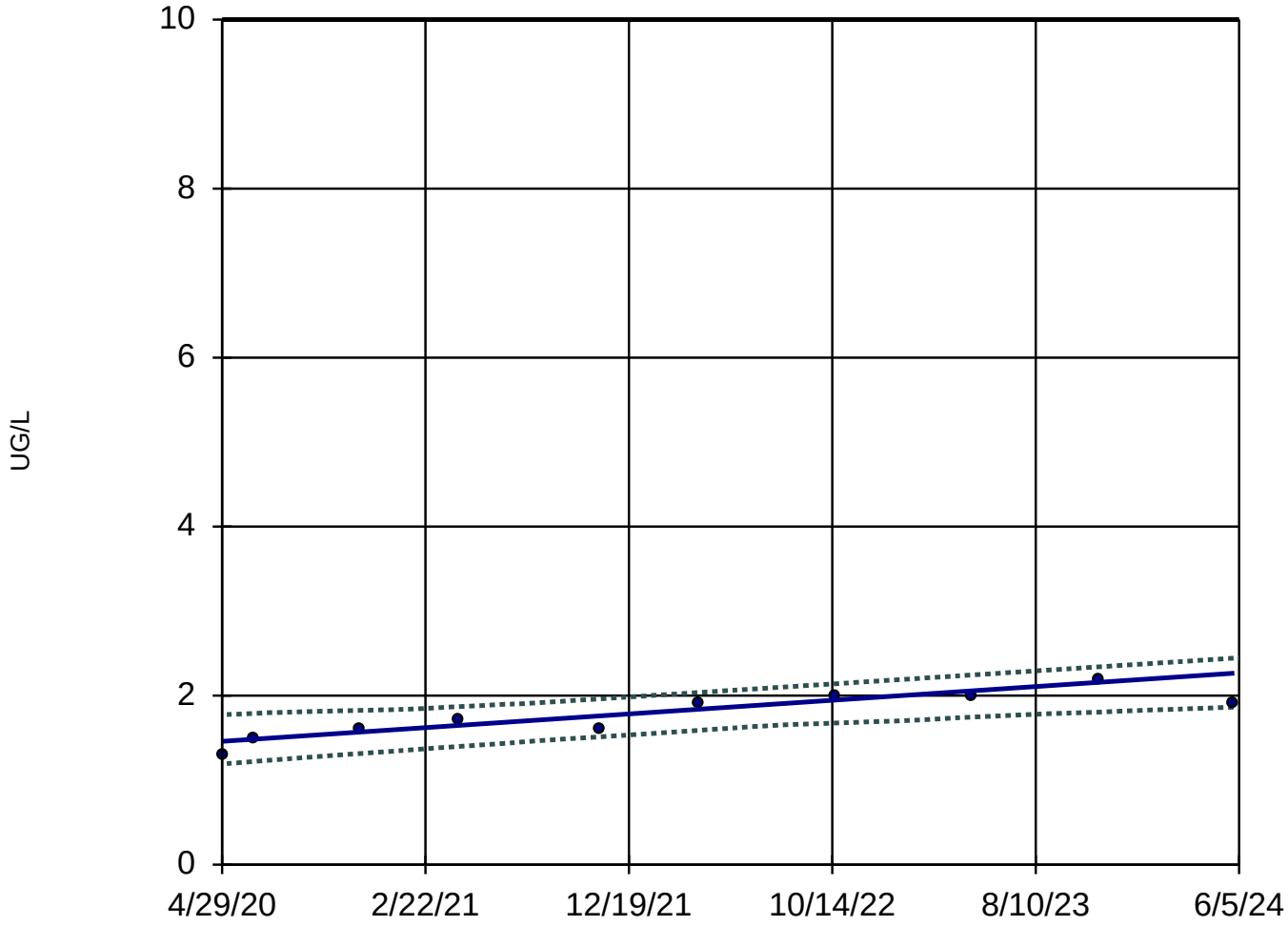
Constituent: ARSENIC, TOTAL Analysis Run 8/28/2024 4:06 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

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Sen's Slope and 95% Confidence Band

S-TP-4D



n = 10

Slope = 0.1973 units per year.

Mann-Kendall statistic = 34
critical = 27

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (10).

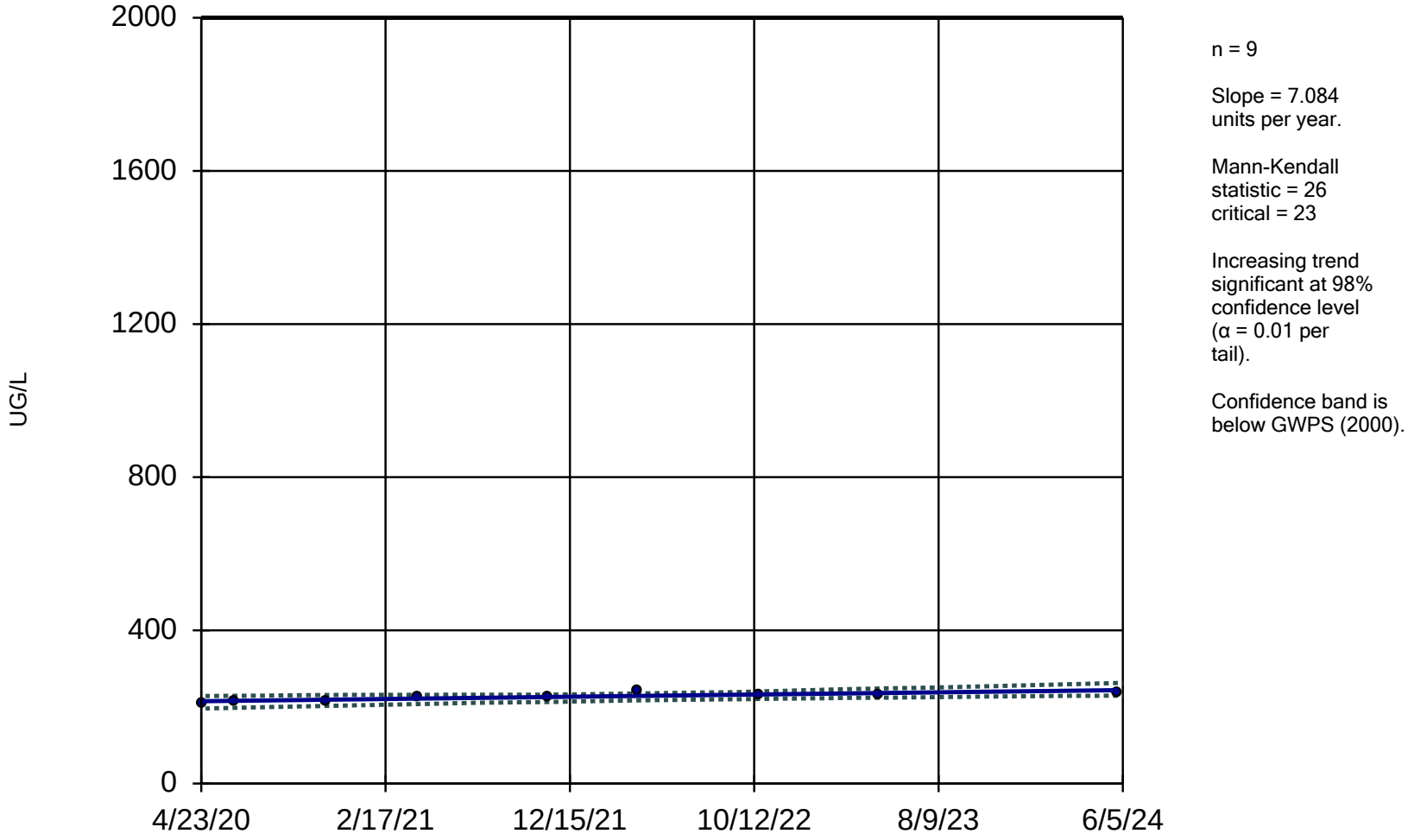
Constituent: ARSENIC, TOTAL Analysis Run 8/28/2024 4:06 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG

Sen's Slope and 95% Confidence Band

S-LMW-4S



n = 9

Slope = 7.084 units per year.

Mann-Kendall statistic = 26
critical = 23

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (2000).

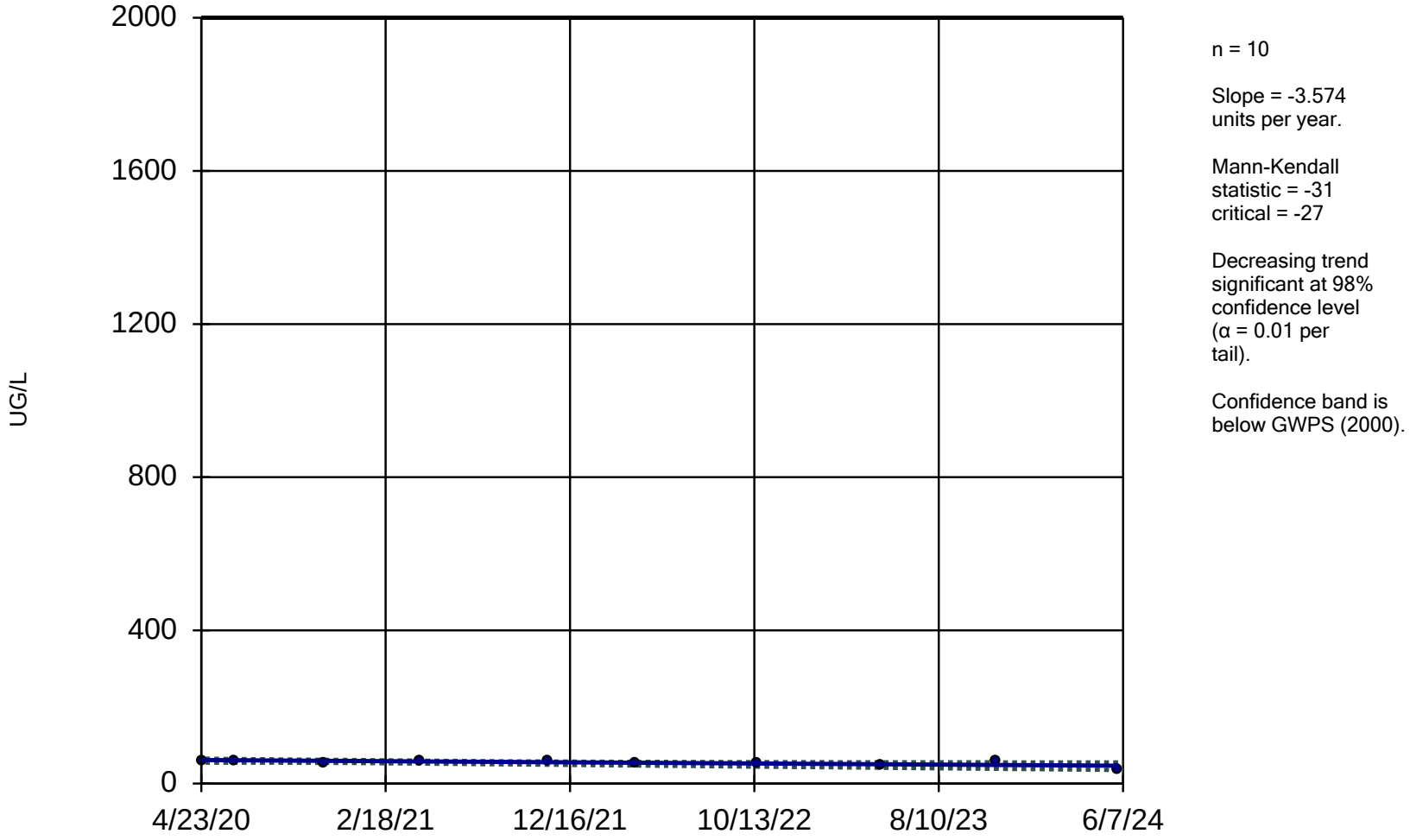
Constituent: BARIUM, TOTAL Analysis Run 8/28/2024 4:07 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

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Sen's Slope and 95% Confidence Band

S-LMW-5S



n = 10

Slope = -3.574 units per year.

Mann-Kendall statistic = -31 critical = -27

Decreasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (2000).

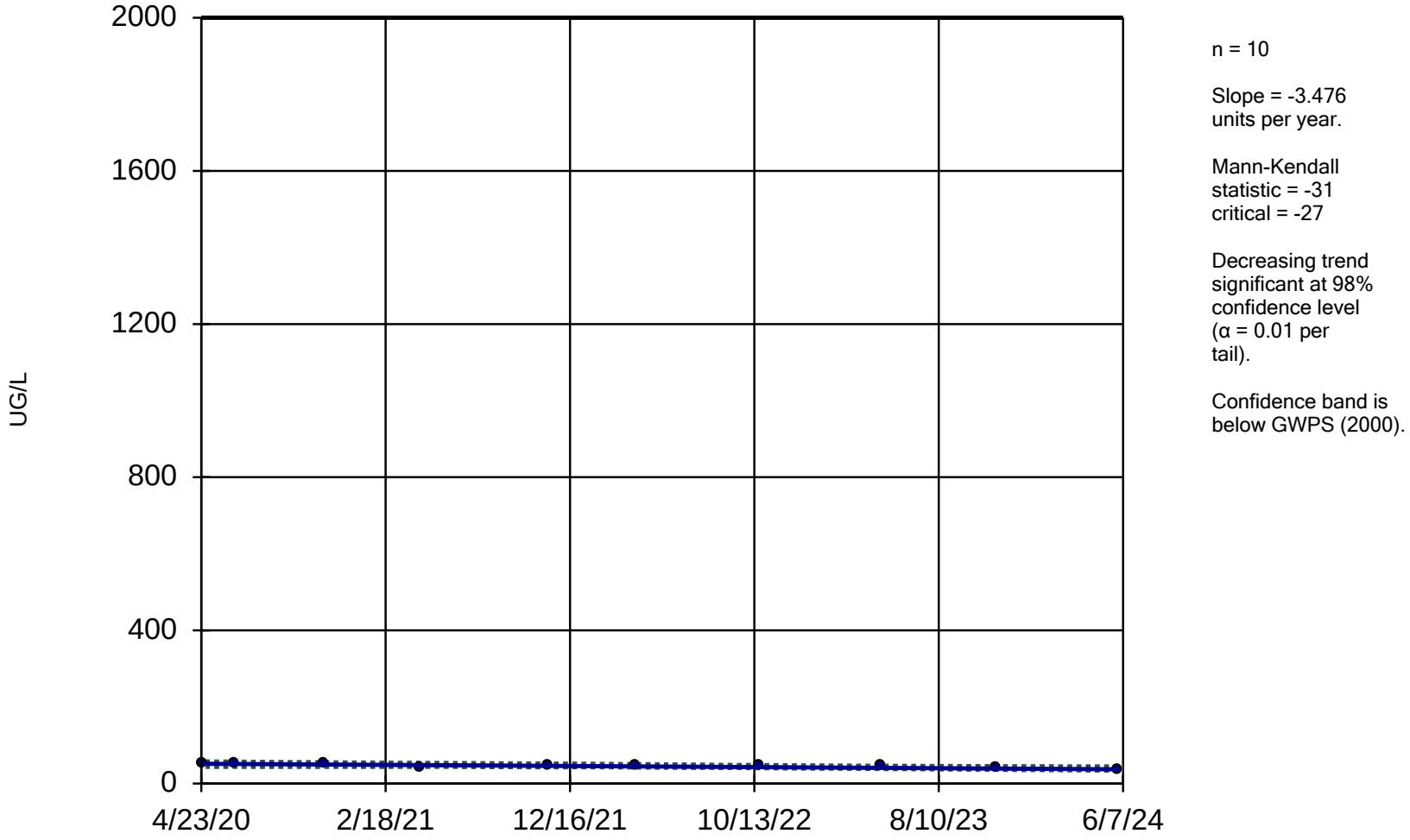
Constituent: BARIUM, TOTAL Analysis Run 8/28/2024 4:07 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

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Sen's Slope and 95% Confidence Band

S-LMW-6S



n = 10

Slope = -3.476 units per year.

Mann-Kendall statistic = -31 critical = -27

Decreasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (2000).

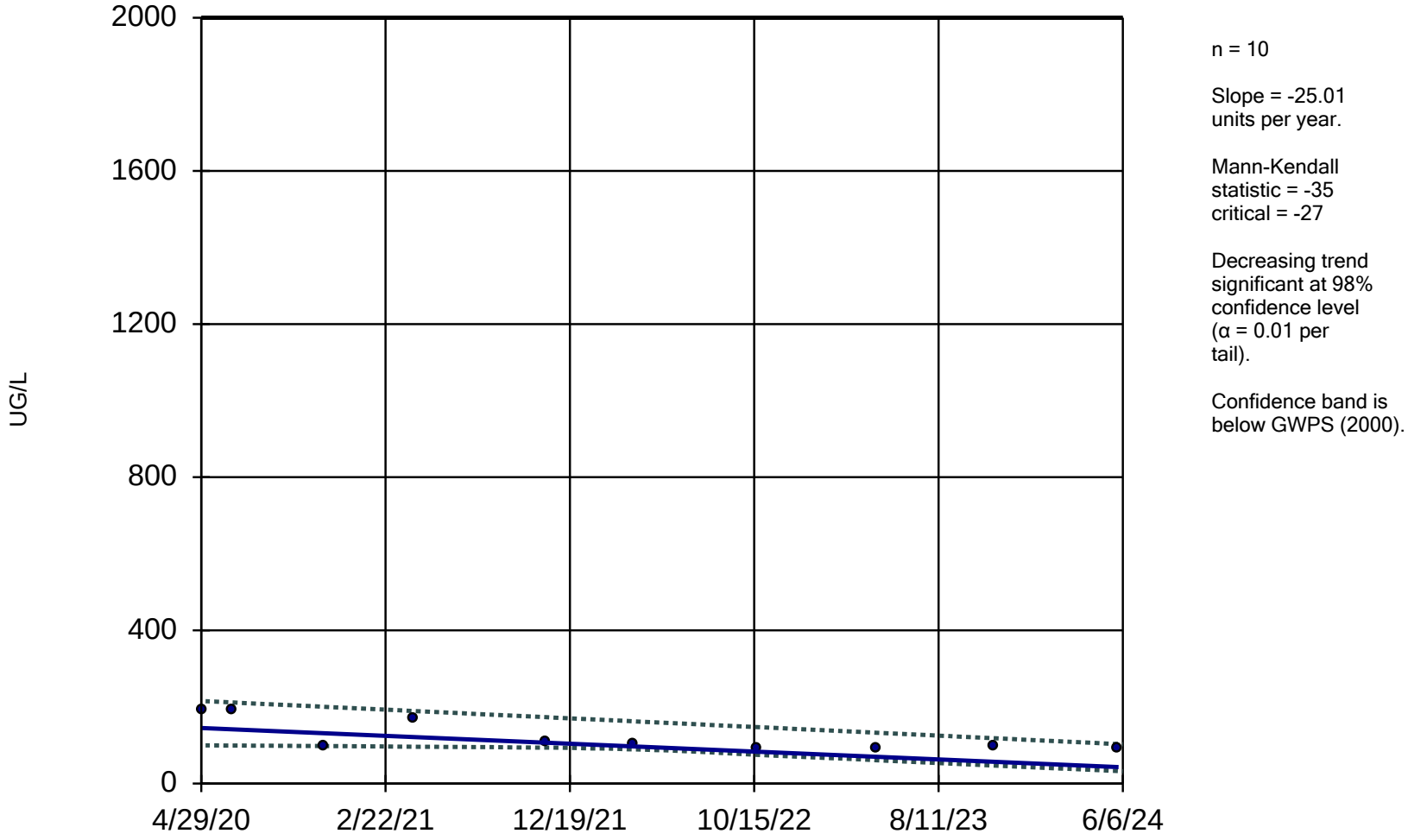
Constituent: BARIUM, TOTAL Analysis Run 8/28/2024 4:07 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

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Sen's Slope and 95% Confidence Band

S-PZ-1S



n = 10

Slope = -25.01 units per year.

Mann-Kendall statistic = -35
critical = -27

Decreasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (2000).

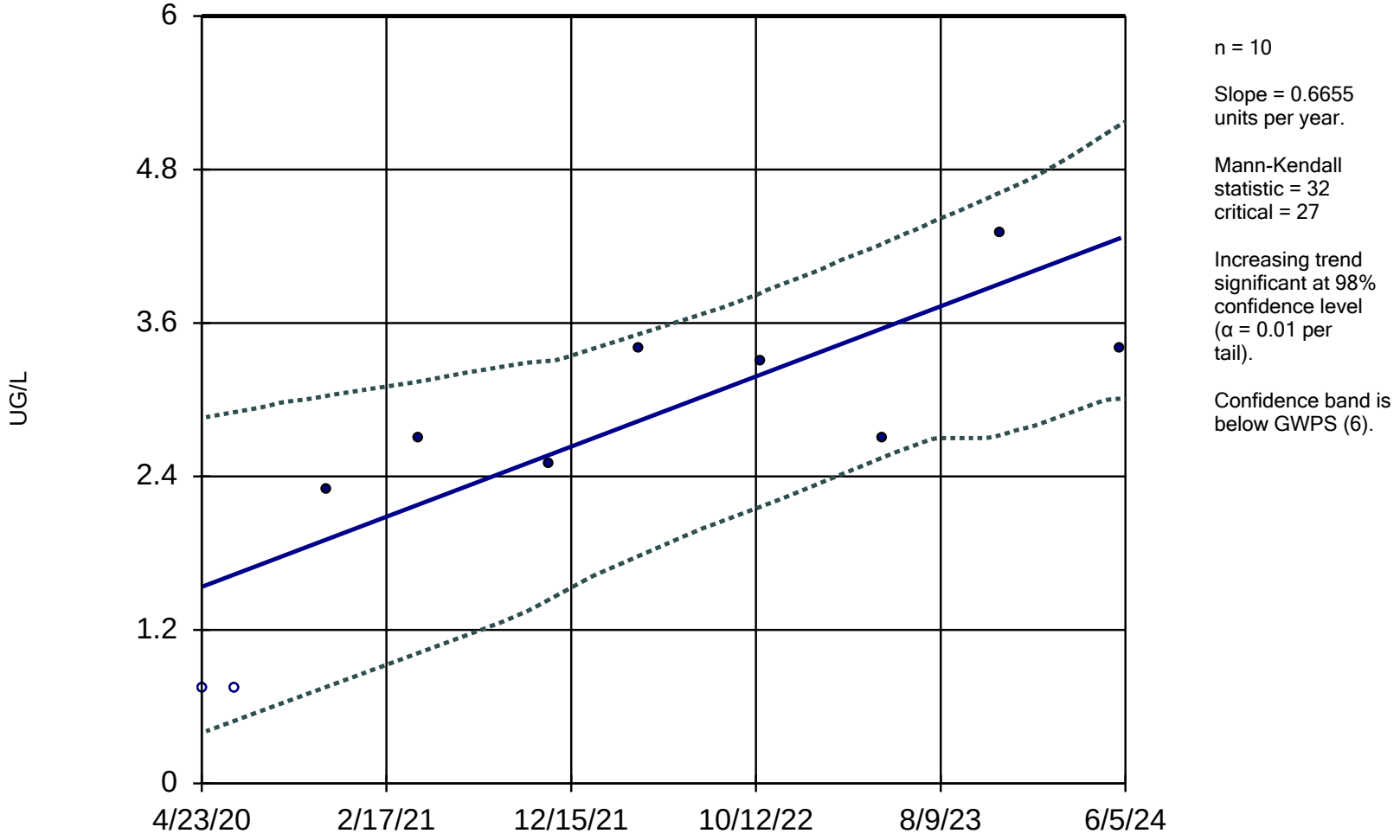
Constituent: BARIUM, TOTAL Analysis Run 8/28/2024 4:07 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

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Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

S-LMW-2S



n = 10

Slope = 0.6655 units per year.

Mann-Kendall statistic = 32
critical = 27

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (6).

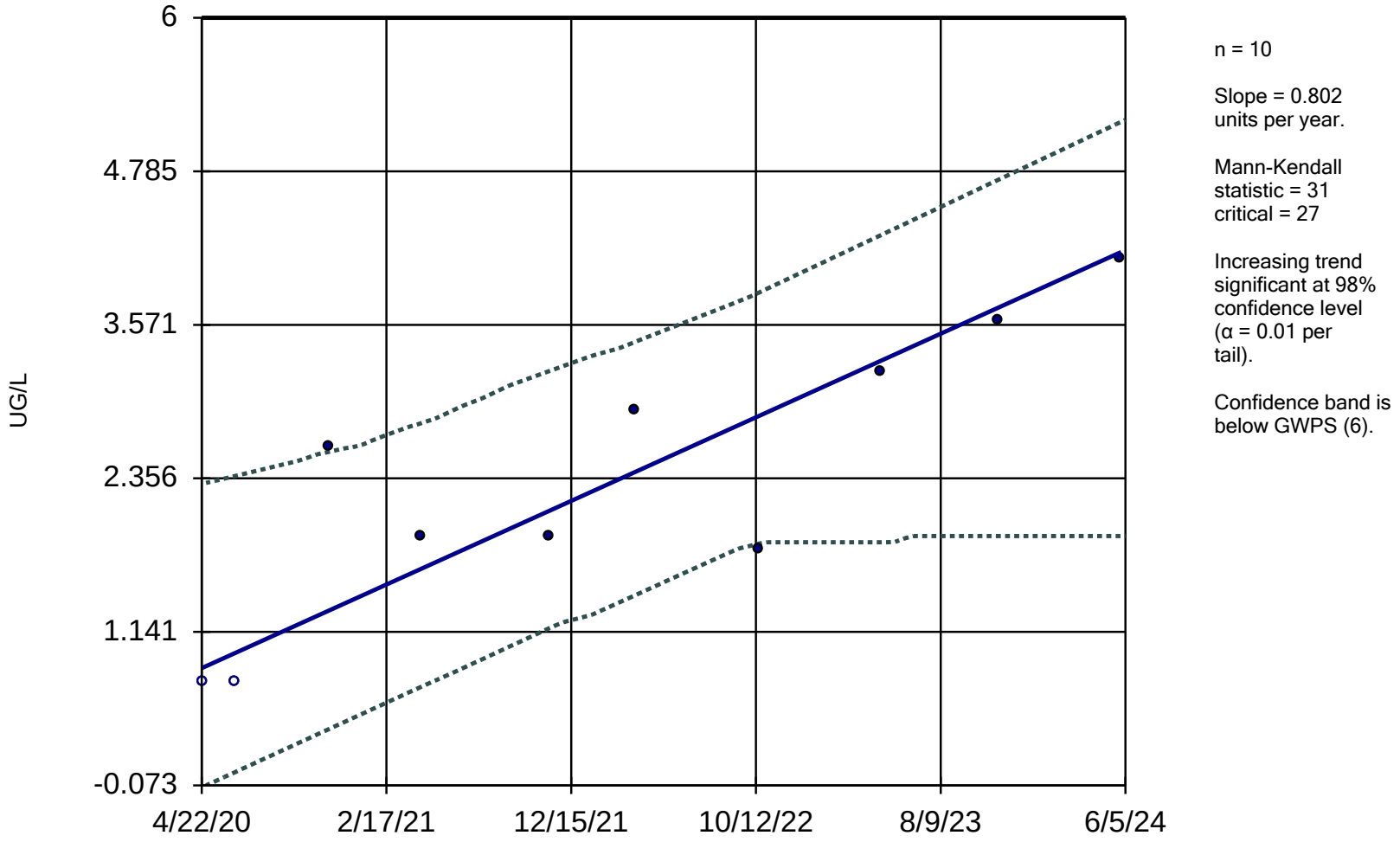
Constituent: COBALT, TOTAL Analysis Run 8/28/2024 4:07 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

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Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

S-AM-1S



n = 10

Slope = 0.802 units per year.

Mann-Kendall statistic = 31
critical = 27

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (6).

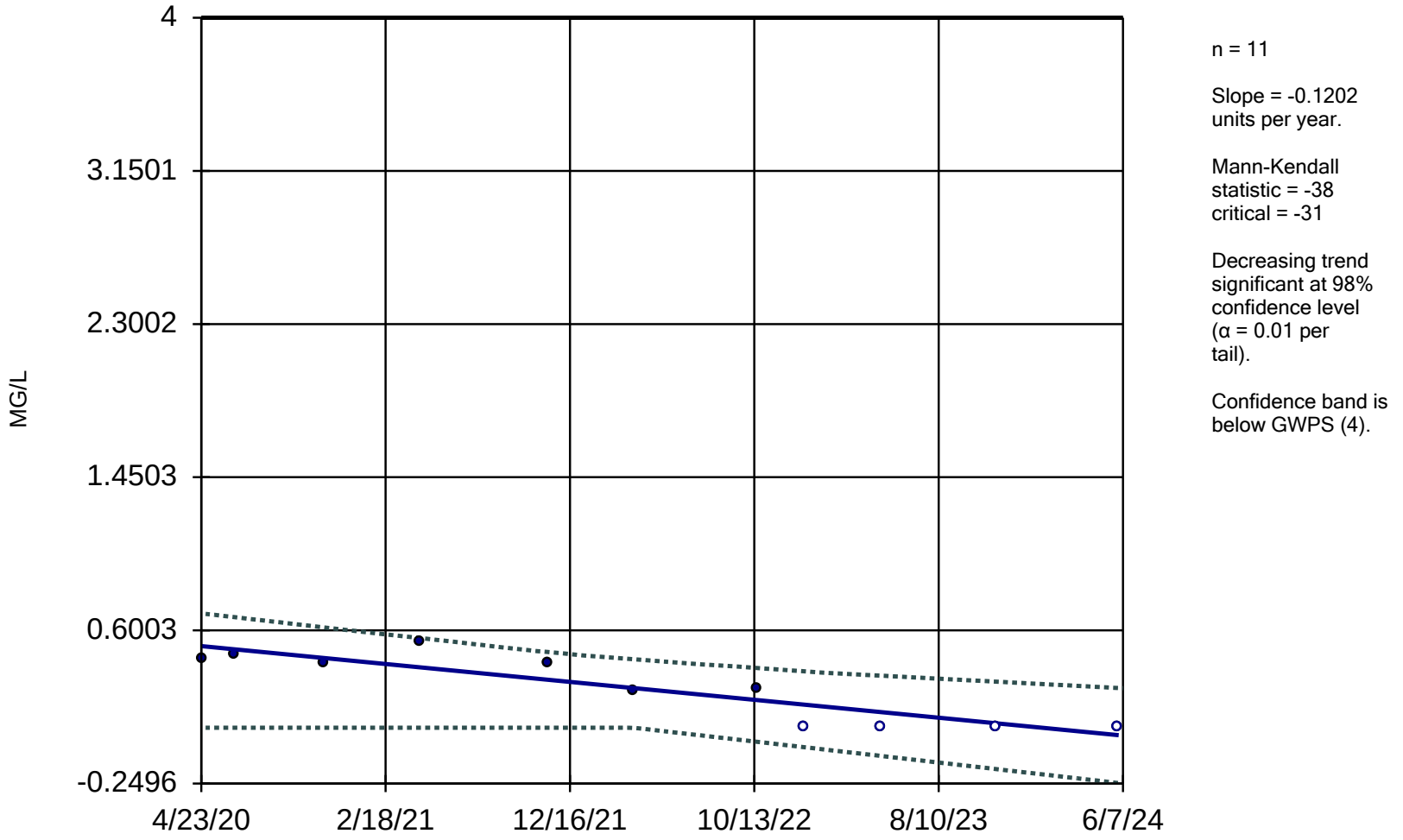
Constituent: COBALT, TOTAL Analysis Run 8/28/2024 4:07 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG
Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

S-LMW-1S



n = 11

Slope = -0.1202 units per year.

Mann-Kendall statistic = -38
critical = -31

Decreasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (4).

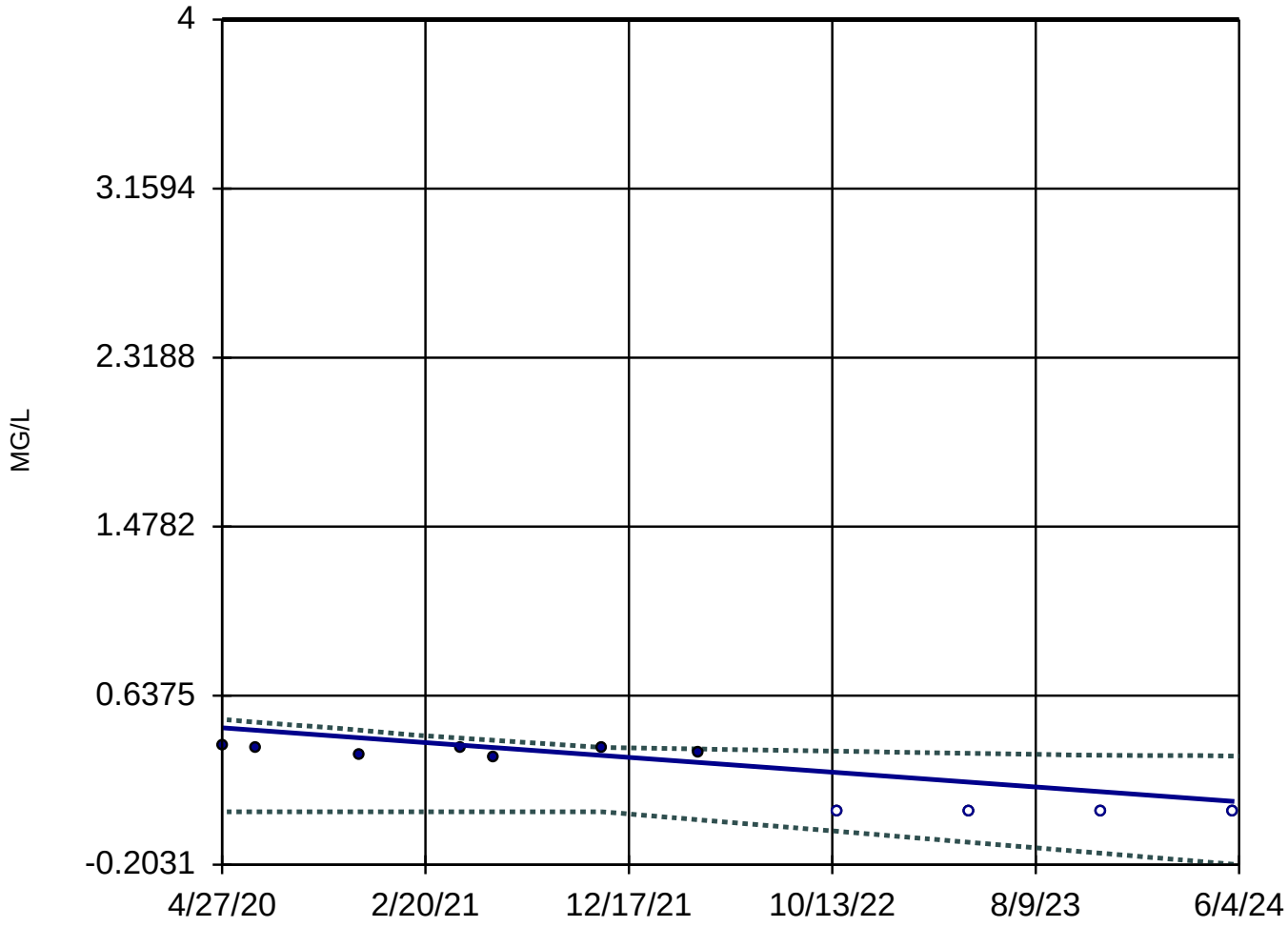
Constituent: FLUORIDE, TOTAL Analysis Run 8/28/2024 4:07 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG
Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

S-UG-3



n = 11

Slope = -0.08946 units per year.

Mann-Kendall statistic = -36
critical = -31

Decreasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (4).

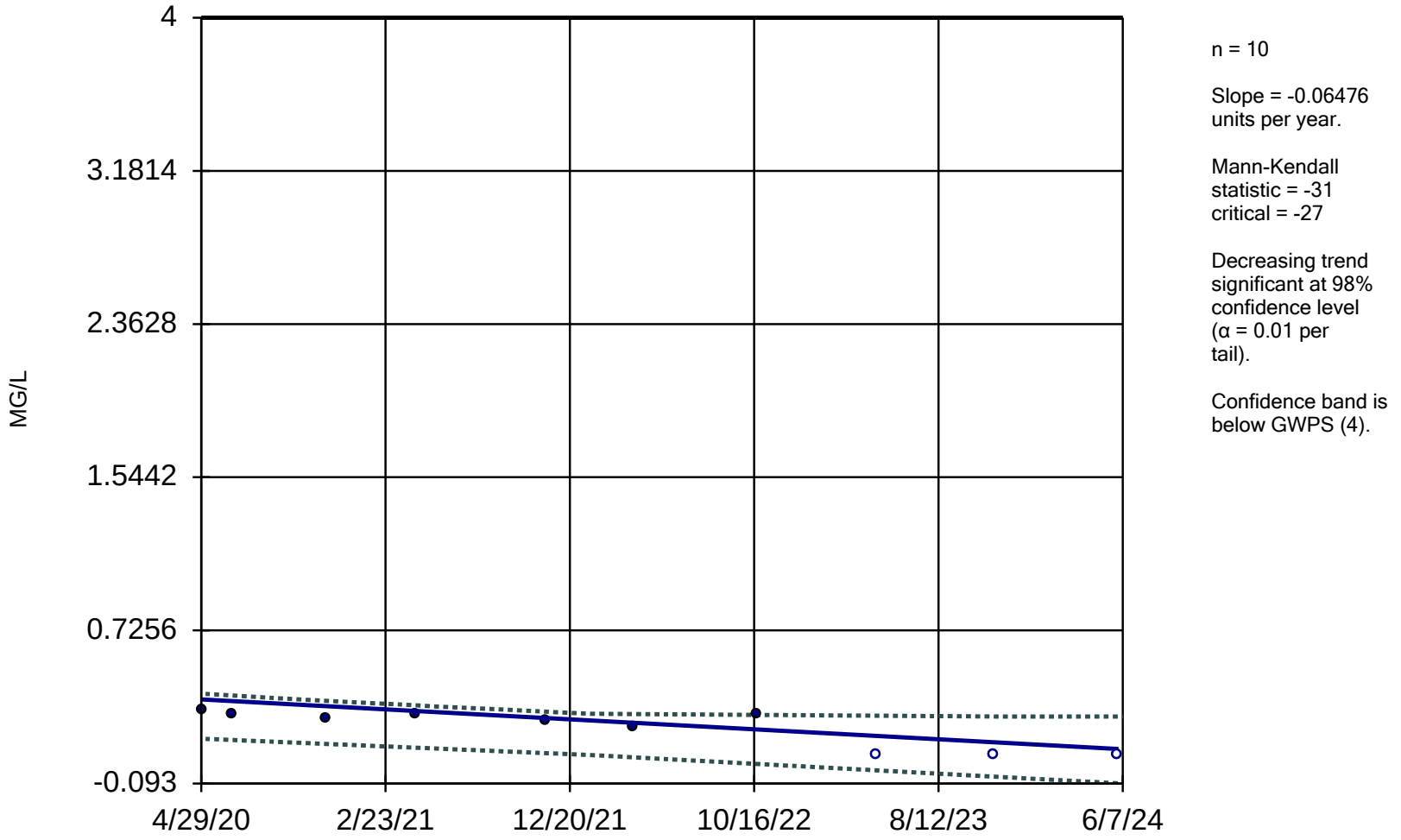
Constituent: FLUORIDE, TOTAL Analysis Run 8/28/2024 4:07 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

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Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

S-TP-3D



n = 10

Slope = -0.06476 units per year.

