



REPORT

2022 Annual Groundwater Monitoring and Corrective Action Report

RCPA Surface Impoundment, Rush Island Energy Center, Jefferson County, Missouri, USA

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EXECUTIVE SUMMARY AND STATUS OF THE RCPA 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 RCPA Coal Combustion Residuals (CCR) Surface Impoundment at the Rush Island Energy Center (RIEC) is subject to the requirements of the CCR Rule. This Annual Report for the RCPA describes CCR Rule groundwater monitoring activities from January 1, 2022, through December 31, 2022 including verification results related to late 2021 sampling.

Throughout 2022, the RCPA 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 it 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 for the past year is provided in **Table 1**.

The Assessment Monitoring program was established at the RCPA 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 arsenic and molybdenum were present at SSLs. A summary of SSLs for the past year is provided in **Table 1**.

Table 1 – Summary of 2022 RCPA Sampling Events, Previous Year Verification, and Statistical Evaluations for Detection and Assessment Monitoring Well Network

Event Name	Type of Event and Sampling Dates	Laboratory Analytical Data Receipt Date	Parameters Collected	Verified SSIs	SSLs	SSI & SSL Determination Date
October 2021 Sampling Event	Detection & Assessment Monitoring, October 25-27, 2021 ^(See Note 7)	January 14, 2022	Appendix III, Detected Appendix IV ^(See Note 1) , & Major Cations and Anions	pH: MW-1, MW-2, MW-3, MW-5 Boron: MW-1, MW-2, MW-3, MW-4, MW-6, MW-7(R) Fluoride: MW-2, MW-3, MW-4, MW-6, MW-7(R) Sulfate: MW-1, MW-2, MW-3 TDS: MW-2	Arsenic: MW-2, MW-3, MW-7(R) Molybdenum MW-2, MW-3	April 14, 2022
	Verification Sampling, February 14, 2022	March 2, 2022	Detected Appendix III parameters ^(See Note 2)			
April 2022 Sampling Event	Detection & Assessment Monitoring, April 12-15, 2022	May 24, 2022	Appendix III, Appendix IV, Major Cations and Anions, & selected MNA parameters	pH: MW-1, MW-2, MW-3 Boron: MW-1, MW-2, MW-3, MW-4, MW-6, MW-7(R) Fluoride: MW-2, MW-3, MW-4, MW-6 Sulfate: MW-1, MW-2, MW-3 TDS: MW-2, MW-3	Arsenic: MW-2, MW-3, MW-7(R) Molybdenum: MW-2, MW-3	August 22, 2022
	Verification Sampling, June 8, 2022	June 17, 2022	Detected Appendix III parameters ^(See Note 2)			

Event Name	Type of Event and Sampling Dates	Laboratory Analytical Data Receipt Date	Parameters Collected	Verified SSIs	SSLs	SSI & SSL Determination Date
October/November 2022 Sampling Event	Detection & Assessment Monitoring, October 31 – November 3, 2022	November 30, 2022	Appendix III, Detected Appendix IV (See Note 3), & Major Cations and Anions	To be determined after statistical analysis and Verification Sampling are completed in 2023.		

Notes:

- 1) Testing was completed for Appendix IV analytes that were detected above the Practical Quantitation Limit (PQL) during the April 2021 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 April 2022 sampling event.
- 4) SSI – Statistically Significant Increase.
- 5) SSL – Statistically Significant Level.
- 6) TDS – Total Dissolved Solids.
- 7) Confirmatory testing was completed for monitoring well and Appendix IV analyte combinations that were determined to be outliers from the October 2021 Assessment Monitoring Sampling.
- 8) MNA – Monitored Natural Attenuation.

On January 9, 2019, Ameren initiated its Corrective Measures Assessment (CMA) and posted its CMA report on May 20, 2019. A public meeting was held on May 28, 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 initial 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.

Ameren commenced phase 1 of the corrective action remedial plan in August 2019 by initiating closure at the RCPA. Closure of the RCPA was completed on December 15, 2020, thereby, transitioning the RCPA into the post-closure care requirements of the CCR Rule. 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).

Phase 2 of the corrective measures remedial plan as outlined in the Remedy Selection Report began with the April 2021 Corrective Action Sampling event on April 22, 2021. Since that time, groundwater sampling and statistical evaluations have been completed semi-annually to determine if there are any values at the corrective

action monitoring well network that are statistically exceeding the GWPS. A summary of the Corrective Action Monitoring and associated statistical results for this year is provided in **Table 2**.

Table 2 – Summary of 2022 RCPA 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
October 2021 Sampling Event	Phase 2 – Corrective Action Sampling October 25-29, 2021 (See Note 4)	December 27, 2021	Appendix III, Detected Appendix IV (See Note 1), & Major Cations and Anions	Arsenic: P05S, P17I, P17S, P19I, P19S P21S, P31S Lead: P17I, P19I Lithium: P16S, P21D, P22S Molybdenum: P10S, P17D, P17I, P19D, P19I, P21D, P21I, P22D.	March 25, 2022
April 2022 Sampling Event	Phase 2 – Corrective Action Sampling April 12-15, 2022	May 24, 2022	Appendix III, Appendix IV, Major Cations and Anions, & selected MNA parameters	Arsenic: P05S, P17I, P17S, P19I, P21S Lead: P17I, P19I Lithium: P21D, P22S Molybdenum: P10S, P17D, P17I, P19D, P19I, P21D, P21I, P22D	August 22, 2022
October/November 2022 Sampling Event	Phase 2 – Corrective Action Sampling October 31, 2022 to November 3, 2022	December 2, 2022	Appendix III, Detected Appendix IV (See Note 2), & Major Cations and Anions	To be determined after statistical analyses are completed in 2023.	

Notes:

- 1) Testing was completed for Appendix IV analytes that were detected above the PQL during the April 2021 sampling event.
- 2) Testing was completed for Appendix IV analytes that were detected above the PQL during the April 2022 sampling event.
- 3) N/A – Not Applicable.
- 4) Confirmatory testing was completed for monitoring well and Appendix IV analyte combinations that were determined to be outliers from the October 2021 Assessment Monitoring Sampling.

Corrective Action

In addition to MNA as a Corrective Action Remedy at Rush Island, Ameren received an Underground Injection Control Missouri State Operating Permit (UI-0000043, available at <https://dnrservices.mo.gov/env/wpp/permits/issued/docs/UI0000043.pdf>) and a pilot groundwater treatment study was completed in 2021. 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 entire downgradient side (eastern side) of the RCPA, to supplement the MNA at the site. Drilling of the injection and extraction wells was completed in 2021, and the system was fully operational in early 2022.

Overall, Corrective Action taken by Ameren including closure of the RCPA with an engineered geomembrane cover system, installation and operation of a groundwater treatment system, and MNA has reduced concentrations of key CCR constituents. In monitoring wells downgradient of the RCPA, average arsenic concentrations have decreased approximately 27%, average boron concentrations have decreased approximately

18%, and average molybdenum concentrations have decreased approximately 7% since 2018. Monitoring and further evaluation 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 DECOMMISSIONING OF MONITORING WELLS

There are currently two (2) different networks used for monitoring the RCPA and these include 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 2022. 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 RCPA.

2.0 GROUNDWATER SAMPLING RESULTS AND DISCUSSION

The following sections discuss the sampling events completed for the RCPA CCR Unit in 2022. **Tables 4** and **5** provide a summary of the groundwater samples collected in 2022 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.

2.1 Detection Monitoring Program

A Detection Monitoring sampling event was completed October 25-27, 2021. Verification sampling and statistical analysis to evaluate for SSIs for the October 2021 event were not completed until 2022 and are therefore included in this report. New detections of Appendix III analytes triggered a verification sampling event, which was completed February 14, 2022. **Table 6** summarizes the results and the statistical analysis of the October 2021 Detection Monitoring event.

Detection Monitoring samples were collected April 12-15, 2022 and testing was completed for all Appendix III analytes, as well as major cations and anions. New detections of Appendix III analytes triggered a verification sampling event, which was completed June 8, 2022. **Table 7** summarizes the results and the statistical analysis of the April 2022 Detection Monitoring event.

A Detection Monitoring sampling event was completed October 31, 2022 to November 3, 2022 and testing was performed for all Appendix III analytes, as well as major cations and anions. Statistical analyses to evaluate for SSIs in the October/November 2022 data were not completed in 2022 and will be included in the 2023 Annual Report. **Table 8** summarizes the results of the October/November 2022 Detection Monitoring Event.

2.2 Assessment Monitoring Program

An Assessment Monitoring sampling event was completed October 25-27, 2021 and testing was completed for Appendix IV analytes that were 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. The statistical evaluation for this event was completed in 2022 and is included in this report. During review of the October 2021 data, it was discovered that there were outliers for barium and lithium at some monitoring wells due to laboratory errors. Therefore, select samples were re-analyzed. For those samples that did not have sufficient sample volume to have the original sample re-analyzed, confirmatory samples were collected on February 14, 2022. These results are discussed more in Section 2.6. **Table 9** summarizes the results of the October 2021 Assessment Monitoring event. The results from this analysis and a table that displays the site-specific GWPS are provided in **Appendix B**. The SSLs for the RCPA for the October 2021 sampling event are:

- Arsenic at MW-2, MW-3, and MW-7/MW-7(R)

- Molybdenum at MW-2 and MW-3

An Assessment Monitoring sampling event was completed April 12-15, 2022 and testing was completed for all Appendix IV analytes, major cations and anions, and other selected MNA parameters. The statistical evaluation for this event was completed in 2022 and is included in this report. **Table 10** summarizes the results of the April 2022 Assessment Monitoring event. The results from this analysis and a table that displays the site specific GWPS are provided in **Appendix C** and determined that there were no new SSLs.

An Assessment Monitoring sampling event was completed October 31, 2022 to November 3, 2022 and testing was completed for Appendix IV analytes that were detected above the PQL during the April 2022 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 October/November 2022 Assessment Monitoring event; however, statistical analyses to evaluate SSLs were not completed in 2022. Results of the statistical evaluation will be included in the 2023 Annual Report.

2.3 Corrective Action Monitoring Program

A Corrective Action sampling event was completed October 25-29, 2021 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. During review of the October 2021 data, it was discovered that there were outliers for lithium at some monitoring wells due to laboratory errors. Therefore, select samples were re-analyzed and these results are discussed more in Section 2.6. The statistical evaluation for this event was completed in 2022 and is included in this report. A summary of the October 2021 Corrective Action sampling event results is provided in **Table 12**. The results from this statistical evaluation are provided in **Appendix D**. Molybdenum at P17S, which was identified as a statistical exceedance of the GWPS in the previous sampling event, is no longer an exceedance. A new exceedance for arsenic at P31S was identified during the October 2021 sampling event. The other exceedances remained the same for this event as those reported for the April 2021 event in the 2021 Annual Report. A summary of constituents displaying statistical exceedances of the GWPS using Corrective Action statistical methods¹ at corresponding wells is as follows:

- Arsenic at P05S, P17I, P17S, P19I, P19S, P21S, and P31S
- Lead at P17I and P19I
- Lithium at P16S, P21D, and P22S
- Molybdenum at P10S, P17D, P17I, P19D, P19I, P21D, P21I, and P22D

A Corrective Action sampling event was completed April 12-15, 2022 and testing was completed for all Appendix III and IV analytes, major cations and anions, and other selected MNA parameters. A summary of the April 2022 Corrective Action sampling event results is provided in **Table 13**. The results from this statistical evaluation are provided in **Appendix E**. Arsenic at P19S and at P31S, in addition to lithium at P16S, were no longer at a level

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].

statistically above the GWPS. The other exceedances remained the same for this event as those reported for the October 2021 event. A summary of constituents statistically exceeding the GWPS at corresponding well(s) is as follows:

- Arsenic at P05S, P17I, P17S, P19I, and P21S
- Lead at P17I and P19I
- Lithium at P21D and P22S
- Molybdenum at P10S, P17D, P17I, P19D, P19I, P21D, P21I, and P22D

A Corrective Action sampling event was completed October 31, 2022 to November 3, 2022 and testing was completed for Appendix III analytes, Appendix IV analytes that were detected above the PQL during the April 2022 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 October/November 2022 Corrective Action event; however, statistical analyses to evaluate statistical exceedances of the GWPS were not completed in 2022. Results of the statistical evaluation will be included in the 2023 Annual Report.

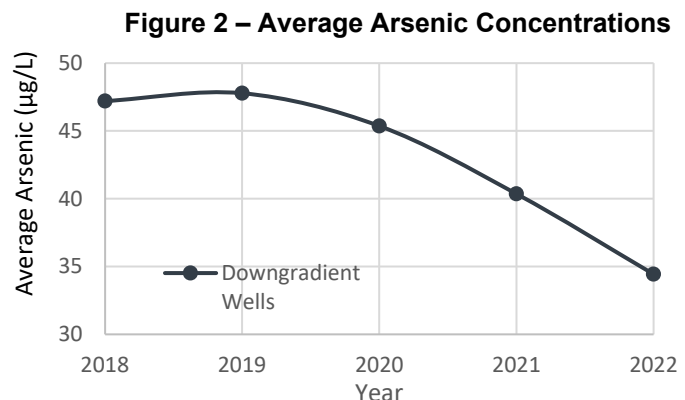
2.4 Evaluation of Corrective Measures

As discussed above, Ameren obtained an Underground Injection Control Missouri State Operating Permit (UI-0000043) and completed a pilot groundwater treatment study which showed significant reductions in key CCR indicator parameters in 2021. Due to the success of the pilot study, Ameren implemented an additional corrective measure (a pump, treat, and re-inject groundwater treatment system) at the downgradient side of the RCPA, to supplement the MNA at the site. The groundwater treatment system became fully operational in early 2022.

Ameren commenced phase 1 of the corrective action remedial plan in August 2019 by initiating closure at the RCPA and closure of the RCPA was completed on December 15, 2020. The October 2022 groundwater sampling event represents the fourth event since closure of the RCPA was completed, and the second 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. In-text **Figures 2-4** below, display the site average concentrations for arsenic, molybdenum, and boron in the downgradient monitoring wells onsite at the RIEC. While there is variability in individual well results, the average annual concentrations at the site are decreasing for arsenic, molybdenum, and boron concentrations as follows:

- **Arsenic** - Average concentrations in the monitoring wells downgradient of the RCPA have decreased approximately 27% since 2018.



- **Boron** - Average concentrations in the monitoring wells downgradient of the RCPA have decreased approximately 18% since 2018.
- **Molybdenum** – Average concentrations in the monitoring wells downgradient of the RCPA have decreased approximately 7% since 2018.

The decreasing average concentrations are encouraging. As displayed by these figures, Corrective Actions taken by Ameren, including the closure of the RCPA with an engineered geomembrane cover system, installation and operation of a groundwater treatment system, and MNA have been effective in reducing concentrations of key CCR constituents. Monitoring and further evaluation of monitoring results will continue, and progress will be tracked in future Annual Reports and statistical evaluations.

Figure 3 – Average Boron Concentrations

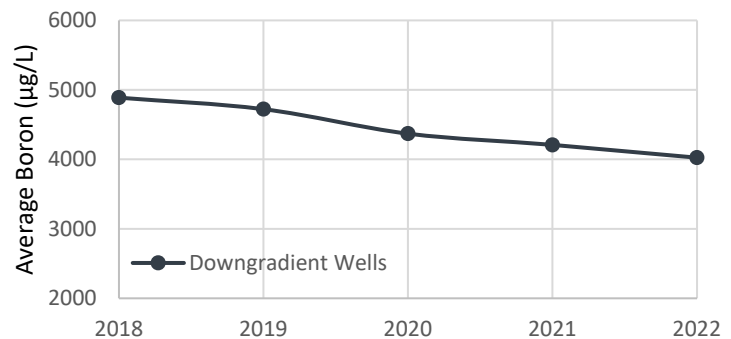
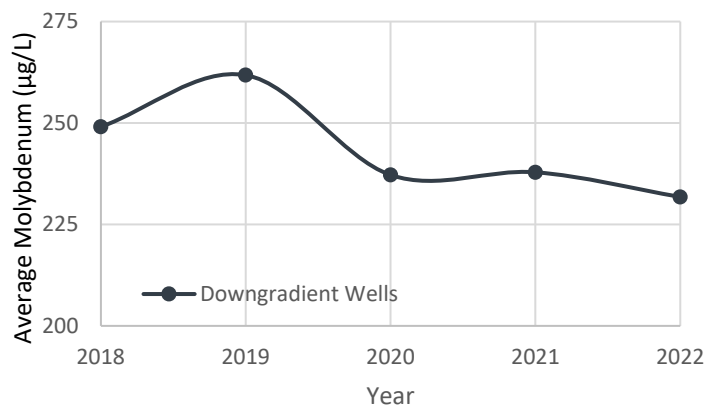


Figure 4 – Average Molybdenum Concentrations



2.5 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 F**. As shown on the potentiometric surface maps, groundwater flow direction within the uppermost aquifer is dynamic and influenced by seasonal changes in water level of the adjacent Mississippi 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. Overall, based on the potentiometric surface maps, a general flow direction from the west (bluffs area) to the east (Mississippi River) is observed under normal river conditions. However, during periods of high river levels, groundwater flow can temporarily reverse. During these times of high river stage and temporary flow direction changes, horizontal groundwater gradients generally decrease, and little net movement of groundwater occurs.

Groundwater flow direction and hydraulic gradient were estimated for the monitoring wells at the RIEC using commercially available software. Results from this assessment indicate that while groundwater flow direction is variable and gradients are relatively flat, the overall net groundwater flow at the RCPA was toward the northeast or towards the Mississippi River. Horizontal gradients calculated by the program range from 0.00002 to 0.001

feet/foot with an estimated net annual groundwater movement of approximately 30 feet in the prevailing downgradient direction.

2.6 Sampling Issues

During the statistical evaluation of the October 2021 Assessment and Corrective Action Monitoring Events (**Appendix B** and **Appendix D**), outliers were identified at multiple monitoring wells for barium and lithium. The outliers were primarily caused by higher than usual dilution factors (laboratory error). This resulted in erroneously high barium results at MW-6 that required confirmation sampling and testing. Additionally, the diluted high PQLs resulted in non-detect results for lithium with PQLs above the site GWPS of 64.7 micrograms per liter ($\mu\text{g/L}$) in multiple wells. Therefore, for samples with sufficient sample volume remaining, the laboratory re-analyzed them with lower dilution factors to determine if results were below the GWPS. In samples where the laboratory did not have sufficient sample volume remaining to re-analyze the outliers, (MW-B1, MW-5, and MW-6), a confirmatory sample was collected on February 14, 2022. Results from this testing displayed that the erroneous results were outliers since the re-test results were within historical ranges at each well. The results of these tests are included in **Table 15** and the laboratory data packets with revised results are provided in **Appendix A**.

No other notable sampling issues were encountered at the RCPA in 2022.

3.0 ACTIVITIES PLANNED FOR 2023

Detection and Assessment Monitoring are scheduled to continue on a semi-annual basis in the second and fourth quarters of 2023. Statistical analysis of the October/November 2022 Detection and Assessment Monitoring data will be completed in 2023 and will be included in the 2023 Annual Report.

As part of the phase 2 of the Remedy Selection Report's corrective measures remedial plan, Corrective Action Sampling is scheduled to continue on a semi-annual basis in the second and fourth quarters of 2023. Statistical analysis of the October/November 2022 Corrective Action Monitoring data will be completed in 2023 and will be included in the 2023 Annual Report. Monitoring and statistical evaluation of the Corrective Action 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 on CCR constituent concentrations in groundwater will continue in 2023 and be included in the 2023 Annual Report.

Tables

Table 3
Summary of Well Construction Details
RCPA Surface Impoundment
Rush Island Energy Center, Jefferson 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								
MW-1	10/31/2015	835384.2	889832.5	395.52	393.5	320.7	310.5	83.0
MW-2	11/1/2015	834261.5	890364.1	393.87	391.7	319.5	309.3	82.4
MW-3	10/31/2015	833178.4	890892.7	391.38	389.2	319.1	308.9	80.3
MW-4	10/30/2015	831647.5	890830.5	392.78	390.8	310.9	300.7	90.1
MW-5	10/29/2015	831994.9	889984.5	390.36	388.0	333.0	327.8	60.2
MW-6	10/28/2015	833111.0	888977.0	402.71	401.1	346.4	341.2	59.8
MW-7(R)	9/11/2019	834501.4	888496.4	408.22	406.0	318.7	308.6	97.4
MW-B1	10/28/2015	837602.1	887903.9	411.61	409.6	319.8	309.6	100.0
MW-B2	10/27/2015	837801.7	885337.2	397.85	395.9	318.3	308.1	87.9
CORRECTIVE ACTION MONITORING WELL NETWORK								
P05S	12/5/2012	832317.6	889749.7	392.50	390.1	365.6	345.6	44.5
P10S	12/4/2012	834545.1	888099.0	407.23	404.8	375.8	355.8	49.0
P16S	12/6/2012	835092.8	889998.3	393.39	390.9	370.9	350.9	40.0
P17D	9/6/2013	834718.8	890158.3	395.56	392.6	267.3	262.3	130.3
P17I	12/10/2013	834744.2	890148.9	394.86	392.5	333.6	328.6	63.9
P17S	11/27/2012	834736.7	890152.8	394.65	392.5	373.5	355.5	37.0
P19D	12/10/2013	833915.6	890552.2	392.08	390.3	270.3	265.3	125.0
P19I	12/10/2013	833911.3	890550.6	392.75	390.2	330.7	325.7	64.5
P19S	11/27/2012	833919.0	890546.4	393.31	390.6	368.6	348.6	42.0
P21D	12/9/2013	832902.9	891031.2	393.39	391.0	271.8	266.8	124.2
P21I	12/9/2013	832904.2	891027.0	393.53	391.2	333.4	328.4	62.8
P21S	11/28/2012	832898.0	891024.7	393.87	391.5	371.5	351.5	40.0
P22D ⁵	12/7/2013	832278.2	891018.7	395.05	391.6	286.6	281.6	110.0
P22S	11/29/2012	832277.0	891007.6	394.30	392.2	373.2	353.2	39.0
P29D	12/11/2013	837804.9	885389.1	398.27	396.2	300.9	295.9	100.3
P29S	1/17/2013	837797.9	885383.8	399.11	397.0	367.0	347.0	50.0
P30S	1/16/2013	836606.9	889007.8	407.75	408.0	368.0	348.0	60.0
P31S	12/10/2012	835629.4	887488.1	408.68	406.1	374.1	354.1	52.0

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) Monitoring well P22D repaired and modified on February 9, 2021.

Table 4
Summary of Detection and Assessment Groundwater Network Sampling Dates
RCPA Surface Impoundment
Rush Island Energy Center, Jefferson County, MO

Groundwater Monitoring Wells	Date of Sample Collection					Total Number of Samples
	February 2022 Confirmatory Sampling	February 2022 Verification Sampling	April 2022 Sampling Event	June 2022 Verification Sampling	October/November 2022 Sampling Event	
CCR Rule Compliance Monitoring Well Network						
MW-B1	2/14/2022	-	4/12/2022	-	11/3/2022	3
MW-B2	-	-	4/12/2022	-	11/3/2022	2
MW-1	-	2/14/2022	4/12/2022	-	11/3/2022	3
MW-2	-	2/14/2022	4/14/2022	-	11/2/2022	3
MW-3	-	-	4/14/2022	6/8/2022	11/1/2022	3
MW-4	-	-	4/15/2022	-	11/1/2022	2
MW-5	2/14/2022	-	4/15/2022	-	11/1/2022	3
MW-6	2/14/2022	-	4/15/2022	-	11/1/2022	3
MW-7(R)	-	-	4/12/2022	-	10/31/2022	2
Assessment or Detection Monitoring	Assessment	Detection	Assessment/ Detection	Detection	Assessment/ Detection	NA

Notes:

- 1.) Detection Monitoring results provided in Tables 6-8.
- 2.) Verification Sampling results provided in Table 6 & 7.
- 3.) Assessment Monitoring results provided in Tables 9-11 and Table 15.
- 4.) "-" No sample collected.
- 5.) NA - Not Applicable.
- 6.) Confirmatory sampling completed in February 2022 at monitoring wells with outliers for Appendix IV parameters during the October 2021 sampling event. Results are provided in Table 15.

Table 5
Summary of Corrective Action Groundwater Network Sampling Dates
RCPA Surface Impoundment
Rush Island Energy Center, Jefferson County, MO

Groundwater Monitoring Wells	Date of Sample Collection		
	April 2022 Sampling Event	October/November 2022 Sampling Event	Total Number of Samples
Corrective Action Monitoring Well Network			
P05S	4/15/2022	11/1/2022	2
P10S	4/12/2022	10/31/2022	2
P16S	4/12/2022	11/3/2022	2
P17D	4/14/2022	11/2/2022	2
P17I	4/14/2022	11/2/2022	2
P17S	4/14/2022	11/2/2022	2
P19D	4/14/2022	11/2/2022	2
P19I	4/14/2022	11/2/2022	2
P19S	4/14/2022	11/2/2022	2
P21D	4/14/2022	11/2/2022	2
P21I	4/14/2022	11/2/2022	2
P21S	4/14/2022	11/2/2022	2
P22D	4/14/2022	11/3/2022	2
P22S	4/14/2022	11/1/2022	2
P29D	4/15/2022	11/3/2022	2
P29S	4/15/2022	11/3/2022	2
P30S	4/15/2022	11/3/2022	2
P31S	4/14/2022	11/3/2022	2
Event Type	Corrective Action	Corrective Action	NA

Notes:

- 1.) Corrective Action sampling results provided in Tables 12-15.
- 2.) NA - Not Applicable.

Table 6
October 2021 Detection Monitoring Results
RCPA Surface Impoundment
Rush Island Energy Center, Jefferson County, MO

ANALYTE	UNITS	PREDICTION LIMITS	BACKGROUND		GROUNDWATER MONITORING WELLS							
			MW-B1	MW-B2	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7(R)	
October 2021 Detection Monitoring Event												
DATE	NA	NA	10/27/2021	10/25/2021	10/26/2021	10/26/2021	10/27/2021	10/27/2021	10/27/2021	10/27/2021	10/27/2021	10/27/2021
pH	SU	6.517-7.417	6.94	7.16	7.73	10.64	9.25	7.26	7.47	7.18	7.13	
BORON, TOTAL	µg/L	125	102	40.2 J	2,340	3,810	14,900	2,850	55.9 J	248	2,300	
CALCIUM, TOTAL	µg/L	161,000	157,000	106,000	67,600	9,480	6,500	83,700	118,000	138,000 J	65,100	
CHLORIDE, TOTAL	mg/L	71.83	42.1	21.9	31.0	21.2 J	25.2	15.4	3.5	3.2	8.0	
FLUORIDE, TOTAL	mg/L	0.2668	0.22	0.26	0.33	1.5	0.89	0.79	0.24	0.27	0.39	
SULFATE, TOTAL	mg/L	46.9	33.7	9.8	60.5	248	200	17.8	14.4	28.7	19.3	
TOTAL DISSOLVED SOLIDS	mg/L	757	630	384 J	579	761	727	459	367	302	355	
February 2022 Verification Sampling Event												
DATE	NA	NA			2/14/2022	2/14/2022						
pH	SU	6.517-7.417										
BORON, TOTAL	µg/L	125										
CALCIUM, TOTAL	µg/L	161,000										
CHLORIDE, TOTAL	mg/L	71.83										
FLUORIDE, TOTAL	mg/L	0.2668			0.21 J							
SULFATE, TOTAL	mg/L	46.9										
TOTAL DISSOLVED SOLIDS	mg/L	757				758						

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. Only analytes/wells that were detected above the prediction limit and that had not already been verified were tested during Verification Sampling.

Table 7
April 2022 Detection Monitoring Results
RCPA Surface Impoundment
Rush Island Energy Center, Jefferson County, MO

ANALYTE	UNITS	PREDICTION LIMITS	BACKGROUND		GROUNDWATER MONITORING WELLS						
			MW-B1	MW-B2	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7(R)
April 2022 Detection Monitoring Event											
DATE	NA	NA	4/12/2022	4/12/2022	4/12/2022	4/14/2022	4/14/2022	4/15/2022	4/15/2022	4/15/2022	4/12/2022
pH	SU	6.517-7.417	6.80	7.22	7.71	10.78	9.08	6.98	7.23	7.22	6.94
BORON, TOTAL	µg/L	125	96.0 J	37.1 J	2,110	4,160	15,600	2,410	56.4 J	1,530	2,130
CALCIUM, TOTAL	µg/L	161,000	139,000	104,000	63,900	10,700	8,830	96,300	115,000	84,500	66,700
CHLORIDE, TOTAL	mg/L	71.83	41.5	27.4	25.5	23.8	26.9	15.8	4.0 J	8.4	7.9
FLUORIDE, TOTAL	mg/L	0.2668	ND	ND	ND	1.1	1.2	0.65	0.13 J	0.31	ND
SULFATE, TOTAL	mg/L	46.9	35.4	11.8	249	260	325	13.3	20.5	19.4	18.4
TOTAL DISSOLVED SOLIDS	mg/L	757	654	435	348	789	896	462	397	339	609
June 2022 Verification Sampling Event											
DATE	NA	NA					6/8/2022				
pH	SU	6.517-7.417									
BORON, TOTAL	µg/L	125									
CALCIUM, TOTAL	µg/L	161,000									
CHLORIDE, TOTAL	mg/L	71.83									
FLUORIDE, TOTAL	mg/L	0.2668									
SULFATE, TOTAL	mg/L	46.9									
TOTAL DISSOLVED SOLIDS	mg/L	757					901				

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.
5. Prediction Limits calculated using Sanitas Software.
6. Values highlighted in yellow indicate a Statistically Significant Increase (SSI).
7. 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: BTT
Reviewed By: MNH

Table 8
October/November 2022 Detection Monitoring Results
RCPA Surface Impoundment
Rush Island Energy Center, Jefferson County, MO

ANALYTE	UNITS	BACKGROUND		GROUNDWATER MONITORING WELLS						
		MW-B1	MW-B2	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7(R)
October/November 2022 Detection Monitoring Event										
DATE	NA	11/3/2022	11/3/2022	11/3/2022	11/2/2022	11/1/2022	11/1/2022	11/1/2022	11/1/2022	10/31/2022
pH	SU	6.67	6.94	7.58	10.59	9.30	7.14	7.33	6.95	7.13
BORON, TOTAL	µg/L	106	37.5 J	2,450	3,350	14,500	2,100	57.4 J	540	1,660
CALCIUM, TOTAL	µg/L	166,000	104,000	46,500	9,950	9,220	104,000	118,000	96,800	71,100
CHLORIDE, TOTAL	mg/L	59.8	26.1	23.7	24.1	26.7 J	14.4	3.4 J	4.3 J	6.9
FLUORIDE, TOTAL	mg/L	ND	0.17 J	0.33	0.98	1.1	0.34	0.19 J	0.27	ND
SULFATE, TOTAL	mg/L	41.1	12.0	229	269	335 J	9.7	28.2	23.8	16.2
TOTAL DISSOLVED SOLIDS	mg/L	727	377	603	814	855	461	388	312	370

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: EMS
Checked By: SMA
Reviewed By: MNH

Table 9
October 2021 Assessment Monitoring Results
RCPA Surface Impoundment
Rush Island Energy Center, Jefferson County, MO

ANALYTE	UNITS	BACKGROUND		GROUNDWATER MONITORING WELLS						
		MW-B1	MW-B2	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7(R)
FIELD PARAMETERS										
DATE	NA	10/27/2021	10/25/2021	10/26/2021	10/26/2021	10/27/2021	10/27/2021	10/27/2021	10/27/2021	10/27/2021
DISSOLVED OXYGEN	mg/L	0.14	3.60	0.31	0.87	0.09	3.64	0.36	2.12	0.13
pH	SU	6.94	7.16	7.73	10.64	9.25	7.26	7.47	7.18	7.13
REDOX POTENTIAL	mV	-143.5	-147.6	118.8	-171.5	-146.7	-139.5	-160.7	-6.7	-174.4
SPECIFIC CONDUCTIVITY	mS/cm	1.173	0.730	0.888	1.042	1.078	0.758	0.647	0.526	0.645
TURBIDITY	NTU	2.92	6.85	4.91	2.09	4.30	1.95	4.07	4.09	2.33
APPENDIX IV PARAMETERS										
ANTIMONY, TOTAL	µg/L	ND	ND	0.15 J	3.2	ND	ND	ND	0.25 J	ND
ARSENIC, TOTAL	µg/L	23.2	5.4	2.7	242	37.0	13.6	1.9	49.6	122
BARIUM, TOTAL	µg/L	492	391	47.3	11.5	23.8	322	316	4,370	234
CADMIUM, TOTAL	µg/L	ND	ND	ND	0.43 J	0.17 J	ND	ND	0.55 J	ND
CHROMIUM, TOTAL	µg/L	0.24 J	0.34 J	0.38 J	0.82 J	0.82 J	0.32 J	0.32 J	21.5	0.30 J
FLUORIDE, TOTAL	mg/L	0.22	0.26	0.33	1.5	0.89	0.79	0.24	0.27	0.39
LEAD, TOTAL	µg/L	ND	ND	ND	15.5	ND	ND	ND	7.3 J	ND
LITHIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	37.0	ND	ND	27.9
MOLYBDENUM, TOTAL	µg/L	ND	ND	76.9	107	871	69.3	ND	ND	74.2
RADIUM [226 + 228]	pCi/L	1.897	ND	ND	ND	ND	ND	ND	ND	ND
SELENIUM, TOTAL	µg/L	ND	ND	ND	4.3	0.47 J	ND	ND	4.7	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.
 6. Statistical Analysis of the October 2021 Assessment Monitoring Data is provided in Appendix B.

Table 10
April 2022 Assessment Monitoring Results
RCPA Surface Impoundment
Rush Island Energy Center, Jefferson County, MO

ANALYTE	UNITS	BACKGROUND		GROUNDWATER MONITORING WELLS						
		MW-B1	MW-B2	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7(R)
FIELD PARAMETERS										
DATE	NA	4/12/2022	4/12/2022	4/12/2022	4/14/2022	4/14/2022	4/15/2022	4/15/2022	4/15/2022	4/12/2022
DISSOLVED OXYGEN	mg/L	0.44	0.11	0.10	0.01	0.10	0.02	0.09	1.28	0.10
pH	SU	6.80	7.22	7.71	10.78	9.08	6.98	7.23	7.22	6.94
REDOX POTENTIAL	mV	-125.8	-85.6	80.5	-21.9	-108.9	51.0	-8.4	28.5	-19.1
SPECIFIC CONDUCTIVITY	mS/cm	1.121	0.669	0.856	1.090	1.196	0.794	0.683	0.576	0.588
TURBIDITY	NTU	3.48	5.34	1.40	2.13	1.22	1.84	4.00	2.79	2.33
APPENDIX IV PARAMETERS										
ANTIMONY, TOTAL	µg/L	ND	ND	0.13 J	3.9	ND	ND	ND	ND	ND
ARSENIC, TOTAL	µg/L	22.0	2.9	2.7	265	29.8	14.2	1.9	0.89 J	121
BARIUM, TOTAL	µg/L	440	405	50.9	12.1	30.5	372	347	171	241
BERYLLIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
CADMIUM, TOTAL	µg/L	ND	ND	ND	0.50 J	0.30 J	ND	ND	ND	ND
CHROMIUM, TOTAL	µg/L	0.36 J	1.6	ND	0.90 J	0.80 J	0.73 J	0.32 J	7.5	ND
COBALT, TOTAL	µg/L	2.4 J	1.9 J	ND	ND	0.86 J	ND	ND	ND	1.5 J
FLUORIDE, TOTAL	mg/L	ND	ND	ND	1.1	1.2	0.65	0.13 J	0.31	ND
LEAD, TOTAL	µg/L	ND	ND	ND	16.9	ND	ND	ND	ND	ND
LITHIUM, TOTAL	µg/L	55.6	9.2 J	3.3 J	2.8 J	5.2 J	37.7	5.5 J	6.7 J	27.7
MERCURY, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND
MOLYBDENUM, TOTAL	µg/L	ND	ND	54.4	117	922	52.4	ND	2.2 J	56.1
RADIUM [226 + 228]	pCi/L	ND	ND	ND	ND	ND	ND	0.862 J	ND	ND
SELENIUM, TOTAL	µg/L	ND	ND	ND	3.7	0.73 J	ND	ND	0.22 J	ND
THALLIUM, TOTAL	µg/L	ND	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, and 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 for 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.
6. Statistical Analysis of the April 2022 Assessment Monitoring Data is provided in Appendix C.

Table 11
October/November 2022 Assessment Monitoring Results
RCPA Surface Impoundment
Rush Island Energy Center, Jefferson County, MO

ANALYTE	UNITS	BACKGROUND		GROUNDWATER MONITORING WELLS						
		MW-B1	MW-B2	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7(R)
FIELD PARAMETERS										
DATE	NA	11/3/2022	11/3/2022	11/3/2022	11/2/2022	11/1/2022	11/1/2022	11/1/2022	11/1/2022	10/31/2022
DISSOLVED OXYGEN	mg/L	0.13	0.17	0.18	0.10	0.07	0.04	0.15	2.56	0.42
pH	SU	6.67	6.94	7.58	10.59	9.30	7.14	7.33	6.95	7.13
REDOX POTENTIAL	mV	-137.1	-134.2	22.8	176.0	-97.8	112.0	103.9	2.3	116.7
SPECIFIC CONDUCTIVITY	mS/cm	1.307	0.722	0.953	1.354	1.301	0.828	0.708	0.562	0.687
TURBIDITY	NTU	3.08	4.90	1.12	3.10	2.69	2.74	2.01	4.91	2.03
APPENDIX IV PARAMETERS										
ANTIMONY, TOTAL	µg/L	ND	ND	0.12 J	3.3	ND	ND	ND	ND	ND
ARSENIC, TOTAL	µg/L	28.4	3.8	2.5	260	35.4	14.5	1.7	0.53 J	120
BARIUM, TOTAL	µg/L	537	373	33.4	10.7	31.8	368	337	112	249
CHROMIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	1.2
FLUORIDE, TOTAL	mg/L	ND	0.17 J	0.33	0.98	1.1	0.34	0.19 J	0.27	ND
LEAD, TOTAL	µg/L	ND	ND	ND	12.2	ND	ND	ND	ND	ND
LITHIUM, TOTAL	µg/L	57.5	7.5 J	ND	ND	ND	34.3	ND	ND	28.1
MOLYBDENUM, TOTAL	µg/L	ND	1.1 J	82.8	126	928 J	49.3	ND	1.5 J	55.0
RADIUM [226 + 228]	pCi/L	1.676	1.351	ND	ND	ND	ND	ND	ND	ND
SELENIUM, TOTAL	µg/L	ND	ND	ND	2.1 J	0.58 J	ND	ND	0.41 J	ND

NOTES

1. Unit Abbreviations: µg/L - micrograms per liter, mg/L - milligrams per liter, SU - standard units, and 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 for 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.

**Table 12
October 2021 Corrective Action Monitoring Results
RCPA Surface Impoundment
Rush Island Energy Center, Jefferson County, MO**

ANALYTE	UNITS	P05S	P10S	P16S	P17D	P17I	P17S	P19D	P19I	P19S	P21D	P21I	P21S	P22D	P22S	P29D	P29S	P30S	P31S
FIELD PARAMETERS																			
DATE	NA	10/28/2021	10/27/2021	10/26/2021	10/26/2021	10/26/2021	10/26/2021	10/27/2021	10/27/2021	10/27/2021	10/26/2021	10/26/2021	10/26/2021	10/27/2021	10/27/2021	10/25/2021	10/29/2021	10/29/2021	10/28/2021
DISSOLVED OXYGEN	mg/L	1.57	0.27	0.83	1.07	0.29	3.26	3.84	0.18	1.45	0.05	1.02	1.39	1.54	0.33	1.98	1.11	0.31	1.17
REDOX POTENTIAL	mV	-160.6	-76.3	-13.6	-166.8	-227.2	-83.5	-174.8	-241.7	-109.8	-194.8	-158.2	20.6	-138.0	-6.7	-133.3	-75.5	-60.7	70.3
SPECIFIC CONDUCTIVITY	mS/cm	0.626	0.850	0.966	0.889	1.084	1.694	0.939	1.449	0.739	1.945	0.553	0.836	0.831	1.502	0.849	1.444	1.067	0.411
TURBIDITY	NTU	9.52	10.5	1.77	0.32	1.35	4.64	4.34	0.93	0.95	1.48	1.00	6.55	1.66	2.53	5.71	8.53	0.93	11.3
APPENDIX III PARAMETERS																			
BORON, TOTAL	µg/L	4,420	2,500	482	7,560	2,160	1,390	11,900	4,660	449	6,410	2,450	213	9,490	547	100	85.5 J	977	307
CALCIUM, TOTAL	µg/L	65,500	70,900	148,000 J	45,200	12,500	186,000	30,200	10,600	98,400	74,800	19,100	136,000	22,800	234,000	86,300	251,000	160,000	60,400
CHLORIDE, TOTAL	mg/L	22.8	17.4	2.5 J	24.0	22.8	66.0	23.4	26.0	2.6	383	26.1	6.0	26.1	41.2	58.9	30.7	39.3	1.6 J
pH	SU	7.14	6.93	6.75	7.75	10.05	7.24	7.72	10.94	6.83	7.51	8.12	6.70	7.67	6.73	7.11	6.63	7.02	7.32
SULFATE, TOTAL	mg/L	17.1	125	ND	2.4	4.3	ND	5.8 J	168	30.5	4.8	5.9 J	ND	98.0	206	19.9	125	149	15.4
TOTAL DISSOLVED SOLIDS	mg/L	368	534	609	615	769	1,140	661	996	406	1,120	372	512	591	962	443 J	935	831	293
APPENDIX IV PARAMETERS																			
ANTIMONY, TOTAL	µg/L	ND	ND	0.14 J	ND	0.34 J	0.18 J	ND	2.3	ND	ND	ND	0.19 J	0.13 J	ND	ND	ND	0.94 J	ND
ARSENIC, TOTAL	µg/L	180	11.7	1.0	1.1	53.3	21.0	0.72 J	149	13.7	0.49 J	5.0	5.9	8.6	1.5	0.99 J	22.1	1.5	83.7
BARIUM, TOTAL	µg/L	184	185	112	104	21.4	183	99.0	14.6 J	256	84.1	39.2	260	74.2	170	147	601	109	302
CADMIUM, TOTAL	µg/L	ND	0.11 J	0.065 J	0.15 J	0.30 J	0.10 J	0.16 J	0.15 J	ND	0.074 J	ND	0.17 J	0.096 J	0.16 J	ND	0.078 J	0.090 J	ND
CHROMIUM, TOTAL	µg/L	0.39 J	0.44 J	ND	0.38 J	0.89 J	0.47 J	0.89 J	0.72 J	0.38 J	ND	0.50 J	0.31 J	1.5	0.30 J	0.35 J	0.36 J	0.30 J	0.51 J
FLUORIDE, TOTAL	mg/L	0.43	0.48	0.48	0.70	1.9	0.37	2.0	1.3	0.32	1.4	1.1	0.28	2.5	0.37	0.32	0.23	0.44	0.39
LEAD, TOTAL	µg/L	ND	ND	ND	ND	9.8 J	ND	ND	5.0 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
LITHIUM, TOTAL	µg/L	15.4	15.9	ND	39.1	ND	ND	19.0	16.3	26.2	146	20.1	ND	27.7	62.4	36.6	57.8	35.7	ND
MOLYBDENUM, TOTAL	µg/L	11.8 J	105	13.7 J	732	133	18.4 J	974	138	6.5 J	484	134	ND	358	8.3 J	ND	ND	2.3 J	7.1 J
RADIUM [226 + 228]	pCi/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.010	ND	ND	ND	ND	ND	ND	ND	2.000
SELENIUM, TOTAL	µg/L	0.21 J	0.28 J	2.9	0.25 J	1.7	0.91 J	0.29 J	0.99 J	ND	ND	0.39 J	0.85 J	0.74 J	0.42 J	ND	ND	ND	ND
ADDITIONAL PARAMETERS																			
ALKALINITY	mg/L	265	268	408	127	169	620	208	455	327	239	137	422	275	283	313	643	345	189
IRON, TOTAL	µg/L	10,100	3,160	82.6	2,490	242	1,740	1,920	102	10,100	1,610	253	701	1,210	691	4,050	11,500	1,590	9,880
MAGNESIUM, TOTAL	µg/L	21,800	10,900	32,300	10,300	622	35,100	4,640	ND	19,100	25,400	2,480	26,500	3,230	43,600	23,800	48,300	23,400	11,500
MANGANESE, TOTAL	µg/L	308	1,200	1.1 J	384	7.2	4,660	246	1.8 J	687	627	51.5	106	72.5	520	139	514	579	2,180
POTASSIUM, TOTAL	µg/L	5,730	4,310	4,290	7,330	2,350	3,510	3,440	12,600	5,600	8,290	4,840	4,350	4,680	7,860	4,020	6,940	6,970	3,720
SODIUM, TOTAL	µg/L	29,500	106,000	35,300	132,000	238,000	183,000	183,000	295,000	22,700	319,000	99,200	24,300	171,000 J	60,900	51,900	23,500	62,600	11,500

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 for 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.
6. Statistical Analysis of the October 2021 Corrective Action Data is provided in Appendix D.

Table 13
April 2022 Corrective Action Monitoring Results
RCPA Surface Impoundment
Rush Island Energy Center, Jefferson County, MO

ANALYTE	UNITS	P05S	P10S	P16S	P17D	P17I	P17S	P19D	P19I	P19S	P21D	P21I	P21S	P22D	P22S	P29D	P29S	P30S	P31S
FIELD PARAMETERS																			
DATE	NA	4/15/2022	4/12/2022	4/12/2022	4/14/2022	4/14/2022	4/14/2022	4/14/2022	4/14/2022	4/14/2022	4/14/2022	4/14/2022	4/14/2022	4/14/2022	4/14/2022	4/15/2022	4/15/2022	4/15/2022	4/14/2022
DISSOLVED OXYGEN	mg/L	0.06	0.27	1.61	1.30	0.06	0.15	0.03	0.00	0.07	0.08	0.04	0.15	0.03	0.02	0.14	0.82	0.13	0.16
REDOX POTENTIAL	mV	-64.6	-2.4	99.3	-152.0	-144.1	-106.8	3.2	-213.5	-10.7	-153.1	-148.3	-80.0	-10.1	33.0	-104.2	-123.6	-12.3	-122.9
SPECIFIC CONDUCTIVITY	mS/cm	0.650	0.936	0.686	0.891	1.060	1.342	0.805	1.399	0.784	2.868	0.548	1.120	0.849	1.199	1.012	0.854	1.084	0.384
TURBIDITY	NTU	9.67	6.48	1.62	1.43	1.41	3.98	3.22	1.50	1.35	0.73	0.99	4.14	2.35	21.30	1.92	9.80	6.26	4.47
APPENDIX III PARAMETERS																			
BORON, TOTAL	µg/L	4,480	2,110	163	7,360	2,220	2,390	9,730	4,830	385	4,880	2,970	187	9,250	483	86.5 J	90.8 J	912	321
CALCIUM, TOTAL	µg/L	64,200	112,000	115,000	43,300	11,100	150,000	29,800	9,840	113,000	116,000	19,100	179,000	21,900	161,000	93,500	123,000	136,000	53,900
CHLORIDE, TOTAL	mg/L	23.7	17.6	1.4 J	26.8	22.4	37.7	20.7	26.3	1.7	661 J	29.9	6.1	26.7	35.8	661	13.4	56.3	1.2
pH	SU	7.14	6.80	6.84	7.37	10.09	7.01	7.87	10.72	6.91	7.36	8.08	6.65	7.71	6.87	7.15	7.05	6.99	7.08
SULFATE, TOTAL	mg/L	8.3	112	21.2	269	301	225	167	246	38.9	167 J	77.6	49.4	96.6	187	167	0.93 J	153	9.9
TOTAL DISSOLVED SOLIDS	mg/L	356	661	470	625	782	920	595 J	1,140 J	474 J	1,220 J	404	667 J	600	789	1,660	486	714	238
APPENDIX IV PARAMETERS																			
ANTIMONY, TOTAL	µg/L	ND	ND	ND	ND	0.29 J	ND	ND	2.4	ND	ND	ND	ND	0.16 J	ND	ND	ND	ND	ND
ARSENIC, TOTAL	µg/L	173	3.5	1.9	1.2	52.1	30.3	0.81 J	112	14.5	0.52 J	5.2	52.4	9.4	8.3 J	0.97 J	45.3	0.97 J	25.3
BARIUM, TOTAL	µg/L	205	189	74.0	102	19.7	145	56.1	15.9	296	143	37.8	345	71.0	145	156	310	101	142
BERYLLIUM, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
CADMIUM, TOTAL	µg/L	ND	0.25 J	0.055 J	0.20 J	0.27 J	ND	0.24 J	0.34 J	ND	0.12 J	0.063 J	0.077 J	0.14 J	0.12 J	ND	ND	ND	ND
CHROMIUM, TOTAL	µg/L	0.82 J	ND	ND	0.47 J	1.0	0.38 J	0.76 J	0.79 J	0.51 J	ND	0.50 J	0.41 J	1.5 J	ND	ND	ND	ND	ND
COBALT, TOTAL	µg/L	ND	3.5 J	ND	ND	ND	2.0 J	0.79 J	ND	ND	ND	ND	1.4 J	ND	1.9 J	ND	3.3 J	ND	ND
FLUORIDE, TOTAL	mg/L	0.34	ND	ND	0.62	1.8	0.38	1.7	0.98	0.26	0.89 J	1.0	ND	2.5	ND	0.89	ND	0.16 J	0.38
LEAD, TOTAL	µg/L	ND	ND	ND	ND	8.9 J	ND	ND	9.9 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
LITHIUM, TOTAL	µg/L	16.6	23.5	28.0	36.7	3.7 J	40.6	16.3	21.6	33.3	170	21.2	15.6	26.6	49.2	50.0	10.3	33.3	7.3 J
MERCURY, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MOLYBDENUM, TOTAL	µg/L	5.2 J	62.9	10.2 J	648	137	61.8	762	228	3.4 J	356	191	1.6 J	330	12.1 J	ND	ND	2.6 J	8.3 J
RADIUM [226 + 228]	pCi/L	ND	ND	ND	1.291	ND	ND	ND	ND	ND	1.530 J	ND	ND	ND	ND	ND	ND	ND	ND
SELENIUM, TOTAL	µg/L	0.20 J	0.18 J	3.7	0.28 J	1.5	0.48 J	0.34 J	3.0	ND	ND	0.47 J	0.24 J	0.90 J	0.42 J	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
ADDITIONAL PARAMETERS																			
ALKALINITY	mg/L	272	375	399	135	172	478	191	390	379	243 J	148	576	277	436	319	442	340	195
IRON, FERRIC, TOTAL	mg/L	7.8	0.44	0.30	1.5	ND	5.5	ND	ND	10.3	1.3	ND	14.4	ND	6.8 J	3.6	7.6	0.43	3.3
IRON, FERROUS, TOTAL	mg/L	2.2 J	ND	ND	0.89 J	0.41 J	0.74 J	1.6 J	0.28 J	0.73 J	1.3 J	0.51 J	0.76 J	2.8 J	0.21 J	0.088 J	0.71 J	ND	0.28 J
IRON, TOTAL	µg/L	9,970	484	305	2,380	177	6,260	961	155	11,000	2,570	238	15,100	1,260	7,000 J	3,720	8,350	429	3,560
MAGNESIUM, TOTAL	µg/L	23,100	16,700	27,000	9,320	448	33,900	4,250	ND	21,900	39,300	2,200	40,100	3,380	34,400	27,100	28,300	23,100	10,400
MANGANESE, TOTAL	µg/L	341	1,850	5.0 J	412	5.6	2,260	222	ND	800	899	49.1	2,270	78.1	678	140	480	375	1,350
POTASSIUM, TOTAL	µg/L	5,790	5,610	2,430	6,690	1,990	4,280	3,410	12,300	5,800	10,800	4,700	4,320	4,250	6,790	4,850	5,610	6,700	3,750
SODIUM, TOTAL	µg/L	23,800	76,500	11,100	126,000	218,000	118,000	147,000	286,000	20,400	422,000	98,200	22,200	168,000	58,100	71,600	13,700	60,900	10,800
SULFIDE, TOTAL	mg/L	ND	ND	ND	ND	0.031 J	ND	ND	0.030 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

NOTES

- 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.
- J - Result is an estimated value.
- ND - Constituent was analyzed for 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.
- 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.
- NA - Not Applicable.
- Statistical Analysis of the April 2022 Corrective Action Data is provided in Appendix E.

Table 14
October/November 2022 Corrective Action Monitoring Results
RCPA Surface Impoundment
Rush Island Energy Center, Jefferson County, MO

ANALYTE	UNITS	P05S	P10S	P16S	P17D	P17I	P17S	P19D	P19I	P19S	P21D	P21I	P21S	P22D	P22S	P29D	P29S	P30S	P31S
FIELD PARAMETERS																			
DATE	NA	11/1/2022	10/31/2022	11/3/2022	11/2/2022	11/2/2022	11/2/2022	11/2/2022	11/2/2022	11/2/2022	11/2/2022	11/2/2022	11/2/2022	11/3/2022	11/1/2022	11/3/2022	11/3/2022	11/3/2022	11/3/2022
DISSOLVED OXYGEN	mg/L	0.07	1.35	0.09	0.60	0.06	1.45	0.10	0.12	0.84	0.08	0.76	0.10	0.30	0.08	0.14	0.07	0.32	3.88
REDOX POTENTIAL	mV	72.1	-64.2	49.0	145.2	-46.0	-87.3	144.4	166.3	172.0	-146.9	-147.2	-125.3	177.9	126.8	-99.7	122.6	8.1	138.0
SPECIFIC CONDUCTIVITY	mS/cm	0.807	0.843	0.839	1.121	1.145	1.935	0.948	1.310	0.604	1.759	0.696	1.145	0.852	1.428	0.852	1.135	1.150	0.379
TURBIDITY	NTU	8.24	4.39	1.54	3.88	1.80	1.81	2.97	3.05	2.74	0.97	1.06	19.70	3.55	8.58	0.98	13.8	4.73	9.37
APPENDIX III PARAMETERS																			
BORON, TOTAL	µg/L	4,260	2,850	438	7,810	2,630	1,700	10,500	3,570	274	5,590	3,170	483	8,520	515	71.0 J	113	884	281
CALCIUM, TOTAL	µg/L	66,000	69,800	123,000	45,800	19,800	35,400	30,200	11,300	84,700	58,400	25,200	154,000	21,200	194,000	92,600	166,000	162,000	54,200
CHLORIDE, TOTAL	mg/L	25.3	18.5	4.6 J	27.8	29.1	74.1	26.3	23.7	1.6 J	433	49.2	11.5	28.8	46.0	67.5	35.9	40.9	3.2 J
pH	SU	7.12	6.84	6.60	7.63	8.80	8.82	7.62	9.36	6.98	7.39	7.83	6.66	7.47	6.67	6.77	6.88	6.74	7.32
SULFATE, TOTAL	mg/L	19.3	115	59.1	250	325 J	369	161	121	13.6	97.9	88.3	15.5	97.5	188	21.5	22.3	144	17.2
TOTAL DISSOLVED SOLIDS	mg/L	358	518	477	621	768	1,240	633	693	324	1,040	420	630	588	887	448	599	712	240
APPENDIX IV PARAMETERS																			
ANTIMONY, TOTAL	µg/L	ND	0.12 J	ND	ND	0.18 J	0.46 J	ND	0.47 J	ND	ND	ND	ND	0.15 J	ND	ND	ND	ND	ND
ARSENIC, TOTAL	µg/L	164	11.9	1.0	1.1	29.1	40.1	0.62 J	28.5	11.6	0.52 J	5.0	125	9.9	2.0	0.96 J	22.7	1.2	29.5
BARIUM, TOTAL	µg/L	162	168	144	95.7	30.1	38.4	89.5	37.9	170	62.7	51.1	278	67.6	162	149	434	111	152
CHROMIUM, TOTAL	µg/L	0.39 J	0.80 J	ND	0.75 J	0.91 J	0.64 J	0.80 J	0.46 J	0.46 J	0.60 J	0.43 J	ND	2.2	ND	ND	ND	0.38 J	0.41 J
FLUORIDE, TOTAL	mg/L	0.33	0.46	ND	0.59	1.9	ND	2.2	0.43	0.33	1.4	0.90	0.24	2.5	ND	0.22	ND	0.27	0.34
LEAD, TOTAL	µg/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
LITHIUM, TOTAL	µg/L	13.6	11.2	23.0	35.1	ND	10.4	15.2	126	17.3	89.2	20.0	14.8	21.5	50.0	31.7	21.0	41.0	7.0 J
MOLYBDENUM, TOTAL	µg/L	7.8 J	101	9.4 J	663	165	26.9	892	100	4.2 J	417	203	ND	318	7.1 J	ND	ND	ND	ND
RADIUM [226 + 228]	pCi/L	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SELENIUM, TOTAL	µg/L	0.25 J	ND	0.46 J	0.24 J	1.0	0.44 J	0.31 J	0.28 J	ND	0.22 J	0.35 J	0.29 J	1.0	0.49 J	ND	ND	2.2	ND
ADDITIONAL PARAMETERS																			
ALKALINITY	mg/L	286	300	416	720	144	605	242	371	302	260	170	582	293	566	327	512	442	191
IRON, TOTAL	µg/L	9,420	1,900	52.0 J	2,460	243	401	1,840	ND	5,750	1,350	283	34,000	1,300	1,900	4,040	19,300	513	3,120
MAGNESIUM, TOTAL	µg/L	21,900	9,900	29,200	10,200	1,090	6,000	4,360	321	16,100	20,500	2,980	43,500	2,890	46,100	25,900	31,300	28,900	10,100
MANGANESE, TOTAL	µg/L	221	917	228	401	10.3	263	241	2.5 J	618	463	57.9	1,630	74.8	424	161	761	379	1,540
POTASSIUM, TOTAL	µg/L	5,770	4,190	4,050	7,360	3,200	2,100	3,570	30,400	4,720	6,820	5,600	4,260	4,240	7,520	3,870	5,380	7,030	3,440
SODIUM, TOTAL	µg/L	33,000	101,000	24,200	127,000	214,000 J	399,000	165,000	209,000	13,000	261,000	109,000	28,200	173,000	64,000	42,600	18,700	55,000	10,900

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 for 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.