Mann-Kendall statistic = -31
critical = -27

Decreasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (4).

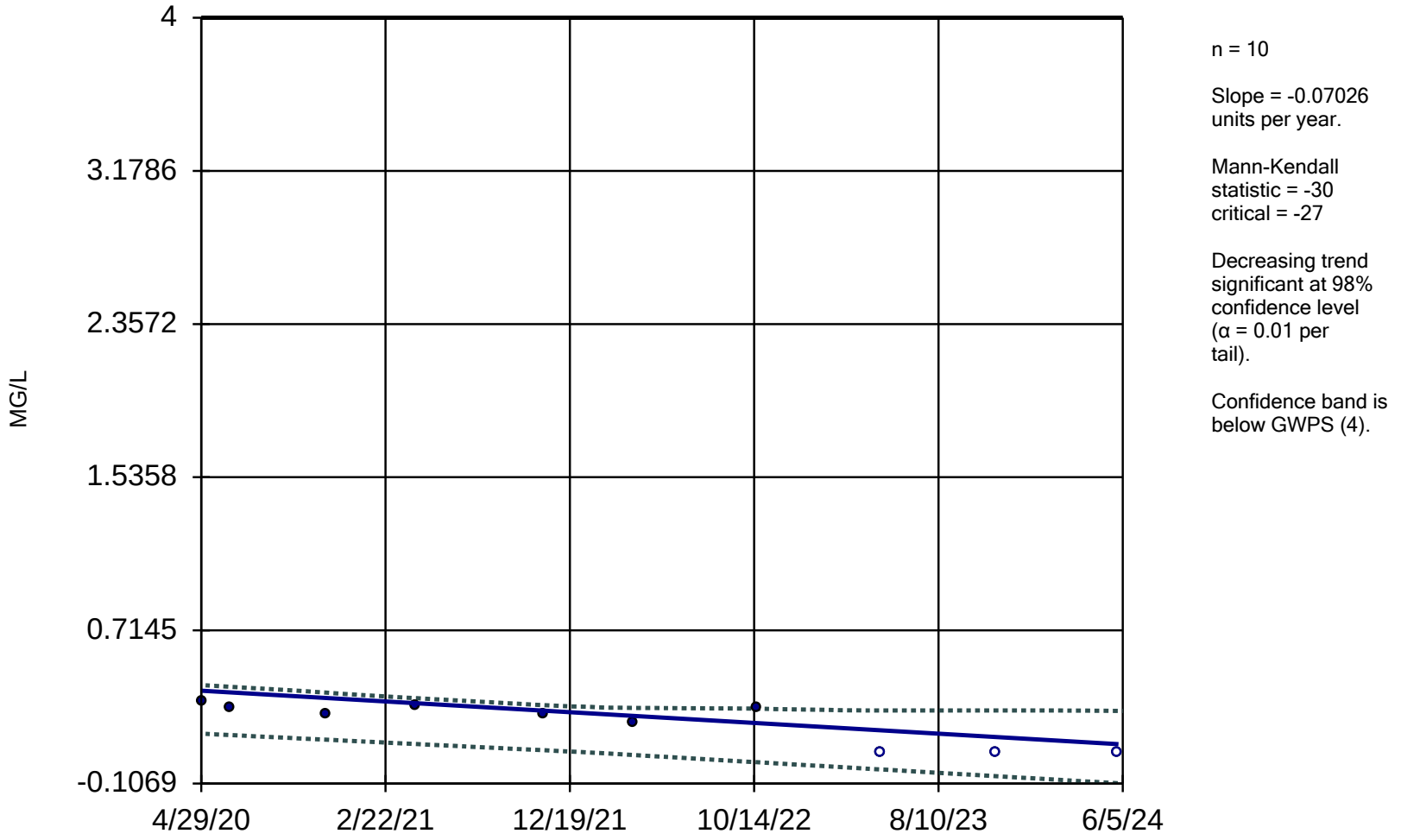
Constituent: FLUORIDE, TOTAL Analysis Run 8/28/2024 4:07 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG
Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

S-TP-4D



n = 10

Slope = -0.07026 units per year.

Mann-Kendall statistic = -30
critical = -27

Decreasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (4).

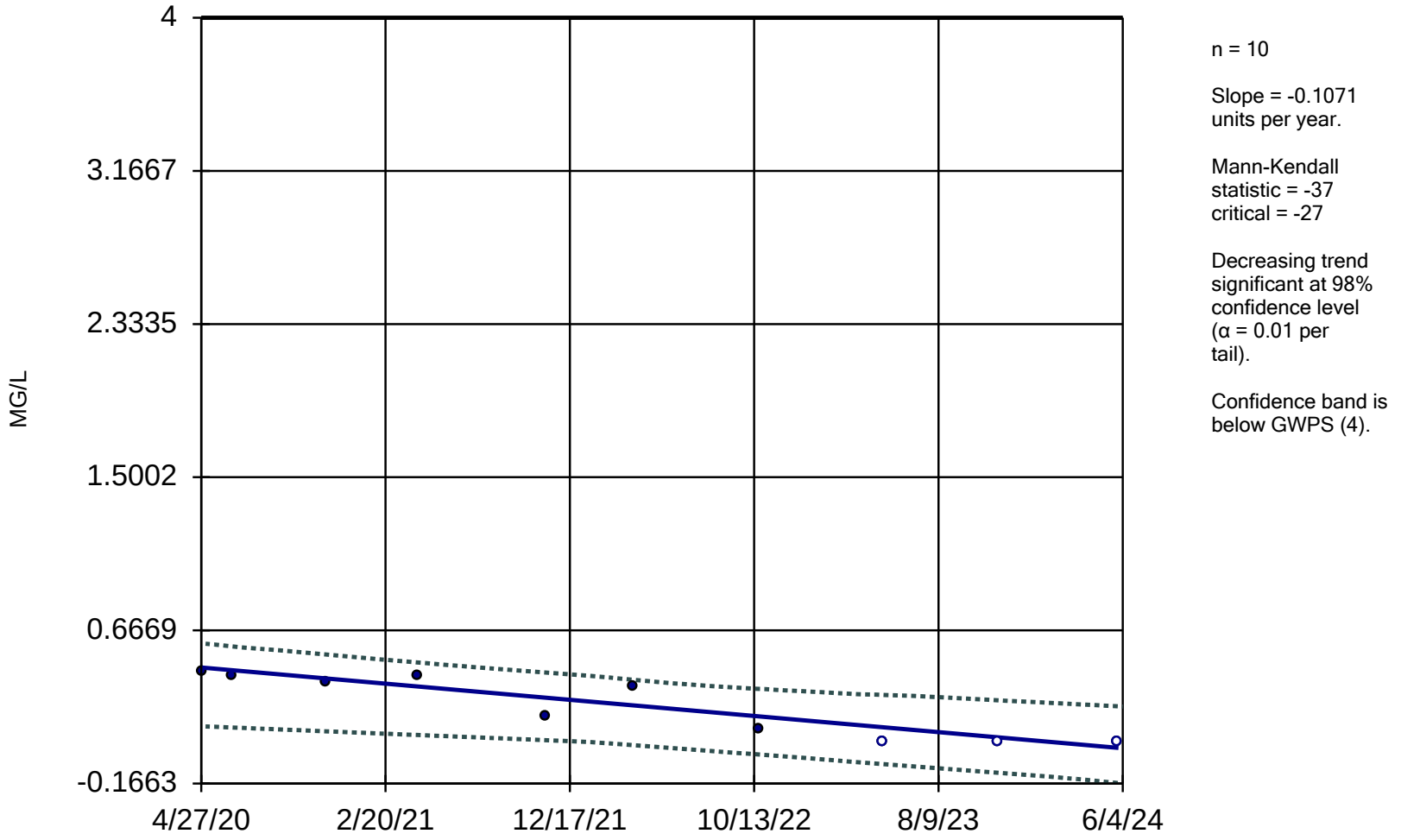
Constituent: FLUORIDE, TOTAL Analysis Run 8/28/2024 4:07 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG
Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

S-TP-5D



n = 10

Slope = -0.1071 units per year.

Mann-Kendall statistic = -37
critical = -27

Decreasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (4).

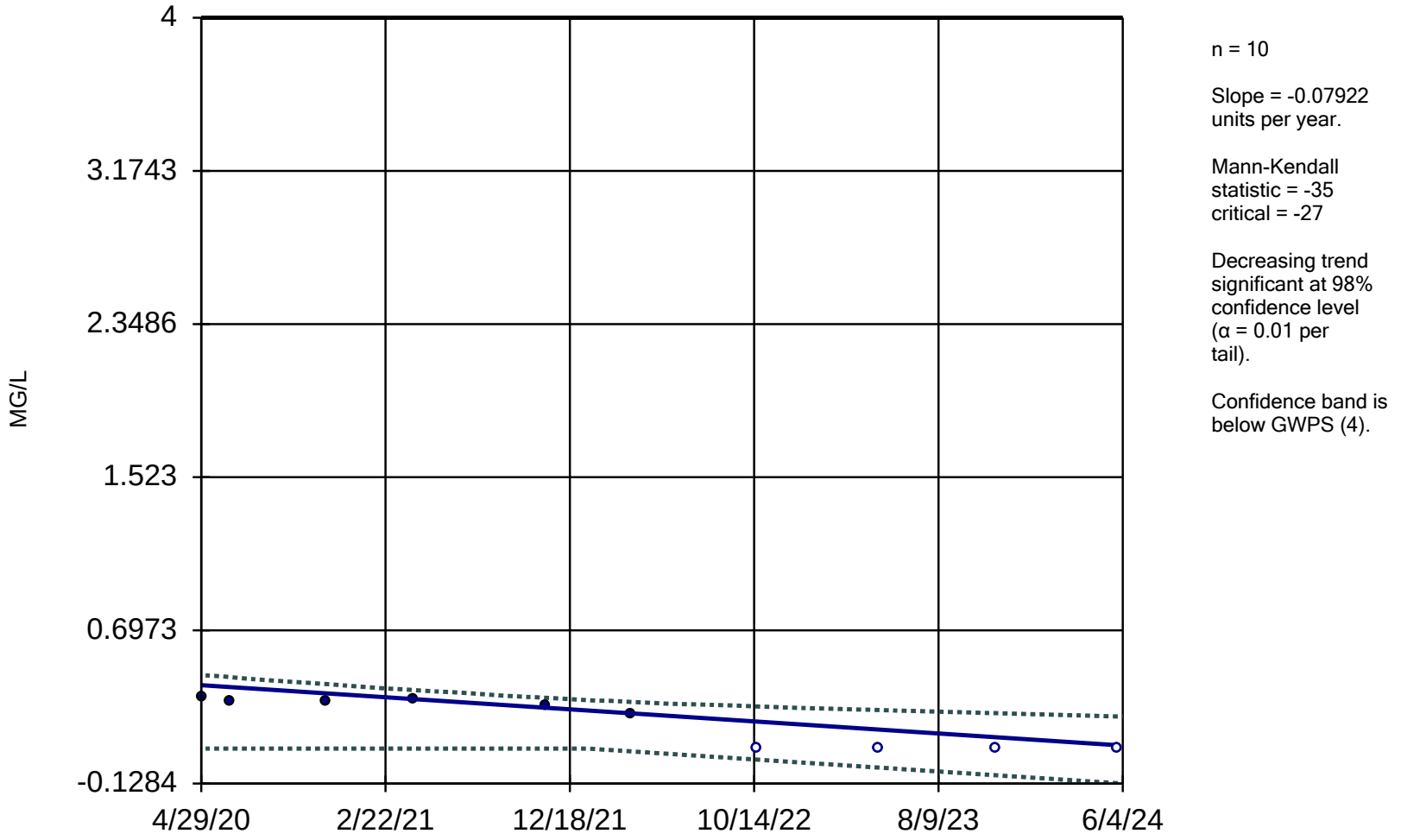
Constituent: FLUORIDE, TOTAL Analysis Run 8/28/2024 4:07 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG
Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

S-TP-6D



n = 10

Slope = -0.07922 units per year.

Mann-Kendall statistic = -35
critical = -27

Decreasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (4).

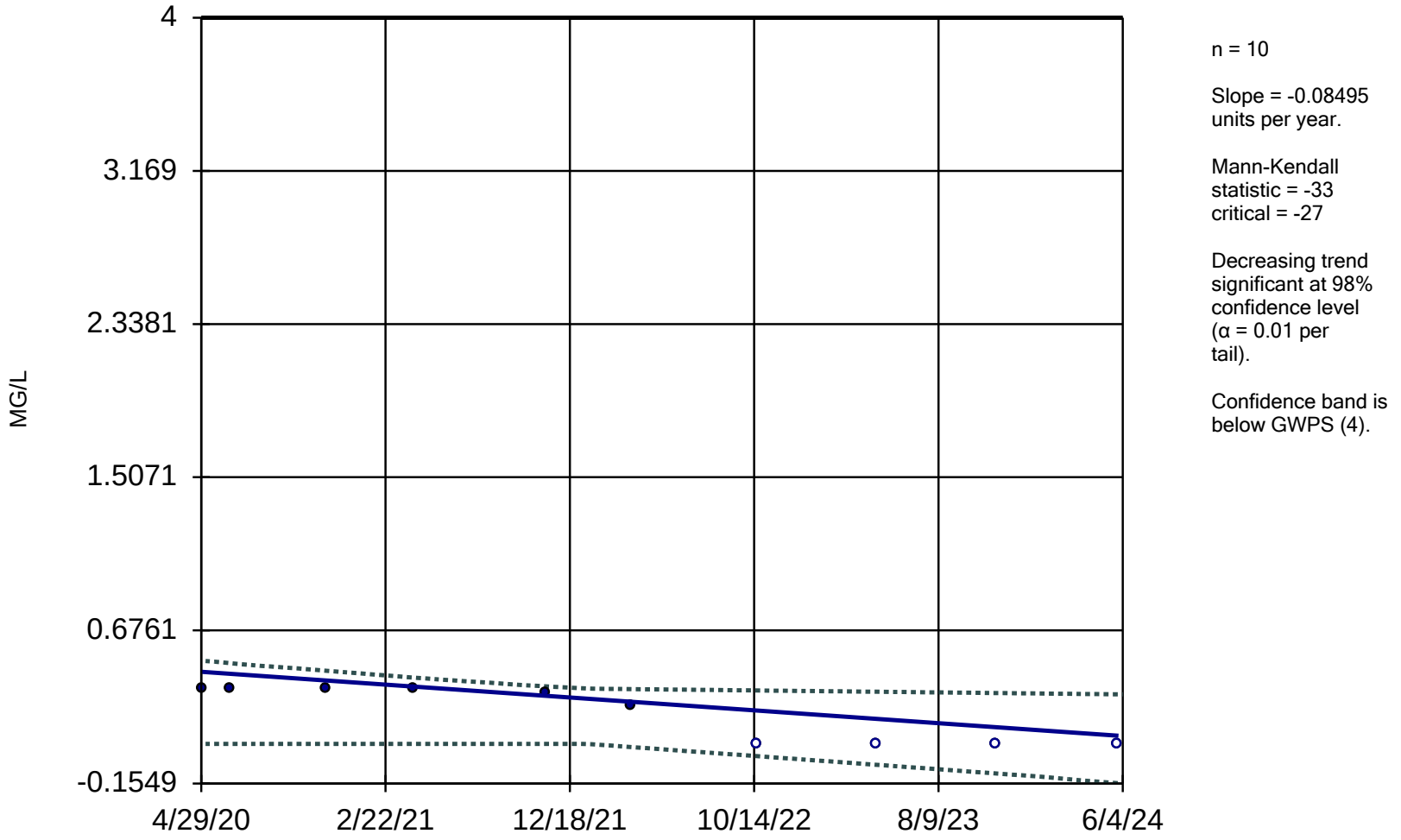
Constituent: FLUORIDE, TOTAL Analysis Run 8/28/2024 4:07 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG
Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

S-TP-6S



n = 10

Slope = -0.08495 units per year.

Mann-Kendall statistic = -33
critical = -27

Decreasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (4).

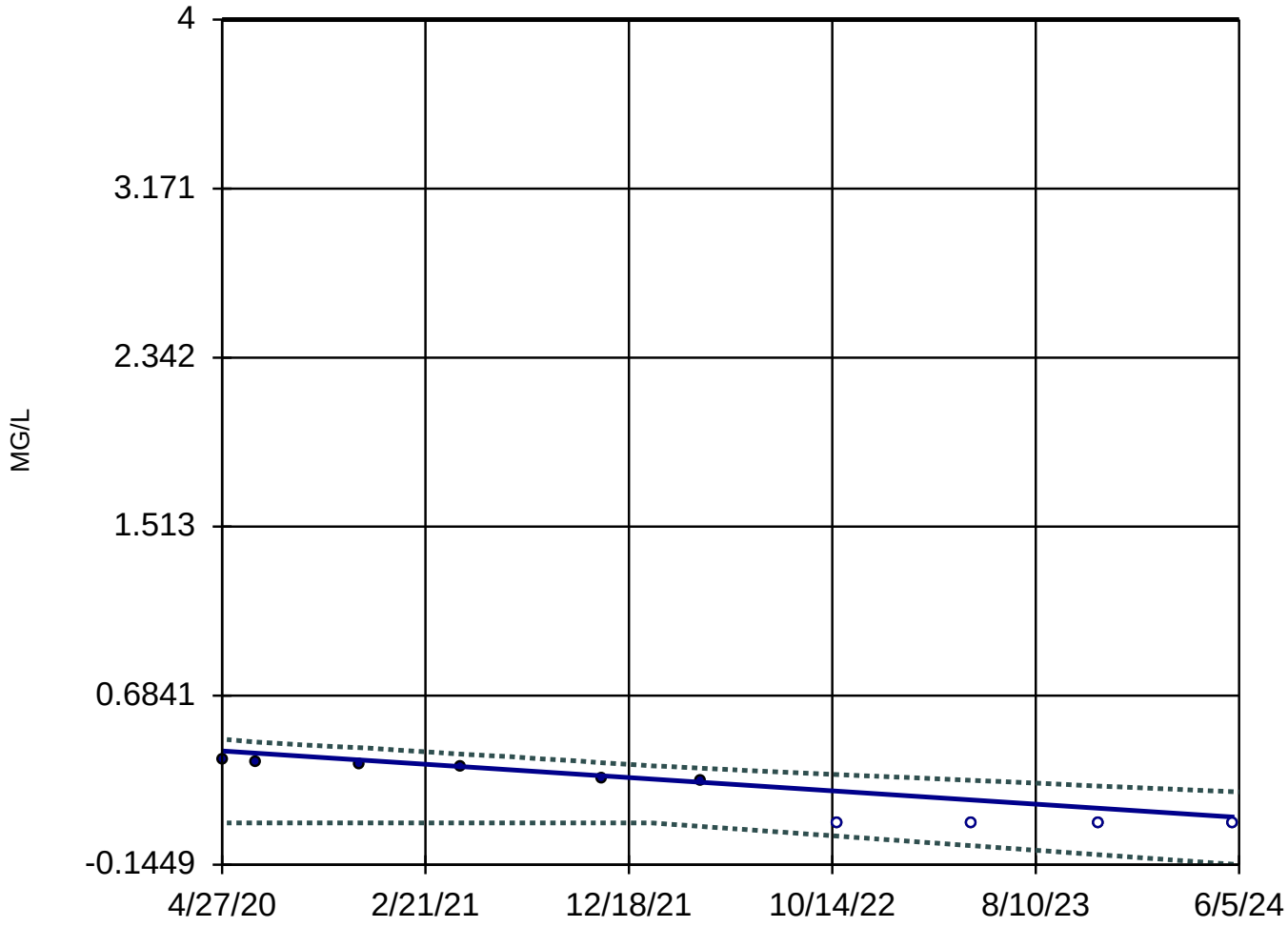
Constituent: FLUORIDE, TOTAL Analysis Run 8/28/2024 4:07 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG
Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

S-TP-8D



n = 10

Slope = -0.07922 units per year.

Mann-Kendall statistic = -39
critical = -27

Decreasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (4).

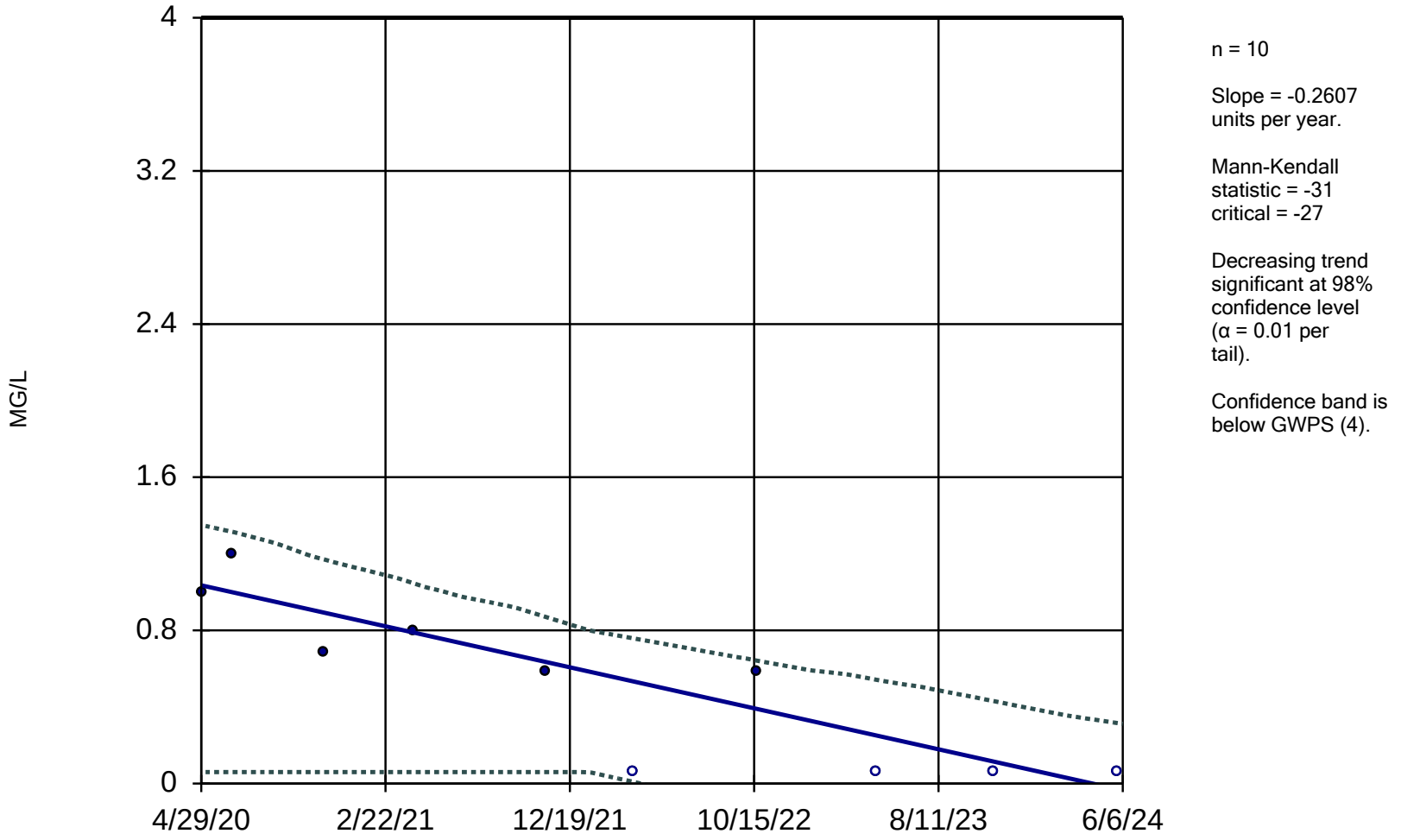
Constituent: FLUORIDE, TOTAL Analysis Run 8/28/2024 4:07 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG
Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

S-PZ-1S



n = 10

Slope = -0.2607 units per year.

Mann-Kendall statistic = -31
critical = -27

Decreasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (4).

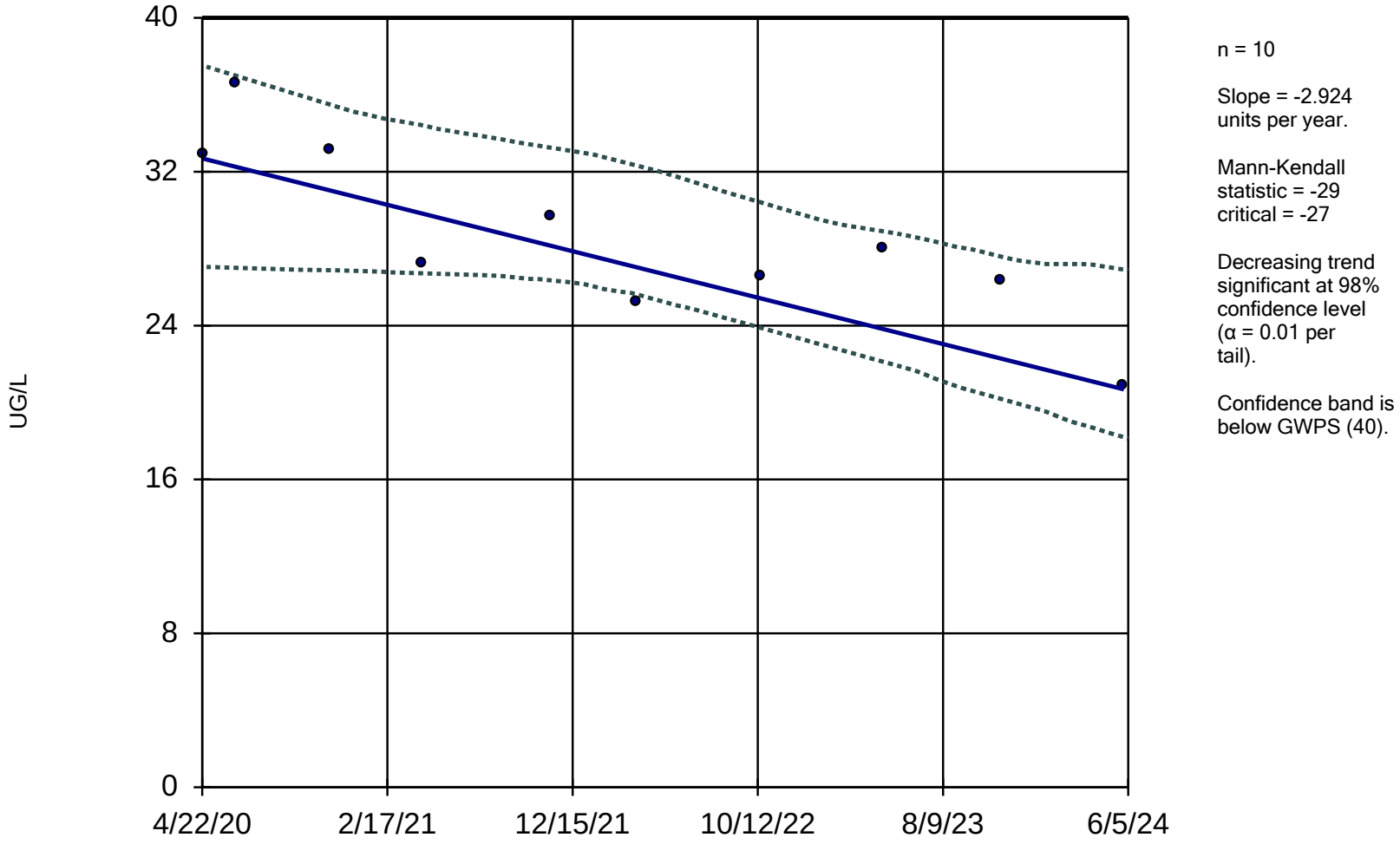
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Sioux E.C. Client: Ameren Data: SEC DATA

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Sen's Slope and 95% Confidence Band

S-AM-1S



n = 10

Slope = -2.924 units per year.

Mann-Kendall statistic = -29
critical = -27

Decreasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (40).

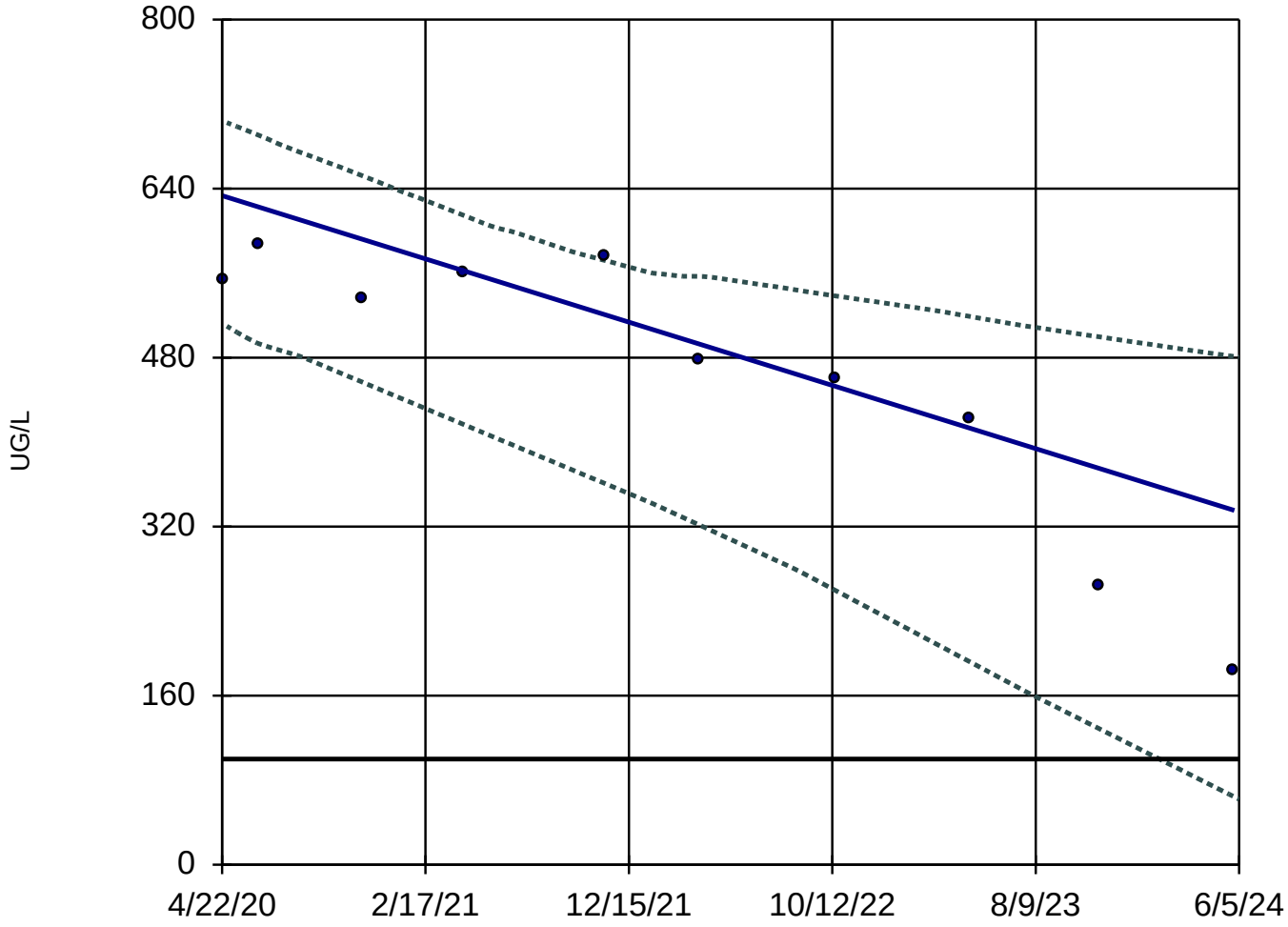
Constituent: LITHIUM, TOTAL Analysis Run 8/28/2024 4:08 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

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Sen's Slope and 95% Confidence Band

S-AM-1D



n = 10

Slope = -72.63 units per year.

Mann-Kendall statistic = -33 critical = -27

Decreasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band intersects GWPS (100) on 02/21/24.

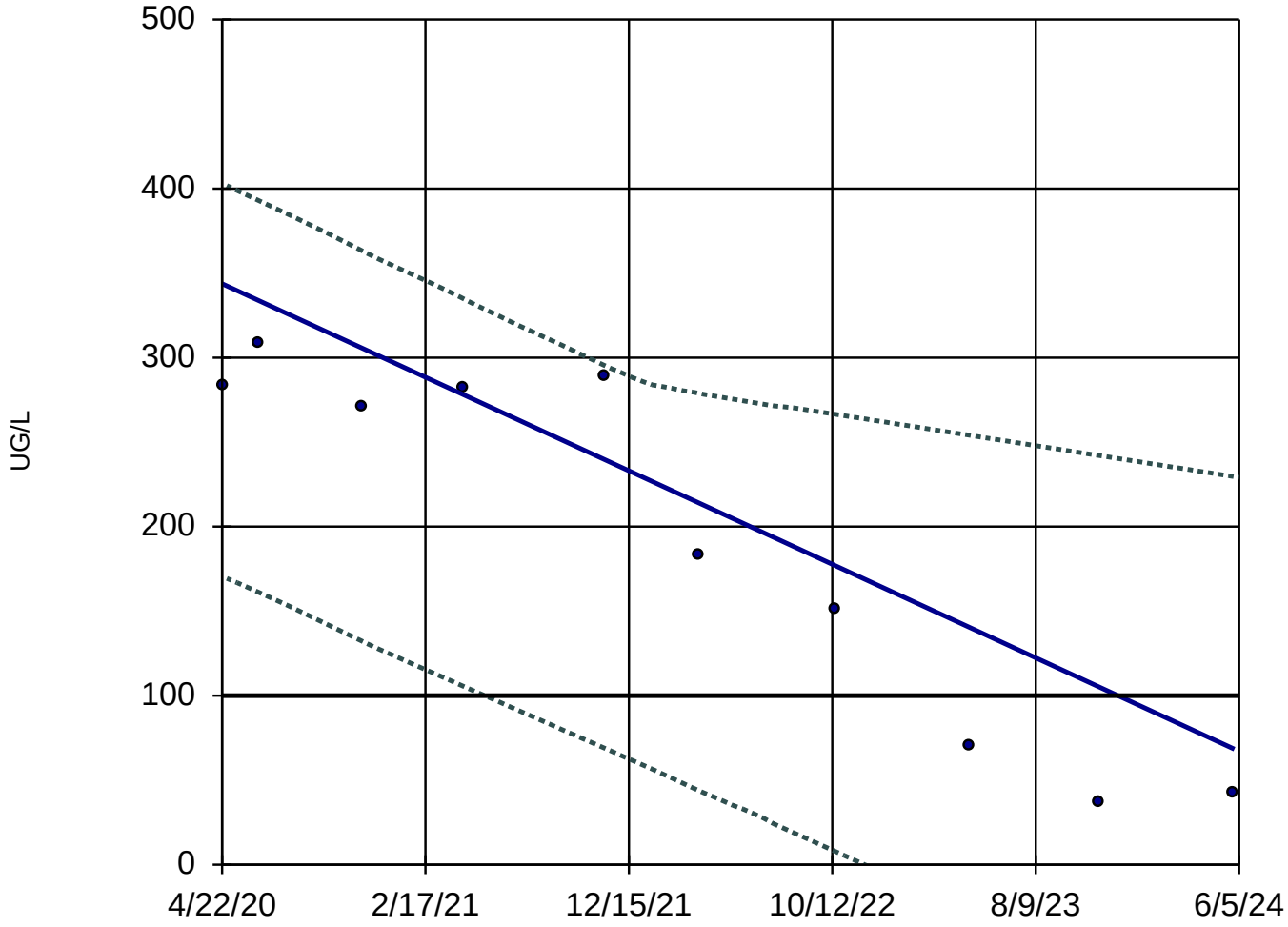
Constituent: MOLYBDENUM, TOTAL Analysis Run 8/28/2024 4:27 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG

Sen's Slope and 95% Confidence Band

S-AM-1S



n = 10

Slope = -67.1
units per year.

Mann-Kendall
statistic = -33
critical = -27

Decreasing trend
significant at 98%
confidence level
(α = 0.01 per
tail).

Confidence band intersects
GWPS (100) on 05/23/21.

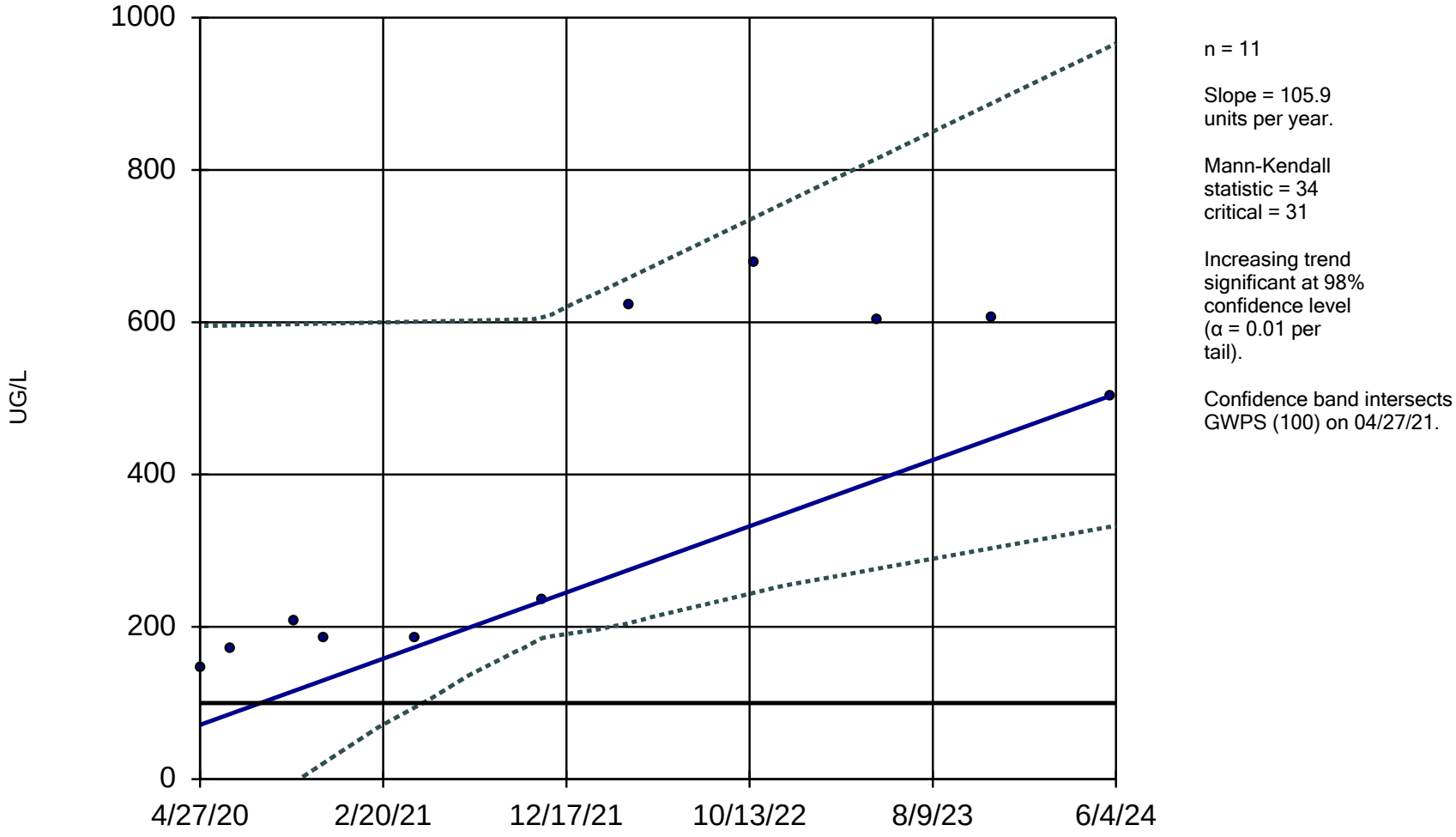
Constituent: MOLYBDENUM, TOTAL Analysis Run 8/28/2024 4:28 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG

Sen's Slope and 95% Confidence Band

S-TP-5D



n = 11

Slope = 105.9 units per year.

Mann-Kendall statistic = 34 critical = 31

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band intersects GWPS (100) on 04/27/21.

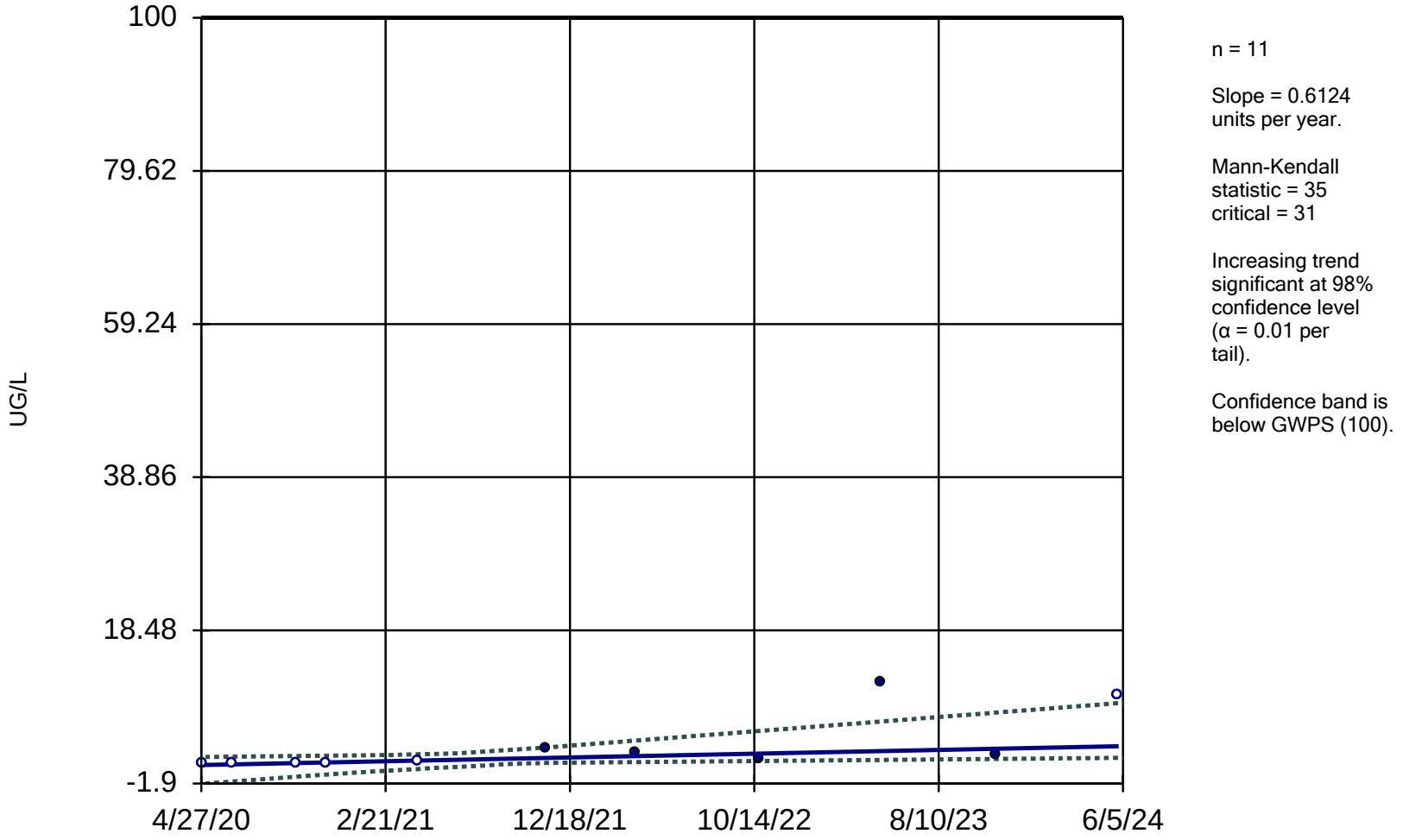
Constituent: MOLYBDENUM, TOTAL Analysis Run 8/28/2024 4:30 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG
Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

S-TP-8D



n = 11

Slope = 0.6124 units per year.

Mann-Kendall statistic = 35
critical = 31

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (100).

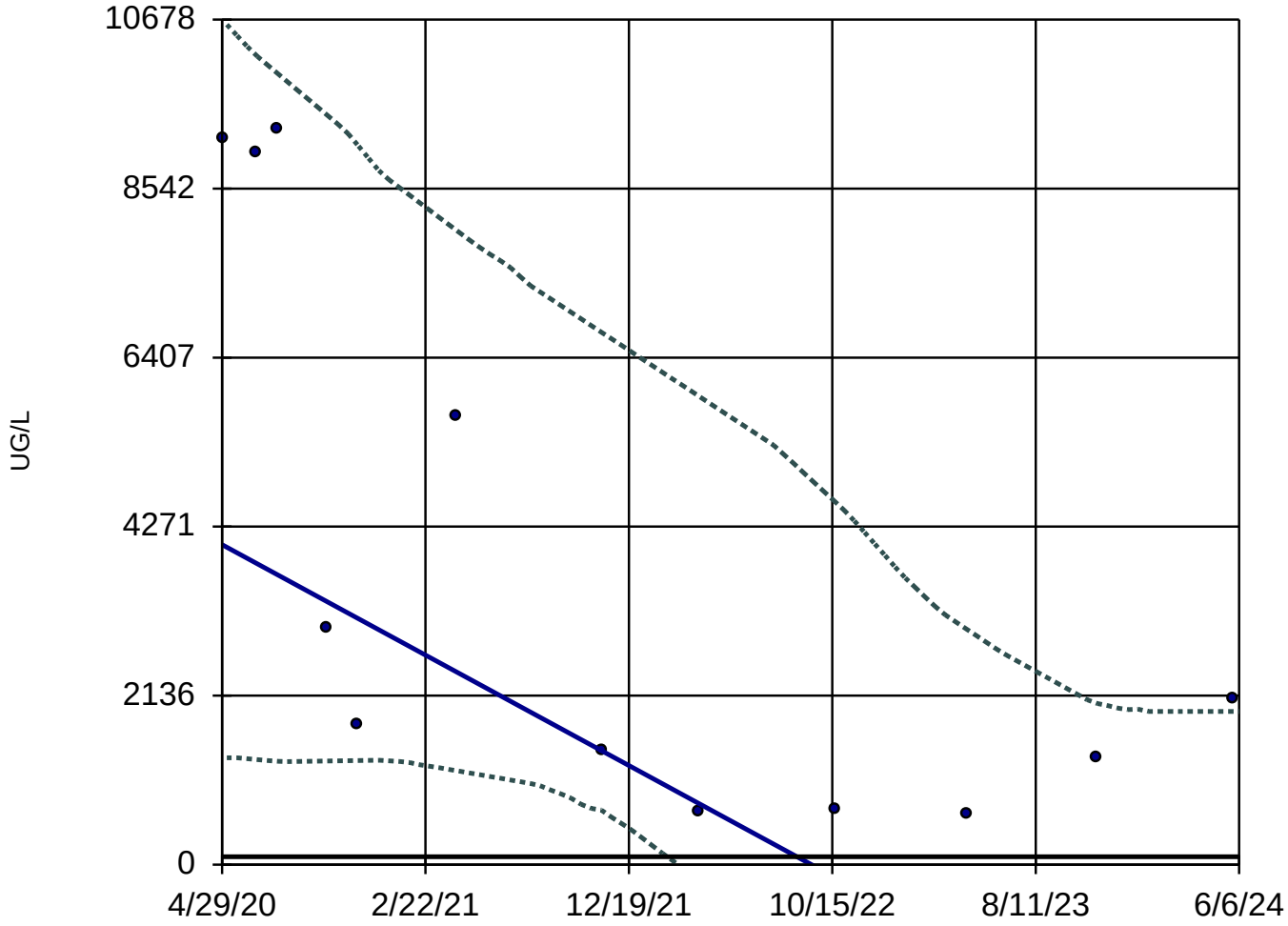
Constituent: MOLYBDENUM, TOTAL Analysis Run 8/28/2024 4:08 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

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Sen's Slope and 95% Confidence Band

S-PZ-1S



n = 12

Slope = -1698 units per year.

Mann-Kendall statistic = -38 critical = -35

Decreasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band intersects GWPS (100) on 02/21/22.

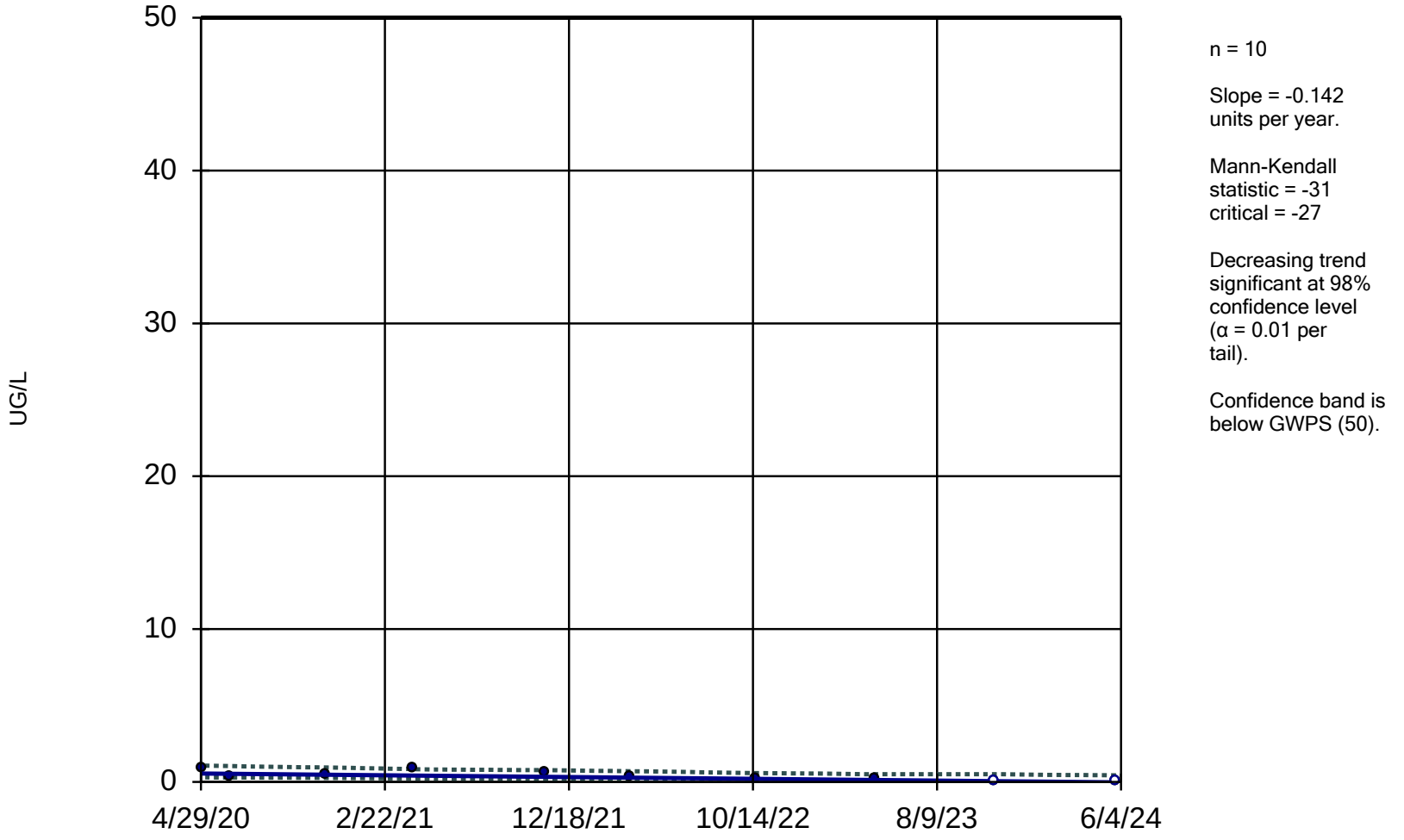
Constituent: MOLYBDENUM, TOTAL Analysis Run 8/28/2024 4:08 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

Sanitas™ v.9.6.37 Software licensed to Rocksmith Geoengineering. UG
Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

S-TP-6S



n = 10

Slope = -0.142 units per year.

Mann-Kendall statistic = -31
critical = -27

Decreasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (50).

Constituent: SELENIUM, TOTAL Analysis Run 8/28/2024 4:08 PM View: Corrective Action

Sioux E.C. Client: Ameren Data: SEC DATA

Trend Test

Sioux E.C. Client: Ameren Data: SEC DATA Printed 8/28/2024, 4:10 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
ARSENIC, TOTAL (UG/L)	S-LMW-1S	-0.04274	-8	-27	No	10	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	S-LMW-2S	-0.00...	0	23	No	9	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	S-LMW-4S	0.008462	4	27	No	10	10	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	S-LMW-5S	0.02074	12	27	No	10	10	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	S-LMW-6S	0.02707	16	27	No	10	10	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	S-UG-3	-0.00...	-3	-27	No	10	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	**S-AM-1D**	**-0.0171**	**-36**	**-27**	**Yes**	**10**	**0**	**n/a**	**n/a**	**0.02**	**NP**
ARSENIC, TOTAL (UG/L)	S-AM-1S	-0.1025	-15	-27	No	10	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	**S-TP-2D**	**0.03782**	**33**	**27**	**Yes**	**10**	**0**	**n/a**	**n/a**	**0.02**	**NP**
ARSENIC, TOTAL (UG/L)	S-TP-3D	0.01354	20	27	No	10	10	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	**S-TP-4D**	**0.1973**	**34**	**27**	**Yes**	**10**	**0**	**n/a**	**n/a**	**0.02**	**NP**
ARSENIC, TOTAL (UG/L)	S-TP-5D	0.01448	15	27	No	10	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	S-TP-6D	-0.00...	-4	-27	No	10	30	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	S-TP-6S	0.04398	27	27	No	10	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	S-TP-8D	-0.05637	-20	-27	No	10	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	S-PZ-9D	0.0367	11	27	No	10	10	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	S-PZ-1S	-0.05394	-22	-27	No	10	10	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	S-LMW-1S	14.9	20	27	No	10	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	S-LMW-2S	-0.5615	-4	-27	No	10	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	**S-LMW-4S**	**7.084**	**26**	**23**	**Yes**	**9**	**0**	**n/a**	**n/a**	**0.02**	**NP**
BARIUM, TOTAL (UG/L)	**S-LMW-5S**	**-3.574**	**-31**	**-27**	**Yes**	**10**	**0**	**n/a**	**n/a**	**0.02**	**NP**
BARIUM, TOTAL (UG/L)	**S-LMW-6S**	**-3.476**	**-31**	**-27**	**Yes**	**10**	**0**	**n/a**	**n/a**	**0.02**	**NP**
BARIUM, TOTAL (UG/L)	S-UG-3	-2.415	-6	-27	No	10	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	S-AM-1D	-2.045	-2	-27	No	10	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	S-AM-1S	-0.517	-1	-27	No	10	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	S-TP-2D	-0.969	-17	-27	No	10	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	S-TP-3D	0.3912	2	27	No	10	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	S-TP-4D	-18.32	-17	-27	No	10	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	S-TP-5D	10.15	19	27	No	10	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	S-TP-6D	-4.63	-13	-27	No	10	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	S-TP-6S	1.47	4	27	No	10	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	S-TP-8D	8.488	15	27	No	10	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	S-PZ-9D	-8.473	-27	-27	No	10	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	**S-PZ-1S**	**-25.01**	**-35**	**-27**	**Yes**	**10**	**0**	**n/a**	**n/a**	**0.02**	**NP**
CADMIUM, TOTAL (UG/L)	S-LMW-1S	0.01286	16	27	No	10	20	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	S-LMW-2S	0.03657	9	23	No	9	0	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	S-LMW-4S	0.01999	9	27	No	10	40	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	S-LMW-5S	-0.03225	-9	-27	No	10	0	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	S-LMW-6S	-0.05814	-7	-27	No	10	0	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	S-UG-3	-0.01656	-7	-27	No	10	0	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	S-AM-1D	-0.00...	-2	-27	No	10	20	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	S-AM-1S	-0.01139	-11	-27	No	10	10	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	S-TP-2D	-0.00...	-25	-27	No	10	100	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	S-TP-3D	-0.00...	-25	-27	No	10	100	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	S-TP-4D	-0.00...	-25	-27	No	10	100	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	S-TP-5D	0.04307	17	27	No	10	30	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	S-TP-6D	-0.00...	-17	-23	No	9	100	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	S-TP-6S	0.002611	6	27	No	10	40	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	S-TP-8D	-0.00...	-25	-27	No	10	100	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	S-PZ-9D	-0.00...	-25	-27	No	10	100	n/a	n/a	0.02	NP

Trend Test

Sioux E.C. Client: Ameren Data: SEC DATA Printed 8/28/2024, 4:10 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
CADMIUM, TOTAL (UG/L)	S-PZ-1S	-0.00...	-1	-23	No	9	11.11	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	S-LMW-1S	0	-1	-27	No	10	60	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	**S-LMW-2S**	**0.6655**	**32**	**27**	**Yes**	**10**	**20**	**n/a**	**n/a**	**0.02**	**NP**
COBALT, TOTAL (UG/L)	S-LMW-4S	-0.03794	-16	-27	No	10	100	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	S-LMW-5S	0	4	27	No	10	70	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	S-LMW-6S	-1.087	-27	-27	No	10	0	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	S-UG-3	0.8384	15	27	No	10	20	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	S-AM-1D	-0.03794	-16	-27	No	10	100	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	**S-AM-1S**	**0.802**	**31**	**27**	**Yes**	**10**	**20**	**n/a**	**n/a**	**0.02**	**NP**
COBALT, TOTAL (UG/L)	S-TP-2D	-0.04018	-15	-23	No	9	100	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	S-TP-3D	-0.04018	-10	-23	No	9	88.89	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	S-TP-4D	-0.04014	-10	-20	No	8	100	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	S-TP-5D	-0.01835	-5	-23	No	9	88.89	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	S-TP-6D	0	-4	-27	No	10	90	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	S-TP-6S	-0.0402	-11	-23	No	9	100	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	S-TP-8D	0	-4	-27	No	10	80	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	S-PZ-9D	-0.03792	-16	-27	No	10	100	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	S-PZ-1S	-0.03797	-16	-27	No	10	100	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	**S-LMW-1S**	**-0.1202**	**-38**	**-31**	**Yes**	**11**	**36.36**	**n/a**	**n/a**	**0.02**	**NP**
FLUORIDE, TOTAL (MG/L)	S-LMW-2S	-0.08534	-14	-31	No	11	63.64	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	S-LMW-4S	-0.05605	-26	-27	No	10	50	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	S-LMW-5S	-0.1011	-31	-44	No	14	28.57	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	S-LMW-6S	-0.03931	-15	-31	No	11	54.55	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	**S-UG-3**	**-0.08946**	**-36**	**-31**	**Yes**	**11**	**36.36**	**n/a**	**n/a**	**0.02**	**NP**
FLUORIDE, TOTAL (MG/L)	S-AM-1D	-0.0594	-16	-27	No	10	10	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	S-AM-1S	-0.1088	-20	-27	No	10	20	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	S-TP-2D	-0.04156	-19	-27	No	10	60	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	**S-TP-3D**	**-0.06476**	**-31**	**-27**	**Yes**	**10**	**30**	**n/a**	**n/a**	**0.02**	**NP**
FLUORIDE, TOTAL (MG/L)	**S-TP-4D**	**-0.07026**	**-30**	**-27**	**Yes**	**10**	**30**	**n/a**	**n/a**	**0.02**	**NP**
FLUORIDE, TOTAL (MG/L)	**S-TP-5D**	**-0.1071**	**-37**	**-27**	**Yes**	**10**	**30**	**n/a**	**n/a**	**0.02**	**NP**
FLUORIDE, TOTAL (MG/L)	**S-TP-6D**	**-0.07922**	**-35**	**-27**	**Yes**	**10**	**40**	**n/a**	**n/a**	**0.02**	**NP**
FLUORIDE, TOTAL (MG/L)	**S-TP-6S**	**-0.08495**	**-33**	**-27**	**Yes**	**10**	**40**	**n/a**	**n/a**	**0.02**	**NP**
FLUORIDE, TOTAL (MG/L)	**S-TP-8D**	**-0.07922**	**-39**	**-27**	**Yes**	**10**	**40**	**n/a**	**n/a**	**0.02**	**NP**
FLUORIDE, TOTAL (MG/L)	S-PZ-9D	-0.06775	-16	-27	No	10	60	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	**S-PZ-1S**	**-0.2607**	**-31**	**-27**	**Yes**	**10**	**40**	**n/a**	**n/a**	**0.02**	**NP**
LITHIUM, TOTAL (UG/L)	S-LMW-1S	1.485	15	27	No	10	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-LMW-2S	0.02808	2	27	No	10	10	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-LMW-4S	2.521	19	27	No	10	10	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-LMW-5S	0.5112	6	20	No	8	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-LMW-6S	0.6826	16	27	No	10	10	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-UG-3	-0.4991	-3	-27	No	10	10	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-AM-1D	-1.053	-25	-27	No	10	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	**S-AM-1S**	**-2.924**	**-29**	**-27**	**Yes**	**10**	**0**	**n/a**	**n/a**	**0.02**	**NP**
LITHIUM, TOTAL (UG/L)	S-TP-2D	1.327	9	27	No	10	10	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-TP-3D	1.366	27	27	No	10	10	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-TP-4D	0.1825	1	27	No	10	10	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-TP-5D	2.133	27	27	No	10	10	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-TP-6D	-0.1843	-1	-27	No	10	10	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-TP-6S	-0.6508	-9	-27	No	10	10	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-TP-8D	0.4971	15	23	No	9	0	n/a	n/a	0.02	NP

Trend Test

Sioux E.C. Client: Ameren Data: SEC DATA Printed 8/28/2024, 4:10 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
LITHIUM, TOTAL (UG/L)	S-PZ-9D	-0.685	-7	-27	No	10	10	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	S-PZ-1S	0.5339	11	23	No	9	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	S-LMW-1S	-13.86	-25	-27	No	10	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	S-LMW-2S	-76	-11	-27	No	10	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	S-LMW-4S	0.2855	7	20	No	8	50	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	S-LMW-5S	-369.4	-27	-27	No	10	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	S-LMW-6S	0.2808	25	27	No	10	50	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	S-UG-3	0.3088	12	27	No	10	30	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	**S-AM-1D**	**-72.63**	**-33**	**-27**	**Yes**	**10**	**0**	**n/a**	**n/a**	**0.02**	**NP**
MOLYBDENUM, TOTAL (UG/L)	**S-AM-1S**	**-67.1**	**-33**	**-27**	**Yes**	**10**	**0**	**n/a**	**n/a**	**0.02**	**NP**
MOLYBDENUM, TOTAL (UG/L)	S-TP-2D	-0.1028	-12	-31	No	11	81.82	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	S-TP-3D	0.1067	10	31	No	11	63.64	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	S-TP-4D	0.03794	18	31	No	11	72.73	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	**S-TP-5D**	**105.9**	**34**	**31**	**Yes**	**11**	**0**	**n/a**	**n/a**	**0.02**	**NP**
MOLYBDENUM, TOTAL (UG/L)	S-TP-6D	0.09217	16	31	No	11	90.91	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	S-TP-6S	0.3342	15	31	No	11	18.18	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	**S-TP-8D**	**0.6124**	**35**	**31**	**Yes**	**11**	**54.55**	**n/a**	**n/a**	**0.02**	**NP**
MOLYBDENUM, TOTAL (UG/L)	S-PZ-9D	1.849	30	35	No	12	8.333	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	**S-PZ-1S**	**-1698**	**-38**	**-35**	**Yes**	**12**	**0**	**n/a**	**n/a**	**0.02**	**NP**
RADIUM [226 + 228] (PCI/L)	S-LMW-1S	0.01105	5	27	No	10	100	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	S-LMW-2S	-0.05662	-7	-27	No	10	80	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	S-LMW-4S	0.03233	4	20	No	8	100	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	S-LMW-5S	-0.05005	-21	-27	No	10	90	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	S-LMW-6S	0.04005	11	27	No	10	100	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	S-UG-3	0.04984	11	27	No	10	100	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	S-AM-1D	0.04837	11	27	No	10	100	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	S-AM-1S	0.03528	13	27	No	10	100	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	S-TP-2D	-0.04901	-3	-27	No	10	90	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	S-TP-3D	0.1278	15	27	No	10	70	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	S-TP-4D	-0.00...	-1	-27	No	10	40	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	S-TP-5D	0.04829	9	27	No	10	90	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	S-TP-6D	-0.05561	-9	-27	No	10	60	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	S-TP-6S	0.02239	9	27	No	10	100	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	S-TP-8D	0.172	19	27	No	10	70	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	S-PZ-9D	0.001954	0	23	No	9	100	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	S-PZ-1S	-0.02	-5	-27	No	10	100	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-LMW-1S	-0.5027	-6	-23	No	9	0	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-LMW-2S	0	0	27	No	10	100	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-LMW-4S	-0.03297	-7	-27	No	10	10	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-LMW-5S	0	-1	-27	No	10	90	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-LMW-6S	0	0	27	No	10	100	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-UG-3	0.5105	24	27	No	10	0	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-AM-1D	0	0	27	No	10	100	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-AM-1S	0	0	27	No	10	100	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-TP-2D	0	0	27	No	10	100	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-TP-3D	0	0	27	No	10	100	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-TP-4D	0	0	27	No	10	100	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-TP-5D	0	0	27	No	10	100	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-TP-6D	0	0	27	No	10	100	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	**S-TP-6S**	**-0.142**	**-31**	**-27**	**Yes**	**10**	**20**	**n/a**	**n/a**	**0.02**	**NP**

Trend Test

Sioux E.C. Client: Ameren Data: SEC DATA Printed 8/28/2024, 4:10 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
SELENIUM, TOTAL (UG/L)	S-TP-8D	0	-1	-27	No	10	90	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-PZ-9D	0	-3	-27	No	10	90	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	S-PZ-1S	0	0	27	No	10	100	n/a	n/a	0.02	NP

Appendix F

November 2023 Corrective Action Alternative Source Demonstration

REPORT

SCPA Corrective Action – Alternative Source Demonstration for Lithium and Cobalt Detections in Isolated Wells

Sioux Energy Center, St. Charles County, Missouri, USA

June 14, 2024

Project Number: 23009-24

Submitted to:

Ameren Missouri
1901 Chouteau Ave,
St. Louis, MO 63103

Submitted by:

Rocksmith Geoengineering, LLC
2320 Creve Coeur Mill Rd
Maryland Heights, MO 63043



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1.0 CERTIFICATION STATEMENT

This *SCPA Corrective Action – Alternative Source Demonstration, Sioux Energy Center, St. Charles County, Missouri, USA* has been prepared to comply with the United States Environmental Protection Agency (EPA) coal combustion residual (CCR) rule under the direction of a licensed professional engineer with Rocksmith Geoengineering, LLC.

I hereby certify that this *SCPA Corrective Action – Alternative Source Demonstration for Lithium and Cobalt Detections in Isolated Wells, Sioux Energy Center, St. Charles County, Missouri, USA* located at 8501 Missouri 94, West Alton, Missouri 63386 has been prepared to meet the requirements of 40 CFR §257.98(a)(1)(i) and 257.95(g)(3)(ii).

Rocksmith Geoengineering, LLC



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Mark Haddock, PE, RG
Principal Engineer, Senior Partner

2.0 INTRODUCTION

In accordance with the United States Environmental Protection Agency (EPA) coal combustion residual (CCR) rule (CCR Rule or The Rule, USEPA 2015), Rocksmith Geoengineering, LLC (Rocksmith) has prepared this Technical Memorandum to document an Alternative Source Demonstration (ASD) for a statistical exceedance of the Groundwater Protection Standard (GWPS) calculated for Ameren Missouri's (Ameren) Sioux Energy Center (SEC) Bottom Ash Surface Impoundment (referred to as the SCPA) Corrective Action Monitoring Well Network. This document satisfies the requirements of §257.98(a)(1)(i) and 257.95(g)(3)(ii), which state that at a minimum, the Corrective Action program must meet the requirements of the Assessment Monitoring Program under 257.95. The Assessment Monitoring Program allows the owner or operator to demonstrate that a source other than the CCR Unit has caused a constituent to be at a statistical level exceeding the GWPS, and that the statistical exceedance was the result of an alternative source or resulted from errors in sampling, analysis, statistical evaluation, or natural variation in groundwater quality.

3.0 SITE DESCRIPTION AND BACKGROUND

The SEC (or Facility) is located approximately 12 miles west-northwest of the confluence of the Mississippi and Missouri Rivers in St. Charles County, Missouri. **Figure 1** depicts the location of the Facility and property boundaries referenced to local features as well as the Mississippi and Missouri Rivers. The Facility encompasses approximately 1,100 acres and is located within the floodplain between the Mississippi and Missouri Rivers. The Facility is bounded to the north by wooded areas along the Mississippi River, to the south by a railroad, and to the east and west by agricultural fields.

3.1 Geological and Hydrogeological Setting

Hydrogeologically, the SCPA lies between the Mississippi River to the north and the Missouri River to the south. Flow and deposition from these rivers have resulted in thick alluvial deposits that lie unconformably on top of bedrock. These alluvial deposits, which can range from approximately 100 to 130 feet in thickness, make up the uppermost aquifer called the alluvial aquifer. Overall, this aquifer is described as a fining upwards sequence of stratified sands and gravels with varying amounts of silts and clays. Drilling in the alluvial aquifer identified different sub-units, including floodplain deposits, natural levee deposits, and channel deposits along with volumetrically less important loess deposits. Grain sizes of these alluvial deposits are highly variable.

Beneath the alluvial aquifer lies the bedrock aquifer. Bedrock in this region includes Mississippian-aged rocks of the Meramecian Series. Formations include primarily limestone, dolomite, and shale and are comprised of the Salem Formation overlying the Warsaw Formation and the Burlington-Keokuk Formation.

3.2 Coal Combustion Residuals (CCR) SCPA Surface Impoundment

The SCPA is located in the floodplain between the Mississippi and Missouri Rivers and is constructed with perimeter berms at an elevation of approximately 446 feet above mean sea level (feet MSL), which is above the 100-year flood elevation of 437.4 feet MSL. Both fly ash and bottom ash have historically been managed and stored in this CCR unit. Borings completed in the SCPA indicate a CCR thickness of up to approximately 75 feet below ground surface (bgs) (to about 370 feet MSL) in the center of the unit and thinning out towards the edges.

The SCPA is located to the southwest of the SEC plant facilities. The boundary of SCPA extends to within approximately 200 feet of the SEC and is approximately 47 acres in size, as shown in **Figure 1**. Directly to the east of the SCPA is a lined CCR unit called the Fly Ash Surface Impoundment (SCPB). Directly to the south of the SCPA is Highway 94 followed by the Utility Waste Landfill (UWL) and eventually the Missouri River. There are three CCR units currently in the UWL: Cell 1 (SCPC), Cell 2 (SCPD) and Cell 4A (SCL4A). West of the SCPA lies miles of agricultural land. North of SCPA there are side channels from the adjacent Mississippi River.

3.3 CCR Rule Groundwater Monitoring

The CCR Rule was published in the Federal Register on April 17, 2015. This rule required CCR surface impoundments and landfills to monitor groundwater around these CCR units. Prior to the first major deadline of October 17, 2017, Ameren completed the following tasks: (1) installation of a groundwater monitoring well system; (2) a Statistical Method Certification; (3) a Groundwater Monitoring Plan (GMP) that details design, installation,

development, sampling procedures, as well as statistical methods; and (4) eight baseline groundwater sampling events for all Appendix III and Appendix IV parameters of the CCR Rule. In November 2017, the first Detection Monitoring event was completed.

The groundwater monitoring system for the SCPA consists of eight monitoring wells screened within the uppermost aquifer (alluvial aquifer), as shown on **Figure 1**. These wells were installed by Golder Associates Inc. (Golder) in 2015 and 2016 for CCR Rule groundwater monitoring purposes. More information regarding the design and installation of the monitoring wells is provided in the SCPA GMP (Golder, 2017) and the SCPA 2017 Annual Report (Golder, 2018).

Between March 2016 and June 2017, eight baseline sampling events were completed for the SCPA. After baseline sampling, Detection Monitoring events have been completed twice a year generally in the second and fourth quarters. In January 2018, background results from the eight baseline sampling events were used to calculate statistical upper prediction limits (UPL). These UPLs were then compared to the Detection Monitoring results. The results of the analysis indicated that there were Statistically Significant Increases (SSIs), and Assessment Monitoring was initiated.

The Assessment monitoring program was established at the SCPA on April 15, 2018. Since that time, groundwater sampling and statistical evaluations have been completed semi-annually to determine if there are any values at a Statistically Significant Level (SSL) over the site-specific Groundwater Protection Standard (GWPS). On October 11, 2018, it was determined that Molybdenum was present at an SSL at several wells (UMW-2D, UMW-3D, UMW-4D, UMW-5D). The SSLs determined in Assessment Monitoring have remained the same since that time, and no new SSLs have been determined.

On January 9, 2019, Ameren initiated its Corrective Measures Assessment (CMA) and posted the CMA report on May 20, 2019. A public meeting was held on May 31, 2019, and responses to public comments are posted on Ameren's CCR website. On August 30, 2019, Ameren published its "Remedy Selection Report – 40 CFR § 257.97 Rush Island, Labadie, Sioux and Meramec CCR Basins" (Remedy Selection Report, Ameren 2019) that identified source control through installation of a low permeability cover system, use of Monitored Natural Attenuation (MNA), and installation of Supplemental Corrective Measures as its chosen corrective action remedial plan. The Remedy Selection Report's remedial plan consists of two phases as follows:

1) Source control, stabilization and containment of CCR by installation of a low permeability geomembrane cap (a minimum 1×10^{-7} centimeters per second (cm/sec) versus 1×10^{-5} cm/sec required by the CCR Rule).
2) Once source control is achieved, monitor the natural attenuation of groundwater concentrations to address limited and localized CCR-related impacts. Ongoing monitoring and modelling evaluations will document that concentrations are decreasing as modelled. MNA occurs due to naturally occurring processes within the aquifer.

As required by the CCR Rule, the following were completed within 90 days of selecting the remedy (November 27 2019): (1) a groundwater monitoring well system was selected and certified by a Professional Engineer, (2) a Statistical Method Certification was prepared and certified by a Professional Engineer, and (3) a GMP was prepared recording the design, installation, development, sampling procedures, as well as statistical methods, and placed in the owner's operating record. The Corrective Action Monitoring Well Network consists of 19 groundwater monitoring wells, installed within the shallow, intermediate, and deep zones of the alluvial aquifer as shown on **Figure 1**.

In January 2021, Ameren commenced Phase 1 by initiating closure at the SCPA. Closure of the SCPA has been substantially completed with the completion of the liner cover system on December 21, 2021, and the first Corrective Action sampling event associated with Phase 2 of the Corrective Measures Remedial Plan was completed in April 2022. On August 3, 2022, corrective action statistical methods[1] were used to determine the following statistical exceedances of the GWPS:

[1] The statistical testing method used to evaluate the Corrective Action monitoring data is the confidence interval method, which is the same method used during Assessment Monitoring, except the null hypothesis for the

- Cobalt at LMW-6S
- Lithium at LMW-5S, TP-2D, and TP-6S
- Molybdenum at LMW-1S, LMW-2S, LMW-5S, AM-1D, AM-1S, TP-5D, and PZ-1S

Monitoring wells LMW-5S and LMW-6S were installed in December 2015 as part of the CCR Rule monitoring program for the SCPB fly ash surface impoundment. These wells are currently used for CCR Rule monitoring for the SCPB, as well as Corrective Action monitoring wells for the SCPA. Monitoring wells TP-2D and TP-6S were installed in July 2018 as part of the nature and extent evaluation completed under Assessment Monitoring and are currently used as Corrective Action monitoring wells.

3.4 November 2023 Sampling Event

Following the November 2023 corrective action sampling event, on March 19, 2024, corrective action statistical methods were used to determine these statistical exceedances of the GWPS:

- Cobalt at LMW-6S
- Lithium at LMW-5S, TP-2D, and TP-6S
- Molybdenum at LMW-1S, LMW-2S, LMW-5S, AM-1D, AM-1S, TP-5D, and PZ-1S

This report further discusses the cobalt and lithium exceedances at the site, and documents why these exceedances are naturally occurring and not caused by impacts originating from the SCPA.

4.0 EVIDENCE THAT STATISTICAL EXCEEDANCES OVER GWPS ORIGINATES FROM DIFFERENT SOURCE

Multiple lines of evidence indicate that the statistical exceedance(s) over the GWPS at monitoring wells LMW-5S, LMW-6S, TP-2D, and TP-6S are not a result of a release from the SCPA, but rather originate from an alternative source. The following detail the different lines of evidence that support this ASD:

- A lack of correlation between key CCR indicators (boron and molybdenum) and exceedances of lithium and cobalt.
- The presence of lithium and cobalt at similar concentrations in groundwater samples collected upgradient of the SCPA.
- The presence of naturally occurring cobalt and lithium in sediments in background locations at the SCPA.
- Cobalt and lithium are naturally occurring elements in soils and alluvial aquifer sediments that are derived from igneous and metamorphic rocks within the Missouri and Mississippi River watersheds.

4.1 CCR Indicators

Several types of CCR by-products are generated by coal-fired power plants. The different types of CCR typically display distinct geochemical signatures and indicator parameters. **Table 1** describes the different types of CCRs and their typical indicator parameters (USEPA 2018, EPRI 2011, EPRI 2012, and EPRI 2017).

confidence intervals is reversed. For Corrective Action, the Unified Guidance states that the appropriate null hypothesis is that the groundwater population (mean) exceeds the GWPS for those constituents that exceed the GWPS under Assessment Monitoring program. Therefore, in Corrective Action the Upper Confidence Limit (UCL) is compared to the Groundwater Protection Standard (GWPS) instead of the Lower Confidence Limit (LCL) [as was used during Assessment Monitoring].