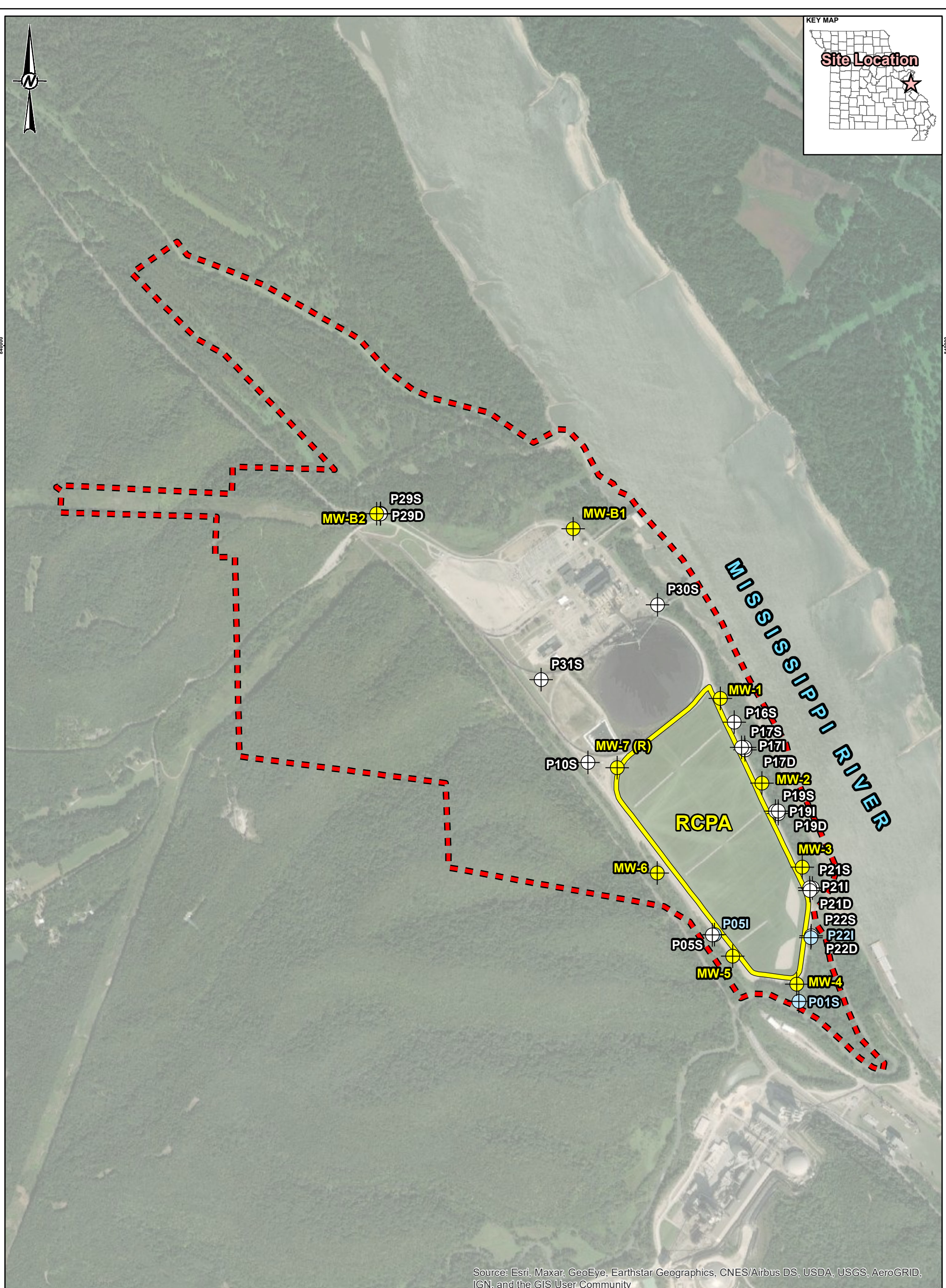
Table 15
October 2021 Re-testing and February 2022 Confirmatory Sampling Results
RCPA Surface Impoundment
Rush Island Energy Center, Jefferson County, MO

Monitoring Network	Well ID	Units	Sample Date	Lithium, Total		Barium, Total	
				Result	PQL	Result	PQL
Assessment Monitoring	MW-B1 ⁵	µg/L	2/14/2022	53.8	30.0	-	-
	MW-5 ⁵	µg/L	2/14/2022	ND	10.0	-	-
	MW-6 ⁵	µg/L	2/14/2022	ND	10.0	174	5.0
	MW-B2	µg/L	10/25/2021	ND	20.0	-	-
Corrective Action	P16S	µg/L	10/26/2021	41.5	20.0	-	-
	P17S	µg/L	10/26/2021	41.2 J	20.0	-	-
	P21S	µg/L	10/26/2021	16.6 J	20.0	-	-

NOTES:

1. Unit Abbreviation: µg/L - micrograms per liter.
2. J - Result is an estimated value.
2. "-" No confirmatory sample collected or no sample re-analyzed.
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. Confirmatory sample collected in February 2022 due to not having sufficient sample volume remaining to re-analyze the samples collected in October 2021.

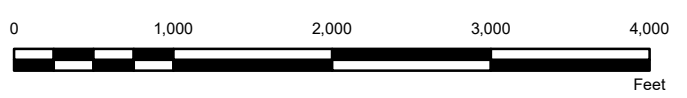
Figures



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

LEGEND

- Rush Island Energy Center Property Boundary
- RCPA - Closed Surface Impoundment
- Monitoring Well Networks**
- Corrective Action Monitoring Well
- RCPA Detection and Assessment Monitoring Well
- Monitoring Well Used for Water Levels Only



CLIENT	AMEREN MISSOURI RUSH ISLAND ENERGY CENTER		
CONSULTANT	YYYY-MM-DD	2022-02-20	
	DESIGNED	JSI	
	PREPARED	ETF	
	REVIEWED	BTT	
	APPROVED	MNH	

NOTE(S)
1. ALL LOCATIONS AND BOUNDARIES ARE APPROXIMATE.

REFERENCE(S)
1.) AMEREN MISSOURI RUSH ISLAND ENERGY CENTER, RUSH ISLAND PROPERTY CONTROL MAP, JANUARY 2012.
2.) COORDINATE SYSTEM: NAD 1983 STATE PLANE MISSOURI EAST FIPS 2401 FEET.

PROJECT
GROUNDWATER MONITORING PROGRAM

TITLE
RUSH ISLAND ENERGY CENTER GROUNDWATER MONITORING PROGRAMS AND WELL LOCATION MAP

PROJECT NO.	CONTROL	FIGURE
153140604	1240	1

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANS18 11 in

APPENDIX A

Laboratory Analytical Data

March 01, 2022

Jeffrey Ingram
Golder Associates
701 Emerson Road, Suite 250
Saint Louis, MO 63141

RE: Project: AMEREN RCPA
Pace Project No.: 60384734

Dear Jeffrey Ingram:

Enclosed are the analytical results for sample(s) received by the laboratory between October 27, 2021 and October 30, 2021. 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 - Indianapolis
- Pace Analytical Services - Kansas City
- Pace Analytical Services - Greensburg

REV-1, 3/1/21: Lithium reanalyzed at lower dilution to meet action limit.

(Greensburg, PA) - Revision 1 - This report replaces the November, 11, 2021 report. This project was revised on December, 09, 2021 to remove total radium.

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: Ryan Feldmann, Golder
Mark Haddock, Golder Associates
Eric Schneider, Golder Associates
Brendan Talbert, Golder Associates



REPORT OF LABORATORY ANALYSIS

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

CERTIFICATIONS

Project: AMEREN RCPA

Pace Project No.: 60384734

Pace Analytical Services Pennsylvania

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601

ANAB DOD-ELAP Rad Accreditation #: L2417

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 04222CA

Colorado Certification #: PA01547

Connecticut Certification #: PH-0694

Delaware Certification

EPA Region 4 DW Rad

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Florida: Cert E871149 SEKS WET

Guam Certification

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas/TNI Certification #: E-10358

Kentucky Certification #: KY90133

KY WW Permit #: KY0098221

KY WW Permit #: KY0000221

Louisiana DHH/TNI Certification #: LA180012

Louisiana DEQ/TNI Certification #: 4086

Maine Certification #: 2017020

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 #: PA014572018-1

New Hampshire/TNI Certification #: 297617

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 #: PA200002-010

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: 02867

Texas/TNI Certification #: T104704188-17-3

Utah/TNI Certification #: PA014572017-9

USDA Soil Permit #: P330-17-00091

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

Wyoming Certification #: 8TMS-L

Pace Analytical Services Indianapolis

7726 Moller Road, Indianapolis, IN 46268

Illinois Accreditation #: 200074

Indiana Drinking Water Laboratory #: C-49-06

Kansas/TNI Certification #: E-10177

Kentucky UST Agency Interest #: 80226

Kentucky WW Laboratory ID #: 98019

Michigan Drinking Water Laboratory #9050

Ohio VAP Certified Laboratory #: CL0065

Oklahoma Laboratory #: 9204

Texas Certification #: T104704355

Wisconsin Laboratory #: 999788130

USDA Soil Permit #: P330-19-00257

Pace Analytical Services Kansas

9608 Loiret Boulevard, Lenexa, KS 66219

Missouri Inorganic Drinking Water Certification #: 10090

Arkansas Drinking Water

Arkansas Certification #: 20-020-0

Arkansas Drinking Water

Illinois Certification #: 2000302021-3

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212020-2

Oklahoma Certification #: 9205/9935

Florida: Cert E871149 SEKS WET

Texas Certification #: T104704407-19-12

Utah Certification #: KS000212019-9

Illinois Certification #: 004592

Kansas Field Laboratory Accreditation: # E-92587

Missouri SEKS Micro Certification: 10070

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: AMEREN RCPA

Pace Project No.: 60384734

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60384734001	R-MW-B1	Water	10/27/21 15:36	10/30/21 04:25
60384734002	R-MW-3	Water	10/27/21 13:27	10/30/21 04:25
60384734003	R-MW-4	Water	10/27/21 15:41	10/30/21 04:25
60384734004	R-MW-5	Water	10/27/21 16:20	10/30/21 04:25
60384734005	R-MW-6	Water	10/27/21 10:07	10/30/21 04:25
60384734006	R-MW-7(r)	Water	10/27/21 14:15	10/30/21 04:25
60384734007	R-MS-1	Water	10/27/21 10:07	10/30/21 04:25
60384734008	R-MSD-1	Water	10/27/21 10:07	10/30/21 04:25
60384734009	R-MW-1	Water	10/26/21 11:02	10/27/21 04:05
60384734010	R-MW-2	Water	10/26/21 14:45	10/27/21 04:05
60384734011	R-MW-B2	Water	10/25/21 16:02	10/27/21 04:05
60384734012	R-DUP-1	Water	10/26/21 00:00	10/27/21 04:05
60384734013	R-FB-1	Water	10/26/21 11:30	10/27/21 04:05

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: AMEREN RCPA

Pace Project No.: 60384734

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60384734001	R-MW-B1	EPA 200.7	MRV	11	PASI-K
		EPA 200.8	JGP	5	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	ALH	3	PASI-K
60384734002	R-MW-3	EPA 200.7	MRV	11	PASI-K
		EPA 200.8	JGP	5	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	ALH	3	PASI-K
60384734003	R-MW-4	EPA 200.7	MRV	11	PASI-K
		EPA 200.8	JGP	5	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	ALH	3	PASI-K
60384734004	R-MW-5	EPA 200.7	MRV	11	PASI-K
		EPA 200.8	JGP	5	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	ALH	3	PASI-K
60384734005	R-MW-6	EPA 200.7	MRV	11	PASI-K
		EPA 200.8	JGP	5	PASI-K
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	ALH	3	PASI-K
60384734006	R-MW-7(r)	EPA 200.7	MRV	11	PASI-K
		EPA 200.8	JGP	5	PASI-K

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SAMPLE ANALYTE COUNT

Project: AMEREN RCPA

Pace Project No.: 60384734

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	ALH	3	PASI-K
60384734007	R-MS-1	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
60384734008	R-MSD-1	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
60384734009	R-MW-1	EPA 200.7	MRV	11	PASI-K
		EPA 200.8	JGP	5	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	ALH	3	PASI-K
60384734010	R-MW-2	EPA 200.7	MRV	11	PASI-K
		EPA 200.8	JGP	5	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	ALH	3	PASI-K
60384734011	R-MW-B2	EPA 200.7	JLH, MRV	11	PASI-K
		EPA 200.8	JGP	5	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	ALH	3	PASI-K
60384734012	R-DUP-1	EPA 200.7	MRV	11	PASI-K
		EPA 200.8	JGP	5	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	ALH	3	PASI-K

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: AMEREN RCPA

Pace Project No.: 60384734

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60384734013	R-FB-1	EPA 200.7	MRV	11	PASI-K
		EPA 200.8	JGP	5	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	ALH	3	PASI-K

PASI-I = Pace Analytical Services - Indianapolis

PASI-K = Pace Analytical Services - Kansas City

PASI-PA = Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN RCPA

Pace Project No.: 60384734

Sample: R-MW-B1 **Lab ID: 60384734001** Collected: 10/27/21 15:36 Received: 10/30/21 04:25 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	492	ug/L	5.0	1.8	1	11/05/21 15:40	11/09/21 20:56	7440-39-3	
Boron	102	ug/L	100	8.6	1	11/05/21 15:40	11/09/21 20:56	7440-42-8	
Calcium	157000	ug/L	2000	754	10	11/05/21 15:40	11/10/21 14:51	7440-70-2	
Iron	24000	ug/L	50.0	21.4	1	11/05/21 15:40	11/09/21 20:56	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/05/21 15:40	11/09/21 20:56	7439-92-1	
Lithium	<76.7	ug/L	100	76.7	10	11/05/21 15:40	11/10/21 14:51	7439-93-2	
Magnesium	41200	ug/L	50.0	31.4	1	11/05/21 15:40	11/09/21 20:56	7439-95-4	
Manganese	1210	ug/L	5.0	0.74	1	11/05/21 15:40	11/09/21 20:56	7439-96-5	
Molybdenum	<2.2	ug/L	20.0	2.2	1	11/05/21 15:40	11/09/21 20:56	7439-98-7	
Potassium	8750	ug/L	500	146	1	11/05/21 15:40	11/09/21 20:56	7440-09-7	
Sodium	25000	ug/L	500	254	1	11/05/21 15:40	11/09/21 20:56	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.10	ug/L	1.0	0.10	1	11/17/21 12:35	11/18/21 17:31	7440-36-0	
Arsenic	23.2	ug/L	1.0	0.11	1	11/17/21 12:35	11/18/21 17:31	7440-38-2	
Cadmium	<0.062	ug/L	0.50	0.062	1	11/17/21 12:35	11/18/21 17:31	7440-43-9	
Chromium	0.24J	ug/L	1.0	0.23	1	11/17/21 12:35	11/18/21 17:31	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/17/21 12:35	11/18/21 17:31	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Indianapolis									
Alkalinity, Total as CaCO3	480	mg/L	2.0	2.0	1		11/04/21 11:32		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	630	mg/L	10.0	10.0	1		11/02/21 11:23		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	42.1	mg/L	5.0	1.9	5		11/05/21 19:12	16887-00-6	
Fluoride	0.22	mg/L	0.20	0.086	1		11/05/21 18:32	16984-48-8	
Sulfate	33.7	mg/L	5.0	2.1	5		11/05/21 19:12	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN RCPA

Pace Project No.: 60384734

Sample: R-MW-3 **Lab ID: 60384734002** Collected: 10/27/21 13:27 Received: 10/30/21 04:25 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	23.8	ug/L	5.0	1.8	1	11/05/21 15:40	11/09/21 20:58	7440-39-3	
Boron	14900	ug/L	100	8.6	1	11/05/21 15:40	11/09/21 20:58	7440-42-8	
Calcium	6500	ug/L	200	75.4	1	11/05/21 15:40	11/09/21 20:58	7440-70-2	
Iron	178	ug/L	50.0	21.4	1	11/05/21 15:40	11/09/21 20:58	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/05/21 15:40	11/09/21 20:58	7439-92-1	
Lithium	<7.7	ug/L	10.0	7.7	1	11/05/21 15:40	11/09/21 20:58	7439-93-2	
Magnesium	419	ug/L	50.0	31.4	1	11/05/21 15:40	11/09/21 20:58	7439-95-4	
Manganese	9.3	ug/L	5.0	0.74	1	11/05/21 15:40	11/09/21 20:58	7439-96-5	
Molybdenum	871	ug/L	20.0	2.2	1	11/05/21 15:40	11/09/21 20:58	7439-98-7	
Potassium	1990	ug/L	500	146	1	11/05/21 15:40	11/09/21 20:58	7440-09-7	
Sodium	247000	ug/L	500	254	1	11/05/21 15:40	11/09/21 20:58	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.10	ug/L	1.0	0.10	1	11/17/21 12:35	11/18/21 17:33	7440-36-0	
Arsenic	37.0	ug/L	1.0	0.11	1	11/17/21 12:35	11/18/21 17:33	7440-38-2	
Cadmium	0.17J	ug/L	0.50	0.062	1	11/17/21 12:35	11/18/21 17:33	7440-43-9	
Chromium	0.82J	ug/L	1.0	0.23	1	11/17/21 12:35	11/18/21 17:33	7440-47-3	
Selenium	0.47J	ug/L	1.0	0.18	1	11/17/21 12:35	11/18/21 17:33	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Indianapolis									
Alkalinity, Total as CaCO3	274	mg/L	2.0	2.0	1		11/04/21 11:32		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	727	mg/L	10.0	10.0	1		11/02/21 11:23		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	25.2	mg/L	5.0	1.9	5		11/05/21 19:39	16887-00-6	
Fluoride	0.89	mg/L	0.20	0.086	1		11/05/21 19:25	16984-48-8	
Sulfate	200	mg/L	20.0	8.4	20		11/05/21 19:52	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RCPA

Pace Project No.: 60384734

Sample: R-MW-4 **Lab ID: 60384734003** Collected: 10/27/21 15:41 Received: 10/30/21 04:25 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	322	ug/L	5.0	1.8	1	11/05/21 15:40	11/09/21 21:00	7440-39-3	
Boron	2850	ug/L	100	8.6	1	11/05/21 15:40	11/09/21 21:00	7440-42-8	
Calcium	83700	ug/L	200	75.4	1	11/05/21 15:40	11/09/21 21:00	7440-70-2	
Iron	6080	ug/L	50.0	21.4	1	11/05/21 15:40	11/09/21 21:00	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/05/21 15:40	11/09/21 21:00	7439-92-1	
Lithium	37.0	ug/L	10.0	7.7	1	11/05/21 15:40	11/09/21 21:00	7439-93-2	
Magnesium	17200	ug/L	50.0	31.4	1	11/05/21 15:40	11/09/21 21:00	7439-95-4	
Manganese	328	ug/L	5.0	0.74	1	11/05/21 15:40	11/09/21 21:00	7439-96-5	
Molybdenum	69.3	ug/L	20.0	2.2	1	11/05/21 15:40	11/09/21 21:00	7439-98-7	
Potassium	5480	ug/L	500	146	1	11/05/21 15:40	11/09/21 21:00	7440-09-7	
Sodium	60000	ug/L	500	254	1	11/05/21 15:40	11/09/21 21:00	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.10	ug/L	1.0	0.10	1	11/17/21 12:35	11/18/21 17:46	7440-36-0	
Arsenic	13.6	ug/L	1.0	0.11	1	11/17/21 12:35	11/18/21 17:46	7440-38-2	
Cadmium	<0.062	ug/L	0.50	0.062	1	11/17/21 12:35	11/18/21 17:46	7440-43-9	
Chromium	0.32J	ug/L	1.0	0.23	1	11/17/21 12:35	11/18/21 17:46	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/17/21 12:35	11/18/21 17:46	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Indianapolis									
Alkalinity, Total as CaCO3	348	mg/L	2.0	2.0	1		11/04/21 11:32		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	459	mg/L	10.0	10.0	1		11/02/21 11:23		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	15.4	mg/L	1.0	0.39	1		11/05/21 20:05	16887-00-6	
Fluoride	0.79	mg/L	0.20	0.086	1		11/05/21 20:05	16984-48-8	
Sulfate	17.8	mg/L	1.0	0.42	1		11/05/21 20:05	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN RCPA

Pace Project No.: 60384734

Sample: R-MW-5 **Lab ID: 60384734004** Collected: 10/27/21 16:20 Received: 10/30/21 04:25 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	316	ug/L	5.0	1.8	1	11/05/21 15:40	11/09/21 21:07	7440-39-3	
Boron	55.9J	ug/L	100	8.6	1	11/05/21 15:40	11/09/21 21:07	7440-42-8	
Calcium	118000	ug/L	2000	754	10	11/05/21 15:40	11/10/21 14:53	7440-70-2	
Iron	8370	ug/L	50.0	21.4	1	11/05/21 15:40	11/09/21 21:07	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/05/21 15:40	11/09/21 21:07	7439-92-1	
Lithium	<76.7	ug/L	100	76.7	10	11/05/21 15:40	11/10/21 14:53	7439-93-2	
Magnesium	15100	ug/L	50.0	31.4	1	11/05/21 15:40	11/09/21 21:07	7439-95-4	
Manganese	297	ug/L	5.0	0.74	1	11/05/21 15:40	11/09/21 21:07	7439-96-5	
Molybdenum	<2.2	ug/L	20.0	2.2	1	11/05/21 15:40	11/09/21 21:07	7439-98-7	
Potassium	1910	ug/L	500	146	1	11/05/21 15:40	11/09/21 21:07	7440-09-7	
Sodium	4070	ug/L	500	254	1	11/05/21 15:40	11/09/21 21:07	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.10	ug/L	1.0	0.10	1	11/17/21 12:35	11/18/21 17:48	7440-36-0	
Arsenic	1.9	ug/L	1.0	0.11	1	11/17/21 12:35	11/18/21 17:48	7440-38-2	
Cadmium	<0.062	ug/L	0.50	0.062	1	11/17/21 12:35	11/18/21 17:48	7440-43-9	
Chromium	0.32J	ug/L	1.0	0.23	1	11/17/21 12:35	11/18/21 17:48	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/17/21 12:35	11/18/21 17:48	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Indianapolis									
Alkalinity, Total as CaCO3	304	mg/L	2.0	2.0	1		11/04/21 11:32		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	367	mg/L	5.0	5.0	1		11/02/21 11:24		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	3.5	mg/L	1.0	0.39	1		11/05/21 20:45	16887-00-6	
Fluoride	0.24	mg/L	0.20	0.086	1		11/05/21 20:45	16984-48-8	
Sulfate	14.4	mg/L	1.0	0.42	1		11/05/21 20:45	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RCPA

Pace Project No.: 60384734

Sample: R-MW-6 **Lab ID: 60384734005** Collected: 10/27/21 10:07 Received: 10/30/21 04:25 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	4370	ug/L	5.0	1.8	1	11/05/21 15:40	11/09/21 21:09	7440-39-3	
Boron	248	ug/L	100	8.6	1	11/05/21 15:40	11/09/21 21:09	7440-42-8	
Calcium	138000	ug/L	2000	754	10	11/05/21 15:40	11/10/21 14:55	7440-70-2	M1
Iron	136000	ug/L	50.0	21.4	1	11/05/21 15:40	11/09/21 21:09	7439-89-6	M1
Lead	7.3J	ug/L	10.0	3.8	1	11/05/21 15:40	11/09/21 21:09	7439-92-1	
Lithium	<76.7	ug/L	100	76.7	10	11/05/21 15:40	11/10/21 14:55	7439-93-2	
Magnesium	14900	ug/L	50.0	31.4	1	11/05/21 15:40	11/09/21 21:09	7439-95-4	
Manganese	350	ug/L	5.0	0.74	1	11/05/21 15:40	11/09/21 21:09	7439-96-5	
Molybdenum	<2.2	ug/L	20.0	2.2	1	11/05/21 15:40	11/09/21 21:09	7439-98-7	
Potassium	1370	ug/L	500	146	1	11/05/21 15:40	11/09/21 21:09	7440-09-7	
Sodium	9180	ug/L	500	254	1	11/05/21 15:40	11/09/21 21:09	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	0.25J	ug/L	1.0	0.10	1	11/17/21 12:35	11/18/21 17:36	7440-36-0	
Arsenic	49.6	ug/L	1.0	0.11	1	11/17/21 12:35	11/18/21 17:36	7440-38-2	
Cadmium	0.55	ug/L	0.50	0.062	1	11/17/21 12:35	11/18/21 17:36	7440-43-9	M1
Chromium	21.5	ug/L	1.0	0.23	1	11/17/21 12:35	11/18/21 17:36	7440-47-3	
Selenium	4.7	ug/L	1.0	0.18	1	11/17/21 12:35	11/18/21 17:36	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Indianapolis									
Alkalinity, Total as CaCO3	235	mg/L	2.0	2.0	1		11/04/21 11:32		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	302	mg/L	5.0	5.0	1		11/02/21 11:24		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	3.2	mg/L	1.0	0.39	1		11/05/21 20:59	16887-00-6	
Fluoride	0.27	mg/L	0.20	0.086	1		11/05/21 20:59	16984-48-8	
Sulfate	28.7	mg/L	5.0	2.1	5		11/09/21 00:45	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RCPA

Pace Project No.: 60384734

Sample: R-MW-7(r) **Lab ID: 60384734006** Collected: 10/27/21 14:15 Received: 10/30/21 04:25 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	234	ug/L	5.0	1.8	1	11/05/21 15:40	11/09/21 21:15	7440-39-3	
Boron	2300	ug/L	100	8.6	1	11/05/21 15:40	11/09/21 21:15	7440-42-8	
Calcium	65100	ug/L	200	75.4	1	11/05/21 15:40	11/09/21 21:15	7440-70-2	
Iron	11000	ug/L	50.0	21.4	1	11/05/21 15:40	11/09/21 21:15	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/05/21 15:40	11/09/21 21:15	7439-92-1	
Lithium	27.9	ug/L	10.0	7.7	1	11/05/21 15:40	11/09/21 21:15	7439-93-2	
Magnesium	19200	ug/L	50.0	31.4	1	11/05/21 15:40	11/09/21 21:15	7439-95-4	
Manganese	277	ug/L	5.0	0.74	1	11/05/21 15:40	11/09/21 21:15	7439-96-5	
Molybdenum	74.2	ug/L	20.0	2.2	1	11/05/21 15:40	11/09/21 21:15	7439-98-7	
Potassium	5450	ug/L	500	146	1	11/05/21 15:40	11/09/21 21:15	7440-09-7	
Sodium	33300	ug/L	500	254	1	11/05/21 15:40	11/09/21 21:15	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.10	ug/L	1.0	0.10	1	11/17/21 12:35	11/18/21 17:50	7440-36-0	
Arsenic	122	ug/L	1.0	0.11	1	11/17/21 12:35	11/18/21 17:50	7440-38-2	
Cadmium	<0.062	ug/L	0.50	0.062	1	11/17/21 12:35	11/18/21 17:50	7440-43-9	
Chromium	0.30J	ug/L	1.0	0.23	1	11/17/21 12:35	11/18/21 17:50	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/17/21 12:35	11/18/21 17:50	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Indianapolis									
Alkalinity, Total as CaCO3	279	mg/L	2.0	2.0	1		11/04/21 11:32		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	355	mg/L	5.0	5.0	1		11/03/21 10:37		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	8.0	mg/L	1.0	0.39	1		11/05/21 22:06	16887-00-6	
Fluoride	0.39	mg/L	0.20	0.086	1		11/05/21 22:06	16984-48-8	
Sulfate	19.3	mg/L	1.0	0.42	1		11/05/21 22:06	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RCPA

Pace Project No.: 60384734

Sample: R-MW-1 **Lab ID: 60384734009** Collected: 10/26/21 11:02 Received: 10/27/21 04:05 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	47.3	ug/L	5.0	1.8	1	11/05/21 15:40	11/09/21 20:43	7440-39-3	
Boron	2340	ug/L	100	8.6	1	11/05/21 15:40	11/09/21 20:43	7440-42-8	
Calcium	67600	ug/L	200	75.4	1	11/05/21 15:40	11/09/21 20:43	7440-70-2	
Iron	71.8	ug/L	50.0	21.4	1	11/05/21 15:40	11/09/21 20:43	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/05/21 15:40	11/09/21 20:43	7439-92-1	
Lithium	<7.7	ug/L	10.0	7.7	1	11/05/21 15:40	11/09/21 20:43	7439-93-2	
Magnesium	11300	ug/L	50.0	31.4	1	11/05/21 15:40	11/09/21 20:43	7439-95-4	
Manganese	70.0	ug/L	5.0	0.74	1	11/05/21 15:40	11/09/21 20:43	7439-96-5	
Molybdenum	76.9	ug/L	20.0	2.2	1	11/05/21 15:40	11/09/21 20:43	7439-98-7	
Potassium	6920	ug/L	500	146	1	11/05/21 15:40	11/09/21 20:43	7440-09-7	
Sodium	115000	ug/L	500	254	1	11/05/21 15:40	11/09/21 20:43	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	0.15J	ug/L	1.0	0.10	1	11/08/21 11:14	11/10/21 12:29	7440-36-0	
Arsenic	2.7	ug/L	1.0	0.11	1	11/08/21 11:14	11/10/21 12:29	7440-38-2	
Cadmium	<0.062	ug/L	0.50	0.062	1	11/08/21 11:14	11/10/21 12:29	7440-43-9	
Chromium	0.38J	ug/L	1.0	0.23	1	11/08/21 11:14	11/10/21 12:29	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/08/21 11:14	11/10/21 12:29	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Indianapolis									
Alkalinity, Total as CaCO3	167	mg/L	2.0	2.0	1		11/04/21 11:32		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	579	mg/L	10.0	10.0	1		11/02/21 11:23		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	31.0	mg/L	2.0	0.78	2		11/05/21 17:26	16887-00-6	
Fluoride	0.33	mg/L	0.20	0.086	1		11/04/21 19:44	16984-48-8	L2
Sulfate	60.5	mg/L	5.0	2.1	5		11/04/21 19:55	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RCPA

Pace Project No.: 60384734

Sample: R-MW-2 **Lab ID: 60384734010** Collected: 10/26/21 14:45 Received: 10/27/21 04:05 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	11.5	ug/L	5.0	1.8	1	11/05/21 15:40	11/09/21 20:45	7440-39-3	
Boron	3810	ug/L	100	8.6	1	11/05/21 15:40	11/09/21 20:45	7440-42-8	
Calcium	9480	ug/L	200	75.4	1	11/05/21 15:40	11/09/21 20:45	7440-70-2	
Iron	121	ug/L	50.0	21.4	1	11/05/21 15:40	11/09/21 20:45	7439-89-6	
Lead	15.5	ug/L	10.0	3.8	1	11/05/21 15:40	11/09/21 20:45	7439-92-1	
Lithium	<7.7	ug/L	10.0	7.7	1	11/05/21 15:40	11/09/21 20:45	7439-93-2	
Magnesium	<31.4	ug/L	50.0	31.4	1	11/05/21 15:40	11/09/21 20:45	7439-95-4	
Manganese	2.1J	ug/L	5.0	0.74	1	11/05/21 15:40	11/09/21 20:45	7439-96-5	
Molybdenum	107	ug/L	20.0	2.2	1	11/05/21 15:40	11/09/21 20:45	7439-98-7	
Potassium	3080	ug/L	500	146	1	11/05/21 15:40	11/09/21 20:45	7440-09-7	
Sodium	220000	ug/L	500	254	1	11/05/21 15:40	11/09/21 20:45	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	3.2	ug/L	1.0	0.10	1	11/08/21 11:14	11/10/21 12:40	7440-36-0	
Arsenic	242	ug/L	1.0	0.11	1	11/08/21 11:14	11/10/21 12:40	7440-38-2	
Cadmium	0.43J	ug/L	0.50	0.062	1	11/08/21 11:14	11/10/21 12:40	7440-43-9	
Chromium	0.82J	ug/L	1.0	0.23	1	11/08/21 11:14	11/10/21 12:40	7440-47-3	
Selenium	4.3	ug/L	1.0	0.18	1	11/08/21 11:14	11/10/21 12:40	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Indianapolis									
Alkalinity, Total as CaCO3	195	mg/L	2.0	2.0	1		11/04/21 11:32		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	761	mg/L	10.0	10.0	1		11/02/21 11:23		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	21.2	mg/L	5.0	1.9	5		11/03/21 18:54	16887-00-6	B
Fluoride	1.5	mg/L	0.20	0.086	1		11/04/21 20:06	16984-48-8	L2
Sulfate	248	mg/L	20.0	8.4	20		11/03/21 19:06	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RCPA

Pace Project No.: 60384734

Sample: R-MW-B2 **Lab ID: 60384734011** Collected: 10/25/21 16:02 Received: 10/27/21 04:05 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	391	ug/L	5.0	1.8	1	11/05/21 15:40	11/09/21 20:48	7440-39-3	
Boron	40.2J	ug/L	100	8.6	1	11/05/21 15:40	11/09/21 20:48	7440-42-8	
Calcium	106000	ug/L	2000	754	10	11/05/21 15:40	11/10/21 14:47	7440-70-2	M1
Iron	9220	ug/L	50.0	21.4	1	11/05/21 15:40	11/09/21 20:48	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/05/21 15:40	11/09/21 20:48	7439-92-1	
Lithium	<15.3	ug/L	20.0	15.3	2	02/08/22 13:08	02/09/22 17:58	7439-93-2	D3
Magnesium	18700	ug/L	50.0	31.4	1	11/05/21 15:40	11/09/21 20:48	7439-95-4	
Manganese	219	ug/L	5.0	0.74	1	11/05/21 15:40	11/09/21 20:48	7439-96-5	
Molybdenum	<2.2	ug/L	20.0	2.2	1	11/05/21 15:40	11/09/21 20:48	7439-98-7	
Potassium	1780	ug/L	500	146	1	11/05/21 15:40	11/09/21 20:48	7440-09-7	
Sodium	15600	ug/L	500	254	1	11/05/21 15:40	11/09/21 20:48	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.10	ug/L	1.0	0.10	1	11/08/21 11:14	11/10/21 12:42	7440-36-0	
Arsenic	5.4	ug/L	1.0	0.11	1	11/08/21 11:14	11/10/21 12:42	7440-38-2	
Cadmium	<0.062	ug/L	0.50	0.062	1	11/08/21 11:14	11/10/21 12:42	7440-43-9	
Chromium	0.34J	ug/L	1.0	0.23	1	11/08/21 11:14	11/10/21 12:42	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/08/21 11:14	11/10/21 12:42	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Indianapolis									
Alkalinity, Total as CaCO3	311	mg/L	2.0	2.0	1		11/04/21 11:32		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	384	mg/L	5.0	5.0	1		11/02/21 11:21		H1
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	21.9	mg/L	5.0	1.9	5		11/03/21 19:29	16887-00-6	B
Fluoride	0.26	mg/L	0.20	0.086	1		11/04/21 20:40	16984-48-8	L2
Sulfate	9.8	mg/L	1.0	0.42	1		11/04/21 20:40	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RCPA

Pace Project No.: 60384734

Sample: R-DUP-1 **Lab ID: 60384734012** Collected: 10/26/21 00:00 Received: 10/27/21 04:05 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	11.5	ug/L	5.0	1.8	1	11/05/21 15:40	11/09/21 20:52	7440-39-3	
Boron	3990	ug/L	100	8.6	1	11/05/21 15:40	11/09/21 20:52	7440-42-8	
Calcium	9920	ug/L	200	75.4	1	11/05/21 15:40	11/09/21 20:52	7440-70-2	
Iron	124	ug/L	50.0	21.4	1	11/05/21 15:40	11/09/21 20:52	7439-89-6	
Lead	16.1	ug/L	10.0	3.8	1	11/05/21 15:40	11/09/21 20:52	7439-92-1	
Lithium	<7.7	ug/L	10.0	7.7	1	11/05/21 15:40	11/09/21 20:52	7439-93-2	
Magnesium	<31.4	ug/L	50.0	31.4	1	11/05/21 15:40	11/09/21 20:52	7439-95-4	
Manganese	2.3J	ug/L	5.0	0.74	1	11/05/21 15:40	11/09/21 20:52	7439-96-5	
Molybdenum	110	ug/L	20.0	2.2	1	11/05/21 15:40	11/09/21 20:52	7439-98-7	
Potassium	3230	ug/L	500	146	1	11/05/21 15:40	11/09/21 20:52	7440-09-7	
Sodium	229000	ug/L	500	254	1	11/05/21 15:40	11/09/21 20:52	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	3.2	ug/L	1.0	0.10	1	11/08/21 11:14	11/10/21 12:44	7440-36-0	
Arsenic	246	ug/L	1.0	0.11	1	11/08/21 11:14	11/10/21 12:44	7440-38-2	
Cadmium	0.44J	ug/L	0.50	0.062	1	11/08/21 11:14	11/10/21 12:44	7440-43-9	
Chromium	0.81J	ug/L	1.0	0.23	1	11/08/21 11:14	11/10/21 12:44	7440-47-3	
Selenium	4.2	ug/L	1.0	0.18	1	11/08/21 11:14	11/10/21 12:44	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Indianapolis									
Alkalinity, Total as CaCO3	196	mg/L	2.0	2.0	1		11/04/21 11:32		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	784	mg/L	10.0	10.0	1		11/02/21 11:23		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	42.6	mg/L	10.0	3.9	10		11/03/21 19:53	16887-00-6	B
Fluoride	1.5	mg/L	0.20	0.086	1		11/04/21 20:51	16984-48-8	L2
Sulfate	296	mg/L	50.0	21.0	50		11/04/21 21:03	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN RCPA

Pace Project No.: 60384734

Sample: R-FB-1 **Lab ID: 60384734013** Collected: 10/26/21 11:30 Received: 10/27/21 04:05 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	<1.8	ug/L	5.0	1.8	1	11/05/21 15:40	11/09/21 20:54	7440-39-3	
Boron	16.2J	ug/L	100	8.6	1	11/05/21 15:40	11/09/21 20:54	7440-42-8	
Calcium	<75.4	ug/L	200	75.4	1	11/05/21 15:40	11/09/21 20:54	7440-70-2	
Iron	<21.4	ug/L	50.0	21.4	1	11/05/21 15:40	11/09/21 20:54	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/05/21 15:40	11/09/21 20:54	7439-92-1	
Lithium	<7.7	ug/L	10.0	7.7	1	11/05/21 15:40	11/09/21 20:54	7439-93-2	
Magnesium	<31.4	ug/L	50.0	31.4	1	11/05/21 15:40	11/09/21 20:54	7439-95-4	
Manganese	<0.74	ug/L	5.0	0.74	1	11/05/21 15:40	11/09/21 20:54	7439-96-5	
Molybdenum	<2.2	ug/L	20.0	2.2	1	11/05/21 15:40	11/09/21 20:54	7439-98-7	
Potassium	<146	ug/L	500	146	1	11/05/21 15:40	11/09/21 20:54	7440-09-7	
Sodium	<254	ug/L	500	254	1	11/05/21 15:40	11/09/21 20:54	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.10	ug/L	1.0	0.10	1	11/08/21 11:14	11/10/21 12:38	7440-36-0	
Arsenic	<0.11	ug/L	1.0	0.11	1	11/08/21 11:14	11/10/21 12:38	7440-38-2	
Cadmium	<0.062	ug/L	0.50	0.062	1	11/08/21 11:14	11/10/21 12:38	7440-43-9	
Chromium	<0.23	ug/L	1.0	0.23	1	11/08/21 11:14	11/10/21 12:38	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/08/21 11:14	11/10/21 12:38	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Indianapolis									
Alkalinity, Total as CaCO3	2.0	mg/L	2.0	2.0	1		11/04/21 11:32		
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		11/02/21 11:23		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	0.45J	mg/L	1.0	0.39	1		11/04/21 21:14	16887-00-6	B
Fluoride	<0.086	mg/L	0.20	0.086	1		11/04/21 21:14	16984-48-8	L2
Sulfate	<0.42	mg/L	1.0	0.42	1		11/04/21 21:14	14808-79-8	

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QUALITY CONTROL DATA

Project: AMEREN RCPA

Pace Project No.: 60384734

QC Batch:	754371	Analysis Method:	EPA 200.7
QC Batch Method:	EPA 200.7	Analysis Description:	200.7 Metals, Total
		Laboratory:	Pace Analytical Services - Kansas City
Associated Lab Samples:	60384734001, 60384734002, 60384734003, 60384734004, 60384734005, 60384734006, 60384734009, 60384734010, 60384734011, 60384734012, 60384734013		

METHOD BLANK:	3019297	Matrix:	Water
Associated Lab Samples:	60384734001, 60384734002, 60384734003, 60384734004, 60384734005, 60384734006, 60384734009, 60384734010, 60384734011, 60384734012, 60384734013		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<1.8	5.0	1.8	11/09/21 20:35	
Boron	ug/L	<8.6	100	8.6	11/09/21 20:35	
Calcium	ug/L	<75.4	200	75.4	11/09/21 20:35	
Iron	ug/L	<21.4	50.0	21.4	11/09/21 20:35	
Lead	ug/L	<3.8	10.0	3.8	11/09/21 20:35	
Lithium	ug/L	<7.7	10.0	7.7	11/09/21 20:35	
Magnesium	ug/L	<31.4	50.0	31.4	11/09/21 20:35	
Manganese	ug/L	<0.74	5.0	0.74	11/09/21 20:35	
Molybdenum	ug/L	<2.2	20.0	2.2	11/09/21 20:35	
Potassium	ug/L	<146	500	146	11/09/21 20:35	
Sodium	ug/L	<254	500	254	11/09/21 20:35	

LABORATORY CONTROL SAMPLE: 3019298

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	1000	100	85-115	
Boron	ug/L	1000	935	94	85-115	
Calcium	ug/L	10000	9590	96	85-115	
Iron	ug/L	10000	9700	97	85-115	
Lead	ug/L	1000	974	97	85-115	
Lithium	ug/L	1000	855	86	85-115	
Magnesium	ug/L	10000	9930	99	85-115	
Manganese	ug/L	1000	949	95	85-115	
Molybdenum	ug/L	1000	999	100	85-115	
Potassium	ug/L	10000	9940	99	85-115	
Sodium	ug/L	10000	10100	101	85-115	

MATRIX SPIKE SAMPLE: 3019299

Parameter	Units	60384734011 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	391	1000	1410	102	70-130	
Boron	ug/L	40.2J	1000	977	94	70-130	
Calcium	ug/L	106000	10000	124000	177	70-130 M1	
Iron	ug/L	9220	10000	19300	101	70-130	
Lead	ug/L	<3.8	1000	964	96	70-130	
Lithium	ug/L	<15.3		793			

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QUALITY CONTROL DATA

Project: AMEREN RCPA

Pace Project No.: 60384734

MATRIX SPIKE SAMPLE:		3019299					
Parameter	Units	60384734011 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Magnesium	ug/L	18700	10000	27900	92	70-130	
Manganese	ug/L	219	1000	1170	95	70-130	
Molybdenum	ug/L	<2.2	1000	997	100	70-130	
Potassium	ug/L	1780	10000	11900	101	70-130	
Sodium	ug/L	15600	10000	26600	111	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:		3019300			3019301							
Parameter	Units	60384734005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Barium	ug/L	4370	1000	1000	5230	5230	86	86	70-130	0	20	
Boron	ug/L	248	1000	1000	1190	1210	94	97	70-130	2	20	
Calcium	ug/L	138000	10000	10000	144000	143000	68	58	70-130	1	20	M1
Iron	ug/L	136000	10000	10000	142000	145000	54	88	70-130	2	20	M1
Lead	ug/L	7.3J	1000	1000	969	977	96	97	70-130	1	20	
Lithium	ug/L	<76.7	1000	1000	827	824	82	82	70-130	0	20	
Magnesium	ug/L	14900	10000	10000	23200	23900	82	90	70-130	3	20	
Manganese	ug/L	350	1000	1000	1280	1310	93	97	70-130	2	20	
Molybdenum	ug/L	<2.2	1000	1000	995	1000	100	100	70-130	1	20	
Potassium	ug/L	1370	10000	10000	11500	11800	101	104	70-130	3	20	
Sodium	ug/L	9180	10000	10000	19100	19400	100	102	70-130	1	20	

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QUALITY CONTROL DATA

Project: AMEREN RCPA

Pace Project No.: 60384734

QC Batch: 770150

Analysis Method: EPA 200.7

QC Batch Method: EPA 200.7

Analysis Description: 200.7 Metals, Total

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60384734011

METHOD BLANK: 3075338

Matrix: Water

Associated Lab Samples: 60384734011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Lithium	ug/L	<7.7	10.0	7.7	02/09/22 17:40	

LABORATORY CONTROL SAMPLE: 3075339

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lithium	ug/L	1000	1010	101	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3075340 3075341

Parameter	Units	60385384001		3075341		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Lithium	ug/L	27.8	1000	1000	1050	1030	102	100	70-130	2	20

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QUALITY CONTROL DATA

Project: AMEREN RCPA

Pace Project No.: 60384734

QC Batch: 754751 Analysis Method: EPA 200.8
 QC Batch Method: EPA 200.8 Analysis Description: 200.8 MET
 Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60384734009, 60384734010, 60384734011, 60384734012, 60384734013

METHOD BLANK: 3020828 Matrix: Water

Associated Lab Samples: 60384734009, 60384734010, 60384734011, 60384734012, 60384734013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.10	1.0	0.10	11/10/21 12:24	
Arsenic	ug/L	<0.11	1.0	0.11	11/10/21 12:24	
Cadmium	ug/L	<0.062	0.50	0.062	11/10/21 12:24	
Chromium	ug/L	<0.23	1.0	0.23	11/10/21 12:24	
Selenium	ug/L	<0.18	1.0	0.18	11/10/21 12:24	

LABORATORY CONTROL SAMPLE: 3020829

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	41.8	104	85-115	
Arsenic	ug/L	40	40.1	100	85-115	
Cadmium	ug/L	40	43.2	108	85-115	
Chromium	ug/L	40	41.1	103	85-115	
Selenium	ug/L	40	40.8	102	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3020830 3020831

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60384734009 Result	Spike Conc.	Spike Conc.	Result						
Antimony	ug/L	0.15J	40	40	38.8	38.2	97	95	70-130	2	20
Arsenic	ug/L	2.7	40	40	42.7	42.6	100	100	70-130	0	20
Cadmium	ug/L	<0.062	40	40	40.2	39.8	100	99	70-130	1	20
Chromium	ug/L	0.38J	40	40	39.0	38.5	97	95	70-130	1	20
Selenium	ug/L	<0.18	40	40	39.2	39.3	98	98	70-130	0	20

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QUALITY CONTROL DATA

Project: AMEREN RCPA

Pace Project No.: 60384734

QC Batch:	756898	Analysis Method:	EPA 200.8
QC Batch Method:	EPA 200.8	Analysis Description:	200.8 MET
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60384734001, 60384734002, 60384734003, 60384734004, 60384734005, 60384734006

METHOD BLANK: 3028935 Matrix: Water
Associated Lab Samples: 60384734001, 60384734002, 60384734003, 60384734004, 60384734005, 60384734006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.10	1.0	0.10	11/18/21 17:26	
Arsenic	ug/L	<0.11	1.0	0.11	11/18/21 17:26	
Cadmium	ug/L	<0.062	0.50	0.062	11/18/21 17:26	
Chromium	ug/L	<0.23	1.0	0.23	11/18/21 17:26	
Selenium	ug/L	<0.18	1.0	0.18	11/18/21 17:26	

LABORATORY CONTROL SAMPLE: 3028936

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	41.9	105	85-115	
Arsenic	ug/L	40	41.7	104	85-115	
Cadmium	ug/L	40	44.0	110	85-115	
Chromium	ug/L	40	38.1	95	85-115	
Selenium	ug/L	40	42.9	107	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3028937 3028938

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Spike Conc.	Result	Spike Conc.	Result						
Antimony	ug/L	0.25J	40	40	44.5	42.9	111	107	70-130	4	20
Arsenic	ug/L	49.6	40	40	90.5	91.7	102	105	70-130	1	20
Cadmium	ug/L	0.55	40	40	60.7	58.9	150	146	70-130	3	20 M1
Chromium	ug/L	21.5	40	40	59.0	58.8	94	93	70-130	0	20
Selenium	ug/L	4.7	40	40	55.5	55.5	127	127	70-130	0	20

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QUALITY CONTROL DATA

Project: AMEREN RCPA

Pace Project No.: 60384734

QC Batch: 648552

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Indianapolis

Associated Lab Samples: 60384734001, 60384734002, 60384734003, 60384734004, 60384734005, 60384734006, 60384734009, 60384734010, 60384734011, 60384734012, 60384734013

METHOD BLANK: 2988277

Matrix: Water

Associated Lab Samples: 60384734001, 60384734002, 60384734003, 60384734004, 60384734005, 60384734006, 60384734009, 60384734010, 60384734011, 60384734012, 60384734013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<2.0	2.0	2.0	11/04/21 11:32	

LABORATORY CONTROL SAMPLE: 2988278

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	50	48.9	98	90-110	

SAMPLE DUPLICATE: 2988279

Parameter	Units	60384734001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	480	485	1	20	

SAMPLE DUPLICATE: 2988280

Parameter	Units	50301781001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	217	220	1	20	

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QUALITY CONTROL DATA

Project: AMEREN RCPA

Pace Project No.: 60384734

QC Batch:	753551	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60384734001, 60384734002, 60384734003, 60384734004, 60384734005, 60384734009, 60384734010, 60384734011, 60384734012, 60384734013

METHOD BLANK: 3016235 Matrix: Water

Associated Lab Samples: 60384734001, 60384734002, 60384734003, 60384734004, 60384734005, 60384734009, 60384734010, 60384734011, 60384734012, 60384734013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	11/02/21 11:20	

LABORATORY CONTROL SAMPLE: 3016236

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	994	99	80-120	

SAMPLE DUPLICATE: 3016237

Parameter	Units	60384736013 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	609	611	0	10	

SAMPLE DUPLICATE: 3016238

Parameter	Units	60384734005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	302	306	1	10	

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QUALITY CONTROL DATA

Project: AMEREN RCPA
Pace Project No.: 60384734

QC Batch: 753818	Analysis Method: SM 2540C
QC Batch Method: SM 2540C	Analysis Description: 2540C Total Dissolved Solids
	Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60384734006

METHOD BLANK: 3017179 Matrix: Water
Associated Lab Samples: 60384734006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	11/03/21 10:36	

LABORATORY CONTROL SAMPLE: 3017180

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1010	101	80-120	

SAMPLE DUPLICATE: 3017181

Parameter	Units	60384734006 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	355	356	0	10	

SAMPLE DUPLICATE: 3017182

Parameter	Units	60384736007 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	591	583	1	10	

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QUALITY CONTROL DATA

Project: AMEREN RCPA

Pace Project No.: 60384734

QC Batch: 753652 Analysis Method: EPA 300.0
 QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
 Laboratory: Pace Analytical Services - Kansas City
 Associated Lab Samples: 60384734009, 60384734010, 60384734011, 60384734012, 60384734013

METHOD BLANK: 3016612 Matrix: Water
 Associated Lab Samples: 60384734009, 60384734010, 60384734011, 60384734012, 60384734013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	11/03/21 08:10	
Fluoride	mg/L	<0.086	0.20	0.086	11/03/21 08:10	
Sulfate	mg/L	<0.42	1.0	0.42	11/03/21 08:10	

METHOD BLANK: 3019321 Matrix: Water
 Associated Lab Samples: 60384734009, 60384734010, 60384734011, 60384734012, 60384734013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.45J	1.0	0.39	11/04/21 08:04	
Fluoride	mg/L	<0.086	0.20	0.086	11/04/21 08:04	
Sulfate	mg/L	<0.42	1.0	0.42	11/04/21 08:04	

METHOD BLANK: 3020953 Matrix: Water
 Associated Lab Samples: 60384734009, 60384734010, 60384734011, 60384734012, 60384734013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.45J	1.0	0.39	11/05/21 18:11	
Fluoride	mg/L	<0.086	0.20	0.086	11/05/21 18:11	
Sulfate	mg/L	<0.42	1.0	0.42	11/05/21 18:11	

LABORATORY CONTROL SAMPLE: 3016613

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.6	93	90-110	
Fluoride	mg/L	2.5	2.2	89	90-110 L2	
Sulfate	mg/L	5	4.9	97	90-110	

LABORATORY CONTROL SAMPLE: 3019322

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	5.1	101	90-110	
Fluoride	mg/L	2.5	2.7	106	90-110	
Sulfate	mg/L	5	5.3	106	90-110	

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QUALITY CONTROL DATA

Project: AMEREN RCPA

Pace Project No.: 60384734

LABORATORY CONTROL SAMPLE: 3020954

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	109	90-110	
Sulfate	mg/L	5	5.2	105	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3016614 3016615

Parameter	Units	60384777001		3016614		3016615		% Rec Limits	RPD	Max RPD	Qual
		MS Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec				
Chloride	mg/L	180	100	100	291	292	111	112	80-120	0	15
Fluoride	mg/L	4.6	50	50	59.3	59.7	109	110	80-120	1	15
Sulfate	mg/L	767	100	500	<8.4	1240	-762	94	80-120		15 M1

MATRIX SPIKE SAMPLE: 3016616

Parameter	Units	60384736021 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	60.7	50	109	97	80-120	
Fluoride	mg/L	0.36	2.5	3.1	111	80-120	
Sulfate	mg/L	256	100	358	102	80-120	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN RCPA

Pace Project No.: 60384734

QC Batch: 754240

Analysis Method: EPA 300.0

QC Batch Method: EPA 300.0

Analysis Description: 300.0 IC Anions

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60384734001, 60384734002, 60384734003, 60384734004, 60384734005, 60384734006

METHOD BLANK: 3018842

Matrix: Water

Associated Lab Samples: 60384734001, 60384734002, 60384734003, 60384734004, 60384734005, 60384734006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	11/05/21 08:53	
Fluoride	mg/L	<0.086	0.20	0.086	11/05/21 08:53	
Sulfate	mg/L	<0.42	1.0	0.42	11/05/21 08:53	

METHOD BLANK: 3021937

Matrix: Water

Associated Lab Samples: 60384734001, 60384734002, 60384734003, 60384734004, 60384734005, 60384734006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	11/08/21 08:38	
Fluoride	mg/L	<0.086	0.20	0.086	11/08/21 08:38	
Sulfate	mg/L	<0.42	1.0	0.42	11/08/21 08:38	

METHOD BLANK: 3023023

Matrix: Water

Associated Lab Samples: 60384734001, 60384734002, 60384734003, 60384734004, 60384734005, 60384734006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	11/09/21 07:59	
Fluoride	mg/L	<0.086	0.20	0.086	11/09/21 07:59	
Sulfate	mg/L	<0.42	1.0	0.42	11/09/21 07:59	

METHOD BLANK: 3024071

Matrix: Water

Associated Lab Samples: 60384734001, 60384734002, 60384734003, 60384734004, 60384734005, 60384734006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	11/10/21 10:55	
Fluoride	mg/L	<0.086	0.20	0.086	11/10/21 10:55	
Sulfate	mg/L	<0.42	1.0	0.42	11/10/21 10:55	

LABORATORY CONTROL SAMPLE: 3018843

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	2.5	100	90-110	

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QUALITY CONTROL DATA

Project: AMEREN RCPA

Pace Project No.: 60384734

LABORATORY CONTROL SAMPLE: 3018843

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	5	4.9	98	90-110	

LABORATORY CONTROL SAMPLE: 3021938

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.9	97	90-110	
Fluoride	mg/L	2.5	2.6	104	90-110	
Sulfate	mg/L	5	5.3	106	90-110	

LABORATORY CONTROL SAMPLE: 3023024

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.8	95	90-110	
Fluoride	mg/L	2.5	2.5	101	90-110	
Sulfate	mg/L	5	5.1	103	90-110	

LABORATORY CONTROL SAMPLE: 3024072

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	2.5	99	90-110	
Sulfate	mg/L	5	5.3	105	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3018844 3018845

Parameter	Units	60384688029		MS		MSD		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result						
Chloride	mg/L	185	100	100	100	306	301	117	112	80-120	1	15	
Fluoride	mg/L	0.92J	12.5	12.5	12.5	12.6	12.7	93	95	80-120	1	15	
Sulfate	mg/L	37.1	25	25	25	61.4	61.7	95	96	80-120	0	15	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3018846 3018847

Parameter	Units	60384734005		MS		MSD		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result						
Chloride	mg/L	3.2	5	5	5	7.6	7.6	88	88	80-120	0	15	
Fluoride	mg/L	0.27	2.5	2.5	2.5	2.6	2.6	93	93	80-120	0	15	
Sulfate	mg/L	28.7	25	25	25	58.7	57.8	120	116	80-120	1	15	

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REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA

Pace Project No.: 60384734

Sample: R-MW-B1 **Lab ID: 60384734001** Collected: 10/27/21 15:36 Received: 10/30/21 04:25 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	0.307 ± 0.467 (0.804) C:NA T:104%	pCi/L	11/22/21 13:39	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	1.59 ± 0.520 (0.682) C:68% T:95%	pCi/L	11/19/21 14:39	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA

Pace Project No.: 60384734

Sample: R-MW-3 **Lab ID: 60384734002** Collected: 10/27/21 13:27 Received: 10/30/21 04:25 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	0.0584 ± 0.413 (0.823) C:NA T:98%	pCi/L	11/22/21 13:39	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	1.34 ± 0.540 (0.840) C:62% T:89%	pCi/L	11/19/21 14:39	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA

Pace Project No.: 60384734

Sample: R-MW-4 **Lab ID: 60384734003** Collected: 10/27/21 15:41 Received: 10/30/21 04:25 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	0.265 ± 0.452 (0.797) C:NA T:95%	pCi/L	11/22/21 13:39	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.864 ± 0.445 (0.788) C:71% T:91%	pCi/L	11/19/21 14:40	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA

Pace Project No.: 60384734

Sample: R-MW-5 **Lab ID: 60384734004** Collected: 10/27/21 16:20 Received: 10/30/21 04:25 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	0.0661 ± 0.430 (0.866) C:NA T:99%	pCi/L	11/22/21 13:39	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.803 ± 0.419 (0.738) C:69% T:92%	pCi/L	11/19/21 14:40	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA

Pace Project No.: 60384734

Sample: R-MW-6 **Lab ID: 60384734005** Collected: 10/27/21 10:07 Received: 10/30/21 04:25 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 ± 0.299 (0.633) C:NA T:95%	pCi/L	11/22/21 13:11	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.527 ± 0.352 (0.659) C:67% T:91%	pCi/L	11/19/21 14:36	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA

Pace Project No.: 60384734

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: R-MW-7(r) Lab ID: 60384734006 Collected: 10/27/21 14:15 Received: 10/30/21 04:25 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.259 ± 0.402 (0.696) C:NA T:91%	pCi/L	11/22/21 13:39	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.644 ± 0.412 (0.773) C:67% T:88%	pCi/L	11/19/21 14:39	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA

Pace Project No.: 60384734

Sample: R-MS-1 **Lab ID: 60384734007** Collected: 10/27/21 10:07 Received: 10/30/21 04:25 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	113.27 %REC ± NA (NA) C:NA T:NA	pCi/L	11/22/21 13:11	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	110.58 %REC ± NA (NA) C:NA T:NA	pCi/L	11/19/21 14:36	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA

Pace Project No.: 60384734

Sample: R-MSD-1 **Lab ID: 60384734008** Collected: 10/27/21 10:07 Received: 10/30/21 04:25 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	99.70 %REC 12.75 RPD ± NA (NA) C:NA T:NA	pCi/L	11/22/21 13:11	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	101.01 %REC 9.04 RPD ± NA (NA) C:NA T:NA	pCi/L	11/19/21 14:36	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA

Pace Project No.: 60384734

Sample: R-MW-1 **Lab ID: 60384734009** Collected: 10/26/21 11:02 Received: 10/27/21 04:05 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	0.160 ± 0.647 (1.13) C:NA T:63%	pCi/L	01/09/22 13:07	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.572 ± 0.517 (1.05) C:52% T:83%	pCi/L	01/11/22 11:35	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA

Pace Project No.: 60384734

Sample: R-MW-2 **Lab ID: 60384734010** Collected: 10/26/21 14:45 Received: 10/27/21 04:05 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	0.493 ± 0.746 (1.18) C:NA T:79%	pCi/L	01/09/22 13:07	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	-0.218 ± 1.92 (4.38) C:63% T:61%	pCi/L	01/11/22 14:48	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA

Pace Project No.: 60384734

Sample: R-MW-B2 **Lab ID: 60384734011** Collected: 10/25/21 16:02 Received: 10/27/21 04:05 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	0.000 ± 0.457 (0.819) C:NA T:96%	pCi/L	01/09/22 13:07	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.324 ± 0.798 (1.76) C:51% T:84%	pCi/L	01/11/22 11:38	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA

Pace Project No.: 60384734

Sample: R-DUP-1 **Lab ID: 60384734012** Collected: 10/26/21 00:00 Received: 10/27/21 04:05 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	0.282 ± 0.576 (0.947) C:NA T:94%	pCi/L	01/09/22 13:31	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	-0.189 ± 1.79 (4.14) C:65% T:48%	pCi/L	01/11/22 14:48	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA

Pace Project No.: 60384734

Sample: R-FB-1 **Lab ID: 60384734013** Collected: 10/26/21 11:30 Received: 10/27/21 04:05 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	0.000 ± 0.316 (0.586) C:NA T:99%	pCi/L	01/09/22 13:31	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	-0.471 ± 0.570 (1.39) C:50% T:86%	pCi/L	01/11/22 11:38	15262-20-1	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN RCPA

Pace Project No.: 60384734

QC Batch: 472458

Analysis Method: EPA 904.0

QC Batch Method: EPA 904.0

Analysis Description: 904.0 Radium 228

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 60384734001, 60384734002, 60384734003, 60384734004, 60384734005, 60384734006, 60384734007, 60384734008

METHOD BLANK: 2280944

Matrix: Water

Associated Lab Samples: 60384734001, 60384734002, 60384734003, 60384734004, 60384734005, 60384734006, 60384734007, 60384734008

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.0658 ± 0.282 (0.644) C:68% T:96%	pCi/L	11/19/21 14:35	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN RCPA

Pace Project No.: 60384734

QC Batch: 476806

Analysis Method: EPA 903.1

QC Batch Method: EPA 903.1

Analysis Description: 903.1 Radium-226

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 60384734009, 60384734010, 60384734011, 60384734012, 60384734013

METHOD BLANK: 2303566

Matrix: Water

Associated Lab Samples: 60384734009, 60384734010, 60384734011, 60384734012, 60384734013

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0349 ± 0.274 (0.492) C:NA T:95%	pCi/L	01/09/22 13:07	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN RCPA

Pace Project No.: 60384734

QC Batch: 472457

Analysis Method: EPA 903.1

QC Batch Method: EPA 903.1

Analysis Description: 903.1 Radium-226

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 60384734001, 60384734002, 60384734003, 60384734004, 60384734005, 60384734006, 60384734007, 60384734008

METHOD BLANK: 2280942

Matrix: Water

Associated Lab Samples: 60384734001, 60384734002, 60384734003, 60384734004, 60384734005, 60384734006, 60384734007, 60384734008

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.194 ± 0.357 (0.636) C:NA T:97%	pCi/L	11/22/21 13:11	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN RCPA

Pace Project No.: 60384734

QC Batch: 476808

Analysis Method: EPA 904.0

QC Batch Method: EPA 904.0

Analysis Description: 904.0 Radium 228

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 60384734009, 60384734010, 60384734011, 60384734012, 60384734013

METHOD BLANK: 2303572

Matrix: Water

Associated Lab Samples: 60384734009, 60384734010, 60384734011, 60384734012, 60384734013

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.315 ± 0.344 (0.714) C:57% T:91%	pCi/L	01/11/22 11:36	

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QUALIFIERS

Project: AMEREN RCPA

Pace Project No.: 60384734

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.