Table 1: Types of CCR and Typical Indicator Parameters

Type of CCR	Description of CCR (USEPA 2018)	Key Indicators (EPRI 2011, 2012, 2017)
Fly Ash	Fine grained, powdery material composed mostly of silica made from the burning of finely ground coal in the boiler.	■ Boron ■ Molybdenum ■ Lithium ■ Sulfate ■ Bromide ■ Potassium ■ Sodium ■ Fluoride
Boiler Slag / Bottom Ash	Molten bottom ash from the slag tap and cyclone type furnaces that turns into pellets that have a smooth glassy appearance after quenching with water.	
Flue Gas Desulfurization Material (FGD)	A material leftover from the process of reducing sulfur dioxide emissions from a coal-fired boiler that can be a wet sludge consisting of calcium sulfite or calcium sulfate or a dry powdered material that is a mixture of sulfites and sulfates.	■ Sulfate ■ Fluoride ■ Calcium ■ Boron ■ Bromide ■ Chloride

Notes:

1) Fly ash and boiler slag/bottom ash typically have the same indicator parameters.
2) Definitions from USEPA website, available at https://www.epa.gov/coalash/coal-ash-basics.
3) Key indicators from EPRI 2011, 2012, and 2017.

4.2 Site Specific Key CCR Indicators

To be a key CCR Indicator parameter for a specific site, a constituent should be present in relatively high concentrations in the leachate (CCR porewater) when compared to background or other sources (nearby rivers, etc.), not be a common anthropogenic contaminant, and be mostly non-reactive and mobile in the site's hydrogeological environment (EPRI 2012). In 2012, EPRI investigated which constituents are the best indicator parameters for coal ash impacts as outlined in **Table 1**. Of the key indicators listed in **Table 1** for fly ash and boiler slag/bottom ash, boron, molybdenum, lithium, sulfate and fluoride are regularly sampled as part of the CCR Rule. Potassium and sodium are sampled periodically for major ion analysis and testing under the CCR Rule. Testing for bromide has not been completed at the site.

Table 2 provides a snapshot of the concentrations present onsite in the background, Mississippi River, Missouri River, and SCPA porewater for each of the constituents sampled on the key indicator list.

Table 2 – Summary of Potential CCR Impact Indicator Parameters at the Sioux Energy Center

Constituent (Units)		Back-ground	Mississippi River[2]	Missouri River[2]	SCPA Porewater	Advantages and Caveats as Key Indicator (from EPRI 2012)
Boron (µg/L)	Minimum	42.4	27.1	110	348	Typically present in leachate, non-reactive and mobile in common hydrogeologic environments, and not a common anthropogenic contaminant.
	Average	93.44	36.4	112.3	53,266	
	Maximum	240	59.9	117	111,000	

[2] Mississippi and Missouri River samples collected September 21 & 22, 2017 and May 8, 2018. Results are available on Ameren's public website at https://www.ameren.com/company/environment-and-sustainability/managing-coal-combustion/ccr-compliance-reports/sioux-energy-center.

Constituent (Units)		Back-ground	Mississippi River[2]	Missouri River[2]	SCPA Porewater	Advantages and Caveats as Key Indicator (from EPRI 2012)
Sulfate (mg/L)	Minimum	12.3	29.9	188	48.5	Commonly analyzed and very mobile in all hydrogeologic environments. Concentration in impoundment leachate may in some cases be too low relative to background to be useful. Less useful in strongly reducing environments where sulfate can be reduced to hydrogen-sulfide gas.
	Average	31.14	34.08	192.1	1,088	
	Maximum	61.1	40.5	196	2,080	
Molybdenum (µg/L)	Minimum	ND (<0.52)	ND (<0.9)	2.6	26.5	Most useful for dry-managed coal ash. May be less mobile than boron in some hydrogeologic environments. Concentrations may be too low in impoundment leachate to be useful if background groundwater has detectable concentrations.
	Average	1.713	1.406	2.97	22,085	
	Maximum	9.3	2.3	3.6	56,600	
Lithium (µg/L)	Minimum	ND (<2.9)	ND (<2.9)	42.0	16.7	Useful for coal ash management sites where the power plant burned bituminous coal. Leachate concentrations are typically low in coal ash derived from subbituminous and lignite coal
	Average	12.72	6.694	43.17	56.16	
	Maximum	25.4	10.4	44.9	170	
Potassium (µg/L)	Minimum	ND (<500)	Not Sampled	Not Sampled	4,350	Commonly analyzed, although may be less mobile than boron and sulfate. Assure that leachate concentration is higher than background and that there are no anthropogenic sources such as agricultural fields where potassium may be applied in fertilizers.
	Average	1,771			34,350	
	Maximum	3,840			60,300	
Sodium (mg/L)	Minimum	4.58	Not Sampled	Not Sampled	13.9	Useful for coal ash management sites where the power plant injects trona or sodium bicarbonate or burned subbituminous coal. Absent dry sorbent injection, leachate concentrations are considerably lower in coal ash derived from bituminous coal, particularly at impoundments. Assure that leachate concentration is higher than background and that there are no anthropogenic sources such as agricultural fields, or major highways in northern climates where sodium may be applied in road salts.
	Average	5.815			59.36	
	Maximum	7.39			116	
Fluoride (mg/L)	Minimum	ND (<0.086)	0.16	0.43	0.22	Mobile and non-reactive in common hydrogeologic environments. Assure that leachate concentration is higher than background.
	Average	0.2845	0.196	0.4435	1.142	
	Maximum	0.46	0.24	0.46	2.9	

Notes:

1) Unit abbreviations - mg/L – milligrams per liter, µg/L – micrograms per liter
2) ND - Constituent was analyzed but was not detected above the Method Detection Limit (MDL) or the adjusted Practical Quantitation Limit (PQL) based on data validation and is considered a non-detect. Values displayed as ND.

Based on the results of **Table 2**, boron appears to be the best indicator parameter for impacts from the SCPA because it has a much higher concentration in the CCR porewater than the background concentrations and it is non-reactive and highly mobile at the site. Sulfate and molybdenum also appear to be good indicators, however, the distinction between background and porewater for sulfate is not as distinct as that for boron, and molybdenum is typically not as mobile as boron (EPRI, 2012). Fluoride may be a good indicator as well, however, porewater concentrations are not significantly higher than background, and therefore it would be difficult to detect impacts using fluoride concentrations. Average lithium concentrations in the porewater are also not significantly elevated when compared to background groundwater samples or the Missouri River, therefore determining the source of impacts would be difficult. Potassium and sodium are also not ideal indicators as many of the wells onsite are either near major roadways (highway 94) or located within the agricultural fields around the plant, which may display elevated concentrations caused from anthropogenic sources (road salt, fertilizers, etc.).

Therefore, boron appears to be the best indicator parameter for CCR impacts at the SEC. Molybdenum also appears to be a good indicator but may not be present at the farthest extents of the plume. Boron and molybdenum concentrations are above background concentrations at each of the six monitoring wells used for Detection and Assessment Monitoring adjacent to the SCPA (WSP 2023).

4.2.1 Lithium Concentrations

As indicated in **Table 1**, lithium can be a key indicator for fly ash and boiler slag/bottom ash impacts if it is present at elevated levels in the CCR porewater compared to background and is mobile at the site. However, as discussed in Section 4.2, boron and molybdenum are better CCR impact indicator parameters than lithium for the SEC, as most porewater samples are not significantly higher than background concentrations. Four of the five CCR porewater samples collected in 2018 as a part of the SCPB ASD (available in the 2018 Annual Report for the SCPB, Golder 2019b) have lithium concentrations below those found naturally occurring in the Missouri River as well as the site-specific Groundwater Protection Standard (GWPS) for lithium (40 µg/L), and at levels only 2 to 3 times the concentrations in background monitoring wells located closer to the Mississippi River (BMW-1S/D and BMW-3S/D). Additionally, lithium concentrations are below Missouri River levels in each of the six perimeter wells adjacent to the SCPA used for Detection and Assessment Monitoring. This further establishes that lithium is not a useful CCR impact indicator parameter for the SCPA and the SEC area.

Table 3 – November 2023 Analytical Results of Key Constituents at Monitoring Wells with a Statistical Lithium Exceedance

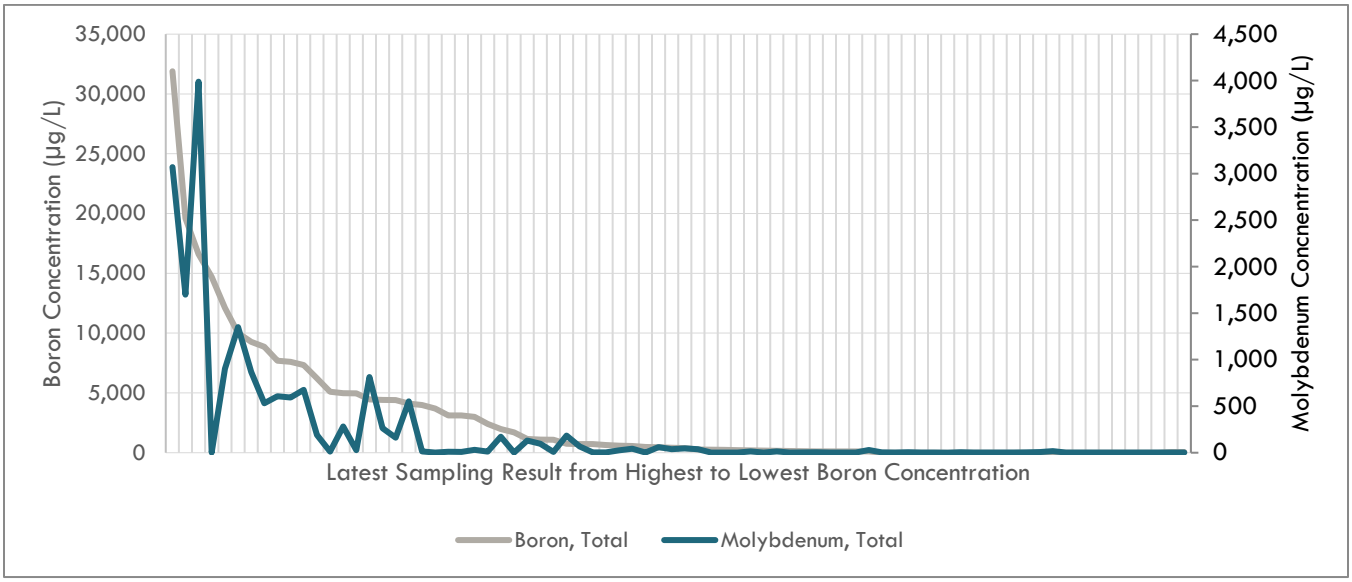
Well ID	Lithium (µg/L)	Boron (µg/L)	Molybdenum (µg/L)
LMW-5S	46.3	12,100	903
TP-2D	50.1	92.3 J	ND (<1.0)
TP-6S	39.7	99.1 J	3.4 J
BMW-1S (background)	8.2 J	57.9 J	2.8 J
BMW-3S (background)	12.6	58.9 J	1.0 J
BMW-1D (background)	13.9	140	1.1 J
BMW-3D (background)	22.2	65.0 J	ND (<1.0)

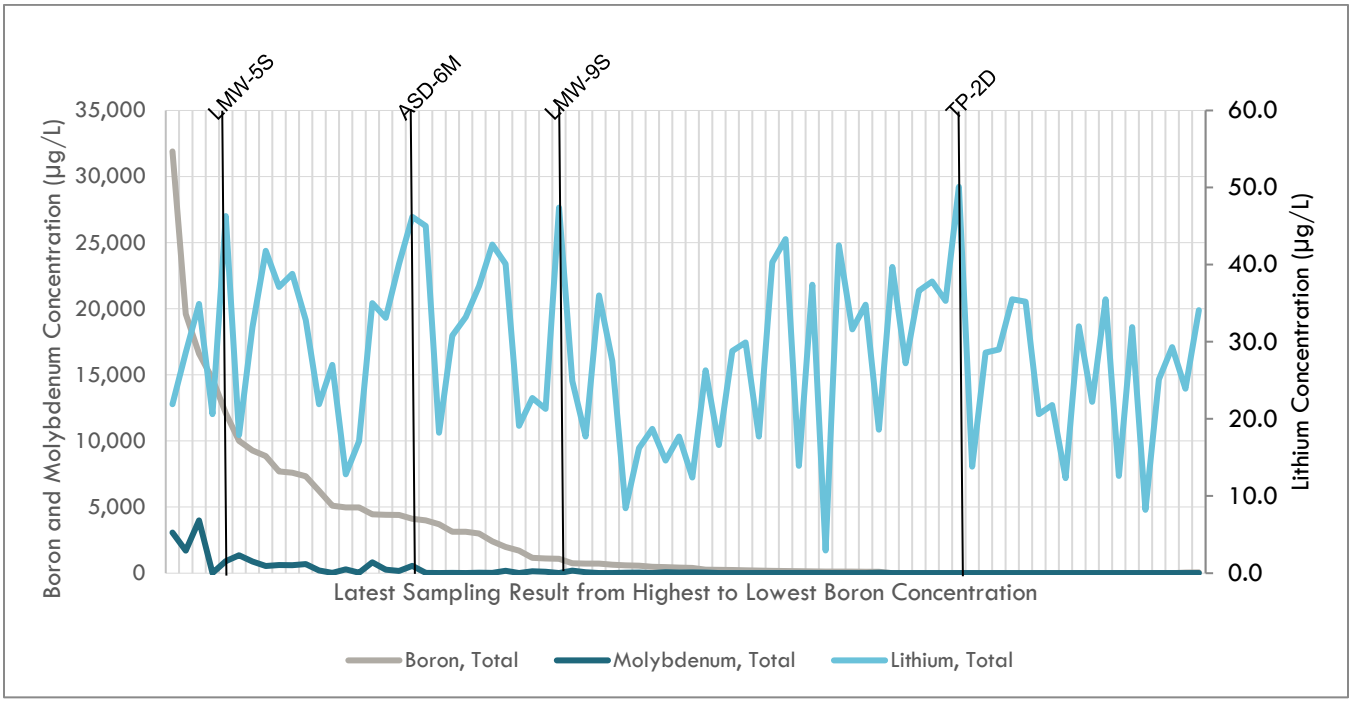
Notes:
1) µg/L – micrograms per liter.
2) J - Result is an estimated value.
3) ND – Constituent was analyzed but was not detected above the Method Detection Limit (MDL) or the adjusted Practical Quantitation Limit (PQL) based on data validation and is considered a non-detect.

As displayed in **Table 3**, of the three wells with a statistical exceedance for lithium, only LMW-5S has boron and molybdenum concentrations at a level above background levels for these constituents. This lack of correlation between key CCR Indicator parameters and elevated lithium concentrations indicates that elevated lithium concentrations are not associated with CCR impacts that contain elevated boron and molybdenum.

To further evaluate the correlation between key CCR indicators and lithium concentrations onsite, a graph that displays boron, lithium and molybdenum concentrations from the most recent sampling result at each monitoring well is provided in **Figure 2** (data used for **Figure 2** provided in **Table 4**). As displayed on the first graph, molybdenum concentrations appear to correlate with boron concentrations, with elevated levels at similar monitoring wells. Lithium concentrations do not track with either boron or molybdenum concentrations, but rather range between 5 – 50 µg/L, indicating that lithium concentrations are not linked to impacts from the SCPA.

Figure 2 – Comparison of Boron, Molybdenum, and Lithium Concentrations





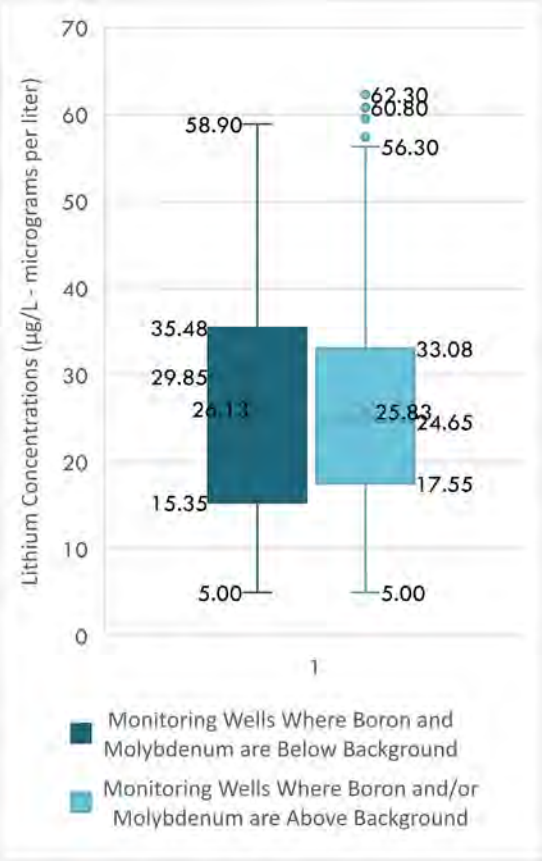
Notes:
1) µg/L – micrograms per liter.
2) Values displayed in order from highest to lowest boron concentrations. Data used in Figure 2 are provided in Table 4.
3) The upper graph displays boron and molybdenum concentrations, with molybdenum concentrations on the right axis.
4) The lower graph displays boron, molybdenum, and lithium concentrations, with lithium concentrations on the right axis.

As displayed in **Table 4**, there are 35 monitoring wells onsite where boron and/or molybdenum concentrations are below background limits and 43 monitoring wells onsite where boron and/or molybdenum are above background limits. Background limits are based on the most recent updated statistical limits for the SCPA (Rocksmith, 2023). **Figure 3** displays the distribution of lithium concentrations for the following datasets: 1) monitoring wells where

there is a corresponding molybdenum and/or boron exceedance (43 monitoring wells) and 2) monitoring wells where there is not a corresponding boron or molybdenum exceedance (35 monitoring wells). For this figure, historical datasets for each monitoring well were used to generate the distributions. The results of this box and whisker plot display a nearly identical distribution between the two datasets including minimum, lower quartile, median, upper quartile, and maximum values all within 6 µg/L of one another. This further demonstrates that lithium concentrations do not correlate with key CCR indicator parameters, and therefore, elevated lithium concentrations onsite are not related to CCR impacts.

Using the data identified in **Figure 3**, for those wells without a boron or molybdenum exceedance above background, a non-parametric (highest value in the dataset) upper prediction limit of 58.9 µg/L was calculated, which is higher than the current Site GWPS of 40 µg/L.

Figure 3 – Distribution of Lithium Concentrations in Monitoring Wells With and Without Key CCR Indicators



4.2.2 *Sequential Extraction Data Confirms Presence of Naturally Occurring Lithium in Alluvial Sediments*

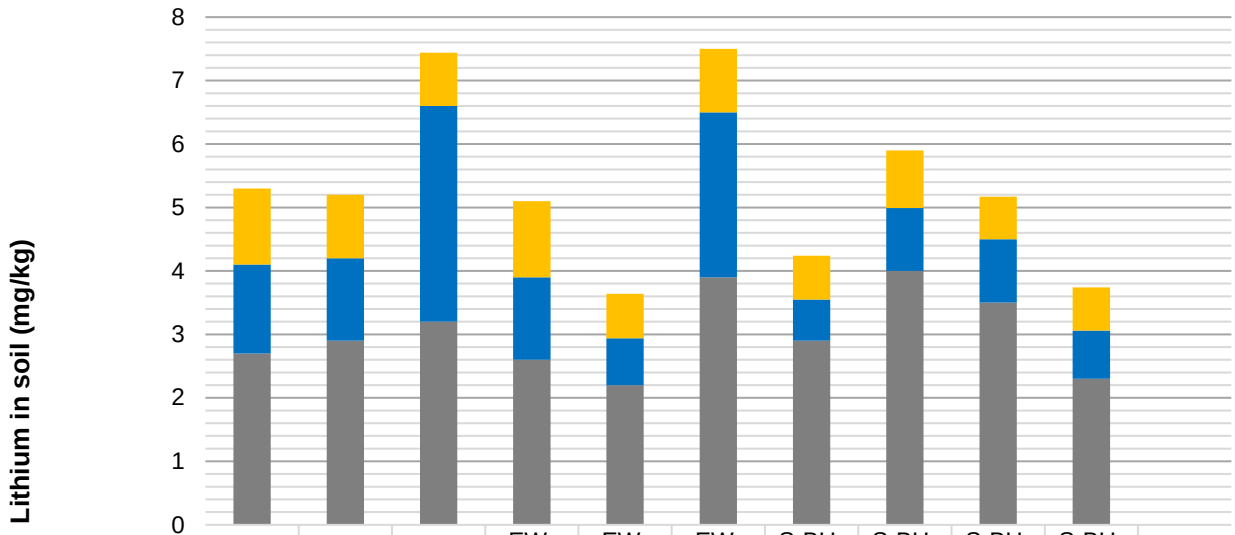
A seven-step sequential extraction method (SEP) based on Tessier et al. (1979) was used to identify the provenance of lithium in soils (i.e., the operationally defined fraction that contains the metal) and determine potential environmental mobility. The total concentration of a metal measured from all seven steps can be compared to the concentration determined from the total metal analysis for compositional accountability. The seven-step SEP is defined by specific extraction steps as follows (based on a modified Tessier et al. 1979 method):

Figure 4 – Sequential Extraction Procedure

SEQUENTIAL EXTRACTION PROCEDURE				
ENVIRONMENTALLY AVAILABLE (Increasing Availability)	Step 1	Increasing Extraction Strength	Exchangeable Fraction:	This extraction includes trace elements that are electrostatically adsorbed to overburden minerals
	Step 2		Carbonate Fraction:	This extraction targets trace elements that are adsorbed or otherwise bound to carbonate minerals
	Step 3		Non-Crystalline Materials Fraction:	This extraction targets trace elements that are complexed by amorphous minerals
	Step 4		Metal Hydroxide Fraction:	This extraction targets trace elements bound to hydroxides of iron, manganese, and/or aluminum
	Step 5		Organic Fraction:	This extraction targets trace elements strongly bound via chemisorption to organic material
NON-ENVIRONMENTALLY AVAILABLE	Step 6		Acid/Sulfide Fraction:	The extraction is used to identify trace elements precipitated as sulfide minerals
	Step 7		Residual Fraction:	Trace elements remaining in the overburden after the previous extractions will be distributed between silicates, phosphates, and refractory oxide

In 2021, samples were collected by Golder from three soil borings across the SEC for sequential extraction testing. The locations of the sequential extraction sample borings are provided in **Figure 1**. Results of the sequential extraction testing as displayed in **Figure 5** indicate the presence of naturally occurring lithium in soils at the SEC in fractions 6 and 7 in each of the soil borings, both directly adjacent to the SCPA and at background locations. Lithium is reported in soils at concentrations ranging from 3.6 to 7.4 milligrams per kilogram (mg/kg, from the SEP) and is predominantly (76 to 87%) present in the residual and sulfide component of the soil, i.e. the non-environmentally available fractions. The absence of lithium in the environmentally available fractions (specifically exchangeable and carbonate fractions) indicate a general lack of lithium transport and attenuation (e.g., through sorption and/or co-precipitation).

Figure 5 - Sequential Extraction of Lithium Results



	IW-2S (40-48)	IW-2M (75-80)	IW-2D (125-129)	EW-3S (35-40)	EW-3M (70-80)	EW-3D (115-120)	S-BH-01S (20-27)	S-BH-01M (45-54)	S-BH-01D (100-110)	S-BH-01 (93-96)
Exchangeable Phase	0	0	0	0	0	0	0	0	0	0
Carbonate Phase	0	0	0	0	0	0	0	0	0	0
Amorphous Phase	0	0	0	0	0	0	0	0	0	0
Metal Hydroxide Phase	1.2	1	0.84	1.2	0.7	1	0.69	0.91	0.67	0.68
Organic Phase	0	0	0	0	0	0	0	0	0	0
Acid/Sulfide Fraction	1.4	1.3	3.4	1.3	0.74	2.6	0.65	0.99	1	0.76
Residual Fraction	2.7	2.9	3.2	2.6	2.2	3.9	2.9	4	3.5	2.3

Borehole ID (sample depth below ground surface)

Notes:

1) Detection with JB flags for the organic phase were not used for this evacuation, as these results were detected in the blank, are estimated, and are therefore not considered accurate for this evaluation.

2) Mg/kg – milligrams per kilogram.

3) Sample locations provided in **Figure 1.** BH-01 is near the background wells while IW-2 and EW-3 are located adjacent to the SCPA CCR Unit.

4.2.3 Leachability Testing

In a previous study completed by Haley & Aldrich in 2018, several leachability tests were completed at the site for the CCR materials in the SCPA and the SCPB.

1. Shake Extraction Tests (method ASTM D3987) were completed. This test consists of shaking the waste (CCR) with water to determine what constituents would be leached from the material. For this test, both the SCPA bottom ash and the SCPB fly ash had a result of non-detect for lithium (<0.018 mg/L).
2. Synthetic Precipitation Leaching Procedure (SPLP) tests were completed for both the SCPA bottom ash and the SCPB fly ash. This method is used to determine if constituents of concern are able to leach into groundwater from the waste (CCR). For this test, the bottom ash/boiler slag in SCPA was again at a non-detect level for lithium, while the fly ash in SCPB had a lithium concentration of 0.0087 mg/L. The lithium concentration of 0.0087 mg/L (8.7 µg/L) is at a similar level as background groundwater, and well below the site GWPS of 40 µg/L.

These results indicate that there is little leachable lithium present in the SCPA or SCPB CCR units.

4.2.4 Lithium at TP-6S

TP-6S is located approximately 2,500 feet southwest of the SCPA and approximately 2,500 feet south of background wells BMW-1S and BMW-1D. Located on the western side of the property, TP-6S is considered upgradient or cross-gradient of the SCPA, as groundwater flow at the site ranges from north to south, with a net groundwater flow toward the east. During the statistical evaluation of the November 2023 sampling event, a lower confidence limit (LCL) of 34.08 µg/L and upper confidence limit (UCL) of 40.08 µg/L were calculated for lithium. When compared to the UPL of 58.9 µg/L for lithium as discussed above, the UCL is below the calculated prediction limit for wells with no boron or molybdenum exceedances. This, coupled with the clear indications that lithium concentrations are not correlated with CCR impacts, indicates that the elevated lithium at TP-6S is not from the SCPA, but rather is naturally occurring in the alluvial aquifer at this location.

4.2.5 Lithium at TP-2D

TP-2D is located approximately 3,000 feet to the northeast of the SCPA on the southern bank of the Mississippi River. Like TP-6S, boron and molybdenum concentrations at this monitoring well are below background, indicating that CCR impacts are unlikely at this monitoring well. During the statistical evaluation of the November 2023 sampling event, a LCL of 41.47 µg/L and UCL of 52.78 µg/L were calculated. When compared to the UPL of 58.9 µg/L as discussed above, the UCL is below the calculated prediction limit for wells with no boron or molybdenum exceedances. This, coupled with the clear indications that lithium concentrations are not correlated with CCR impacts indicates that the elevated lithium at TP-2D is not from the SCPA, but rather is naturally occurring in the alluvial aquifer at this location.

4.2.6 Lithium at LMW-5S

LMW-5S is located approximately 2,000 feet to the southeast of the SCPA, near the southeastern perimeter of the SCPB. Unlike TP-2D and TP-6S, boron and molybdenum concentrations are elevated at LMW-5S. During the statistical evaluation of the November 2023 sampling event, a LCL of 42.97 µg/L and UCL of 48.17 µg/L were calculated. When compared to the UPL of 58.9 µg/L as discussed above, the UCL is below the calculated prediction limit for wells with no boron or molybdenum exceedances. This, coupled with the clear indications that lithium concentrations are not correlated with CCR impacts indicates that the elevated lithium at LMW-5S is not from the SCPA, but rather is naturally occurring in the alluvial aquifer at this location.

4.2.7 Naturally Occurring Lithium Values at the SEC are Consistent with Upstream Sampling Results within the Missouri and Mississippi River Alluvial Aquifers

Naturally occurring lithium is present in groundwater across the United States (US), can be found in nearly all rock and soil types, and is most commonly found to be associated with silicate minerals (Tomazscak 2015). The weathering of silicate minerals is known to cause the release of naturally occurring lithium into groundwater (Tomazscak 2015). Site-specific test results (i.e., SEP results) confirm this finding for the SEC.

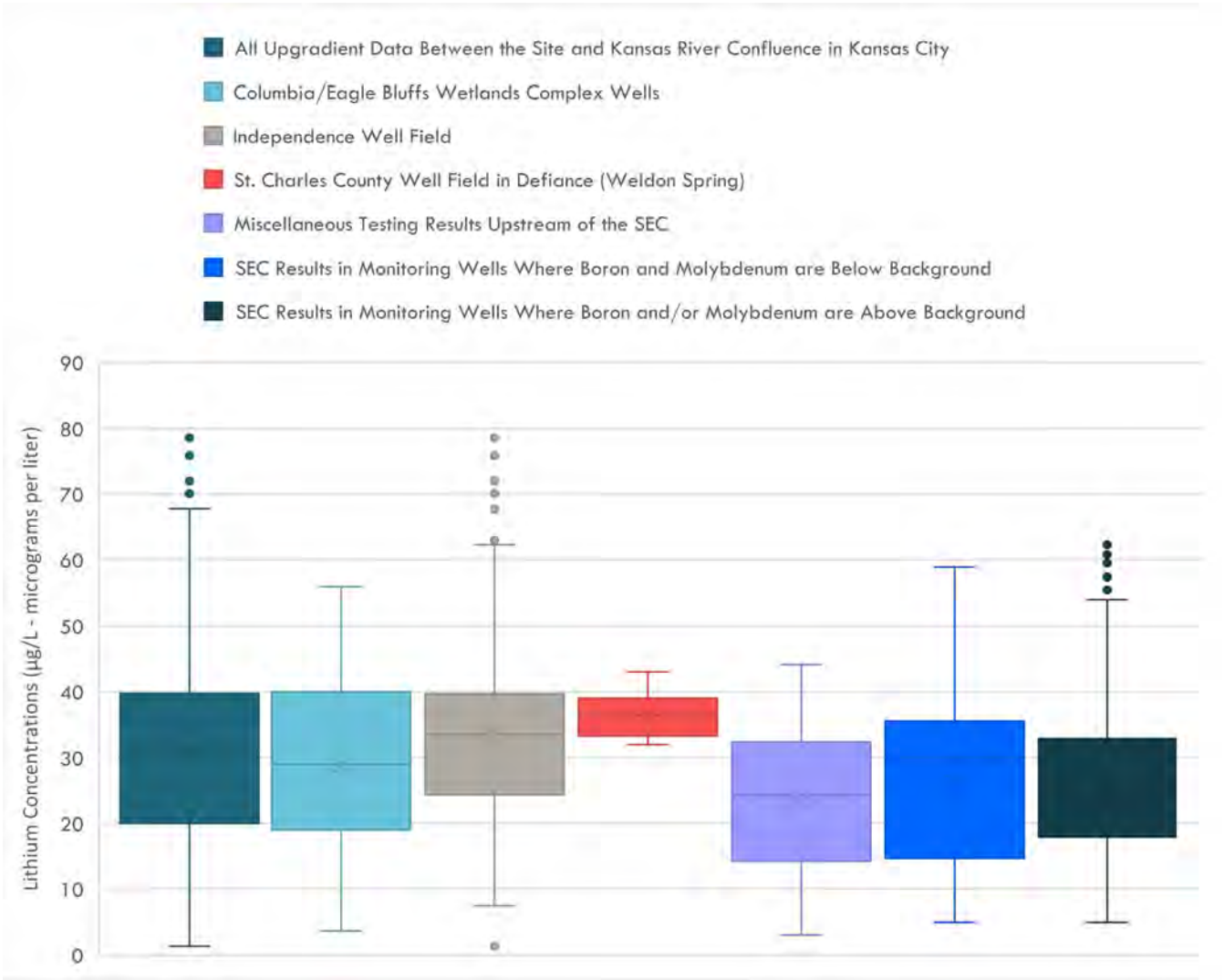
The National Water Quality Monitoring Council's (NWQMC) Water Quality Portal (available at https://www.waterqualitydata.us/) summarizes data from the USGS, the USEPA, and the NWQMC databases. A review of lithium results from within the Missouri and Mississippi River Alluvial Aquifer from the NWQMC database includes lithium results from a total of 1,347 groundwater sample results for wells located upgradient of the SEC within the Missouri River alluvial aquifer and 1 groundwater sample result for wells located upgradient of the SEC

within the Mississippi River alluvial aquifer in the state of Missouri. To evaluate naturally occurring Missouri River Alluvial Aquifer concentrations of lithium, the database results were divided different groups as follows:

- Independence Well Field near Independence Missouri (Kelly 2010) – Total of 410 results.
- Columbia/Eagle Bluffs Wetland Complex Wells (Richards 1995, Richards 1999, Richards, 2002) – Total of 851 results.
- Weldon Spring Well Field (Kleeschulte, 1993) – Total of 32 results.
- Miscellaneous testing results upstream of the SEC – Total of 54 results
- Only 1 result was available within the Mississippi River alluvium upgradient of the SEC, a concentration of 14.7 µg/L near Wayland Missouri.

Figure 6 displays a box and whisker plot that compares the publicly available groundwater lithium concentration data in the upgradient alluvial aquifers to lithium concentrations at SEC as displayed in **Figure 4**.

Figure 6 – Comparison of Missouri River Alluvial Aquifer Groundwater Lithium Concentrations – Public Data and SEC Results



Overall, the results display a very similar distribution of lithium results across the state within the Missouri River Alluvium. In fact, lithium concentrations appear to be lower, on average, than those in Independence, Columbia/Eagle Bluffs Wetland Complex, and Weldon Spring. This consistency with upgradient alluvial aquifer samples demonstrates that the lithium concentrations onsite are not from the SCPA, but rather are naturally occurring within the alluvial aquifer.

4.3 Cobalt Evaluation

Cobalt is present at a level that is statistically above the GWPS of 6 µg/L using corrective action statistical evaluations at LMW-6S. LMW-6S is located approximately 1,800 feet southeast of the SCPA, on the eastern perimeter of the SCPB, approximately 750 feet northeast of LMW-5S discussed above. As displayed in **Table 5**, boron is present at LMW-6S at a concentration above background, while molybdenum is detected below the Practical Quantitation Limit (PQL), similar to molybdenum concentrations at background wells.

Table 5 – November 2023 Analytical Results of Key Constituents at Monitoring Wells with a Statistical Cobalt Exceedance

Well ID	Cobalt (µg/L)	Boron (µg/L)	Molybdenum (µg/L)
LMW-6S	7.9	14,700	1.7 J
BMW-1S (background)	ND (<1.2)	57.9 J	2.8 J
BMW-3S (background)	ND (<1.2)	58.9 J	1.0 J
BMW-1D (background)	ND (<1.2)	140	1.1 J
BMW-3D (background)	ND (<1.2)	65.0 J	ND (<1.0)

Notes:
1) µg/L – micrograms per liter.
2) J - Result is an estimated value.
3) ND – Constituent was analyzed but was not detected above the Method Detection Limit (MDL) or the adjusted Practical Quantitation Limit (PQL) based on data validation and is considered a non-detect.

As displayed on **Table 1**, cobalt is not typically considered a key CCR indicator parameter because it is usually present at a low concentration in CCR leachate relative to typical background, has low mobility, and has a higher potential for reactivity (EPRI 2017). Based on the results of the initial Corrective Action Statistical Evaluation completed in November 2023, Cobalt was present at a level statistically above the GWPS, with a LCL of 7.033 µg/L and a UCL of 9.744 µg/L. Since its installation in 2016, cobalt concentrations have ranged from 5.9 to 10.7 µg/L. **Table 6** provides a summary of cobalt minimum, average, and maximum concentrations in the different potential source areas including background, porewater, Missouri River, and Mississippi River. As displayed on **Table 6**, cobalt concentrations at LMW-6S are above those present in background groundwater, nearby rivers, and porewater.

Table 6 – Summary of Cobalt Concentrations

Constituent (Units)		LMW-6S	Background	Assessment Monitoring Wells Adjacent to SCPA (UMW 1D-6D)	Mississippi River[3]	Missouri River[3]	SCPA Porewater	SCPB Porewater
Cobalt (µg/L)	Minimum	5.9	ND (<0.72)	ND (<0.72)	ND (<0.73)	ND (<0.73)	ND (<0.73)	ND (<0.73)

[3] Mississippi and Missouri River samples collected September 21 & 22, 2017 and May 8, 2018. Results are available on Ameren's public website at https://www.ameren.com/company/environment-and-sustainability/managing-coal-combustion/ccr-compliance-reports/sioux-energy-center.

Constituent (Units)		LMW-6S	Background	Assessment Monitoring Wells Adjacent to SCPA (UMW 1D-6D)	Mississippi River[3]	Missouri River[3]	SCPA Porewater	SCPB Porewater
	Average	7.767	0.7909	0.4685	1.217	0.5065	0.652	ND (<0.73)
	Maximum	10.7	4.2 J	1.7 J	2.3 J	0.87 J	1.8	ND (<0.73)

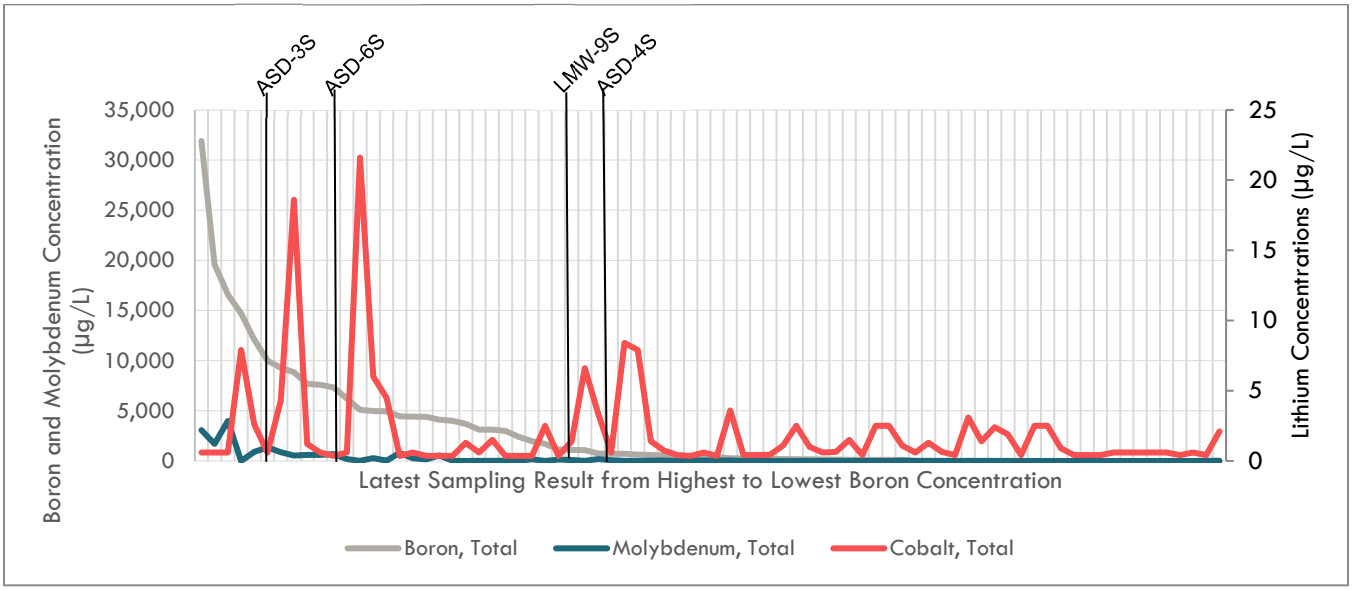
Notes:
1) µg/L – micrograms per liter.
2) J - Result is an estimated value.
3) ND – Constituent was analyzed but was not detected above the Method Detection Limit (MDL) or the adjusted Practical Quantitation Limit (PQL) based on data validation and is considered a non-detect.

In January 2018, as part of the initial SCPB ASD, porewater was sampled in the SCPA and SCPB CCR units. Eight of the nine results from this analysis were non-detect (<0.73 µg/L) and one result at SCPA-2 was 1.8 J µg/L. This lack of cobalt in the CCR materials has been confirmed in other studies, including the current NPDES permit (#MO-0000353), where cobalt is not listed as a Pollutant of Concern (POC) since the results collected from the SCPA and SCPB outfalls were at a non-detect level. Lack of cobalt within the porewater of the SCPA and SCPB, coupled with the lack of cobalt at a statistically significant level above the GWPS in any other monitoring well onsite, indicates that cobalt is likely not from the SCPA, but rather, an alternative source.

Further evidence that the SCPA is not a source of elevated cobalt concentrations is the lack of cobalt in the groundwater monitoring wells directly adjacent to the CCR Unit used for Detection and Assessment Monitoring. These wells (UMW-1D, UMW-2D, UMW-3D, UMW-4D, UMW-5D and UMW-6D, as displayed in **Figure 1**) show elevated key CCR indicator parameter concentrations for boron and molybdenum but do not have elevated cobalt concentrations. Of the 108 testing results for these six (6) monitoring wells, only one result has a value over the method detection limit (MDL) at 1.7 J µg/L, a result below the PQL. Therefore, over 99% of all cobalt results in monitoring wells located directly adjacent to the SCPA are present at a non-detect level.

Like lithium, concentrations of cobalt do not closely track with key indicator parameters of boron or molybdenum. **Figure 7** is a graph that displays boron, cobalt and molybdenum concentrations from the most recent sampling result at each monitoring well (data used to generate this graph is available in **Table 4**). As displayed previously in **Figure 2** and below in **Figure 7**, molybdenum concentrations appear to correlate with boron concentrations, with elevated levels at similar monitoring wells. Cobalt concentrations do not track closely with either boron or molybdenum concentrations, but rather range from non-detect (<0.73 µg/L) to 20 µg/L.

Figure 7 – **Comparison of Boron, Molybdenum, and Cobalt Concentrations**

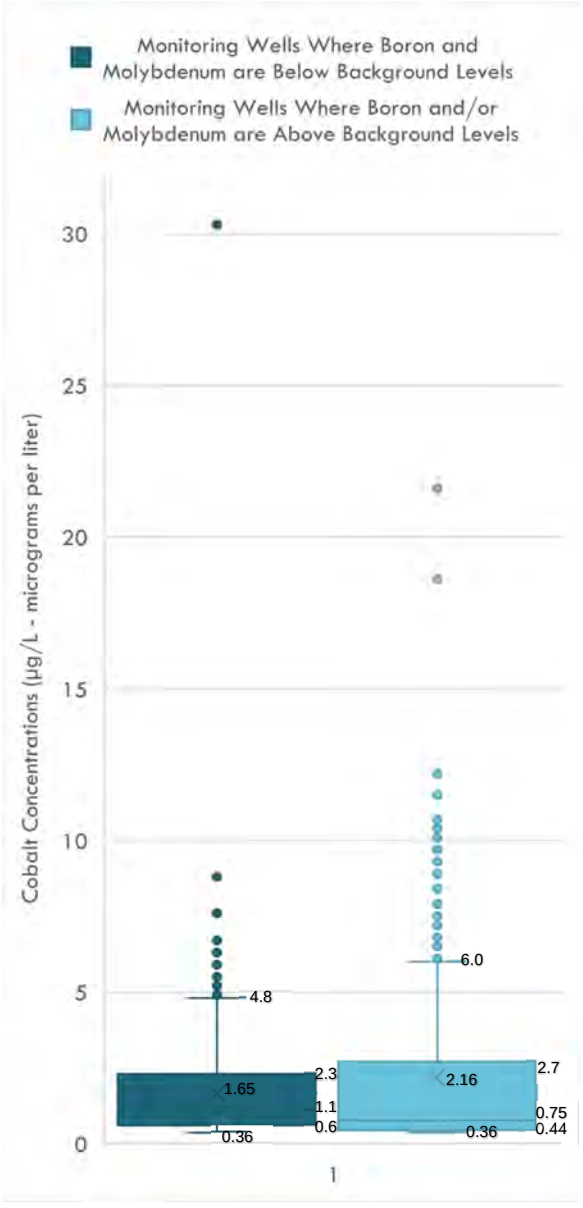


Notes:

1) µg/L – micrograms per liter,
2) Values displayed in order from highest to lowest boron concentrations. Data used in Figure 7 are provided in Table 4.
3) Cobalt concentrations displayed on secondary axis, with values on the right side of the graph.

As displayed in **Table 4**, there are 35 monitoring wells onsite where boron and molybdenum concentrations are below background and 43 monitoring wells onsite where boron or molybdenum are above background concentrations. **Figure 8** displays the distribution of cobalt concentrations between these two datasets (with and without boron or molybdenum exceedances). For this figure, historical data for each of the wells identified above were used to generate the distribution. The results of this box and whisker plot display a very similar distribution between the two datasets, including mean concentrations within 0.51 µg/L and median concentrations within 0.4 µg/L. This further demonstrates that cobalt concentrations do not correlate with key CCR indicator parameters, and therefore, elevated cobalt concentrations onsite are naturally occurring and not related to CCR impacts.

Figure 8 – **Distribution of Cobalt Concentrations in Monitoring Wells With and Without Key CCR Indicators**

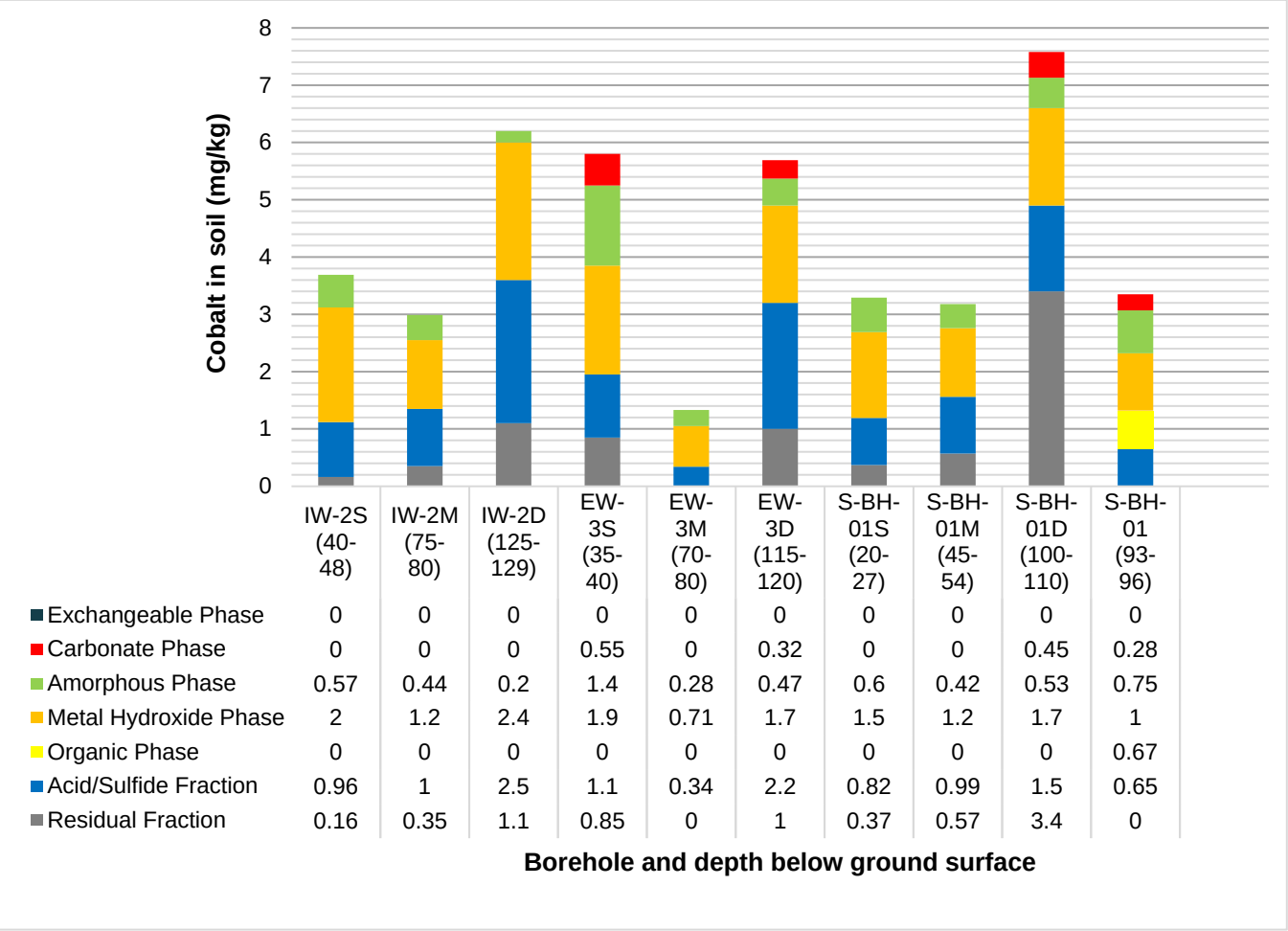


4.3.1 *Sequential Extraction Data Confirms Presence of Naturally Occurring Cobalt in Sediments*

As with lithium, a seven-step sequential extraction method (SEP) based on Tessier et al. (1979) was used to identify the provenance of cobalt in soils (i.e. the operationally-defined fraction that contains the metal) and determine potential environmental mobility. The total concentration of a metal measured from all seven steps can be compared to the concentration determined from the total metal analysis for compositional accountability. The locations of the sequential extraction sample locations are provided in **Figure 1**.

Results of the sequential extraction testing indicate naturally occurring cobalt is present in soils at the SEC in fractions 6 and 7 of each of the soil borings, both directly adjacent to the SCPA and at background locations. Cobalt is reported at concentrations ranging from 1.3 to 7.6 milligrams per kilogram (mg/kg, from the SEP) and is present in the residual and sulfide component of the soil (35 to 81%), i.e., the non-environmentally available fractions. Background soil samples, outside of the impacts from the SCPA, display similar results as those soil samples collected adjacent to the CCR unit, indicating that cobalt is not from impacts from the CCR Unit, but rather is naturally occurring in the alluvial aquifer.

Figure 9 - Sequential Extraction of Cobalt Results



Notes:

1) Mg/kg – milligrams per kilogram.

2) Sample locations provided in **Figure 1.** BH-01 is near the background wells while IW-2 and EW-3 are located adjacent to the SCPA CCR Unit.

4.3.2 Leachability Testing

As with lithium, leachability tests were completed at the site by Haley & Aldrich in 2018 for the CCR materials in the SCPA and the SCPB.

1. For the Shake Extraction Tests (method ASTM D3987), both the SCPA bottom ash and the SCPB fly ash results were non-detect (<0.0068 mg/L) for cobalt.
2. For the SPLP test, both the SCPA bottom ash and the SCPB fly ash were non-detect (<0.0027 mg/L) for cobalt.

This confirms the results of the porewater testing and indicate that little to no leachable cobalt is present in the SCPA or SCPB CCR units and they are not significant sources of cobalt in the alluvial aquifer groundwater.

4.3.3 Naturally Occurring Cobalt Values at the SEC are Consistent with Upstream Sampling Results within the Missouri and Mississippi River Alluvial Aquifers

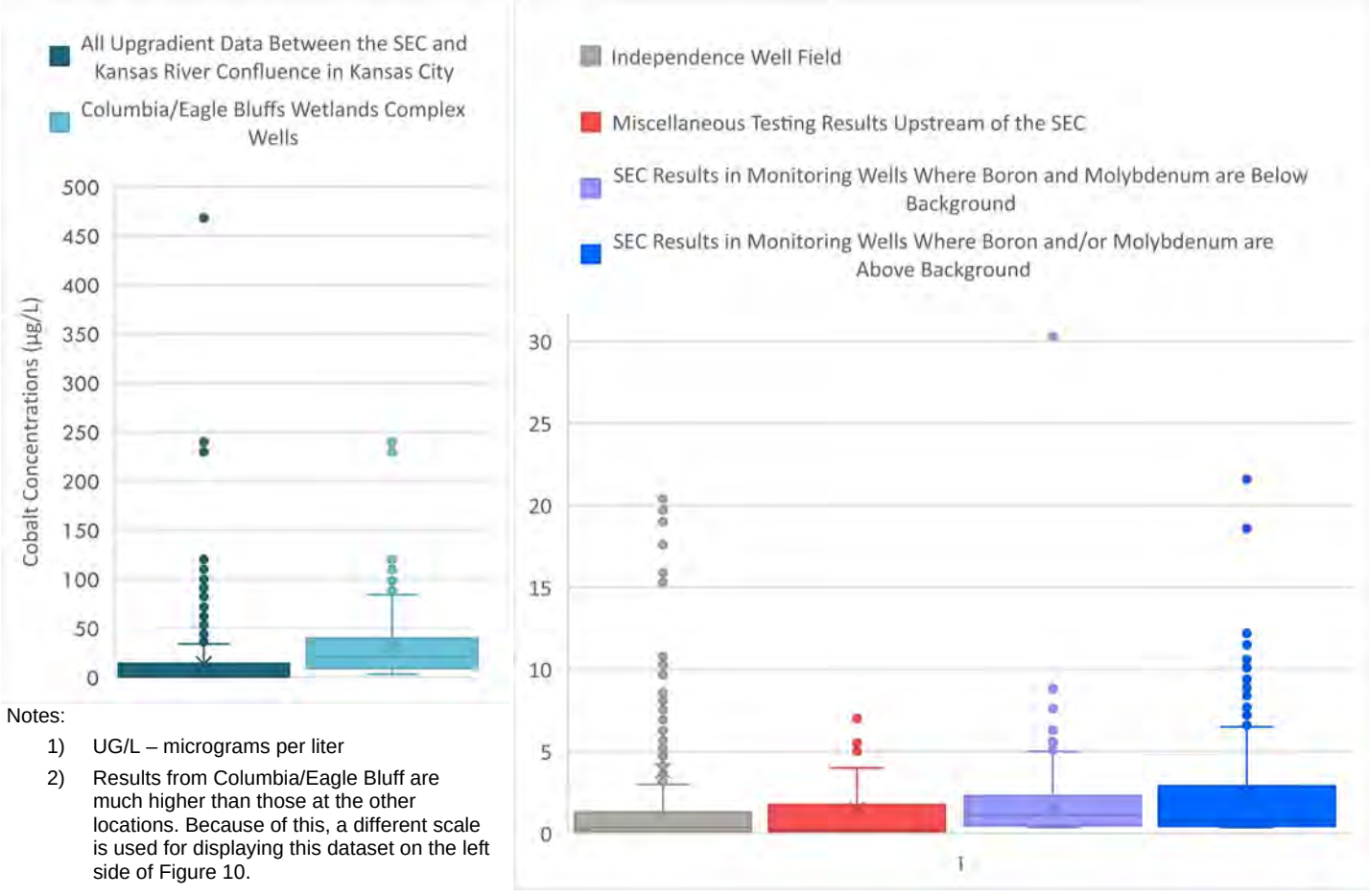
Cobalt may be present in mineral form as arsenides, carbonates, sulfides and oxides (Hem, 1989; Smith and Carson, 1981). During weathering of these minerals (i.e., dissolution and/or oxidation), any cobalt is typically

released and redistributed to iron or manganese (hydr)oxides (Butt et al., 2000) or other sorbent (e.g., clays, organic matter). The National Water Quality Monitoring Council's (NWQMC) Water Quality Portal (available at https://www.waterqualitydata.us/) summarizes data from the USGS, the USEPA, and the NWQMC databases. A review of Cobalt results from within the Missouri and Mississippi River Alluvial Aquifer from the NWQMC database includes Cobalt results from a total of 515 groundwater sample results for wells located upgradient of the SEC within the Missouri River alluvial aquifer and 1 groundwater sample result for wells located upgradient of the SEC within the Mississippi River alluvial aquifer in the state of Missouri. To evaluate naturally occurring Missouri River Alluvial Aquifer concentrations of cobalt, the database results were divided different groups as follows:

- Independence Well Field near Independence Missouri (Kelly 2010) – Total of 306 results.
- Columbia/Eagle Bluffs Wetland Complex Wells (Richards 1995, Richards 1999, Richards, 2002) – Total of 176 results.
- Miscellaneous testing results upstream of the SEC – Total of 33 results.
- Only 1 result available within the Mississippi River alluvium upgradient of the SEC, a concentration of 0.079 µg/L near Wayland Missouri.

Figure 10 displays a box and whisker plot that compares the publicly available groundwater cobalt data in the upgradient alluvial aquifers to those completed onsite as displayed in **Figure 9**.

Figure 10 – Comparison of Missouri River Alluvial Aquifer Groundwater Cobalt Concentrations – Public Data and Sioux Results



Notes:

1) UG/L – micrograms per liter
2) Results from Columbia/Eagle Bluff are much higher than those at the other locations. Because of this, a different scale is used for displaying this dataset on the left side of Figure 10.

The cobalt concentrations from the Columbia/Eagle Bluffs Wetlands complex are much higher than those at the SEC and those farther upgradient at the Independence Well Field. It is unknown why these results are at such elevated concentrations, therefore, they are not used for this evaluation. Excluding the data from Columbia/Eagle Bluffs Wetlands Complex, the results display that the majority of cobalt concentrations across the Missouri River alluvial aquifer are below 4 µg/L with some outliers above 6 µg/L at each site. This is likely caused by the heterogeneous nature of the Missouri River Basin alluvial aquifer deposits, which are derived from a vast area of the United States including parts of Missouri, Iowa, Kansas, Nebraska, South Dakota, North Dakota, Montana, Wyoming, and Colorado. The sediments in the Missouri River Alluvial Aquifer at the site are made up of a mixture of sediments from all reaches of the Missouri River Basin. Cobalt deposits and many metamorphic and igneous rocks containing cobalt occur at numerous locations within the Missouri River Basin. Therefore, the alluvial aquifer sediments in the vicinity of LMW-6S (as well as other various locations within the Missouri River Alluvium) include localized zones of increased cobalt concentrations, and are likely the cause of the elevated concentrations observed at the SEC.

This inconsistency of upgradient alluvial aquifer samples and their origins indicates that the cobalt concentrations onsite, namely the exceedance at LMW-6S, are not influenced by the SCPA, but rather are naturally occurring within the aquifer groundwater.

5.0 SUMMARY

Based on the information presented in **Section 4.0**, the statistical exceedances for lithium and cobalt at the site using Corrective Action statistical methods are not the result of impacts from the SCPA, but instead are the result of natural geochemical variability of groundwater within the alluvial aquifer at the site. The natural geochemical sources for lithium and cobalt exceedances are supported by several factors including: (1) a lack of correlation between key CCR indicators (boron and molybdenum) and exceedances of lithium and cobalt, (2) the presence of lithium and cobalt at similar levels in upgradient alluvial aquifer samples , (3) the presence of naturally occurring cobalt and lithium in sediments upgradient of the SCPA, and (4) cobalt and lithium have been shown to be naturally occurring elements in soils and alluvial aquifer sediments that are derived from geologic sources within the Missouri River watershed.

6.0 REFERENCES

Ameren Missouri, 2019a. Remedy Selection Report – 40 CFR § 257.97 Rush Island, Labadie, Sioux and Meramec CCR Basins.

Ameren Missouri, 2019b. Response to Community Comments on Ameren Missouri Corrective Measures Assessment for Rush Island, Labadie, Sioux and Meramec Energy Centers.

Ayotte, J.D., Gronberg, J.M. and Apodaca, L.E., 2011. Trace elements and radon in groundwater across the United States, 1992-2003 (p. 115). US Department of the Interior, US Geological Survey.

Butt, CRMl, M. J. Lintern, and RRIL. Anand, Evolution of regoliths and landscapes in deeply weathered terrain—implications for geochemical exploration, Ore Geology Reviews 16, no. 3-4 (2000): 167-183.

Dellantonio, A., Fitz, W.J., Repmann, F. and Wenzel, W.W., 2010. Disposal of coal combustion residues in terrestrial systems: contamination and risk management. Journal of environmental quality, 39(3), pp.761-775.

Electric Power Research Institute (EPRI). 2011, Composition and Leaching of FGD Gypsum and Mined Gypsum, Report 1022146. November 2011.

Electric Power Research Institute (EPRI). 2012, Groundwater Quality Signatures for Assessing Potential Impacts from Coal Combustion Product Leachate, Report 1017923. October 2012.

Electric Power Research Institute (EPRI). 2017, Guidelines for Development of Alternative Source Demonstrations at Coal Combustion Residual Sites, Report 3002010920, October 2017.

Golder Associates Inc., 2017, 40 CFR Part 257 Groundwater Monitoring Plan, SCPA Surface Impoundment–Sioux Energy Center – St. Charles County, Missouri, USA.

Golder Associates Inc., 2018, 2017 Annual Groundwater Monitoring Report, SCPA Surface Impoundment, Sioux Energy Center – St. Charles County, Missouri, USA.

Golder Associates Inc., 2019a, 2018 Annual Groundwater Monitoring Report, SCPA Surface Impoundment, Sioux Energy Center – St. Charles County, Missouri, USA.

Golder Associates Inc., 2019b, 2018 Annual Groundwater Monitoring and Corrective Action Report, SCPB Surface Impoundment, Sioux Energy Center – St. Charles County, Missouri, USA

Golder Associates Inc., 2020, 2019 Annual Groundwater Monitoring Report, SCPA Surface Impoundment, Sioux Energy Center – St. Charles County, Missouri, USA.

Golder Associates Inc., 2021, 2020 Annual Groundwater Monitoring Report, SCPA Surface Impoundment, Sioux Energy Center – St. Charles County, Missouri, USA.

Golder Associates USA Inc., 2022, 2021 Annual Groundwater Monitoring and Corrective Action Report, SCPA Surface Impoundment, Sioux Energy Center – St. Charles County, Missouri, USA.

Gredell Engineering Resources, Inc., 2019. Ameren Missouri Sioux Energy Center Site Characterization Report, Special Condition 18(b), Missouri Operating Permit #MO-0000353: July 2019.

Hem, John David, and Geological Survey (US). Study and interpretation of the chemical characteristics of natural water. (1989): 263

Huber, R.S., Kim, N., Renshaw, C.E., Renshaw, P.F. and Kondo, D.G., 2014. Relationship between altitude and lithium in groundwater in the United States of America: results of a 1992–2003 study. Geospatial health, 9(1), p.231.

Kelly, Brian P., 2010, Contributing Recharge Areas, Groundwater Travel Time, and Groundwater Quality of the Missouri River Alluvial Aquifer near the Independence, Missouri, Well Field,1997–2008: U.S. Geologic Survey, Scientific Investigations Report 2010-5232.

Kleeschulte, Michael J., 1993, Water-Quality Data for the Missouri River and Missouri River Alluvium Near Weldon Spring, St. Charles County, Missouri – 1991-92: U.S. Geological Survey, Open-File Report 93-109.

Richards, J.M., 1995, Hydrologic data for the Columbia/Eagle Bluffs Wetland Complex, Columbia, Missouri—1992–93: U.S. Geological Survey Open-File Report 95–109.

Richards, J.M., 1999, Hydrologic data for the Columbia/Eagle Bluffs Wetland Complex, Columbia, Missouri—993–96: U.S. Geological Survey Open-File Report 99–607.

Richards, J.M., 2002, Water-Quality and Ground-Water Hydrology of the Columbia/Eagle Bluffs Wetland Complex, Columbia, Missouri – 1992-999: U.S. Geological Survey, Water-Resources Investigations Report 02-4227.

Rocksmith Geoengineering, LLC, 2023. Corrective Action Statistical Evaluation, SCPA Surface Impoundment, Sioux Energy Center, St. Charles County, Missouri.

Rocksmith Geoengineering, LLC, 2023. Updated Statistical Limits with Additional Background Data—SCPA CCR Unit, Sioux Energy Center, St. Charles, Missouri.

Smith, H. I. C., and B. L. Carson, Trace metals in the environment. Volume 6: cobalt. An appraisal of environmental exposure, Ann Arbor, MI: Ann Arbor Science (1981).

Tomascak, P.B., Magna, T. and Dohmen, R., 2016. The surficial realm: Low temperature geochemistry of lithium. In Advances in Lithium Isotope Geochemistry (pp. 157-189). Springer, Cham.

Tessier, A., Campbell, P., and Bisson, M., 1979. Sequential extraction procedure for the speciation of particulate trace metals. Analytical chemistry, 51(7), pp.844-851.

USEPA. 2009. Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance. Office of Resource Conservation and Recovery – Program Implementation and Information Division. March.

USEPA. Federal Register. Volume 80. No. 74. Friday April 17, Part II. Environmental Protection Agency. 40 CFR Parts 257 and 261. Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule/ [EPA-HQ-RCRA-2009-0640; FRL-9919-44-OSWER] (2015).

Water Quality Data Home. (n.d.). Www.waterqualitydata.us. From https://www.waterqualitydata.us

WSP USA Inc., 2023, 2022 Annual Groundwater Monitoring and Corrective Action Report, SCPA Surface Impoundment, Sioux Energy Center – St. Charles County, Missouri, USA.

Richards, J.M., 1999, Hydrologic data for the Columbia/Eagle Bluffs Wetland Complex, Columbia, Missouri—993–96: U.S. Geological Survey Open-File Report 99–607.

Tables

Table 4
Summary of Corrective Action Groundwater Network Sampling Results
SCPA Surface Impoundment
Sioux Energy Center, St. Charles County, MO

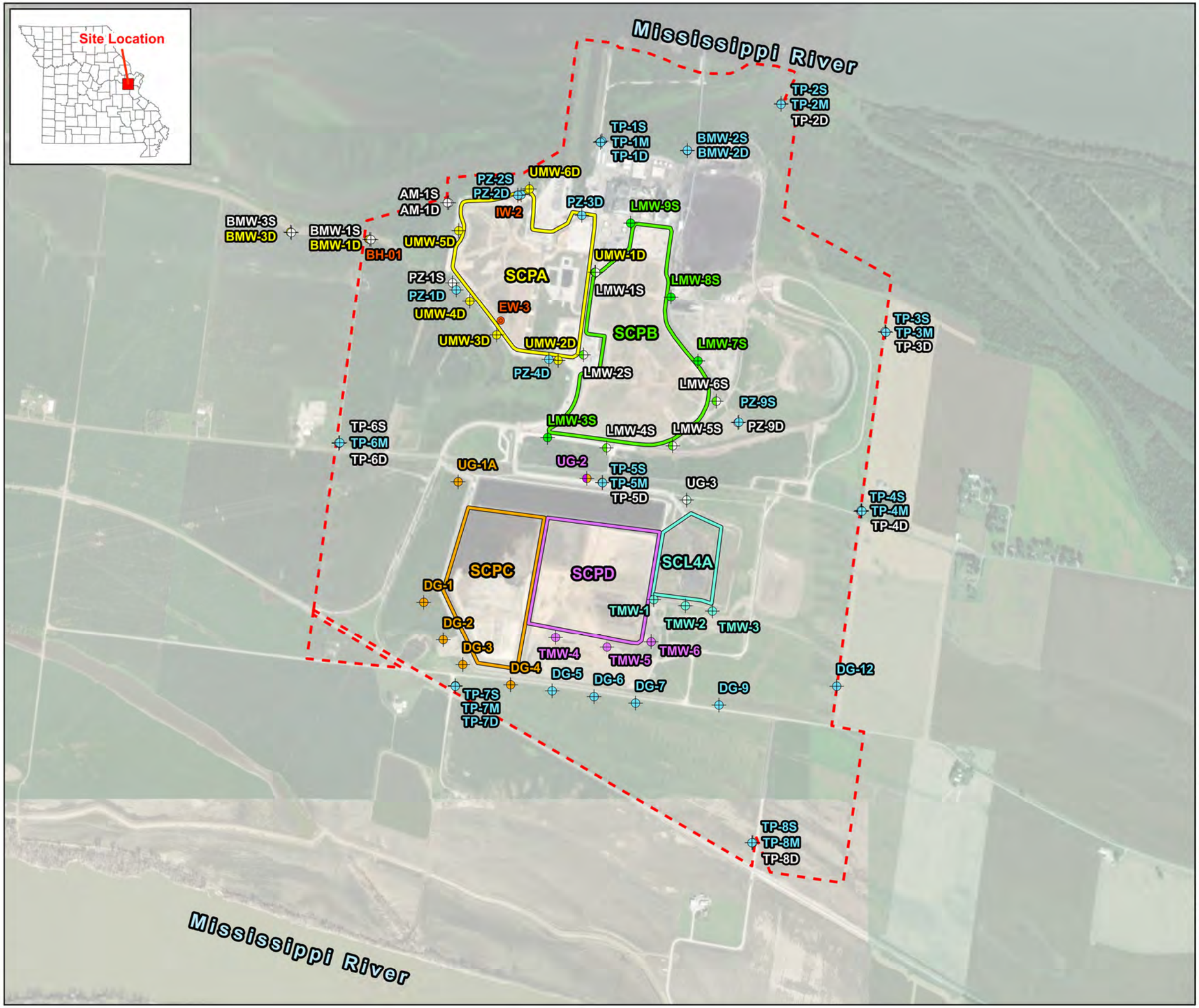
Constituent	Boron		Molybdenum		Lithium		Cobalt	
Background Limit	240 µg/L		DQR (20 µg/L)		27.91 µg/L		DQR (5 µg/L)	
Groundwater Monitoring Wells	Date	µg/L	Date	µg/L	Date	µg/L	Date	µg/L
S-UMW-3D	11/10/2023	31,900	11/10/2023	3,070	11/10/2023	21.9	11/10/2023	ND
S-UMW-2D	11/10/2023	19,600	11/10/2023	1,700	11/10/2023	28.6	11/10/2023	ND
S-UMW-4D	11/10/2023	16,600	11/10/2023	3,990	11/10/2023	34.9	11/10/2023	ND
S-LMW-6S	11/14/2023	14,700	11/14/2023	1.7 J	11/14/2023	20.6	11/14/2023	7.9
S-LMW-5S	11/14/2023	12,100	11/14/2023	903	11/14/2023	46.3	11/14/2023	2.6 J
S-PZ-1S	11/10/2023	10,000	11/10/2023	1,350	11/10/2023	17.9	11/10/2023	ND
S-LMW-2S	11/14/2023	9,270	11/14/2023	869	11/14/2023	31.9	11/14/2023	4.3 J
S-ASD-3S	1/25/2018	8,850	1/25/2018	532	1/25/2018	41.8	1/25/2018	18.6
S-TP-5D	11/13/2023	7,690	11/13/2023	607	11/13/2023	37.1	11/13/2023	1.2 J
S-LMW-4S	11/14/2023	7,590	11/14/2023	593	11/14/2023	38.8	11/14/2023	ND
S-ASD-3M	1/25/2018	7,330	1/25/2018	675	1/25/2018	32.8	1/25/2018	ND
S-UMW-5D	11/10/2023	6,220	11/10/2023	191	11/10/2023	21.9	11/10/2023	ND
S-ASD-6S	2/2/2018	5,100	2/2/2018	10.8 J	2/2/2018	27.0	2/2/2018	21.6
S-LMW-8S	11/14/2023	4,970	8/6/2019	282	8/6/2019	12.8	5/16/2018	6.0
S-ASD-5S	2/8/2018	4,960	2/8/2018	27.7	2/8/2018	17.1	2/8/2018	4.5 J
S-ASD-3D	1/25/2018	4,450	1/25/2018	814	1/25/2018	35.0	1/25/2018	ND
S-AM-1D	11/10/2023	4,410	11/10/2023	263	11/10/2023	33.1	11/10/2023	ND
S-ASD-4D	2/9/2018	4,400	2/9/2018	161	2/9/2018	40.1	2/9/2018	ND
S-ASD-6M	2/5/2018	4,110	2/5/2018	551	2/5/2018	46.2	2/5/2018	ND
S-ASD-5D	2/8/2018	3,990	2/8/2018	12.9 J	2/8/2018	45.0	2/8/2018	ND
S-LMW-7S	11/14/2023	3,690	8/5/2019	ND	8/5/2019	18.2	5/16/2018	1.3 J
S-PZ-9D	11/14/2023	3,120	11/14/2023	10.7 J	11/14/2023	30.8	11/14/2023	ND
S-TP-5M	8/2/2019	3,120	8/2/2019	7.6 J	8/2/2019	33.2	8/2/2019	1.5 J
S-ASD-4M	2/9/2018	2,990	2/9/2018	30.5	2/9/2018	37.2	2/9/2018	ND
S-ASD-5M	2/8/2018	2,400	2/8/2018	10.9 J	2/8/2018	42.6	2/8/2018	ND
S-ASD-6D	2/5/2018	1,980	2/5/2018	172	2/5/2018	40.1	2/5/2018	ND
S-UG-2	11/13/2023	1,700	8/19/2019	ND	8/19/2019	19.1	11/13/2019	ND
S-ASD-1D	1/31/2018	1,150	1/31/2018	131	1/31/2018	22.7	1/31/2018	ND
S-LMW-1S	11/14/2023	1,100	11/14/2023	96.3	11/14/2023	21.3	11/14/2023	1.4 J
S-LMW-9S	11/14/2023	1,080	8/9/2019	8.7 J	8/9/2019	47.4	5/16/2018	6.6
S-ASD-2S	1/30/2018	744	1/30/2018	184	1/30/2018	24.9	1/30/2018	3.4 J
S-UMW-1D	11/14/2023	720	11/14/2023	66.4	11/14/2023	17.7	11/14/2023	ND
S-ASD-4S	2/9/2018	717	2/9/2018	3.0 J	2/9/2018	36.0	2/9/2018	8.4
S-UG-3	11/13/2023	638	11/13/2023	3.6 J	11/13/2023	27.5	11/13/2023	7.9
S-ASD-1S	1/31/2018	588	1/31/2018	24.8	1/31/2018	8.4 J	1/31/2018	1.4 J
S-ASD-1M	1/31/2018	555	1/31/2018	43.3	1/31/2018	16.2	1/31/2018	0.74 J
S-TP-1D	8/6/2019	481	8/6/2019	ND	8/6/2019	18.7	8/6/2019	ND
S-ASD-2M	1/30/2018	451	1/30/2018	59.9	1/30/2018	14.6	1/30/2018	ND
S-UMW-6D	11/10/2023	411	11/10/2023	37.2	11/10/2023	17.7	11/10/2023	ND
S-ASD-2D	1/30/2018	385	1/30/2018	46.3	1/30/2018	12.4	1/30/2018	ND
S-AM-1S	11/10/2023	258	11/10/2023	37.0	11/10/2023	26.3	11/10/2023	3.6 J
S-TP-1M	8/5/2019	246	8/5/2019	ND	8/5/2019	16.6	8/5/2019	ND
S-TP-2M	8/5/2019	238	8/5/2019	ND	8/5/2019	28.8	8/5/2019	ND
S-LMW-3S	11/13/2023	214	8/5/2019	ND	8/5/2019	29.9	5/16/2018	ND
S-TP-5S	8/2/2019	211	8/2/2019	13.1 J	8/2/2019	17.7	8/2/2019	1.1 J
S-UG-1A	11/13/2023	165	8/19/2019	ND	8/19/2019	40.3	11/13/2019	ND
S-TP-7S	8/6/2019	144	8/6/2019	14.1 J	8/6/2019	43.3	8/6/2019	1.0 J
S-BMW-1D	11/10/2023	140	11/10/2023	1.1 J	11/10/2023	13.9	11/10/2023	ND
S-TMW-6	11/13/2023	120	7/25/2022	3.2 J	7/25/2022	37.4	7/25/2022	ND
S-TP-1S	8/5/2019	120	8/5/2019	5.4 J	8/5/2019	ND	8/5/2019	1.5 J
S-TP-7D	8/6/2019	110	8/6/2019	ND	8/6/2019	42.5	8/6/2019	ND
S-DG-1	11/13/2023	107	8/19/2019	ND	8/19/2019	31.6	11/13/2019	ND
S-DG-4	11/13/2023	105	8/19/2019	ND	8/19/2019	34.8	11/13/2019	ND
S-TP-4S	8/6/2019	101	8/6/2019	28.6	8/6/2019	18.6	8/6/2019	1.1 J
S-TP-6S	11/10/2023	99.1 J	11/10/2023	3.4 J	11/10/2023	39.7	11/10/2023	ND
S-TMW-3	11/13/2023	96.1 J	8/19/2019	ND	8/19/2019	27.2	6/6/2017	1.3 J
S-TMW-4	11/13/2023	93.7 J	7/25/2022	4.0 J	7/25/2022	36.6	7/25/2022	ND
S-TP-7M	8/6/2019	93.5 J	8/6/2019	ND	8/6/2019	37.8	8/6/2019	ND
S-TMW-5	11/13/2023	93.3 J	7/25/2022	2.1 J	7/25/2022	35.3	7/25/2022	3.1 J
S-TP-2D	11/13/2023	92.3 J	11/13/2023	ND	11/13/2023	50.1	11/13/2023	1.4 J
S-TP-2S	8/5/2019	88.5 J	8/5/2019	4.3 J	8/5/2019	13.8	8/5/2019	2.4 J
S-TMW-2	11/13/2023	85.9 J	8/19/2019	ND	8/19/2019	28.6	6/6/2017	1.9 J
S-TP-8M	8/5/2019	85.1 J	8/5/2019	ND	8/5/2019	29.0	8/5/2019	ND
S-DG-2	11/13/2023	82.0 J	8/19/2019	ND	8/19/2019	35.5	11/13/2019	ND
S-DG-3	11/13/2023	81.9 J	8/19/2019	ND	8/19/2019	35.2	11/13/2019	ND
S-TMW-1	11/13/2023	80.2 J	8/19/2019	3.1 J	8/19/2019	20.6	6/6/2017	0.91 J
S-TP-8S	8/5/2019	72.6 J	8/5/2019	6.5 J	8/5/2019	21.8	8/5/2019	ND
S-TP-3S	8/7/2019	71.3 J	8/7/2019	16.8 J	8/7/2019	12.3	8/7/2019	ND
S-TP-4M	8/6/2019	66.8 J	8/6/2019	ND	8/6/2019	32.0	8/6/2019	ND
S-BMW-3D	11/10/2023	65.0 J	11/10/2023	ND	11/10/2023	22.2	11/10/2023	ND
S-TP-3D	11/10/2023	63.4 J	11/10/2023	1.3 J	11/10/2023	35.5	11/10/2023	ND
S-BMW-3S	11/10/2023	58.9 J	11/10/2023	1.0 J	11/10/2023	12.6	11/10/2023	ND
S-TP-4D	11/13/2023	58.4 J	11/13/2023	ND	11/13/2023	31.9	11/13/2023	ND
S-BMW-1S	11/10/2023	57.9 J	11/10/2023	2.8 J	11/10/2023	8.2 J	11/10/2023	ND
S-TP-6M	8/6/2019	53.1 J	8/6/2019	ND	8/6/2019	25.1	8/6/2019	ND
S-TP-6D	11/10/2023	52.5 J	11/10/2023	1.4 J	11/10/2023	29.3	11/10/2023	ND
S-TP-3M	8/7/2019	44.3 J	8/7/2019	ND	8/7/2019	23.9	8/7/2019	ND
S-TP-8D	11/13/2023	ND	11/13/2023	1.9 J	11/13/2023	34.1	11/13/2023	1.9 J

Notes:
1.) Unit Abbreviations: µg/L.
2.) ND - Constituent was analyzed but was not detected above the Method Detection Limit (MDL) or the adjusted Practical Quantitation Limit (PQL) based on data validation and is considered a non-detect. Values displayed as ND.
3.) J - Result is an estimated value.
4.) Date corresponds with most recent result for each analyte.
5.) Well ID's highlighted in light red have values above the background limit for boron or molybdenum. These values are used in the "concentrations with a boron or molybdenum value over background" for the box and whisker plots provided in Figure 3 and Figure 8. Well ID's in blue do not have a molybdenum or boron value above background, and these wells are used in the "concentrations without a boron or molybdenum value over background" column for the box and whisker plots provided in Figures 3 and 9.
6.) If all background results are less than the PQL, the Double Quantification Rule (DQR) is used. In cases where DQR is the background value, the latest PQL is used for the background limit.