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

H1 Analysis conducted outside the EPA method holding time.

L2 Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN RCPA
Pace Project No.: 60384734

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60384734001	R-MW-B1	EPA 200.7	754371	EPA 200.7	754544
60384734002	R-MW-3	EPA 200.7	754371	EPA 200.7	754544
60384734003	R-MW-4	EPA 200.7	754371	EPA 200.7	754544
60384734004	R-MW-5	EPA 200.7	754371	EPA 200.7	754544
60384734005	R-MW-6	EPA 200.7	754371	EPA 200.7	754544
60384734006	R-MW-7(r)	EPA 200.7	754371	EPA 200.7	754544
60384734009	R-MW-1	EPA 200.7	754371	EPA 200.7	754544
60384734010	R-MW-2	EPA 200.7	754371	EPA 200.7	754544
60384734011	R-MW-B2	EPA 200.7	754371	EPA 200.7	754544
60384734011	R-MW-B2	EPA 200.7	770150	EPA 200.7	770289
60384734012	R-DUP-1	EPA 200.7	754371	EPA 200.7	754544
60384734013	R-FB-1	EPA 200.7	754371	EPA 200.7	754544
60384734001	R-MW-B1	EPA 200.8	756898	EPA 200.8	757071
60384734002	R-MW-3	EPA 200.8	756898	EPA 200.8	757071
60384734003	R-MW-4	EPA 200.8	756898	EPA 200.8	757071
60384734004	R-MW-5	EPA 200.8	756898	EPA 200.8	757071
60384734005	R-MW-6	EPA 200.8	756898	EPA 200.8	757071
60384734006	R-MW-7(r)	EPA 200.8	756898	EPA 200.8	757071
60384734009	R-MW-1	EPA 200.8	754751	EPA 200.8	754851
60384734010	R-MW-2	EPA 200.8	754751	EPA 200.8	754851
60384734011	R-MW-B2	EPA 200.8	754751	EPA 200.8	754851
60384734012	R-DUP-1	EPA 200.8	754751	EPA 200.8	754851
60384734013	R-FB-1	EPA 200.8	754751	EPA 200.8	754851
60384734001	R-MW-B1	EPA 903.1	472457		
60384734002	R-MW-3	EPA 903.1	472457		
60384734003	R-MW-4	EPA 903.1	472457		
60384734004	R-MW-5	EPA 903.1	472457		
60384734005	R-MW-6	EPA 903.1	472457		
60384734006	R-MW-7(r)	EPA 903.1	472457		
60384734007	R-MS-1	EPA 903.1	472457		
60384734008	R-MSD-1	EPA 903.1	472457		
60384734009	R-MW-1	EPA 903.1	476806		
60384734010	R-MW-2	EPA 903.1	476806		
60384734011	R-MW-B2	EPA 903.1	476806		
60384734012	R-DUP-1	EPA 903.1	476806		
60384734013	R-FB-1	EPA 903.1	476806		
60384734001	R-MW-B1	EPA 904.0	472458		
60384734002	R-MW-3	EPA 904.0	472458		
60384734003	R-MW-4	EPA 904.0	472458		
60384734004	R-MW-5	EPA 904.0	472458		
60384734005	R-MW-6	EPA 904.0	472458		
60384734006	R-MW-7(r)	EPA 904.0	472458		
60384734007	R-MS-1	EPA 904.0	472458		
60384734008	R-MSD-1	EPA 904.0	472458		
60384734009	R-MW-1	EPA 904.0	476808		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN RCPA

Pace Project No.: 60384734

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60384734010	R-MW-2	EPA 904.0	476808		
60384734011	R-MW-B2	EPA 904.0	476808		
60384734012	R-DUP-1	EPA 904.0	476808		
60384734013	R-FB-1	EPA 904.0	476808		
60384734001	R-MW-B1	SM 2320B	648552		
60384734002	R-MW-3	SM 2320B	648552		
60384734003	R-MW-4	SM 2320B	648552		
60384734004	R-MW-5	SM 2320B	648552		
60384734005	R-MW-6	SM 2320B	648552		
60384734006	R-MW-7(r)	SM 2320B	648552		
60384734009	R-MW-1	SM 2320B	648552		
60384734010	R-MW-2	SM 2320B	648552		
60384734011	R-MW-B2	SM 2320B	648552		
60384734012	R-DUP-1	SM 2320B	648552		
60384734013	R-FB-1	SM 2320B	648552		
60384734001	R-MW-B1	SM 2540C	753551		
60384734002	R-MW-3	SM 2540C	753551		
60384734003	R-MW-4	SM 2540C	753551		
60384734004	R-MW-5	SM 2540C	753551		
60384734005	R-MW-6	SM 2540C	753551		
60384734006	R-MW-7(r)	SM 2540C	753818		
60384734009	R-MW-1	SM 2540C	753551		
60384734010	R-MW-2	SM 2540C	753551		
60384734011	R-MW-B2	SM 2540C	753551		
60384734012	R-DUP-1	SM 2540C	753551		
60384734013	R-FB-1	SM 2540C	753551		
60384734001	R-MW-B1	EPA 300.0	754240		
60384734002	R-MW-3	EPA 300.0	754240		
60384734003	R-MW-4	EPA 300.0	754240		
60384734004	R-MW-5	EPA 300.0	754240		
60384734005	R-MW-6	EPA 300.0	754240		
60384734006	R-MW-7(r)	EPA 300.0	754240		
60384734009	R-MW-1	EPA 300.0	753652		
60384734010	R-MW-2	EPA 300.0	753652		
60384734011	R-MW-B2	EPA 300.0	753652		
60384734012	R-DUP-1	EPA 300.0	753652		
60384734013	R-FB-1	EPA 300.0	753652		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60384734



Client Name: Colder

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: T-206 Type of Ice: Wet Blue None

Cooler Temperature (°C): As-read 3.1 Corr. Factor 0.2 Corrected 2.9

Date and initials of person examining contents: 10/30/21 CC

Temperature should be above freezing to 6°C

Chain of Custody present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<p><i>All coolers out of temp held only Radion</i></p> <p><i>u 10/30/21</i></p> <p><i>Received 2 BPA 1BP10, 1BP30 for Ameron ROP</i></p> <p><i>Sample ID R-MSD-1 taken 10/30/21</i></p> <p><i>@10:27</i></p>
Chain of Custody relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples arrived within holding time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Short Hold Time analyses (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Rush Turn Around Time requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Sufficient volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Correct containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Pace containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Filtered volume received for dissolved tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Sample labels match COC: Date / time / ID / analyses	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples contain multiple phases? Matrix: <u>WT</u>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Containers requiring pH preservation in compliance? (HNO ₃ , H ₂ SO ₄ , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) LOT# <u>603222</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<p>List sample IDs, volumes, lot #'s of preservative and the date/time added.</p>
Cyanide water sample checks:		
Lead acetate strip turns dark? (Record only)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Potassium iodide test strip turns blue/purple? (Preserve)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Headspace in VOA vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Samples from USDA Regulated Area: State:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

REVIEWED
By jchurch at 6:40 pm, 10/30/21

Project Manager Review _____ Date: _____



CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:	Page: 1 of 1
Company: Goldier Associates	Report To: Jeffrey Ingram	Attention:	
Address: 13515 Barrett Parkway Drive, Ste 260 Ballwin, MO 63021	Copy To: Ryan Feldmann / Eric Schneider	Company Name:	
Email To: Jeffrey.Ingram@goldier.com	Purchase Order No.:	Address:	
Phone: 636-724-9191 Fax: 636-724-9323	Project Name: Ameren RCPA Rush Island Energy Center	Site Location:	NPDES <input type="checkbox"/> GROUND WATER <input checked="" type="checkbox"/> DRINKING WATER <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER <input type="checkbox"/>
Requested Due Date/TAT: Standard	Project Number: 153-140603.0002A (COC #5)	State: MO	
REGULATORY AGENCY			

ITEM #	Valid Matrix Codes MATRIX CODE DRINKING WATER DW WASTE WATER WW PRODUCT P SOILSOLID SL WVP AR OT TS	COLLECTED		SAMPLE TYPE (G=RAB C=COMP)	MATRIX CODE (see valid codes to left)	# OF CONTAINERS	Requested Analysis Filtered (Y/N)							Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)									
		COMPOSITE START	COMPOSITE END/GRAB				DATE	TIME	DATE	TIME	Y/N	Chloride/Fluoride/Sulfate	App III and Cat/An Metals					Alkalinity	TDS	Appendix IV Metals *	Radium 226	Radium 228	Residual Chlorine (Y/N)			
1						4																				
2	R-MS-1			10/27/11	1507	1																				
3	R-MW-B1				1536	1																				
4	R-MW-3				1327	1																				
5	R-MW-4				1541	1																				
6	R-MW-5				1620	1																				
7	R-MW-6				1607	1																				
8	R-MW-7(r)				1415	1																				

Section D Required Client Information: SAMPLE ID (A-Z, 0-9 / -) Sample IDs MUST BE UNIQUE	RELINQUISHED BY / AFFILIATION <i>Sierra / Goldier</i>	DATE 10/28/11	TIME 1530	ACCEPTED BY / AFFILIATION <i>C. Clark Pace</i>	DATE 10/30 0425	TIME 31	TEMPERATURE 0.8
ADDITIONAL COMMENTS							
SAMPLER NAME AND SIGNATURE PRINT Name of SAMPLER: <i>Sierra Shields</i> SIGNATURE of SAMPLER: <i>[Signature]</i>							
						DATE Signed (MM/DD/YY): 10/29/11	

Pace Project No./ Lab I.D. 60384734			
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Sample Condition Upon Receipt
ESI Tech Spec Client

WO#: 60384734



60384734

Client Name: Golden

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: T-299 Type of Ice: Wet Blue None

Cooler Temperature (°C): As-read ^{3.1, 2.9} 15.5, 16.5 Corr. Factor -0.2 Corrected ^{3.3, 3.1} 15.3, 16.3

Date and initials of person examining contents: 12/1/21
Jan KWS

Temperature should be above freezing to 6°C

Chain of Custody present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Chain of Custody relinquished:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples arrived within holding time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Short Hold Time analyses (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Rush Turn Around Time requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Sufficient volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Correct containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Pace containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Filtered volume received for dissolved tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Sample labels match COC: Date / time / ID / analyses	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples contain multiple phases? Matrix: <u>Water</u>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Containers requiring pH preservation in compliance? (HNO ₃ , H ₂ SO ₄ , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> 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)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Potassium iodide test strip turns blue/purple? (Preserve)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Headspace in VOA vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Samples from USDA Regulated Area: State:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> 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: REVIEWED By jchurc at 7:25 pm, 11/1/21 Date: _____

Temp Log: Record start and finish times when unpacking cooler, if >20 min, recheck sample temps.	
Start: <u>1550</u>	Start:
End: <u>1405</u>	End:
Temp: <u>4.8</u>	Temp:



CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A Required Client Information:		Section B Report To: Jeffrey Ingram		Section C Invoice Information:	
Company: Golder Associates	Address: 13515 Barrett Parkway Drive, Ste 260	Report To: Ryan Feldmann / Eric Schneider	Company Name: _____	Attention: _____	Page: <u>1</u> of <u>1</u>
Email To: Jeffrey_Ingram@golder.com	Ballwin, MO 63021	Copy To: _____	Address: _____	Company Name: _____	
Phone: 636-724-9191	Jeffrey_Ingram@golder.com	Purchase Order No.: _____	Pace Quote Reference: _____	NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER <input type="checkbox"/>	
Requested Due Date/TAT: Standard	Project Name: Ameren RCPA Rush Island Energy Center	Project Name: Ameren RCPA Rush Island Energy Center	Pace Project Manager: Jamie Church	UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER <input type="checkbox"/>	
	Project Number: 153-140603.0002A (COC #5)	Pace Profile #: 9285	Site Location: MO	STATE: _____	

ITEM #	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	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	MATRIX CODE (see valid codes to left)	# OF CONTAINERS	Preservatives Unpreserved H ₂ SO ₄ HNO ₃ HCl NaOH Na ₂ S ₂ O ₃ Methanol Other	Requested Analysis Filtered (Y/N)	Temp in °C	Received on	Custody Sealed	Cooler (Y/N)	Samples Intact (Y/N)
			COMPOSITE START	COMPOSITE END/GRAB										
1	R-MW-1				G	WT	4		Y					
2	R-MW-2			10-26-21	G	WT	4		Y					
3	R-MW-3			10-26-21	G	WT	4		Y					
4	R-MW-4				G	WT								
5	R-MW-5				G	WT								
6	R-MW-6				G	WT								
7	R-MW-7 (r)				G	WT								
8	R-MW-B1				G	WT								
9	R-MW-B2			10-25-21	G	WT	4		Y					
10	R-DUP-1			10-26-21	G	WT	4		Y					
11	R-FB-1			10-26-21	G	WT	4		Y					
12	R-MS-1				G	WT								

60584734
Pace Project No./ Lab I.D.
2(87N) (87W) (87S) N
↓
2(87N) (87W) (87S) N
↓

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Brandon Talbot Golder	10-26-2021		<i>[Signature]</i>	10/26/2021	04:05	3.1 Y Y Y Y Y Y Y Y Y Y
SAMPLER NAME AND SIGNATURE							
PRINT Name of SAMPLER: <i>Brandon Talbot</i>				DATE Signed (MM/DD/YY): 10/26/2021			
SIGNATURE of SAMPLER: <i>[Signature]</i>							



MEMORANDUM

DATE January 12, 2023

Project No. 153140604

TO Project File
WSP USA Inc.

CC Amanda Derhake, Jeff Ingram

FROM Rahel Pommerenke

EMAIL rahel.pommerenke@wsp.com

DATA VALIDATION SUMMARY, RUSH ISLAND ENERGY CENTER – RCPA – DETECTION MONITORING AND ASSESSMENT MONITORING - DATA PACKAGE 60384734REV1

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 MDL and the PQL the results were recorded at the detection value and qualified as estimates (J).
- When a compound was analyzed outside of hold time, the results were qualified as estimates (J).
- 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 duplicate criterion was not met, the associated sample result was qualified as an estimate (J for detects, UJ for non-detects).
- When matrix spike/matrix spike duplicate (MS/MSD) criterion was not met, the associated sample result was qualified as an estimate (J, J+ for estimates biased high, and J- for estimates biased low).

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Company Name: WSP USA Inc.
 Project Name: Ameren - RIEC - RCPA
 Reviewer: R. Pommerenke

Project Manager: J. Ingram
 Project Number: 153140604
 Validation Date: 1/12/2023

Laboratory: Pace Analytical

SDG #: 60384734rev1

Analytical Method (type and no.): EPA 200.7/200.8 (Total Metals); SM2320B (Alkalinity); SM2540C (TDS); EPA 300.0 (Anions); EPA 903.1/904.0 (Radium 226/228)

Matrix: Air Soil/Sed. Water Waste

Sample Names R-MW-B1, R-MW-3, R-MW-4, R-MW-5, R-MW-6, R-MW-7(r), R-MS-1, R-MSD-1, R-MW-1, R-MW-2, R-MW-B2, R-DUP-1, R-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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>10/25/2021 - 10/27/2021</u>
b) Sampling team indicated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>SSS/BTT/ETF</u>
c) Sample location noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
d) Sample depth indicated (Soils)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u></u>
e) Sample type indicated (grab/composite)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Grab</u>
f) Field QC noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>See Notes</u>
g) Field parameters collected (note types)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>pH, Sp.Cond, ORP, Temp, DO, Turb</u>
h) Field Calibration within control limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
i) Notations of unacceptable field conditions/performances from field logs or field notes?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u></u>
j) Does the laboratory narrative indicate deficiencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u></u>

Note Deficiencies: _____

Chain-of-Custody (COC)	YES	NO	NA	COMMENTS
a) Was the COC properly completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
b) Was the COC signed by both field and laboratory personnel?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
c) Were samples received in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>See Notes</u>

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

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Blanks	YES	NO	NA	COMMENTS
a) Were analytes detected in the method blank(s)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See Notes
b) Were analytes detected in the field blank(s)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See Notes
c) Were analytes detected in the equipment blank(s)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
d) Were analytes detected in the trip blank(s)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Laboratory Control Sample (LCS)	YES	NO	NA	COMMENTS
a) Was a LCS analyzed once per SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
b) Were the proper analytes included in the LCS?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
c) Was the LCS accuracy criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Notes

Duplicates	YES	NO	NA	COMMENTS
a) Were field duplicates collected (note original and duplicate sample names)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
b) Were field dup. precision criteria met (note RPD)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Notes
c) Were lab duplicates analyzed (note original and duplicate samples)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
d) Were lab dup. precision criteria met (note RPD)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Max RPD: 1% [<20%]

Blind Standards	YES	NO	NA	COMMENTS
a) Was a blind standard used (indicate name, analytes included and concentrations)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
b) Was the %D within control limits?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

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

Comments/Notes:

Lithium was reanalyzed at a lower dilution to meet action limit.

The Sample Condition Upon Receipt form indicated that coolers received outside of temperature only contained radium samples, no qualification necessary.

TDS was analyzed outside of hold time in sample R-MW-B2.

Calcium, lithium, chloride, and sulfate analyzed at a dilution in multiple samples. No qualification necessary.

QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

Comments/Notes:

Blanks:

3019321/3020953: Chloride (0.45J/0.45J). Associated with samples -009 through -013. Results >RL and 10x blank not qualified. Results < RL were reported at the RL and qualified as estimates.

R-FB-1 @ R-MW-1: Boron (16.2J), alkalinity (2.0), chloride (0.45 J). Sample results >RL and 10x blank, no qualification necessary.

LCS:

3016613: LCS % recovery low for fluoride. Associated with samples -009 through -013. LCS recovery was within the EPA guidance recovery range (70%-130%). No qualification was deemed necessary.

R-DUP-1 @ R-MW-2: Dup RPD for chloride (67.1%) exceeds limit (20%).

Laboratory analyzed sample duplicates for alkalinity and TDS.

MS/MSD:

3019299: MS % recovery high for calcium. Associated with sample -011. Only 1 QC indicator out, no qualification necessary.

3019300/3019301: MS % recovery low for iron, only 1 QC indicator out, no qualification necessary. MS/MSD % recovery low for calcium. Associated with sample -005.

3028937/3028938: MS/MSD % recovery high for cadmium. Associated with sample -005.

3016614/3016615: MS % recovery low for sulfate, RPD not calculated. MS/MSD performed on unrelated sample, no qualification necessary.

QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason
R-MW-B2	TDS	384	J	Analyzed outside of hold time
R-FB-1	Chloride	1.0	U	Detected in MB, RL > result > MDL
R-MW-2	"	21.2	J	Dup RPD exceeds limit
R-DUP-1	"	42.6	J	"
R-MW-6	Calcium	138000	J-	MS/MSD % recovery low
R-MW-6	Cadmium	0.55	J+	MS/MSD % recovery high

Signature:  Date: 1/12/2023

March 01, 2022

Jeffrey Ingram
Golder Associates
701 Emerson Road, Suite 250
Saint Louis, MO 63141

RE: Project: AMEREN RCPA-CA
Pace Project No.: 60384736

Dear Jeffrey Ingram:

Enclosed are the analytical results for sample(s) received by the laboratory between October 27, 2021 and October 30, 2021. 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 - Indianapolis
- Pace Analytical Services - Kansas City
- Pace Analytical Services - Greensburg

REV-1, 3/1/21: Lithium reanalyzed at lower dilution to meet action limit.

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: Ryan Feldmann, Golder
Mark Haddock, Golder Associates
Eric Schneider, Golder Associates
Brendan Talbert, Golder Associates



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Pace Analytical Services Pennsylvania

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601

ANAB DOD-ELAP Rad Accreditation #: L2417

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 04222CA

Colorado Certification #: PA01547

Connecticut Certification #: PH-0694

Delaware Certification

EPA Region 4 DW Rad

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Florida: Cert E871149 SEKS WET

Guam Certification

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas/TNI Certification #: E-10358

Kentucky Certification #: KY90133

KY WW Permit #: KY0098221

KY WW Permit #: KY0000221

Louisiana DHH/TNI Certification #: LA180012

Louisiana DEQ/TNI Certification #: 4086

Maine Certification #: 2017020

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 #: PA014572018-1

New Hampshire/TNI Certification #: 297617

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 #: PA200002-010

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: 02867

Texas/TNI Certification #: T104704188-17-3

Utah/TNI Certification #: PA014572017-9

USDA Soil Permit #: P330-17-00091

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

Wyoming Certification #: 8TMS-L

Pace Analytical Services Indianapolis

7726 Moller Road, Indianapolis, IN 46268

Illinois Accreditation #: 200074

Indiana Drinking Water Laboratory #: C-49-06

Kansas/TNI Certification #: E-10177

Kentucky UST Agency Interest #: 80226

Kentucky WW Laboratory ID #: 98019

Michigan Drinking Water Laboratory #9050

Ohio VAP Certified Laboratory #: CL0065

Oklahoma Laboratory #: 9204

Texas Certification #: T104704355

Wisconsin Laboratory #: 999788130

USDA Soil Permit #: P330-19-00257

Pace Analytical Services Kansas

9608 Loiret Boulevard, Lenexa, KS 66219

Missouri Inorganic Drinking Water Certification #: 10090

Arkansas Drinking Water

Arkansas Certification #: 20-020-0

Arkansas Drinking Water

Illinois Certification #: 2000302021-3

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212020-2

Oklahoma Certification #: 9205/9935

Florida: Cert E871149 SEKS WET

Texas Certification #: T104704407-19-12

Utah Certification #: KS000212019-9

Illinois Certification #: 004592

Kansas Field Laboratory Accreditation: # E-92587

Missouri SEKS Micro Certification: 10070

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60384736001	R-P05S	Water	10/28/21 12:40	10/30/21 04:25
60384736002	R-P10S	Water	10/27/21 12:54	10/30/21 04:25
60384736003	R-P19S	Water	10/27/21 12:30	10/30/21 04:25
60384736004	R-P-19I	Water	10/27/21 13:40	10/30/21 04:25
60384736005	R-P19D	Water	10/27/21 12:18	10/30/21 04:25
60384736006	R-P22S	Water	10/27/21 10:40	10/30/21 04:25
60384736007	R-P22D	Water	10/27/21 10:05	10/30/21 04:25
60384736008	R-P29S	Water	10/29/21 13:15	10/30/21 04:25
60384736009	R-P30S	Water	10/29/21 11:10	10/30/21 04:25
60384736010	R-P31S	Water	10/28/21 11:45	10/30/21 04:25
60384736011	R-CA-MS-1	Water	10/27/21 10:05	10/30/21 04:25
60384736012	R-CA-MSD-1	Water	10/27/21 10:05	10/30/21 04:25
60384736013	R-P16S	Water	10/26/21 11:51	10/27/21 04:05
60384736014	R-P17S	Water	10/26/21 13:30	10/27/21 04:05
60384736015	R-P17I	Water	10/26/21 13:25	10/27/21 04:05
60384736016	R-P17D	Water	10/26/21 14:50	10/27/21 04:05
60384736017	R-P21S	Water	10/26/21 15:15	10/27/21 04:05
60384736018	R-P21I	Water	10/26/21 13:35	10/27/21 04:05
60384736019	R-P21D	Water	10/26/21 12:40	10/27/21 04:05
60384736020	R-P29D	Water	10/25/21 14:51	10/27/21 04:05
60384736021	R-CA-DUP-1	Water	10/25/21 00:00	10/27/21 04:05
60384736022	R-CA-DUP-2	Water	10/25/21 00:00	10/27/21 04:05
60384736023	R-CA-FB-1	Water	10/26/21 12:15	10/27/21 04:05
60384736024	R-CA-FB-2	Water	10/26/21 13:00	10/27/21 04:05

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: AMEREN RCPA-CA
Pace Project No.: 60384736

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60384736001	R-P05S	EPA 200.7	MA1	11	PASI-K
		EPA 200.8	JGP	5	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	ALH	3	PASI-K
60384736002	R-P10S	EPA 200.7	MA1	11	PASI-K
		EPA 200.8	JGP	5	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	ALH	3	PASI-K
60384736003	R-P19S	EPA 200.7	MA1	11	PASI-K
		EPA 200.8	JGP	5	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	ALH	3	PASI-K
60384736004	R-P-19I	EPA 200.7	MA1	11	PASI-K
		EPA 200.8	JGP	5	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	ALH	3	PASI-K
60384736005	R-P19D	EPA 200.7	MA1	11	PASI-K
		EPA 200.8	JGP	5	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	ALH	3	PASI-K
60384736006	R-P22S	EPA 200.7	MA1	11	PASI-K
		EPA 200.8	JGP	5	PASI-K

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60384736007	R-P22D	EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	ALH	3	PASI-K
		EPA 200.7	MA1	11	PASI-K
		EPA 200.8	JGP	5	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		SM 2320B	SWJ	1	PASI-I
60384736008	R-P29S	SM 2540C	BLA	1	PASI-K
		EPA 300.0	ALH	3	PASI-K
		EPA 200.7	MA1	11	PASI-K
		EPA 200.8	JGP	5	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	ALH	3	PASI-K
		EPA 200.7	MA1	11	PASI-K
60384736009	R-P30S	EPA 200.8	JGP	5	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	ALH	3	PASI-K
		EPA 200.7	MA1	11	PASI-K
		EPA 200.8	JGP	5	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
60384736010	R-P31S	SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	ALH	3	PASI-K
		EPA 200.7	MA1	11	PASI-K
		EPA 200.8	JGP	5	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	ALH	3	PASI-K
60384736011	R-CA-MS-1	EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
60384736012	R-CA-MSD-1	EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60384736013	R-P16S	EPA 200.7	JLH, MRV	11	PASI-K
		EPA 200.8	JGP	5	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	ALH	3	PASI-K
60384736014	R-P17S	EPA 200.7	JLH, MRV	11	PASI-K
		EPA 200.8	JGP	5	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	ALH	3	PASI-K
60384736015	R-P17I	EPA 200.7	MRV	11	PASI-K
		EPA 200.8	JGP	5	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	ALH	3	PASI-K
60384736016	R-P17D	EPA 200.7	MRV	11	PASI-K
		EPA 200.8	JGP	5	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	ALH	3	PASI-K
60384736017	R-P21S	EPA 200.7	JLH, MRV	11	PASI-K
		EPA 200.8	JGP	5	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	ALH	3	PASI-K
60384736018	R-P21I	EPA 200.7	MRV	11	PASI-K
		EPA 200.8	JGP	5	PASI-K

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60384736019	R-P21D	EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	ALH	3	PASI-K
		EPA 200.7	MRV	11	PASI-K
		EPA 200.8	JGP	5	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		SM 2320B	SWJ	1	PASI-I
60384736020	R-P29D	SM 2540C	BLA	1	PASI-K
		EPA 300.0	ALH	3	PASI-K
		EPA 200.7	MRV	11	PASI-K
		EPA 200.8	JGP	5	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	ALH	3	PASI-K
		EPA 200.7	MRV	11	PASI-K
60384736021	R-CA-DUP-1	EPA 200.8	JGP	5	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	ALH	3	PASI-K
		EPA 200.7	MRV	11	PASI-K
		EPA 200.8	JGP	5	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
60384736022	R-CA-DUP-2	SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	ALH	3	PASI-K
		EPA 200.7	MRV	11	PASI-K
		EPA 200.8	JGP	5	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	ALH	3	PASI-K
60384736023	R-CA-FB-1	EPA 200.7	MRV	11	PASI-K
		EPA 200.8	JGP	5	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60384736024	R-CA-FB-2	SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	ALH	3	PASI-K
		EPA 200.7	MRV	11	PASI-K
		EPA 200.8	JGP	5	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		SM 2320B	SWJ	1	PASI-I
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	ALH	3	PASI-K

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

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-P05S **Lab ID: 60384736001** Collected: 10/28/21 12:40 Received: 10/30/21 04:25 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	184	ug/L	5.0	1.8	1	11/16/21 15:51	11/19/21 11:16	7440-39-3	
Boron	4420	ug/L	100	8.6	1	11/16/21 15:51	11/19/21 11:16	7440-42-8	
Calcium	65500	ug/L	200	75.4	1	11/16/21 15:51	11/19/21 11:16	7440-70-2	
Iron	10100	ug/L	50.0	21.4	1	11/16/21 15:51	11/19/21 11:16	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/16/21 15:51	11/19/21 11:16	7439-92-1	
Lithium	15.4	ug/L	10.0	7.7	1	11/16/21 15:51	11/19/21 11:16	7439-93-2	
Magnesium	21800	ug/L	50.0	31.4	1	11/16/21 15:51	11/19/21 11:16	7439-95-4	
Manganese	308	ug/L	5.0	0.74	1	11/16/21 15:51	11/19/21 11:16	7439-96-5	
Molybdenum	11.8J	ug/L	20.0	2.2	1	11/16/21 15:51	11/19/21 11:16	7439-98-7	
Potassium	5730	ug/L	500	146	1	11/16/21 15:51	11/19/21 11:16	7440-09-7	
Sodium	29500	ug/L	500	254	1	11/16/21 15:51	11/19/21 11:16	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.10	ug/L	1.0	0.10	1	11/16/21 15:51	11/18/21 16:46	7440-36-0	
Arsenic	180	ug/L	1.0	0.11	1	11/16/21 15:51	11/18/21 16:46	7440-38-2	
Cadmium	<0.062	ug/L	0.50	0.062	1	11/16/21 15:51	11/18/21 16:46	7440-43-9	
Chromium	0.39J	ug/L	1.0	0.23	1	11/16/21 15:51	11/18/21 16:46	7440-47-3	
Selenium	0.21J	ug/L	1.0	0.18	1	11/16/21 15:51	11/18/21 16:46	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Indianapolis									
Alkalinity, Total as CaCO3	265	mg/L	2.0	2.0	1		11/04/21 11:48		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	368	mg/L	5.0	5.0	1		11/03/21 10:38		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	22.8	mg/L	2.0	0.78	2		11/05/21 22:46	16887-00-6	
Fluoride	0.43	mg/L	0.20	0.086	1		11/05/21 22:32	16984-48-8	
Sulfate	17.1	mg/L	1.0	0.42	1		11/05/21 22:32	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-P10S **Lab ID: 60384736002** Collected: 10/27/21 12:54 Received: 10/30/21 04:25 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	1.8	1	11/16/21 15:51	11/19/21 11:18	7440-39-3	
Boron	2500	ug/L	100	8.6	1	11/16/21 15:51	11/19/21 11:18	7440-42-8	
Calcium	70900	ug/L	200	75.4	1	11/16/21 15:51	11/19/21 11:18	7440-70-2	M1
Iron	3160	ug/L	50.0	21.4	1	11/16/21 15:51	11/19/21 11:18	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/16/21 15:51	11/19/21 11:18	7439-92-1	
Lithium	15.9	ug/L	10.0	7.7	1	11/16/21 15:51	11/19/21 11:18	7439-93-2	
Magnesium	10900	ug/L	50.0	31.4	1	11/16/21 15:51	11/19/21 11:18	7439-95-4	
Manganese	1200	ug/L	5.0	0.74	1	11/16/21 15:51	11/19/21 11:18	7439-96-5	
Molybdenum	105	ug/L	20.0	2.2	1	11/16/21 15:51	11/19/21 11:18	7439-98-7	
Potassium	4310	ug/L	500	146	1	11/16/21 15:51	11/19/21 11:18	7440-09-7	
Sodium	106000	ug/L	500	254	1	11/16/21 15:51	11/19/21 11:18	7440-23-5	M1
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.10	ug/L	1.0	0.10	1	11/16/21 15:51	11/18/21 16:48	7440-36-0	
Arsenic	11.7	ug/L	1.0	0.11	1	11/16/21 15:51	11/18/21 16:48	7440-38-2	
Cadmium	0.11J	ug/L	0.50	0.062	1	11/16/21 15:51	11/18/21 16:48	7440-43-9	
Chromium	0.44J	ug/L	1.0	0.23	1	11/16/21 15:51	11/18/21 16:48	7440-47-3	
Selenium	0.28J	ug/L	1.0	0.18	1	11/16/21 15:51	11/18/21 16:48	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Indianapolis									
Alkalinity, Total as CaCO3	268	mg/L	2.0	2.0	1		11/04/21 11:48		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	534	mg/L	10.0	10.0	1		11/03/21 10:37		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	17.4	mg/L	1.0	0.39	1		11/08/21 18:24	16887-00-6	L1
Fluoride	0.48	mg/L	0.20	0.086	1		11/08/21 18:24	16984-48-8	L1
Sulfate	125	mg/L	20.0	8.4	20		11/08/21 18:42	14808-79-8	L1

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ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-P19S **Lab ID: 60384736003** Collected: 10/27/21 12:30 Received: 10/30/21 04:25 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	256	ug/L	5.0	1.8	1	11/16/21 15:51	11/19/21 11:22	7440-39-3	
Boron	449	ug/L	100	8.6	1	11/16/21 15:51	11/19/21 11:22	7440-42-8	
Calcium	98400	ug/L	200	75.4	1	11/16/21 15:51	11/19/21 11:22	7440-70-2	
Iron	10100	ug/L	50.0	21.4	1	11/16/21 15:51	11/19/21 11:22	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/16/21 15:51	11/19/21 11:22	7439-92-1	
Lithium	26.2	ug/L	10.0	7.7	1	11/16/21 15:51	11/19/21 11:22	7439-93-2	
Magnesium	19100	ug/L	50.0	31.4	1	11/16/21 15:51	11/19/21 11:22	7439-95-4	
Manganese	687	ug/L	5.0	0.74	1	11/16/21 15:51	11/19/21 11:22	7439-96-5	
Molybdenum	6.5J	ug/L	20.0	2.2	1	11/16/21 15:51	11/19/21 11:22	7439-98-7	
Potassium	5600	ug/L	500	146	1	11/16/21 15:51	11/19/21 11:22	7440-09-7	
Sodium	22700	ug/L	500	254	1	11/16/21 15:51	11/19/21 11:22	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.10	ug/L	1.0	0.10	1	11/16/21 15:51	11/18/21 16:49	7440-36-0	
Arsenic	13.7	ug/L	1.0	0.11	1	11/16/21 15:51	11/18/21 16:49	7440-38-2	
Cadmium	<0.062	ug/L	0.50	0.062	1	11/16/21 15:51	11/18/21 16:49	7440-43-9	
Chromium	0.38J	ug/L	1.0	0.23	1	11/16/21 15:51	11/18/21 16:49	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/16/21 15:51	11/18/21 16:49	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Indianapolis									
Alkalinity, Total as CaCO3	327	mg/L	2.0	2.0	1		11/04/21 11:48		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	406	mg/L	5.0	5.0	1		11/03/21 10:37		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	2.6	mg/L	1.0	0.39	1		11/08/21 19:01	16887-00-6	L1
Fluoride	0.32	mg/L	0.20	0.086	1		11/08/21 19:01	16984-48-8	L1
Sulfate	30.5	mg/L	5.0	2.1	5		11/08/21 19:19	14808-79-8	L1

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ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-P-19I **Lab ID: 60384736004** Collected: 10/27/21 13:40 Received: 10/30/21 04:25 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	14.6	ug/L	5.0	1.8	1	11/16/21 15:51	11/19/21 11:25	7440-39-3	B
Boron	4660	ug/L	100	8.6	1	11/16/21 15:51	11/19/21 11:25	7440-42-8	
Calcium	10600	ug/L	200	75.4	1	11/16/21 15:51	11/19/21 11:25	7440-70-2	
Iron	102	ug/L	50.0	21.4	1	11/16/21 15:51	11/19/21 11:25	7439-89-6	
Lead	5.0J	ug/L	10.0	3.8	1	11/16/21 15:51	11/19/21 11:25	7439-92-1	
Lithium	16.3	ug/L	10.0	7.7	1	11/16/21 15:51	11/19/21 11:25	7439-93-2	
Magnesium	<31.4	ug/L	50.0	31.4	1	11/16/21 15:51	11/19/21 11:25	7439-95-4	
Manganese	1.8J	ug/L	5.0	0.74	1	11/16/21 15:51	11/19/21 11:25	7439-96-5	
Molybdenum	138	ug/L	20.0	2.2	1	11/16/21 15:51	11/19/21 11:25	7439-98-7	
Potassium	12600	ug/L	500	146	1	11/16/21 15:51	11/19/21 11:25	7440-09-7	
Sodium	295000	ug/L	500	254	1	11/16/21 15:51	11/19/21 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	2.3	ug/L	1.0	0.10	1	11/16/21 15:51	11/18/21 16:55	7440-36-0	
Arsenic	149	ug/L	1.0	0.11	1	11/16/21 15:51	11/18/21 16:55	7440-38-2	
Cadmium	0.15J	ug/L	0.50	0.062	1	11/16/21 15:51	11/18/21 16:55	7440-43-9	
Chromium	0.72J	ug/L	1.0	0.23	1	11/16/21 15:51	11/18/21 16:55	7440-47-3	
Selenium	0.99J	ug/L	1.0	0.18	1	11/16/21 15:51	11/18/21 16:55	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Indianapolis									
Alkalinity, Total as CaCO3	455	mg/L	2.0	2.0	1		11/04/21 11:48		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	996	mg/L	10.0	10.0	1		11/03/21 10:37		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	26.0	mg/L	5.0	1.9	5		11/12/21 14:50	16887-00-6	
Fluoride	1.3	mg/L	0.20	0.086	1		11/15/21 22:52	16984-48-8	
Sulfate	168	mg/L	20.0	8.4	20		11/11/21 18:50	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-P19D **Lab ID: 60384736005** Collected: 10/27/21 12:18 Received: 10/30/21 04:25 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	99.0	ug/L	5.0	1.8	1	11/16/21 15:51	11/19/21 11:27	7440-39-3	
Boron	11900	ug/L	100	8.6	1	11/16/21 15:51	11/19/21 11:27	7440-42-8	
Calcium	30200	ug/L	200	75.4	1	11/16/21 15:51	11/19/21 11:27	7440-70-2	
Iron	1920	ug/L	50.0	21.4	1	11/16/21 15:51	11/19/21 11:27	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/16/21 15:51	11/19/21 11:27	7439-92-1	
Lithium	19.0	ug/L	10.0	7.7	1	11/16/21 15:51	11/19/21 11:27	7439-93-2	
Magnesium	4640	ug/L	50.0	31.4	1	11/16/21 15:51	11/19/21 11:27	7439-95-4	
Manganese	246	ug/L	5.0	0.74	1	11/16/21 15:51	11/19/21 11:27	7439-96-5	
Molybdenum	974	ug/L	20.0	2.2	1	11/16/21 15:51	11/19/21 11:27	7439-98-7	
Potassium	3440	ug/L	500	146	1	11/16/21 15:51	11/19/21 11:27	7440-09-7	
Sodium	183000	ug/L	500	254	1	11/16/21 15:51	11/19/21 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	<0.10	ug/L	1.0	0.10	1	11/16/21 15:51	11/18/21 17:01	7440-36-0	
Arsenic	0.72J	ug/L	1.0	0.11	1	11/16/21 15:51	11/18/21 17:01	7440-38-2	
Cadmium	0.16J	ug/L	0.50	0.062	1	11/16/21 15:51	11/18/21 17:01	7440-43-9	
Chromium	0.89J	ug/L	1.0	0.23	1	11/16/21 15:51	11/18/21 17:01	7440-47-3	
Selenium	0.29J	ug/L	1.0	0.18	1	11/16/21 15:51	11/18/21 17:01	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Indianapolis									
Alkalinity, Total as CaCO3	208	mg/L	2.0	2.0	1		11/04/21 11:48		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	661	mg/L	10.0	10.0	1		11/03/21 10:38		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	23.4	mg/L	5.0	1.9	5		11/10/21 03:48	16887-00-6	L1
Fluoride	2.0	mg/L	0.20	0.086	1		11/08/21 20:14	16984-48-8	L1
Sulfate	5.8	mg/L	5.0	2.1	5		11/10/21 03:48	14808-79-8	L1

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ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-P22S **Lab ID: 60384736006** Collected: 10/27/21 10:40 Received: 10/30/21 04:25 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	170	ug/L	5.0	1.8	1	11/16/21 15:51	11/19/21 11:29	7440-39-3	
Boron	547	ug/L	100	8.6	1	11/16/21 15:51	11/19/21 11:29	7440-42-8	
Calcium	234000	ug/L	1000	377	5	11/16/21 15:51	11/22/21 12:25	7440-70-2	
Iron	691	ug/L	50.0	21.4	1	11/16/21 15:51	11/19/21 11:29	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/16/21 15:51	11/19/21 11:29	7439-92-1	
Lithium	62.4	ug/L	10.0	7.7	1	11/16/21 15:51	11/19/21 11:29	7439-93-2	
Magnesium	43600	ug/L	50.0	31.4	1	11/16/21 15:51	11/19/21 11:29	7439-95-4	
Manganese	520	ug/L	5.0	0.74	1	11/16/21 15:51	11/19/21 11:29	7439-96-5	
Molybdenum	8.3J	ug/L	20.0	2.2	1	11/16/21 15:51	11/19/21 11:29	7439-98-7	
Potassium	7860	ug/L	500	146	1	11/16/21 15:51	11/19/21 11:29	7440-09-7	
Sodium	60900	ug/L	500	254	1	11/16/21 15:51	11/19/21 11:29	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.10	ug/L	1.0	0.10	1	11/16/21 15:51	11/18/21 17:03	7440-36-0	
Arsenic	1.5	ug/L	1.0	0.11	1	11/16/21 15:51	11/18/21 17:03	7440-38-2	
Cadmium	0.16J	ug/L	0.50	0.062	1	11/16/21 15:51	11/18/21 17:03	7440-43-9	
Chromium	0.30J	ug/L	1.0	0.23	1	11/16/21 15:51	11/18/21 17:03	7440-47-3	
Selenium	0.42J	ug/L	1.0	0.18	1	11/16/21 15:51	11/18/21 17:03	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Indianapolis									
Alkalinity, Total as CaCO3	283	mg/L	2.0	2.0	1		11/04/21 11:48		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	962	mg/L	10.0	10.0	1		11/03/21 10:38		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	41.2	mg/L	10.0	3.9	10		11/08/21 21:46	16887-00-6	L1
Fluoride	0.37	mg/L	0.20	0.086	1		11/08/21 21:27	16984-48-8	L1
Sulfate	206	mg/L	20.0	8.4	20		11/08/21 22:04	14808-79-8	L1

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ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-P22D **Lab ID: 60384736007** Collected: 10/27/21 10:05 Received: 10/30/21 04:25 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	74.2	ug/L	5.0	1.8	1	11/16/21 15:51	11/19/21 11:31	7440-39-3	
Boron	9490	ug/L	100	8.6	1	11/16/21 15:51	11/19/21 11:31	7440-42-8	
Calcium	22800	ug/L	200	75.4	1	11/16/21 15:51	11/19/21 11:31	7440-70-2	
Iron	1210	ug/L	50.0	21.4	1	11/16/21 15:51	11/19/21 11:31	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/16/21 15:51	11/19/21 11:31	7439-92-1	
Lithium	27.7	ug/L	10.0	7.7	1	11/16/21 15:51	11/19/21 11:31	7439-93-2	
Magnesium	3230	ug/L	50.0	31.4	1	11/16/21 15:51	11/19/21 11:31	7439-95-4	
Manganese	72.5	ug/L	5.0	0.74	1	11/16/21 15:51	11/19/21 11:31	7439-96-5	
Molybdenum	358	ug/L	20.0	2.2	1	11/16/21 15:51	11/19/21 11:31	7439-98-7	
Potassium	4680	ug/L	500	146	1	11/16/21 15:51	11/19/21 11:31	7440-09-7	
Sodium	171000	ug/L	500	254	1	11/16/21 15:51	11/19/21 11:31	7440-23-5	M1
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	0.13J	ug/L	1.0	0.10	1	11/16/21 15:51	11/18/21 17:05	7440-36-0	
Arsenic	8.6	ug/L	1.0	0.11	1	11/16/21 15:51	11/18/21 17:05	7440-38-2	
Cadmium	0.096J	ug/L	0.50	0.062	1	11/16/21 15:51	11/18/21 17:05	7440-43-9	
Chromium	1.5	ug/L	1.0	0.23	1	11/16/21 15:51	11/18/21 17:05	7440-47-3	
Selenium	0.74J	ug/L	1.0	0.18	1	11/16/21 15:51	11/18/21 17:05	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Indianapolis									
Alkalinity, Total as CaCO3	275	mg/L	2.0	2.0	1		11/04/21 11:48		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	591	mg/L	10.0	10.0	1		11/03/21 10:38		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	26.1	mg/L	5.0	1.9	5		11/08/21 23:18	16887-00-6	
Fluoride	2.5	mg/L	0.20	0.086	1		11/08/21 22:22	16984-48-8	
Sulfate	98.0	mg/L	5.0	2.1	5		11/08/21 23:18	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-P29S **Lab ID: 60384736008** Collected: 10/29/21 13:15 Received: 10/30/21 04:25 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	601	ug/L	5.0	1.8	1	11/16/21 15:51	11/19/21 11:41	7440-39-3	
Boron	85.5J	ug/L	100	8.6	1	11/16/21 15:51	11/19/21 11:41	7440-42-8	
Calcium	251000	ug/L	1000	377	5	11/16/21 15:51	11/22/21 12:27	7440-70-2	
Iron	11500	ug/L	50.0	21.4	1	11/16/21 15:51	11/19/21 11:41	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/16/21 15:51	11/19/21 11:41	7439-92-1	
Lithium	57.8	ug/L	10.0	7.7	1	11/16/21 15:51	11/19/21 11:41	7439-93-2	
Magnesium	48300	ug/L	50.0	31.4	1	11/16/21 15:51	11/19/21 11:41	7439-95-4	
Manganese	514	ug/L	5.0	0.74	1	11/16/21 15:51	11/19/21 11:41	7439-96-5	
Molybdenum	<2.2	ug/L	20.0	2.2	1	11/16/21 15:51	11/19/21 11:41	7439-98-7	
Potassium	6940	ug/L	500	146	1	11/16/21 15:51	11/19/21 11:41	7440-09-7	
Sodium	23500	ug/L	500	254	1	11/16/21 15:51	11/19/21 11:41	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.10	ug/L	1.0	0.10	1	11/16/21 15:51	11/18/21 17:15	7440-36-0	
Arsenic	22.1	ug/L	1.0	0.11	1	11/16/21 15:51	11/18/21 17:15	7440-38-2	
Cadmium	0.078J	ug/L	0.50	0.062	1	11/16/21 15:51	11/18/21 17:15	7440-43-9	
Chromium	0.36J	ug/L	1.0	0.23	1	11/16/21 15:51	11/18/21 17:15	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/16/21 15:51	11/18/21 17:15	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Indianapolis									
Alkalinity, Total as CaCO3	643	mg/L	2.0	2.0	1		11/04/21 11:48		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	935	mg/L	10.0	10.0	1		11/03/21 10:39		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	30.7	mg/L	5.0	1.9	5		11/10/21 04:00	16887-00-6	L1
Fluoride	0.23	mg/L	0.20	0.086	1		11/09/21 00:49	16984-48-8	L1
Sulfate	125	mg/L	20.0	8.4	20		11/10/21 04:11	14808-79-8	L1

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ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-P30S **Lab ID: 60384736009** Collected: 10/29/21 11:10 Received: 10/30/21 04:25 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	109	ug/L	5.0	1.8	1	11/16/21 15:51	11/19/21 11:43	7440-39-3	
Boron	977	ug/L	100	8.6	1	11/16/21 15:51	11/19/21 11:43	7440-42-8	
Calcium	160000	ug/L	1000	377	5	11/16/21 15:51	11/22/21 12:30	7440-70-2	
Iron	1590	ug/L	50.0	21.4	1	11/16/21 15:51	11/19/21 11:43	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/16/21 15:51	11/19/21 11:43	7439-92-1	
Lithium	35.7	ug/L	10.0	7.7	1	11/16/21 15:51	11/19/21 11:43	7439-93-2	
Magnesium	23400	ug/L	50.0	31.4	1	11/16/21 15:51	11/19/21 11:43	7439-95-4	
Manganese	579	ug/L	5.0	0.74	1	11/16/21 15:51	11/19/21 11:43	7439-96-5	
Molybdenum	2.3J	ug/L	20.0	2.2	1	11/16/21 15:51	11/19/21 11:43	7439-98-7	
Potassium	6970	ug/L	500	146	1	11/16/21 15:51	11/19/21 11:43	7440-09-7	
Sodium	62600	ug/L	500	254	1	11/16/21 15:51	11/19/21 11:43	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	0.94J	ug/L	1.0	0.10	1	11/16/21 15:51	11/18/21 17:17	7440-36-0	
Arsenic	1.5	ug/L	1.0	0.11	1	11/16/21 15:51	11/18/21 17:17	7440-38-2	
Cadmium	0.090J	ug/L	0.50	0.062	1	11/16/21 15:51	11/18/21 17:17	7440-43-9	
Chromium	0.30J	ug/L	1.0	0.23	1	11/16/21 15:51	11/18/21 17:17	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/16/21 15:51	11/18/21 17:17	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Indianapolis									
Alkalinity, Total as CaCO3	345	mg/L	2.0	2.0	1		11/04/21 11:48		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	831	mg/L	13.3	13.3	1		11/03/21 10:39		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	39.3	mg/L	5.0	1.9	5		11/09/21 01:26	16887-00-6	L1
Fluoride	0.44	mg/L	0.20	0.086	1		11/09/21 01:08	16984-48-8	L1
Sulfate	149	mg/L	20.0	8.4	20		11/09/21 01:44	14808-79-8	L1