ROCKSMITH GEOENGINEERING

Prepared by: GTM
Checked by: JTA
Reviewed by: MNH

Figures



TITLE

SIOUX ENERGY CENTER GROUNDWATER MONITORING PROGRAMS AND SAMPLE LOCATION MAP

Legend

- Sioux Energy Center Property Boundary

CCR Units

- SCPA - Bottom Ash Surface Impoundment (Closed)
- SCPB - Fly Ash Surface Impoundment (Closed)

Utility Waste Landfill Cells

- SCL4A - Dry CCR Disposal Area
- SCPC- Inactive FGD Surface Impoundment
- SCPD - FGD Surface Impoundment

Monitoring Well Networks

- Corrective Action Monitoring Well
- SCPA Detection and Assessment Monitoring Well
- SCPB and Corrective Action Monitoring Well
- SCPB Detection Monitoring Well
- SCPC Detection Monitoring Well
- SCPD and SCPC Detection Monitoring Well
- SCPD Detection Monitoring Well
- SCL4A and Corrective Action Monitoring Well
- SCL4A Detection Monitoring Well
- Monitoring Well Used for Water Level Elevation Measurements Only
- Soil Boring Location for Sequential Extraction Samples

NOTES

1. All boundaries and locations are approximate.
2. FGD - Flue Gas Desulfurization.
3. CCR - Coal Combustion Residuals.

REFERENCES

1. Ameren Missouri Sioux Energy Center, Sioux Property Control Map, February 2011.

0 500 1,000 2,000 3,000 Feet

PROJECT
CCR RULE GROUNDWATER MONITORING PROGRAM

CLIENT
AMEREN MISSOURI
SIOUX ENERGY CENTER

ROCKSMITH GEOENGINEERING

DESIGN	JSI	YYYY-MM-DD	2023-03-29
PREPARED	JSI	PROJECT No.	23009
REVIEW	GTM		
APPROVED	MNH		

FIGURE 1

Path: C:\Users\Gina\Money\Rocksmith Geoengineering LLC\23007 - Ameren GW - Documents\400 - Drawings, Figures\4.3-SECs\4.3.2 - Production\2023\ASDot\Figure1-WellLocations.aprx

Appendix G

May 2024 Corrective Action Alternative Source Demonstration

REPORT

SCPA Corrective Action – Alternative Source Demonstration for Lithium and Cobalt Detections in Isolated Wells

Sioux Energy Center, St. Charles County, Missouri, USA

December 23, 2024

Project Number: 23009-24

Submitted to:

Ameren Missouri
1901 Chouteau Ave,
St. Louis, MO 63103

Submitted by:

Rocksmith Geoengineering, LLC
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Certification Statement

This *SCPA Corrective Action – Alternative Source Demonstration for Lithium and Cobalt Detections in Isolated Wells, Sioux Energy Center, St. Charles County, Missouri, USA* has been prepared to comply with the United States Environmental Protection Agency (USEPA) coal combustion residual (CCR) rule under the direction of a licensed professional engineer with Rocksmith Geoengineering, LLC.

I hereby certify that this S*CPA Corrective Action – Alternative Source Demonstration for Lithium and Cobalt Detections in Isolated Wells, Sioux Energy Center, St. Charles County, Missouri, USA* located at 8501 Missouri 94, West Alton, Missouri 63386 has been prepared to meet the requirements of 40 CFR §257.98(a)(1)(i) and 257.95(g)(3)(ii).

Rocksmith Geoengineering, LLC



_____

Mark Haddock, PE, RG
Principal Engineer, Senior Partner

1.0 INTRODUCTION

In accordance with the United States Environmental Protection Agency (USEPA) coal combustion residual (CCR) rule (CCR Rule or The Rule, USEPA 2015), this SCPA Corrective Action – Alternative Source Demonstration has been prepared to document an Alternative Source Demonstration (ASD) for statistical exceedances of the Groundwater Protection Standard (GWPS) calculated for Ameren Missouri's (Ameren) Sioux Energy Center (SEC) Bottom Ash Surface Impoundment (referred to as the SCPA) Corrective Action Monitoring Well Network. This document satisfies the requirements of §257.98(a)(1)(i) and 257.95(g)(3)(ii), which state that at a minimum, the Corrective Action program must meet the requirements of the Assessment Monitoring Program under 257.95. The Assessment Monitoring Program allows the owner or operator to demonstrate that a source other than the CCR Unit has caused a constituent to be at a statistical level exceeding the GWPS, and that the statistical exceedance was the result of an alternative source or resulted from errors in sampling, analysis, statistical evaluation, or natural variation in groundwater quality.

2.0 SITE DESCRIPTION AND BACKGROUND

The SEC (or Facility) is located approximately 12 miles west-northwest of the confluence of the Mississippi and Missouri Rivers in St. Charles County, Missouri. **Figure 1** depicts the location of the Facility and property boundaries referenced to local features as well as the Mississippi and Missouri Rivers. The Facility encompasses approximately 1,100 acres and is located within the floodplain between the Mississippi and Missouri Rivers. The Facility is bounded to the north by wooded areas along the Mississippi River, to the south by a railroad, and to the east and west by agricultural fields.

2.1 Geological and Hydrogeological Setting

Hydrogeologically, the SCPA lies between the Mississippi River to the north and the Missouri River to the south. Flow and deposition from these rivers have resulted in thick alluvial deposits that lie unconformably on top of bedrock. These alluvial deposits, which can range from approximately 100 to 130 feet in thickness, make up the uppermost aquifer called the alluvial aquifer. Overall, this aquifer is described as a fining upwards sequence of stratified sands and gravels with varying amounts of silts and clays. Drilling in the alluvial aquifer identified different sub-units, including floodplain deposits, natural levee deposits, and channel deposits along with volumetrically less important loess deposits. Grain sizes of these alluvial deposits are highly variable.

Beneath the alluvial aquifer lies the bedrock aquifer. Bedrock in this region includes Mississippian-aged rocks of the Meramecian Series. Formations include primarily limestone, dolomite, and shale and are comprised of the Salem Formation overlying the Warsaw Formation and the Burlington-Keokuk Formation.

2.2 Coal Combustion Residuals (CCR) SCPA Surface Impoundment

The SCPA is located in the floodplain between the Mississippi and Missouri Rivers and is constructed with perimeter berms at an elevation of approximately 446 feet above mean sea level (feet MSL), which is above the 100-year flood elevation of 437.4 feet MSL. Both fly ash and bottom ash have historically been managed and stored in this CCR unit. Borings completed in the SCPA indicate a CCR thickness of up to approximately 75 feet below ground surface (bgs) (to about 370 feet MSL) in the center of the unit and thinning out towards the edges.

The SCPA is located to the southwest of the SEC plant facilities. The boundary of SCPA extends to within approximately 200 feet of the SEC and is approximately 47 acres in size, as shown in **Figure 1**. Directly to the east of the SCPA is a lined CCR unit called the Fly Ash Surface Impoundment (SCPB). Directly to the south of the SCPA is Highway 94 followed by the Utility Waste Landfill (UWL) and eventually the Missouri River. There are three CCR units currently in the UWL: Cell 1 (SCPC), Cell 2 (SCPD) and Cell 4A (SCL4A). West of the SCPA lies miles of agricultural land. North of SCPA there are side channels from the adjacent Mississippi River.

2.3 CCR Rule Groundwater Monitoring

The CCR Rule was published in the Federal Register on April 17, 2015. This rule required CCR surface impoundments and landfills to monitor groundwater around these CCR units. Prior to the first major deadline of October 17, 2017, Ameren completed the following tasks: (1) installation of a groundwater monitoring well system; (2) a Statistical Method Certification; (3) a Groundwater Monitoring Plan (GMP) that details design, installation,

development, sampling procedures, as well as statistical methods; and (4) eight baseline groundwater sampling events for all Appendix III and Appendix IV parameters of the CCR Rule. In November 2017, the first Detection Monitoring event was completed.

The groundwater monitoring system for the SCPA consists of eight monitoring wells screened within the uppermost aquifer (alluvial aquifer), as shown on **Figure 1**. These wells were installed by Golder Associates Inc. (Golder) in 2015 and 2016 for CCR Rule groundwater monitoring purposes. More information regarding the design and installation of the monitoring wells is provided in the SCPA GMP (Golder 2017) and the SCPA 2017 Annual Report (Golder 2018).

Between March 2016 and June 2017, eight baseline sampling events were completed for the SCPA. After baseline sampling, Detection Monitoring events have been completed twice a year generally in the second and fourth quarters. In January 2018, background results from the eight baseline sampling events were used to calculate statistical upper prediction limits (UPL). These UPLs were then compared to the Detection Monitoring results. The results of the analysis indicated that there were Statistically Significant Increases (SSIs), and Assessment Monitoring was initiated.

The Assessment monitoring program was established at the SCPA on April 15, 2018. Since that time, groundwater sampling and statistical evaluations have been completed semi-annually to determine if there are any values at a Statistically Significant Level (SSL) over the site-specific Groundwater Protection Standard (GWPS). On October 11, 2018, it was determined that molybdenum was present at an SSL at several wells (UMW-2D, UMW-3D, UMW-4D, UMW-5D). The SSLs determined in Assessment Monitoring have remained the same since that time, and no new SSLs have been determined.

2.4 Corrective Action Background

On January 9, 2019, Ameren initiated its Corrective Measures Assessment (CMA) and posted the CMA report on May 20, 2019. A public meeting was held on May 31, 2019, and responses to public comments are posted on Ameren's CCR website. On August 30, 2019, Ameren published its "Remedy Selection Report – 40 CFR § 257.97 Rush Island, Labadie, Sioux and Meramec CCR Basins" (Remedy Selection Report, Ameren 2019) that identified source control through installation of a low permeability cover system, use of Monitored Natural Attenuation (MNA), and installation of Supplemental Corrective Measures as its chosen corrective action remedial plan. The Remedy Selection Report's remedial plan consists of two phases as follows:

1) Source control, stabilization and containment of CCR by installation of a low permeability geomembrane cap (a minimum 1 x 10^{-7} centimeters per second (cm/sec) versus 1 x 10^{-5} cm/sec required by the CCR Rule).
2) Once source control is achieved, monitor the natural attenuation of groundwater concentrations to address limited and localized CCR-related impacts. Ongoing monitoring and modelling evaluations will document that concentrations are decreasing as modelled. MNA occurs due to naturally occurring processes within the aquifer.

As required by the CCR Rule, the following were completed within 90 days of selecting the remedy (November 27 2019): (1) a groundwater monitoring well system was selected and certified by a Professional Engineer, (2) a Statistical Method Certification was prepared and certified by a Professional Engineer, and (3) a GMP was prepared recording the design, installation, development, sampling procedures, as well as statistical methods, and placed in the owner's operating record. The Corrective Action Monitoring Well Network consists of 19 groundwater monitoring wells, installed within the shallow, intermediate, and deep zones of the alluvial aquifer as shown in **Figure 1**.

In January 2021, Ameren commenced Phase 1 by initiating closure at the SCPA. Closure of the SCPA has been substantially completed with the completion of the liner cover system on December 21, 2021, and the first Corrective Action sampling event associated with Phase 2 of the Corrective Measures Remedial Plan was completed in April 2022.

On August 3, 2022, corrective action statistical methods[1] were used to determine the following statistical exceedances of the GWPS:

- Cobalt at LMW-6S
- Lithium at LMW-5S, TP-2D, and TP-6S
- Molybdenum at LMW-1S, LMW-2S, LMW-5S, AM-1D, AM-1S, TP-5D, and PZ-1S

Monitoring wells LMW-5S and LMW-6S were installed in December 2015 as part of the CCR Rule monitoring program for the SCPB fly ash surface impoundment. These wells are currently used for CCR Rule monitoring for the SCPB, as well as Corrective Action monitoring wells for the SCPA. Monitoring wells TP-2D and TP-6S were installed in July 2018 as part of the nature and extent evaluation completed under Assessment Monitoring and are currently used as Corrective Action monitoring wells.

In addition to MNA as a Corrective Measure, Ameren has also initiated a supplemental Corrective Measure consisting of groundwater extraction, treatment, and re-injection using ex-situ treatment technologies with chemical precipitation and selective ion exchange. This treatment system became fully operational in February 2023 and began achieving target flow rates in September 2023. In July 2024, a Supplemental Remedy Selection Report was produced for the SEC (Haley & Aldrich, 2024), documenting that these Corrective Measures are effectively contributing to constituent mass reductions in groundwater near the SCPA. The supplemental Corrective Measures are ongoing.

2.5 May 2024 Sampling Event

Following the May 2024 corrective action sampling event, from May 28-31, 2024, corrective action statistical methods were used to determine these statistical exceedances of the GWPS:

- Cobalt at LMW-6S
- Lithium at LMW-5S, TP-2D
- Molybdenum at LMW-2S, LMW-5S, AM-1D, AM-1S, TP-5D, and PZ-1S

This report further discusses the cobalt and lithium exceedances at the site, and documents why these exceedances are naturally occurring and not caused by impacts originating from the SCPA.

3.0 EVIDENCE THAT STATISTICAL EXCEEDANCES OVER GWPS ORIGINATES FROM DIFFERENT SOURCE

Multiple lines of evidence (LOEs) indicate that the statistical exceedance(s) over the GWPS at monitoring wells LMW-5S, LMW-6S, and TP-6S are not a result of a release from the SCPA, but rather originate from an alternative source. The following LOEs support this ASD:

- A lack of correlation between key CCR indicators (boron and molybdenum) and exceedances of lithium and cobalt.

[1] The statistical testing method used to evaluate the Corrective Action monitoring data is the confidence interval method, which is the same method used during Assessment Monitoring, except the null hypothesis for the confidence intervals is reversed. For Corrective Action, the Unified Guidance states that the appropriate null hypothesis is that the groundwater population (mean) exceeds the GWPS for those constituents that exceed the GWPS under Assessment Monitoring program. Therefore, in Corrective Action the Upper Confidence Limit (UCL) is compared to the Groundwater Protection Standard (GWPS) instead of the Lower Confidence Limit (LCL) [as was used during Assessment Monitoring].

- The presence of lithium and cobalt at similar concentrations in groundwater samples collected upgradient of the SCPA.
- Cobalt concentrations at LMW-6S exceed those observed in potential sources at the SEC, including CCR unit porewater
- The presence of naturally occurring cobalt and lithium in sediments in background locations at the SCPA.
- Cobalt and lithium are naturally occurring elements in soils and alluvial aquifer sediments that are derived from igneous and metamorphic rocks within the Missouri and Mississippi River watersheds.

3.1 CCR Indicators

Several types of CCR by-products are generated by coal-fired power plants. The different types of CCR typically display distinct geochemical signatures and indicator parameters. **Table 1** describes the different types of CCRs and their typical indicator parameters (USEPA 2018, EPRI 2011, EPRI 2012, and EPRI 2017).

Table 1: Types of CCR and Typical Indicator Parameters

Type of CCR	Description of CCR (USEPA 2018)	Key Indicators (EPRI 2011, 2012, 2017)
Fly Ash	Fine grained, powdery material composed mostly of silica made from the burning of finely ground coal in the boiler.	■ Boron ■ Molybdenum ■ Lithium ■ Sulfate ■ Bromide ■ Potassium ■ Sodium ■ Fluoride
Boiler Slag / Bottom Ash	Molten bottom ash from the slag tap and cyclone type furnaces that turns into pellets that have a smooth glassy appearance after quenching with water.	
Flue Gas Desulfurization Material (FGD)	A material leftover from the process of reducing sulfur dioxide emissions from a coal-fired boiler that can be a wet sludge consisting of calcium sulfite or calcium sulfate or a dry powdered material that is a mixture of sulfites and sulfates.	■ Sulfate ■ Fluoride ■ Calcium ■ Boron ■ Bromide ■ Chloride

Notes:

1) Fly ash and boiler slag/bottom ash typically have the same indicator parameters.
2) Definitions from USEPA website, available at https://www.epa.gov/coalash/coal-ash-basics.
3) Key indicators from EPRI 2011, 2012, and 2017.

3.2 Site Specific Key CCR Indicators

To be a key CCR Indicator parameter for a specific site, a constituent should be present in relatively high concentrations in the leachate (CCR porewater) when compared to background or other sources (nearby rivers, etc.), not be a common anthropogenic contaminant, and be mostly non-reactive and mobile in the site hydrogeological environment (EPRI 2012). In 2012, EPRI investigated which constituents are the best indicator parameters for coal ash impacts as outlined in **Table 1**. Of the key indicators listed in **Table 1** for fly ash and boiler slag/bottom ash, boron, molybdenum, lithium, sulfate, and fluoride are regularly sampled as part of the CCR Rule. Potassium and sodium are sampled periodically for major ion analysis and testing under the CCR Rule. Testing for bromide has not been completed at the site.

Table 2 provides a snapshot of the concentrations present onsite in the background, Mississippi River, Missouri River, and SCPA porewater for each of the constituents sampled on the key indicator list.

Table 2 – Summary of Potential CCR Impact Indicator Parameters at the Sioux Energy Center

Constituent (Units)		Back-ground	Mississippi River[2]	Missouri River[2]	SCPA Porewater	Advantages and Caveats as Key Indicator (from EPRI 2012)
Boron (µg/L)	Minimum	42.4	27.1	110	348	Typically present in leachate, non-reactive and mobile in common hydrogeologic environments, and not a common anthropogenic contaminant.
	Average	94.05	36.4	112.3	53,266	
	Maximum	240	59.9	117	111,000	
Sulfate (mg/L)	Minimum	12.3	29.9	188	48.5	Commonly analyzed and very mobile in all hydrogeologic environments. Concentration in impoundment leachate may in some cases be too low relative to background to be useful. Less useful in strongly reducing environments where sulfate can be reduced to hydrogen-sulfide gas.
	Average	31.03	34.08	192.1	1,088	
	Maximum	61.1	40.5	196	2,080	
Molybdenum (µg/L)	Minimum	ND (<0.52)	ND (<0.9)	2.6	26.5	Most useful for dry-managed coal ash. May be less mobile than boron in some hydrogeologic environments. Concentrations may be too low in impoundment leachate to be useful if background groundwater has detectable concentrations.
	Average	2.576	1.406	2.97	22,085	
	Maximum	9.3	2.3	3.6	56,600	
Lithium (µg/L)	Minimum	ND (<2.9)	ND (<2.9)	42.0	16.7	Useful for coal ash management sites where the power plant burned bituminous coal. Leachate concentrations are typically low in coal ash derived from subbituminous and lignite coal
	Average	12.7	6.694	43.17	56.16	
	Maximum	25.4	10.4	44.9	170	
Potassium (µg/L)	Minimum	ND (<500)	Not Sampled	Not Sampled	4,350	Commonly analyzed, although may be less mobile than boron and sulfate. Assure that leachate concentration is higher than background and that there are no anthropogenic sources such as agricultural fields where potassium may be applied in fertilizers.
	Average	1,788			34,350	
	Maximum	3,840			60,300	
Sodium (mg/L)	Minimum	4.58	Not Sampled	Not Sampled	13.9	Useful for coal ash management sites where the power plant injects trona or sodium bicarbonate or burned subbituminous coal. Absent dry sorbent injection, leachate concentrations are considerably lower in coal ash derived from bituminous coal, particularly at impoundments. Assure that leachate concentration is higher than background and that there are no anthropogenic sources such as agricultural fields, or major highways in northern climates where sodium may be applied in road salts.
	Average	5.848			59.36	
	Maximum	7.39			116	
Fluoride (mg/L)	Minimum	ND (<0.086)	0.16	0.43	0.22	Mobile and non-reactive in common hydrogeologic environments. Assure that leachate concentration is higher than background.
	Average	0.2735	0.196	0.4435	1.142	
	Maximum	0.46	0.24	0.46	2.9	

[2] Mississippi and Missouri River samples collected September 21 & 22, 2017 and May 8, 2018. Results are available on Ameren's public website at https://www.ameren.com/company/environment-and-sustainability/managing-coal-combustion/ccr-compliance-reports/sioux-energy-center.

Notes:

1) Unit abbreviations - mg/L – milligrams per liter, µg/L – micrograms per liter
2) ND - Constituent was analyzed but was not detected above the Method Detection Limit (MDL) or the adjusted Practical Quantitation Limit (PQL) based on data validation and is considered a non-detect. Values displayed as ND.

Based on the results of **Table 2**, boron appears to be the best indicator parameter for impacts from the SCPA because it has a much higher concentration in the CCR porewater than the background concentrations and it is non-reactive and highly mobile at the site. Sulfate and molybdenum also appear to be good indicators, however, the distinction between background and porewater for sulfate is not as distinct as that for boron, and molybdenum is typically not as mobile as boron (EPRI, 2012). Fluoride may be a good indicator as well, however, porewater concentrations are not significantly higher than background, and therefore it would be difficult to detect impacts using fluoride concentrations. Average lithium concentrations in the porewater are also not significantly elevated when compared to background groundwater samples or the Missouri River, therefore, determining the source of impacts would be difficult. Potassium and sodium are also not ideal indicators as many of the wells onsite are either near major roadways (Highway 94) or located within the agricultural fields around the plant, which may display elevated concentrations caused from anthropogenic sources (road salt, fertilizers, etc.).

Therefore, boron appears to be the best indicator parameter for CCR impacts at the SEC. Molybdenum also appears to be a good indicator but may not be present at the farthest extents of the plume. Boron and molybdenum concentrations are above background concentrations at each of the six monitoring wells used for Detection and Assessment Monitoring adjacent to the SCPA (Rocksmith 2024).

3.2.1 Lithium Concentrations

As indicated in **Table 1**, lithium can be a key indicator for fly ash and boiler slag/bottom ash impacts if it is present at elevated levels in the CCR porewater compared to background and is mobile at the site. However, as discussed in Section 3.2, boron and molybdenum are better CCR impact indicator parameters than lithium for the SEC, as most porewater samples are not significantly higher than background concentrations. Four of the five CCR porewater samples collected in 2018 as a part of the SCPB ASD (available in the 2018 Annual Report for the SCPB, Golder 2019b) have lithium concentrations below those found naturally occurring in the Missouri River and the site-specific GWPS for lithium (40 µg/L), and at levels only 2 to 3 times the concentrations in background monitoring wells located closer to the Mississippi River (BMW-1S/D and BMW-3S/D). Additionally, lithium concentrations are below Missouri River levels in each of the six perimeter wells adjacent to the SCPA used for Detection and Assessment Monitoring. This further establishes that lithium is not a useful CCR impact indicator parameter for the SCPA and the SEC area.

Table 3 – May 2024 Analytical Results of Key Constituents at Monitoring Wells with a Statistical Lithium Exceedance

Well ID	Lithium (µg/L)	Boron (µg/L)	Molybdenum (µg/L)
LMW-5S	49.2	15,600	1,500
TP-2D	51.4	84.3 J	ND (<1.0)
BMW-1S (background)	5.7 J	58.1 J	ND (<20.0)
BMW-3S (background)	10.3	54.1 J	ND (<20.0)
BMW-1D (background)	13.7	117	ND (<20.0)
BMW-3D (background)	23.0	64.1 J	ND (<20.0)

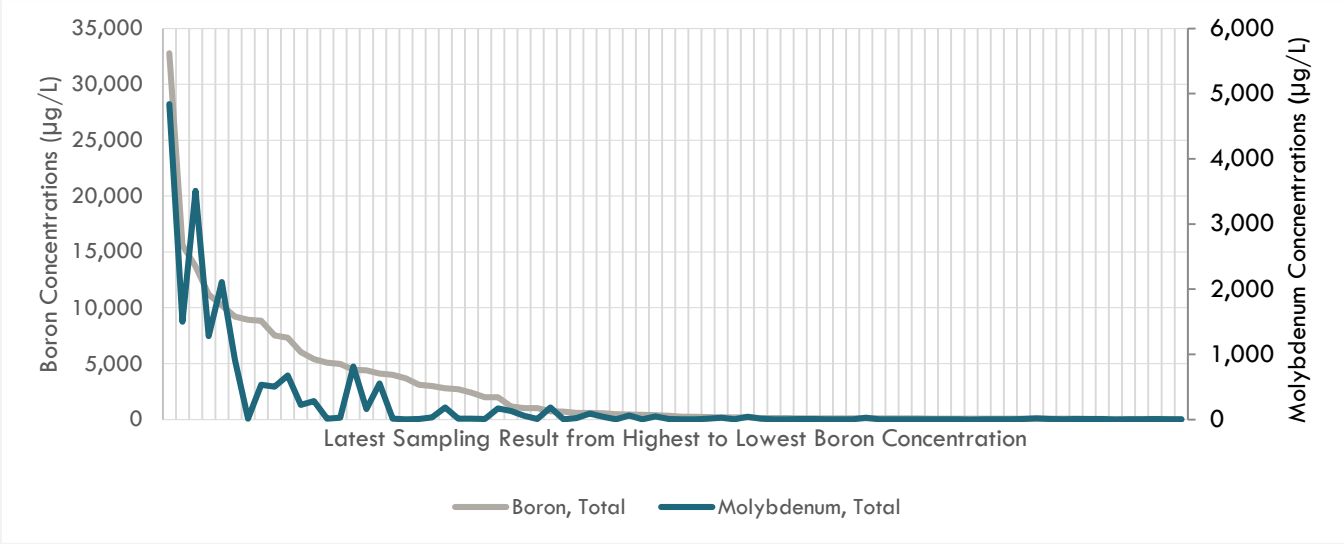
Notes:

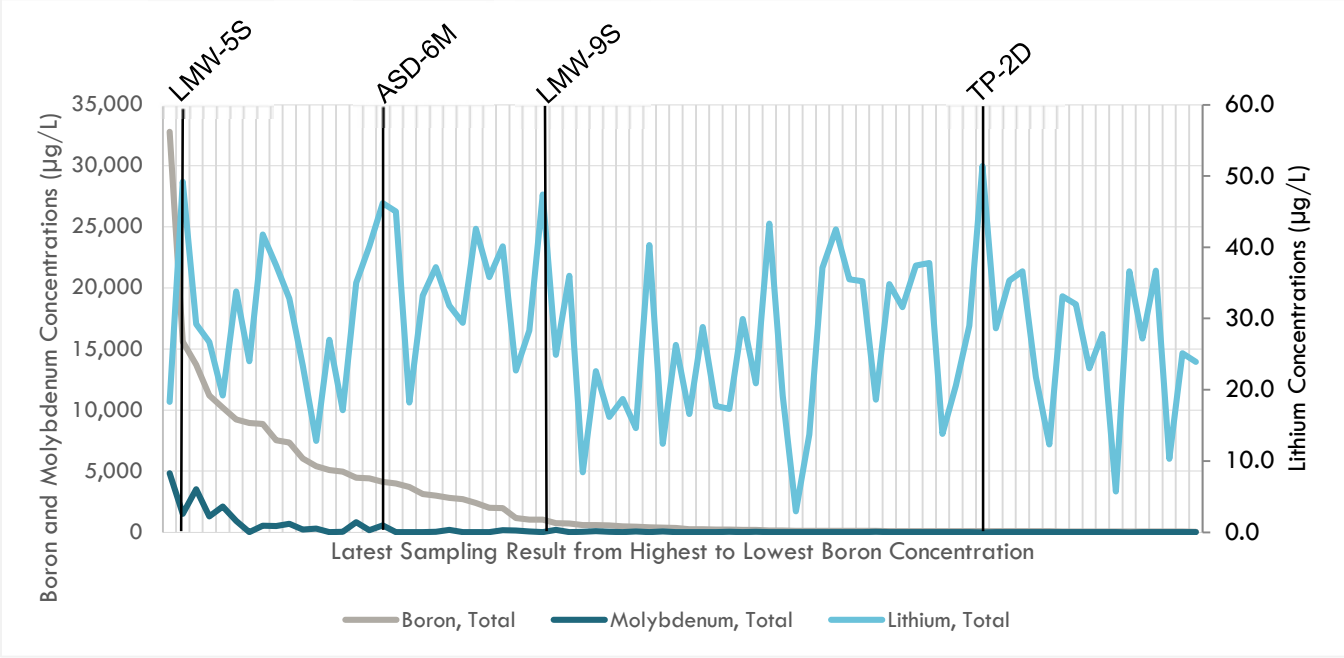
1) µg/L – micrograms per liter.
2) J - Result is an estimated value.
3) ND – Constituent was analyzed but was not detected above the Method Detection Limit (MDL) or the adjusted Practical Quantitation Limit (PQL) based on data validation and is considered a non-detect.

As displayed in **Table 3**, of the two wells with a statistical exceedance for lithium, only LMW-5S has boron and molybdenum concentrations at a level above background levels for these constituents. This lack of strong correlation between key CCR Indicator parameters and elevated lithium concentrations indicates that elevated lithium concentrations are not associated with CCR impacts that contain elevated boron and molybdenum.

To further evaluate the correlation between key CCR indicators and lithium concentrations onsite, a graph that displays boron, lithium, and molybdenum concentrations from the most recent sampling result at each monitoring well is provided in **Figure 2** (data used for **Figure 2** provided in **Table 4**). As displayed on the first graph, molybdenum concentrations appear to correlate with boron concentrations, with elevated levels at similar monitoring wells. Lithium concentrations do not track with either boron or molybdenum concentrations, but rather range between 3.0 and 51.4 µg/L, indicating that lithium concentrations are not linked to impacts from the SCPA.

Figure 2 – Comparison of Boron, Molybdenum, and Lithium Concentrations





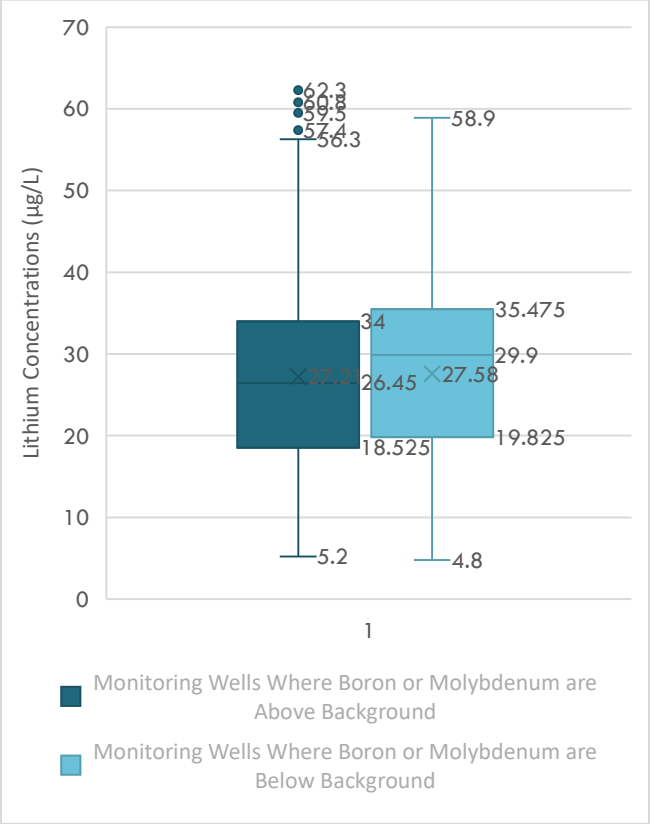
Notes:

1) µg/L – micrograms per liter.
2) Values displayed in order from highest to lowest boron concentrations. Data used in Figure 2 are provided in Table 4.
3) The upper graph displays boron and molybdenum concentrations, with molybdenum concentrations on the right axis.
4) The lower graph displays boron, molybdenum, and lithium concentrations, with lithium concentrations on the right axis.

As displayed in **Table 4**, there are 35 monitoring wells onsite where boron and/or molybdenum concentrations are below background limits and 43 monitoring wells onsite where boron and/or molybdenum are above background limits. Background limits are based on the most recent updated statistical limits for the SCPA (Rocksmith 2023). **Figure 3** displays the distribution of lithium concentrations for the following datasets: 1) monitoring wells where there is a corresponding molybdenum and/or boron exceedance (43 monitoring wells) and 2) monitoring wells where there is not a corresponding boron or molybdenum exceedance (35 monitoring wells). For this figure, historical datasets for each monitoring well were used to generate the distributions. The results of this box and whisker plot display a nearly identical distribution between the two datasets including minimum, lower quartile, median, upper quartile, and maximum values all within 4 µg/L of one another. This further demonstrates that lithium concentrations do not correlate with key CCR indicator parameters, and therefore, elevated lithium concentrations onsite are not related to CCR impacts.

Using the data identified in **Figure 3**, for those wells without a boron or molybdenum exceedance above background, a non-parametric (highest value in the dataset) upper prediction limit of 58.9 µg/L was calculated, which is higher than the current Site GWPS of 40 µg/L.

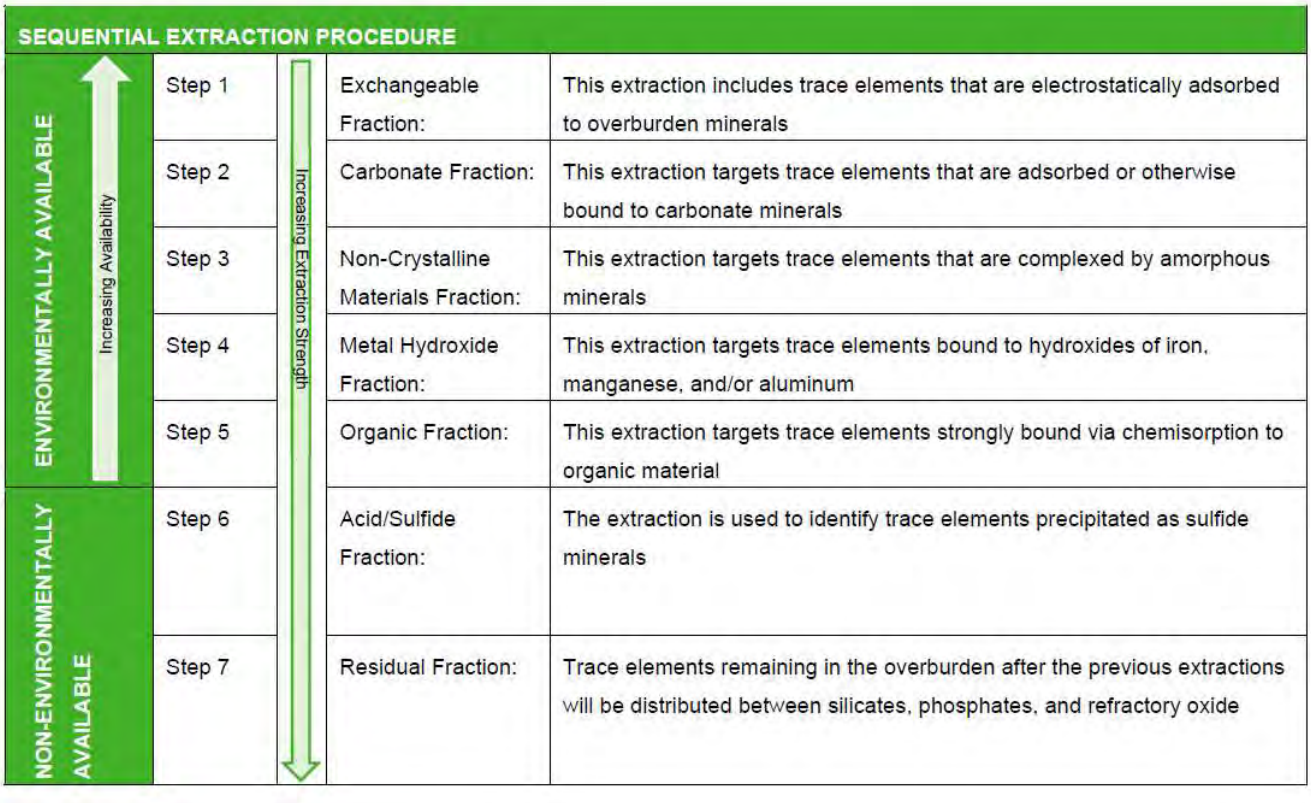
Figure 3 – Distribution of Lithium Concentrations in Monitoring Wells With and Without Key CCR Indicators



3.2.2 Sequential Extraction Data Confirms Presence of Naturally Occurring Lithium in Alluvial Sediments

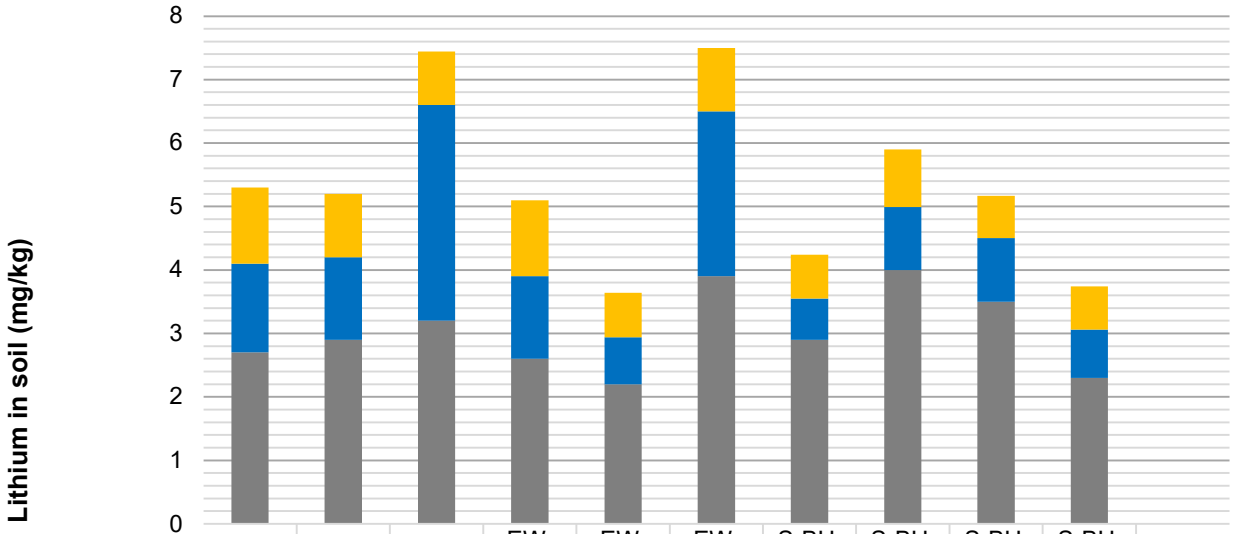
A seven-step sequential extraction method (SEP) based on Tessier et al. (1979) was used to identify the provenance of lithium in soils (i.e., the operationally defined fraction that contains the metal) and determine potential environmental mobility. The total concentration of a metal measured from the seven steps can be compared to the concentration determined from the total metal analysis for compositional accountability. The seven-step SEP is defined by specific extraction steps as follows in **Figure 4** (based on a modified Tessier et al. 1979 method):

Figure 4 – Sequential Extraction Procedure



In 2021, samples were collected from three soil borings across the SEC for sequential extraction testing. The locations of the sequential extraction sample borings are provided in **Figure 1**. Results of the sequential extraction testing as displayed in **Figure 5** indicate the presence of naturally occurring lithium in soils at the SEC in fractions 6 and 7 in each of the soil borings, both directly adjacent to the SCPA and at background locations. Lithium is reported in soils at concentrations ranging from 3.6 to 7.4 milligrams per kilogram (mg/kg, from the SEP) and is predominantly (76 to 87%) present in the residual and sulfide component of the soil, i.e. the non-environmentally available fractions. The absence of lithium in the environmentally available fractions (specifically exchangeable and carbonate fractions) indicate a general lack of lithium transport and attenuation (e.g., through sorption and/or co-precipitation).