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ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-P31S **Lab ID: 60384736010** Collected: 10/28/21 11:45 Received: 10/30/21 04:25 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	302	ug/L	5.0	1.8	1	11/16/21 15:51	11/19/21 11:45	7440-39-3	
Boron	307	ug/L	100	8.6	1	11/16/21 15:51	11/19/21 11:45	7440-42-8	
Calcium	60400	ug/L	200	75.4	1	11/16/21 15:51	11/19/21 11:45	7440-70-2	
Iron	9880	ug/L	50.0	21.4	1	11/16/21 15:51	11/19/21 11:45	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/16/21 15:51	11/19/21 11:45	7439-92-1	
Lithium	<7.7	ug/L	10.0	7.7	1	11/16/21 15:51	11/19/21 11:45	7439-93-2	
Magnesium	11500	ug/L	50.0	31.4	1	11/16/21 15:51	11/19/21 11:45	7439-95-4	
Manganese	2180	ug/L	5.0	0.74	1	11/16/21 15:51	11/19/21 11:45	7439-96-5	
Molybdenum	7.1J	ug/L	20.0	2.2	1	11/16/21 15:51	11/19/21 11:45	7439-98-7	
Potassium	3720	ug/L	500	146	1	11/16/21 15:51	11/19/21 11:45	7440-09-7	
Sodium	11500	ug/L	500	254	1	11/16/21 15:51	11/19/21 11:45	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.10	ug/L	1.0	0.10	1	11/16/21 15:51	11/18/21 17:19	7440-36-0	
Arsenic	83.7	ug/L	1.0	0.11	1	11/16/21 15:51	11/18/21 17:19	7440-38-2	
Cadmium	<0.062	ug/L	0.50	0.062	1	11/16/21 15:51	11/18/21 17:19	7440-43-9	
Chromium	0.51J	ug/L	1.0	0.23	1	11/16/21 15:51	11/18/21 17:19	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/16/21 15:51	11/18/21 17:19	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Indianapolis									
Alkalinity, Total as CaCO3	189	mg/L	2.0	2.0	1		11/04/21 11:48		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	293	mg/L	5.0	5.0	1		11/03/21 10:38		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	1.6	mg/L	1.0	0.39	1		11/09/21 14:08	16887-00-6	B
Fluoride	0.39	mg/L	0.20	0.086	1		11/09/21 14:08	16984-48-8	
Sulfate	15.4	mg/L	1.0	0.42	1		11/09/21 14:08	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-P16S **Lab ID: 60384736013** Collected: 10/26/21 11:51 Received: 10/27/21 04:05 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	112	ug/L	5.0	1.8	1	11/05/21 16:54	11/09/21 21:43	7440-39-3	
Boron	482	ug/L	100	8.6	1	11/05/21 16:54	11/09/21 21:43	7440-42-8	
Calcium	148000	ug/L	2000	754	10	11/05/21 16:54	11/10/21 15:09	7440-70-2	M1
Iron	82.6	ug/L	50.0	21.4	1	11/05/21 16:54	11/09/21 21:43	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/05/21 16:54	11/09/21 21:43	7439-92-1	
Lithium	41.5	ug/L	20.0	15.3	2	02/08/22 13:08	02/09/22 17:50	7439-93-2	
Magnesium	32300	ug/L	50.0	31.4	1	11/05/21 16:54	11/09/21 21:43	7439-95-4	M1
Manganese	1.1J	ug/L	5.0	0.74	1	11/05/21 16:54	11/09/21 21:43	7439-96-5	
Molybdenum	13.7J	ug/L	20.0	2.2	1	11/05/21 16:54	11/09/21 21:43	7439-98-7	
Potassium	4290	ug/L	500	146	1	11/05/21 16:54	11/09/21 21:43	7440-09-7	
Sodium	35300	ug/L	500	254	1	11/05/21 16:54	11/09/21 21:43	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	0.14J	ug/L	1.0	0.10	1	11/05/21 16:54	11/10/21 11:45	7440-36-0	
Arsenic	1.0	ug/L	1.0	0.11	1	11/05/21 16:54	11/08/21 12:20	7440-38-2	
Cadmium	0.065J	ug/L	0.50	0.062	1	11/05/21 16:54	11/08/21 12:20	7440-43-9	
Chromium	0.37J	ug/L	1.0	0.23	1	11/05/21 16:54	11/08/21 12:20	7440-47-3	
Selenium	2.9	ug/L	1.0	0.18	1	11/05/21 16:54	11/08/21 12:20	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Indianapolis									
Alkalinity, Total as CaCO3	408	mg/L	2.0	2.0	1		11/04/21 11:48		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	609	mg/L	10.0	10.0	1		11/02/21 11:21		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	2.5	mg/L	1.0	0.39	1		11/04/21 16:31	16887-00-6	B
Fluoride	0.48	mg/L	0.20	0.086	1		11/04/21 16:31	16984-48-8	L2
Sulfate	<0.42	mg/L	1.0	0.42	1		11/04/21 16:31	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-P17S **Lab ID: 60384736014** Collected: 10/26/21 13:30 Received: 10/27/21 04:05 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	183	ug/L	5.0	1.8	1	11/05/21 16:54	11/09/21 21:49	7440-39-3	
Boron	1390	ug/L	100	8.6	1	11/05/21 16:54	11/09/21 21:49	7440-42-8	
Calcium	186000	ug/L	2000	754	10	11/05/21 16:54	11/10/21 15:16	7440-70-2	
Iron	1740	ug/L	50.0	21.4	1	11/05/21 16:54	11/09/21 21:49	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/05/21 16:54	11/09/21 21:49	7439-92-1	
Lithium	41.2	ug/L	20.0	15.3	2	02/08/22 13:08	02/09/22 17:53	7439-93-2	
Magnesium	35100	ug/L	50.0	31.4	1	11/05/21 16:54	11/09/21 21:49	7439-95-4	
Manganese	4660	ug/L	5.0	0.74	1	11/05/21 16:54	11/09/21 21:49	7439-96-5	
Molybdenum	18.4J	ug/L	20.0	2.2	1	11/05/21 16:54	11/09/21 21:49	7439-98-7	
Potassium	3510	ug/L	500	146	1	11/05/21 16:54	11/09/21 21:49	7440-09-7	
Sodium	183000	ug/L	500	254	1	11/05/21 16:54	11/09/21 21:49	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	0.10	1	11/05/21 16:54	11/10/21 11:47	7440-36-0	
Arsenic	21.0	ug/L	1.0	0.11	1	11/05/21 16:54	11/08/21 11:25	7440-38-2	
Cadmium	0.10J	ug/L	0.50	0.062	1	11/05/21 16:54	11/08/21 11:25	7440-43-9	
Chromium	0.47J	ug/L	1.0	0.23	1	11/05/21 16:54	11/08/21 11:25	7440-47-3	
Selenium	0.91J	ug/L	1.0	0.18	1	11/05/21 16:54	11/08/21 11:25	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Indianapolis									
Alkalinity, Total as CaCO3	620	mg/L	2.0	2.0	1		11/04/21 11:48		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	1140	mg/L	13.3	13.3	1		11/02/21 11:21		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	66.0	mg/L	5.0	1.9	5		11/03/21 11:12	16887-00-6	
Fluoride	0.37	mg/L	0.20	0.086	1		11/04/21 16:42	16984-48-8	L2
Sulfate	<0.42	mg/L	1.0	0.42	1		11/04/21 16:42	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-P171 **Lab ID: 60384736015** Collected: 10/26/21 13:25 Received: 10/27/21 04:05 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	21.4	ug/L	5.0	1.8	1	11/05/21 16:54	11/09/21 21:51	7440-39-3	
Boron	2160	ug/L	100	8.6	1	11/05/21 16:54	11/09/21 21:51	7440-42-8	
Calcium	12500	ug/L	200	75.4	1	11/05/21 16:54	11/09/21 21:51	7440-70-2	
Iron	242	ug/L	50.0	21.4	1	11/05/21 16:54	11/09/21 21:51	7439-89-6	
Lead	9.8J	ug/L	10.0	3.8	1	11/05/21 16:54	11/09/21 21:51	7439-92-1	
Lithium	<7.7	ug/L	10.0	7.7	1	11/05/21 16:54	11/09/21 21:51	7439-93-2	
Magnesium	622	ug/L	50.0	31.4	1	11/05/21 16:54	11/09/21 21:51	7439-95-4	
Manganese	7.2	ug/L	5.0	0.74	1	11/05/21 16:54	11/09/21 21:51	7439-96-5	
Molybdenum	133	ug/L	20.0	2.2	1	11/05/21 16:54	11/09/21 21:51	7439-98-7	
Potassium	2350	ug/L	500	146	1	11/05/21 16:54	11/09/21 21:51	7440-09-7	
Sodium	238000	ug/L	500	254	1	11/05/21 16:54	11/09/21 21:51	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	0.34J	ug/L	1.0	0.10	1	11/05/21 16:54	11/10/21 11:56	7440-36-0	
Arsenic	53.3	ug/L	1.0	0.11	1	11/05/21 16:54	11/08/21 11:36	7440-38-2	
Cadmium	0.30J	ug/L	0.50	0.062	1	11/05/21 16:54	11/08/21 11:36	7440-43-9	
Chromium	0.89J	ug/L	1.0	0.23	1	11/05/21 16:54	11/08/21 11:36	7440-47-3	
Selenium	1.7	ug/L	1.0	0.18	1	11/05/21 16:54	11/08/21 11:36	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Indianapolis									
Alkalinity, Total as CaCO3	169	mg/L	2.0	2.0	1		11/04/21 11:48		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	769	mg/L	10.0	10.0	1		11/02/21 11:22		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	22.8	mg/L	2.0	0.78	2		11/03/21 12:23	16887-00-6	
Fluoride	1.9	mg/L	0.20	0.086	1		11/04/21 16:53	16984-48-8	L2
Sulfate	4.3	mg/L	1.0	0.42	1		11/04/21 16:53	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-P17D **Lab ID: 60384736016** Collected: 10/26/21 14:50 Received: 10/27/21 04:05 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	104	ug/L	5.0	1.8	1	11/05/21 16:54	11/09/21 21:58	7440-39-3	
Boron	7560	ug/L	100	8.6	1	11/05/21 16:54	11/09/21 21:58	7440-42-8	
Calcium	45200	ug/L	200	75.4	1	11/05/21 16:54	11/09/21 21:58	7440-70-2	
Iron	2490	ug/L	50.0	21.4	1	11/05/21 16:54	11/09/21 21:58	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/05/21 16:54	11/09/21 21:58	7439-92-1	
Lithium	39.1	ug/L	10.0	7.7	1	11/05/21 16:54	11/09/21 21:58	7439-93-2	
Magnesium	10300	ug/L	50.0	31.4	1	11/05/21 16:54	11/09/21 21:58	7439-95-4	
Manganese	384	ug/L	5.0	0.74	1	11/05/21 16:54	11/09/21 21:58	7439-96-5	
Molybdenum	732	ug/L	20.0	2.2	1	11/05/21 16:54	11/09/21 21:58	7439-98-7	
Potassium	7330	ug/L	500	146	1	11/05/21 16:54	11/09/21 21:58	7440-09-7	
Sodium	132000	ug/L	500	254	1	11/05/21 16:54	11/09/21 21:58	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.10	ug/L	1.0	0.10	1	11/05/21 16:54	11/10/21 11:58	7440-36-0	
Arsenic	1.1	ug/L	1.0	0.11	1	11/05/21 16:54	11/08/21 11:38	7440-38-2	
Cadmium	0.15J	ug/L	0.50	0.062	1	11/05/21 16:54	11/08/21 11:38	7440-43-9	
Chromium	0.38J	ug/L	1.0	0.23	1	11/05/21 16:54	11/08/21 11:38	7440-47-3	
Selenium	0.25J	ug/L	1.0	0.18	1	11/05/21 16:54	11/08/21 11:38	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Indianapolis									
Alkalinity, Total as CaCO3	127	mg/L	2.0	2.0	1		11/04/21 11:48		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	615	mg/L	10.0	10.0	1		11/02/21 11:22		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	24.0	mg/L	5.0	1.9	5		11/03/21 12:58	16887-00-6	
Fluoride	0.70	mg/L	0.20	0.086	1		11/04/21 17:05	16984-48-8	L2
Sulfate	2.4	mg/L	1.0	0.42	1		11/04/21 17:05	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-P21S **Lab ID: 60384736017** Collected: 10/26/21 15:15 Received: 10/27/21 04:05 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	260	ug/L	5.0	1.8	1	11/05/21 16:54	11/09/21 22:00	7440-39-3	
Boron	213	ug/L	100	8.6	1	11/05/21 16:54	11/09/21 22:00	7440-42-8	
Calcium	136000	ug/L	2000	754	10	11/05/21 16:54	11/10/21 15:18	7440-70-2	
Iron	701	ug/L	50.0	21.4	1	11/05/21 16:54	11/09/21 22:00	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/05/21 16:54	11/09/21 22:00	7439-92-1	
Lithium	16.6J	ug/L	20.0	15.3	2	02/08/22 13:08	02/09/22 17:55	7439-93-2	
Magnesium	26500	ug/L	50.0	31.4	1	11/05/21 16:54	11/09/21 22:00	7439-95-4	
Manganese	106	ug/L	5.0	0.74	1	11/05/21 16:54	11/09/21 22:00	7439-96-5	
Molybdenum	<2.2	ug/L	20.0	2.2	1	11/05/21 16:54	11/09/21 22:00	7439-98-7	
Potassium	4350	ug/L	500	146	1	11/05/21 16:54	11/09/21 22:00	7440-09-7	
Sodium	24300	ug/L	500	254	1	11/05/21 16:54	11/09/21 22:00	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	0.19J	ug/L	1.0	0.10	1	11/05/21 16:54	11/10/21 11:59	7440-36-0	
Arsenic	5.9	ug/L	1.0	0.11	1	11/05/21 16:54	11/08/21 11:40	7440-38-2	
Cadmium	0.17J	ug/L	0.50	0.062	1	11/05/21 16:54	11/08/21 11:40	7440-43-9	
Chromium	0.31J	ug/L	1.0	0.23	1	11/05/21 16:54	11/08/21 11:40	7440-47-3	
Selenium	0.85J	ug/L	1.0	0.18	1	11/05/21 16:54	11/08/21 11:40	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Indianapolis									
Alkalinity, Total as CaCO3	422	mg/L	2.0	2.0	1		11/04/21 11:48		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	512	mg/L	10.0	10.0	1		11/02/21 11:22		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	6.0	mg/L	1.0	0.39	1		11/04/21 17:16	16887-00-6	
Fluoride	0.28	mg/L	0.20	0.086	1		11/04/21 17:16	16984-48-8	L2
Sulfate	<0.42	mg/L	1.0	0.42	1		11/04/21 17:16	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-P211 **Lab ID: 60384736018** Collected: 10/26/21 13:35 Received: 10/27/21 04:05 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	39.2	ug/L	5.0	1.8	1	11/05/21 16:54	11/09/21 22:02	7440-39-3	
Boron	2450	ug/L	100	8.6	1	11/05/21 16:54	11/09/21 22:02	7440-42-8	
Calcium	19100	ug/L	200	75.4	1	11/05/21 16:54	11/09/21 22:02	7440-70-2	
Iron	253	ug/L	50.0	21.4	1	11/05/21 16:54	11/09/21 22:02	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/05/21 16:54	11/09/21 22:02	7439-92-1	
Lithium	20.1	ug/L	10.0	7.7	1	11/05/21 16:54	11/09/21 22:02	7439-93-2	
Magnesium	2480	ug/L	50.0	31.4	1	11/05/21 16:54	11/09/21 22:02	7439-95-4	
Manganese	51.5	ug/L	5.0	0.74	1	11/05/21 16:54	11/09/21 22:02	7439-96-5	
Molybdenum	134	ug/L	20.0	2.2	1	11/05/21 16:54	11/09/21 22:02	7439-98-7	
Potassium	4840	ug/L	500	146	1	11/05/21 16:54	11/09/21 22:02	7440-09-7	
Sodium	99200	ug/L	500	254	1	11/05/21 16:54	11/09/21 22:02	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.10	ug/L	1.0	0.10	1	11/05/21 16:54	11/10/21 12:01	7440-36-0	
Arsenic	5.0	ug/L	1.0	0.11	1	11/05/21 16:54	11/08/21 11:42	7440-38-2	
Cadmium	<0.062	ug/L	0.50	0.062	1	11/05/21 16:54	11/08/21 11:42	7440-43-9	
Chromium	0.50J	ug/L	1.0	0.23	1	11/05/21 16:54	11/08/21 11:42	7440-47-3	
Selenium	0.39J	ug/L	1.0	0.18	1	11/05/21 16:54	11/08/21 11:42	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Indianapolis									
Alkalinity, Total as CaCO3	137	mg/L	2.0	2.0	1		11/04/21 11:48		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	372	mg/L	5.0	5.0	1		11/02/21 11:22		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	26.1	mg/L	5.0	1.9	5		11/03/21 21:16	16887-00-6	
Fluoride	1.1	mg/L	0.20	0.086	1		11/04/21 17:27	16984-48-8	L2
Sulfate	5.9	mg/L	1.0	0.42	1		11/04/21 17:27	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-P21D **Lab ID: 60384736019** Collected: 10/26/21 12:40 Received: 10/27/21 04:05 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	84.1	ug/L	5.0	1.8	1	11/05/21 16:54	11/09/21 22:04	7440-39-3	
Boron	6410	ug/L	100	8.6	1	11/05/21 16:54	11/09/21 22:04	7440-42-8	
Calcium	74800	ug/L	200	75.4	1	11/05/21 16:54	11/09/21 22:04	7440-70-2	
Iron	1610	ug/L	50.0	21.4	1	11/05/21 16:54	11/09/21 22:04	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/05/21 16:54	11/09/21 22:04	7439-92-1	
Lithium	146	ug/L	10.0	7.7	1	11/05/21 16:54	11/09/21 22:04	7439-93-2	
Magnesium	25400	ug/L	50.0	31.4	1	11/05/21 16:54	11/09/21 22:04	7439-95-4	
Manganese	627	ug/L	5.0	0.74	1	11/05/21 16:54	11/09/21 22:04	7439-96-5	
Molybdenum	484	ug/L	20.0	2.2	1	11/05/21 16:54	11/09/21 22:04	7439-98-7	
Potassium	8290	ug/L	500	146	1	11/05/21 16:54	11/09/21 22:04	7440-09-7	
Sodium	319000	ug/L	500	254	1	11/05/21 16:54	11/09/21 22:04	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.10	ug/L	1.0	0.10	1	11/05/21 16:54	11/10/21 12:03	7440-36-0	
Arsenic	0.49J	ug/L	1.0	0.11	1	11/05/21 16:54	11/08/21 11:44	7440-38-2	
Cadmium	0.074J	ug/L	0.50	0.062	1	11/05/21 16:54	11/08/21 11:44	7440-43-9	
Chromium	0.57J	ug/L	1.0	0.23	1	11/05/21 16:54	11/08/21 11:44	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/05/21 16:54	11/08/21 11:44	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Indianapolis									
Alkalinity, Total as CaCO3	239	mg/L	2.0	2.0	1		11/04/21 11:48		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	1120	mg/L	13.3	13.3	1		11/02/21 11:22		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	383	mg/L	50.0	19.4	50		11/03/21 14:57	16887-00-6	
Fluoride	1.4	mg/L	0.20	0.086	1		11/04/21 17:39	16984-48-8	L2
Sulfate	4.8	mg/L	1.0	0.42	1		11/04/21 17:39	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-P29D **Lab ID: 60384736020** Collected: 10/25/21 14:51 Received: 10/27/21 04:05 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	147	ug/L	5.0	1.8	1	11/05/21 16:54	11/09/21 22:06	7440-39-3	
Boron	100	ug/L	100	8.6	1	11/05/21 16:54	11/09/21 22:06	7440-42-8	
Calcium	86300	ug/L	200	75.4	1	11/05/21 16:54	11/09/21 22:06	7440-70-2	
Iron	4050	ug/L	50.0	21.4	1	11/05/21 16:54	11/09/21 22:06	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/05/21 16:54	11/09/21 22:06	7439-92-1	
Lithium	36.6	ug/L	10.0	7.7	1	11/05/21 16:54	11/09/21 22:06	7439-93-2	
Magnesium	23800	ug/L	50.0	31.4	1	11/05/21 16:54	11/09/21 22:06	7439-95-4	
Manganese	139	ug/L	5.0	0.74	1	11/05/21 16:54	11/09/21 22:06	7439-96-5	
Molybdenum	<2.2	ug/L	20.0	2.2	1	11/05/21 16:54	11/09/21 22:06	7439-98-7	
Potassium	4020	ug/L	500	146	1	11/05/21 16:54	11/09/21 22:06	7440-09-7	
Sodium	51900	ug/L	500	254	1	11/05/21 16:54	11/09/21 22:06	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.10	ug/L	1.0	0.10	1	11/05/21 16:54	11/10/21 12:08	7440-36-0	
Arsenic	0.99J	ug/L	1.0	0.11	1	11/05/21 16:54	11/08/21 11:58	7440-38-2	
Cadmium	<0.062	ug/L	0.50	0.062	1	11/05/21 16:54	11/08/21 11:58	7440-43-9	
Chromium	0.35J	ug/L	1.0	0.23	1	11/05/21 16:54	11/08/21 11:58	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/05/21 16:54	11/08/21 11:58	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Indianapolis									
Alkalinity, Total as CaCO3	313	mg/L	2.0	2.0	1		11/04/21 11:48		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	443	mg/L	10.0	10.0	1		11/02/21 11:21		H1
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	58.9	mg/L	10.0	3.9	10		11/03/21 15:32	16887-00-6	
Fluoride	0.32	mg/L	0.20	0.086	1		11/04/21 17:50	16984-48-8	L2
Sulfate	19.9	mg/L	1.0	0.42	1		11/03/21 15:09	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-CA-DUP-1 **Lab ID: 60384736021** Collected: 10/25/21 00:00 Received: 10/27/21 04:05 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	182	ug/L	5.0	1.8	1	11/05/21 16:54	11/09/21 22:11	7440-39-3	
Boron	1380	ug/L	100	8.6	1	11/05/21 16:54	11/09/21 22:11	7440-42-8	
Calcium	181000	ug/L	2000	754	10	11/05/21 16:54	11/10/21 15:20	7440-70-2	
Iron	1710	ug/L	50.0	21.4	1	11/05/21 16:54	11/09/21 22:11	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/05/21 16:54	11/09/21 22:11	7439-92-1	
Lithium	<76.7	ug/L	100	76.7	10	11/05/21 16:54	11/10/21 15:20	7439-93-2	
Magnesium	34600	ug/L	50.0	31.4	1	11/05/21 16:54	11/09/21 22:11	7439-95-4	
Manganese	4630	ug/L	5.0	0.74	1	11/05/21 16:54	11/09/21 22:11	7439-96-5	
Molybdenum	19.3J	ug/L	20.0	2.2	1	11/05/21 16:54	11/09/21 22:11	7439-98-7	
Potassium	3420	ug/L	500	146	1	11/05/21 16:54	11/09/21 22:11	7440-09-7	
Sodium	184000	ug/L	500	254	1	11/05/21 16:54	11/09/21 22:11	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	0.20J	ug/L	1.0	0.10	1	11/05/21 16:54	11/10/21 12:10	7440-36-0	
Arsenic	21.8	ug/L	1.0	0.11	1	11/05/21 16:54	11/08/21 12:00	7440-38-2	
Cadmium	0.075J	ug/L	0.50	0.062	1	11/05/21 16:54	11/08/21 12:00	7440-43-9	
Chromium	0.45J	ug/L	1.0	0.23	1	11/05/21 16:54	11/08/21 12:00	7440-47-3	
Selenium	0.88J	ug/L	1.0	0.18	1	11/05/21 16:54	11/08/21 12:00	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Indianapolis									
Alkalinity, Total as CaCO3	617	mg/L	2.0	2.0	1		11/04/21 11:48		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	1110	mg/L	13.3	13.3	1		11/03/21 10:37		H1
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	60.7	mg/L	10.0	3.9	10		11/03/21 16:31	16887-00-6	
Fluoride	0.36	mg/L	0.20	0.086	1		11/04/21 18:24	16984-48-8	L2
Sulfate	256	mg/L	20.0	8.4	20		11/04/21 18:47	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-CA-DUP-2 **Lab ID: 60384736022** Collected: 10/25/21 00:00 Received: 10/27/21 04:05 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	40.3	ug/L	5.0	1.8	1	11/05/21 16:54	11/09/21 22:13	7440-39-3	
Boron	2530	ug/L	100	8.6	1	11/05/21 16:54	11/09/21 22:13	7440-42-8	
Calcium	19500	ug/L	200	75.4	1	11/05/21 16:54	11/09/21 22:13	7440-70-2	
Iron	261	ug/L	50.0	21.4	1	11/05/21 16:54	11/09/21 22:13	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/05/21 16:54	11/09/21 22:13	7439-92-1	
Lithium	20.3	ug/L	10.0	7.7	1	11/05/21 16:54	11/09/21 22:13	7439-93-2	
Magnesium	2530	ug/L	50.0	31.4	1	11/05/21 16:54	11/09/21 22:13	7439-95-4	
Manganese	52.0	ug/L	5.0	0.74	1	11/05/21 16:54	11/09/21 22:13	7439-96-5	
Molybdenum	137	ug/L	20.0	2.2	1	11/05/21 16:54	11/09/21 22:13	7439-98-7	
Potassium	5060	ug/L	500	146	1	11/05/21 16:54	11/09/21 22:13	7440-09-7	
Sodium	102000	ug/L	500	254	1	11/05/21 16:54	11/09/21 22:13	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.10	ug/L	1.0	0.10	1	11/05/21 16:54	11/10/21 12:12	7440-36-0	
Arsenic	5.1	ug/L	1.0	0.11	1	11/05/21 16:54	11/08/21 12:02	7440-38-2	
Cadmium	<0.062	ug/L	0.50	0.062	1	11/05/21 16:54	11/08/21 12:02	7440-43-9	
Chromium	0.49J	ug/L	1.0	0.23	1	11/05/21 16:54	11/08/21 12:02	7440-47-3	
Selenium	0.39J	ug/L	1.0	0.18	1	11/05/21 16:54	11/08/21 12:02	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Indianapolis									
Alkalinity, Total as CaCO3	139	mg/L	2.0	2.0	1		11/04/21 11:48		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	360	mg/L	5.0	5.0	1		11/03/21 10:37		H1
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	26.0	mg/L	5.0	1.9	5		11/03/21 17:07	16887-00-6	
Fluoride	1.1	mg/L	0.20	0.086	1		11/04/21 19:09	16984-48-8	L2
Sulfate	76.1	mg/L	5.0	2.1	5		11/03/21 17:07	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-CA-FB-1 **Lab ID: 60384736023** Collected: 10/26/21 12:15 Received: 10/27/21 04:05 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	<1.8	ug/L	5.0	1.8	1	11/05/21 16:54	11/09/21 22:15	7440-39-3	
Boron	12.3J	ug/L	100	8.6	1	11/05/21 16:54	11/09/21 22:15	7440-42-8	
Calcium	<75.4	ug/L	200	75.4	1	11/05/21 16:54	11/09/21 22:15	7440-70-2	
Iron	<21.4	ug/L	50.0	21.4	1	11/05/21 16:54	11/09/21 22:15	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/05/21 16:54	11/09/21 22:15	7439-92-1	
Lithium	<7.7	ug/L	10.0	7.7	1	11/05/21 16:54	11/09/21 22:15	7439-93-2	
Magnesium	<31.4	ug/L	50.0	31.4	1	11/05/21 16:54	11/09/21 22:15	7439-95-4	
Manganese	<0.74	ug/L	5.0	0.74	1	11/05/21 16:54	11/09/21 22:15	7439-96-5	
Molybdenum	<2.2	ug/L	20.0	2.2	1	11/05/21 16:54	11/09/21 22:15	7439-98-7	
Potassium	<146	ug/L	500	146	1	11/05/21 16:54	11/09/21 22:15	7440-09-7	
Sodium	<254	ug/L	500	254	1	11/05/21 16:54	11/09/21 22:15	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.10	ug/L	1.0	0.10	1	11/05/21 16:54	11/10/21 12:17	7440-36-0	
Arsenic	<0.11	ug/L	1.0	0.11	1	11/05/21 16:54	11/08/21 11:54	7440-38-2	
Cadmium	<0.062	ug/L	0.50	0.062	1	11/05/21 16:54	11/08/21 11:54	7440-43-9	
Chromium	0.31J	ug/L	1.0	0.23	1	11/05/21 16:54	11/08/21 11:54	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/05/21 16:54	11/08/21 11:54	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Indianapolis									
Alkalinity, Total as CaCO3	<2.0	mg/L	2.0	2.0	1		11/04/21 11:32		
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		11/02/21 11:22		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	0.49J	mg/L	1.0	0.39	1		11/04/21 19:21	16887-00-6	B
Fluoride	<0.086	mg/L	0.20	0.086	1		11/04/21 19:21	16984-48-8	L2
Sulfate	<0.42	mg/L	1.0	0.42	1		11/04/21 19:21	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-CA-FB-2 **Lab ID: 60384736024** Collected: 10/26/21 13:00 Received: 10/27/21 04:05 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	<1.8	ug/L	5.0	1.8	1	11/05/21 16:54	11/09/21 22:17	7440-39-3	
Boron	<8.6	ug/L	100	8.6	1	11/05/21 16:54	11/09/21 22:17	7440-42-8	
Calcium	<75.4	ug/L	200	75.4	1	11/05/21 16:54	11/09/21 22:17	7440-70-2	
Iron	<21.4	ug/L	50.0	21.4	1	11/05/21 16:54	11/09/21 22:17	7439-89-6	
Lead	<3.8	ug/L	10.0	3.8	1	11/05/21 16:54	11/09/21 22:17	7439-92-1	
Lithium	<7.7	ug/L	10.0	7.7	1	11/05/21 16:54	11/09/21 22:17	7439-93-2	
Magnesium	<31.4	ug/L	50.0	31.4	1	11/05/21 16:54	11/09/21 22:17	7439-95-4	
Manganese	<0.74	ug/L	5.0	0.74	1	11/05/21 16:54	11/09/21 22:17	7439-96-5	
Molybdenum	<2.2	ug/L	20.0	2.2	1	11/05/21 16:54	11/09/21 22:17	7439-98-7	
Potassium	<146	ug/L	500	146	1	11/05/21 16:54	11/09/21 22:17	7440-09-7	
Sodium	<254	ug/L	500	254	1	11/05/21 16:54	11/09/21 22:17	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.10	ug/L	1.0	0.10	1	11/05/21 16:54	11/10/21 12:19	7440-36-0	
Arsenic	<0.11	ug/L	1.0	0.11	1	11/05/21 16:54	11/08/21 11:56	7440-38-2	
Cadmium	<0.062	ug/L	0.50	0.062	1	11/05/21 16:54	11/08/21 11:56	7440-43-9	
Chromium	0.31J	ug/L	1.0	0.23	1	11/05/21 16:54	11/08/21 11:56	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/05/21 16:54	11/08/21 11:56	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Indianapolis									
Alkalinity, Total as CaCO3	<2.0	mg/L	2.0	2.0	1		11/04/21 11:32		
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		11/02/21 11:22		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	0.50J	mg/L	1.0	0.39	1		11/04/21 19:32	16887-00-6	B
Fluoride	<0.086	mg/L	0.20	0.086	1		11/04/21 19:32	16984-48-8	L2
Sulfate	<0.42	mg/L	1.0	0.42	1		11/04/21 19:32	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

QC Batch:	754494	Analysis Method:	EPA 200.7
QC Batch Method:	EPA 200.7	Analysis Description:	200.7 Metals, Total
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60384736013, 60384736014, 60384736015, 60384736016, 60384736017, 60384736018, 60384736019, 60384736020, 60384736021, 60384736022, 60384736023, 60384736024

METHOD BLANK:	3019879	Matrix:	Water
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Associated Lab Samples: 60384736013, 60384736014, 60384736015, 60384736016, 60384736017, 60384736018, 60384736019, 60384736020, 60384736021, 60384736022, 60384736023, 60384736024

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<1.8	5.0	1.8	11/09/21 21:39	
Boron	ug/L	<8.6	100	8.6	11/09/21 21:39	
Calcium	ug/L	<75.4	200	75.4	11/09/21 21:39	
Iron	ug/L	<21.4	50.0	21.4	11/09/21 21:39	
Lead	ug/L	<3.8	10.0	3.8	11/09/21 21:39	
Lithium	ug/L	<7.7	10.0	7.7	11/09/21 21:39	
Magnesium	ug/L	<31.4	50.0	31.4	11/09/21 21:39	
Manganese	ug/L	<0.74	5.0	0.74	11/09/21 21:39	
Molybdenum	ug/L	<2.2	20.0	2.2	11/09/21 21:39	
Potassium	ug/L	<146	500	146	11/09/21 21:39	
Sodium	ug/L	<254	500	254	11/09/21 21:39	

LABORATORY CONTROL SAMPLE: 3019880

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	949	95	85-115	
Boron	ug/L	1000	938	94	85-115	
Calcium	ug/L	10000	9690	97	85-115	
Iron	ug/L	10000	9690	97	85-115	
Lead	ug/L	1000	942	94	85-115	
Lithium	ug/L	1000	862	86	85-115	
Magnesium	ug/L	10000	9770	98	85-115	
Manganese	ug/L	1000	960	96	85-115	
Molybdenum	ug/L	1000	972	97	85-115	
Potassium	ug/L	10000	9430	94	85-115	
Sodium	ug/L	10000	9670	97	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3019881 3019882

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		60384736013 Result	Spike Conc.	Spike Conc.	Result							Result
Barium	ug/L	112	1000	1000	1090	1100	98	99	70-130	1	20	
Boron	ug/L	482	1000	1000	1390	1450	91	97	70-130	4	20	
Calcium	ug/L	148000	10000	10000	155000	162000	69	139	70-130	4	20	M1
Iron	ug/L	82.6	10000	10000	9500	9530	94	94	70-130	0	20	
Lead	ug/L	<3.8	1000	1000	947	963	95	96	70-130	2	20	

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QUALITY CONTROL DATA

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3019881												3019882	
Parameter	Units	60384736013 Result	MS	MSD	MS	MSD	MS	MSD	% Rec	Limits	RPD	Max RPD	Qual
			Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec					
Lithium	ug/L	41.5			866	868					0	20	
Magnesium	ug/L	32300	10000	10000	39100	39600	68	73	70-130		1	20	M1
Manganese	ug/L	1.1J	1000	1000	920	930	92	93	70-130		1	20	
Molybdenum	ug/L	13.7J	1000	1000	996	1000	98	99	70-130		1	20	
Potassium	ug/L	4290	10000	10000	14000	14500	98	102	70-130		3	20	
Sodium	ug/L	35300	10000	10000	44400	46300	91	111	70-130		4	20	

MATRIX SPIKE SAMPLE: 3019883											
Parameter	Units	60384736020 Result	Spike Conc.	MS	MS	% Rec	Limits	Qualifiers			
				Result	% Rec						
Barium	ug/L		147	1000	1140	99	70-130				
Boron	ug/L		100	1000	1030	93	70-130				
Calcium	ug/L		86300	10000	98200	119	70-130				
Iron	ug/L		4050	10000	13700	97	70-130				
Lead	ug/L		<3.8	1000	960	96	70-130				
Lithium	ug/L		36.6	1000	1060	102	70-130				
Magnesium	ug/L		23800	10000	32300	84	70-130				
Manganese	ug/L		139	1000	1080	94	70-130				
Molybdenum	ug/L		<2.2	1000	1000	100	70-130				
Potassium	ug/L		4020	10000	14300	103	70-130				
Sodium	ug/L		51900	10000	63100	113	70-130				

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QUALITY CONTROL DATA

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

QC Batch:	756724	Analysis Method:	EPA 200.7
QC Batch Method:	EPA 200.7	Analysis Description:	200.7 Metals, Total
		Laboratory:	Pace Analytical Services - Kansas City
Associated Lab Samples:	60384736001, 60384736002, 60384736003, 60384736004, 60384736005, 60384736006, 60384736007, 60384736008, 60384736009, 60384736010		

METHOD BLANK:	3028124	Matrix:	Water
Associated Lab Samples:	60384736001, 60384736002, 60384736003, 60384736004, 60384736005, 60384736006, 60384736007, 60384736008, 60384736009, 60384736010		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	2.0J	5.0	1.8	11/19/21 11:08	
Boron	ug/L	<8.6	100	8.6	11/19/21 11:08	
Calcium	ug/L	<75.4	200	75.4	11/19/21 11:08	
Iron	ug/L	<21.4	50.0	21.4	11/19/21 11:08	
Lead	ug/L	<3.8	10.0	3.8	11/19/21 11:08	
Lithium	ug/L	<7.7	10.0	7.7	11/19/21 11:08	
Magnesium	ug/L	<31.4	50.0	31.4	11/19/21 11:08	
Manganese	ug/L	<0.74	5.0	0.74	11/19/21 11:08	
Molybdenum	ug/L	<2.2	20.0	2.2	11/19/21 11:08	
Potassium	ug/L	<146	500	146	11/19/21 11:08	
Sodium	ug/L	<254	500	254	11/19/21 11:08	

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	983	98	85-115	
Boron	ug/L	1000	960	96	85-115	
Calcium	ug/L	10000	9630	96	85-115	
Iron	ug/L	10000	9760	98	85-115	
Lead	ug/L	1000	984	98	85-115	
Lithium	ug/L	1000	848	85	85-115	
Magnesium	ug/L	10000	10000	100	85-115	
Manganese	ug/L	1000	968	97	85-115	
Molybdenum	ug/L	1000	1000	100	85-115	
Potassium	ug/L	10000	9660	97	85-115	
Sodium	ug/L	10000	9790	98	85-115	

Parameter	Units	3028126		3028127		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		60384736007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result							MSD Result
Barium	ug/L	74.2	1000	1000	1050	1060	98	98	70-130	1	20	
Boron	ug/L	9490	1000	1000	10400	10400	87	90	70-130	0	20	
Calcium	ug/L	22800	10000	10000	31800	32000	90	92	70-130	0	20	
Iron	ug/L	1210	10000	10000	11000	11000	98	98	70-130	1	20	
Lead	ug/L	<3.8	1000	1000	984	991	98	99	70-130	1	20	

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QUALITY CONTROL DATA

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3028126												3028127	
Parameter	Units	60384736007		MS	MSD	MS	MSD	MS	MSD	% Rec	Max		
		Result	Conc.	Spike	Spike	Result	Result	% Rec	% Rec	Limits	RPD		
Lithium	ug/L	27.7	1000	1000	1000	1130	1140	111	112	70-130	1	20	
Magnesium	ug/L	3230	10000	10000	10000	13000	13100	98	99	70-130	0	20	
Manganese	ug/L	72.5	1000	1000	1000	1050	1050	98	98	70-130	0	20	
Molybdenum	ug/L	358	1000	1000	1000	1360	1370	100	102	70-130	1	20	
Potassium	ug/L	4680	10000	10000	10000	14400	14400	97	97	70-130	0	20	
Sodium	ug/L	171000	10000	10000	10000	178000	178000	63	68	70-130	0	20 M1	

MATRIX SPIKE SAMPLE: 3028129											
Parameter	Units	60384736002		Spike	MS	MS	% Rec	Qualifiers			
		Result	Conc.						Result	% Rec	
Barium	ug/L	185	1000	1000	1140	95	70-130				
Boron	ug/L	2500	1000	1000	3370	87	70-130				
Calcium	ug/L	70900	10000	10000	77500	66	70-130	M1			
Iron	ug/L	3160	10000	10000	12700	95	70-130				
Lead	ug/L	<3.8	1000	1000	967	97	70-130				
Lithium	ug/L	15.9	1000	1000	1070	105	70-130				
Magnesium	ug/L	10900	10000	10000	19500	86	70-130				
Manganese	ug/L	1200	1000	1000	2080	88	70-130				
Molybdenum	ug/L	105	1000	1000	1100	99	70-130				
Potassium	ug/L	4310	10000	10000	14000	97	70-130				
Sodium	ug/L	106000	10000	10000	112000	60	70-130	M1			

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QUALITY CONTROL DATA

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

QC Batch: 770150

Analysis Method: EPA 200.7

QC Batch Method: EPA 200.7

Analysis Description: 200.7 Metals, Total

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60384736013, 60384736014, 60384736017

METHOD BLANK: 3075338

Matrix: Water

Associated Lab Samples: 60384736013, 60384736014, 60384736017

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Lithium	ug/L	<7.7	10.0	7.7	02/09/22 17:40	

LABORATORY CONTROL SAMPLE: 3075339

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lithium	ug/L	1000	1010	101	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3075340 3075341

Parameter	Units	60385384001		3075341		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Lithium	ug/L	27.8	1000	1000	1050	1030	102	100	70-130	2	20

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

QC Batch:	754495	Analysis Method:	EPA 200.8
QC Batch Method:	EPA 200.8	Analysis Description:	200.8 MET
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60384736013, 60384736014, 60384736015, 60384736016, 60384736017, 60384736018, 60384736019, 60384736020, 60384736021, 60384736022, 60384736023, 60384736024

METHOD BLANK: 3019884 Matrix: Water

Associated Lab Samples: 60384736013, 60384736014, 60384736015, 60384736016, 60384736017, 60384736018, 60384736019, 60384736020, 60384736021, 60384736022, 60384736023, 60384736024

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.10	1.0	0.10	11/10/21 11:40	
Arsenic	ug/L	<0.11	1.0	0.11	11/08/21 11:17	
Cadmium	ug/L	<0.062	0.50	0.062	11/08/21 11:17	
Chromium	ug/L	<0.23	1.0	0.23	11/08/21 11:17	
Selenium	ug/L	<0.18	1.0	0.18	11/08/21 11:17	

LABORATORY CONTROL SAMPLE: 3019885

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	41.7	104	85-115	
Arsenic	ug/L	40	41.1	103	85-115	
Cadmium	ug/L	40	45.7	114	85-115	
Chromium	ug/L	40	41.1	103	85-115	
Selenium	ug/L	40	41.2	103	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3019886 3019887

Parameter	Units	60384736014 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Antimony	ug/L	0.18J	40	40	38.1	38.5	95	96	70-130	1	20	
Arsenic	ug/L	21.0	40	40	61.6	60.9	101	100	70-130	1	20	
Cadmium	ug/L	0.10J	40	40	38.3	37.8	96	94	70-130	1	20	
Chromium	ug/L	0.47J	40	40	38.4	38.1	95	94	70-130	1	20	
Selenium	ug/L	0.91J	40	40	40.3	40.5	98	99	70-130	1	20	

MATRIX SPIKE SAMPLE: 3019888

Parameter	Units	60384736019 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	<0.10	40	32.9	82	70-130	
Arsenic	ug/L	0.49J	40	39.0	96	70-130	
Cadmium	ug/L	0.074J	40	29.4	73	70-130	
Chromium	ug/L	0.57J	40	39.1	96	70-130	
Selenium	ug/L	<0.18	40	31.4	78	70-130	

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QUALITY CONTROL DATA

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

QC Batch:	756725	Analysis Method:	EPA 200.8
QC Batch Method:	EPA 200.8	Analysis Description:	200.8 MET
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60384736001, 60384736002, 60384736003, 60384736004, 60384736005, 60384736006, 60384736007, 60384736008, 60384736009, 60384736010

METHOD BLANK:	3028130	Matrix:	Water
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Associated Lab Samples: 60384736001, 60384736002, 60384736003, 60384736004, 60384736005, 60384736006, 60384736007, 60384736008, 60384736009, 60384736010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.10	1.0	0.10	11/18/21 16:41	
Arsenic	ug/L	<0.11	1.0	0.11	11/18/21 16:41	
Cadmium	ug/L	<0.062	0.50	0.062	11/18/21 16:41	
Chromium	ug/L	<0.23	1.0	0.23	11/18/21 16:41	
Selenium	ug/L	<0.18	1.0	0.18	11/18/21 16:41	

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	41.0	103	85-115	
Arsenic	ug/L	40	41.1	103	85-115	
Cadmium	ug/L	40	43.0	108	85-115	
Chromium	ug/L	40	38.0	95	85-115	
Selenium	ug/L	40	42.0	105	85-115	

Parameter	Units	60384736003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	<0.10	40	41.1	103	70-130	
Arsenic	ug/L	13.7	40	57.0	108	70-130	
Cadmium	ug/L	<0.062	40	46.4	116	70-130	
Chromium	ug/L	0.38J	40	37.0	92	70-130	
Selenium	ug/L	<0.18	40	46.2	115	70-130	

Parameter	Units	3028133		3028134		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60384736007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Antimony	ug/L	0.13J	40	40	38.3	37.8	95	94	70-130	1	20
Arsenic	ug/L	8.6	40	40	48.7	48.5	100	100	70-130	0	20
Cadmium	ug/L	0.096J	40	40	32.9	32.5	82	81	70-130	1	20
Chromium	ug/L	1.5	40	40	38.8	38.7	93	93	70-130	0	20
Selenium	ug/L	0.74J	40	40	31.6	30.4	77	74	70-130	4	20

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QUALITY CONTROL DATA

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

QC Batch:	648546	Analysis Method:	SM 2320B
QC Batch Method:	SM 2320B	Analysis Description:	2320B Alkalinity
		Laboratory:	Pace Analytical Services - Indianapolis
Associated Lab Samples:	60384736001, 60384736002, 60384736003, 60384736004, 60384736005, 60384736006, 60384736007, 60384736008, 60384736009, 60384736010, 60384736013, 60384736014, 60384736015, 60384736016, 60384736017, 60384736018, 60384736019, 60384736020, 60384736021, 60384736022		

METHOD BLANK:	2988247	Matrix:	Water
Associated Lab Samples:	60384736001, 60384736002, 60384736003, 60384736004, 60384736005, 60384736006, 60384736007, 60384736008, 60384736009, 60384736010, 60384736013, 60384736014, 60384736015, 60384736016, 60384736017, 60384736018, 60384736019, 60384736020, 60384736021, 60384736022		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<2.0	2.0	2.0	11/04/21 11:48	

LABORATORY CONTROL SAMPLE:	2988248					
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	50	50.1	100	90-110	

SAMPLE DUPLICATE:	2988249					
Parameter	Units	60384736001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	265	275	3	20	

SAMPLE DUPLICATE:	2988250					
Parameter	Units	60384736003 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	327	334	2	20	

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QUALITY CONTROL DATA

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

QC Batch: 648552

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Indianapolis

Associated Lab Samples: 60384736023, 60384736024

METHOD BLANK: 2988277

Matrix: Water

Associated Lab Samples: 60384736023, 60384736024

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<2.0	2.0	2.0	11/04/21 11:32	

LABORATORY CONTROL SAMPLE: 2988278

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	50	48.9	98	90-110	

SAMPLE DUPLICATE: 2988279

Parameter	Units	60384734001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	480	485	1	20	

SAMPLE DUPLICATE: 2988280

Parameter	Units	50301781001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	217	220	1	20	

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QUALITY CONTROL DATA

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

QC Batch:	753551	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60384736013, 60384736014, 60384736015, 60384736016, 60384736017, 60384736018, 60384736019, 60384736020, 60384736023, 60384736024

METHOD BLANK: 3016235 Matrix: Water

Associated Lab Samples: 60384736013, 60384736014, 60384736015, 60384736016, 60384736017, 60384736018, 60384736019, 60384736020, 60384736023, 60384736024

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	11/02/21 11:20	

LABORATORY CONTROL SAMPLE: 3016236

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	994	99	80-120	

SAMPLE DUPLICATE: 3016237

Parameter	Units	60384736013 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	609	611	0	10	

SAMPLE DUPLICATE: 3016238

Parameter	Units	60384734005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	302	306	1	10	

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QUALITY CONTROL DATA

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

QC Batch:	753818	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
		Laboratory:	Pace Analytical Services - Kansas City
Associated Lab Samples:	60384736001, 60384736002, 60384736003, 60384736004, 60384736005, 60384736006, 60384736007, 60384736008, 60384736009, 60384736010, 60384736021, 60384736022		

METHOD BLANK:	3017179	Matrix:	Water
Associated Lab Samples:	60384736001, 60384736002, 60384736003, 60384736004, 60384736005, 60384736006, 60384736007, 60384736008, 60384736009, 60384736010, 60384736021, 60384736022		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	11/03/21 10:36	

LABORATORY CONTROL SAMPLE: 3017180						
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1010	101	80-120	

SAMPLE DUPLICATE: 3017181						
Parameter	Units	60384734006 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	355	356	0	10	

SAMPLE DUPLICATE: 3017182						
Parameter	Units	60384736007 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	591	583	1	10	

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QUALITY CONTROL DATA

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

QC Batch: 753652 Analysis Method: EPA 300.0

QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60384736013, 60384736014, 60384736015, 60384736016, 60384736017, 60384736018, 60384736019, 60384736020, 60384736021, 60384736022, 60384736023, 60384736024

METHOD BLANK: 3016612 Matrix: Water

Associated Lab Samples: 60384736013, 60384736014, 60384736015, 60384736016, 60384736017, 60384736018, 60384736019, 60384736020, 60384736021, 60384736022, 60384736023, 60384736024

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	11/03/21 08:10	
Fluoride	mg/L	<0.086	0.20	0.086	11/03/21 08:10	
Sulfate	mg/L	<0.42	1.0	0.42	11/03/21 08:10	

METHOD BLANK: 3019321 Matrix: Water

Associated Lab Samples: 60384736013, 60384736014, 60384736015, 60384736016, 60384736017, 60384736018, 60384736019, 60384736020, 60384736021, 60384736022, 60384736023, 60384736024

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.45J	1.0	0.39	11/04/21 08:04	
Fluoride	mg/L	<0.086	0.20	0.086	11/04/21 08:04	
Sulfate	mg/L	<0.42	1.0	0.42	11/04/21 08:04	

METHOD BLANK: 3020953 Matrix: Water

Associated Lab Samples: 60384736013, 60384736014, 60384736015, 60384736016, 60384736017, 60384736018, 60384736019, 60384736020, 60384736021, 60384736022, 60384736023, 60384736024

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.45J	1.0	0.39	11/05/21 18:11	
Fluoride	mg/L	<0.086	0.20	0.086	11/05/21 18:11	
Sulfate	mg/L	<0.42	1.0	0.42	11/05/21 18:11	

LABORATORY CONTROL SAMPLE: 3016613

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.6	93	90-110	
Fluoride	mg/L	2.5	2.2	89	90-110 L2	
Sulfate	mg/L	5	4.9	97	90-110	

LABORATORY CONTROL SAMPLE: 3019322

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	5.1	101	90-110	

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QUALITY CONTROL DATA

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

LABORATORY CONTROL SAMPLE: 3019322

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2.5	2.7	106	90-110	
Sulfate	mg/L	5	5.3	106	90-110	

LABORATORY CONTROL SAMPLE: 3020954

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	109	90-110	
Sulfate	mg/L	5	5.2	105	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3016614 3016615

Parameter	Units	60384777001		3016615		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Chloride	mg/L	180	100	291	292	111	112	80-120	0	15	
Fluoride	mg/L	4.6	50	59.3	59.7	109	110	80-120	1	15	
Sulfate	mg/L	767	100	<8.4	1240	-762	94	80-120		15 M1	

MATRIX SPIKE SAMPLE: 3016616

Parameter	Units	60384736021 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	60.7	50	109	97	80-120	
Fluoride	mg/L	0.36	2.5	3.1	111	80-120	
Sulfate	mg/L	256	100	358	102	80-120	

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QUALITY CONTROL DATA

Project: AMEREN RCPA-CA
Pace Project No.: 60384736

QC Batch: 754240 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60384736001

METHOD BLANK: 3018842 Matrix: Water

Associated Lab Samples: 60384736001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	11/05/21 08:53	
Fluoride	mg/L	<0.086	0.20	0.086	11/05/21 08:53	
Sulfate	mg/L	<0.42	1.0	0.42	11/05/21 08:53	

METHOD BLANK: 3021937 Matrix: Water

Associated Lab Samples: 60384736001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	11/08/21 08:38	
Fluoride	mg/L	<0.086	0.20	0.086	11/08/21 08:38	
Sulfate	mg/L	<0.42	1.0	0.42	11/08/21 08:38	

METHOD BLANK: 3023023 Matrix: Water

Associated Lab Samples: 60384736001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	11/09/21 07:59	
Fluoride	mg/L	<0.086	0.20	0.086	11/09/21 07:59	
Sulfate	mg/L	<0.42	1.0	0.42	11/09/21 07:59	

METHOD BLANK: 3024071 Matrix: Water

Associated Lab Samples: 60384736001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	11/10/21 10:55	
Fluoride	mg/L	<0.086	0.20	0.086	11/10/21 10:55	
Sulfate	mg/L	<0.42	1.0	0.42	11/10/21 10:55	

LABORATORY CONTROL SAMPLE: 3018843

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	2.5	100	90-110	

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QUALITY CONTROL DATA

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

LABORATORY CONTROL SAMPLE: 3018843

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	5	4.9	98	90-110	

LABORATORY CONTROL SAMPLE: 3021938

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.9	97	90-110	
Fluoride	mg/L	2.5	2.6	104	90-110	
Sulfate	mg/L	5	5.3	106	90-110	

LABORATORY CONTROL SAMPLE: 3023024

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.8	95	90-110	
Fluoride	mg/L	2.5	2.5	101	90-110	
Sulfate	mg/L	5	5.1	103	90-110	

LABORATORY CONTROL SAMPLE: 3024072

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	2.5	99	90-110	
Sulfate	mg/L	5	5.3	105	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3018844 3018845

Parameter	Units	60384688029		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec					
Chloride	mg/L	185	100	100	306	301	117	112	80-120	1	15		
Fluoride	mg/L	0.92J	12.5	12.5	12.6	12.7	93	95	80-120	1	15		
Sulfate	mg/L	37.1	25	25	61.4	61.7	95	96	80-120	0	15		

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3018846 3018847

Parameter	Units	60384734005		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec					
Chloride	mg/L	3.2	5	5	7.6	7.6	88	88	80-120	0	15		
Fluoride	mg/L	0.27	2.5	2.5	2.6	2.6	93	93	80-120	0	15		
Sulfate	mg/L	28.7	25	25	58.7	57.8	120	116	80-120	1	15		

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QUALITY CONTROL DATA

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

QC Batch: 754481

Analysis Method: EPA 300.0

QC Batch Method: EPA 300.0

Analysis Description: 300.0 IC Anions

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60384736002, 60384736003, 60384736005, 60384736006, 60384736007, 60384736008, 60384736009

METHOD BLANK: 3019839

Matrix: Water

Associated Lab Samples: 60384736002, 60384736003, 60384736005, 60384736006, 60384736007, 60384736008, 60384736009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	11/08/21 08:58	
Fluoride	mg/L	<0.086	0.20	0.086	11/08/21 08:58	
Sulfate	mg/L	<0.42	1.0	0.42	11/08/21 08:58	

METHOD BLANK: 3023011

Matrix: Water

Associated Lab Samples: 60384736002, 60384736003, 60384736005, 60384736006, 60384736007, 60384736008, 60384736009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	11/09/21 07:59	
Fluoride	mg/L	<0.086	0.20	0.086	11/09/21 07:59	
Sulfate	mg/L	<0.42	1.0	0.42	11/09/21 07:59	

METHOD BLANK: 3023060

Matrix: Water

Associated Lab Samples: 60384736002, 60384736003, 60384736005, 60384736006, 60384736007, 60384736008, 60384736009

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<3.9	10.0	3.9	11/09/21 20:53	
Fluoride	mg/L	<0.86	2.0	0.86	11/09/21 20:53	
Sulfate	mg/L	<4.2	10.0	4.2	11/09/21 20:53	

LABORATORY CONTROL SAMPLE: 3019840

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	2.5	102	90-110	
Sulfate	mg/L	5	5.2	104	90-110	

LABORATORY CONTROL SAMPLE: 3023012

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.8	95	90-110	
Fluoride	mg/L	2.5	2.5	101	90-110	
Sulfate	mg/L	5	5.1	103	90-110	

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QUALITY CONTROL DATA

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

LABORATORY CONTROL SAMPLE: 3023061

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	5	47.0	941	90-110	L1

MATRIX SPIKE SAMPLE: 3019843

Parameter	Units	60385056001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	144	50	205	121	80-120	E, M1
Fluoride	mg/L	0.55	2.5	3.2	105	80-120	
Sulfate	mg/L	55.3	50	110	109	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3019858 3019859

Parameter	Units	3019858		3019859		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60384736007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Chloride	mg/L	26.1	25	25	50.3	50.4	97	97	80-120	0	15
Fluoride	mg/L	2.5	2.5	2.5	5.1	5.2	104	107	80-120	2	15
Sulfate	mg/L	98.0	25	25	126	126	110	113	80-120	0	15 E

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QUALITY CONTROL DATA

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

QC Batch: 754912	Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0	Analysis Description: 300.0 IC Anions
	Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60384736010

METHOD BLANK: 3021296 Matrix: Water

Associated Lab Samples: 60384736010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.53J	1.0	0.39	11/09/21 08:03	
Fluoride	mg/L	<0.086	0.20	0.086	11/09/21 08:03	
Sulfate	mg/L	<0.42	1.0	0.42	11/09/21 08:03	

METHOD BLANK: 3024066 Matrix: Water

Associated Lab Samples: 60384736010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	11/10/21 10:55	
Fluoride	mg/L	<0.086	0.20	0.086	11/10/21 10:55	
Sulfate	mg/L	<0.42	1.0	0.42	11/10/21 10:55	

LABORATORY CONTROL SAMPLE: 3021297

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.5	90	90-110	
Fluoride	mg/L	2.5	2.4	98	90-110	
Sulfate	mg/L	5	4.8	96	90-110	

LABORATORY CONTROL SAMPLE: 3024067

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	2.5	99	90-110	
Sulfate	mg/L	5	5.3	105	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3021298 3021299

Parameter	Units	3021298		3021299		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Chloride	mg/L	2.6	5	5	7.0	7.0	87	88	80-120	1	15
Fluoride	mg/L	0.27	2.5	2.5	2.5	2.5	89	90	80-120	1	15
Sulfate	mg/L	61.4	50	50	110	109	98	95	80-120	2	15

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QUALITY CONTROL DATA

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

MATRIX SPIKE SAMPLE:		3021300					
Parameter	Units	60385308002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	13.4	5	18.6	104	80-120	
Fluoride	mg/L	<0.086	2.5	2.5	101	80-120	
Sulfate	mg/L	2.5	5	7.5	101	80-120	

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QUALITY CONTROL DATA

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

QC Batch: 755520

Analysis Method: EPA 300.0

QC Batch Method: EPA 300.0

Analysis Description: 300.0 IC Anions

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60384736004

METHOD BLANK: 3023412

Matrix: Water

Associated Lab Samples: 60384736004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	11/12/21 11:28	
Fluoride	mg/L	<0.086	0.20	0.086	11/11/21 09:00	
Sulfate	mg/L	<0.42	1.0	0.42	11/12/21 11:28	

METHOD BLANK: 3026738

Matrix: Water

Associated Lab Samples: 60384736004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	11/13/21 15:27	
Fluoride	mg/L	<0.086	0.20	0.086	11/13/21 15:27	
Sulfate	mg/L	<0.42	1.0	0.42	11/13/21 15:27	

METHOD BLANK: 3027905

Matrix: Water

Associated Lab Samples: 60384736004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.39	1.0	0.39	11/15/21 08:30	
Fluoride	mg/L	<0.086	0.20	0.086	11/15/21 08:30	
Sulfate	mg/L	<0.42	1.0	0.42	11/15/21 08:30	

LABORATORY CONTROL SAMPLE: 3023413

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.6	93	90-110	
Fluoride	mg/L	2.5	2.5	99	90-110	
Sulfate	mg/L	5	4.9	98	90-110	

LABORATORY CONTROL SAMPLE: 3026739

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.6	93	90-110	
Fluoride	mg/L	2.5	2.5	102	90-110	
Sulfate	mg/L	5	4.9	98	90-110	

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QUALITY CONTROL DATA

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

LABORATORY CONTROL SAMPLE: 3027906

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.8	97	90-110	
Fluoride	mg/L	2.5	2.7	109	90-110	
Sulfate	mg/L	5	5.2	103	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3023414 3023415

Parameter	Units	60385430005		MS	MSD	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	Spike Conc.	Spike Conc.	MS Spike Conc.								
Chloride	mg/L	1.4	5	5	5	5.7	5.7	86	87	80-120	1	15	
Fluoride	mg/L	0.20	2.5	2.5	2.5	2.5	2.5	92	93	80-120	1	15	
Sulfate	mg/L	47.2	50	50	50	96.3	93.4	98	92	80-120	3	15	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3023417 3023418

Parameter	Units	60385405002		MS	MSD	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	Spike Conc.	Spike Conc.	MS Spike Conc.								
Chloride	mg/L	58.7	50	50	50	96.6	96.1	93	92	80-120	1	15	
Fluoride	mg/L	0.16J	2.5	2.5	2.5	2.5	2.4	93	91	80-120	2	15	
Sulfate	mg/L	350	250	250	250	608	609	103	103	80-120	0	15	

SAMPLE DUPLICATE: 3023416

Parameter	Units	60385430005		Dup Result	RPD	Max RPD	Qualifiers
		Result	Spike Conc.				
Chloride	mg/L	1.4	5	1.4	0	15	
Fluoride	mg/L	0.20	2.5	0.20J		15	
Sulfate	mg/L	47.2	50	46.7	1	15	

SAMPLE DUPLICATE: 3023419

Parameter	Units	60385405002		Dup Result	RPD	Max RPD	Qualifiers
		Result	Spike Conc.				
Chloride	mg/L	58.7	50	48.4	3	15	
Fluoride	mg/L	0.16J	2.5	0.18J		15	
Sulfate	mg/L	350	250	353	1	15	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-P05S **Lab ID: 60384736001** Collected: 10/28/21 12:40 Received: 10/30/21 04:25 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 ± 0.363 (0.624) C:NA T:103%	pCi/L	11/30/21 11:26	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.173 ± 0.419 (0.930) C:69% T:90%	pCi/L	11/24/21 14:25	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-P10S **Lab ID: 60384736002** Collected: 10/27/21 12:54 Received: 10/30/21 04:25 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	0.161 ± 0.315 (0.576) C:NA T:94%	pCi/L	11/30/21 11:26	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.517 ± 0.422 (0.849) C:71% T:90%	pCi/L	11/24/21 14:25	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-P19S **Lab ID: 60384736003** Collected: 10/27/21 12:30 Received: 10/30/21 04:25 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	0.260 ± 0.339 (0.559) C:NA T:94%	pCi/L	11/30/21 11:26	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.848 ± 0.489 (0.914) C:70% T:90%	pCi/L	11/24/21 14:25	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-P-19I **Lab ID: 60384736004** Collected: 10/27/21 13:40 Received: 10/30/21 04:25 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	0.112 ± 0.256 (0.412) C:NA T:95%	pCi/L	11/30/21 11:26	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.785 ± 0.572 (1.12) C:64% T:73%	pCi/L	11/24/21 14:36	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-P19D **Lab ID: 60384736005** Collected: 10/27/21 12:18 Received: 10/30/21 04:25 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 ± 0.407 (0.726) C:NA T:96%	pCi/L	11/30/21 11:26	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.502 ± 0.411 (0.828) C:76% T:85%	pCi/L	11/24/21 11:39	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-P22S **Lab ID: 60384736006** Collected: 10/27/21 10:40 Received: 10/30/21 04:25 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	0.306 ± 0.318 (0.474) C:NA T:98%	pCi/L	11/30/21 11:26	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.385 ± 0.362 (0.744) C:74% T:93%	pCi/L	11/24/21 11:39	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-P22D **Lab ID: 60384736007** Collected: 10/27/21 10:05 Received: 10/30/21 04:25 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 ± 0.244 (0.529) C:NA T:89%	pCi/L	11/30/21 11:43	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.552 ± 0.394 (0.763) C:71% T:84%	pCi/L	11/24/21 11:39	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-P29S **Lab ID: 60384736008** Collected: 10/29/21 13:15 Received: 10/30/21 04:25 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	0.341 ± 0.354 (0.528) C:NA T:91%	pCi/L	11/30/21 11:43	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.382 ± 0.377 (0.775) C:72% T:83%	pCi/L	11/24/21 11:40	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-P30S **Lab ID: 60384736009** Collected: 10/29/21 11:10 Received: 10/30/21 04:25 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	-0.0498 ± 0.324 (0.703) C:NA T:97%	pCi/L	11/30/21 11:43	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	0.0861 ± 0.334 (0.757) C:73% T:87%	pCi/L	11/24/21 11:40	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-P31S **Lab ID: 60384736010** Collected: 10/28/21 11:45 Received: 10/30/21 04:25 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	0.430 ± 0.342 (0.444) C:NA T:103%	pCi/L	11/30/21 11:43	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	1.57 ± 0.548 (0.782) C:68% T:89%	pCi/L	11/24/21 11:49	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-CA-MS-1 **Lab ID: 60384736011** Collected: 10/27/21 10:05 Received: 10/30/21 04:25 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	113.92 %REC ± NA (NA) C:NA T:NA%	pCi/L	11/30/21 11:43	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	111.61 %REC ± NA (NA) C:NA T:NA	pCi/L	11/24/21 14:37	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	83.97 %REC 30.27 RPD ± NA (NA) C:NA T:NA%	pCi/L	11/30/21 11:43	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	106.67 %REC 4.52 RPD ± NA (NA) C:NA T:NA	pCi/L	11/24/21 11:40	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-P16S **Lab ID: 60384736013** Collected: 10/26/21 11:51 Received: 10/27/21 04:05 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	0.000 ± 0.345 (0.773) C:NA T:80%	pCi/L	12/21/21 12:26	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.386 ± 0.380 (0.777) C:70% T:86%	pCi/L	12/22/21 14:13	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-P17S **Lab ID: 60384736014** Collected: 10/26/21 13:30 Received: 10/27/21 04:05 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	0.209 ± 0.453 (0.836) C:NA T:90%	pCi/L	12/21/21 12:26	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.479 ± 0.400 (0.796) C:71% T:84%	pCi/L	12/22/21 14:14	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-P171 **Lab ID: 60384736015** Collected: 10/26/21 13:25 Received: 10/27/21 04:05 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	0.115 ± 1.13 (1.83) C:NA T:25%	pCi/L	12/21/21 12:26	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.348 ± 0.429 (0.905) C:68% T:81%	pCi/L	12/22/21 14:14	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-P17D **Lab ID: 60384736016** Collected: 10/26/21 14:50 Received: 10/27/21 04:05 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	0.216 ± 0.425 (0.776) C:NA T:84%	pCi/L	12/21/21 12:26	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.519 ± 0.438 (0.877) C:67% T:85%	pCi/L	12/22/21 14:14	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-P21S **Lab ID: 60384736017** Collected: 10/26/21 15:15 Received: 10/27/21 04:05 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	0.185 ± 0.402 (0.742) C:NA T:91%	pCi/L	12/21/21 12:26	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.650 ± 0.462 (0.899) C:71% T:84%	pCi/L	12/22/21 14:14	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-P211 **Lab ID: 60384736018** Collected: 10/26/21 13:35 Received: 10/27/21 04:05 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	0.0641 ± 0.547 (1.07) C:NA T:88%	pCi/L	12/21/21 12:26	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.0373 ± 0.439 (1.02) C:65% T:83%	pCi/L	12/22/21 14:14	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: R-P21D Lab ID: 60384736019 Collected: 10/26/21 12:40 Received: 10/27/21 04:05 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.405 ± 0.327 (0.183) C:NA T:89%	pCi/L	12/21/21 12:50	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.605 ± 0.425 (0.818) C:69% T:88%	pCi/L	12/22/21 14:14	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-P29D **Lab ID: 60384736020** Collected: 10/25/21 14:51 Received: 10/27/21 04:05 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	-0.118 ± 0.433 (0.935) C:NA T:94%	pCi/L	12/21/21 12:50	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.333 ± 0.384 (0.807) C:71% T:92%	pCi/L	12/22/21 14:14	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-CA-DUP-1 **Lab ID: 60384736021** Collected: 10/25/21 00:00 Received: 10/27/21 04:05 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	0.144 ± 0.445 (0.862) C:NA T:84%	pCi/L	12/21/21 12:50	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.541 ± 0.476 (0.958) C:66% T:76%	pCi/L	12/22/21 14:14	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-CA-DUP-2 **Lab ID: 60384736022** Collected: 10/25/21 00:00 Received: 10/27/21 04:05 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	-0.108 ± 0.300 (0.708) C:NA T:105%	pCi/L	12/21/21 12:50	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.00503 ± 0.347 (0.809) C:65% T:97%	pCi/L	12/22/21 14:14	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-CA-FB-1 **Lab ID: 60384736023** Collected: 10/26/21 12:15 Received: 10/27/21 04:05 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	-0.121 ± 0.412 (0.911) C:NA T:93%	pCi/L	12/21/21 12:50	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	0.526 ± 0.389 (0.758) C:70% T:91%	pCi/L	12/22/21 14:15	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Sample: R-CA-FB-2 **Lab ID: 60384736024** Collected: 10/26/21 13:00 Received: 10/27/21 04:05 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	0.0574 ± 0.262 (0.423) C:NA T:98%	pCi/L	12/21/21 12:50	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.680 ± 0.468 (0.901) C:67% T:87%	pCi/L	12/22/21 14:15	15262-20-1	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

QC Batch: 472871

Analysis Method: EPA 903.1

QC Batch Method: EPA 903.1

Analysis Description: 903.1 Radium-226

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 60384736001, 60384736002, 60384736003, 60384736004, 60384736005, 60384736006, 60384736007, 60384736008, 60384736009, 60384736010, 60384736011, 60384736012

METHOD BLANK: 2283219

Matrix: Water

Associated Lab Samples: 60384736001, 60384736002, 60384736003, 60384736004, 60384736005, 60384736006, 60384736007, 60384736008, 60384736009, 60384736010, 60384736011, 60384736012

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.116 ± 0.332 (0.616) C:NA T:98%	pCi/L	11/30/21 11:26	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

QC Batch: 475843

Analysis Method: EPA 904.0

QC Batch Method: EPA 904.0

Analysis Description: 904.0 Radium 228

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 60384736013, 60384736014, 60384736015, 60384736016, 60384736017, 60384736018, 60384736019, 60384736020, 60384736021, 60384736022, 60384736023, 60384736024

METHOD BLANK: 2298507

Matrix: Water

Associated Lab Samples: 60384736013, 60384736014, 60384736015, 60384736016, 60384736017, 60384736018, 60384736019, 60384736020, 60384736021, 60384736022, 60384736023, 60384736024

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.659 ± 0.404 (0.737) C:69% T:86%	pCi/L	12/22/21 14:14	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

QC Batch: 472872

Analysis Method: EPA 904.0

QC Batch Method: EPA 904.0

Analysis Description: 904.0 Radium 228

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 60384736001, 60384736002, 60384736003, 60384736004, 60384736005, 60384736006, 60384736007, 60384736008, 60384736009, 60384736010, 60384736011, 60384736012

METHOD BLANK: 2283220

Matrix: Water

Associated Lab Samples: 60384736001, 60384736002, 60384736003, 60384736004, 60384736005, 60384736006, 60384736007, 60384736008, 60384736009, 60384736010, 60384736011, 60384736012

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.627 ± 0.401 (0.765) C:70% T:92%	pCi/L	11/24/21 11:20	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

QC Batch:	475842	Analysis Method:	EPA 903.1
QC Batch Method:	EPA 903.1	Analysis Description:	903.1 Radium-226
		Laboratory:	Pace Analytical Services - Greensburg
Associated Lab Samples:	60384736013, 60384736014, 60384736015, 60384736016, 60384736017, 60384736018, 60384736019, 60384736020, 60384736021, 60384736022, 60384736023, 60384736024		

METHOD BLANK:	2298503	Matrix:	Water
Associated Lab Samples:	60384736013, 60384736014, 60384736015, 60384736016, 60384736017, 60384736018, 60384736019, 60384736020, 60384736021, 60384736022, 60384736023, 60384736024		

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	-0.0992 ± 0.238 (0.596) C:NA T:93%	pCi/L	12/21/21 12:37	

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QUALIFIERS

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

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.