Figure 5 - Sequential Extraction of Lithium Results



	IW-2S (40-48)	IW-2M (75-80)	IW-2D (125-129)	EW-3S (35-40)	EW-3M (70-80)	EW-3D (115-120)	S-BH-01S (20-27)	S-BH-01M (45-54)	S-BH-01D (100-110)	S-BH-01 (93-96)
Exchangeable Phase	0	0	0	0	0	0	0	0	0	0
Carbonate Phase	0	0	0	0	0	0	0	0	0	0
Amorphous Phase	0	0	0	0	0	0	0	0	0	0
Metal Hydroxide Phase	1.2	1	0.84	1.2	0.7	1	0.69	0.91	0.67	0.68
Organic Phase	0	0	0	0	0	0	0	0	0	0
Acid/Sulfide Fraction	1.4	1.3	3.4	1.3	0.74	2.6	0.65	0.99	1	0.76
Residual Fraction	2.7	2.9	3.2	2.6	2.2	3.9	2.9	4	3.5	2.3

Borehole ID (sample depth below ground surface)

Notes:

1) Detection with JB flags for the organic phase were not used for this evacuation, as these results were detected in the blank, are estimated, and are therefore not considered accurate for this evaluation.

2) Mg/kg – milligrams per kilogram.

3) Sample locations provided in **Figure 1.** BH-01 is near the background wells while IW-2 and EW-3 are located adjacent to the SCPA CCR Unit.

3.2.3 Leachability Testing

In a previous study completed by Haley & Aldrich in 2018, several leachability tests were completed at the site for the CCR materials in the SCPA and the SCPB.

1. Shake Extraction Tests (method ASTM D3987) were completed. This test consists of shaking the waste (CCR) with water to determine what constituents would be leached from the material. For this test, both the SCPA bottom ash and the SCPB fly ash had a result of non-detect for lithium (<0.018 mg/L).
2. Synthetic Precipitation Leaching Procedure (SPLP) tests were completed for both the SCPA bottom ash and the SCPB fly ash. This method is used to determine if constituents of concern are able to leach into groundwater from the waste (CCR). For this test, the bottom ash/boiler slag in SCPA was again at a non-detect level for lithium, while the fly ash in SCPB had a lithium concentration of 0.0087 mg/L. The lithium concentration of 0.0087 mg/L (8.7 µg/L) is at a similar level as background groundwater, and well below the site GWPS of 40 µg/L.

These results indicate that there is little leachable lithium present in the SCPA or SCPB CCR units.

3.2.4 Lithium at TP-2D

TP-2D is located approximately 3,000 feet to the northeast of the SCPA on the southern bank of the Mississippi River. Boron and molybdenum concentrations at this monitoring well are below background, indicating that CCR impacts are unlikely at this monitoring well. During the statistical evaluation of the May 2024 sampling event, a LCL of 42.48 µg/L and UCL of 52.63 µg/L were calculated. When compared to the UPL of 58.9 µg/L as discussed above, the UCL is below the calculated prediction limit for wells with no boron or molybdenum exceedances. This, coupled with the clear indications that lithium concentrations are not correlated with CCR impacts indicates that the elevated lithium at TP-2D is not from the SCPA, but rather is naturally occurring in the alluvial aquifer at this location.

3.2.5 Lithium at LMW-5S

LMW-5S is located approximately 2,000 feet to the southeast of the SCPA, near the southeastern perimeter of the SCPB. Unlike TP-2D, boron and molybdenum concentrations are elevated at LMW-5S. During the statistical evaluation of the May 2024 sampling event, a LCL of 43.48 µg/L and UCL of 48.57 µg/L were calculated. When compared to the UPL of 58.9 µg/L as discussed above, the UCL is below the calculated prediction limit for wells with no boron or molybdenum exceedances. This, coupled with the clear indications that lithium concentrations are not correlated with CCR impacts indicates that the elevated lithium at LMW-5S is not from the SCPA, but rather is naturally occurring in the alluvial aquifer at this location.

3.2.6 Naturally Occurring Lithium Values at the SEC are Consistent with Upstream Sampling Results within the Missouri and Mississippi River Alluvial Aquifers

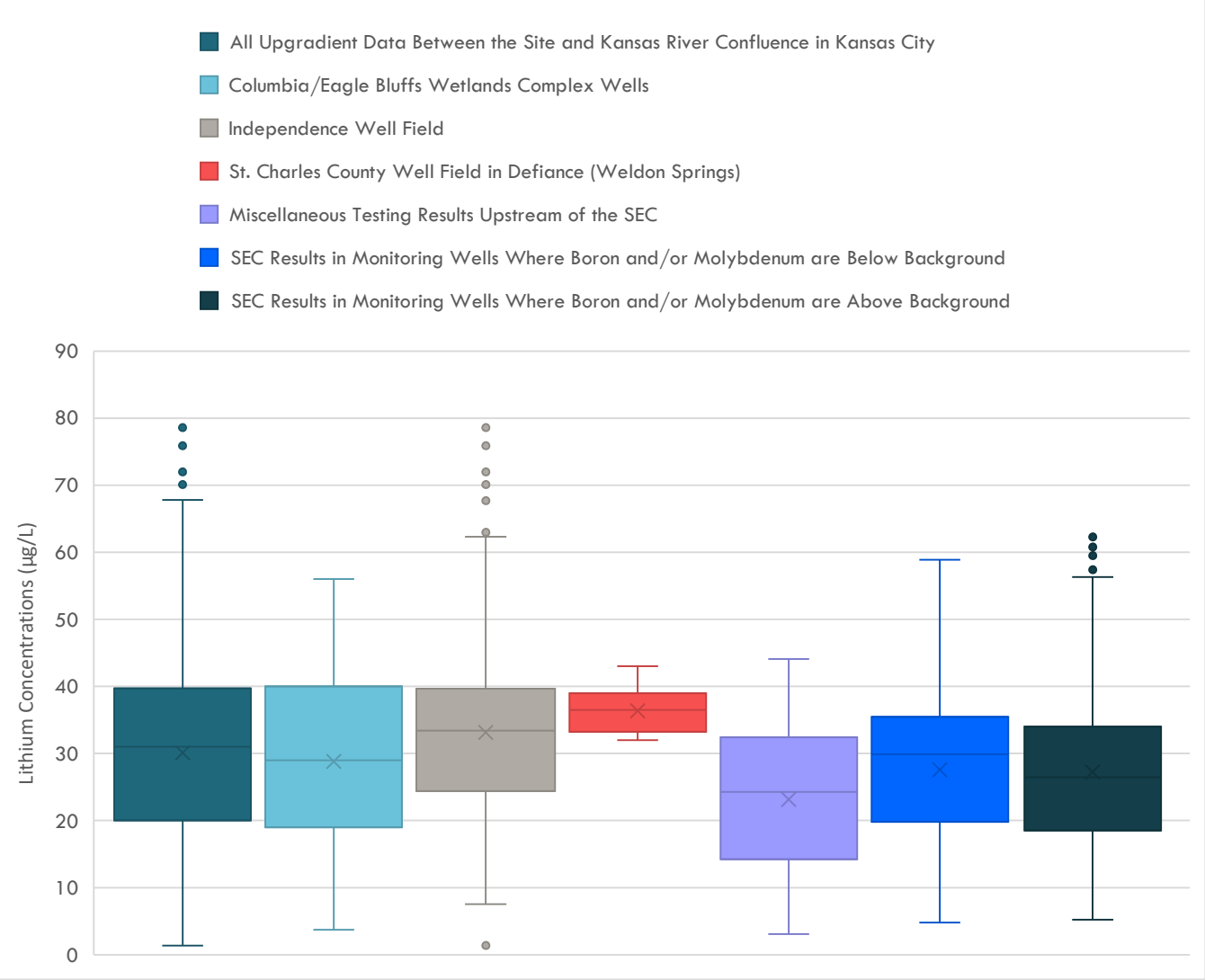
Naturally occurring lithium is present in groundwater across the United States (US), can be found in nearly all rock and soil types, and is most commonly found to be associated with silicate minerals (Tomazscak 2015). The weathering of silicate minerals is known to cause the release of naturally occurring lithium into groundwater (Tomazscak 2015). Site-specific test results (i.e., SEP results) confirm this finding for the SEC.

The National Water Quality Monitoring Council (NWQMC) Water Quality Portal (available at https://www.waterqualitydata.us/) summarizes data from USGS, USEPA, and NWQMC databases. A review of lithium results from within the Missouri and Mississippi River Alluvial Aquifer from the NWQMC database includes lithium results from a total of 1,347 groundwater sample results for wells located upgradient of the SEC within the Missouri River alluvial aquifer and 1 groundwater sample result for wells located upgradient of the SEC within the Mississippi River alluvial aquifer in the state of Missouri. To evaluate naturally occurring Missouri River Alluvial Aquifer concentrations of lithium, the database results were divided different groups as follows:

- Independence Well Field near Independence Missouri (Kelly 2010) – Total of 410 results.
- Columbia/Eagle Bluffs Wetland Complex Wells (Richards 1995, Richards 1999, Richards, 2002) – Total of 851 results.
- Weldon Spring Well Field (Kleeschulte, 1993) – Total of 32 results.
- Miscellaneous testing results upstream of the SEC – Total of 54 results
- Only 1 result was available within the Mississippi River alluvium upgradient of the SEC, a concentration of 14.7 µg/L near Wayland Missouri.

Figure 6 displays a box and whisker plot that compares the publicly available groundwater lithium concentration data in the upgradient alluvial aquifers to lithium concentrations at SEC as displayed in **Figure 4**.

Figure 6 – Comparison of Missouri River Alluvial Aquifer Groundwater Lithium Concentrations – Public Data and SEC Results



Overall, the results display a very similar distribution of lithium results across the state within the Missouri River Alluvium. In fact, lithium concentrations appear to be lower, on average, than those in Independence, Columbia/Eagle Bluffs Wetland Complex, and Weldon Spring. This consistency with upgradient alluvial aquifer samples demonstrates that the lithium concentrations onsite are not from the SCPA, but rather are naturally occurring within the alluvial aquifer.

3.3 Cobalt Evaluation

Cobalt is present at a level that is statistically above the GWPS of 6 µg/L using corrective action statistical evaluations at LMW-6S. LMW-6S is located approximately 1,800 feet southeast of the SCPA, on the eastern perimeter of the SCPB, approximately 750 feet northeast of LMW-5S discussed above. As displayed in **Table 5**, boron is present at LMW-6S at a concentration above background, while molybdenum is detected below the Practical Quantitation Limit (PQL), similar to molybdenum concentrations at background wells.

Table 5 – May 2024 Analytical Results of Key Constituents at Monitoring Wells with a Statistical Cobalt Exceedance

Well ID	Cobalt (µg/L)	Boron (µg/L)	Molybdenum (µg/L)
LMW-6S	4.4 J	8,930	10.6 J
BMW-1S (background)	2.0 J	58.1 J	ND (<20)
BMW-3S (background)	ND (<1.2)	54.1 J	ND (<20)
BMW-1D (background)	ND (<1.2)	117	ND (<20)
BMW-3D (background)	ND (<1.2)	64.1 J	ND (<20)

Notes:
1) µg/L – micrograms per liter.
2) J - Result is an estimated value.
3) ND – Constituent was analyzed but was not detected above the Method Detection Limit (MDL) or the adjusted Practical Quantitation Limit (PQL) based on data validation and is considered a non-detect.

As displayed on **Table 1**, cobalt is not typically considered a key CCR indicator parameter because it is usually present at a low concentration in CCR leachate relative to typical background, has low mobility, and has a higher potential for reactivity (EPRI 2017). Based on the results of the Corrective Action Statistical Evaluation for the May 2024 sampling event, cobalt is present at LMW-6S at a level statistically above the GWPS (6 µg/L), with a LCL of 6.359 µg/L and a UCL of 9.621 µg/L. Since the installation of LMW-6S in 2016, cobalt concentrations have ranged from 4.4 J to 10.7 µg/L. **Table 6** provides a summary of minimum, average, and maximum cobalt concentrations in the different potential source areas: background groundwater, groundwater adjacent to the SCPA, CCR unit porewater, and the Missouri and Mississippi Rivers. As displayed on **Table 6**, cobalt concentrations at LMW-6S are greater than those present in background groundwater, nearby rivers, and porewater.

Table 6 – Summary of Cobalt Concentrations

Constituent (Units)		LMW-6S	Background	Assessment Monitoring Wells Adjacent to SCPA (UMW 1D-6D)	Mississippi River[3]	Missouri River[3]	SCPA Porewater	SCPB Porewater
Cobalt (µg/L)	Minimum	4.4 J	ND (<0.72)	ND (<0.72)	ND (<0.73)	ND (<0.73)	ND (<0.73)	ND (<0.73)
	Average	7.589	0.8031	0.4853	1.217	0.5065	0.652	ND (<0.73)
	Maximum	10.7	4.2 J	1.7 J	2.3 J	0.87 J	1.8 J	ND (<0.73)

Notes:
1) µg/L – micrograms per liter.
2) J - Result is an estimated value.
3) ND – Constituent was analyzed but was not detected above the Method Detection Limit (MDL) or the adjusted Practical Quantitation Limit (PQL) based on data validation and is considered a non-detect.

In January 2018, as part of the initial SCPB ASD, porewater was sampled in the SCPA and SCPB CCR units. Eight of the nine results from this analysis were non-detect (<0.73 µg/L) and one result at SCPA-2 was 1.8 J µg/L. This lack of cobalt in the CCR materials has been confirmed in other studies, including the current NPDES permit (#MO-0000353), where cobalt is not listed as a Pollutant of Concern (POC) since the results collected from the SCPA and SCPB outfalls were at a non-detect level. Lack of cobalt within the porewater of the SCPA and SCPB,

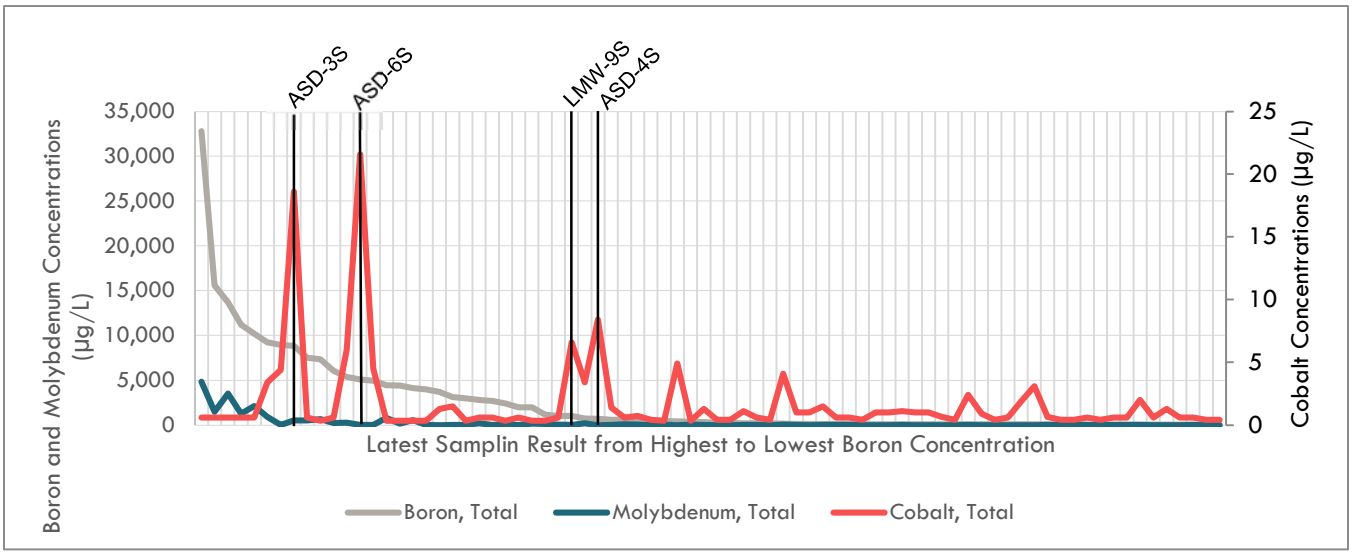
[3] Mississippi and Missouri River samples collected September 21 & 22, 2017 and May 8, 2018. Results are available on Ameren's public website at https://www.ameren.com/company/environment-and-sustainability/managing-coal-combustion/ccr-compliance-reports/sioux-energy-center.

coupled with the lack of cobalt at a statistically significant level above the GWPS in any other monitoring well onsite, indicates that cobalt is likely not from the SCPA, but rather, an alternative source.

Further evidence that the SCPA is not a source of elevated cobalt concentrations is the lack of cobalt in the groundwater monitoring wells directly adjacent to the CCR Unit used for Detection and Assessment Monitoring. These wells (UMW-1D, UMW-2D, UMW-3D, UMW-4D, UMW-5D and UMW-6D, as displayed in **Figure 1**) show elevated key CCR indicator parameter concentrations for boron and molybdenum but do not have elevated cobalt concentrations. Of the 120 testing results for these six monitoring wells, only one result has a value over the method detection limit (MDL) at 1.7 J µg/L, a result below the PQL. Therefore, over 99% of all cobalt results in monitoring wells located directly adjacent to the SCPA indicate cobalt is present at a non-detect level.

Like lithium, concentrations of cobalt do not closely track with key indicator parameters of boron or molybdenum. **Figure 7** is a graph that displays boron, cobalt, and molybdenum concentrations from the most recent sampling result at each monitoring well (data used to generate this graph is available in **Table 4**). As displayed previously in **Figure 2** and below in **Figure 7**, molybdenum concentrations appear to correlate with boron concentrations, with elevated levels at similar monitoring wells. Cobalt concentrations do not track closely with either boron or molybdenum concentrations, but rather range from non-detect (<0.73 µg/L) to 21.6 µg/L.

Figure 7 – Comparison of Boron, Molybdenum, and Cobalt Concentrations



Notes:

1) µg/L – micrograms per liter,
2) Values displayed in order from highest to lowest boron concentrations. Data used in Figure 7 are provided in Table 4.
3) Cobalt concentrations displayed on secondary axis, with values on the right side of the graph.

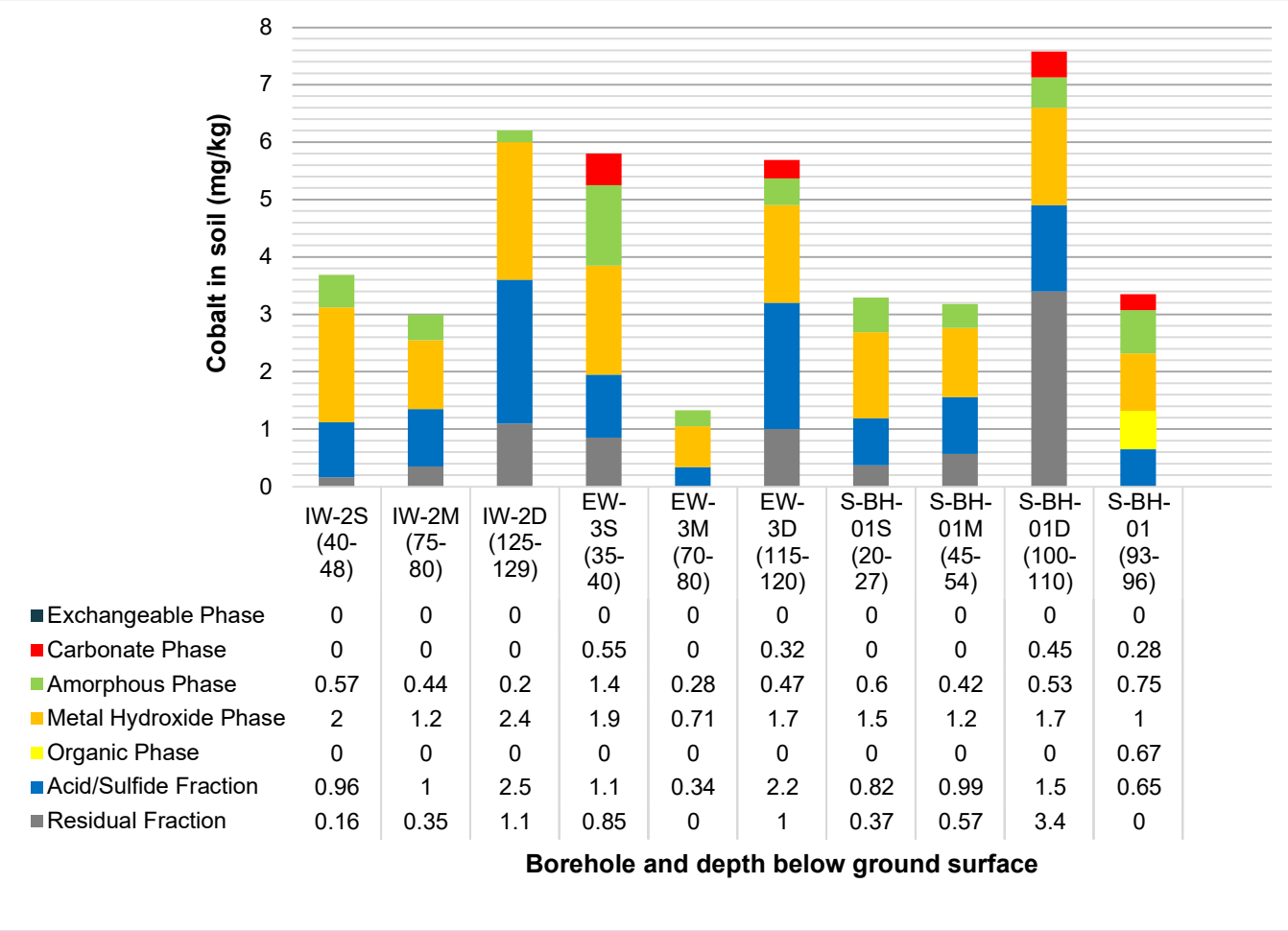
3.3.1 Sequential Extraction Data Confirms Presence of Naturally Occurring Cobalt in Sediments

As with lithium, a seven-step sequential extraction method (SEP) based on Tessier et al. (1979) was used to identify the provenance of cobalt in soils (i.e. the operationally-defined fraction that contains the metal) and determine potential environmental mobility. The total concentration of a metal measured from the seven steps can be compared to the concentration determined from the total metal analysis for compositional accountability. The locations of the sequential extraction sample locations are provided in **Figure 1**.

Results of the sequential extraction testing are displayed below in **Figure 8**. The results indicate naturally occurring cobalt is present in soils at the SEC in fractions 6 and 7 of each of the soil borings, both directly adjacent to the SCPA and at background locations. Cobalt is reported at concentrations ranging from 1.3 to 7.6 milligrams per kilogram (mg/kg, from the SEP) and is present in the residual and sulfide component of the soil (35 to 81%), i.e., the non-environmentally available fractions. Background soil samples, outside of the impacts from

the SCPA, display similar results as those soil samples collected adjacent to the CCR unit, indicating that cobalt is not from impacts from the CCR Unit, but rather is naturally occurring in the alluvial aquifer.

Figure 8 - Sequential Extraction of Cobalt Results



Notes:

1) Mg/kg – milligrams per kilogram.

2) Sample locations provided in **Figure 1.** BH-01 is near the background wells while IW-2 and EW-3 are located adjacent to the SCPA CCR Unit.

3.3.2 Leachability Testing

As with lithium, leachability tests were completed at the site by Haley & Aldrich in 2018 for the CCR materials in the SCPA and the SCPB.

1. For the Shake Extraction Tests (method ASTM D3987), both the SCPA bottom ash and the SCPB fly ash results were non-detect (<0.0068 mg/L) for cobalt.
2. For the SPLP test, both the SCPA bottom ash and the SCPB fly ash were non-detect (<0.0027 mg/L) for cobalt.

This confirms the results of the porewater testing and indicate that little to no leachable cobalt is present in the SCPA or SCPB CCR units and they are not significant sources of cobalt in the alluvial aquifer groundwater.

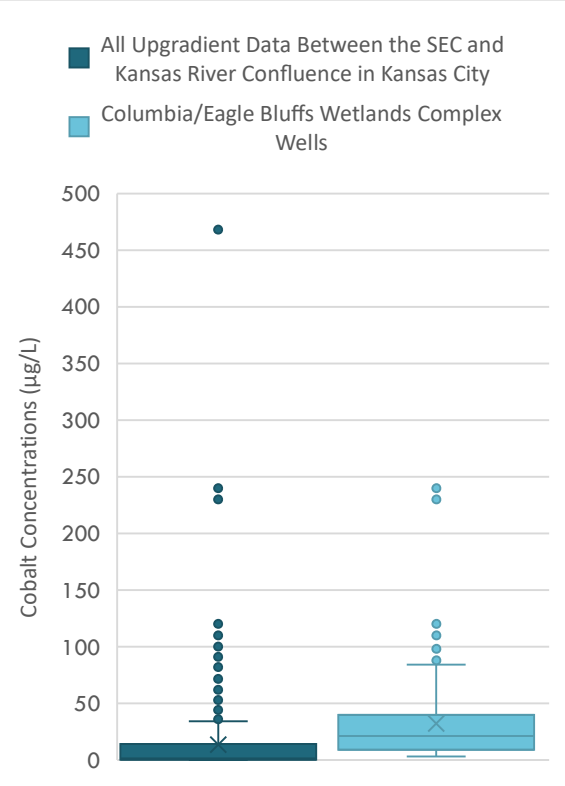
3.3.3 Naturally Occurring Cobalt Values at the SEC are Consistent with Upstream Sampling Results within the Missouri and Mississippi River Alluvial Aquifers

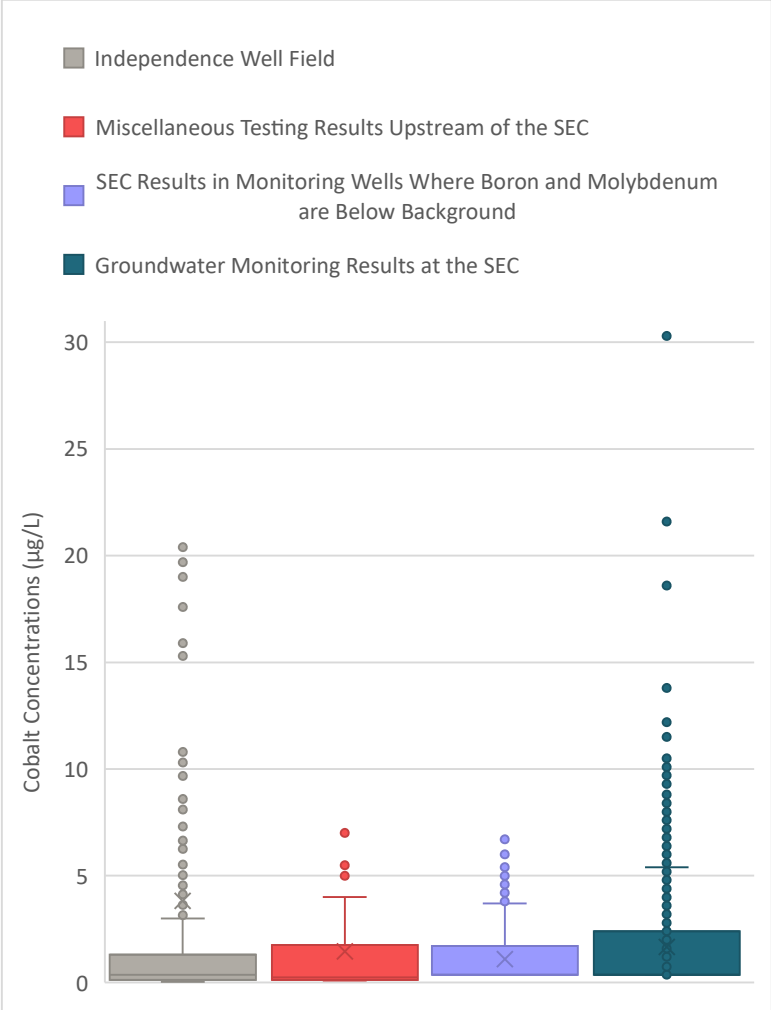
Cobalt may be present in mineral form as arsenides, carbonates, sulfides and oxides (Hem, 1989; Smith and Carson, 1981). During weathering of these minerals (i.e., dissolution and/or oxidation), any cobalt is typically released and redistributed to iron or manganese (hydr)oxides (Butt et al., 2000) or other sorbent (e.g., clays, organic matter). The National Water Quality Monitoring Council (NWQMC) Water Quality Portal (available at https://www.waterqualitydata.us/) summarizes data from the USGS, USEPA, and NWQMC databases. A review of cobalt results from within the Missouri and Mississippi River Alluvial Aquifer from the NWQMC database includes cobalt results from a total of 515 groundwater sample results for wells located upgradient of the SEC within the Missouri River alluvial aquifer and 1 groundwater sample result for wells located upgradient of the SEC within the Mississippi River alluvial aquifer in the state of Missouri. To evaluate naturally occurring Missouri River Alluvial Aquifer concentrations of cobalt, the database results were divided different groups as follows:

- Independence Well Field near Independence Missouri (Kelly 2010) – Total of 306 results.
- Columbia/Eagle Bluffs Wetland Complex Wells (Richards 1995, Richards 1999, Richards, 2002) – Total of 176 results.
- Miscellaneous testing results upstream of the SEC – Total of 33 results.
- Only 1 result available within the Mississippi River alluvium upgradient of the SEC, a concentration of 0.079 µg/L near Wayland Missouri.

Figure 9 displays a box and whisker plot that compares the publicly available groundwater cobalt data in the upgradient alluvial aquifers to those collected in monitoring wells at the SEC.

Figure 9 – Comparison of Missouri River Alluvial Aquifer Groundwater Cobalt Concentrations – Public Data and Sioux Results





Notes:

1) UG/L – micrograms per liter
2) Results from Columbia/Eagle Bluff are much higher than those at the other locations. Because of this, a different scale is used for displaying this dataset on the left side of Figure 10.

The cobalt concentrations from the Columbia/Eagle Bluffs Wetlands complex are much higher than those at the SEC and those farther upgradient at the Independence Well Field. It is unknown why these results are at such elevated concentrations, therefore, they are not used for this evaluation. Excluding the data from Columbia/Eagle Bluffs Wetlands Complex, the results display that the majority of cobalt concentrations across the Missouri River alluvial aquifer are below 4 µg/L with some outliers above 6 µg/L at each site. This is likely caused by the heterogeneous nature of the Missouri River Basin alluvial aquifer deposits, which are derived from a vast area of the United States including parts of Missouri, Iowa, Kansas, Nebraska, South Dakota, North Dakota, Montana, Wyoming, and Colorado. The sediments in the Missouri River Alluvial Aquifer at the site are made up of a mixture of sediments from all reaches of the Missouri River Basin. Cobalt deposits and many metamorphic and igneous rocks containing cobalt occur at numerous locations within the Missouri River Basin. Therefore, the alluvial aquifer sediments in the vicinity of LMW-6S (as well as other various locations within the Missouri River Alluvium) include localized zones of increased cobalt concentrations, and are likely the cause of the elevated concentrations observed at the SEC.

This inconsistency of upgradient alluvial aquifer samples and their origins indicates that the cobalt concentrations onsite, namely the exceedance at LMW-6S, are not influenced by the SCPA, but rather are naturally occurring within the aquifer groundwater.

4.0 SUMMARY

Based on the information presented in **Section 4.0**, the statistical exceedances for lithium and cobalt at the site using Corrective Action statistical methods are not the result of impacts from the SCPA, but instead are the result of natural geochemical variability of groundwater within the alluvial aquifer at the site. The natural geochemical sources for lithium and cobalt exceedances are supported by several factors including: (1) a lack of correlation between key CCR indicators (boron and molybdenum) and exceedances of lithium and cobalt, (2) cobalt concentrations at LMW-6S exceed those observed in potential sources at the SEC, including CCR unit porewater, (3) the presence of naturally occurring cobalt and lithium in sediments upgradient of the SCPA, and (4) cobalt and lithium have been shown to be naturally occurring elements in soils and alluvial aquifer sediments that are derived from geologic sources within the Missouri River watershed

5.0 REFERENCES

Ameren Missouri, 2019a. Remedy Selection Report – 40 CFR § 257.97 Rush Island, Labadie, Sioux and Meramec CCR Basins.

Ameren Missouri, 2019b. Response to Community Comments on Ameren Missouri Corrective Measures Assessment for Rush Island, Labadie, Sioux and Meramec Energy Centers.

Ayotte, J.D., Gronberg, J.M. and Apodaca, L.E., 2011. Trace elements and radon in groundwater across the United States, 1992-2003 (p. 115). US Department of the Interior, US Geological Survey.

Butt, CRMI, M. J. Lintern, and RRIL. Anand, Evolution of regoliths and landscapes in deeply weathered terrain—implications for geochemical exploration, Ore Geology Reviews 16, no. 3-4 (2000): 167-183.

Dellantonio, A., Fitz, W.J., Repmann, F. and Wenzel, W.W., 2010. Disposal of coal combustion residues in terrestrial systems: contamination and risk management. Journal of environmental quality, 39(3), pp.761-775.

Electric Power Research Institute (EPRI). 2011, Composition and Leaching of FGD Gypsum and Mined Gypsum, Report 1022146. November 2011.

Electric Power Research Institute (EPRI). 2012, Groundwater Quality Signatures for Assessing Potential Impacts from Coal Combustion Product Leachate, Report 1017923. October 2012.

Electric Power Research Institute (EPRI). 2017, Guidelines for Development of Alternative Source Demonstrations at Coal Combustion Residual Sites, Report 3002010920, October 2017.

Golder Associates Inc., 2017, 40 CFR Part 257 Groundwater Monitoring Plan, SCPA Surface Impoundment–Sioux Energy Center – St. Charles County, Missouri, USA.

Golder Associates Inc., 2018, 2017 Annual Groundwater Monitoring Report, SCPA Surface Impoundment, Sioux Energy Center – St. Charles County, Missouri, USA.

Golder Associates Inc., 2019a, 2018 Annual Groundwater Monitoring Report, SCPA Surface Impoundment, Sioux Energy Center – St. Charles County, Missouri, USA.

Golder Associates Inc., 2019b, 2018 Annual Groundwater Monitoring and Corrective Action Report, SCPB Surface Impoundment, Sioux Energy Center – St. Charles County, Missouri, USA

Golder Associates Inc., 2020, 2019 Annual Groundwater Monitoring Report, SCPA Surface Impoundment, Sioux Energy Center – St. Charles County, Missouri, USA.

Golder Associates Inc., 2021, 2020 Annual Groundwater Monitoring Report, SCPA Surface Impoundment, Sioux Energy Center – St. Charles County, Missouri, USA.

Golder Associates USA Inc., 2022, 2021 Annual Groundwater Monitoring and Corrective Action Report, SCPA Surface Impoundment, Sioux Energy Center – St. Charles County, Missouri, USA.

Gredell Engineering Resources, Inc., 2019. Ameren Missouri Sioux Energy Center Site Characterization Report, Special Condition 18(b), Missouri Operating Permit #MO-0000353: July 2019.

Haley & Aldrich, Inc., 2024. Supplemental Remedy Selection Report, Ameren Missouri Sioux Energy Center, St. Charles County, Missouri.

Hem, John David, and Geological Survey (US). Study and interpretation of the chemical characteristics of natural water. (1989): 263

Huber, R.S., Kim, N., Renshaw, C.E., Renshaw, P.F. and Kondo, D.G., 2014. Relationship between altitude and lithium in groundwater in the United States of America: results of a 1992–2003 study. Geospatial health, 9(1), p.231.

Kelly, Brian P., 2010, Contributing Recharge Areas, Groundwater Travel Time, and Groundwater Quality of the Missouri River Alluvial Aquifer near the Independence, Missouri, Well Field,1997–2008: U.S. Geologic Survey, Scientific Investigations Report 2010-5232.

Kleeschulte, Michael J., 1993, Water-Quality Data for the Missouri River and Missouri River Alluvium Near Weldon Spring, St. Charles County, Missouri – 1991-92: U.S. Geological Survey, Open-File Report 93-109.

Richards, J.M., 1995, Hydrologic data for the Columbia/Eagle Bluffs Wetland Complex, Columbia, Missouri—1992–93: U.S. Geological Survey Open-File Report 95–109.

Richards, J.M., 1999, Hydrologic data for the Columbia/Eagle Bluffs Wetland Complex, Columbia, Missouri—993–96: U.S. Geological Survey Open-File Report 99–607.

Richards, J.M., 2002, Water-Quality and Ground-Water Hydrology of the Columbia/Eagle Bluffs Wetland Complex, Columbia, Missouri – 1992-999: U.S. Geological Survey, Water-Resources Investigations Report 02-4227.

Rocksmith Geoengineering, LLC, 2024. Annual Groundwater Monitoring and Corrective Action Report, SCPA Surface Impoundment, Sioux Energy Center – St. Charles County, Missouri, USA.

Rocksmith Geoengineering, LLC, 2023. Corrective Action Statistical Evaluation, SCPA Surface Impoundment, Sioux Energy Center, St. Charles County, Missouri.

Rocksmith Geoengineering, LLC, 2023. Updated Statistical Limits with Additional Background Data—SCPA CCR Unit, Sioux Energy Center, St. Charles, Missouri.

Smith, H. I. C., and B. L. Carson, Trace metals in the environment. Volume 6: cobalt. An appraisal of environmental exposure, Ann Arbor, MI: Ann Arbor Science (1981).

Tomascak, P.B., Magna, T. and Dohmen, R., 2016. The surficial realm: Low temperature geochemistry of lithium. In Advances in Lithium Isotope Geochemistry (pp. 157-189). Springer, Cham.

Tessier, A., Campbell, P., and Bisson, M., 1979. Sequential extraction procedure for the speciation of particulate trace metals. Analytical chemistry, 51(7), pp.844-851.

USEPA. 2009. Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance. Office of Resource Conservation and Recovery – Program Implementation and Information Division. March.

USEPA. Federal Register. Volume 80. No. 74. Friday April 17, Part II. Environmental Protection Agency. 40 CFR Parts 257 and 261. Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule/ [EPA-HQ-RCRA-2009-0640; FRL-9919-44-OSWER] (2015).

Water Quality Data Home. (n.d.). Www.waterqualitydata.us. From https://www.waterqualitydata.us

WSP USA Inc., 2023, 2022 Annual Groundwater Monitoring and Corrective Action Report, SCPA Surface Impoundment, Sioux Energy Center – St. Charles County, Missouri, USA.

Tables

Table 4
Summary of Corrective Action Groundwater Network Sampling Results
SCPA Surface Impoundment
Sioux Energy Center, St. Charles County, MO

Constituent	Boron		Molybdenum		Lithium		Cobalt	
Background Limit	240 µg/L		DQR (20 µg/L)		27.91 µg/L		DQR (5 µg/L)	
Groundwater Monitoring Wells	Date	µg/L	Date	µg/L	Date	µg/L	Date	µg/L
S-UMW-3D	5/30/2024	32,800	5/30/2024	4,840	5/30/2024	18.3	5/30/2024	ND
S-LMW-5S	5/31/2024	15,600	5/31/2024	1,500	5/31/2024	49.2	5/31/2024	ND
S-UMW-4D	5/30/2024	13,700 J	5/30/2024	3,510	5/30/2024	29.2	5/30/2024	ND
S-UMW-2D	5/30/2024	11,200	5/30/2024	1,280	5/30/2024	26.7	5/30/2024	ND
S-PZ-1S	5/30/2024	10,200	5/30/2024	2,110	5/30/2024	19.2	5/30/2024	ND
S-LMW-2S	5/29/2024	9,220	5/29/2024	915	5/29/2024	33.8	5/29/2024	3.4 J
S-LMW-6S	5/31/2024	8,930	5/31/2024	10.6 J	5/31/2024	24.0	5/31/2024	4.4 J
S-ASD-3S	1/25/2018	8,850	1/25/2018	532	1/25/2018	41.8	1/25/2018	18.6
S-TP-5D	5/28/2024	7,530	5/28/2024	504	5/28/2024	37.4	5/28/2024	ND
S-ASD-3M	1/25/2018	7,330	1/25/2018	675	1/25/2018	32.8	1/25/2018	ND
S-UMW-5D	5/30/2024	6,040	5/30/2024	226	5/30/2024	23.4	5/30/2024	ND
S-LMW-8S	5/30/2024	5,390	8/6/2019	282	8/6/2019	12.8	5/16/2018	6.0
S-ASD-6S	2/2/2018	5,100	2/2/2018	10.8 J	2/2/2018	27.0	2/2/2018	21.6
S-ASD-5S	2/8/2018	4,960	2/8/2018	27.7 J	2/8/2018	17.1	2/8/2018	4.5 J
S-ASD-3D	1/25/2018	4,450	1/25/2018	814	1/25/2018	35.0	1/25/2018	ND
S-ASD-4D	2/9/2018	4,400	2/9/2018	161	2/9/2018	40.1	2/9/2018	ND
S-ASD-6M	2/5/2018	4,110	2/5/2018	551	2/5/2018	46.2	2/5/2018	ND
S-ASD-5D	2/8/2018	3,990	2/8/2018	12.9 J	2/8/2018	45.0	2/8/2018	ND
S-LMW-7S	5/30/2024	3,690	8/5/2019	ND	8/5/2019	18.2	5/16/2018	1.3 J
S-TP-5M	8/2/2019	3,120	8/2/2019	7.6 J	8/2/2019	33.2	8/2/2019	1.5 J
S-ASD-4M	2/9/2018	2,990	2/9/2018	30.5	2/9/2018	37.2	2/9/2018	ND
S-AM-1D	5/29/2024	2,810	5/29/2024	184	5/29/2024	31.8	5/29/2024	ND
S-PZ-9D	5/31/2024	2,700	5/31/2024	14.6 J	5/31/2024	29.4	5/31/2024	ND
S-ASD-5M	2/8/2018	2,400	2/8/2018	10.9 J	2/8/2018	42.6	2/8/2018	ND
S-LMW-4S	5/29/2024	1,990	5/29/2024	ND	5/29/2024	35.8	5/29/2024	ND
S-ASD-6D	2/5/2018	1,980	2/5/2018	172	2/5/2018	40.1	2/5/2018	ND
S-ASD-1D	1/31/2018	1,150	1/31/2018	131	1/31/2018	22.7	1/31/2018	ND
S-LMW-1S	5/31/2024	1,030	5/31/2024	58.1	5/31/2024	28.3	5/31/2024	ND
S-LMW-9S	5/31/2024	1,020	8/9/2019	8.7 J	8/9/2019	47.4	5/16/2018	6.6
S-ASD-2S	1/30/2018	744	1/30/2018	184	1/30/2018	24.9	1/30/2018	3.4 J
S-ASD-4S	2/9/2018	717	2/9/2018	3.0 J	2/9/2018	36.0	2/9/2018	8.4
S-ASD-1S	1/31/2018	588	1/31/2018	24.8	1/31/2018	8.4 J	1/31/2018	1.4
S-UMW-1D	5/31/2024	586	5/31/2024	93.0	5/31/2024	22.6	5/31/2024	ND
S-ASD-1M	1/31/2018	555	1/31/2018	43.3	1/31/2018	16.2	1/31/2018	0.74 J
S-TP-1D	8/6/2019	481	8/6/2019	ND	8/6/2019	18.7	8/6/2019	ND
S-ASD-2M	1/30/2018	451	1/30/2018	59.9	1/30/2018	14.6	1/30/2018	ND
S-UG-1A	5/30/2024	408	8/19/2019	ND	8/19/2019	40.3	8/21/2019	4.9 J
S-ASD-2D	1/30/2018	385	1/30/2018	46.3	1/30/2018	12.4	1/30/2018	ND
S-UG-3	5/28/2024	345	5/28/2024	ND	5/28/2024	26.3	5/28/2024	1.3 J
S-TP-1M	8/5/2019	246	8/5/2019	ND	8/5/2019	16.6	8/5/2019	ND
S-TP-2M	8/5/2019	238	8/5/2019	ND	8/5/2019	28.8	8/5/2019	ND
S-TP-5S	8/2/2019	211	8/2/2019	13.1 J	8/2/2019	17.7	8/2/2019	1.1 J
S-UMW-6D	5/30/2024	204	5/30/2024	28.2	5/30/2024	17.3	5/30/2024	ND
S-LMW-3S	5/29/2024	188	8/5/2019	ND	8/5/2019	29.9	5/16/2018	ND
S-AM-1S	5/29/2024	177	5/29/2024	42.9	5/29/2024	20.9	5/29/2024	4.1 J
S-TP-7S	8/6/2019	144	8/6/2019	14.1 J	8/6/2019	43.3	8/6/2019	1.0 J
S-UG-2	5/28/2024	143	8/19/2019	ND	8/19/2019	19.1	11/13/2019	ND
S-TP-1S	8/5/2019	120	8/5/2019	5.4 J	8/5/2019	ND	8/5/2019	1.5 J
S-BMW-1D	5/28/2024	117	5/28/2024	ND	5/28/2024	13.7	5/28/2024	ND
S-TP-6S	5/28/2024	113	5/28/2024	ND	5/28/2024	37.1	5/28/2024	ND
S-TP-7D	8/6/2019	110	8/6/2019	ND	8/6/2019	42.5	8/6/2019	ND
S-DG-2	5/30/2024	102	8/19/2019	ND	8/19/2019	35.5	11/13/2019	ND
S-DG-3	5/30/2024	102	8/19/2019	ND	8/19/2019	35.2	11/13/2019	ND
S-TP-4S	8/6/2019	101	8/6/2019	28.6	8/6/2019	18.6	8/6/2019	1.1 J
S-DG-4	5/30/2024	94.5 J	8/19/2019	ND	8/19/2019	34.8	11/13/2019	ND
S-DG-1	5/30/2024	94.2 J	8/19/2019	ND	8/19/2019	31.6	11/13/2019	ND
S-TMW-6	5/29/2024	93.5 J	7/25/2022	3.2 J	7/25/2022	37.4	7/25/2022	ND
S-TP-7M	8/6/2019	93.5 J	8/6/2019	ND	8/6/2019	37.8	8/6/2019	ND
S-TP-2S	8/5/2019	88.5 J	8/5/2019	4.3 J	8/5/2019	13.8	8/5/2019	2.4 J
S-TMW-1	5/30/2024	85.5 J	8/19/2019	3.1 J	8/19/2019	20.6	6/6/2017	0.91 J
S-TP-8M	8/5/2019	85.1 J	8/5/2019	ND	8/5/2019	29.0	8/5/2019	ND
S-TP-2D	5/31/2024	84.3 J	5/31/2024	ND	5/31/2024	51.4	5/31/2024	ND
S-TMW-2	5/29/2024	84.0 J	8/19/2019	ND	8/19/2019	28.6	6/6/2017	1.9 J
S-TMW-5	5/29/2024	81.3 J	7/25/2022	2.1 J	7/25/2022	35.3	7/25/2022	3.1 J
S-TMW-4	5/29/2024	74.9 J	7/25/2022	4.0 J	7/25/2022	36.6	7/25/2022	ND
S-TP-8S	8/5/2019	72.6 J	8/5/2019	6.5 J	8/5/2019	21.8	8/5/2019	ND
S-TP-3S	8/7/2019	71.3 J	8/7/2019	16.8 J	8/7/2019	12.3	8/7/2019	ND
S-TP-8D	5/29/2024	69.4 J	5/29/2024	ND	5/29/2024	33.1	5/29/2024	ND
S-TP-4M	8/6/2019	66.8 J	8/6/2019	ND	8/6/2019	32.0	8/6/2019	ND
S-BMW-3D	5/28/2024	64.1 J	5/28/2024	ND	5/28/2024	23.0	5/28/2024	ND
S-TP-6D	5/28/2024	60.4 J	5/28/2024	ND	5/28/2024	27.8	5/28/2024	ND
S-BMW-1S	5/28/2024	58.1 J	5/28/2024	ND	5/28/2024	5.7 J	5/28/2024	2.0 J
S-TP-3D	5/31/2024	56.9 J	5/31/2024	ND	5/31/2024	36.6	5/31/2024	ND
S-TMW-3	5/29/2024	56.8 J	8/19/2019	ND	8/19/2019	27.2	6/6/2017	1.3 J
S-TP-4D	5/29/2024	56.3 J	5/29/2024	1.0 J	5/29/2024	36.7	5/29/2024	ND
S-BMW-3S	5/28/2024	54.1 J	5/28/2024	ND	5/28/2024	10.3	5/28/2024	ND
S-TP-6M	8/6/2019	53.1 J	8/6/2019	ND	8/6/2019	25.1	8/6/2019	ND
S-TP-3M	8/7/2019	44.3 J	8/7/2019	ND	8/7/2019	23.9	8/7/2019	ND

Notes:

1.) Unit Abbreviations: µg/L.

2.) ND - Constituent was analyzed but was not detected above the Method Detection Limit (MDL) or the adjusted Practical Quantitation Limit (PQL) based on data validation and is considered a non-detect. Values displayed as ND.

3.) J - Result is an estimated value.

4.) Date corresponds with most recent result for each analyte.

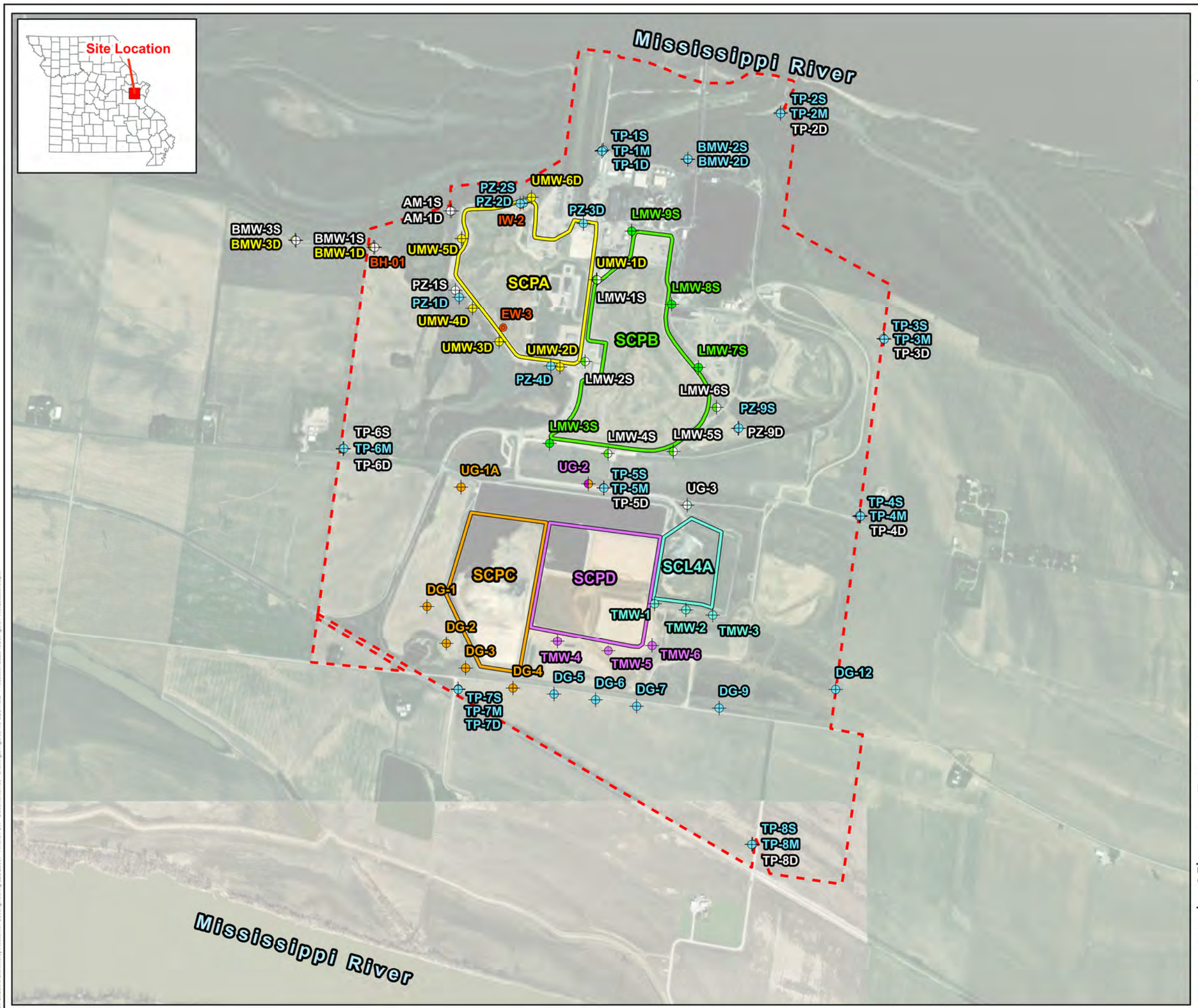
5.) Well ID's highlighted in light red have values above the background limit for boron or molybdenum. These values are used in the "concentrations with a boron or molybdenum value over background" for the box and whisker plots provided in Figure 3 and Figure 8. Well ID's in blue do not have a molybdenum or boron value above background, and these wells are used in the "concentrations without a boron or molybdenum value over background" column for the box and whisker plots provided in Figures 3 and 9.

6.) If all background results are less than the PQL, the Double Quantification Rule (DQR) is used. In cases where DQR is the background value, the latest PQL is used for the background limit.

ROCKSMITH GEOENGINEERING

Prepared by: JTR
Checked by: GTM
Reviewed by: MNH

Figures



TITLE

SIOUX ENERGY CENTER GROUNDWATER MONITORING PROGRAMS AND SAMPLE LOCATION MAP

Legend

- Sioux Energy Center Property Boundary

CCR Units

- SCPA - Bottom Ash Surface Impoundment (Closed)
- SCPB - Fly Ash Surface Impoundment (Closed)

Utility Waste Landfill Cells

- SCL4A - Dry CCR Disposal Area
- SCPC- FGD Surface Impoundment (Closed)
- SCPD - FGD Surface Impoundment

Monitoring Well Networks

- Corrective Action Monitoring Well
- SCPA Detection and Assessment Monitoring Well
- SCPB and Corrective Action Monitoring Well
- SCPB Detection Monitoring Well
- SCPC Detection Monitoring Well
- SCPD and SCPC Detection Monitoring Well
- SCPD Detection Monitoring Well
- SCL4A and Corrective Action Monitoring Well
- SCL4A Detection Monitoring Well
- Monitoring Well Used for Water Level Elevation Measurements Only
- Soil Boring Location for Sequential Extraction Samples

NOTES

1. All boundaries and locations are approximate.
2. FGD - Flue Gas Desulfurization.
3. CCR - Coal Combustion Residuals.

REFERENCES

1. Ameren Missouri Sioux Energy Center, Sioux Property Control Map, February 2011.

0 500 1,000 2,000 3,000 Feet

PROJECT
CCR RULE GROUNDWATER MONITORING PROGRAM

CLIENT
AMEREN MISSOURI
SIOUX ENERGY CENTER

Ameren

ROCKSMITH GEOENGINEERING

DESIGN	JSI	YYYY-MM-DD	2024-12-20
PREPARED	JSI	PROJECT No.	23009-24
REVIEW	GTM		
APPROVED	MNH		

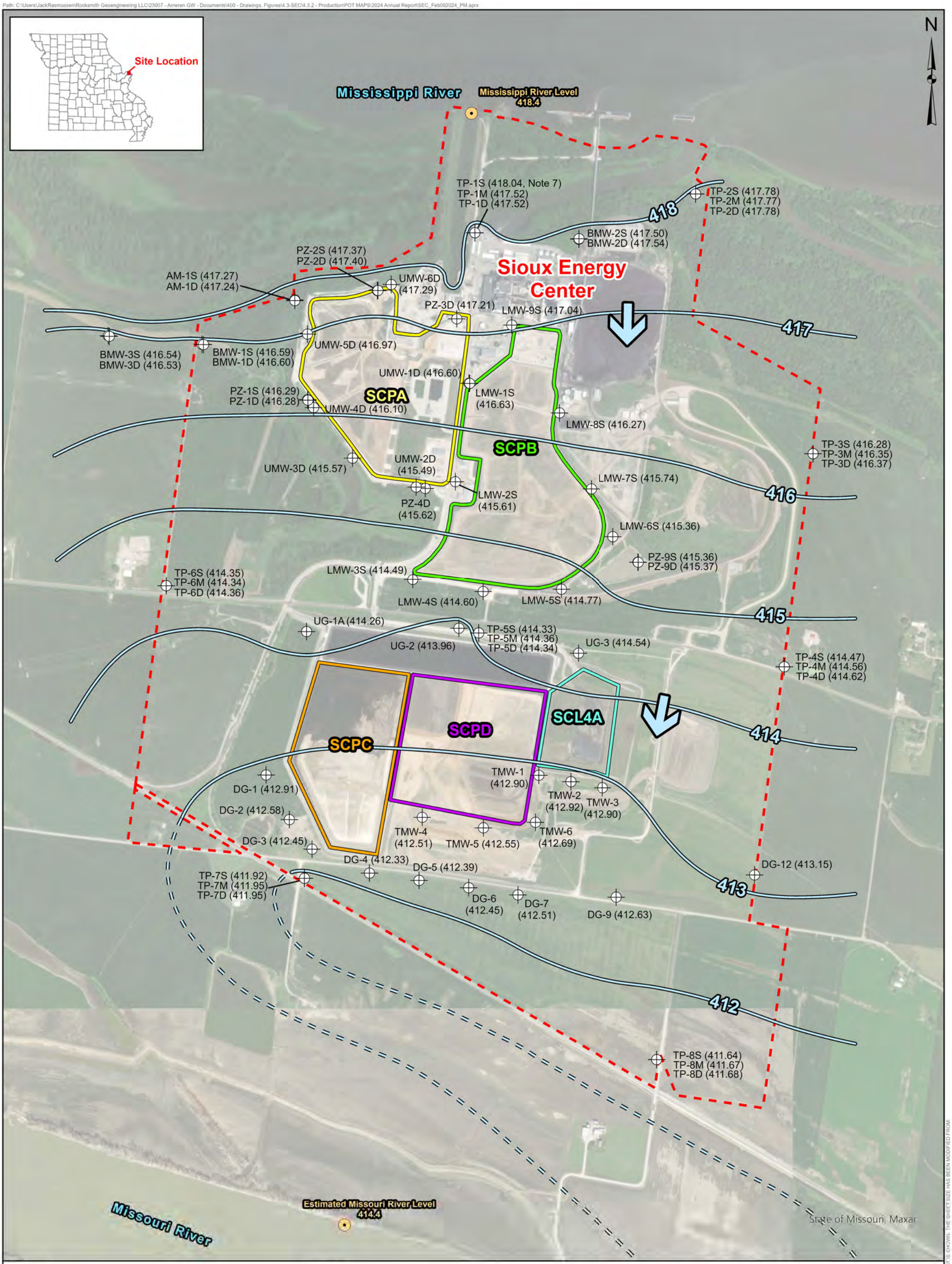
FIGURE 1

Path: C:\Users\GinaMMoney\Rocksmith Geoengineering LLC\23007 - Ameren GW - Documents\400 - Drawings, Figures\4.3-SEC4.3.2 - Production\2023ASDhF\Figure1-WellLocations.aprx

Appendix H

2024 Potentiometric Surface Maps

Path: C:\Users\JackRasmussen\Rocksmith Geoengineering LLC\23007 - Ameren GW - Documents\400 - Drawings, Figures\4.3-SEC\4.3.2 - Production\POT MAPS\2024 Annual Report\SEC_Feb062024_PM.aprx



LEGEND

- Sioux Energy Center Property Boundary

CCR Units

- SCPA - Bottom Ash Surface Impoundment (Closed)
- SCPB - Fly Ash Surface Impoundment (Closed)
- SCPC - WFGD Surface Impoundment (Closed)
- SCL4A - Dry CCR Disposal Area
- SCPD - FGD Surface Impoundment

Groundwater Elevation Contour (FT MSL)

- Groundwater Elevation Contour (FT MSL)
- Inferred Groundwater Elevation Contour (FT MSL)

Ground/Surface Water Measurement Locations

- River Gauge Location
- Monitoring Well or Piezometer
- Groundwater Flow Direction

NOTES

1.) ALL LOCATIONS AND BOUNDARIES ARE APPROXIMATE.
2.) GROUNDWATER AND SURFACE WATER ELEVATIONS DISPLAYED IN FEET ABOVE MEAN SEA LEVEL (FT MSL).
3.) GROUNDWATER ELEVATION MEASUREMENTS OBTAINED BY ROCKSMITH.
4.) MISSOURI RIVER ELEVATION ESTIMATED BASED ON NEARBY UNITED STATES GEOLOGICAL SURVEY (USGS) RIVER GAUGING LOCATIONS.
5.) MISSISSIPPI RIVER ELEVATION PROVIDED BY AMEREN MISSOURI.
6.) FGD - FLUE GAS DESULFURIZATION.
7.) TP-1S NOT USED FOR POTENTIOMETRIC SURFACE CONTOURING.

REFERENCES

1.) AMEREN MISSOURI SIOUX ENERGY CENTER, SIOUX PROPERTY CONTROL MAP, FEBRUARY 2011.
2.) COORDINATE SYSTEM: NAD 1983 STATE PLANE MISSOURI EAST FIPS 2,401 FEET.
3.) USGS NATIONAL WATER INFORMATION SYSTEM, USGS GAUGES 06935965 (ST. CHARLES), 07010000 (ST. LOUIS), 05587498 (ALTON), GRAFTON (05587450).

0 500 1,000 1,500 2,000 Feet

TITLE
FEBRUARY 6, 2024 POTENTIOMETRIC SURFACE MAP

PROJECT
CCR GROUNDWATER MONITORING PROGRAM

CLIENT
AMEREN MISSOURI
SIOUX ENERGY CENTER

ROCKSMITH GEOENGINEERING

DESIGN	GTM	YYYY-MM-DD	2024-07-03
PREPARED	JTA	PROJECT No.	23009-24
REVIEW	GTM		
APPROVED	MNH		

FIGURE H1

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM

Path: C:\Users\JackRasmussen\Rocksmith Geoengineering LLC\23007 - Ameren GW - Documents\400 - Drawings, Figures\4.3-SEC\4.3.2 - Production\POT MAPS\2024 Annual Report\SEC_May242024_PM.aprx



N

Mississippi River

Mississippi River Level
417.4

TP-2S (417.05)
TP-2M (417.07)
TP-2D (417.06)

TP-1S (417.27)
TP-1M (417.35)
TP-1D (417.40)

BMW-2S (417.26)
BMW-2D (417.29)

Sioux Energy Center

AM-1S (417.90)
AM-1D (417.90)

UMW-6D (417.64)

PZ-2S (417.81)
PZ-2D (417.84)

PZ-3D (417.84)

LMW-9S (417.72)

UMW-5D (417.91)

BMW-3S (418.16)
BMW-3D (418.13)

BMW-1S (418.04)
BMW-1D (418.02)

UMW-1D (417.86)

PZ-1S (418.05)
PZ-1D (418.05)

SCPA

LMW-1S (417.88)

LMW-8S (417.62)

UMW-4D (417.97)

UMW-3D (417.92)

SCPB

TP-3S (417.15)
TP-3M (417.16)
TP-3D (417.20)

LMW-2S (417.78)

LMW-7S (417.57)

PZ-4D
(418.03)

UMW-2D (417.89)

LMW-6S (417.45)

PZ-9S (417.60)
PZ-9D (417.61)

TP-6S (418.32)
TP-6M (418.30)
TP-6D (418.32)

LMW-3S (417.99)

LMW-4S
(417.80)

LMW-5S (417.68)

UG-2 (417.71)

UG-1A (418.54)

TP-5S (418.00)
TP-5M (418.04)
TP-5D (418.03)

UG-3 (418.06)

TP-4S (417.04)
TP-4M (417.11)
TP-4D (417.13)

SCPC

SCPD

SCL4A

DG-1 (419.11)

TMW-1 (418.05)

TMW-2 (417.99)

TMW-3 (417.97)

DG-2 (419.21)

TMW-4 (418.58)

TMW-5 (418.45)

TMW-6 (418.33)

DG-3 (419.22)

DG-5 (419.02)

418

DG-12 (417.97)

TP-7S (418.98)
TP-7M (418.98)
TP-7D (418.99)

DG-4
(419.11)

DG-6 (418.87)

DG-7 (418.81)

DG-9 (418.41)

TP-8S (418.30)
TP-8M (418.30)
TP-8D (418.31)

419

Estimated Missouri River Level
420.6

Missouri River

420

State of Missouri, Maxar

LEGEND

- Sioux Energy Center Property Boundary

CCR Units

- SCPA - Bottom Ash Surface Impoundment (Closed)
- SCPB - Fly Ash Surface Impoundment (Closed)
- SCPC - WFGD Surface Impoundment (Closed)
- SCL4A - Dry CCR Disposal Area
- SCPD - FGD Surface Impoundment

Groundwater Elevation Contour (FT MSL)

- Groundwater Elevation Contour (FT MSL)
- Inferred Groundwater Elevation Contour (FT MSL)

Ground/Surface Water Measurement Locations

- River Gauge Location
- Monitoring Well or Piezometer
- Groundwater Flow Direction

NOTES

1.) ALL LOCATIONS AND BOUNDARIES ARE APPROXIMATE.
2.) GROUNDWATER AND SURFACE WATER ELEVATIONS DISPLAYED IN FEET ABOVE MEAN SEA LEVEL (FT MSL).
3.) GROUNDWATER ELEVATION MEASUREMENTS OBTAINED BY ROCKSMITH.
4.) MISSOURI RIVER ELEVATION ESTIMATED BASED ON NEARBY UNITED STATES GEOLOGICAL SURVEY (USGS) RIVER GAUGING LOCATIONS.
5.) MISSISSIPPI RIVER ELEVATION PROVIDED BY AMEREN MISSOURI.
6.) FGD - FLUE GAS DESULFURIZATION.

REFERENCES

1.) AMEREN MISSOURI SIOUX ENERGY CENTER, SIOUX PROPERTY CONTROL MAP, FEBRUARY 2011.
2.) COORDINATE SYSTEM: NAD 1983 STATE PLANE MISSOURI EAST FIPS 2,401 FEET.
3.) USGS NATIONAL WATER INFORMATION SYSTEM, USGS GAUGES 06935965 (ST. CHARLES), 07010000 (ST. LOUIS), 05587498 (ALTON), GRAFTON (05587450).

0 500 1,000 1,500 2,000 Feet

TITLE
MAY 24, 2024 POTENTIOMETRIC SURFACE MAP

PROJECT
CCR GROUNDWATER MONITORING PROGRAM

CLIENT
AMEREN MISSOURI
SIOUX ENERGY CENTER

ROCKSMITH GEOENGINEERING

DESIGN	GTM	YYYY-MM-DD	2024-07-03
PREPARED	JTA	PROJECT No.	23009-24
REVIEW	GTM		
APPROVED	MNH		

FIGURE H2

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:

Path: C:\Users\JackRasmussen\Rocksmith Geoengineering LLC\23007 - Ameren GW - Documents\400 - Drawings, Figures\4.3-SEC\4.3.2 - Production\POT MAPS\2024 Annual Report\SEC_July262024_PM.aprx



N

Mississippi River
Mississippi River Level
419.4

TP-2S (419.09)
TP-2M (419.08)
TP-2D (419.06)

TP-1S (419.20)
TP-1M (419.36)
TP-1D (419.36)

BMW-2S (419.32)
BMW-2D (419.28)

Sioux Energy Center

AM-1S (419.86)
AM-1D (419.84)

UMW-6D (419.60)

PZ-2S (419.77)
PZ-2D (419.77)

PZ-3D (419.81)

LMW-9S (419.73)

UMW-5D
(419.84)

BMW-3S
(420.10)
BMW-3D
(420.11)

420

BMW-1S (420.14)
BMW-1D (420.08)

UMW-1D (419.75)

SCPA

LMW-1S
(419.94)

PZ-1S (420.12)
PZ-1D (420.07)

UMW-4D (419.98)

LMW-8S (419.71)

TP-3S (419.19)
TP-3M (419.23)
TP-3D (419.23)

UMW-3D (419.98)

SCPB

LMW-7S (419.74)

PZ-4D (420.06)

LMW-2S (419.91)

UMW-2D
(419.92)

LMW-6S (419.35)

PZ-9S (419.78)
PZ-9D (419.75)

TP-6S (420.31)
TP-6M (420.28)
TP-6D (420.26)

LMW-3S
(419.90)

LMW-4S
(419.78)

LMW-5S (419.68)

UG-1A (420.30)

TP-5S (419.92)
TP-5M (419.88)
TP-5D (419.84)

UG-2 (419.53)

UG-3 (419.92)

TP-4S (419.17)
TP-4M (419.20)
TP-4D (419.23)

SCPC

SCPD

SCL4A

DG-1 (420.26)

TMW-1
(419.56)

TMW-3 (419.39)

TMW-2
(419.40)

DG-2 (420.13)

DG-3 (420.01)

TMW-4
(419.65)

TMW-5 (419.57)

TMW-6 (419.54)

DG-4 (419.83)

DG-12 (419.42)

DG-6 (419.73)

TP-7S (419.58)
TP-7M (419.58)
TP-7D (419.59)

DG-5 (419.78)

DG-7 (419.69)

DG-9 (419.53)

419

TP-8S (418.91)
TP-8M (418.91)
TP-8D (418.90)

418

Missouri River

Estimated Missouri River Level
417.3

State of Missouri, Maxar

LEGEND

- Sioux Energy Center Property Boundary

CCR Units

- SCPA - Bottom Ash Surface Impoundment (Closed)
- SCPB - Fly Ash Surface Impoundment (Closed)
- SCPC - WFGD Surface Impoundment (Closed)
- SCL4A - Dry CCR Disposal Area
- SCPD - FGD Surface Impoundment

Groundwater Elevation Contour (FT MSL)

- Groundwater Elevation Contour (FT MSL)
- Inferred Groundwater Elevation Contour (FT MSL)

Ground/Surface Water Measurement Locations

- River Gauge Location
- Monitoring Well or Piezometer
- Groundwater Flow Direction

NOTES

1.) ALL LOCATIONS AND BOUNDARIES ARE APPROXIMATE.
2.) GROUNDWATER AND SURFACE WATER ELEVATIONS DISPLAYED IN FEET ABOVE MEAN SEA LEVEL (FT MSL).
3.) GROUNDWATER ELEVATION MEASUREMENTS OBTAINED BY ROCKSMITH.
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REFERENCES

1.) AMEREN MISSOURI SIOUX ENERGY CENTER, SIOUX PROPERTY CONTROL MAP, FEBRUARY 2011.
2.) COORDINATE SYSTEM: NAD 1983 STATE PLANE MISSOURI EAST FIPS 2,401 FEET.
3.) USGS NATIONAL WATER INFORMATION SYSTEM, USGS GAUGES 06935965 (ST. CHARLES), 07010000 (ST. LOUIS), 05587498 (ALTON), GRAFTON (05587450).

0 500 1,000 1,500 2,000
Feet

TITLE
JULY 26, 2024 POTENTIOMETRIC SURFACE MAP

PROJECT
CCR GROUNDWATER MONITORING PROGRAM

CLIENT
AMEREN MISSOURI
SIOUX ENERGY CENTER

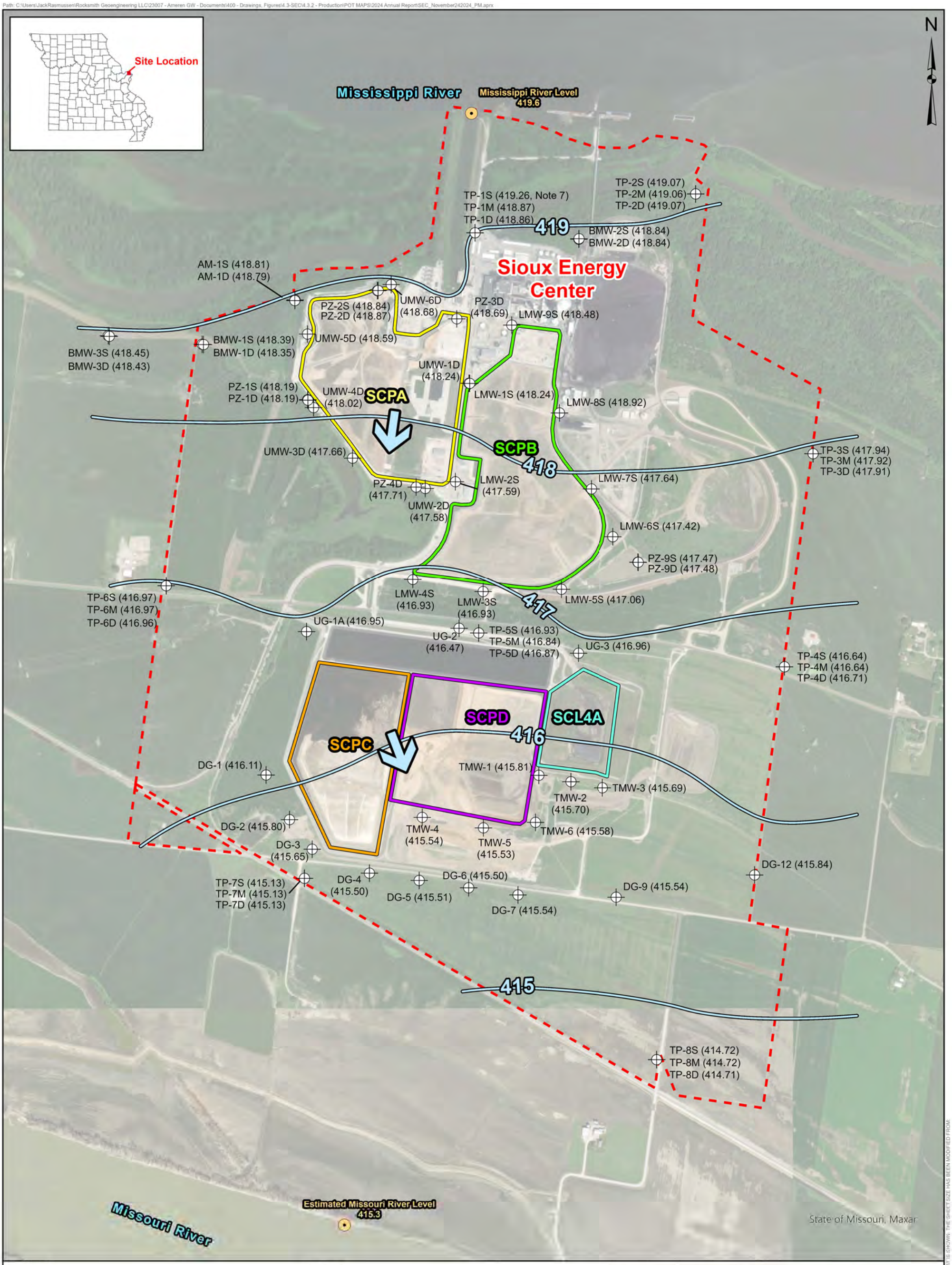
ROCKSMITH GEOENGINEERING

DESIGN	GTM	YYYY-MM-DD	2024-09-11
PREPARED	JTR	PROJECT No.	23009-24
REVIEW	GTM		
APPROVED	MNH		

FIGURE H3

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:

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LEGEND

- Sioux Energy Center Property Boundary

CCR Units

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REFERENCES

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3.) USGS NATIONAL WATER INFORMATION SYSTEM, USGS GAUGES 06935965 (ST. CHARLES), 07010000 (ST. LOUIS), 05587498 (ALTON), GRAFTON (05587450).

0 500 1,000 1,500 2,000 Feet

TITLE
NOVEMBER 14, 2024 POTENTIOMETRIC SURFACE MAP

PROJECT
CCR GROUNDWATER MONITORING PROGRAM

CLIENT
AMEREN MISSOURI
SIOUX ENERGY CENTER

ROCKSMITH GEOENGINEERING

DESIGN	GTM	YYYY-MM-DD	2024-12-19
PREPARED	JTR	PROJECT No.	23009-24
REVIEW	GTM		
APPROVED	MNH		

FIGURE H4

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: 1 in 0