E Analyte concentration exceeded the calibration range. The reported result is estimated.

H1 Analysis conducted outside the EPA method holding time.

L1 Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results for this analyte in associated samples may be biased high.

L2 Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60384736001	R-P05S	EPA 200.7	756724	EPA 200.7	756851
60384736002	R-P10S	EPA 200.7	756724	EPA 200.7	756851
60384736003	R-P19S	EPA 200.7	756724	EPA 200.7	756851
60384736004	R-P-19I	EPA 200.7	756724	EPA 200.7	756851
60384736005	R-P19D	EPA 200.7	756724	EPA 200.7	756851
60384736006	R-P22S	EPA 200.7	756724	EPA 200.7	756851
60384736007	R-P22D	EPA 200.7	756724	EPA 200.7	756851
60384736008	R-P29S	EPA 200.7	756724	EPA 200.7	756851
60384736009	R-P30S	EPA 200.7	756724	EPA 200.7	756851
60384736010	R-P31S	EPA 200.7	756724	EPA 200.7	756851
60384736013	R-P16S	EPA 200.7	754494	EPA 200.7	754594
60384736013	R-P16S	EPA 200.7	770150	EPA 200.7	770289
60384736014	R-P17S	EPA 200.7	754494	EPA 200.7	754594
60384736014	R-P17S	EPA 200.7	770150	EPA 200.7	770289
60384736015	R-P17I	EPA 200.7	754494	EPA 200.7	754594
60384736016	R-P17D	EPA 200.7	754494	EPA 200.7	754594
60384736017	R-P21S	EPA 200.7	754494	EPA 200.7	754594
60384736017	R-P21S	EPA 200.7	770150	EPA 200.7	770289
60384736018	R-P21I	EPA 200.7	754494	EPA 200.7	754594
60384736019	R-P21D	EPA 200.7	754494	EPA 200.7	754594
60384736020	R-P29D	EPA 200.7	754494	EPA 200.7	754594
60384736021	R-CA-DUP-1	EPA 200.7	754494	EPA 200.7	754594
60384736022	R-CA-DUP-2	EPA 200.7	754494	EPA 200.7	754594
60384736023	R-CA-FB-1	EPA 200.7	754494	EPA 200.7	754594
60384736024	R-CA-FB-2	EPA 200.7	754494	EPA 200.7	754594
60384736001	R-P05S	EPA 200.8	756725	EPA 200.8	756852
60384736002	R-P10S	EPA 200.8	756725	EPA 200.8	756852
60384736003	R-P19S	EPA 200.8	756725	EPA 200.8	756852
60384736004	R-P-19I	EPA 200.8	756725	EPA 200.8	756852
60384736005	R-P19D	EPA 200.8	756725	EPA 200.8	756852
60384736006	R-P22S	EPA 200.8	756725	EPA 200.8	756852
60384736007	R-P22D	EPA 200.8	756725	EPA 200.8	756852
60384736008	R-P29S	EPA 200.8	756725	EPA 200.8	756852
60384736009	R-P30S	EPA 200.8	756725	EPA 200.8	756852
60384736010	R-P31S	EPA 200.8	756725	EPA 200.8	756852
60384736013	R-P16S	EPA 200.8	754495	EPA 200.8	754593
60384736014	R-P17S	EPA 200.8	754495	EPA 200.8	754593
60384736015	R-P17I	EPA 200.8	754495	EPA 200.8	754593
60384736016	R-P17D	EPA 200.8	754495	EPA 200.8	754593
60384736017	R-P21S	EPA 200.8	754495	EPA 200.8	754593
60384736018	R-P21I	EPA 200.8	754495	EPA 200.8	754593
60384736019	R-P21D	EPA 200.8	754495	EPA 200.8	754593
60384736020	R-P29D	EPA 200.8	754495	EPA 200.8	754593
60384736021	R-CA-DUP-1	EPA 200.8	754495	EPA 200.8	754593

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60384736022	R-CA-DUP-2	EPA 200.8	754495	EPA 200.8	754593
60384736023	R-CA-FB-1	EPA 200.8	754495	EPA 200.8	754593
60384736024	R-CA-FB-2	EPA 200.8	754495	EPA 200.8	754593
60384736001	R-P05S	EPA 903.1	472871		
60384736002	R-P10S	EPA 903.1	472871		
60384736003	R-P19S	EPA 903.1	472871		
60384736004	R-P-19I	EPA 903.1	472871		
60384736005	R-P19D	EPA 903.1	472871		
60384736006	R-P22S	EPA 903.1	472871		
60384736007	R-P22D	EPA 903.1	472871		
60384736008	R-P29S	EPA 903.1	472871		
60384736009	R-P30S	EPA 903.1	472871		
60384736010	R-P31S	EPA 903.1	472871		
60384736011	R-CA-MS-1	EPA 903.1	472871		
60384736012	R-CA-MSD-1	EPA 903.1	472871		
60384736013	R-P16S	EPA 903.1	475842		
60384736014	R-P17S	EPA 903.1	475842		
60384736015	R-P17I	EPA 903.1	475842		
60384736016	R-P17D	EPA 903.1	475842		
60384736017	R-P21S	EPA 903.1	475842		
60384736018	R-P21I	EPA 903.1	475842		
60384736019	R-P21D	EPA 903.1	475842		
60384736020	R-P29D	EPA 903.1	475842		
60384736021	R-CA-DUP-1	EPA 903.1	475842		
60384736022	R-CA-DUP-2	EPA 903.1	475842		
60384736023	R-CA-FB-1	EPA 903.1	475842		
60384736024	R-CA-FB-2	EPA 903.1	475842		
60384736001	R-P05S	EPA 904.0	472872		
60384736002	R-P10S	EPA 904.0	472872		
60384736003	R-P19S	EPA 904.0	472872		
60384736004	R-P-19I	EPA 904.0	472872		
60384736005	R-P19D	EPA 904.0	472872		
60384736006	R-P22S	EPA 904.0	472872		
60384736007	R-P22D	EPA 904.0	472872		
60384736008	R-P29S	EPA 904.0	472872		
60384736009	R-P30S	EPA 904.0	472872		
60384736010	R-P31S	EPA 904.0	472872		
60384736011	R-CA-MS-1	EPA 904.0	472872		
60384736012	R-CA-MSD-1	EPA 904.0	472872		
60384736013	R-P16S	EPA 904.0	475843		
60384736014	R-P17S	EPA 904.0	475843		
60384736015	R-P17I	EPA 904.0	475843		
60384736016	R-P17D	EPA 904.0	475843		
60384736017	R-P21S	EPA 904.0	475843		
60384736018	R-P21I	EPA 904.0	475843		
60384736019	R-P21D	EPA 904.0	475843		
60384736020	R-P29D	EPA 904.0	475843		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60384736021	R-CA-DUP-1	EPA 904.0	475843		
60384736022	R-CA-DUP-2	EPA 904.0	475843		
60384736023	R-CA-FB-1	EPA 904.0	475843		
60384736024	R-CA-FB-2	EPA 904.0	475843		
60384736001	R-P05S	SM 2320B	648546		
60384736002	R-P10S	SM 2320B	648546		
60384736003	R-P19S	SM 2320B	648546		
60384736004	R-P-19I	SM 2320B	648546		
60384736005	R-P19D	SM 2320B	648546		
60384736006	R-P22S	SM 2320B	648546		
60384736007	R-P22D	SM 2320B	648546		
60384736008	R-P29S	SM 2320B	648546		
60384736009	R-P30S	SM 2320B	648546		
60384736010	R-P31S	SM 2320B	648546		
60384736013	R-P16S	SM 2320B	648546		
60384736014	R-P17S	SM 2320B	648546		
60384736015	R-P17I	SM 2320B	648546		
60384736016	R-P17D	SM 2320B	648546		
60384736017	R-P21S	SM 2320B	648546		
60384736018	R-P21I	SM 2320B	648546		
60384736019	R-P21D	SM 2320B	648546		
60384736020	R-P29D	SM 2320B	648546		
60384736021	R-CA-DUP-1	SM 2320B	648546		
60384736022	R-CA-DUP-2	SM 2320B	648546		
60384736023	R-CA-FB-1	SM 2320B	648552		
60384736024	R-CA-FB-2	SM 2320B	648552		
60384736001	R-P05S	SM 2540C	753818		
60384736002	R-P10S	SM 2540C	753818		
60384736003	R-P19S	SM 2540C	753818		
60384736004	R-P-19I	SM 2540C	753818		
60384736005	R-P19D	SM 2540C	753818		
60384736006	R-P22S	SM 2540C	753818		
60384736007	R-P22D	SM 2540C	753818		
60384736008	R-P29S	SM 2540C	753818		
60384736009	R-P30S	SM 2540C	753818		
60384736010	R-P31S	SM 2540C	753818		
60384736013	R-P16S	SM 2540C	753551		
60384736014	R-P17S	SM 2540C	753551		
60384736015	R-P17I	SM 2540C	753551		
60384736016	R-P17D	SM 2540C	753551		
60384736017	R-P21S	SM 2540C	753551		
60384736018	R-P21I	SM 2540C	753551		
60384736019	R-P21D	SM 2540C	753551		
60384736020	R-P29D	SM 2540C	753551		
60384736021	R-CA-DUP-1	SM 2540C	753818		
60384736022	R-CA-DUP-2	SM 2540C	753818		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN RCPA-CA

Pace Project No.: 60384736

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60384736023	R-CA-FB-1	SM 2540C	753551		
60384736024	R-CA-FB-2	SM 2540C	753551		
60384736001	R-P05S	EPA 300.0	754240		
60384736002	R-P10S	EPA 300.0	754481		
60384736003	R-P19S	EPA 300.0	754481		
60384736004	R-P-19I	EPA 300.0	755520		
60384736005	R-P19D	EPA 300.0	754481		
60384736006	R-P22S	EPA 300.0	754481		
60384736007	R-P22D	EPA 300.0	754481		
60384736008	R-P29S	EPA 300.0	754481		
60384736009	R-P30S	EPA 300.0	754481		
60384736010	R-P31S	EPA 300.0	754912		
60384736013	R-P16S	EPA 300.0	753652		
60384736014	R-P17S	EPA 300.0	753652		
60384736015	R-P17I	EPA 300.0	753652		
60384736016	R-P17D	EPA 300.0	753652		
60384736017	R-P21S	EPA 300.0	753652		
60384736018	R-P21I	EPA 300.0	753652		
60384736019	R-P21D	EPA 300.0	753652		
60384736020	R-P29D	EPA 300.0	753652		
60384736021	R-CA-DUP-1	EPA 300.0	753652		
60384736022	R-CA-DUP-2	EPA 300.0	753652		
60384736023	R-CA-FB-1	EPA 300.0	753652		
60384736024	R-CA-FB-2	EPA 300.0	753652		

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

WO#: 60384736



Client Name: Colder

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: T-286 Type of Ice: Wet Blue None

Cooler Temperature (°C): As-read 3.1 Corr. Factor -0.2 Corrected 2.9

Date and initials of person examining contents: 10/30/21 CC

Temperature should be above freezing to 6°C

Chain of Custody present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	All coolers out of temp held only Radium
Chain of Custody relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples arrived within holding time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Short Hold Time analyses (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	10/30/21
Rush Turn Around Time requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Sufficient volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Received 2.07mL, 1.87mL, 1.87mL for Ameron RCPA
Correct containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	Sample ID R-MSD-1 taken 10/27/21
Pace containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Filtered volume received for dissolved tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Sample labels match COC: Date / time / ID / analyses	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples contain multiple phases? Matrix: <u>WT</u>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Containers requiring pH preservation in compliance? (HNO ₃ , H ₂ SO ₄ , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) LOT# <u>603222</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> 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)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Potassium iodide test strip turns blue/purple? (Preserve)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Headspace in VOA vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Samples from USDA Regulated Area: State:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

REVIEWED
By jchurch at 7:20 pm, 10/30/21

Project Manager Review Date: _____



CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company: Colider Associates	Report To: Jeffrey Ingram	Company Name: Ryan Feldmann / Eric Schneider	Attention: Jeffrey Ingram	Company Name: Ryan Feldmann / Eric Schneider	REGULATORY AGENCY
Address: 13515 Barrett Parkway Drive, Ste 280	Copy To: Ryan Feldmann / Eric Schneider	Address: Ballwin, MO 63021	Company Name: Ryan Feldmann / Eric Schneider	Address: Ballwin, MO 63021	NPDES <input type="checkbox"/> GROUND WATER <input checked="" type="checkbox"/> DRINKING WATER
Email To: Jeffrey Ingram@golder.com	Purchase Order No.:	Project Name: Ameren RCPA-CA	Reference: Jamie Church	RCRA <input type="checkbox"/> UST <input type="checkbox"/>	OTHER <input type="checkbox"/>
Phone: 636-724-9191	Fax: 636-724-9323	Project Number: 153-140603.0002A (COC #6)	Pace Profile #: 9285	Site Location: MO	STATE: MO
Requested Due Date/TAT: Standard					

ITEM #	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	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	MATRIX CODE (see valid codes to left)	# OF CONTAINERS	Preservatives Unpreserved H ₂ SO ₄ HNO ₃ HCl NaOH Na ₂ S ₂ O ₃ Methanol Other	Requested Analysis Filtered (Y/N)	Chloride/Fluoride/Sulfate	App III and Cat/An Metals	Alkalinity	TDS	Appendix IV Metals *	Radium 226	Radium 228	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
			COMPOSITE START DATE TIME	COMPOSITE END/GRAB DATE TIME														
1	R-P05S		10-29-21	12:40	G	WT	4		Y	✓	✓	✓	✓	✓	✓	✓		
2	R-P10S		10-29-21	12:54	G	WT	4		Y	✓	✓	✓	✓	✓	✓	✓		
3	R-P16S				G	WT												
4	R-P17S				G	WT												
5	R-P17I				G	WT												
6	R-P17D				G	WT												
7	R-P19S		10-27-21	12:30	G	WT	4		Y	✓	✓	✓	✓	✓	✓	✓		
8	R-P-19I			1340	G	WT	1											
9	R-P19D			1218	G	WT	1											
10	R-P21S				G	WT												
11	R-P21I				G	WT												
12	R-P21D				G	WT												

RECEIVED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
Clark Pace	10/30/21	0425				Y Y Y Y
						0.8
						13.4
						15.1

Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE	
PRINT Name of SAMPLER: Sierra Shields	DATE Signed (MM/DD/YYYY): 10/29/21
SIGNATURE OF SAMPLER: <i>Sierra Shields</i>	

Additional Comments: *ERP / Golder 10/29/21 1530*

*EPA 200.7: Fe, Mg, Mn, K, Na, Ca, B
 **EPA 200.7: Ba, Pb, Li, Mo
 **EPA 200.8: Sb, As, Cd, Cr, Se



CHAIN-OF-CUSTODY / Analytical Request Document
 The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A
 Required Client Information:
 Company: **Golder Associates**
 Address: **13515 Barrett Parkway Drive, Ste 260**
 Ballwin, MO 63021
 Email To: **Jeffrey_Ingram@golder.com**
 Phone: **636-724-9191** Fax: **636-724-9323**
 Requested Due Date/TAT: **Standard**

Section B
 Required Project Information:
 Report To: **Jeffrey Ingram**
 Copy To: **Ryan Feldmann / Eric Schneider**
 Purchase Order No.:
 Project Name: **Ameren RCPA-CA**
 Project Number: **153-140603.0002A (COC #6)**

Section C
 Invoice Information:
 Attention:
 Company Name:
 Address:
 Pace Quote Reference:
 Pace Project Manager: **Jamie Church**
 Pace Profile #: **9285**

REGULATORY AGENCY
 NPDES / GROUND WATER DRINKING WATER
 UST RCRA OTHER
 Site Location: **MO**
 STATE: **MO**

Page: **2** of **2**

ITEM #	Valid Matrix Codes MATRIX CODE GROUND WATER DW WASTE WATER WW PRODUCT P SOILSOLID SL OIL OL REF REF COR COR TS TS	SAMPLE ID (A-Z, 0-9 / -) Sample IDs MUST BE UNIQUE	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Analysis Test ↑	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
			COMPOSITE START	COMPOSITE END/GRAB						
1	R-P22S		DATE: 10-27-20	TIME: 1040	4	Unpreserved	H ₂ SO ₄			
2	R-P22D		DATE: 10-27-20	TIME: 1005	1	Unpreserved	HNO ₃			
3	R-P29S		DATE: 10-29-20	TIME: 1315	4	Unpreserved	HCl			
4	R-P29D		DATE: 10-29-20	TIME: 1145	4	Unpreserved	NaOH			
5	R-P30S		DATE: 10-29-20	TIME: 1240	4	Unpreserved	Na ₂ S ₂ O ₃			
6	R-P31S		DATE: 10-29-20	TIME: 1145	4	Unpreserved	Other			
7	R-CA-DUP-1						Methanol			
8	R-CA-DUP-2						Chloride/Fluoride/Sulfate			
9	R-CA-FB-1						App III and Cat/An Metals			
10	R-CA-FB-2						Alkalinity			
11	R-CA-MS-1		DATE: 10-27-20	TIME: 1005	4	Unpreserved	TDS			
12	R-CA-MSD-1		DATE: 10-27-20	TIME: 1005	4	Unpreserved	Appendix IV Metals *			

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
<i>J. Golder</i>	10/27/20	1530	<i>Clarke Pace</i>	10/30/20	0453	Y Y Y
						Y Y Y
						Y Y Y

SAMPLER NAME AND SIGNATURE
 PRINT Name of SAMPLER: **Sierra Shields**
 SIGNATURE OF SAMPLER: *[Signature]*
 DATE Signed (MM/DD/YYYY): **10/29/20**

Temp in °C: _____
 Received on Ice (Y/N): _____
 Custody Sealed Cooler (Y/N): _____
 Samples Intact (Y/N): _____



Sample Condition Upon Receipt
ESI Tech Spec Client

WO#: 60384736



60384736

Client Name: Golden

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: T-299 Type of Ice: (Wet) Blue None

Cooler Temperature (°C): As-read 3.1, 2.9 Corr. Factor -0.2 Corrected 3.3, 3.1

Date and initials of person examining contents: 10/1/21
Jan KAS

Temperature should be above freezing to 6°C

Chain of Custody present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Chain of Custody relinquished:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples arrived within holding time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Short Hold Time analyses (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Rush Turn Around Time requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Sufficient volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Correct containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Pace containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Filtered volume received for dissolved tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Sample labels match COC: Date / time / ID / analyses	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples contain multiple phases? Matrix: <u>Water</u>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Containers requiring pH preservation in compliance? (HNO ₃ , H ₂ SO ₄ , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> 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) <input type="checkbox"/> Yes <input type="checkbox"/> No Potassium iodide test strip turns blue/purple? (Preserve) <input type="checkbox"/> Yes <input type="checkbox"/> No		
Trip Blank present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Headspace in VOA vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Samples from USDA Regulated Area: State:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> 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: _____

REVIEWED
By jchurch at 7:33 pm, 11/1/21

Temp Log: Record start and finish times when unpacking cooler, if >20 min, recheck sample temps.

Start: 155° Start: _____

End: 1005 End: _____

Temp: 4.8 Temp: _____

CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company: Golder Associates	Report To: Jeffrey Ingram	Report To: Ryan Feldmann / Eric Schneider	Company Name:	Attention:	
Address: 13515 Barrett Parkway Drive, Ste 260	Copy To: Jeffrey Ingram	Address:	Company Name:	Company Name:	
Email To: Jeffrey.Ingram@golder.com	Purchase Order No.:	Project Name: Ameren RCPA-CA	Project Reference:	Project Reference:	
Phone: 636-724-9191	Fax: 636-724-9323	Project Number: 153-140603.0002A (COC #6)	Project Manager: Jamie Church	Project Profile #:	9285
Requested Due Date/TAT: Standard					

ITEM #	Section D Required Client Information	Valid Matrix Codes MATRIX CODE DRINKING WATER DW WASTE WATER WW WATER PRODUCT P SOLID OIL SL OL WF AR OT TS	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	MATRIX CODE (see valid codes to left)	# OF CONTAINERS	PRESERVATIVES		Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	Pace Project No. / Lab I.D.
			COMPOSITE START	COMPOSITE END/GRAB				DATE	TIME			
1	R-P05S				G	WT						
2	R-P10S				G	WT						
3	R-P16S		10-26-21	1151	G	WT	4	1	3			
4	R-P17S			1330	G	WT						
5	R-P17I			1325	G	WT						
6	R-P17D			1450	G	WT						
7	R-P19S				G	WT						
8	R-P-19I				G	WT						
9	R-P19D				G	WT						
10	R-P21S		10-26-21	1515	G	WT	4	1	3			
11	R-P21I			1335	G	WT						
12	R-P21D			1240	G	WT						

ADDITIONAL COMMENTS		RELINQUISHED BY / AFFILIATION		ACCEPTED BY / AFFILIATION		DATE		TIME		DATE		TIME	
*EPA 200.7: Fe, Mg, Mn, K, Na, Ca, B		SSA / Golder		Jeffrey Ingram		10/26/21		1750		10/26/21		0445	
**EPA 200.7: Ba, Pb, Li, Mo													
**EPA 200.8: Sb, As, Cd, Cr, Se													
SAMPLER NAME AND SIGNATURE		PRINT Name of SAMPLER: Sierra Shields		SIGNATURE of SAMPLER: <i>Sierra Shields</i>		DATE Signed (MM/DD/YY): 10/26/21		Temp in °C		Received on Ice (Y/N)		Custody Sealed (Y/N)	



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CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A
 Required Client Information:
 Company: **Golder Associates**
 Address: **13515 Barrett Parkway Drive, Ste 260, Ballwin, MO 63021**
 Email To: **Jeffrey_Ingram@golder.com**
 Phone: **636-724-9191** Fax: **636-724-9323**
 Requested Due Date/TAT: **Standard**

Section B
 Required Project Information:
 Report To: **Jeffrey Ingram**
 Copy To: **Ryan Feldmann / Eric Schneider**
 Purchase Order No.:
 Project Name: **Ameren RCPA-CA**
 Project Number: **153-140603.0002A (COC #6)**

Section C
 Invoice Information:
 Attention:
 Company Name:
 Address:
 Pace Quote Reference:
 Pace Project Manager:
 P300 Profile #: **9285**

REGULATORY AGENCY
 NPDES / GROUND WATER / DRINKING WATER
 UST / RCRA / OTHER

Site Location: **MO** STATE: **MO**

Page: 2 of 2

ITEM #	Section D Required Client Information	Valid Matrix Codes MATRIX CODE D/W DRINKING WATER W/W WASTE WATER P PRODUCT S/L SOIL/SOLID O/L OIL W/P CR CS TS	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	MATRIX CODE (see valid codes to left)	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives H ₂ SO ₄ HNO ₃ HCl NaOH Na ₂ S ₂ O ₅ Methanol Other	Analysis Test ↓ Y/N ↑	Requested Analysis Filtered (Y/N)													Pace Project No./ Lab I.D.											
			COMPOSITE START	COMPOSITE END/GRAB							DATE	TIME	Chloride/Fluoride/Sulfate	App III and Cat/An Metals	Alkalinity	TDS	Appendix IV Metals *	Radium 226	Radium 228	Residual Chlorine (Y/N)	Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)		Samples Inact (Y/N)										
1	R-P22S					WT G																													
2	R-P22D					WT G																													
3	R-P29S					WT G																													
4	R-P29D					WT G	10-25-21 1451		4	1	3																								
5	R-P30S					WT G																													
6	R-P31S					WT G																													
7	R-CA-DUP-1					WT G																													
8	R-CA-DUP-2					WT G																													
9	R-CA-FB-1					WT G	10-24-21 1215		4	1	3																								
10	R-CA-FB-2					WT G	10-26-21 1300		4	1	3																								
11	R-CA-MS-1					WT G																													
12	R-CA-MSD-1					WT G																													

6038 4736

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
EPA 200.7: Fe, Mg, Mn, K, Na, Ca, B EPA 200.7: Ba, Pb, Li, Mo EPA 200.8: Sb, As, Cd, Cr, Se	Sierra Shields/Golder	10/26/21	1750	Sierra Shields	10/27/21	0405	Y
							Y
							Y
							N
							N

SAMPLER NAME AND SIGNATURE
 PRINT Name of SAMPLER: **Sierra Shields**
 SIGNATURE OF SAMPLER: *Sierra Shields*
 DATE Signed (MM/DD/YYYY): **10/26/21**



MEMORANDUM

DATE January 12, 2023

Project No. 153140604

TO Project File
WSP USA Inc.

CC Amanda Derhake, Jeff Ingram

FROM Rahel Pommerenke

EMAIL rahel.pommerenke@wsp.com

DATA VALIDATION SUMMARY, RUSH ISLAND ENERGY CENTER – RCPA-CA – CORRECTIVE ACTION SAMPLING OCTOBER 2021 - DATA PACKAGE 60384736REV1

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 MDL and the PQL the results were recorded at the detection value and qualified as estimates (J).
- When a compound was analyzed outside of hold time, the results were qualified as estimates (J for 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 duplicate criterion was not met, the associated sample result was qualified as an estimate (J for detects, UJ for non-detects).
- When matrix spike/matrix spike duplicate (MS/MSD) criterion was not met, the associated sample result was qualified as an estimate (J, J+ for estimates biased high, and J- for estimates biased low).
- When laboratory control sample (LCS) criterion was not met, the associated sample result was qualified as an estimate (J).

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Company Name: WSP USA Inc.
 Project Name: Ameren - RIEC - RCPA-CA
 Reviewer: R. Pommerenke

Project Manager: J. Ingram
 Project Number: 153140604
 Validation Date: 1/12/2023

Laboratory: Pace Analytical

SDG #: 60384736rev1

Analytical Method (type and no.): EPA 200.7/200.8 (Total Metals); SM2320B (Alkalinity); SM2540C (TDS); EPA 300.0 (Anions); EPA 903.1/904.0 (Radium 226/228)

Matrix: Air Soil/Sed. Water Waste

Sample Names R-P05S, R-P10S, R-P19S, R-P-19I, R-P19D, R-P22S, R-P22D, R-P29S, R-P30S, R-P31S, R-CA-MS-1, R-CA-MSD-1, R-P16S, R-P17S, R-P17I, R-P17D, R-P21S, R-P21I, R-P21D, R-P29D, R-CA-DUP-1, R-CA-DUP-2, R-CA-FB-1, R-CA-FB-2

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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>10/25/2021 - 10/29/2021</u>
b) Sampling team indicated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>SSS/ETF/BTT</u>
c) Sample location noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
d) Sample depth indicated (Soils)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u></u>
e) Sample type indicated (grab/composite)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Grab</u>
f) Field QC noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>See Notes</u>
g) Field parameters collected (note types)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>pH, Sp.Cond, ORP, Temp, DO, Turb</u>
h) Field Calibration within control limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
i) Notations of unacceptable field conditions/performances from field logs or field notes?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u></u>
j) Does the laboratory narrative indicate deficiencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u></u>

Note Deficiencies: _____

Chain-of-Custody (COC)	YES	NO	NA	COMMENTS
a) Was the COC properly completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
b) Was the COC signed by both field and laboratory personnel?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
c) Were samples received in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>See Notes</u>

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

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Blanks	YES	NO	NA	COMMENTS
a) Were analytes detected in the method blank(s)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See Notes
b) Were analytes detected in the field blank(s)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See Notes
c) Were analytes detected in the equipment blank(s)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
d) Were analytes detected in the trip blank(s)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Laboratory Control Sample (LCS)	YES	NO	NA	COMMENTS
a) Was a LCS analyzed once per SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
b) Were the proper analytes included in the LCS?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
c) Was the LCS accuracy criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Notes

Duplicates	YES	NO	NA	COMMENTS
a) Were field duplicates collected (note original and duplicate sample names)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See Notes
b) Were field dup. precision criteria met (note RPD)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Notes
c) Were lab duplicates analyzed (note original and duplicate samples)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
d) Were lab dup. precision criteria met (note RPD)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Max RPD: 3% [20%]

Blind Standards	YES	NO	NA	COMMENTS
a) Was a blind standard used (indicate name, analytes included and concentrations)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
b) Was the %D within control limits?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

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

Comments/Notes:

Lithium was reanalyzed at a lower dilution to meet action limit.

The Sample Condition Upon Receipt form indicated that coolers received outside of temperature only contained radium samples, no qualification necessary.

TDS was analyzed outside of hold time in samples R-P29D, R-CA-DUP-1, R-CA-DUP-2. Results qualified as estimates.

Calcium, lithium, chloride and sulfate analyzed at a dilution in multiple samples, no qualification required.

QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

Comments/Notes:

Blanks:

3028124: Barium (2.0J). Associated with samples -001 through -10. Results <10x blank but >RL qualified as estimates.

Results >RL and 10x blank not qualified.

3019321/3020953: Chloride (0.45J/0.45J). Associated with samples -013 through -024. Results <10x blank but >RL qualified as estimates.

Results <RL were reported at the RL and qualified as ND. Results >RL and 10x blank not qualified.

3021296: Chloride (0.53J). Associated with sample -010. Result <10x blank but >RL qualified as estimate.

R-CA-FB-1 @ R-P16S: Boron (12.3J), chromium (0.31J), chloride (0.49J). Results >RL and 10x blank not qualified. Results <RL were reported at the RL and qualified as ND. Results <10x blank but >RL qualified as estimate.

R-CA-FB-2 @ R-P21D: Chromium (0.31J), chloride (0.50J). Results <RL were reported at the RL and qualified as ND.

Results >RL and 10x blank not qualified.

Laboratory Control Sample

3016613: LCS % recovery low (89%) for fluoride. Associated with samples -013 through -024. Results generally consistent with historical results, no qualification necessary.

3023061: LCS % recovery high for sulfate. Associated with samples -002, -003, -005 through -009. Results generally consistent with historical results, except for R-P-19D, which was qualified as an estimate.

Duplicates:

R-CA-DUP-1 @ R-P17S: RPD for cadmium (28.6%) exceeds RPD control limit (20%); Sulfate ND in sample, detected in duplicate; Lithium detected in sample, ND in duplicate.

R-CA-DUP-2 @ R-P21I: RPD for sulfate (171.2%) exceeds RPD control limit (20%).

The laboratory analyzed sample duplicates for alkalinity, TDS, and anions.

MS/MSD:

3019881/3019882: MS % recovery low and MSD % recovery high for calcium. Associated with sample 60384736013.

3019881/3019882: MS % recovery low for magnesium. Associated with sample 60384736013. Only 1 QC indicator out, no qualification necessary.

3028129: MS % recovery low for calcium, sodium. Associated with sample 60384736002. Only 1 QC indicator out, no qualification necessary.

3028126/3028127: MS/MSD % recovery low for sodium. Associated with sample 60384736007.

3016614/3016615: MS % recovery low for sulfate. MS performed on unrelated sample, no qualification necessary.

3019843: MS % recovery high for chloride. MS performed on unrelated sample, no qualification necessary.

QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason
R-P29D	TDS	443	J	Analyzed outside of hold time
R-CA-DUP-1	"	1110	J	"
R-CA-DUP-2	"	360	J	"
R-P-19I	Barium	14.6	J	Detected in MB, 10x blank > result > RL
R-P31S	Chloride	1.6	J	"
R-CA-FB-1	"	1.0	U	Detected in MB, RL > result > MDL
R-CA-FB-2	"	1.0	U	"
R-P16S	"	2.5	J	Detected in MB/FB, 10x blank > result > RL
"	Chromium	1.0	U	Detected in FB, RL > result > MDL
R-P21D	"	1.0	U	"
R-P19D	Sulfate	5.8	J	LCS % recovery outside control limits
R-P17S	Cadmium	0.10	J	Duplicate RPD exceeds limit
"	Sulfate	0.42	UJ	ND in sample, detected in duplicate
R-CA-DUP-1	Cadmium	0.075	J	Duplicate RPD exceeds limit
"	Sulfate	256	J	ND in sample, detected in duplicate
R-P21I	Sulfate	5.9	J	Duplicate RPD exceeds limit
R-CA-DUP-2	"	76.1	J	"
R-P16S	Calcium	148000	J	MS/MSD % recovery outside control limits
R-P22D	Sodium	171000	J-	MS/MSD % recovery low
R-CA-DUP-1	Lithium	76.7	UJ	Detected in parent sample, ND in duplicate.
R-P17S	"	41.2	J	"

Signature: *Rahul R...*

Date: 1/12/2023

March 02, 2022

Jeffrey Ingram
Golder Associates
701 Emerson Road, Suite 250
Saint Louis, MO 63141

RE: Project: AMEREN VS RCPA
Pace Project No.: 60392852

Dear Jeffrey Ingram:

Enclosed are the analytical results for sample(s) received by the laboratory on February 16, 2022. 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: Ryan Feldmann, Golder
Mark Haddock, Golder Associates
Eric Schneider, Golder Associates
Brendan Talbert, Golder Associates



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: AMEREN VS RCPA

Pace Project No.: 60392852

Pace Analytical Services Kansas

9608 Loiret Boulevard, Lenexa, KS 66219

Missouri Inorganic Drinking Water Certification #: 10090

Arkansas Drinking Water

Arkansas Certification #: 20-020-0

Arkansas Drinking Water

Illinois Certification #: 2000302021-3

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212020-2

Oklahoma Certification #: 9205/9935

Florida: Cert E871149 SEKS WET

Texas Certification #: T104704407-19-12

Utah Certification #: KS000212019-9

Illinois Certification #: 004592

Kansas Field Laboratory Accreditation: # E-92587

Missouri SEKS Micro Certification: 10070

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: AMEREN VS RCPA

Pace Project No.: 60392852

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60392852001	R-MW-1	Water	02/14/22 10:30	02/16/22 04:10
60392852002	R-MW-2	Water	02/14/22 11:47	02/16/22 04:10
60392852003	R-MW-5	Water	02/14/22 13:02	02/16/22 04:10
60392852004	R-MW-6	Water	02/14/22 14:02	02/16/22 04:10
60392852005	R-MW-B1	Water	02/14/22 13:32	02/16/22 04:10
60392852006	R-RCPA-FB-1	Water	02/14/22 11:55	02/16/22 04:10
60392852007	R-RCPA-DUP-1	Water	02/14/22 08:00	02/16/22 04:10

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: AMEREN VS RCPA

Pace Project No.: 60392852

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60392852001	R-MW-1	SM 2540C	JDS	1	PASI-K
		EPA 300.0	SK	1	PASI-K
60392852002	R-MW-2	SM 2540C	JDS	1	PASI-K
		EPA 300.0	SK	1	PASI-K
60392852003	R-MW-5	EPA 200.7	JLH	1	PASI-K
60392852004	R-MW-6	EPA 200.7	JLH	2	PASI-K
60392852005	R-MW-B1	EPA 200.7	JLH	1	PASI-K
60392852006	R-RCPA-FB-1	SM 2540C	JDS	1	PASI-K
		EPA 300.0	SK	1	PASI-K
60392852007	R-RCPA-DUP-1	SM 2540C	JDS	1	PASI-K
		EPA 300.0	SK	1	PASI-K

PASI-K = Pace Analytical Services - Kansas City

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN VS RCPA

Pace Project No.: 60392852

Sample: R-MW-1 **Lab ID: 60392852001** Collected: 02/14/22 10:30 Received: 02/16/22 04:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	594	mg/L	10.0	10.0	1		02/21/22 14:50		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Fluoride	0.21	mg/L	0.20	0.12	1		03/01/22 14:23	16984-48-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN VS RCPA

Pace Project No.: 60392852

Sample: R-MW-2 **Lab ID: 60392852002** Collected: 02/14/22 11:47 Received: 02/16/22 04:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	758	mg/L	10.0	10.0	1		02/21/22 14:50		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Fluoride	1.4	mg/L	0.20	0.12	1		02/25/22 20:05	16984-48-8	

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ANALYTICAL RESULTS

Project: AMEREN VS RCPA

Pace Project No.: 60392852

Sample: R-MW-5 **Lab ID: 60392852003** Collected: 02/14/22 13:02 Received: 02/16/22 04:10 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									
Lithium	<7.7	ug/L	10.0	7.7	1	03/01/22 09:18	03/01/22 14:51	7439-93-2	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN VS RCPA

Pace Project No.: 60392852

Sample: R-MW-6 **Lab ID: 60392852004** Collected: 02/14/22 14:02 Received: 02/16/22 04:10 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	174	ug/L	5.0	1.8	1	03/01/22 09:18	03/01/22 14:53	7440-39-3	
Lithium	<7.7	ug/L	10.0	7.7	1	03/01/22 09:18	03/01/22 14:53	7439-93-2	

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ANALYTICAL RESULTS

Project: AMEREN VS RCPA

Pace Project No.: 60392852

Sample: R-MW-B1 **Lab ID: 60392852005** Collected: 02/14/22 13:32 Received: 02/16/22 04:10 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									
Lithium	53.8	ug/L	30.0	23.0	3	03/01/22 09:18	03/01/22 16:19	7439-93-2	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN VS RCPA

Pace Project No.: 60392852

Sample: R-RCPA-FB-1 **Lab ID: 60392852006** Collected: 02/14/22 11:55 Received: 02/16/22 04:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
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		02/21/22 14:50		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Fluoride	<0.12	mg/L	0.20	0.12	1		02/25/22 20:47	16984-48-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN VS RCPA

Pace Project No.: 60392852

Sample: R-RCPA-DUP-1 **Lab ID: 60392852007** Collected: 02/14/22 08:00 Received: 02/16/22 04:10 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
2540C Total Dissolved Solids	Analytical Method: SM 2540C Pace Analytical Services - Kansas City								
Total Dissolved Solids	574	mg/L	20.0	20.0	1		02/21/22 14:51		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Fluoride	0.30	mg/L	0.20	0.12	1		02/25/22 21:01	16984-48-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN VS RCPA

Pace Project No.: 60392852

QC Batch: 773220	Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7	Analysis Description: 200.7 Metals, Total
	Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60392852003, 60392852004, 60392852005

METHOD BLANK: 3086442 Matrix: Water

Associated Lab Samples: 60392852003, 60392852004, 60392852005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<1.8	5.0	1.8	03/01/22 14:21	
Lithium	ug/L	<7.7	10.0	7.7	03/01/22 14:21	

LABORATORY CONTROL SAMPLE: 3086443

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	1010	101	85-115	
Lithium	ug/L	1000	873	87	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3086444 3086445

Parameter	Units	60392705006		3086445		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Barium	ug/L	94.4	1000	1000	1100	101	103	70-130	2	20	
Lithium	ug/L	<23.0	1000	1000	935	91	93	70-130	2	20	

MATRIX SPIKE SAMPLE: 3086446

Parameter	Units	60392705001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	142	1000	1090	95	70-130	
Lithium	ug/L	25.5J	1000	996	97	70-130	

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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QUALITY CONTROL DATA

Project: AMEREN VS RCPA

Pace Project No.: 60392852

QC Batch: 772094	Analysis Method: SM 2540C
QC Batch Method: SM 2540C	Analysis Description: 2540C Total Dissolved Solids
	Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60392852001, 60392852002, 60392852006, 60392852007

METHOD BLANK: 3082668 Matrix: Water
Associated Lab Samples: 60392852001, 60392852002, 60392852006, 60392852007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	02/21/22 14:50	

LABORATORY CONTROL SAMPLE: 3082669

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1030	103	80-120	

SAMPLE DUPLICATE: 3082670

Parameter	Units	60392852001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	594	584	2	10	

SAMPLE DUPLICATE: 3082671

Parameter	Units	60392898004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	777	791	2	10	

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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QUALITY CONTROL DATA

Project: AMEREN VS RCPA

Pace Project No.: 60392852

QC Batch: 772863 Analysis Method: EPA 300.0
 QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
 Laboratory: Pace Analytical Services - Kansas City
 Associated Lab Samples: 60392852002, 60392852006, 60392852007

METHOD BLANK: 3085430 Matrix: Water
 Associated Lab Samples: 60392852002, 60392852006, 60392852007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	<0.12	0.20	0.12	02/25/22 15:13	

METHOD BLANK: 3086765 Matrix: Water
 Associated Lab Samples: 60392852002, 60392852006, 60392852007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	<0.12	0.20	0.12	02/28/22 12:30	

LABORATORY CONTROL SAMPLE: 3085431

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2.5	2.7	108	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3085432 3085433

Parameter	Units	60392838001		60392856001		60392856001		% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS % Rec	MSD % Rec				
Fluoride	mg/L	0.84	2.5	2.5	4.1	4.1	129	131	80-120	1	15 M1

MATRIX SPIKE SAMPLE: 3085434

Parameter	Units	60392856001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	ND	50	61.5	123	80-120	M1

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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QUALITY CONTROL DATA

Project: AMEREN VS RCPA

Pace Project No.: 60392852

QC Batch: 773192

Analysis Method: EPA 300.0

QC Batch Method: EPA 300.0

Analysis Description: 300.0 IC Anions

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60392852001

METHOD BLANK: 3086384

Matrix: Water

Associated Lab Samples: 60392852001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	<0.12	0.20	0.12	03/01/22 13:57	

METHOD BLANK: 3087762

Matrix: Water

Associated Lab Samples: 60392852001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Fluoride	mg/L	<0.12	0.20	0.12	03/02/22 08:55	

LABORATORY CONTROL SAMPLE: 3086385

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2.5	2.5	100	90-110	

LABORATORY CONTROL SAMPLE: 3087763

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2.5	2.7	110	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3086387 3086388

Parameter	Units	60392852001		3086388		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Fluoride	mg/L	0.21	2.5	2.5	2.4	2.4	89	89	80-120	0	15

MATRIX SPIKE SAMPLE: 3086389

Parameter	Units	60393286005 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	ND	10000	9800	98	80-120	

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 VS RCPA

Pace Project No.: 60392852

SAMPLE DUPLICATE: 3086386

Parameter	Units	60392852001 Result	Dup Result	RPD	Max RPD	Qualifiers
Fluoride	mg/L	0.21	0.21	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.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: AMEREN VS RCPA

Pace Project No.: 60392852

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

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN VS RCPA

Pace Project No.: 60392852

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60392852003	R-MW-5	EPA 200.7	773220	EPA 200.7	773337
60392852004	R-MW-6	EPA 200.7	773220	EPA 200.7	773337
60392852005	R-MW-B1	EPA 200.7	773220	EPA 200.7	773337
60392852001	R-MW-1	SM 2540C	772094		
60392852002	R-MW-2	SM 2540C	772094		
60392852006	R-RCPA-FB-1	SM 2540C	772094		
60392852007	R-RCPA-DUP-1	SM 2540C	772094		
60392852001	R-MW-1	EPA 300.0	773192		
60392852002	R-MW-2	EPA 300.0	772863		
60392852006	R-RCPA-FB-1	EPA 300.0	772863		
60392852007	R-RCPA-DUP-1	EPA 300.0	772863		

REPORT OF LABORATORY ANALYSIS

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WO#: 60392852



DC#_Title: ENV-FRM-LENE-0009_Sample Con

Revision: 2

Effective Date: 01/12/2022

Issued By: Lenexa

Client Name: Golder

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: T-299 Type of Ice: Wet Blue None

Cooler Temperature (°C): As-read 1.5 Corr. Factor -0.2 Corrected 1.3

Date and initials of person examining contents:

N 2/16/22

Temperature should be above freezing to 6°C

Chain of Custody present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Chain of Custody relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples arrived within holding time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Short Hold Time analyses (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Rush Turn Around Time requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Sufficient volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Correct containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Pace containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Filtered volume received for dissolved tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Sample labels match COC: Date / time / ID / analyses	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples contain multiple phases? Matrix: <u>WT</u>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Containers requiring pH preservation in compliance? (HNO ₃ , H ₂ SO ₄ , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> 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)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Potassium iodide test strip turns blue/purple? (Preserve)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Headspace in VOA vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Samples from USDA Regulated Area: State: _____	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	

LOT#: 55192

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

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ Date: _____



CHAIN-OF-CUSTODY / Analytical Request Document

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



www.paceanalytical.com

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	Golder Associates	Report To:	Jeffrey Ingram	Attention:	
Address:	13515 Barrett Parkway Dr., Ste 260 Ballwin, MO 63021	Copy To:	Eric Schnieder, Ryan Feldman, Brendan Talbert	Company Name:	Golder Associates Inc
Email To:	jeffrey_ingram@golder.com	Purchase Order No.:		Address:	
Phone:	636-724-9191	Project Name:	Ameren - Verification Sampling - RCRA	Pace Quote Reference:	
Requested Due Date/TAT:	Standard	Project Number:	153140603, CCC ZA	Pace Project Manager:	Jamie Church
				Pace Profile #:	9285, line 1

REGULATORY AGENCY

NPDES GROUND WATER DRINKING WATER
 UST RCRA OTHER

Site Location: MO
 STATE: MO

ITEM #	Section D Required Client Information	Valid Matrix Codes	MATRIX CODE	MATRIX TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives										Chloride	Fluoride	Sulfate	TDS	Calcium	Boron	Lithium	Barium	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
					COMPOSITE START	COMPOSITE END/GRAB			DATE	TIME	DATE	TIME	H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₃	Methanol										
1	R-MW-1	DRINKING WATER	DW	G			2-14-22	1030	1																	60392852		
2	R-MW-2	WASTE WATER	WW	G				1147																		3BP24		
3	R-MW-5	WASTE WATER PRODUCT	WWP	G				1302																		BP2U		
4	R-MW-6	WASTE WATER PRODUCT	WWP	G				1402																		BP3N		
5	R-MW-B1	WASTE WATER PRODUCT	WWP	G				1332																				
6	R-RCRA-FB-1	WASTE WATER PRODUCT	WWP	G				1155																				
7	R-RCRA-DUP-1	WASTE WATER PRODUCT	WWP	G																								
8	R-RCRA-MS-1	WASTE WATER PRODUCT	WWP	G				1030																				
9	R-RCRA-MSD-1	WASTE WATER PRODUCT	WWP	G				1030																				
10																												
11																												
12																												

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Brendan Talbert/Golder	2-15-22	1330	Angela Mon	2-15	1335	
	Angela M	2-15	1335	Angela Mon	2/16	0410	Y Y Y

Temp in °C		Received on Ice (Y/N)		Cooler (Y/N)		Samples Intact (Y/N)	
------------	--	-----------------------	--	--------------	--	----------------------	--

SAMPLER NAME AND SIGNATURE	
PRINT Name of SAMPLER:	Brendan Talbert
SIGNATURE of SAMPLER:	Brendan Talbert
DATE Signed (MM/DD/YYYY)	2-14-22

*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.

MEMORANDUM

DATE March 3, 2022

Project No. 153140604

TO Project File
Golder Associates

CC Amanda Derhake, Jeff Ingram

FROM Annie Muehlfarth

EMAIL AMuehlfarth@golder.com

DATA VALIDATION SUMMARY, RUSH ISLAND ENERGY CENTER – RCPA – VERIFICATION SAMPLING - DATA PACKAGE 60392852

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

- When duplicate criterion was not met, the associated sample result was qualified as an estimate (J for detects, UJ for non-detects).

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Company Name: Golder Associates USA Inc / WSP
 Project Name: Ameren- Rush Island - RCPA
 Reviewer: A. Muehlfarth

Project Manager: J. Ingram
 Project Number: 153140604
 Validation Date: 3/3/2022

Laboratory: Pace Analytical Services - Kansas City SDG #: 60392852
 Analytical Method (type and no.): SM 2540C (TDS), EPA 300.0 (Anions), EPA 200.7 (Total Metals)
 Matrix: Air Soil/Sed. Water Waste
 Sample Names R-MW-1, R-MW-2, R-MW-5, R-MW-6, R-MW-B1, R-RCPA-FB-1, R-RCPA-DUP-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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>2/14/2022</u>
b) Sampling team indicated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>GTM/BTT</u>
c) Sample location noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
d) Sample depth indicated (Soils)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u></u>
e) Sample type indicated (grab/composite)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Grab</u>
f) Field QC noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>See Notes</u>
g) Field parameters collected (note types)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>pH, Sp.Cond, ORP, Temp, DO, Turb</u>
h) Field Calibration within control limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
i) Notations of unacceptable field conditions/performances from field logs or field notes?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u></u>
j) Does the laboratory narrative indicate deficiencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u></u>
Note Deficiencies: <u></u>				

Chain-of-Custody (COC)	YES	NO	NA	COMMENTS
a) Was the COC properly completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
b) Was the COC signed by both field and laboratory personnel?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
c) Were samples received in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>

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

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Blanks	YES	NO	NA	COMMENTS
a) Were analytes detected in the method blank(s)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
b) Were analytes detected in the field blank(s)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See Notes
c) Were analytes detected in the equipment blank(s)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
d) Were analytes detected in the trip blank(s)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Laboratory Control Sample (LCS)	YES	NO	NA	COMMENTS
a) Was a LCS analyzed once per SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
b) Were the proper analytes included in the LCS?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
c) Was the LCS accuracy criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Duplicates	YES	NO	NA	COMMENTS
a) Were field duplicates collected (note original and duplicate sample names)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	R-RCPA-DUP-1 @ R-MW-1
b) Were field dup. precision criteria met (note RPD)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Notes
c) Were lab duplicates analyzed (note original and duplicate samples)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
d) Were lab dup. precision criteria met (note RPD)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Max RPD: 3% [<15%]

Blind Standards	YES	NO	NA	COMMENTS
a) Was a blind standard used (indicate name, analytes included and concentrations)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
b) Was the %D within control limits?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

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

Comments/Notes:

Lithium was analyzed at a dilution [3x] in sample R-MW-B1. No qualification necessary.

Blanks:

R-RCPA-FB-1 @ R-MW-2: TDS (10.0). Associated sample result >RL and >10x blank, no qualification necessary.

Duplicates:

R-RCPA-DUP-1 @ R-MW-1: RPD for fluoride (35.3%) exceeds limit (20%).

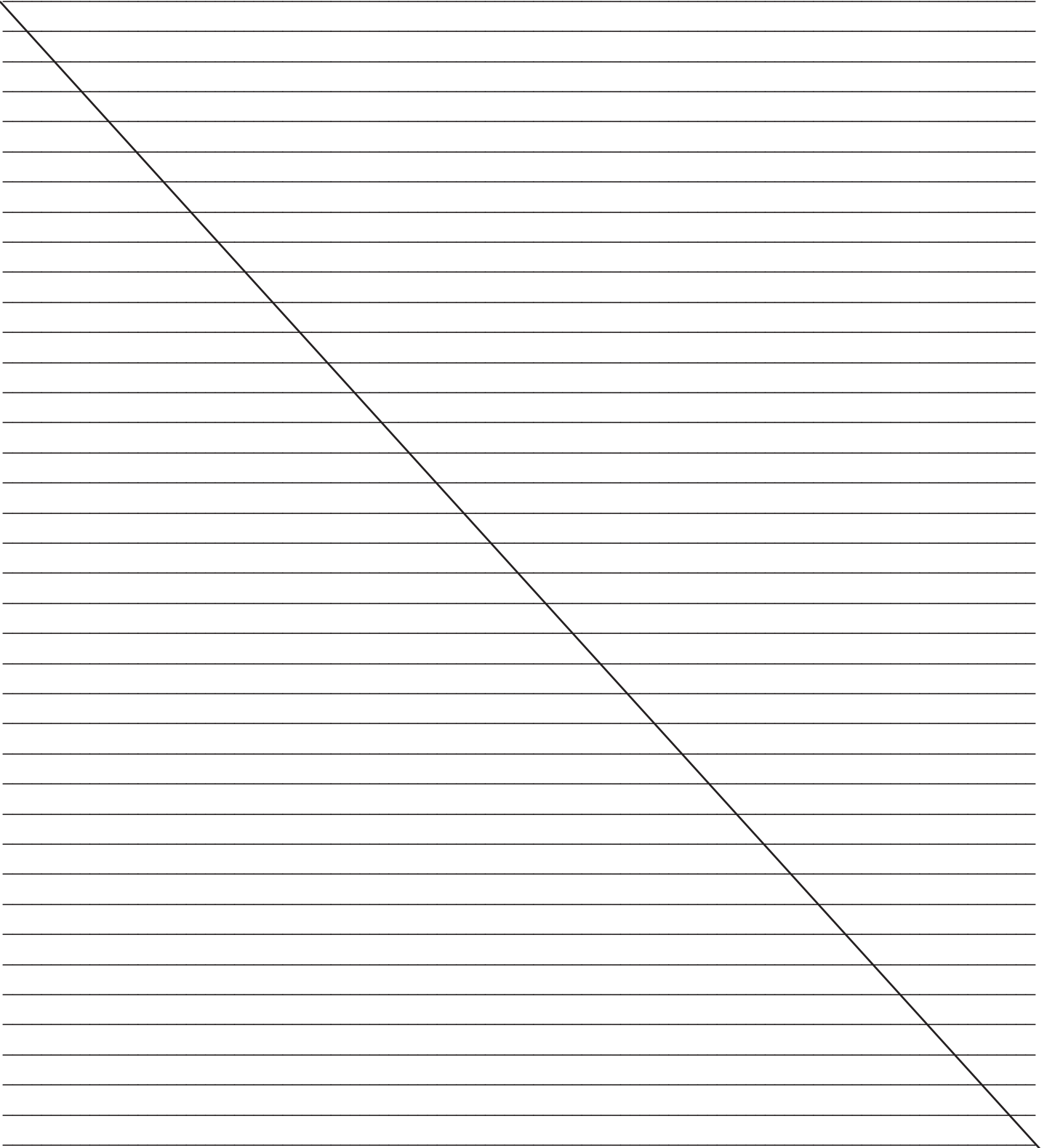
QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

Comments/Notes:

MS/MSD:

3085432/3085433: MS/MSD % recovery high for fluoride. MS/MSD performed on unrelated sample, no qualification necessary.

3085434: MS % recovery high for fluoride. MS performed on unrelated sample, no qualification necessary.

A large diagonal line is drawn across the page, starting from the top left and extending to the bottom right, crossing out the remaining lined area of the page.

QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason
R-MW-1	Fluoride	0.21	J	Dup RPD exceeds limit
R-RCPA-DUP-1	"	0.30	J	"

Signature: Ann Muehlhardt Date: 3/3/2022

May 24, 2022

Jeffrey Ingram
Golder Associates
701 Emerson Road, Suite 250
Saint Louis, MO 63141

RE: Project: AMEREN RIEC RCPA
Pace Project No.: 60397546

Dear Jeffrey Ingram:

Enclosed are the analytical results for sample(s) received by the laboratory between April 13, 2022 and April 16, 2022. 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: Ryan Feldmann, Golder
Mark Haddock, Golder Associates
Eric Schneider, Golder Associates
Brendan Talbert, Golder Associates



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: AMEREN RIEC RCPA

Pace Project No.: 60397546

Pace Analytical Services Pennsylvania

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601

ANAB DOD-ELAP Rad Accreditation #: L2417

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 04222CA

Colorado Certification #: PA01547

Connecticut Certification #: PH-0694

Delaware Certification

EPA Region 4 DW Rad

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Florida: Cert E871149 SEKS WET

Guam Certification

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas/TNI Certification #: E-10358

Kentucky Certification #: KY90133

KY WW Permit #: KY0098221

KY WW Permit #: KY0000221

Louisiana DHH/TNI Certification #: LA180012

Louisiana DEQ/TNI Certification #: 4086

Maine Certification #: 2017020

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 #: PA014572018-1

New Hampshire/TNI Certification #: 297617

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 #: PA200002-010

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: 02867

Texas/TNI Certification #: T104704188-17-3

Utah/TNI Certification #: PA014572017-9

USDA Soil Permit #: P330-17-00091

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

Wyoming Certification #: 8TMS-L

Pace Analytical Services Kansas

9608 Loiret Boulevard, Lenexa, KS 66219

Missouri Inorganic Drinking Water Certification #: 10090

Arkansas Drinking Water

Arkansas Certification #: 20-020-0

Arkansas Drinking Water

Illinois Certification #: 2000302021-3

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212020-2

Oklahoma Certification #: 9205/9935

Florida: Cert E871149 SEKS WET

Texas Certification #: T104704407-21-15

Utah Certification #: KS000212019-9

Illinois Certification #: 004592

Kansas Field Laboratory Accreditation: # E-92587

Missouri SEKS Micro Certification: 10070

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: AMEREN RIEC RCPA

Pace Project No.: 60397546

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60397546001	R-MW-1	Water	04/12/22 15:29	04/13/22 03:45
60397546002	R-MW-7(r)	Water	04/12/22 09:53	04/13/22 03:45
60397546003	R-MW-B1	Water	04/12/22 11:23	04/13/22 03:45
60397546004	R-MW-B2	Water	04/12/22 12:20	04/13/22 03:45
60397546005	R-FB-1	Water	04/12/22 15:35	04/13/22 03:45
60397546006	R-MW-2	Water	04/14/22 09:27	04/16/22 04:47
60397546007	R-MW-3	Water	04/14/22 12:08	04/16/22 04:47
60397546008	R-MW-4	Water	04/15/22 09:05	04/16/22 04:47
60397546009	R-MW-5	Water	04/15/22 10:35	04/16/22 04:47
60397546010	R-MW-6	Water	04/15/22 14:20	04/16/22 04:47
60397546011	R-DUP-1	Water	04/15/22 08:00	04/16/22 04:47
60397546012	R-MS-1	Water	04/15/22 09:05	04/16/22 04:47
60397546013	R-MSD-1	Water	04/15/22 09:05	04/16/22 04:47

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: AMEREN RIEC RCPA

Pace Project No.: 60397546

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory		
60397546001	R-MW-1	EPA 200.7	JLH	13	PASI-K		
		EPA 200.8	MRV	6	PASI-K		
		EPA 7470	ALH	1	PASI-K		
		EPA 903.1	RPS	1	PASI-PA		
		EPA 904.0	JSM	1	PASI-PA		
		SM 2320B	SB2	1	PASI-K		
		SM 2540C	TNB	1	PASI-K		
		SM 3500-Fe B#4	BLA	1	PASI-K		
		SM 3500-Fe B#4	SK	1	PASI-K		
		SM 4500-S-2 D	SK	1	PASI-K		
		EPA 300.0	KB	3	PASI-K		
		60397546002	R-MW-7(r)	EPA 200.7	JLH	13	PASI-K
				EPA 200.8	MRV	6	PASI-K
EPA 7470	ALH			1	PASI-K		
EPA 903.1	RPS			1	PASI-PA		
EPA 904.0	JSM			1	PASI-PA		
SM 2320B	SB2			1	PASI-K		
SM 2540C	TNB			1	PASI-K		
SM 3500-Fe B#4	BLA			1	PASI-K		
SM 3500-Fe B#4	SK			1	PASI-K		
SM 4500-S-2 D	SK			1	PASI-K		
EPA 300.0	KB			3	PASI-K		
60397546003	R-MW-B1			EPA 200.7	JLH	13	PASI-K
				EPA 200.8	JGP, MRV	6	PASI-K
		EPA 7470	ALH	1	PASI-K		
		EPA 903.1	RPS	1	PASI-PA		
		EPA 904.0	JSM	1	PASI-PA		
		SM 2320B	SB2	1	PASI-K		
		SM 2540C	TNB	1	PASI-K		
		SM 3500-Fe B#4	BLA	1	PASI-K		
		SM 3500-Fe B#4	SK	1	PASI-K		
		SM 4500-S-2 D	SK	1	PASI-K		
		EPA 300.0	KB	3	PASI-K		
		60397546004	R-MW-B2	EPA 200.7	JLH	13	PASI-K
				EPA 200.8	JGP, MRV	6	PASI-K
EPA 7470	ALH			1	PASI-K		
EPA 903.1	RPS			1	PASI-PA		

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: AMEREN RIEC RCPA

Pace Project No.: 60397546

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60397546005	R-FB-1	EPA 904.0	JSM	1	PASI-PA
		SM 2320B	SB2	1	PASI-K
		SM 2540C	TNB	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K
		SM 3500-Fe B#4	SK	1	PASI-K
		SM 4500-S-2 D	SK	1	PASI-K
		EPA 300.0	KB	3	PASI-K
		EPA 200.7	JLH	13	PASI-K
		EPA 200.8	JGP, MRV	6	PASI-K
		EPA 7470	ALH	1	PASI-K
		EPA 903.1	RPS	1	PASI-PA
		EPA 904.0	JSM	1	PASI-PA
		SM 2320B	SB2	1	PASI-K
		SM 2540C	TNB	1	PASI-K
		60397546006	R-MW-2	SM 3500-Fe B#4	BLA
SM 3500-Fe B#4	SK			1	PASI-K
SM 4500-S-2 D	SK			1	PASI-K
EPA 300.0	KB			3	PASI-K
EPA 200.7	JLH			13	PASI-K
EPA 200.8	MRV			6	PASI-K
EPA 7470	ALH			1	PASI-K
EPA 903.1	RPS			1	PASI-PA
EPA 904.0	JSM			1	PASI-PA
SM 2320B	SB2			1	PASI-K
SM 2540C	BLA			1	PASI-K
SM 3500-Fe B#4	BLA			1	PASI-K
SM 3500-Fe B#4	SK			1	PASI-K
SM 4500-S-2 D	SK			1	PASI-K
60397546007	R-MW-3			EPA 300.0	KB
		EPA 200.7	JLH	13	PASI-K
		EPA 200.8	MRV	6	PASI-K
		EPA 7470	ALH	1	PASI-K
		EPA 903.1	RPS	1	PASI-PA
		EPA 904.0	JSM	1	PASI-PA
		SM 2320B	SB2	1	PASI-K
		SM 2540C	BLA	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K

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SAMPLE ANALYTE COUNT

Project: AMEREN RIEC RCPA

Pace Project No.: 60397546

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60397546008	R-MW-4	SM 3500-Fe B#4	SK	1	PASI-K
		SM 4500-S-2 D	SK	1	PASI-K
		EPA 300.0	KB	3	PASI-K
		EPA 200.7	JLH	13	PASI-K
		EPA 200.8	MRV	6	PASI-K
		EPA 7470	ALH	1	PASI-K
		EPA 903.1	RPS	1	PASI-PA
		EPA 904.0	JSM	1	PASI-PA
		SM 2320B	SB2	1	PASI-K
		SM 2540C	BLA	1	PASI-K
60397546009	R-MW-5	SM 3500-Fe B#4	BLA	1	PASI-K
		SM 3500-Fe B#4	SK	1	PASI-K
		SM 4500-S-2 D	SK	1	PASI-K
		EPA 300.0	KB	3	PASI-K
		EPA 200.7	JLH	13	PASI-K
		EPA 200.8	MRV	6	PASI-K
		EPA 7470	ALH	1	PASI-K
		EPA 903.1	RPS	1	PASI-PA
		EPA 904.0	JSM	1	PASI-PA
		SM 2320B	SB2	1	PASI-K
60397546010	R-MW-6	SM 2540C	BLA	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K
		SM 3500-Fe B#4	SK	1	PASI-K
		SM 4500-S-2 D	SK	1	PASI-K
		EPA 300.0	KB	3	PASI-K
		EPA 200.7	JLH	13	PASI-K
		EPA 200.8	MRV	6	PASI-K
		EPA 7470	ALH	1	PASI-K
		EPA 903.1	RPS	1	PASI-PA
		EPA 904.0	JSM	1	PASI-PA
60397546011	R-DUP-1	SM 2320B	SB2	1	PASI-K
		SM 2540C	BLA	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K
		SM 3500-Fe B#4	SK	1	PASI-K
		SM 4500-S-2 D	SK	1	PASI-K
		EPA 300.0	KB	3	PASI-K
		EPA 200.7	JLH	13	PASI-K

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SAMPLE ANALYTE COUNT

Project: AMEREN RIEC RCPA

Pace Project No.: 60397546

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 200.8	MRV	6	PASI-K
		EPA 7470	ALH	1	PASI-K
		EPA 903.1	RPS	1	PASI-PA
		EPA 904.0	JSM	1	PASI-PA
		SM 2320B	SB2	1	PASI-K
		SM 2540C	BLA	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K
		SM 3500-Fe B#4	SK	1	PASI-K
		SM 4500-S-2 D	SK	1	PASI-K
		EPA 300.0	KB	3	PASI-K
60397546012	R-MS-1	EPA 903.1	RPS	1	PASI-PA
		EPA 904.0	JSM	1	PASI-PA
60397546013	R-MSD-1	EPA 903.1	RPS	1	PASI-PA
		EPA 904.0	JSM	1	PASI-PA

PASI-K = Pace Analytical Services - Kansas City

PASI-PA = Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA

Pace Project No.: 60397546

Sample: R-MW-1 Lab ID: 60397546001 Collected: 04/12/22 15:29 Received: 04/13/22 03:45 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	50.9	ug/L	5.0	1.2	1	04/21/22 15:13	04/22/22 19:20	7440-39-3	
Beryllium	<0.24	ug/L	1.0	0.24	1	04/21/22 15:13	04/22/22 19:20	7440-41-7	
Boron	2110	ug/L	100	7.1	1	04/21/22 15:13	04/22/22 19:20	7440-42-8	
Calcium	63900	ug/L	200	71.3	1	04/21/22 15:13	04/22/22 19:20	7440-70-2	
Cobalt	<1.4	ug/L	5.0	1.4	1	04/21/22 15:13	04/22/22 19:20	7440-48-4	
Iron	73.5	ug/L	50.0	21.1	1	04/21/22 15:13	04/22/22 19:20	7439-89-6	
Lead	<6.1	ug/L	10.0	6.1	1	04/21/22 15:13	04/22/22 19:20	7439-92-1	
Lithium	3.3J	ug/L	10.0	1.2	1	04/21/22 15:13	04/22/22 19:20	7439-93-2	
Magnesium	10300	ug/L	50.0	11.7	1	04/21/22 15:13	04/22/22 19:20	7439-95-4	
Manganese	62.5	ug/L	5.0	1.1	1	04/21/22 15:13	04/22/22 19:20	7439-96-5	
Molybdenum	54.4	ug/L	20.0	1.8	1	04/21/22 15:13	04/22/22 19:20	7439-98-7	
Potassium	7700	ug/L	500	224	1	04/21/22 15:13	04/22/22 19:20	7440-09-7	
Sodium	121000	ug/L	500	166	1	04/21/22 15:13	04/22/22 19:20	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	0.13J	ug/L	1.0	0.12	1	04/21/22 15:13	04/22/22 14:48	7440-36-0	
Arsenic	2.7	ug/L	1.0	0.14	1	04/21/22 15:13	04/22/22 14:48	7440-38-2	
Cadmium	<0.053	ug/L	0.50	0.053	1	04/21/22 15:13	04/22/22 14:48	7440-43-9	
Chromium	0.32J	ug/L	1.0	0.31	1	04/21/22 15:13	04/22/22 14:48	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	04/21/22 15:13	04/22/22 14:48	7782-49-2	
Thallium	<0.15	ug/L	1.0	0.15	1	04/21/22 15:13	04/22/22 14:48	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.12	ug/L	0.20	0.12	1	04/27/22 12:52	04/28/22 09:35	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	169	mg/L	20.0	4.6	1		04/20/22 13:40		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	348	mg/L	5.0	5.0	1		04/19/22 14:43		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	0.074	mg/L	0.050		1		05/03/22 10:05	20074-52-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	<0.060	mg/L	0.20	0.060	1		04/19/22 17:16	15438-31-0	H6

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA

Pace Project No.: 60397546

Sample: R-MW-1 **Lab ID: 60397546001** Collected: 04/12/22 15:29 Received: 04/13/22 03:45 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	<0.026	mg/L	0.050	0.026	1		04/14/22 16:32	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	25.5	mg/L	2.0	1.1	2		04/29/22 16:33	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		04/29/22 16:19	16984-48-8	
Sulfate	249	mg/L	20.0	11.0	20		04/29/22 16:47	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA

Pace Project No.: 60397546

Sample: R-MW-7(r) **Lab ID: 60397546002** Collected: 04/12/22 09:53 Received: 04/13/22 03:45 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	241	ug/L	5.0	1.2	1	04/21/22 15:13	04/22/22 19:26	7440-39-3	
Beryllium	<0.24	ug/L	1.0	0.24	1	04/21/22 15:13	04/22/22 19:26	7440-41-7	
Boron	2130	ug/L	100	7.1	1	04/21/22 15:13	04/22/22 19:26	7440-42-8	
Calcium	66700	ug/L	200	71.3	1	04/21/22 15:13	04/22/22 19:26	7440-70-2	
Cobalt	1.5J	ug/L	5.0	1.4	1	04/21/22 15:13	04/22/22 19:26	7440-48-4	
Iron	13200	ug/L	50.0	21.1	1	04/21/22 15:13	04/22/22 19:26	7439-89-6	
Lead	<6.1	ug/L	10.0	6.1	1	04/21/22 15:13	04/22/22 19:26	7439-92-1	
Lithium	27.7	ug/L	10.0	1.2	1	04/21/22 15:13	04/22/22 19:26	7439-93-2	
Magnesium	20000	ug/L	50.0	11.7	1	04/21/22 15:13	04/22/22 19:26	7439-95-4	
Manganese	298	ug/L	5.0	1.1	1	04/21/22 15:13	04/22/22 19:26	7439-96-5	
Molybdenum	56.1	ug/L	20.0	1.8	1	04/21/22 15:13	04/22/22 19:26	7439-98-7	
Potassium	5400	ug/L	500	224	1	04/21/22 15:13	04/22/22 19:26	7440-09-7	
Sodium	33700	ug/L	500	166	1	04/21/22 15:13	04/22/22 19:26	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	04/21/22 15:13	04/22/22 14:53	7440-36-0	
Arsenic	121	ug/L	1.0	0.14	1	04/21/22 15:13	04/22/22 14:53	7440-38-2	
Cadmium	<0.053	ug/L	0.50	0.053	1	04/21/22 15:13	04/22/22 14:53	7440-43-9	
Chromium	<0.31	ug/L	1.0	0.31	1	04/21/22 15:13	04/22/22 14:53	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	04/21/22 15:13	04/22/22 14:53	7782-49-2	
Thallium	<0.15	ug/L	1.0	0.15	1	04/21/22 15:13	04/22/22 14:53	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.12	ug/L	0.20	0.12	1	04/27/22 12:52	04/28/22 09:38	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	299	mg/L	20.0	4.6	1		04/20/22 13:46		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	609	mg/L	10.0	10.0	1		04/19/22 14:43		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	12.6	mg/L	0.050		1		05/03/22 10:05	20074-52-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	0.57	mg/L	0.20	0.060	1		04/19/22 16:49	15438-31-0	H6

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA

Pace Project No.: 60397546

Sample: R-MW-7(r) **Lab ID: 60397546002** Collected: 04/12/22 09:53 Received: 04/13/22 03:45 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	<0.026	mg/L	0.050	0.026	1		04/14/22 16:33	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		04/29/22 17:01	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		04/29/22 17:01	16984-48-8	
Sulfate	18.4	mg/L	5.0	2.8	5		04/29/22 17:15	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA

Pace Project No.: 60397546

Sample: R-MW-B1 Lab ID: 60397546003 Collected: 04/12/22 11:23 Received: 04/13/22 03:45 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	440	ug/L	5.0	1.2	1	04/21/22 15:13	04/22/22 19:29	7440-39-3	
Beryllium	<0.24	ug/L	1.0	0.24	1	04/21/22 15:13	04/22/22 19:29	7440-41-7	
Boron	96.0J	ug/L	100	7.1	1	04/21/22 15:13	04/22/22 19:29	7440-42-8	
Calcium	139000	ug/L	200	38.2	1	04/21/22 15:13	04/25/22 17:50	7440-70-2	
Cobalt	2.4J	ug/L	5.0	1.4	1	04/21/22 15:13	04/22/22 19:29	7440-48-4	
Iron	21000	ug/L	50.0	21.1	1	04/21/22 15:13	04/22/22 19:29	7439-89-6	
Lead	<6.1	ug/L	10.0	6.1	1	04/21/22 15:13	04/22/22 19:29	7439-92-1	
Lithium	55.6	ug/L	10.0	1.1	1	04/21/22 15:13	04/25/22 17:50	7439-93-2	
Magnesium	41600	ug/L	50.0	11.7	1	04/21/22 15:13	04/22/22 19:29	7439-95-4	
Manganese	1090	ug/L	5.0	1.1	1	04/21/22 15:13	04/22/22 19:29	7439-96-5	
Molybdenum	<1.8	ug/L	20.0	1.8	1	04/21/22 15:13	04/22/22 19:29	7439-98-7	
Potassium	8830	ug/L	500	224	1	04/21/22 15:13	04/22/22 19:29	7440-09-7	
Sodium	25000	ug/L	500	166	1	04/21/22 15:13	04/22/22 19:29	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	04/21/22 15:13	04/23/22 17:00	7440-36-0	
Arsenic	22.0	ug/L	1.0	0.14	1	04/21/22 15:13	04/22/22 15:03	7440-38-2	
Cadmium	<0.053	ug/L	0.50	0.053	1	04/21/22 15:13	04/22/22 15:03	7440-43-9	
Chromium	0.36J	ug/L	1.0	0.31	1	04/21/22 15:13	04/22/22 15:03	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	04/21/22 15:13	04/22/22 15:03	7782-49-2	
Thallium	<0.15	ug/L	1.0	0.15	1	04/21/22 15:13	04/22/22 15:03	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.12	ug/L	0.20	0.12	1	04/27/22 12:52	04/28/22 09:45	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	492	mg/L	20.0	4.6	1		04/20/22 13:52		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	654	mg/L	10.0	10.0	1		04/19/22 14:43		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	20.2	mg/L	0.050		1		05/03/22 10:05	20074-52-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	0.74	mg/L	0.20	0.060	1		04/19/22 17:13	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA

Pace Project No.: 60397546

Sample: R-MW-B1 **Lab ID: 60397546003** Collected: 04/12/22 11:23 Received: 04/13/22 03:45 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	<0.026	mg/L	0.050	0.026	1		04/14/22 16:33	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	41.5	mg/L	5.0	2.6	5		04/29/22 17:44	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		04/29/22 17:30	16984-48-8	
Sulfate	35.4	mg/L	5.0	2.8	5		04/29/22 17:44	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA

Pace Project No.: 60397546

Sample: R-MW-B2 **Lab ID: 60397546004** Collected: 04/12/22 12:20 Received: 04/13/22 03:45 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	405	ug/L	5.0	1.2	1	04/21/22 15:13	04/22/22 19:31	7440-39-3	
Beryllium	<0.24	ug/L	1.0	0.24	1	04/21/22 15:13	04/22/22 19:31	7440-41-7	
Boron	37.1J	ug/L	100	7.1	1	04/21/22 15:13	04/22/22 19:31	7440-42-8	
Calcium	104000	ug/L	200	38.2	1	04/21/22 15:13	04/25/22 17:53	7440-70-2	
Cobalt	1.9J	ug/L	5.0	1.4	1	04/21/22 15:13	04/22/22 19:31	7440-48-4	
Iron	8860	ug/L	50.0	21.1	1	04/21/22 15:13	04/22/22 19:31	7439-89-6	
Lead	<6.1	ug/L	10.0	6.1	1	04/21/22 15:13	04/22/22 19:31	7439-92-1	
Lithium	9.2J	ug/L	10.0	1.1	1	04/21/22 15:13	04/25/22 17:53	7439-93-2	
Magnesium	19500	ug/L	50.0	11.7	1	04/21/22 15:13	04/22/22 19:31	7439-95-4	
Manganese	244	ug/L	5.0	1.1	1	04/21/22 15:13	04/22/22 19:31	7439-96-5	
Molybdenum	<1.8	ug/L	20.0	1.8	1	04/21/22 15:13	04/22/22 19:31	7439-98-7	
Potassium	1840	ug/L	500	224	1	04/21/22 15:13	04/22/22 19:31	7440-09-7	
Sodium	18600	ug/L	500	166	1	04/21/22 15:13	04/22/22 19:31	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	04/21/22 15:13	04/23/22 17:03	7440-36-0	
Arsenic	2.9	ug/L	1.0	0.14	1	04/21/22 15:13	04/22/22 15:05	7440-38-2	
Cadmium	<0.053	ug/L	0.50	0.053	1	04/21/22 15:13	04/22/22 15:05	7440-43-9	
Chromium	1.6	ug/L	1.0	0.31	1	04/21/22 15:13	04/22/22 15:05	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	04/21/22 15:13	04/22/22 15:05	7782-49-2	
Thallium	<0.15	ug/L	1.0	0.15	1	04/21/22 15:13	04/22/22 15:05	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.12	ug/L	0.20	0.12	1	04/27/22 12:52	04/28/22 09:47	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	330	mg/L	20.0	4.6	1		04/21/22 10:06		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	435	mg/L	10.0	10.0	1		04/19/22 14:43		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	8.4	mg/L	0.050		1		05/03/22 10:05	20074-52-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	0.42	mg/L	0.20	0.060	1		04/19/22 17:13	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA

Pace Project No.: 60397546

Sample: R-MW-B2 **Lab ID: 60397546004** Collected: 04/12/22 12:20 Received: 04/13/22 03:45 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	<0.026	mg/L	0.050	0.026	1		04/14/22 16:33	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	27.4	mg/L	5.0	2.6	5		04/29/22 18:12	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		04/29/22 17:58	16984-48-8	
Sulfate	11.8	mg/L	1.0	0.55	1		04/29/22 17:58	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA

Pace Project No.: 60397546

Sample: R-FB-1 **Lab ID: 60397546005** Collected: 04/12/22 15:35 Received: 04/13/22 03:45 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	2.5J	ug/L	5.0	1.2	1	04/21/22 15:13	04/22/22 19:33	7440-39-3	
Beryllium	<0.24	ug/L	1.0	0.24	1	04/21/22 15:13	04/22/22 19:33	7440-41-7	
Boron	<7.1	ug/L	100	7.1	1	04/21/22 15:13	04/22/22 19:33	7440-42-8	
Calcium	<71.3	ug/L	200	71.3	1	04/21/22 15:13	04/22/22 19:33	7440-70-2	
Cobalt	<1.4	ug/L	5.0	1.4	1	04/21/22 15:13	04/22/22 19:33	7440-48-4	
Iron	<21.1	ug/L	50.0	21.1	1	04/21/22 15:13	04/22/22 19:33	7439-89-6	
Lead	<6.1	ug/L	10.0	6.1	1	04/21/22 15:13	04/22/22 19:33	7439-92-1	
Lithium	<1.2	ug/L	10.0	1.2	1	04/21/22 15:13	04/22/22 19:33	7439-93-2	
Magnesium	<11.7	ug/L	50.0	11.7	1	04/21/22 15:13	04/22/22 19:33	7439-95-4	
Manganese	<1.1	ug/L	5.0	1.1	1	04/21/22 15:13	04/22/22 19:33	7439-96-5	
Molybdenum	<1.8	ug/L	20.0	1.8	1	04/21/22 15:13	04/22/22 19:33	7439-98-7	
Potassium	<224	ug/L	500	224	1	04/21/22 15:13	04/22/22 19:33	7440-09-7	
Sodium	<166	ug/L	500	166	1	04/21/22 15:13	04/22/22 19:33	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	04/21/22 15:13	04/23/22 17:06	7440-36-0	
Arsenic	<0.14	ug/L	1.0	0.14	1	04/21/22 15:13	04/22/22 15:08	7440-38-2	
Cadmium	<0.053	ug/L	0.50	0.053	1	04/21/22 15:13	04/22/22 15:08	7440-43-9	
Chromium	0.36J	ug/L	1.0	0.31	1	04/21/22 15:13	04/22/22 15:08	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	04/21/22 15:13	04/22/22 15:08	7782-49-2	
Thallium	<0.15	ug/L	1.0	0.15	1	04/21/22 15:13	04/22/22 15:08	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.12	ug/L	0.20	0.12	1	04/27/22 12:52	04/28/22 09:49	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<4.6	mg/L	20.0	4.6	1		04/21/22 10:18		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	25.0	mg/L	5.0	5.0	1		04/19/22 14:44		D6
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	0.0072J	mg/L	0.050		1		05/03/22 10:05	20074-52-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	<0.060	mg/L	0.20	0.060	1		04/19/22 17:16	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA

Pace Project No.: 60397546

Sample: R-FB-1 **Lab ID: 60397546005** Collected: 04/12/22 15:35 Received: 04/13/22 03:45 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	<0.026	mg/L	0.050	0.026	1		04/14/22 16:33	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	0.75J	mg/L	1.0	0.53	1		04/29/22 18:54	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		04/29/22 18:54	16984-48-8	
Sulfate	0.60J	mg/L	1.0	0.55	1		04/29/22 18:54	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA

Pace Project No.: 60397546

Sample: R-MW-2 Lab ID: 60397546006 Collected: 04/14/22 09:27 Received: 04/16/22 04:47 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	12.1	ug/L	5.0	1.7	1	04/20/22 13:35	04/21/22 21:01	7440-39-3	
Beryllium	<0.31	ug/L	1.0	0.31	1	04/20/22 13:35	04/21/22 21:01	7440-41-7	
Boron	4160	ug/L	100	13.5	1	04/20/22 13:35	04/21/22 21:01	7440-42-8	
Calcium	10700	ug/L	200	38.2	1	04/20/22 13:35	04/21/22 21:01	7440-70-2	
Cobalt	<0.78	ug/L	5.0	0.78	1	04/20/22 13:35	04/21/22 21:01	7440-48-4	
Iron	121	ug/L	50.0	23.9	1	04/20/22 13:35	04/21/22 21:01	7439-89-6	
Lead	16.9	ug/L	10.0	4.3	1	04/20/22 13:35	04/21/22 21:01	7439-92-1	
Lithium	2.8J	ug/L	10.0	1.1	1	04/20/22 13:35	04/21/22 21:01	7439-93-2	
Magnesium	<43.0	ug/L	50.0	43.0	1	04/20/22 13:35	04/21/22 21:01	7439-95-4	
Manganese	<3.8	ug/L	5.0	3.8	1	04/20/22 13:35	04/21/22 21:01	7439-96-5	
Molybdenum	117	ug/L	20.0	1.4	1	04/20/22 13:35	04/21/22 21:01	7439-98-7	
Potassium	3010	ug/L	500	167	1	04/20/22 13:35	04/21/22 21:01	7440-09-7	
Sodium	217000	ug/L	500	64.8	1	04/20/22 13:35	04/21/22 21:01	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	3.9	ug/L	1.0	0.12	1	04/20/22 13:35	04/29/22 17:59	7440-36-0	
Arsenic	265	ug/L	1.0	0.14	1	04/20/22 13:35	04/29/22 17:59	7440-38-2	
Cadmium	0.50J	ug/L	0.50	0.053	1	04/20/22 13:35	04/29/22 17:59	7440-43-9	
Chromium	0.90J	ug/L	1.0	0.31	1	04/20/22 13:35	04/29/22 17:59	7440-47-3	
Selenium	3.7	ug/L	1.0	0.18	1	04/20/22 13:35	04/29/22 17:59	7782-49-2	
Thallium	<0.15	ug/L	1.0	0.15	1	04/20/22 13:35	04/29/22 17:59	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.12	ug/L	0.20	0.12	1	05/05/22 13:38	05/06/22 13:11	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	215	mg/L	20.0	4.6	1		04/21/22 13:01		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	789	mg/L	10.0	10.0	1		04/21/22 15:01		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	0.0J	mg/L	0.050		1		05/03/22 10:01	20074-52-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	0.36	mg/L	0.20	0.060	1		04/26/22 11:47	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA

Pace Project No.: 60397546

Sample: R-MW-2 **Lab ID: 60397546006** Collected: 04/14/22 09:27 Received: 04/16/22 04:47 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	0.044J	mg/L	0.050	0.026	1		04/21/22 17:29	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	23.8	mg/L	5.0	2.6	5		04/28/22 16:39	16887-00-6	
Fluoride	1.1	mg/L	0.20	0.12	1		04/28/22 16:25	16984-48-8	
Sulfate	260	mg/L	20.0	11.0	20		04/28/22 16:52	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA

Pace Project No.: 60397546

Sample: R-MW-3 Lab ID: 60397546007 Collected: 04/14/22 12:08 Received: 04/16/22 04:47 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	30.5	ug/L	5.0	1.7	1	04/20/22 13:35	04/21/22 21:04	7440-39-3	
Beryllium	<0.31	ug/L	1.0	0.31	1	04/20/22 13:35	04/21/22 21:04	7440-41-7	
Boron	15600	ug/L	100	13.5	1	04/20/22 13:35	04/21/22 21:04	7440-42-8	
Calcium	8830	ug/L	200	38.2	1	04/20/22 13:35	04/21/22 21:04	7440-70-2	
Cobalt	0.86J	ug/L	5.0	0.78	1	04/20/22 13:35	04/21/22 21:04	7440-48-4	
Iron	168	ug/L	50.0	23.9	1	04/20/22 13:35	04/21/22 21:04	7439-89-6	
Lead	<4.3	ug/L	10.0	4.3	1	04/20/22 13:35	04/21/22 21:04	7439-92-1	
Lithium	5.2J	ug/L	10.0	1.1	1	04/20/22 13:35	04/21/22 21:04	7439-93-2	
Magnesium	576	ug/L	50.0	43.0	1	04/20/22 13:35	04/21/22 21:04	7439-95-4	
Manganese	12.9	ug/L	5.0	3.8	1	04/20/22 13:35	04/21/22 21:04	7439-96-5	
Molybdenum	922	ug/L	20.0	1.4	1	04/20/22 13:35	04/21/22 21:04	7439-98-7	
Potassium	2170	ug/L	500	167	1	04/20/22 13:35	04/21/22 21:04	7440-09-7	
Sodium	256000	ug/L	500	64.8	1	04/20/22 13:35	04/21/22 21:04	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	04/20/22 13:35	04/29/22 18:02	7440-36-0	
Arsenic	29.8	ug/L	1.0	0.14	1	04/20/22 13:35	04/29/22 18:02	7440-38-2	
Cadmium	0.30J	ug/L	0.50	0.053	1	04/20/22 13:35	04/29/22 18:02	7440-43-9	
Chromium	0.80J	ug/L	1.0	0.31	1	04/20/22 13:35	04/29/22 18:02	7440-47-3	
Selenium	0.73J	ug/L	1.0	0.18	1	04/20/22 13:35	04/29/22 18:02	7782-49-2	
Thallium	<0.15	ug/L	1.0	0.15	1	04/20/22 13:35	04/29/22 18:02	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.12	ug/L	0.20	0.12	1	05/05/22 13:38	05/06/22 13:14	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	236	mg/L	20.0	4.6	1		04/21/22 13:07		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	896	mg/L	13.3	13.3	1		04/21/22 15:01		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	0.0J	mg/L	0.050		1		05/03/22 10:01	20074-52-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	0.52	mg/L	0.20	0.060	1		04/26/22 11:47	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA

Pace Project No.: 60397546

Sample: R-MW-3 **Lab ID: 60397546007** Collected: 04/14/22 12:08 Received: 04/16/22 04:47 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	<0.026	mg/L	0.050	0.026	1		04/21/22 17:30	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	26.9	mg/L	5.0	2.6	5		04/28/22 17:20	16887-00-6	B
Fluoride	1.2	mg/L	0.20	0.12	1		04/28/22 17:06	16984-48-8	
Sulfate	325	mg/L	20.0	11.0	20		04/28/22 17:34	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA

Pace Project No.: 60397546

Sample: R-MW-4 **Lab ID: 60397546008** Collected: 04/15/22 09:05 Received: 04/16/22 04:47 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	372	ug/L	5.0	1.7	1	04/20/22 13:35	04/21/22 21:06	7440-39-3	
Beryllium	<0.31	ug/L	1.0	0.31	1	04/20/22 13:35	04/21/22 21:06	7440-41-7	
Boron	2410	ug/L	100	13.5	1	04/20/22 13:35	04/21/22 21:06	7440-42-8	
Calcium	96300	ug/L	200	38.2	1	04/20/22 13:35	04/21/22 21:06	7440-70-2	
Cobalt	<0.78	ug/L	5.0	0.78	1	04/20/22 13:35	04/21/22 21:06	7440-48-4	
Iron	6930	ug/L	50.0	23.9	1	04/20/22 13:35	04/21/22 21:06	7439-89-6	
Lead	<4.3	ug/L	10.0	4.3	1	04/20/22 13:35	04/21/22 21:06	7439-92-1	
Lithium	37.7	ug/L	10.0	1.1	1	04/20/22 13:35	04/21/22 21:06	7439-93-2	
Magnesium	20000	ug/L	50.0	43.0	1	04/20/22 13:35	04/21/22 21:06	7439-95-4	
Manganese	408	ug/L	5.0	3.8	1	04/20/22 13:35	04/21/22 21:06	7439-96-5	
Molybdenum	52.4	ug/L	20.0	1.4	1	04/20/22 13:35	04/21/22 21:06	7439-98-7	
Potassium	5300	ug/L	500	167	1	04/20/22 13:35	04/21/22 21:06	7440-09-7	
Sodium	39300	ug/L	500	64.8	1	04/20/22 13:35	04/21/22 21:06	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	04/20/22 13:35	04/29/22 18:10	7440-36-0	
Arsenic	14.2	ug/L	1.0	0.14	1	04/20/22 13:35	04/29/22 18:10	7440-38-2	
Cadmium	<0.053	ug/L	0.50	0.053	1	04/20/22 13:35	04/29/22 18:10	7440-43-9	
Chromium	0.73J	ug/L	1.0	0.31	1	04/20/22 13:35	04/29/22 18:10	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	04/20/22 13:35	04/29/22 18:10	7782-49-2	
Thallium	<0.15	ug/L	1.0	0.15	1	04/20/22 13:35	04/29/22 18:10	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.12	ug/L	0.20	0.12	1	05/05/22 13:38	05/06/22 13:16	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	370	mg/L	20.0	4.6	1		04/21/22 14:07		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	462	mg/L	10.0	10.0	1		04/21/22 15:02		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	6.2	mg/L	0.050		1		05/03/22 10:01	20074-52-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	0.68	mg/L	0.20	0.060	1		04/26/22 11:52	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA

Pace Project No.: 60397546

Sample: R-MW-4 **Lab ID: 60397546008** Collected: 04/15/22 09:05 Received: 04/16/22 04:47 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	<0.026	mg/L	0.050	0.026	1		04/21/22 17:33	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	15.8	mg/L	1.0	0.53	1		04/28/22 18:15	16887-00-6	
Fluoride	0.65	mg/L	0.20	0.12	1		04/28/22 18:15	16984-48-8	
Sulfate	13.3	mg/L	1.0	0.55	1		04/28/22 18:15	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA

Pace Project No.: 60397546

Sample: R-MW-5 Lab ID: 60397546009 Collected: 04/15/22 10:35 Received: 04/16/22 04:47 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	347	ug/L	5.0	1.7	1	04/20/22 13:35	04/21/22 21:24	7440-39-3	
Beryllium	<0.31	ug/L	1.0	0.31	1	04/20/22 13:35	04/21/22 21:24	7440-41-7	
Boron	56.4J	ug/L	100	13.5	1	04/20/22 13:35	04/21/22 21:24	7440-42-8	
Calcium	115000	ug/L	200	38.2	1	04/20/22 13:35	04/21/22 21:24	7440-70-2	
Cobalt	<0.78	ug/L	5.0	0.78	1	04/20/22 13:35	04/21/22 21:24	7440-48-4	
Iron	8080	ug/L	50.0	23.9	1	04/20/22 13:35	04/21/22 21:24	7439-89-6	
Lead	<4.3	ug/L	10.0	4.3	1	04/20/22 13:35	04/21/22 21:24	7439-92-1	
Lithium	5.5J	ug/L	10.0	1.1	1	04/20/22 13:35	04/21/22 21:24	7439-93-2	
Magnesium	15700	ug/L	50.0	43.0	1	04/20/22 13:35	04/21/22 21:24	7439-95-4	
Manganese	326	ug/L	5.0	3.8	1	04/20/22 13:35	04/21/22 21:24	7439-96-5	
Molybdenum	<1.4	ug/L	20.0	1.4	1	04/20/22 13:35	04/21/22 21:24	7439-98-7	
Potassium	1890	ug/L	500	167	1	04/20/22 13:35	04/21/22 21:24	7440-09-7	
Sodium	3920	ug/L	500	64.8	1	04/20/22 13:35	04/21/22 21:24	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	04/20/22 13:35	04/29/22 18:20	7440-36-0	
Arsenic	1.9	ug/L	1.0	0.14	1	04/20/22 13:35	04/29/22 18:20	7440-38-2	
Cadmium	<0.053	ug/L	0.50	0.053	1	04/20/22 13:35	04/29/22 18:20	7440-43-9	
Chromium	0.32J	ug/L	1.0	0.31	1	04/20/22 13:35	04/29/22 18:20	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	04/20/22 13:35	04/29/22 18:20	7782-49-2	
Thallium	<0.15	ug/L	1.0	0.15	1	04/20/22 13:35	04/29/22 18:20	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.12	ug/L	0.20	0.12	1	05/05/22 13:38	05/06/22 13:27	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	328	mg/L	20.0	4.6	1		04/21/22 14:20		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	397	mg/L	10.0	10.0	1		04/21/22 15:02		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	7.7	mg/L	0.050		1		05/03/22 10:01	20074-52-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	0.37	mg/L	0.20	0.060	1		04/26/22 11:54	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA

Pace Project No.: 60397546

Sample: R-MW-5 **Lab ID: 60397546009** Collected: 04/15/22 10:35 Received: 04/16/22 04:47 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	<0.026	mg/L	0.050	0.026	1		04/21/22 17:34	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	4.0	mg/L	1.0	0.53	1		04/28/22 20:06	16887-00-6	B
Fluoride	0.13J	mg/L	0.20	0.12	1		04/28/22 20:06	16984-48-8	
Sulfate	20.5	mg/L	2.0	1.1	2		04/29/22 11:25	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA

Pace Project No.: 60397546

Sample: R-MW-6 Lab ID: 60397546010 Collected: 04/15/22 14:20 Received: 04/16/22 04:47 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	171	ug/L	5.0	1.7	1	04/20/22 13:35	04/21/22 21:27	7440-39-3	
Beryllium	<0.31	ug/L	1.0	0.31	1	04/20/22 13:35	04/21/22 21:27	7440-41-7	
Boron	1530	ug/L	100	13.5	1	04/20/22 13:35	04/21/22 21:27	7440-42-8	
Calcium	84500	ug/L	200	38.2	1	04/20/22 13:35	04/21/22 21:27	7440-70-2	
Cobalt	<0.78	ug/L	5.0	0.78	1	04/20/22 13:35	04/21/22 21:27	7440-48-4	
Iron	518	ug/L	50.0	23.9	1	04/20/22 13:35	04/21/22 21:27	7439-89-6	
Lead	<4.3	ug/L	10.0	4.3	1	04/20/22 13:35	04/21/22 21:27	7439-92-1	
Lithium	6.7J	ug/L	10.0	1.1	1	04/20/22 13:35	04/21/22 21:27	7439-93-2	
Magnesium	12600	ug/L	50.0	43.0	1	04/20/22 13:35	04/21/22 21:27	7439-95-4	
Manganese	182	ug/L	5.0	3.8	1	04/20/22 13:35	04/21/22 21:27	7439-96-5	
Molybdenum	2.2J	ug/L	20.0	1.4	1	04/20/22 13:35	04/21/22 21:27	7439-98-7	
Potassium	1970	ug/L	500	167	1	04/20/22 13:35	04/21/22 21:27	7440-09-7	
Sodium	20900	ug/L	500	64.8	1	04/20/22 13:35	04/21/22 21:27	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	04/20/22 13:35	04/29/22 18:24	7440-36-0	
Arsenic	0.89J	ug/L	1.0	0.14	1	04/20/22 13:35	04/29/22 18:24	7440-38-2	
Cadmium	<0.053	ug/L	0.50	0.053	1	04/20/22 13:35	04/29/22 18:24	7440-43-9	
Chromium	7.5	ug/L	1.0	0.31	1	04/20/22 13:35	04/29/22 18:24	7440-47-3	
Selenium	0.22J	ug/L	1.0	0.18	1	04/20/22 13:35	04/29/22 18:24	7782-49-2	
Thallium	<0.15	ug/L	1.0	0.15	1	04/20/22 13:35	04/29/22 18:24	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.12	ug/L	0.20	0.12	1	05/05/22 13:38	05/06/22 13:30	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	266	mg/L	20.0	4.6	1		04/21/22 14:33		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	339	mg/L	5.0	5.0	1		04/21/22 15:03		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	0.37	mg/L	0.050		1		05/03/22 10:01	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	0.060	1		04/26/22 11:42	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA

Pace Project No.: 60397546

Sample: R-MW-6 **Lab ID: 60397546010** Collected: 04/15/22 14:20 Received: 04/16/22 04:47 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	<0.026	mg/L	0.050	0.026	1		04/21/22 17:34	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	8.4	mg/L	1.0	0.53	1		04/28/22 20:20	16887-00-6	
Fluoride	0.31	mg/L	0.20	0.12	1		04/28/22 20:20	16984-48-8	
Sulfate	19.4	mg/L	2.0	1.1	2		04/29/22 11:39	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA

Pace Project No.: 60397546

Sample: R-DUP-1 Lab ID: 60397546011 Collected: 04/15/22 08:00 Received: 04/16/22 04:47 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	351	ug/L	5.0	1.7	1	04/20/22 13:35	04/21/22 21:30	7440-39-3	
Beryllium	<0.31	ug/L	1.0	0.31	1	04/20/22 13:35	04/21/22 21:30	7440-41-7	
Boron	53.0J	ug/L	100	13.5	1	04/20/22 13:35	04/21/22 21:30	7440-42-8	
Calcium	116000	ug/L	200	38.2	1	04/20/22 13:35	04/21/22 21:30	7440-70-2	
Cobalt	<0.78	ug/L	5.0	0.78	1	04/20/22 13:35	04/21/22 21:30	7440-48-4	
Iron	8130	ug/L	50.0	23.9	1	04/20/22 13:35	04/21/22 21:30	7439-89-6	
Lead	<4.3	ug/L	10.0	4.3	1	04/20/22 13:35	04/21/22 21:30	7439-92-1	
Lithium	5.5J	ug/L	10.0	1.1	1	04/20/22 13:35	04/21/22 21:30	7439-93-2	
Magnesium	15900	ug/L	50.0	43.0	1	04/20/22 13:35	04/21/22 21:30	7439-95-4	
Manganese	327	ug/L	5.0	3.8	1	04/20/22 13:35	04/21/22 21:30	7439-96-5	
Molybdenum	<1.4	ug/L	20.0	1.4	1	04/20/22 13:35	04/21/22 21:30	7439-98-7	
Potassium	1890	ug/L	500	167	1	04/20/22 13:35	04/21/22 21:30	7440-09-7	
Sodium	3930	ug/L	500	64.8	1	04/20/22 13:35	04/21/22 21:30	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	04/20/22 13:35	04/29/22 18:32	7440-36-0	
Arsenic	1.8	ug/L	1.0	0.14	1	04/20/22 13:35	04/29/22 18:32	7440-38-2	
Cadmium	<0.053	ug/L	0.50	0.053	1	04/20/22 13:35	04/29/22 18:32	7440-43-9	
Chromium	0.42J	ug/L	1.0	0.31	1	04/20/22 13:35	04/29/22 18:32	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	04/20/22 13:35	04/29/22 18:32	7782-49-2	
Thallium	<0.15	ug/L	1.0	0.15	1	04/20/22 13:35	04/29/22 18:32	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.12	ug/L	0.20	0.12	1	05/05/22 13:38	05/06/22 13:32	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	321	mg/L	20.0	4.6	1		04/21/22 14:50		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	391	mg/L	10.0	10.0	1		04/21/22 15:03		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	7.7	mg/L	0.050		1		05/03/22 10:01	20074-52-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	0.41	mg/L	0.20	0.060	1		04/26/22 11:52	15438-31-0	H6

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA

Pace Project No.: 60397546

Sample: R-DUP-1 **Lab ID: 60397546011** Collected: 04/15/22 08:00 Received: 04/16/22 04:47 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	<0.026	mg/L	0.050	0.026	1		04/21/22 17:35	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	4.0	mg/L	1.0	0.53	1		04/28/22 21:02	16887-00-6	B
Fluoride	0.14J	mg/L	0.20	0.12	1		04/28/22 21:02	16984-48-8	
Sulfate	20.2	mg/L	2.0	1.1	2		04/29/22 11:52	14808-79-8	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA

Pace Project No.: 60397546

QC Batch: 783583

Analysis Method: EPA 7470

QC Batch Method: EPA 7470

Analysis Description: 7470 Mercury

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60397546001, 60397546002, 60397546003, 60397546004, 60397546005

METHOD BLANK: 3124795

Matrix: Water

Associated Lab Samples: 60397546001, 60397546002, 60397546003, 60397546004, 60397546005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	<0.12	0.20	0.12	04/28/22 09:31	

LABORATORY CONTROL SAMPLE: 3124796

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.1	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3124797 3124798

Parameter	Units	3124797		3124798		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Mercury	ug/L	<0.12	5	5	5.0	5.1	101	103	75-125	2	20

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA

Pace Project No.: 60397546

QC Batch:	785114	Analysis Method:	EPA 7470
QC Batch Method:	EPA 7470	Analysis Description:	7470 Mercury
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60397546006, 60397546007, 60397546008, 60397546009, 60397546010, 60397546011

METHOD BLANK: 3130302 Matrix: Water

Associated Lab Samples: 60397546006, 60397546007, 60397546008, 60397546009, 60397546010, 60397546011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	<0.12	0.20	0.12	05/06/22 13:07	

LABORATORY CONTROL SAMPLE: 3130303

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.9	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3130304 3130305

Parameter	Units	3130304		3130305		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Mercury	ug/L	<0.12	5	5	4.8	4.7	97	94	75-125	3	20

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA

Pace Project No.: 60397546

QC Batch:	782329	Analysis Method:	EPA 200.7
QC Batch Method:	EPA 200.7	Analysis Description:	200.7 Metals, Total
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60397546006, 60397546007, 60397546008, 60397546009, 60397546010, 60397546011

METHOD BLANK: 3120014 Matrix: Water

Associated Lab Samples: 60397546006, 60397546007, 60397546008, 60397546009, 60397546010, 60397546011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<1.7	5.0	1.7	04/21/22 20:55	
Beryllium	ug/L	<0.31	1.0	0.31	04/21/22 20:55	
Boron	ug/L	<13.5	100	13.5	04/21/22 20:55	
Calcium	ug/L	<38.2	200	38.2	04/21/22 20:55	
Cobalt	ug/L	<0.78	5.0	0.78	04/21/22 20:55	
Iron	ug/L	<23.9	50.0	23.9	04/21/22 20:55	
Lead	ug/L	<4.3	10.0	4.3	04/21/22 20:55	
Lithium	ug/L	<1.1	10.0	1.1	04/21/22 20:55	
Magnesium	ug/L	<43.0	50.0	43.0	04/21/22 20:55	
Manganese	ug/L	<3.8	5.0	3.8	04/21/22 20:55	
Molybdenum	ug/L	<1.4	20.0	1.4	04/21/22 20:55	
Potassium	ug/L	<167	500	167	04/21/22 20:55	
Sodium	ug/L	<64.8	500	64.8	04/21/22 20:55	

LABORATORY CONTROL SAMPLE: 3120015

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	959	96	85-115	
Beryllium	ug/L	1000	977	98	85-115	
Boron	ug/L	1000	895	90	85-115	
Calcium	ug/L	10000	9260	93	85-115	
Cobalt	ug/L	1000	864	86	85-115	
Iron	ug/L	10000	8780	88	85-115	
Lead	ug/L	1000	905	91	85-115	
Lithium	ug/L	1000	901	90	85-115	
Magnesium	ug/L	10000	9320	93	85-115	
Manganese	ug/L	1000	946	95	85-115	
Molybdenum	ug/L	1000	887	89	85-115	
Potassium	ug/L	10000	9020	90	85-115	
Sodium	ug/L	10000	8840	88	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3120016 3120017

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60397546008	Result	Conc.	Conc.						
Barium	ug/L	372	1000	1000	1410	1420	104	105	70-130	1	20
Beryllium	ug/L	<0.31	1000	1000	1090	1100	109	110	70-130	1	20

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA

Pace Project No.: 60397546

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3120016 3120017											
Parameter	Units	60397546008		MS	MSD	MS	MSD	MS	MSD	% Rec	Max
		Result	Conc.	Spike	Spike	Result	Result	% Rec	% Rec	Limits	RPD
Boron	ug/L	2410	1000	1000	3400	3440	99	103	70-130	1	20
Calcium	ug/L	96300	10000	10000	105000	107000	90	111	70-130	2	20
Cobalt	ug/L	<0.78	1000	1000	931	946	93	95	70-130	2	20
Iron	ug/L	6930	10000	10000	16300	16500	94	96	70-130	1	20
Lead	ug/L	<4.3	1000	1000	967	980	97	98	70-130	1	20
Lithium	ug/L	37.7	1000	1000	1080	1100	104	107	70-130	2	20
Magnesium	ug/L	20000	10000	10000	29900	30200	98	102	70-130	1	20
Manganese	ug/L	408	1000	1000	1430	1450	102	104	70-130	1	20
Molybdenum	ug/L	52.4	1000	1000	1040	1050	98	100	70-130	1	20
Potassium	ug/L	5300	10000	10000	15000	15200	97	99	70-130	1	20
Sodium	ug/L	39300	10000	10000	48500	49000	91	97	70-130	1	20

MATRIX SPIKE SAMPLE: 3120018							
Parameter	Units	60397549009		MS	MS	% Rec	Qualifiers
		Result	Spike	Result	% Rec	Limits	
Barium	ug/L	296	1000	1350	105	70-130	
Beryllium	ug/L	<0.31	1000	1100	110	70-130	
Boron	ug/L	385	1000	1400	102	70-130	
Calcium	ug/L	113000	10000	125000	116	70-130	
Cobalt	ug/L	<0.78	1000	939	94	70-130	
Iron	ug/L	11000	10000	20600	96	70-130	
Lead	ug/L	<4.3	1000	977	98	70-130	
Lithium	ug/L	33.3	1000	1100	106	70-130	
Magnesium	ug/L	21900	10000	32300	105	70-130	
Manganese	ug/L	800	1000	1850	105	70-130	
Molybdenum	ug/L	3.4J	1000	995	99	70-130	
Potassium	ug/L	5800	10000	15900	101	70-130	
Sodium	ug/L	20400	10000	30300	99	70-130	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA

Pace Project No.: 60397546

QC Batch:	782608	Analysis Method:	EPA 200.7
QC Batch Method:	EPA 200.7	Analysis Description:	200.7 Metals, Total
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60397546001, 60397546002, 60397546003, 60397546004, 60397546005

METHOD BLANK: 3120974 Matrix: Water

Associated Lab Samples: 60397546001, 60397546002, 60397546003, 60397546004, 60397546005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<1.2	5.0	1.2	04/22/22 19:04	
Beryllium	ug/L	<0.24	1.0	0.24	04/22/22 19:04	
Boron	ug/L	<7.1	100	7.1	04/22/22 19:04	
Calcium	ug/L	<71.3	200	71.3	04/22/22 19:04	
Cobalt	ug/L	<1.4	5.0	1.4	04/22/22 19:04	
Iron	ug/L	<21.1	50.0	21.1	04/22/22 19:04	
Lead	ug/L	<6.1	10.0	6.1	04/22/22 19:04	
Lithium	ug/L	<1.2	10.0	1.2	04/22/22 19:04	
Magnesium	ug/L	<11.7	50.0	11.7	04/22/22 19:04	
Manganese	ug/L	<1.1	5.0	1.1	04/22/22 19:04	
Molybdenum	ug/L	<1.8	20.0	1.8	04/22/22 19:04	
Potassium	ug/L	<224	500	224	04/22/22 19:04	
Sodium	ug/L	<166	500	166	04/22/22 19:04	

LABORATORY CONTROL SAMPLE: 3120975

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	1010	101	85-115	
Beryllium	ug/L	1000	1030	103	85-115	
Boron	ug/L	1000	957	96	85-115	
Calcium	ug/L	10000	9760	98	85-115	
Cobalt	ug/L	1000	988	99	85-115	
Iron	ug/L	10000	9800	98	85-115	
Lead	ug/L	1000	1020	102	85-115	
Lithium	ug/L	1000	863	86	85-115	
Magnesium	ug/L	10000	10300	103	85-115	
Manganese	ug/L	1000	993	99	85-115	
Molybdenum	ug/L	1000	978	98	85-115	
Potassium	ug/L	10000	9880	99	85-115	
Sodium	ug/L	10000	9920	99	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3120976 3120977

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60397546001	Result	Conc.	Conc.								
Barium	ug/L	50.9	1000	1000	1030	1010	98	96	70-130	2	20		
Beryllium	ug/L	<0.24	1000	1000	1030	1010	103	101	70-130	2	20		

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA

Pace Project No.: 60397546

Parameter	Units	3120976		3120977		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60397546001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Boron	ug/L	2110	1000	1000	3080	3030	98	92	70-130	2	20
Calcium	ug/L	63900	10000	10000	74500	72600	106	87	70-130	3	20
Cobalt	ug/L	<1.4	1000	1000	961	946	96	95	70-130	2	20
Iron	ug/L	73.5	10000	10000	9820	9570	97	95	70-130	3	20
Lead	ug/L	<6.1	1000	1000	981	958	98	96	70-130	2	20
Lithium	ug/L	3.3J	1000	1000	1120	1100	112	109	70-130	2	20
Magnesium	ug/L	10300	10000	10000	19800	19500	96	92	70-130	2	20
Manganese	ug/L	62.5	1000	1000	1050	1030	99	96	70-130	2	20
Molybdenum	ug/L	54.4	1000	1000	1030	1010	98	96	70-130	2	20
Potassium	ug/L	7700	10000	10000	17900	17600	102	99	70-130	2	20
Sodium	ug/L	121000	10000	10000	132000	129000	111	78	70-130	3	20

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA

Pace Project No.: 60397546

QC Batch:	782328	Analysis Method:	EPA 200.8
QC Batch Method:	EPA 200.8	Analysis Description:	200.8 MET
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60397546006, 60397546007, 60397546008, 60397546009, 60397546010, 60397546011

METHOD BLANK: 3120008 Matrix: Water

Associated Lab Samples: 60397546006, 60397546007, 60397546008, 60397546009, 60397546010, 60397546011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.12	1.0	0.12	04/29/22 17:53	
Arsenic	ug/L	<0.14	1.0	0.14	04/29/22 17:53	
Cadmium	ug/L	<0.053	0.50	0.053	04/29/22 17:53	
Chromium	ug/L	<0.31	1.0	0.31	04/29/22 17:53	
Selenium	ug/L	<0.18	1.0	0.18	04/29/22 17:53	
Thallium	ug/L	<0.15	1.0	0.15	04/29/22 17:53	

LABORATORY CONTROL SAMPLE: 3120009

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	38.9	97	85-115	
Arsenic	ug/L	40	40.7	102	85-115	
Cadmium	ug/L	40	40.7	102	85-115	
Chromium	ug/L	40	41.6	104	85-115	
Selenium	ug/L	40	40.9	102	85-115	
Thallium	ug/L	40	38.7	97	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3120010 3120011

Parameter	Units	60397546008		3120011		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Antimony	ug/L	<0.12	40	40	39.1	39.1	98	98	70-130	0	20
Arsenic	ug/L	14.2	40	40	55.4	55.3	103	103	70-130	0	20
Cadmium	ug/L	<0.053	40	40	39.3	39.0	98	97	70-130	1	20
Chromium	ug/L	0.73J	40	40	40.7	40.8	100	100	70-130	0	20
Selenium	ug/L	<0.18	40	40	39.6	39.7	99	99	70-130	0	20
Thallium	ug/L	<0.15	40	40	37.9	37.8	95	94	70-130	0	20

MATRIX SPIKE SAMPLE: 3120012

Parameter	Units	60397549009 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	<0.12	40	39.4	99	70-130	
Arsenic	ug/L	14.5	40	56.3	105	70-130	
Cadmium	ug/L	<0.053	40	39.2	98	70-130	
Chromium	ug/L	0.51J	40	40.4	100	70-130	
Selenium	ug/L	<0.18	40	40.0	100	70-130	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA

Pace Project No.: 60397546

MATRIX SPIKE SAMPLE:		3120012					
Parameter	Units	60397549009 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Thallium	ug/L	<0.15	40	37.7	94	70-130	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA
Pace Project No.: 60397546

QC Batch: 782609 Analysis Method: EPA 200.8
QC Batch Method: EPA 200.8 Analysis Description: 200.8 MET
Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60397546001, 60397546002, 60397546003, 60397546004, 60397546005

METHOD BLANK: 3120978 Matrix: Water
Associated Lab Samples: 60397546001, 60397546002, 60397546003, 60397546004, 60397546005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.12	1.0	0.12	04/22/22 14:39	
Arsenic	ug/L	<0.14	1.0	0.14	04/22/22 14:39	
Cadmium	ug/L	<0.053	0.50	0.053	04/22/22 14:39	
Chromium	ug/L	<0.31	1.0	0.31	04/22/22 14:39	
Selenium	ug/L	<0.18	1.0	0.18	04/22/22 14:39	
Thallium	ug/L	<0.15	1.0	0.15	04/22/22 14:39	

LABORATORY CONTROL SAMPLE: 3120979

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	40.6	102	85-115	
Arsenic	ug/L	40	40.2	100	85-115	
Cadmium	ug/L	40	43.4	108	85-115	
Chromium	ug/L	40	40.7	102	85-115	
Selenium	ug/L	40	41.1	103	85-115	
Thallium	ug/L	40	38.5	96	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3120980 3120981

Parameter	Units	3120980		3120981		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Antimony	ug/L	<0.12	40	34.1	34.1	85	85	70-130	0	20	
Arsenic	ug/L	121	40	160	161	98	99	70-130	0	20	
Cadmium	ug/L	<0.053	40	39.1	39.3	98	98	70-130	0	20	
Chromium	ug/L	<0.31	40	39.5	39.3	98	97	70-130	0	20	
Selenium	ug/L	<0.18	40	39.7	39.3	99	98	70-130	1	20	
Thallium	ug/L	<0.15	40	39.2	38.9	98	97	70-130	1	20	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA
Pace Project No.: 60397546

QC Batch: 782260 Analysis Method: SM 2320B
QC Batch Method: SM 2320B Analysis Description: 2320B Alkalinity
Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60397546001, 60397546002, 60397546003

METHOD BLANK: 3119662 Matrix: Water
Associated Lab Samples: 60397546001, 60397546002, 60397546003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<4.6	20.0	4.6	04/20/22 10:52	

LABORATORY CONTROL SAMPLE: 3119663

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	475	95	90-110	

SAMPLE DUPLICATE: 3119664

Parameter	Units	60397403002 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	620	622	0	10	

SAMPLE DUPLICATE: 3119665

Parameter	Units	60397347017 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	139	137	1	10	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA

Pace Project No.: 60397546

QC Batch: 782418

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60397546004, 60397546005

METHOD BLANK: 3120304

Matrix: Water

Associated Lab Samples: 60397546004, 60397546005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<4.6	20.0	4.6	04/21/22 09:55	

LABORATORY CONTROL SAMPLE: 3120305

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	471	94	90-110	

SAMPLE DUPLICATE: 3120306

Parameter	Units	60397546004 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	330	328	1	10	

SAMPLE DUPLICATE: 3120307

Parameter	Units	60397785001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	202	203	0	10	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA

Pace Project No.: 60397546

QC Batch:	782420	Analysis Method:	SM 2320B
QC Batch Method:	SM 2320B	Analysis Description:	2320B Alkalinity
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60397546006, 60397546007, 60397546008, 60397546009, 60397546010, 60397546011

METHOD BLANK: 3120310 Matrix: Water
Associated Lab Samples: 60397546006, 60397546007, 60397546008, 60397546009, 60397546010, 60397546011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<4.6	20.0	4.6	04/21/22 12:49	

LABORATORY CONTROL SAMPLE: 3120311

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	476	95	90-110	

SAMPLE DUPLICATE: 3120312

Parameter	Units	60397546008 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	370	375	1	10	

SAMPLE DUPLICATE: 3120313

Parameter	Units	60397546009 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	328	330	0	10	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA

Pace Project No.: 60397546

QC Batch:	782149	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60397546001, 60397546002, 60397546003, 60397546004, 60397546005

METHOD BLANK: 3119400 Matrix: Water
Associated Lab Samples: 60397546001, 60397546002, 60397546003, 60397546004, 60397546005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	04/19/22 14:43	

LABORATORY CONTROL SAMPLE: 3119401

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	880	88	80-120	

SAMPLE DUPLICATE: 3119402

Parameter	Units	60397546005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	25.0	22.5	11	10	D6

SAMPLE DUPLICATE: 3119403

Parameter	Units	60397549004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	11.5	12.5	8	10	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA

Pace Project No.: 60397546

QC Batch: 782575

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60397546006, 60397546007, 60397546008, 60397546009, 60397546010, 60397546011

METHOD BLANK: 3120906

Matrix: Water

Associated Lab Samples: 60397546006, 60397546007, 60397546008, 60397546009, 60397546010, 60397546011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	04/21/22 15:00	

LABORATORY CONTROL SAMPLE: 3120907

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	925	92	80-120	

SAMPLE DUPLICATE: 3120908

Parameter	Units	60397546006 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	789	810	3	10	

SAMPLE DUPLICATE: 3120909

Parameter	Units	60397546008 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	462	451	2	10	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA

Pace Project No.: 60397546

QC Batch:	782077	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: 60397546001, 60397546002, 60397546003, 60397546004, 60397546005

METHOD BLANK: 3119130 Matrix: Water

Associated Lab Samples: 60397546001, 60397546002, 60397546003, 60397546004, 60397546005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron, Ferrous	mg/L	<0.060	0.20	0.060	04/19/22 16:40	H6

LABORATORY CONTROL SAMPLE: 3119131

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron, Ferrous	mg/L	2	2.0	102	90-110	H6

SAMPLE DUPLICATE: 3119132

Parameter	Units	60397418002 Result	Dup Result	RPD	Max RPD	Qualifiers
Iron, Ferrous	mg/L	ND	0.13J		20	H6

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA

Pace Project No.: 60397546

QC Batch: 782776

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: 60397546006, 60397546007, 60397546008, 60397546009, 60397546011

METHOD BLANK: 3121488

Matrix: Water

Associated Lab Samples: 60397546006, 60397546007, 60397546008, 60397546009, 60397546011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron, Ferrous	mg/L	<0.060	0.20	0.060	04/26/22 11:45	H6

LABORATORY CONTROL SAMPLE: 3121489

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron, Ferrous	mg/L	2	2.1	106	90-110	H6

SAMPLE DUPLICATE: 3121490

Parameter	Units	60397546008 Result	Dup Result	RPD	Max RPD	Qualifiers
Iron, Ferrous	mg/L	0.68	0.68	0	20	H6

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA
Pace Project No.: 60397546

QC Batch: 782777	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: 60397546010

METHOD BLANK: 3121491 Matrix: Water
Associated Lab Samples: 60397546010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron, Ferrous	mg/L	<0.060	0.20	0.060	04/26/22 11:40	H6

LABORATORY CONTROL SAMPLE: 3121492

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron, Ferrous	mg/L	2	2.2	109	90-110	H6

SAMPLE DUPLICATE: 3121493

Parameter	Units	60397549019 Result	Dup Result	RPD	Max RPD	Qualifiers
Iron, Ferrous	mg/L	<0.060	<0.060		20	H6

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA

Pace Project No.: 60397546

QC Batch:	781332	Analysis Method:	SM 4500-S-2 D
QC Batch Method:	SM 4500-S-2 D	Analysis Description:	4500S2D Sulfide, Total
		Laboratory:	Pace Analytical Services - Kansas City
Associated Lab Samples:	60397546001, 60397546002, 60397546003, 60397546004, 60397546005		

METHOD BLANK:	3116170	Matrix:	Water
Associated Lab Samples:	60397546001, 60397546002, 60397546003, 60397546004, 60397546005		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.026	0.050	0.026	04/14/22 16:28	

LABORATORY CONTROL SAMPLE: 3116171						
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.5	0.50	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3116172												3116173	
Parameter	Units	60397616001 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	0.18	0.5	0.5	0.66	0.66	95	96	75-125	0	20		

SAMPLE DUPLICATE: 3116174						
Parameter	Units	60397346017 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.026	<0.026		20	

SAMPLE DUPLICATE: 3116175						
Parameter	Units	60397546004 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.026	<0.026		20	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA

Pace Project No.: 60397546

QC Batch:	782478	Analysis Method:	SM 4500-S-2 D
QC Batch Method:	SM 4500-S-2 D	Analysis Description:	4500S2D Sulfide, Total
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60397546006, 60397546007, 60397546008, 60397546009, 60397546010, 60397546011

METHOD BLANK: 3120475 Matrix: Water
Associated Lab Samples: 60397546006, 60397546007, 60397546008, 60397546009, 60397546010, 60397546011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.026	0.050	0.026	04/21/22 17:28	

LABORATORY CONTROL SAMPLE: 3120476

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.5	0.49	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3120477 3120478

Parameter	Units	60397546008 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	<0.026	0.5	0.5	0.46	0.46	91	91	75-125	0	20	

SAMPLE DUPLICATE: 3120479

Parameter	Units	60397546008 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.026	<0.026		20	

SAMPLE DUPLICATE: 3120480

Parameter	Units	60397546009 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.026	<0.026		20	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA

Pace Project No.: 60397546

QC Batch:	783678	Analysis Method:	EPA 300.0
QC Batch Method:	EPA 300.0	Analysis Description:	300.0 IC Anions
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60397546006, 60397546007, 60397546008, 60397546009, 60397546010, 60397546011

METHOD BLANK: 3125086 Matrix: Water
Associated Lab Samples: 60397546006, 60397546007, 60397546008, 60397546009, 60397546010, 60397546011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	04/28/22 09:01	
Fluoride	mg/L	<0.12	0.20	0.12	04/28/22 09:01	
Sulfate	mg/L	<0.55	1.0	0.55	04/28/22 09:01	

METHOD BLANK: 3126817 Matrix: Water
Associated Lab Samples: 60397546006, 60397546007, 60397546008, 60397546009, 60397546010, 60397546011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.61J	1.0	0.53	04/29/22 06:33	
Fluoride	mg/L	<0.12	0.20	0.12	04/29/22 06:33	
Sulfate	mg/L	<0.55	1.0	0.55	04/29/22 06:33	

LABORATORY CONTROL SAMPLE: 3125087

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	100	90-110	
Sulfate	mg/L	5	5.0	99	90-110	

LABORATORY CONTROL SAMPLE: 3126818

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.8	97	90-110	
Fluoride	mg/L	2.5	2.6	104	90-110	
Sulfate	mg/L	5	5.0	100	90-110	

MATRIX SPIKE SAMPLE: 3125090

Parameter	Units	60398489003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	206	50	262	112	80-120	E
Fluoride	mg/L	0.21	2.5	2.6	97	80-120	
Sulfate	mg/L	189	50	245	111	80-120	E

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA

Pace Project No.: 60397546

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3125093												3125092	
Parameter	Units	60397546008		MS	MSD	MS	MSD	MS	MSD	% Rec	Max	RPD	Qual
		Result	Conc.	Spike	Spike	Result	Result	% Rec	% Rec	Limits	RPD		
Chloride	mg/L	15.8	5	5	21.0	20.9	105	103	80-120	0	15	E	
Fluoride	mg/L	0.65	2.5	2.5	3.2	3.1	102	100	80-120	2	15		
Sulfate	mg/L	13.3	5	5	18.5	18.4	102	101	80-120	0	15		

SAMPLE DUPLICATE: 3125094

Parameter	Units	60397546008		Dup	RPD	Max	Qualifiers
		Result	Result				
Chloride	mg/L	15.8	15.8	15.8	0	15	
Fluoride	mg/L	0.65	0.65	0.65	1	15	
Sulfate	mg/L	13.3	13.3	13.3	0	15	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA
Pace Project No.: 60397546

QC Batch: 783933 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60397546001, 60397546002, 60397546003, 60397546004, 60397546005

METHOD BLANK: 3126081 Matrix: Water
Associated Lab Samples: 60397546001, 60397546002, 60397546003, 60397546004, 60397546005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	04/29/22 13:58	
Fluoride	mg/L	<0.12	0.20	0.12	04/29/22 13:58	
Sulfate	mg/L	<0.55	1.0	0.55	04/29/22 13:58	

METHOD BLANK: 3128018 Matrix: Water
Associated Lab Samples: 60397546001, 60397546002, 60397546003, 60397546004, 60397546005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	05/02/22 09:06	
Fluoride	mg/L	<0.12	0.20	0.12	05/02/22 09:06	
Sulfate	mg/L	<0.55	1.0	0.55	05/02/22 09:06	

LABORATORY CONTROL SAMPLE: 3126082

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	2.5	99	90-110	
Sulfate	mg/L	5	4.9	98	90-110	

LABORATORY CONTROL SAMPLE: 3128019

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.5	90	90-110	
Sulfate	mg/L	5	4.6	93	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3126083 3126084

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60398382001 Result	Spike Conc.	Spike Conc.	Result						
Chloride	mg/L	168	50	50	239	238	117	116	80-120	0	15 E
Fluoride	mg/L	<2.0	25	25	25.6	25.7	103	103	80-120	0	15
Sulfate	mg/L	220	250	250	472	472	97	97	80-120	0	15

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA

Pace Project No.: 60397546

MATRIX SPIKE SAMPLE:		3126085					
Parameter	Units	60397549004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	0.57J	5	4.7	83	80-120	
Fluoride	mg/L	<0.12	2.5	2.5	101	80-120	
Sulfate	mg/L	<0.55	5	4.9	98	80-120	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA

Pace Project No.: 60397546

Sample: R-MW-1 **Lab ID: 60397546001** Collected: 04/12/22 15:29 Received: 04/13/22 03:45 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	0.0943 ± 0.262 (0.508) C:NA T:89%	pCi/L	05/09/22 16:31	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.456 ± 0.352 (0.697) C:76% T:89%	pCi/L	05/02/22 12:53	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA

Pace Project No.: 60397546

Sample: R-MW-7(r) **Lab ID: 60397546002** Collected: 04/12/22 09:53 Received: 04/13/22 03:45 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	0.148 ± 0.400 (0.742) C:NA T:92%	pCi/L	05/09/22 16:44	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	1.42 ± 0.677 (1.20) C:75% T:92%	pCi/L	05/02/22 16:16	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA

Pace Project No.: 60397546

Sample: R-MW-B1 **Lab ID: 60397546003** Collected: 04/12/22 11:23 Received: 04/13/22 03:45 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	0.381 ± 0.459 (0.754) C:NA T:88%	pCi/L	05/09/22 16:31	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	0.589 ± 0.600 (1.25) C:78% T:88%	pCi/L	05/02/22 16:16	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA

Pace Project No.: 60397546

Sample: R-MW-B2 **Lab ID: 60397546004** Collected: 04/12/22 12:20 Received: 04/13/22 03:45 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	0.134 ± 0.315 (0.584) C:NA T:89%	pCi/L	05/09/22 16:31	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	-0.410 ± 0.601 (1.43) C:76% T:89%	pCi/L	05/02/22 16:16	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA

Pace Project No.: 60397546

Sample: R-FB-1 **Lab ID: 60397546005** Collected: 04/12/22 15:35 Received: 04/13/22 03:45 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	0.0467 ± 0.242 (0.503) C:NA T:93%	pCi/L	05/09/22 16:31	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	0.474 ± 0.478 (0.990) C:80% T:93%	pCi/L	05/02/22 16:20	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA

Pace Project No.: 60397546

Sample: R-MW-2 **Lab ID: 60397546006** Collected: 04/14/22 09:27 Received: 04/16/22 04:47 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 ± 0.651 (1.26) C:NA T:33%	pCi/L	05/10/22 15:58	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	0.366 ± 0.693 (1.52) C:76% T:33%	pCi/L	05/03/22 12:48	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA

Pace Project No.: 60397546

Sample: R-MW-3 **Lab ID: 60397546007** Collected: 04/14/22 12:08 Received: 04/16/22 04:47 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	-0.278 ± 0.335 (0.911) C:NA T:60%	pCi/L	05/10/22 16:15	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	0.707 ± 0.579 (1.16) C:66% T:60%	pCi/L	05/03/22 12:48	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA

Pace Project No.: 60397546

Sample: R-MW-4 **Lab ID: 60397546008** Collected: 04/15/22 09:05 Received: 04/16/22 04:47 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	0.260 ± 0.369 (0.625) C:NA T:88%	pCi/L	05/10/22 16:55	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.580 ± 0.324 (0.580) C:81% T:88%	pCi/L	05/03/22 12:48	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA

Pace Project No.: 60397546

Sample: R-MW-5 **Lab ID: 60397546009** Collected: 04/15/22 10:35 Received: 04/16/22 04:47 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	0.361 ± 0.270 (0.140) C:NA T:82%	pCi/L	05/10/22 16:15	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.501 ± 0.326 (0.611) C:83% T:82%	pCi/L	05/03/22 12:48	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA

Pace Project No.: 60397546

Sample: R-MW-6 **Lab ID: 60397546010** Collected: 04/15/22 14:20 Received: 04/16/22 04:47 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	0.101 ± 0.312 (0.604) C:NA T:80%	pCi/L	05/10/22 16:15	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.477 ± 0.353 (0.686) C:78% T:80%	pCi/L	05/03/22 12:49	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA

Pace Project No.: 60397546

Sample: R-DUP-1 **Lab ID: 60397546011** Collected: 04/15/22 08:00 Received: 04/16/22 04:47 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	0.294 ± 0.238 (0.133) C:NA T:89%	pCi/L	05/10/22 16:15	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.358 ± 0.341 (0.700) C:78% T:89%	pCi/L	05/03/22 12:49	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA

Pace Project No.: 60397546

Sample: R-MS-1 **Lab ID: 60397546012** Collected: 04/15/22 09:05 Received: 04/16/22 04:47 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	70.46 %REC ± NA (NA) C:NA T:NA	pCi/L	05/10/22 16:15	13982-63-3	1e
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	106.14 %REC ± NA (NA) C:NA T:NA	pCi/L	05/03/22 16:11	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA

Pace Project No.: 60397546

Sample: R-MSD-1 **Lab ID: 60397546013** Collected: 04/15/22 09:05 Received: 04/16/22 04:47 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	97.12 %REC 31.82 RPD ± NA (NA) C:NA T:NA	pCi/L	05/10/22 16:15	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	86.78 %REC 20.07 RPD ± NA (NA) C:NA T:NA	pCi/L	05/03/22 16:11	15262-20-1	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA

Pace Project No.: 60397546

QC Batch: 499299

Analysis Method: EPA 903.1

QC Batch Method: EPA 903.1

Analysis Description: 903.1 Radium-226

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 60397546001, 60397546002, 60397546003, 60397546004, 60397546005

METHOD BLANK: 2416724

Matrix: Water

Associated Lab Samples: 60397546001, 60397546002, 60397546003, 60397546004, 60397546005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0861 ± 0.197 (0.117) C:NA T:93%	pCi/L	05/09/22 15:29	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA

Pace Project No.: 60397546

QC Batch: 499346

Analysis Method: EPA 903.1

QC Batch Method: EPA 903.1

Analysis Description: 903.1 Radium-226

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 60397546006, 60397546007, 60397546008, 60397546009, 60397546010, 60397546011, 60397546012, 60397546013

METHOD BLANK: 2416841

Matrix: Water

Associated Lab Samples: 60397546006, 60397546007, 60397546008, 60397546009, 60397546010, 60397546011, 60397546012, 60397546013

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	-0.218 ± 0.227 (0.614) C:NA T:90%	pCi/L	05/10/22 15:58	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA

Pace Project No.: 60397546

QC Batch: 499348

Analysis Method: EPA 904.0

QC Batch Method: EPA 904.0

Analysis Description: 904.0 Radium 228

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 60397546006, 60397546007, 60397546008, 60397546009, 60397546010, 60397546011, 60397546012, 60397546013

METHOD BLANK: 2416843

Matrix: Water

Associated Lab Samples: 60397546006, 60397546007, 60397546008, 60397546009, 60397546010, 60397546011, 60397546012, 60397546013

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.650 ± 0.330 (0.564) C:76% T:90%	pCi/L	05/03/22 12:48	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA

Pace Project No.: 60397546

QC Batch: 499300

Analysis Method: EPA 904.0

QC Batch Method: EPA 904.0

Analysis Description: 904.0 Radium 228

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 60397546001, 60397546002, 60397546003, 60397546004, 60397546005

METHOD BLANK: 2416725

Matrix: Water

Associated Lab Samples: 60397546001, 60397546002, 60397546003, 60397546004, 60397546005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.317 ± 0.272 (0.543) C:80% T:93%	pCi/L	05/02/22 12:51	

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 RIEC RCPA
Pace Project No.: 60397546

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

- 1e The Matrix Spike recovery was low and outside of the default acceptance criteria for MS recovery. Results have been reported based on acceptable RPD for the RQS set.
- B Analyte was detected in the associated method blank.
- D6 The precision between the sample and sample duplicate exceeded laboratory control limits.
- E Analyte concentration exceeded the calibration range. The reported result is estimated.
- H6 Analysis initiated outside of the 15 minute EPA required holding time.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN RIEC RCPA

Pace Project No.: 60397546

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60397546001	R-MW-1	EPA 200.7	782608	EPA 200.7	782680
60397546002	R-MW-7(r)	EPA 200.7	782608	EPA 200.7	782680
60397546003	R-MW-B1	EPA 200.7	782608	EPA 200.7	782680
60397546004	R-MW-B2	EPA 200.7	782608	EPA 200.7	782680
60397546005	R-FB-1	EPA 200.7	782608	EPA 200.7	782680
60397546006	R-MW-2	EPA 200.7	782329	EPA 200.7	782412
60397546007	R-MW-3	EPA 200.7	782329	EPA 200.7	782412
60397546008	R-MW-4	EPA 200.7	782329	EPA 200.7	782412
60397546009	R-MW-5	EPA 200.7	782329	EPA 200.7	782412
60397546010	R-MW-6	EPA 200.7	782329	EPA 200.7	782412
60397546011	R-DUP-1	EPA 200.7	782329	EPA 200.7	782412
60397546001	R-MW-1	EPA 200.8	782609	EPA 200.8	782681
60397546002	R-MW-7(r)	EPA 200.8	782609	EPA 200.8	782681
60397546003	R-MW-B1	EPA 200.8	782609	EPA 200.8	782681
60397546004	R-MW-B2	EPA 200.8	782609	EPA 200.8	782681
60397546005	R-FB-1	EPA 200.8	782609	EPA 200.8	782681
60397546006	R-MW-2	EPA 200.8	782328	EPA 200.8	782411
60397546007	R-MW-3	EPA 200.8	782328	EPA 200.8	782411
60397546008	R-MW-4	EPA 200.8	782328	EPA 200.8	782411
60397546009	R-MW-5	EPA 200.8	782328	EPA 200.8	782411
60397546010	R-MW-6	EPA 200.8	782328	EPA 200.8	782411
60397546011	R-DUP-1	EPA 200.8	782328	EPA 200.8	782411
60397546001	R-MW-1	EPA 7470	783583	EPA 7470	783737
60397546002	R-MW-7(r)	EPA 7470	783583	EPA 7470	783737
60397546003	R-MW-B1	EPA 7470	783583	EPA 7470	783737
60397546004	R-MW-B2	EPA 7470	783583	EPA 7470	783737
60397546005	R-FB-1	EPA 7470	783583	EPA 7470	783737
60397546006	R-MW-2	EPA 7470	785114	EPA 7470	785353
60397546007	R-MW-3	EPA 7470	785114	EPA 7470	785353
60397546008	R-MW-4	EPA 7470	785114	EPA 7470	785353
60397546009	R-MW-5	EPA 7470	785114	EPA 7470	785353
60397546010	R-MW-6	EPA 7470	785114	EPA 7470	785353
60397546011	R-DUP-1	EPA 7470	785114	EPA 7470	785353
60397546001	R-MW-1	EPA 903.1	499299		
60397546002	R-MW-7(r)	EPA 903.1	499299		
60397546003	R-MW-B1	EPA 903.1	499299		
60397546004	R-MW-B2	EPA 903.1	499299		
60397546005	R-FB-1	EPA 903.1	499299		
60397546006	R-MW-2	EPA 903.1	499346		
60397546007	R-MW-3	EPA 903.1	499346		
60397546008	R-MW-4	EPA 903.1	499346		
60397546009	R-MW-5	EPA 903.1	499346		
60397546010	R-MW-6	EPA 903.1	499346		
60397546011	R-DUP-1	EPA 903.1	499346		
60397546012	R-MS-1	EPA 903.1	499346		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN RIEC RCPA

Pace Project No.: 60397546

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60397546013	R-MSD-1	EPA 903.1	499346		
60397546001	R-MW-1	EPA 904.0	499300		
60397546002	R-MW-7(r)	EPA 904.0	499300		
60397546003	R-MW-B1	EPA 904.0	499300		
60397546004	R-MW-B2	EPA 904.0	499300		
60397546005	R-FB-1	EPA 904.0	499300		
60397546006	R-MW-2	EPA 904.0	499348		
60397546007	R-MW-3	EPA 904.0	499348		
60397546008	R-MW-4	EPA 904.0	499348		
60397546009	R-MW-5	EPA 904.0	499348		
60397546010	R-MW-6	EPA 904.0	499348		
60397546011	R-DUP-1	EPA 904.0	499348		
60397546012	R-MS-1	EPA 904.0	499348		
60397546013	R-MSD-1	EPA 904.0	499348		
60397546001	R-MW-1	SM 2320B	782260		
60397546002	R-MW-7(r)	SM 2320B	782260		
60397546003	R-MW-B1	SM 2320B	782260		
60397546004	R-MW-B2	SM 2320B	782418		
60397546005	R-FB-1	SM 2320B	782418		
60397546006	R-MW-2	SM 2320B	782420		
60397546007	R-MW-3	SM 2320B	782420		
60397546008	R-MW-4	SM 2320B	782420		
60397546009	R-MW-5	SM 2320B	782420		
60397546010	R-MW-6	SM 2320B	782420		
60397546011	R-DUP-1	SM 2320B	782420		
60397546001	R-MW-1	SM 2540C	782149		
60397546002	R-MW-7(r)	SM 2540C	782149		
60397546003	R-MW-B1	SM 2540C	782149		
60397546004	R-MW-B2	SM 2540C	782149		
60397546005	R-FB-1	SM 2540C	782149		
60397546006	R-MW-2	SM 2540C	782575		
60397546007	R-MW-3	SM 2540C	782575		
60397546008	R-MW-4	SM 2540C	782575		
60397546009	R-MW-5	SM 2540C	782575		
60397546010	R-MW-6	SM 2540C	782575		
60397546011	R-DUP-1	SM 2540C	782575		
60397546001	R-MW-1	SM 3500-Fe B#4	784653		
60397546002	R-MW-7(r)	SM 3500-Fe B#4	784653		
60397546003	R-MW-B1	SM 3500-Fe B#4	784653		
60397546004	R-MW-B2	SM 3500-Fe B#4	784653		
60397546005	R-FB-1	SM 3500-Fe B#4	784653		
60397546006	R-MW-2	SM 3500-Fe B#4	784651		
60397546007	R-MW-3	SM 3500-Fe B#4	784651		
60397546008	R-MW-4	SM 3500-Fe B#4	784651		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN RIEC RCPA

Pace Project No.: 60397546

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60397546009	R-MW-5	SM 3500-Fe B#4	784651		
60397546010	R-MW-6	SM 3500-Fe B#4	784651		
60397546011	R-DUP-1	SM 3500-Fe B#4	784651		
60397546001	R-MW-1	SM 3500-Fe B#4	782077		
60397546002	R-MW-7(r)	SM 3500-Fe B#4	782077		
60397546003	R-MW-B1	SM 3500-Fe B#4	782077		
60397546004	R-MW-B2	SM 3500-Fe B#4	782077		
60397546005	R-FB-1	SM 3500-Fe B#4	782077		
60397546006	R-MW-2	SM 3500-Fe B#4	782776		
60397546007	R-MW-3	SM 3500-Fe B#4	782776		
60397546008	R-MW-4	SM 3500-Fe B#4	782776		
60397546009	R-MW-5	SM 3500-Fe B#4	782776		
60397546010	R-MW-6	SM 3500-Fe B#4	782777		
60397546011	R-DUP-1	SM 3500-Fe B#4	782776		
60397546001	R-MW-1	SM 4500-S-2 D	781332		
60397546002	R-MW-7(r)	SM 4500-S-2 D	781332		
60397546003	R-MW-B1	SM 4500-S-2 D	781332		
60397546004	R-MW-B2	SM 4500-S-2 D	781332		
60397546005	R-FB-1	SM 4500-S-2 D	781332		
60397546006	R-MW-2	SM 4500-S-2 D	782478		
60397546007	R-MW-3	SM 4500-S-2 D	782478		
60397546008	R-MW-4	SM 4500-S-2 D	782478		
60397546009	R-MW-5	SM 4500-S-2 D	782478		
60397546010	R-MW-6	SM 4500-S-2 D	782478		
60397546011	R-DUP-1	SM 4500-S-2 D	782478		
60397546001	R-MW-1	EPA 300.0	783933		
60397546002	R-MW-7(r)	EPA 300.0	783933		
60397546003	R-MW-B1	EPA 300.0	783933		
60397546004	R-MW-B2	EPA 300.0	783933		
60397546005	R-FB-1	EPA 300.0	783933		
60397546006	R-MW-2	EPA 300.0	783678		
60397546007	R-MW-3	EPA 300.0	783678		
60397546008	R-MW-4	EPA 300.0	783678		
60397546009	R-MW-5	EPA 300.0	783678		
60397546010	R-MW-6	EPA 300.0	783678		
60397546011	R-DUP-1	EPA 300.0	783678		

REPORT OF LABORATORY ANALYSIS

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60397546



DC#_Title: ENV-FRM-LENE-0009_Sample Cor

Revision: 2

Effective Date: 01/12/2022

Issued By: Lenexa

Client Name: holder

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 2.7/2.1 Corr. Factor -0.2 Corrected 1.7/1.1/1.4

Date and initials of person examining contents:

Temperature should be above freezing to 6°C 12.4 -1.0

2/4/13/22

Chain of Custody present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Chain of Custody relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples arrived within holding time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Short Hold Time analyses (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Rush Turn Around Time requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Sufficient volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Correct containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Pace containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Filtered volume received for dissolved tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Sample labels match COC: Date / time / ID / analyses	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples contain multiple phases? Matrix: <u>WT</u>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Containers requiring pH preservation in compliance? (HNO ₃ , H ₂ SO ₄ , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> 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)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Potassium iodide test strip turns blue/purple? (Preserve)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Headspace in VOA vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Samples from USDA Regulated Area: State:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> 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: _____

CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: 1 of 2

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company: Golder Associates		Report To: Jeffrey Ingram		Attention:	
Address: 701 Emerson Road, Suite 250 Creve Coeur, Missouri, 63141		Copy To: Eric Schnieder, Ryan Feldman, Brendan Talbert		Company Name: Golder Associates USA, Inc	
Email To: jeffrey_ingram@golder.com		Purchase Order No.: COC #5		Address:	
Phone: 636-724-9191 Fax: 636-724-9323		Project Name: Ameren Rush Island Energy Center RCPA		Pace Quote Reference:	
Requested Due Date/TAT: Standard		Project Number: 153140604_0002		Pace Project Manager: Jamie Church	
				Pace Profile #: 9285	
				REGULATORY AGENCY	
				<input type="checkbox"/> NPDES <input checked="" type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER <input type="checkbox"/> UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER	
				Site Location MO	
				STATE:	

ITEM #	Section D Required Client Information	Valid Matrix Codes MATRIX CODE DRINKING WATER DW WASTE WATER WW PRODUCT P SOIL/SOLID S OIL OIL	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	UNPRESERVED	PRESERVATIVES										ANALYSIS TESTS	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	RECEIVED ON	ICE (Y/N)	CUSTODY SEALED	COOLER (Y/N)	SAMPLES INTACT (Y/N)							
					COMPOSITE START	COMPOSITE END/GRAB				HNO ₃	HCl	NaOH	Na ₂ O ₃	Methanol	Other	Chloride/Fluoride/Sulfate	App III and Cat/An Metals	Alkalinity	TDS												Appendix IV Metals *	Mercury	Radium 226	Radium 228	Ferrous/Ferric Iron	SM4500-S2D Sulfide	Residual Chlorine (Y/N)
1	R-MW-1		WT	G			4-12-21 1529	6	2	3	1																										
2	R-MW-2		WT	G																																	
3	R-MW-3		WT	G																																	
4	R-MW-4		WT	G																																	
5	R-MW-5		WT	G																																	
6	R-MW-6		WT	G																																	
7	R-MW-7(r)		WT	G			4-12-22 0953	6	2	3	1																										
8	R-MW-B1		WT	G			4-12-22 1123	6	2	3	1																										
9	R-MW-B2		WT	G			4-12-22 1220	6	2	3	1																										
10	R-DUP-1		WT	G			4-12-22 1535	6	2	3	1																										
11	R-FB-1		WT	G																																	
12	R-MS-1		WT	G																																	

60397546
Pace Project No./Lab I.D.

[Signature]
ACCEPTED BY / AFFILIATION

[Signature]
RELINQUISHED BY / AFFILIATION

Section E Additional Comments		Temp in °C	Received on	Ice (Y/N)	Cooler (Y/N)	Samples Intact (Y/N)
		1.7	4/13 0354	Y	Y	Y
		1.1		Y	Y	Y
		1.4		Y	Y	Y
SAMPLER NAME AND SIGNATURE PRINT Name of SAMPLER: <i>[Signature]</i> SIGNATURE of SAMPLER: <i>[Signature]</i> DATE Signed (MM/DD/YYYY): 04/12/22						

* 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.

F-ALL-Q-020rev.08, 12-Oct-2007

WO#: 60397546



DC#_Title: ENV-FRM-LENE-0009_Sample Con

Revision: 2

Effective Date: 01/12/2022

Issued By: Lenexa

Client Name: Golden

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 Nope Other

Thermometer Used: _____ Type of Ice: Wet Blue None

Cooler Temperature (°C): As-read 1.5/3.7/2.8 Corr. Factor -1.0 Corrected 0.5/2.7/1.8

Date and initials of person examining contents:

Temperature should be above freezing to 6°C 12.3/13.2

11.3/12.2

pm/1/19/22

Chain of Custody present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Chain of Custody relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples arrived within holding time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Short Hold Time analyses (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Rush Turn Around Time requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Sufficient volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Correct containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Pace containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Filtered volume received for dissolved tests?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Sample labels match COC: Date / time / ID / analyses	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples contain multiple phases? Matrix: <u>WT</u>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Containers requiring pH preservation in compliance? (HNO ₃ , H ₂ SO ₄ , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) LOT#: <u>55192/55198</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> 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)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Potassium iodide test strip turns blue/purple? (Preserve)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Headspace in VOA vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Samples from USDA Regulated Area: State:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> 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: _____

CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A

Required Client Information:

Company: Golder Associates

Address: 701 Emerson Road, Suite 250

Creve Coeur, Missouri, 63141

Email To: jeffrey_ingram@golder.com

Phone: 636-724-9191 Fax: 636-724-9323

Requested Due Date/TAT: Standard

Section B

Required Project Information:

Report To: Jeffrey Ingram

Copy To: Eric Schnieder, Ryan Feldman, Brendan Talbert

Purchase Order No.: COC #5

Project Name: Ameren Rush Island Energy Center RCPA

Project Number: 153140604.0002

Section C

Invoice Information:

Attention:

Company Name: Golder Associates USA, Inc

Address:

Reference: Pace Project

Manager: Jamie Church

Pace Profile #: 9285

Page: 1 of 2

REGULATORY AGENCY

NPDES GROUND WATER DRINKING WATER

UST RCRA OTHER

Site Location

STATE: MO

ITEM #	Valid Matrix Codes MATRIX CODE DRINKING WATER DW WASTE WATER WW PRODUCT P SOLID OIL SL WP AR OT TS	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	MATRIX CODE (see valid codes to left)	# OF CONTAINERS	Preservatives						Analysis Test Y/N	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
		COMPOSITE START	COMPOSITE END/GRAB				DATE	TIME	DATE	TIME	H ₂ SO ₄	HNO ₃				
1	R-MW-1			G	WT	6										60897546
2	R-MW-2			G	WT	6	4/14/22	0727						X	X	60897546
3	R-MW-3			G	WT	6	4/14/22	1208						X	X	60897546
4	R-MW-4			G	WT	6	4-15-22	0905						X	X	60897546
5	R-MW-5			G	WT	6	4-15-22	1035						X	X	60897546
6	R-MW-6			G	WT	6	4-15-22	1420						X	X	60897546
7	R-MW-7(c)			G	WT											
8	R-MW-B1			G	WT											
9	R-MW-B2			G	WT											
10	R-DUP-1			G	WT	6	4-15-22							X	X	60897546
11	R-FB-1			G	WT	6										
12	R-MS-1			G	WT	6	4-15-22	0905						X	X	60897546

RELIQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	Received on Ice (Y/N)	Cooler (Y/N)	Samples Intact (Y/N)
<i>Grant Mory</i>	4-15-22	1655	<i>Grant Mory</i>	4/16	0447	0.5	X	X
						2-7	X	X
						1-8	X	X
						11.3	X	X
						12.2	X	X

SAMPLER NAME AND SIGNATURE
 PRINT Name of SAMPLER: Grant Mory
 SIGNATURE of SAMPLER: *Grant Mory*

*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.

CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	Golder Associates	Report To:	Jeffrey Ingram	Attention:	
Address:	701 Emerson Road, Suite 250 Creve Coeur, Missouri, 63141	Copy To:	Eric Schrieder, Ryan Feldman, Brendan Talbert	Company Name:	Golder Associates USA, Inc
Email To:	jeffrey_ingram@golder.com	Purchase Order No.:	COG #5	Address:	
Phone:	636-724-9191	Project Name:	Ameren Rush Island Energy Center RCPA	Site Location	MO
Requested Due Date/TAT:	Standard	Project Number:	153140604.0002	STATE:	

REGULATORY AGENCY

NPDES GROUND WATER DRINKING WATER

UST RCRA OTHER

ITEM #	Valid Matrix Codes MATRIX CODE DRINKING WATER DW WASTE WATER WW PRODUCT P SOILSOLID SL OIL OL WP WP AR AR OT OT TS TS	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives Unpreserved H ₂ O ₂ HNO ₃ HCl NaOH Na ₂ S ₂ O ₃ Methanol Other	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)
				DATE	TIME					
1		R-MSD-1	G	7-15-22	0905		6		Y	
2			G						Y	
3			G						Y	
4			G						Y	
5			G						Y	
6			G						Y	
7			G						Y	
8			G						Y	
9			G						Y	
10			G						Y	
11			G						Y	
12			G						Y	

ADDITIONAL COMMENTS

*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, Th

RELINQUISHED BY / AFFILIATION: Grant Mory / Golder DATE: 7/15/22 TIME: 1655

ACCEPTED BY / AFFILIATION: J. Ingraham DATE: 7/16/22 TIME: 0947

RECEIVED ON: 7/16/22

TEMP IN °C: 2.7

ICE (Y/N): Y

CUSTOMER SEALED (Y/N): Y

SAMPLES INTACT (Y/N): Y

DATE SIGNED (MM/DD/YYYY): 07/15/22

PRINT NAME OF SAMPLER: Grant Mory

SIGNATURE OF SAMPLER: *[Signature]*

MEMORANDUM**DATE** June 8, 2022**Project No.** 153140604.0002**TO** Project File
Golder Associates**CC** Amanda Derhake, Jeff Ingram**FROM** Annie Muehlfarth**EMAIL** ann.muehlfarth@wsp.com**DATA VALIDATION SUMMARY, RUSH ISLAND ENERGY CENTER – RCPA – DETECTION MONITORING AND ASSESSMENT MONITORING - DATA PACKAGE 60397546**

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 MDL and the PQL the results were recorded at the detection value and qualified as estimates (J).
- When duplicate criterion was not met, the associated sample result was qualified as an estimate (J for detects, UJ for non-detects).
- When a compound was analyzed outside of hold time, associated sample results were qualified as estimates (J for detects, UJ for non-detects).

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Company Name: Golder Associates USA Inc
 Project Name: Ameren - RIEC - RCPA
 Reviewer: A. Muehlfarth

Project Manager: J. Ingram
 Project Number: GL153140604.0002
 Validation Date: 6/8/2022

Laboratory: Pace Analytical

SDG #: 60397546

Analytical Method (type and no.): EPA 200.7/200.8/7470 (Total Metals); SM2320B (Alkalinity); SM2540C (TDS); EPA 300.0 (Anions); EPA 903.1/904.0 (Radium 226/228)

Matrix: Air Soil/Sed. Water Waste _____ SM 3500-FE (Ferric Iron); SM 4500-S-2 (Sulfide)

Sample Names R-MW-1, R-MW-7(r), R-MW-B1, R-MW-B2, R-FB-1, R-MW-2, R-MW-3, R-MW-4, R-MW-5, R-MW-6, R-DUP-1, R-MS-1, R-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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>4/12/2022 - 4/15/2022</u>
b) Sampling team indicated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>GTM/EMS</u>
c) Sample location noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
d) Sample depth indicated (Soils)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____
e) Sample type indicated (grab/composite)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Grab</u>
f) Field QC noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>See Notes</u>
g) Field parameters collected (note types)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>pH, Sp.Cond, ORP, Temp, DO, Turb</u>
h) Field Calibration within control limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
i) Notations of unacceptable field conditions/performances from field logs or field notes?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
j) Does the laboratory narrative indicate deficiencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	_____

Note Deficiencies: _____

Chain-of-Custody (COC)	YES	NO	NA	COMMENTS
a) Was the COC properly completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
b) Was the COC signed by both field and laboratory personnel?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
c) Were samples received in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____

General (reference QAPP or Method)	YES	NO	NA	COMMENTS
a) Were hold times met for sample pretreatment?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>See Notes</u>
b) Were hold times met for sample analysis?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>See Notes</u>
c) Were the correct preservatives used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
d) Was the correct method used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
e) Were appropriate reporting limits achieved?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
f) Were any sample dilutions noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>See Notes</u>
g) Were any matrix problems noted?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Blanks	YES	NO	NA	COMMENTS
a) Were analytes detected in the method blank(s)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See Notes
b) Were analytes detected in the field blank(s)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See Notes
c) Were analytes detected in the equipment blank(s)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
d) Were analytes detected in the trip blank(s)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Laboratory Control Sample (LCS)	YES	NO	NA	COMMENTS
a) Was a LCS analyzed once per SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
b) Were the proper analytes included in the LCS?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
c) Was the LCS accuracy criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Duplicates	YES	NO	NA	COMMENTS
a) Were field duplicates collected (note original and duplicate sample names)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	R-DUP-1 @ R-MW-5
b) Were field dup. precision criteria met (note RPD)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Notes
c) Were lab duplicates analyzed (note original and duplicate samples)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
d) Were lab dup. precision criteria met (note RPD)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Notes

Blind Standards	YES	NO	NA	COMMENTS
a) Was a blind standard used (indicate name, analytes included and concentrations)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
b) Was the %D within control limits?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Matrix Spike/Matrix Spike Duplicate (MS/MSD)	YES	NO	NA	COMMENTS
a) Was MS accuracy criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Recovery could not be calculated since sample contained high concentration of analyte?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
b) Was MSD accuracy criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Recovery could not be calculated since sample contained high concentration of analyte?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
c) Were MS/MSD precision criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Comments/Notes:

Ferrous Iron analyzed outside of hold time in all samples. Results qualified as estimates.

Chloride and sulfate analyzed at a dilution. No qualification necessary.

Blanks:

MB 3126817: Chloride (0.61J), associated with samples -006 through -011. Results >RL and 10x blank were not qualified.

Results >RL but <10x blank qualified as estimates.

QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

Comments/Notes:

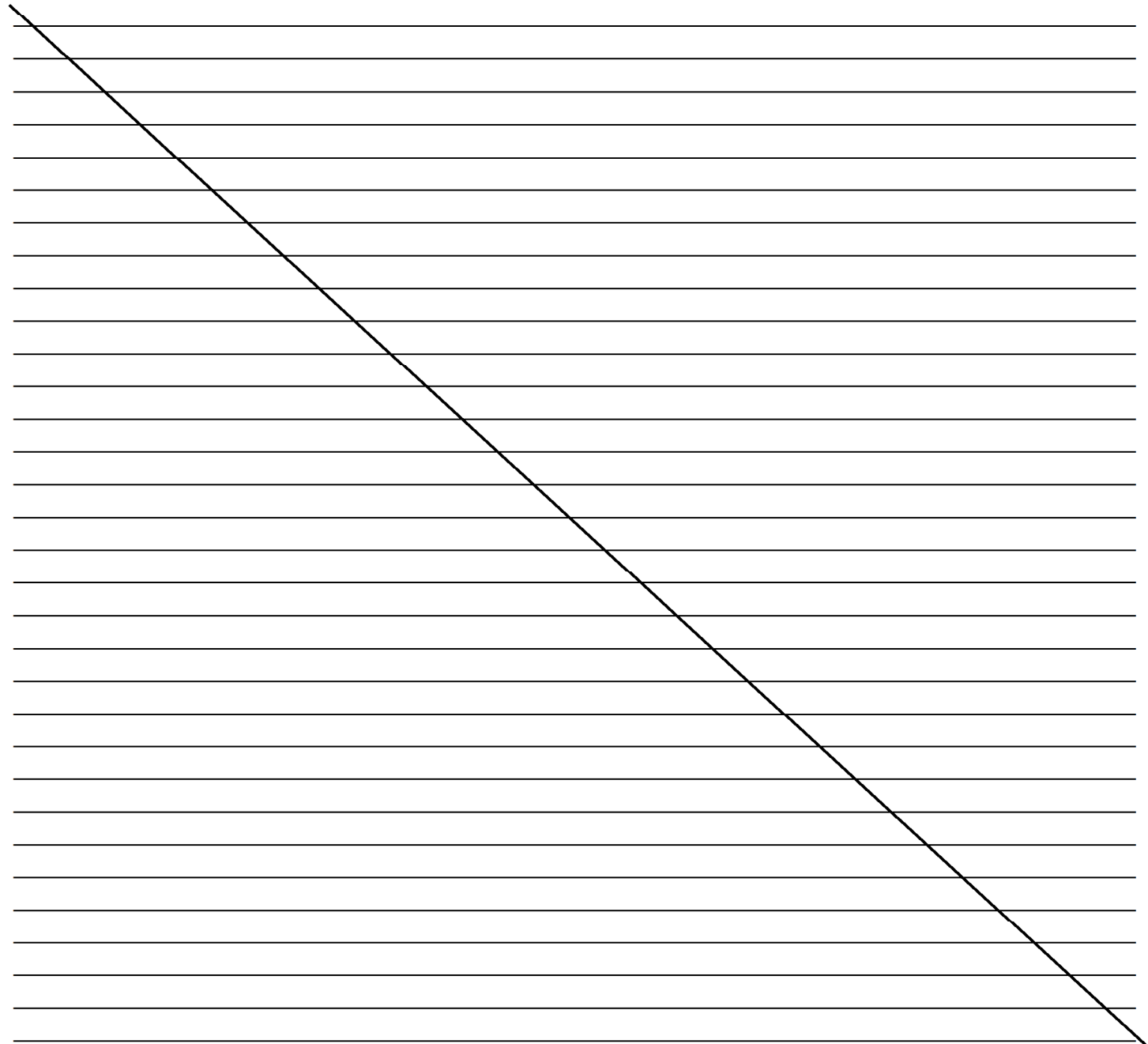
MB 2416843: Radium-228 (0.650 ± 0.330 (0.564)), associated with samples -006 through -013. Sample results ND, no qualification necessary.

R-FB-1 @ R-MW-1: Barium (2.5J), chromium (0.36J), TDS (25.0), ferric iron (0.0072J), chloride (0.75J), sulfate (0.60J). Results >RL and 10x blank were not qualified. Results <RL were reported at RL and qualified as estimates.

Duplicates:

R-DUP-1 @ R-MW-5: RPD exceeds limit (20%) for chromium (27.0%) and radium-226 (20.5%).

Lab Sample Duplicate 3119402: RPD exceeds limit (10%) for TDS (11%), associated with sample -005.



QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason
R-MW-1	Ferrous Iron	0.060	UJ	Analyzed outside of hold time, non-detect
R-FB-1	"	0.060	UJ	"
R-MW-7(r)	"	0.57	J	
R-MW-B1	"	0.74	J	"
R-MW-B2	"	0.42	J	"
R-MW-2	"	0.36	J	"
R-MW-3	"	0.52	J	"
R-MW-4	"	0.68	J	"
R-MW-5	"	0.37	J	"
R-MW-6	"	0.14	J	"
R-DUP-1	"	0.41	J	"
R-MW-5	Chloride	4.0	J	Detected in MB, 10x blank > result > RL
R-DUP-1	"	4.0	J	"
R-MW-1	Chromium	1.0	UJ	Detected in FB, RL > result
R-MW-5	"	0.32	J	Dup RPD exceeds limit
"	Radium-226	0.361 ± 0.270	J	"
R-DUP-1	Chromium	0.42	J	"
"	Radium-226	0.358 ± 0.341	J	"
R-FB-1	TDS	25.0	J	Lab dup RPD exceeds limit

Signature: _____ *Ann Marshall* _____

Date: 6/8/2022

January 12, 2023

Jeffrey Ingram
WSP Golder
701 Emerson Road
Suite 250
Saint Louis, MO 63141

RE: Project: AMEREN RIEC RCPA-CA
Pace Project No.: 60397549

Dear Jeffrey Ingram:

Enclosed are the analytical results for sample(s) received by the laboratory between April 13, 2022 and April 16, 2022. 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

REV-1, 1/12/23: Sample collection dates updated from 4/15/22 to 4/14/22 for samples R-P-17S, R-P-17I, R-P-17D, R-P-19S, R-P-19I, R-P-19D and R-P-21S

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: Mark Haddock, Golder Associates
Lisa Meyer, Ameren
Grant Morey, WSP Golder
Ann Muehlfarth, WSP Golder
Eric Schneider, WSP Golder



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Pace Analytical Services Pennsylvania

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601

ANAB DOD-ELAP Rad Accreditation #: L2417

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 04222CA

Colorado Certification #: PA01547

Connecticut Certification #: PH-0694

Delaware Certification

EPA Region 4 DW Rad

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Guam Certification

Florida: Cert E871149 SEKS WET

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas/TNI Certification #: E-10358

Kentucky Certification #: KY90133

KY WW Permit #: KY0098221

KY WW Permit #: KY0000221

Louisiana DHH/TNI Certification #: LA180012

Louisiana DEQ/TNI Certification #: 4086

Maine Certification #: 2017020

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 #: PA014572018-1

New Hampshire/TNI Certification #: 297617

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 #: PA200002-010

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: 02867

Texas/TNI Certification #: T104704188-17-3

Utah/TNI Certification #: PA014572017-9

USDA Soil Permit #: P330-17-00091

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

Wyoming Certification #: 8TMS-L

Pace Analytical Services Kansas

9608 Loiret Boulevard, Lenexa, KS 66219

Missouri Inorganic Drinking Water Certification #: 10090

Arkansas Drinking Water

Arkansas Certification #: 22-031-0

Illinois Certification #: 2000302021-3

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 #: T104704407-21-15

Utah Certification #: KS000212022-12

Illinois Certification #: 004592

Kansas Field Laboratory Accreditation: # E-92587

Missouri SEKS Micro Certification: 10070

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60397549001	R-P-10S	Water	04/12/22 13:40	04/13/22 03:45
60397549002	R-P-16S	Water	04/12/22 16:17	04/13/22 03:45
60397549003	R-CA-FB-1	Water	04/12/22 14:09	04/13/22 03:45
60397549004	R-CA-FB-2	Water	04/12/22 16:27	04/13/22 03:45
60397549005	R-P-05S	Water	04/15/22 12:30	04/16/22 04:47
60397549006	R-P-17S	Water	04/14/22 10:22	04/16/22 04:47
60397549007	R-P-17I	Water	04/14/22 11:01	04/16/22 04:47
60397549008	R-P-17D	Water	04/14/22 09:18	04/16/22 04:47
60397549009	R-P-19S	Water	04/14/22 10:42	04/16/22 04:47
60397549010	R-P-19I	Water	04/14/22 11:29	04/16/22 04:47
60397549011	R-P-19D	Water	04/14/22 12:27	04/16/22 04:47
60397549012	R-P-21S	Water	04/14/22 12:57	04/16/22 04:47
60397549013	R-P-21I	Water	04/14/22 13:37	04/16/22 04:47
60397549014	R-P-21D	Water	04/14/22 14:27	04/16/22 04:47
60397549015	R-P-22S	Water	04/14/22 16:00	04/16/22 04:47
60397549016	R-P-22D	Water	04/14/22 16:47	04/16/22 04:47
60397549017	R-P-29S	Water	04/15/22 11:52	04/16/22 04:47
60397549018	R-P-29D	Water	04/15/22 12:40	04/16/22 04:47
60397549019	R-P-30S	Water	04/15/22 14:03	04/16/22 04:47
60397549020	R-P-31S	Water	04/14/22 16:30	04/16/22 04:47
60397549021	R-CA-DUP-1	Water	04/14/22 00:00	04/16/22 04:47
60397549022	R-CA-DUP-2	Water	04/14/22 00:00	04/16/22 04:47
60397549023	R-CA-MS-1	Water	04/15/22 14:03	04/16/22 04:47
60397549024	R-CA-MSD-2	Water	04/15/22 14:03	04/16/22 04:47

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SAMPLE ANALYTE COUNT

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory		
60397549001	R-P-10S	EPA 200.7	JLH	13	PASI-K		
		EPA 200.8	MRV	6	PASI-K		
		EPA 7470	ALH	1	PASI-K		
		EPA 903.1	RPS	1	PASI-PA		
		EPA 904.0	JSM	1	PASI-PA		
		SM 2320B	SB2	1	PASI-K		
		SM 2540C	TNB	1	PASI-K		
		SM 3500-Fe B#4	BLA	1	PASI-K		
		SM 3500-Fe B#4	SK	1	PASI-K		
		SM 4500-S-2 D	SK	1	PASI-K		
		EPA 300.0	KB	3	PASI-K		
		60397549002	R-P-16S	EPA 200.7	JLH	13	PASI-K
				EPA 200.8	MRV	6	PASI-K
EPA 7470	ALH			1	PASI-K		
EPA 903.1	RPS			1	PASI-PA		
EPA 904.0	JSM			1	PASI-PA		
SM 2320B	SB2			1	PASI-K		
SM 2540C	TNB			1	PASI-K		
SM 3500-Fe B#4	BLA			1	PASI-K		
SM 3500-Fe B#4	SK			1	PASI-K		
SM 4500-S-2 D	SK			1	PASI-K		
EPA 300.0	KB			3	PASI-K		
60397549003	R-CA-FB-1			EPA 200.7	JLH	13	PASI-K
				EPA 200.8	MRV	6	PASI-K
		EPA 7470	ALH	1	PASI-K		
		EPA 903.1	RPS	1	PASI-PA		
		EPA 904.0	JSM	1	PASI-PA		
		SM 2320B	SB2	1	PASI-K		
		SM 2540C	TNB	1	PASI-K		
		SM 3500-Fe B#4	BLA	1	PASI-K		
		SM 3500-Fe B#4	SK	1	PASI-K		
		SM 4500-S-2 D	SK	1	PASI-K		
		EPA 300.0	KB	3	PASI-K		
		60397549004	R-CA-FB-2	EPA 200.7	JLH	13	PASI-K
				EPA 200.8	MRV	6	PASI-K
EPA 7470	ALH			1	PASI-K		
EPA 903.1	RPS			1	PASI-PA		

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SAMPLE ANALYTE COUNT

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 904.0	JSM	1	PASI-PA
		SM 2320B	SB2	1	PASI-K
		SM 2540C	TNB	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K
		SM 3500-Fe B#4	SK	1	PASI-K
		SM 4500-S-2 D	SK	1	PASI-K
		EPA 300.0	KB	3	PASI-K
60397549005	R-P-05S	EPA 200.7	JLH	13	PASI-K
		EPA 200.8	MRV	6	PASI-K
		EPA 7470	ALH	1	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	SB2	1	PASI-K
		SM 2540C	BLA	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K
		SM 3500-Fe B#4	SK	1	PASI-K
		SM 4500-S-2 D	SK	1	PASI-K
		EPA 300.0	KB	3	PASI-K
60397549006	R-P-17S	EPA 200.7	JLH	13	PASI-K
		EPA 200.8	MRV	6	PASI-K
		EPA 7470	ALH	1	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	SB2	1	PASI-K
		SM 2540C	BLA	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K
		SM 3500-Fe B#4	SK	1	PASI-K
		SM 4500-S-2 D	SK	1	PASI-K
		EPA 300.0	KB	3	PASI-K
60397549007	R-P-17I	EPA 200.7	JLH	13	PASI-K
		EPA 200.8	MRV	6	PASI-K
		EPA 7470	ALH	1	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	SB2	1	PASI-K
		SM 2540C	BLA	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K

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SAMPLE ANALYTE COUNT

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60397549008	R-P-17D	SM 3500-Fe B#4	SK	1	PASI-K
		SM 4500-S-2 D	SK	1	PASI-K
		EPA 300.0	KB	3	PASI-K
		EPA 200.7	JLH	13	PASI-K
		EPA 200.8	MRV	6	PASI-K
		EPA 7470	ALH	1	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	SB2	1	PASI-K
		SM 2540C	BLA	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K
		SM 3500-Fe B#4	SK	1	PASI-K
		60397549009	R-P-19S	SM 4500-S-2 D	SK
EPA 300.0	KB			3	PASI-K
EPA 200.7	JLH			13	PASI-K
EPA 200.8	MRV			6	PASI-K
EPA 7470	ALH			1	PASI-K
EPA 903.1	SLC			1	PASI-PA
EPA 904.0	VAL			1	PASI-PA
SM 2320B	SB2			1	PASI-K
SM 2540C	SK			1	PASI-K
SM 3500-Fe B#4	BLA			1	PASI-K
SM 3500-Fe B#4	SK			1	PASI-K
SM 4500-S-2 D	SK			1	PASI-K
60397549010	R-P-19I			EPA 300.0	KB
		EPA 200.7	JLH	13	PASI-K
		EPA 200.8	MRV	6	PASI-K
		EPA 7470	ALH	1	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	SB2	1	PASI-K
		SM 2540C	SK	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K
		SM 3500-Fe B#4	SK	1	PASI-K
		SM 4500-S-2 D	SK	1	PASI-K
		EPA 300.0	KB	3	PASI-K
		60397549011	R-P-19D	EPA 200.7	JLH

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SAMPLE ANALYTE COUNT

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory		
60397549012	R-P-21S	EPA 200.8	MRV	6	PASI-K		
		EPA 7470	ALH	1	PASI-K		
		EPA 903.1	SLC	1	PASI-PA		
		EPA 904.0	VAL	1	PASI-PA		
		SM 2320B	SB2	1	PASI-K		
		SM 2540C	SK	1	PASI-K		
		SM 3500-Fe B#4	BLA	1	PASI-K		
		SM 3500-Fe B#4	SK	1	PASI-K		
		SM 4500-S-2 D	SK	1	PASI-K		
		EPA 300.0	KB	3	PASI-K		
		EPA 200.7	JLH	13	PASI-K		
		EPA 200.8	MRV	6	PASI-K		
		EPA 7470	ALH	1	PASI-K		
		EPA 903.1	SLC	1	PASI-PA		
		EPA 904.0	VAL	1	PASI-PA		
		SM 2320B	SB2	1	PASI-K		
		SM 2540C	SK	1	PASI-K		
		60397549013	R-P-21I	SM 3500-Fe B#4	BLA	1	PASI-K
SM 3500-Fe B#4	SK			1	PASI-K		
SM 4500-S-2 D	SK			1	PASI-K		
EPA 300.0	KB			3	PASI-K		
EPA 200.7	JLH			13	PASI-K		
EPA 200.8	MRV			6	PASI-K		
EPA 7470	ALH			1	PASI-K		
EPA 903.1	SLC			1	PASI-PA		
EPA 904.0	VAL			1	PASI-PA		
SM 2320B	SB2			1	PASI-K		
SM 2540C	BLA			1	PASI-K		
SM 3500-Fe B#4	BLA			1	PASI-K		
SM 3500-Fe B#4	SK			1	PASI-K		
SM 4500-S-2 D	SK			1	PASI-K		
EPA 300.0	KB			3	PASI-K		
60397549014	R-P-21D			EPA 200.7	JLH	13	PASI-K
				EPA 200.8	MRV	6	PASI-K
				EPA 7470	ALH	1	PASI-K
		EPA 903.1	SLC	1	PASI-PA		
		EPA 904.0	VAL	1	PASI-PA		

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SAMPLE ANALYTE COUNT

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory		
60397549015	R-P-22S	SM 2320B	SB2	1	PASI-K		
		SM 2540C	BLA	1	PASI-K		
		SM 3500-Fe B#4	BLA	1	PASI-K		
		SM 3500-Fe B#4	SK	1	PASI-K		
		SM 4500-S-2 D	SK	1	PASI-K		
		EPA 300.0	KB	3	PASI-K		
		EPA 200.7	JLH	13	PASI-K		
		EPA 200.8	MRV	6	PASI-K		
		EPA 7470	ALH	1	PASI-K		
		EPA 903.1	SLC	1	PASI-PA		
		EPA 904.0	VAL	1	PASI-PA		
		SM 2320B	SB2	1	PASI-K		
		SM 2540C	BLA	1	PASI-K		
		SM 3500-Fe B#4	BLA	1	PASI-K		
		60397549016	R-P-22D	SM 3500-Fe B#4	SK	1	PASI-K
SM 4500-S-2 D	SK			1	PASI-K		
EPA 300.0	KB			3	PASI-K		
EPA 200.7	JLH			13	PASI-K		
EPA 200.8	MRV			6	PASI-K		
EPA 7470	ALH			1	PASI-K		
EPA 903.1	SLC			1	PASI-PA		
EPA 904.0	VAL			1	PASI-PA		
SM 2320B	SB2			1	PASI-K		
SM 2540C	BLA			1	PASI-K		
SM 3500-Fe B#4	BLA			1	PASI-K		
SM 3500-Fe B#4	SK			1	PASI-K		
SM 4500-S-2 D	SK			1	PASI-K		
60397549017	R-P-29S			EPA 300.0	KB	3	PASI-K
				EPA 200.7	JLH	13	PASI-K
		EPA 200.8	MRV	6	PASI-K		
		EPA 7470	ALH	1	PASI-K		
		EPA 903.1	SLC	1	PASI-PA		
		EPA 904.0	VAL	1	PASI-PA		
		SM 2320B	SB2	1	PASI-K		
		SM 2540C	SK	1	PASI-K		
		SM 3500-Fe B#4	BLA	1	PASI-K		
		SM 3500-Fe B#4	SK	1	PASI-K		

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SAMPLE ANALYTE COUNT

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60397549018	R-P-29D	SM 4500-S-2 D	SK	1	PASI-K
		EPA 300.0	KB	3	PASI-K
		EPA 200.7	JLH	13	PASI-K
		EPA 200.8	MRV	6	PASI-K
		EPA 7470	ALH	1	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	SB2	1	PASI-K
		SM 2540C	SK	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K
60397549019	R-P-30S	SM 3500-Fe B#4	SK	1	PASI-K
		SM 4500-S-2 D	SK	1	PASI-K
		EPA 300.0	KB	3	PASI-K
		EPA 200.7	JLH	13	PASI-K
		EPA 200.8	MRV	6	PASI-K
		EPA 7470	ALH	1	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	SB2	1	PASI-K
		SM 2540C	SK	1	PASI-K
60397549020	R-P-31S	SM 3500-Fe B#4	BLA	1	PASI-K
		SM 3500-Fe B#4	SK	1	PASI-K
		SM 4500-S-2 D	SK	1	PASI-K
		EPA 300.0	KB	3	PASI-K
		EPA 200.7	JLH	13	PASI-K
		EPA 200.8	MRV	6	PASI-K
		EPA 7470	ALH	1	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	SB2	1	PASI-K
60397549021	R-CA-DUP-1	SM 2540C	BLA	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K
		SM 3500-Fe B#4	SK	1	PASI-K
		SM 4500-S-2 D	SK	1	PASI-K
		EPA 300.0	KB	3	PASI-K
		EPA 200.7	JLH	13	PASI-K
		EPA 200.8	MRV	6	PASI-K

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SAMPLE ANALYTE COUNT

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 7470	ALH	1	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	SB2	1	PASI-K
		SM 2540C	BLA	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K
		SM 3500-Fe B#4	SK	1	PASI-K
		SM 4500-S-2 D	SK	1	PASI-K
		EPA 300.0	KB	3	PASI-K
60397549022	R-CA-DUP-2	EPA 200.7	JLH	13	PASI-K
		EPA 200.8	MRV	6	PASI-K
		EPA 7470	ALH	1	PASI-K
		EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	SB2	1	PASI-K
		SM 2540C	BLA	1	PASI-K
		SM 3500-Fe B#4	BLA	1	PASI-K
		SM 3500-Fe B#4	SK	1	PASI-K
		SM 4500-S-2 D	SK	1	PASI-K
		EPA 300.0	KB	3	PASI-K
60397549023	R-CA-MS-1	EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
60397549024	R-CA-MSD-2	EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA

PASI-K = Pace Analytical Services - Kansas City

PASI-PA = Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Sample: R-P-10S Lab ID: 60397549001 Collected: 04/12/22 13:40 Received: 04/13/22 03:45 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	189	ug/L	5.0	1.2	1	04/21/22 15:13	04/22/22 18:21	7440-39-3	
Beryllium	<0.24	ug/L	1.0	0.24	1	04/21/22 15:13	04/22/22 18:21	7440-41-7	
Boron	2110	ug/L	100	7.1	1	04/21/22 15:13	04/22/22 18:21	7440-42-8	
Calcium	112000	ug/L	200	38.2	1	04/21/22 15:13	04/25/22 17:05	7440-70-2	
Cobalt	3.5J	ug/L	5.0	1.4	1	04/21/22 15:13	04/22/22 18:21	7440-48-4	
Iron	484	ug/L	50.0	21.1	1	04/21/22 15:13	04/22/22 18:21	7439-89-6	
Lead	<6.1	ug/L	10.0	6.1	1	04/21/22 15:13	04/22/22 18:21	7439-92-1	
Lithium	23.5	ug/L	10.0	1.1	1	04/21/22 15:13	04/25/22 17:05	7439-93-2	
Magnesium	16700	ug/L	50.0	11.7	1	04/21/22 15:13	04/22/22 18:21	7439-95-4	
Manganese	1850	ug/L	5.0	1.1	1	04/21/22 15:13	04/22/22 18:21	7439-96-5	
Molybdenum	62.9	ug/L	20.0	1.8	1	04/21/22 15:13	04/22/22 18:21	7439-98-7	
Potassium	5610	ug/L	500	224	1	04/21/22 15:13	04/22/22 18:21	7440-09-7	
Sodium	76500	ug/L	500	166	1	04/21/22 15:13	04/22/22 18:21	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	04/21/22 15:13	04/29/22 16:44	7440-36-0	
Arsenic	3.5	ug/L	1.0	0.14	1	04/21/22 15:13	04/29/22 16:44	7440-38-2	
Cadmium	0.25J	ug/L	0.50	0.053	1	04/21/22 15:13	04/29/22 16:44	7440-43-9	
Chromium	0.40J	ug/L	1.0	0.31	1	04/21/22 15:13	04/29/22 16:44	7440-47-3	B
Selenium	0.18J	ug/L	1.0	0.18	1	04/21/22 15:13	04/29/22 16:44	7782-49-2	
Thallium	<0.15	ug/L	1.0	0.15	1	04/21/22 15:13	04/29/22 16:44	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.12	ug/L	0.20	0.12	1	04/27/22 12:52	04/28/22 09:51	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	375	mg/L	20.0	4.6	1		04/21/22 10:22		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	661	mg/L	10.0	10.0	1		04/19/22 14:44		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	0.44	mg/L	0.050		1		05/03/22 10:05	20074-52-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	<0.060	mg/L	0.20	0.060	1		04/19/22 17:14	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Sample: R-P-10S **Lab ID: 60397549001** Collected: 04/12/22 13:40 Received: 04/13/22 03:45 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	<0.021	mg/L	0.050	0.021	1		04/14/22 16:34	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	17.6	mg/L	1.0	0.53	1		04/29/22 19:08	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		04/29/22 19:08	16984-48-8	
Sulfate	112	mg/L	10.0	5.5	10		04/29/22 19:23	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Sample: R-P-16S **Lab ID: 60397549002** Collected: 04/12/22 16:17 Received: 04/13/22 03:45 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	74.0	ug/L	5.0	1.2	1	04/21/22 15:13	04/22/22 18:23	7440-39-3	
Beryllium	<0.24	ug/L	1.0	0.24	1	04/21/22 15:13	04/22/22 18:23	7440-41-7	
Boron	163	ug/L	100	7.1	1	04/21/22 15:13	04/22/22 18:23	7440-42-8	
Calcium	115000	ug/L	200	38.2	1	04/21/22 15:13	04/25/22 17:08	7440-70-2	
Cobalt	<1.4	ug/L	5.0	1.4	1	04/21/22 15:13	04/22/22 18:23	7440-48-4	
Iron	305	ug/L	50.0	21.1	1	04/21/22 15:13	04/22/22 18:23	7439-89-6	
Lead	<6.1	ug/L	10.0	6.1	1	04/21/22 15:13	04/22/22 18:23	7439-92-1	
Lithium	28.0	ug/L	10.0	1.1	1	04/21/22 15:13	04/25/22 17:08	7439-93-2	
Magnesium	27000	ug/L	50.0	11.7	1	04/21/22 15:13	04/22/22 18:23	7439-95-4	
Manganese	5.0J	ug/L	5.0	1.1	1	04/21/22 15:13	04/22/22 18:23	7439-96-5	
Molybdenum	10.2J	ug/L	20.0	1.8	1	04/21/22 15:13	04/22/22 18:23	7439-98-7	
Potassium	2430	ug/L	500	224	1	04/21/22 15:13	04/22/22 18:23	7440-09-7	
Sodium	11100	ug/L	500	166	1	04/21/22 15:13	04/22/22 18:23	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	04/21/22 15:13	04/29/22 16:48	7440-36-0	
Arsenic	1.9	ug/L	1.0	0.14	1	04/21/22 15:13	04/29/22 16:48	7440-38-2	
Cadmium	0.055J	ug/L	0.50	0.053	1	04/21/22 15:13	04/29/22 16:48	7440-43-9	
Chromium	<0.31	ug/L	1.0	0.31	1	04/21/22 15:13	04/29/22 16:48	7440-47-3	
Selenium	3.7	ug/L	1.0	0.18	1	04/21/22 15:13	04/29/22 16:48	7782-49-2	
Thallium	<0.15	ug/L	1.0	0.15	1	04/21/22 15:13	04/29/22 16:48	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.12	ug/L	0.20	0.12	1	04/27/22 12:52	04/28/22 09:58	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	399	mg/L	20.0	4.6	1		04/21/22 10:29		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	470	mg/L	10.0	10.0	1		04/19/22 14:44		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	0.30	mg/L	0.050		1		05/03/22 10:05	20074-52-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	<0.060	mg/L	0.20	0.060	1		04/19/22 17:14	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Sample: R-P-16S **Lab ID: 60397549002** Collected: 04/12/22 16:17 Received: 04/13/22 03:45 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	<0.021	mg/L	0.050	0.021	1		04/14/22 16:34	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	1.4	mg/L	1.0	0.53	1		04/29/22 19:37	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		04/29/22 19:37	16984-48-8	
Sulfate	21.2	mg/L	5.0	2.8	5		05/02/22 11:42	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Sample: R-CA-FB-1 Lab ID: 60397549003 Collected: 04/12/22 14:09 Received: 04/13/22 03:45 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	<1.2	ug/L	5.0	1.2	1	04/21/22 15:13	04/22/22 18:25	7440-39-3	
Beryllium	<0.24	ug/L	1.0	0.24	1	04/21/22 15:13	04/22/22 18:25	7440-41-7	
Boron	<7.1	ug/L	100	7.1	1	04/21/22 15:13	04/22/22 18:25	7440-42-8	
Calcium	<71.3	ug/L	200	71.3	1	04/21/22 15:13	04/22/22 18:25	7440-70-2	
Cobalt	<1.4	ug/L	5.0	1.4	1	04/21/22 15:13	04/22/22 18:25	7440-48-4	
Iron	<21.1	ug/L	50.0	21.1	1	04/21/22 15:13	04/22/22 18:25	7439-89-6	
Lead	<6.1	ug/L	10.0	6.1	1	04/21/22 15:13	04/22/22 18:25	7439-92-1	
Lithium	<1.2	ug/L	10.0	1.2	1	04/21/22 15:13	04/22/22 18:25	7439-93-2	
Magnesium	14.2J	ug/L	50.0	11.7	1	04/21/22 15:13	04/22/22 18:25	7439-95-4	
Manganese	<1.1	ug/L	5.0	1.1	1	04/21/22 15:13	04/22/22 18:25	7439-96-5	
Molybdenum	<1.8	ug/L	20.0	1.8	1	04/21/22 15:13	04/22/22 18:25	7439-98-7	
Potassium	<224	ug/L	500	224	1	04/21/22 15:13	04/22/22 18:25	7440-09-7	
Sodium	<166	ug/L	500	166	1	04/21/22 15:13	04/22/22 18:25	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	04/21/22 15:13	04/29/22 16:55	7440-36-0	
Arsenic	<0.14	ug/L	1.0	0.14	1	04/21/22 15:13	04/29/22 16:55	7440-38-2	
Cadmium	<0.053	ug/L	0.50	0.053	1	04/21/22 15:13	04/29/22 16:55	7440-43-9	
Chromium	<0.31	ug/L	1.0	0.31	1	04/21/22 15:13	04/29/22 16:55	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	04/21/22 15:13	04/29/22 16:55	7782-49-2	
Thallium	<0.15	ug/L	1.0	0.15	1	04/21/22 15:13	04/29/22 16:55	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.12	ug/L	0.20	0.12	1	04/27/22 12:52	04/28/22 10:01	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<4.6	mg/L	20.0	4.6	1		04/21/22 10:36		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	11.5	mg/L	5.0	5.0	1		04/19/22 14:44		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	0.0044J	mg/L	0.050		1		05/03/22 10:05	20074-52-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	<0.060	mg/L	0.20	0.060	1		04/19/22 17:15	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Sample: R-CA-FB-1 **Lab ID: 60397549003** Collected: 04/12/22 14:09 Received: 04/13/22 03:45 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	<0.021	mg/L	0.050	0.021	1		04/14/22 16:34	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	0.58J	mg/L	1.0	0.53	1		04/29/22 20:05	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		04/29/22 20:05	16984-48-8	
Sulfate	<0.55	mg/L	1.0	0.55	1		04/29/22 20:05	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Sample: R-CA-FB-2 **Lab ID: 60397549004** Collected: 04/12/22 16:27 Received: 04/13/22 03:45 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	<1.2	ug/L	5.0	1.2	1	04/21/22 15:13	04/22/22 18:28	7440-39-3	
Beryllium	<0.24	ug/L	1.0	0.24	1	04/21/22 15:13	04/22/22 18:28	7440-41-7	
Boron	<7.1	ug/L	100	7.1	1	04/21/22 15:13	04/22/22 18:28	7440-42-8	
Calcium	<71.3	ug/L	200	71.3	1	04/21/22 15:13	04/22/22 18:28	7440-70-2	
Cobalt	<1.4	ug/L	5.0	1.4	1	04/21/22 15:13	04/22/22 18:28	7440-48-4	
Iron	<21.1	ug/L	50.0	21.1	1	04/21/22 15:13	04/22/22 18:28	7439-89-6	
Lead	<6.1	ug/L	10.0	6.1	1	04/21/22 15:13	04/22/22 18:28	7439-92-1	
Lithium	<1.2	ug/L	10.0	1.2	1	04/21/22 15:13	04/22/22 18:28	7439-93-2	
Magnesium	<11.7	ug/L	50.0	11.7	1	04/21/22 15:13	04/22/22 18:28	7439-95-4	
Manganese	<1.1	ug/L	5.0	1.1	1	04/21/22 15:13	04/22/22 18:28	7439-96-5	
Molybdenum	<1.8	ug/L	20.0	1.8	1	04/21/22 15:13	04/22/22 18:28	7439-98-7	
Potassium	<224	ug/L	500	224	1	04/21/22 15:13	04/22/22 18:28	7440-09-7	
Sodium	<166	ug/L	500	166	1	04/21/22 15:13	04/22/22 18:28	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	04/21/22 15:13	04/29/22 16:57	7440-36-0	
Arsenic	<0.14	ug/L	1.0	0.14	1	04/21/22 15:13	04/29/22 16:57	7440-38-2	
Cadmium	<0.053	ug/L	0.50	0.053	1	04/21/22 15:13	04/29/22 16:57	7440-43-9	
Chromium	<0.31	ug/L	1.0	0.31	1	04/21/22 15:13	04/29/22 16:57	7440-47-3	B
Selenium	<0.18	ug/L	1.0	0.18	1	04/21/22 15:13	04/29/22 16:57	7782-49-2	
Thallium	<0.15	ug/L	1.0	0.15	1	04/21/22 15:13	04/29/22 16:57	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.12	ug/L	0.20	0.12	1	04/27/22 12:52	04/28/22 10:03	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<4.6	mg/L	20.0	4.6	1		04/21/22 10:40		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	11.5	mg/L	5.0	5.0	1		04/19/22 14:44		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	0.0056J	mg/L	0.050		1		05/03/22 10:05	20074-52-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	<0.060	mg/L	0.20	0.060	1		04/19/22 17:16	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Sample: R-CA-FB-2 **Lab ID: 60397549004** Collected: 04/12/22 16:27 Received: 04/13/22 03:45 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	<0.021	mg/L	0.050	0.021	1		04/14/22 16:35	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	0.57J	mg/L	1.0	0.53	1		04/29/22 20:19	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		04/29/22 20:19	16984-48-8	
Sulfate	<0.55	mg/L	1.0	0.55	1		04/29/22 20:19	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Sample: R-P-05S Lab ID: 60397549005 Collected: 04/15/22 12:30 Received: 04/16/22 04:47 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	205	ug/L	5.0	1.7	1	04/20/22 13:35	04/21/22 21:33	7440-39-3	
Beryllium	<0.31	ug/L	1.0	0.31	1	04/20/22 13:35	04/21/22 21:33	7440-41-7	
Boron	4480	ug/L	100	13.5	1	04/20/22 13:35	04/21/22 21:33	7440-42-8	
Calcium	64200	ug/L	200	38.2	1	04/20/22 13:35	04/21/22 21:33	7440-70-2	
Cobalt	<0.78	ug/L	5.0	0.78	1	04/20/22 13:35	04/21/22 21:33	7440-48-4	
Iron	9970	ug/L	50.0	23.9	1	04/20/22 13:35	04/21/22 21:33	7439-89-6	
Lead	<4.3	ug/L	10.0	4.3	1	04/20/22 13:35	04/21/22 21:33	7439-92-1	
Lithium	16.6	ug/L	10.0	1.1	1	04/20/22 13:35	04/21/22 21:33	7439-93-2	
Magnesium	23100	ug/L	50.0	43.0	1	04/20/22 13:35	04/21/22 21:33	7439-95-4	
Manganese	341	ug/L	5.0	3.8	1	04/20/22 13:35	04/21/22 21:33	7439-96-5	
Molybdenum	5.2J	ug/L	20.0	1.4	1	04/20/22 13:35	04/21/22 21:33	7439-98-7	
Potassium	5790	ug/L	500	167	1	04/20/22 13:35	04/21/22 21:33	7440-09-7	
Sodium	23800	ug/L	500	64.8	1	04/20/22 13:35	04/21/22 21:33	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	04/20/22 13:35	04/29/22 18:35	7440-36-0	
Arsenic	173	ug/L	1.0	0.14	1	04/20/22 13:35	04/29/22 18:35	7440-38-2	
Cadmium	<0.053	ug/L	0.50	0.053	1	04/20/22 13:35	04/29/22 18:35	7440-43-9	
Chromium	0.82J	ug/L	1.0	0.31	1	04/20/22 13:35	04/29/22 18:35	7440-47-3	
Selenium	0.20J	ug/L	1.0	0.18	1	04/20/22 13:35	04/29/22 18:35	7782-49-2	
Thallium	<0.15	ug/L	1.0	0.15	1	04/20/22 13:35	04/29/22 18:35	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.12	ug/L	0.20	0.12	1	05/05/22 13:38	05/06/22 13:34	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	272	mg/L	20.0	4.6	1		04/21/22 14:56		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	356	mg/L	5.0	5.0	1		04/21/22 15:03		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	7.8	mg/L	0.050		1		05/03/22 10:01	20074-52-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	2.2	mg/L	0.20	0.060	1		04/26/22 11:56	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Sample: R-P-05S **Lab ID: 60397549005** Collected: 04/15/22 12:30 Received: 04/16/22 04:47 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	<0.021	mg/L	0.050	0.021	1		04/21/22 17:35	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	23.7	mg/L	2.0	1.1	2		04/28/22 21:43	16887-00-6	
Fluoride	0.34	mg/L	0.20	0.12	1		04/28/22 21:29	16984-48-8	
Sulfate	8.3	mg/L	1.0	0.55	1		04/28/22 21:29	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Sample: R-P-17S **Lab ID: 60397549006** Collected: 04/14/22 10:22 Received: 04/16/22 04:47 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	145	ug/L	5.0	1.7	1	04/20/22 13:35	04/21/22 21:35	7440-39-3	
Beryllium	<0.31	ug/L	1.0	0.31	1	04/20/22 13:35	04/21/22 21:35	7440-41-7	
Boron	2390	ug/L	100	13.5	1	04/20/22 13:35	04/21/22 21:35	7440-42-8	
Calcium	150000	ug/L	200	38.2	1	04/20/22 13:35	04/21/22 21:35	7440-70-2	
Cobalt	2.0J	ug/L	5.0	0.78	1	04/20/22 13:35	04/21/22 21:35	7440-48-4	
Iron	6260	ug/L	50.0	23.9	1	04/20/22 13:35	04/21/22 21:35	7439-89-6	
Lead	<4.3	ug/L	10.0	4.3	1	04/20/22 13:35	04/21/22 21:35	7439-92-1	
Lithium	40.6	ug/L	10.0	1.1	1	04/20/22 13:35	04/21/22 21:35	7439-93-2	
Magnesium	33900	ug/L	50.0	43.0	1	04/20/22 13:35	04/21/22 21:35	7439-95-4	
Manganese	2260	ug/L	5.0	3.8	1	04/20/22 13:35	04/21/22 21:35	7439-96-5	
Molybdenum	61.8	ug/L	20.0	1.4	1	04/20/22 13:35	04/21/22 21:35	7439-98-7	
Potassium	4280	ug/L	500	167	1	04/20/22 13:35	04/21/22 21:35	7440-09-7	
Sodium	118000	ug/L	500	64.8	1	04/20/22 13:35	04/21/22 21:35	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	04/20/22 13:35	04/29/22 18:39	7440-36-0	
Arsenic	30.3	ug/L	1.0	0.14	1	04/20/22 13:35	04/29/22 18:39	7440-38-2	
Cadmium	<0.053	ug/L	0.50	0.053	1	04/20/22 13:35	04/29/22 18:39	7440-43-9	
Chromium	0.38J	ug/L	1.0	0.31	1	04/20/22 13:35	04/29/22 18:39	7440-47-3	
Selenium	0.48J	ug/L	1.0	0.18	1	04/20/22 13:35	04/29/22 18:39	7782-49-2	
Thallium	<0.15	ug/L	1.0	0.15	1	04/20/22 13:35	04/29/22 18:39	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.12	ug/L	0.20	0.12	1	05/05/22 13:38	05/06/22 13:36	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	478	mg/L	20.0	4.6	1		04/21/22 15:02		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	920	mg/L	13.3	13.3	1		04/21/22 15:03		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	5.5	mg/L	0.050		1		05/03/22 10:01	20074-52-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	0.74	mg/L	0.20	0.060	1		04/26/22 11:53	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Sample: R-P-17S **Lab ID: 60397549006** Collected: 04/14/22 10:22 Received: 04/16/22 04:47 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	<0.021	mg/L	0.050	0.021	1		04/21/22 17:36	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	37.7	mg/L	5.0	2.6	5		04/28/22 22:11	16887-00-6	
Fluoride	0.38	mg/L	0.20	0.12	1		04/28/22 21:57	16984-48-8	
Sulfate	225	mg/L	20.0	11.0	20		04/28/22 22:25	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Sample: R-P-17I Lab ID: 60397549007 Collected: 04/14/22 11:01 Received: 04/16/22 04:47 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	19.7	ug/L	5.0	1.7	1	04/20/22 13:35	04/21/22 21:38	7440-39-3	
Beryllium	<0.31	ug/L	1.0	0.31	1	04/20/22 13:35	04/21/22 21:38	7440-41-7	
Boron	2220	ug/L	100	13.5	1	04/20/22 13:35	04/21/22 21:38	7440-42-8	
Calcium	11100	ug/L	200	38.2	1	04/20/22 13:35	04/21/22 21:38	7440-70-2	
Cobalt	<0.78	ug/L	5.0	0.78	1	04/20/22 13:35	04/21/22 21:38	7440-48-4	
Iron	177	ug/L	50.0	23.9	1	04/20/22 13:35	04/21/22 21:38	7439-89-6	
Lead	8.9J	ug/L	10.0	4.3	1	04/20/22 13:35	04/21/22 21:38	7439-92-1	
Lithium	3.7J	ug/L	10.0	1.1	1	04/20/22 13:35	04/21/22 21:38	7439-93-2	
Magnesium	448	ug/L	50.0	43.0	1	04/20/22 13:35	04/21/22 21:38	7439-95-4	
Manganese	5.6	ug/L	5.0	3.8	1	04/20/22 13:35	04/21/22 21:38	7439-96-5	
Molybdenum	137	ug/L	20.0	1.4	1	04/20/22 13:35	04/21/22 21:38	7439-98-7	
Potassium	1990	ug/L	500	167	1	04/20/22 13:35	04/21/22 21:38	7440-09-7	
Sodium	218000	ug/L	500	64.8	1	04/20/22 13:35	04/21/22 21:38	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	0.29J	ug/L	1.0	0.12	1	04/20/22 13:35	04/29/22 18:42	7440-36-0	
Arsenic	52.1	ug/L	1.0	0.14	1	04/20/22 13:35	04/29/22 18:42	7440-38-2	
Cadmium	0.27J	ug/L	0.50	0.053	1	04/20/22 13:35	04/29/22 18:42	7440-43-9	
Chromium	1.0	ug/L	1.0	0.31	1	04/20/22 13:35	04/29/22 18:42	7440-47-3	
Selenium	1.5	ug/L	1.0	0.18	1	04/20/22 13:35	04/29/22 18:42	7782-49-2	
Thallium	<0.15	ug/L	1.0	0.15	1	04/20/22 13:35	04/29/22 18:42	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.12	ug/L	0.20	0.12	1	05/05/22 13:38	05/06/22 13:39	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	172	mg/L	20.0	4.6	1		04/21/22 15:09		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	782	mg/L	10.0	10.0	1		04/21/22 15:03		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	0.0J	mg/L	0.050		1		05/03/22 10:01	20074-52-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	0.41	mg/L	0.20	0.060	1		04/26/22 11:55	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Sample: R-P-17I **Lab ID: 60397549007** Collected: 04/14/22 11:01 Received: 04/16/22 04:47 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	0.031J	mg/L	0.050	0.021	1		04/21/22 17:36	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	22.4	mg/L	5.0	2.6	5		04/29/22 12:06	16887-00-6	B
Fluoride	1.8	mg/L	0.20	0.12	1		04/28/22 22:39	16984-48-8	
Sulfate	301	mg/L	20.0	11.0	20		04/28/22 22:53	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Sample: R-P-17D Lab ID: 60397549008 Collected: 04/14/22 09:18 Received: 04/16/22 04:47 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	102	ug/L	5.0	1.7	1	04/20/22 13:35	04/21/22 21:41	7440-39-3	
Beryllium	<0.31	ug/L	1.0	0.31	1	04/20/22 13:35	04/21/22 21:41	7440-41-7	
Boron	7360	ug/L	100	13.5	1	04/20/22 13:35	04/21/22 21:41	7440-42-8	
Calcium	43300	ug/L	200	38.2	1	04/20/22 13:35	04/21/22 21:41	7440-70-2	
Cobalt	<0.78	ug/L	5.0	0.78	1	04/20/22 13:35	04/21/22 21:41	7440-48-4	
Iron	2380	ug/L	50.0	23.9	1	04/20/22 13:35	04/21/22 21:41	7439-89-6	
Lead	<4.3	ug/L	10.0	4.3	1	04/20/22 13:35	04/21/22 21:41	7439-92-1	
Lithium	36.7	ug/L	10.0	1.1	1	04/20/22 13:35	04/21/22 21:41	7439-93-2	
Magnesium	9320	ug/L	50.0	43.0	1	04/20/22 13:35	04/21/22 21:41	7439-95-4	
Manganese	412	ug/L	5.0	3.8	1	04/20/22 13:35	04/21/22 21:41	7439-96-5	
Molybdenum	648	ug/L	20.0	1.4	1	04/20/22 13:35	04/21/22 21:41	7439-98-7	
Potassium	6690	ug/L	500	167	1	04/20/22 13:35	04/21/22 21:41	7440-09-7	
Sodium	126000	ug/L	500	64.8	1	04/20/22 13:35	04/21/22 21:41	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	04/20/22 13:35	04/29/22 18:50	7440-36-0	
Arsenic	1.2	ug/L	1.0	0.14	1	04/20/22 13:35	04/29/22 18:50	7440-38-2	
Cadmium	0.20J	ug/L	0.50	0.053	1	04/20/22 13:35	04/29/22 18:50	7440-43-9	
Chromium	0.47J	ug/L	1.0	0.31	1	04/20/22 13:35	04/29/22 18:50	7440-47-3	
Selenium	0.28J	ug/L	1.0	0.18	1	04/20/22 13:35	04/29/22 18:50	7782-49-2	
Thallium	<0.15	ug/L	1.0	0.15	1	04/20/22 13:35	04/29/22 18:50	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.12	ug/L	0.20	0.12	1	05/05/22 13:38	05/06/22 13:41	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	135	mg/L	20.0	4.6	1		04/21/22 15:15		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	625	mg/L	10.0	10.0	1		04/21/22 15:03		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	1.5	mg/L	0.050		1		05/03/22 10:01	20074-52-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	0.89	mg/L	0.20	0.060	1		04/26/22 11:53	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Sample: R-P-17D **Lab ID: 60397549008** Collected: 04/14/22 09:18 Received: 04/16/22 04:47 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	<0.021	mg/L	0.050	0.021	1		04/21/22 17:36	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	26.8	mg/L	2.0	1.1	2		04/29/22 14:04	16887-00-6	
Fluoride	0.62	mg/L	0.20	0.12	1		04/29/22 13:50	16984-48-8	
Sulfate	269	mg/L	20.0	11.0	20		04/29/22 14:18	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Sample: R-P-19S Lab ID: 60397549009 Collected: 04/14/22 10:42 Received: 04/16/22 04:47 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	296	ug/L	5.0	1.7	1	04/20/22 13:35	04/21/22 21:56	7440-39-3	
Beryllium	<0.31	ug/L	1.0	0.31	1	04/20/22 13:35	04/21/22 21:56	7440-41-7	
Boron	385	ug/L	100	13.5	1	04/20/22 13:35	04/21/22 21:56	7440-42-8	
Calcium	113000	ug/L	200	38.2	1	04/20/22 13:35	04/21/22 21:56	7440-70-2	
Cobalt	<0.78	ug/L	5.0	0.78	1	04/20/22 13:35	04/21/22 21:56	7440-48-4	
Iron	11000	ug/L	50.0	23.9	1	04/20/22 13:35	04/21/22 21:56	7439-89-6	
Lead	<4.3	ug/L	10.0	4.3	1	04/20/22 13:35	04/21/22 21:56	7439-92-1	
Lithium	33.3	ug/L	10.0	1.1	1	04/20/22 13:35	04/21/22 21:56	7439-93-2	
Magnesium	21900	ug/L	50.0	43.0	1	04/20/22 13:35	04/21/22 21:56	7439-95-4	
Manganese	800	ug/L	5.0	3.8	1	04/20/22 13:35	04/21/22 21:56	7439-96-5	
Molybdenum	3.4J	ug/L	20.0	1.4	1	04/20/22 13:35	04/21/22 21:56	7439-98-7	
Potassium	5800	ug/L	500	167	1	04/20/22 13:35	04/21/22 21:56	7440-09-7	
Sodium	20400	ug/L	500	64.8	1	04/20/22 13:35	04/21/22 21:56	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	04/20/22 13:35	04/29/22 18:53	7440-36-0	
Arsenic	14.5	ug/L	1.0	0.14	1	04/20/22 13:35	04/29/22 18:53	7440-38-2	
Cadmium	<0.053	ug/L	0.50	0.053	1	04/20/22 13:35	04/29/22 18:53	7440-43-9	
Chromium	0.51J	ug/L	1.0	0.31	1	04/20/22 13:35	04/29/22 18:53	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	04/20/22 13:35	04/29/22 18:53	7782-49-2	
Thallium	<0.15	ug/L	1.0	0.15	1	04/20/22 13:35	04/29/22 18:53	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.12	ug/L	0.20	0.12	1	05/05/22 13:38	05/06/22 13:43	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	379	mg/L	20.0	4.6	1		04/21/22 15:20		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	474	mg/L	10.0	10.0	1		04/22/22 14:23		H3
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	10.3	mg/L	0.050		1		05/03/22 10:01	20074-52-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	0.73	mg/L	0.20	0.060	1		04/26/22 11:54	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Sample: R-P-19S **Lab ID: 60397549009** Collected: 04/14/22 10:42 Received: 04/16/22 04:47 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	<0.021	mg/L	0.050	0.021	1		04/21/22 17:37	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	1.7	mg/L	1.0	0.53	1		04/29/22 14:32	16887-00-6	
Fluoride	0.26	mg/L	0.20	0.12	1		04/29/22 14:32	16984-48-8	
Sulfate	38.9	mg/L	2.0	1.1	2		04/29/22 14:46	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Sample: R-P-19I **Lab ID: 60397549010** Collected: 04/14/22 11:29 Received: 04/16/22 04:47 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	15.9	ug/L	5.0	1.7	1	04/20/22 13:35	04/21/22 21:59	7440-39-3	
Beryllium	<0.31	ug/L	1.0	0.31	1	04/20/22 13:35	04/21/22 21:59	7440-41-7	
Boron	4830	ug/L	100	13.5	1	04/20/22 13:35	04/21/22 21:59	7440-42-8	
Calcium	9840	ug/L	200	38.2	1	04/20/22 13:35	04/21/22 21:59	7440-70-2	
Cobalt	<0.78	ug/L	5.0	0.78	1	04/20/22 13:35	04/21/22 21:59	7440-48-4	
Iron	155	ug/L	50.0	23.9	1	04/20/22 13:35	04/21/22 21:59	7439-89-6	
Lead	9.9J	ug/L	10.0	4.3	1	04/20/22 13:35	04/21/22 21:59	7439-92-1	
Lithium	21.6	ug/L	10.0	1.1	1	04/20/22 13:35	04/21/22 21:59	7439-93-2	
Magnesium	<43.0	ug/L	50.0	43.0	1	04/20/22 13:35	04/21/22 21:59	7439-95-4	
Manganese	<3.8	ug/L	5.0	3.8	1	04/20/22 13:35	04/21/22 21:59	7439-96-5	
Molybdenum	228	ug/L	20.0	1.4	1	04/20/22 13:35	04/21/22 21:59	7439-98-7	
Potassium	12300	ug/L	500	167	1	04/20/22 13:35	04/21/22 21:59	7440-09-7	
Sodium	286000	ug/L	500	64.8	1	04/20/22 13:35	04/21/22 21:59	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	2.4	ug/L	1.0	0.12	1	04/20/22 13:35	04/29/22 19:04	7440-36-0	
Arsenic	112	ug/L	1.0	0.14	1	04/20/22 13:35	04/29/22 19:04	7440-38-2	
Cadmium	0.34J	ug/L	0.50	0.053	1	04/20/22 13:35	04/29/22 19:04	7440-43-9	
Chromium	0.79J	ug/L	1.0	0.31	1	04/20/22 13:35	04/29/22 19:04	7440-47-3	
Selenium	3.0	ug/L	1.0	0.18	1	04/20/22 13:35	04/29/22 19:04	7782-49-2	
Thallium	<0.15	ug/L	1.0	0.15	1	04/20/22 13:35	04/29/22 19:04	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.12	ug/L	0.20	0.12	1	05/05/22 13:38	05/06/22 13:50	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	390	mg/L	20.0	4.6	1		04/21/22 15:27		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	1140	mg/L	13.3	13.3	1		04/22/22 14:24		H3
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	0.0J	mg/L	0.050		1		05/03/22 10:01	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	0.060	1		04/26/22 11:55	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Sample: R-P-19I **Lab ID: 60397549010** Collected: 04/14/22 11:29 Received: 04/16/22 04:47 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	0.030J	mg/L	0.050	0.021	1		04/21/22 17:37	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	26.3	mg/L	2.0	1.1	2		04/29/22 15:55	16887-00-6	
Fluoride	0.98	mg/L	0.20	0.12	1		04/29/22 15:13	16984-48-8	
Sulfate	246	mg/L	20.0	11.0	20		04/29/22 16:08	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Sample: R-P-19D **Lab ID: 60397549011** Collected: 04/14/22 12:27 Received: 04/16/22 04:47 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	56.1	ug/L	5.0	1.7	1	04/20/22 13:35	04/21/22 22:01	7440-39-3	
Beryllium	<0.31	ug/L	1.0	0.31	1	04/20/22 13:35	04/21/22 22:01	7440-41-7	
Boron	9730	ug/L	100	13.5	1	04/20/22 13:35	04/21/22 22:01	7440-42-8	
Calcium	29800	ug/L	200	38.2	1	04/20/22 13:35	04/21/22 22:01	7440-70-2	
Cobalt	0.79J	ug/L	5.0	0.78	1	04/20/22 13:35	04/21/22 22:01	7440-48-4	
Iron	961	ug/L	50.0	23.9	1	04/20/22 13:35	04/21/22 22:01	7439-89-6	
Lead	<4.3	ug/L	10.0	4.3	1	04/20/22 13:35	04/21/22 22:01	7439-92-1	
Lithium	16.3	ug/L	10.0	1.1	1	04/20/22 13:35	04/21/22 22:01	7439-93-2	
Magnesium	4250	ug/L	50.0	43.0	1	04/20/22 13:35	04/21/22 22:01	7439-95-4	
Manganese	222	ug/L	5.0	3.8	1	04/20/22 13:35	04/21/22 22:01	7439-96-5	
Molybdenum	762	ug/L	20.0	1.4	1	04/20/22 13:35	04/21/22 22:01	7439-98-7	
Potassium	3410	ug/L	500	167	1	04/20/22 13:35	04/21/22 22:01	7440-09-7	
Sodium	147000	ug/L	500	64.8	1	04/20/22 13:35	04/21/22 22:01	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	04/20/22 13:35	04/29/22 19:08	7440-36-0	
Arsenic	0.81J	ug/L	1.0	0.14	1	04/20/22 13:35	04/29/22 19:08	7440-38-2	
Cadmium	0.24J	ug/L	0.50	0.053	1	04/20/22 13:35	04/29/22 19:08	7440-43-9	
Chromium	0.76J	ug/L	1.0	0.31	1	04/20/22 13:35	04/29/22 19:08	7440-47-3	
Selenium	0.34J	ug/L	1.0	0.18	1	04/20/22 13:35	04/29/22 19:08	7782-49-2	
Thallium	<0.15	ug/L	1.0	0.15	1	04/20/22 13:35	04/29/22 19:08	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.12	ug/L	0.20	0.12	1	05/05/22 13:38	05/06/22 13:53	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	191	mg/L	20.0	4.6	1		04/21/22 15:34		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	595	mg/L	10.0	10.0	1		04/22/22 14:24		H3
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	0.0J	mg/L	0.050		1		05/03/22 10:01	20074-52-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	1.6	mg/L	0.20	0.060	1		04/26/22 11:56	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Sample: R-P-19D **Lab ID: 60397549011** Collected: 04/14/22 12:27 Received: 04/16/22 04:47 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	<0.021	mg/L	0.050	0.021	1		04/21/22 17:37	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	20.7	mg/L	2.0	1.1	2		04/29/22 16:36	16887-00-6	
Fluoride	1.7	mg/L	0.20	0.12	1		04/29/22 16:22	16984-48-8	
Sulfate	167	mg/L	20.0	11.0	20		04/29/22 16:50	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Sample: R-P-21S Lab ID: 60397549012 Collected: 04/14/22 12:57 Received: 04/16/22 04:47 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	345	ug/L	5.0	1.7	1	04/20/22 13:35	04/21/22 22:04	7440-39-3	
Beryllium	<0.31	ug/L	1.0	0.31	1	04/20/22 13:35	04/21/22 22:04	7440-41-7	
Boron	187	ug/L	100	13.5	1	04/20/22 13:35	04/21/22 22:04	7440-42-8	
Calcium	179000	ug/L	200	38.2	1	04/20/22 13:35	04/21/22 22:04	7440-70-2	
Cobalt	1.4J	ug/L	5.0	0.78	1	04/20/22 13:35	04/21/22 22:04	7440-48-4	
Iron	15100	ug/L	50.0	23.9	1	04/20/22 13:35	04/21/22 22:04	7439-89-6	
Lead	<4.3	ug/L	10.0	4.3	1	04/20/22 13:35	04/21/22 22:04	7439-92-1	
Lithium	15.6	ug/L	10.0	1.1	1	04/20/22 13:35	04/21/22 22:04	7439-93-2	
Magnesium	40100	ug/L	50.0	43.0	1	04/20/22 13:35	04/21/22 22:04	7439-95-4	
Manganese	2270	ug/L	5.0	3.8	1	04/20/22 13:35	04/21/22 22:04	7439-96-5	
Molybdenum	1.6J	ug/L	20.0	1.4	1	04/20/22 13:35	04/21/22 22:04	7439-98-7	
Potassium	4320	ug/L	500	167	1	04/20/22 13:35	04/21/22 22:04	7440-09-7	
Sodium	22200	ug/L	500	64.8	1	04/20/22 13:35	04/21/22 22:04	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	04/20/22 13:35	04/29/22 19:12	7440-36-0	
Arsenic	52.4	ug/L	1.0	0.14	1	04/20/22 13:35	04/29/22 19:12	7440-38-2	
Cadmium	0.077J	ug/L	0.50	0.053	1	04/20/22 13:35	04/29/22 19:12	7440-43-9	
Chromium	0.41J	ug/L	1.0	0.31	1	04/20/22 13:35	04/29/22 19:12	7440-47-3	
Selenium	0.24J	ug/L	1.0	0.18	1	04/20/22 13:35	04/29/22 19:12	7782-49-2	
Thallium	<0.15	ug/L	1.0	0.15	1	04/20/22 13:35	04/29/22 19:12	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.12	ug/L	0.20	0.12	1	05/05/22 13:38	05/06/22 13:55	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	576	mg/L	20.0	4.6	1		04/22/22 12:33		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	667	mg/L	10.0	10.0	1		04/22/22 14:25		H3
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	14.4	mg/L	0.050		1		05/03/22 10:01	20074-52-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	0.76	mg/L	0.20	0.060	1		04/26/22 11:41	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Sample: R-P-21S **Lab ID: 60397549012** Collected: 04/14/22 12:57 Received: 04/16/22 04:47 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	<0.021	mg/L	0.050	0.021	1		04/22/22 11:25	18496-25-8	H3
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	6.1	mg/L	1.0	0.53	1		04/29/22 17:04	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		04/29/22 17:04	16984-48-8	
Sulfate	49.4	mg/L	10.0	5.5	10		05/02/22 15:28	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Sample: R-P-211 **Lab ID: 60397549013** Collected: 04/14/22 13:37 Received: 04/16/22 04:47 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	37.8	ug/L	5.0	1.7	1	04/20/22 13:35	04/21/22 22:07	7440-39-3	
Beryllium	<0.31	ug/L	1.0	0.31	1	04/20/22 13:35	04/21/22 22:07	7440-41-7	
Boron	2970	ug/L	100	13.5	1	04/20/22 13:35	04/21/22 22:07	7440-42-8	
Calcium	19100	ug/L	200	38.2	1	04/20/22 13:35	04/21/22 22:07	7440-70-2	
Cobalt	<0.78	ug/L	5.0	0.78	1	04/20/22 13:35	04/21/22 22:07	7440-48-4	
Iron	238	ug/L	50.0	23.9	1	04/20/22 13:35	04/21/22 22:07	7439-89-6	
Lead	<4.3	ug/L	10.0	4.3	1	04/20/22 13:35	04/21/22 22:07	7439-92-1	
Lithium	21.2	ug/L	10.0	1.1	1	04/20/22 13:35	04/21/22 22:07	7439-93-2	
Magnesium	2200	ug/L	50.0	43.0	1	04/20/22 13:35	04/21/22 22:07	7439-95-4	
Manganese	49.1	ug/L	5.0	3.8	1	04/20/22 13:35	04/21/22 22:07	7439-96-5	
Molybdenum	191	ug/L	20.0	1.4	1	04/20/22 13:35	04/21/22 22:07	7439-98-7	
Potassium	4700	ug/L	500	167	1	04/20/22 13:35	04/21/22 22:07	7440-09-7	
Sodium	98200	ug/L	500	64.8	1	04/20/22 13:35	04/21/22 22:07	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	04/20/22 13:35	04/29/22 19:15	7440-36-0	
Arsenic	5.2	ug/L	1.0	0.14	1	04/20/22 13:35	04/29/22 19:15	7440-38-2	
Cadmium	0.063J	ug/L	0.50	0.053	1	04/20/22 13:35	04/29/22 19:15	7440-43-9	
Chromium	0.50J	ug/L	1.0	0.31	1	04/20/22 13:35	04/29/22 19:15	7440-47-3	
Selenium	0.47J	ug/L	1.0	0.18	1	04/20/22 13:35	04/29/22 19:15	7782-49-2	
Thallium	<0.15	ug/L	1.0	0.15	1	04/20/22 13:35	04/29/22 19:15	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.12	ug/L	0.20	0.12	1	05/05/22 13:38	05/06/22 13:57	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	148	mg/L	20.0	4.6	1		04/21/22 13:12		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	404	mg/L	5.0	5.0	1		04/21/22 15:01		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	0.0J	mg/L	0.050		1		05/03/22 10:01	20074-52-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	0.51	mg/L	0.20	0.060	1		04/26/22 11:48	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Sample: R-P-211 **Lab ID: 60397549013** Collected: 04/14/22 13:37 Received: 04/16/22 04:47 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	<0.021	mg/L	0.050	0.021	1		04/21/22 17:31	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	29.9	mg/L	10.0	5.3	10		05/02/22 15:42	16887-00-6	
Fluoride	1.0	mg/L	0.20	0.12	1		04/29/22 17:18	16984-48-8	
Sulfate	77.6	mg/L	10.0	5.5	10		05/02/22 15:42	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Sample: R-P-21D Lab ID: 60397549014 Collected: 04/14/22 14:27 Received: 04/16/22 04:47 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	1.2	1	04/21/22 15:13	04/22/22 18:30	7440-39-3	
Beryllium	<0.24	ug/L	1.0	0.24	1	04/21/22 15:13	04/22/22 18:30	7440-41-7	
Boron	4880	ug/L	100	7.1	1	04/21/22 15:13	04/22/22 18:30	7440-42-8	
Calcium	116000	ug/L	200	38.2	1	04/21/22 15:13	04/25/22 17:11	7440-70-2	
Cobalt	<1.4	ug/L	5.0	1.4	1	04/21/22 15:13	04/22/22 18:30	7440-48-4	
Iron	2570	ug/L	50.0	21.1	1	04/21/22 15:13	04/22/22 18:30	7439-89-6	
Lead	<6.1	ug/L	10.0	6.1	1	04/21/22 15:13	04/22/22 18:30	7439-92-1	
Lithium	170	ug/L	10.0	1.1	1	04/21/22 15:13	04/25/22 17:11	7439-93-2	
Magnesium	39300	ug/L	50.0	11.7	1	04/21/22 15:13	04/22/22 18:30	7439-95-4	
Manganese	899	ug/L	5.0	1.1	1	04/21/22 15:13	04/22/22 18:30	7439-96-5	
Molybdenum	356	ug/L	20.0	1.8	1	04/21/22 15:13	04/22/22 18:30	7439-98-7	
Potassium	10800	ug/L	500	224	1	04/21/22 15:13	04/22/22 18:30	7440-09-7	
Sodium	422000	ug/L	500	166	1	04/21/22 15:13	04/22/22 18:30	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	04/21/22 15:13	04/29/22 16:59	7440-36-0	
Arsenic	0.52J	ug/L	1.0	0.14	1	04/21/22 15:13	04/29/22 16:59	7440-38-2	
Cadmium	0.12J	ug/L	0.50	0.053	1	04/21/22 15:13	04/29/22 16:59	7440-43-9	
Chromium	0.55J	ug/L	1.0	0.31	1	04/21/22 15:13	04/29/22 16:59	7440-47-3	B
Selenium	<0.18	ug/L	1.0	0.18	1	04/21/22 15:13	04/29/22 16:59	7782-49-2	
Thallium	<0.15	ug/L	1.0	0.15	1	04/21/22 15:13	04/29/22 16:59	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.12	ug/L	0.20	0.12	1	05/05/22 13:38	05/06/22 13:59	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	243	mg/L	20.0	4.6	1		04/21/22 13:17		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	1220	mg/L	66.7	66.7	1		04/21/22 15:01		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	1.3	mg/L	0.050		1		05/03/22 10:01	20074-52-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	1.3	mg/L	0.20	0.060	1		04/26/22 11:48	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Sample: R-P-21D **Lab ID: 60397549014** Collected: 04/14/22 14:27 Received: 04/16/22 04:47 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	<0.021	mg/L	0.050	0.021	1		04/21/22 17:31	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	661	mg/L	100	52.7	100		05/02/22 15:56	16887-00-6	
Fluoride	0.89	mg/L	0.20	0.12	1		04/29/22 17:32	16984-48-8	
Sulfate	167	mg/L	10.0	5.5	10		04/29/22 17:45	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Sample: R-P-22S Lab ID: 60397549015 Collected: 04/14/22 16:00 Received: 04/16/22 04:47 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	145	ug/L	5.0	1.2	1	04/21/22 15:13	04/22/22 18:32	7440-39-3	
Beryllium	<0.24	ug/L	1.0	0.24	1	04/21/22 15:13	04/22/22 18:32	7440-41-7	
Boron	483	ug/L	100	7.1	1	04/21/22 15:13	04/22/22 18:32	7440-42-8	
Calcium	161000	ug/L	200	38.2	1	04/21/22 15:13	04/25/22 17:14	7440-70-2	
Cobalt	1.9J	ug/L	5.0	1.4	1	04/21/22 15:13	04/22/22 18:32	7440-48-4	
Iron	7000	ug/L	50.0	21.1	1	04/21/22 15:13	04/22/22 18:32	7439-89-6	
Lead	<6.1	ug/L	10.0	6.1	1	04/21/22 15:13	04/22/22 18:32	7439-92-1	
Lithium	49.2	ug/L	10.0	1.1	1	04/21/22 15:13	04/25/22 17:14	7439-93-2	
Magnesium	34400	ug/L	50.0	11.7	1	04/21/22 15:13	04/22/22 18:32	7439-95-4	
Manganese	678	ug/L	5.0	1.1	1	04/21/22 15:13	04/22/22 18:32	7439-96-5	
Molybdenum	12.1J	ug/L	20.0	1.8	1	04/21/22 15:13	04/22/22 18:32	7439-98-7	
Potassium	6790	ug/L	500	224	1	04/21/22 15:13	04/22/22 18:32	7440-09-7	
Sodium	58100	ug/L	500	166	1	04/21/22 15:13	04/22/22 18:32	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	04/21/22 15:13	04/29/22 17:02	7440-36-0	
Arsenic	8.3	ug/L	1.0	0.14	1	04/21/22 15:13	04/29/22 17:02	7440-38-2	
Cadmium	0.12J	ug/L	0.50	0.053	1	04/21/22 15:13	04/29/22 17:02	7440-43-9	
Chromium	0.45J	ug/L	1.0	0.31	1	04/21/22 15:13	04/29/22 17:02	7440-47-3	B
Selenium	0.42J	ug/L	1.0	0.18	1	04/21/22 15:13	04/29/22 17:02	7782-49-2	
Thallium	<0.15	ug/L	1.0	0.15	1	04/21/22 15:13	04/29/22 17:02	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.12	ug/L	0.20	0.12	1	05/05/22 13:38	05/06/22 14:02	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	436	mg/L	20.0	4.6	1		04/21/22 13:35		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	789	mg/L	10.0	10.0	1		04/21/22 15:01		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	6.8	mg/L	0.050		1		05/03/22 10:01	20074-52-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	0.21	mg/L	0.20	0.060	1		04/26/22 11:51	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Sample: R-P-22S **Lab ID: 60397549015** Collected: 04/14/22 16:00 Received: 04/16/22 04:47 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	<0.021	mg/L	0.050	0.021	1		04/21/22 17:32	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	35.8	mg/L	2.0	1.1	2		04/29/22 18:41	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		04/29/22 17:59	16984-48-8	
Sulfate	187	mg/L	20.0	11.0	20		04/29/22 18:55	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Sample: R-P-22D Lab ID: 60397549016 Collected: 04/14/22 16:47 Received: 04/16/22 04:47 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	71.0	ug/L	5.0	1.2	1	04/21/22 15:13	04/22/22 18:34	7440-39-3	
Beryllium	<0.24	ug/L	1.0	0.24	1	04/21/22 15:13	04/22/22 18:34	7440-41-7	
Boron	9250	ug/L	100	7.1	1	04/21/22 15:13	04/22/22 18:34	7440-42-8	
Calcium	21900	ug/L	200	71.3	1	04/21/22 15:13	04/22/22 18:34	7440-70-2	
Cobalt	<1.4	ug/L	5.0	1.4	1	04/21/22 15:13	04/22/22 18:34	7440-48-4	
Iron	1260	ug/L	50.0	21.1	1	04/21/22 15:13	04/22/22 18:34	7439-89-6	
Lead	<6.1	ug/L	10.0	6.1	1	04/21/22 15:13	04/22/22 18:34	7439-92-1	
Lithium	26.6	ug/L	10.0	1.2	1	04/21/22 15:13	04/22/22 18:34	7439-93-2	
Magnesium	3380	ug/L	50.0	11.7	1	04/21/22 15:13	04/22/22 18:34	7439-95-4	
Manganese	78.1	ug/L	5.0	1.1	1	04/21/22 15:13	04/22/22 18:34	7439-96-5	
Molybdenum	330	ug/L	20.0	1.8	1	04/21/22 15:13	04/22/22 18:34	7439-98-7	
Potassium	4250	ug/L	500	224	1	04/21/22 15:13	04/22/22 18:34	7440-09-7	
Sodium	168000	ug/L	500	166	1	04/21/22 15:13	04/22/22 18:34	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	0.16J	ug/L	1.0	0.12	1	04/21/22 15:13	04/29/22 17:06	7440-36-0	
Arsenic	9.4	ug/L	1.0	0.14	1	04/21/22 15:13	04/29/22 17:06	7440-38-2	
Cadmium	0.14J	ug/L	0.50	0.053	1	04/21/22 15:13	04/29/22 17:06	7440-43-9	
Chromium	1.5	ug/L	1.0	0.31	1	04/21/22 15:13	04/29/22 17:06	7440-47-3	B
Selenium	0.90J	ug/L	1.0	0.18	1	04/21/22 15:13	04/29/22 17:06	7782-49-2	
Thallium	<0.15	ug/L	1.0	0.15	1	04/21/22 15:13	04/29/22 17:06	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.12	ug/L	0.20	0.12	1	05/05/22 13:38	05/06/22 14:04	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	277	mg/L	20.0	4.6	1		04/21/22 13:41		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	600	mg/L	10.0	10.0	1		04/21/22 15:02		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	0.0J	mg/L	0.050		1		05/03/22 10:01	20074-52-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	2.8	mg/L	0.20	0.060	1		04/26/22 11:51	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Sample: R-P-22D **Lab ID: 60397549016** Collected: 04/14/22 16:47 Received: 04/16/22 04:47 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	0.024J	mg/L	0.050	0.021	1		04/21/22 17:32	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	26.7	mg/L	5.0	2.6	5		05/02/22 16:10	16887-00-6	
Fluoride	2.5	mg/L	0.20	0.12	1		04/29/22 19:09	16984-48-8	
Sulfate	96.6	mg/L	20.0	11.0	20		05/02/22 16:38	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Sample: R-P-29S Lab ID: 60397549017 Collected: 04/15/22 11:52 Received: 04/16/22 04:47 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	310	ug/L	5.0	1.2	1	04/21/22 15:13	04/22/22 18:37	7440-39-3	
Beryllium	<0.24	ug/L	1.0	0.24	1	04/21/22 15:13	04/22/22 18:37	7440-41-7	
Boron	90.8J	ug/L	100	7.1	1	04/21/22 15:13	04/22/22 18:37	7440-42-8	
Calcium	123000	ug/L	200	38.2	1	04/21/22 15:13	04/25/22 17:17	7440-70-2	
Cobalt	3.3J	ug/L	5.0	1.4	1	04/21/22 15:13	04/22/22 18:37	7440-48-4	
Iron	8350	ug/L	50.0	21.1	1	04/21/22 15:13	04/22/22 18:37	7439-89-6	
Lead	<6.1	ug/L	10.0	6.1	1	04/21/22 15:13	04/22/22 18:37	7439-92-1	
Lithium	10.3	ug/L	10.0	1.1	1	04/21/22 15:13	04/25/22 17:17	7439-93-2	
Magnesium	28300	ug/L	50.0	11.7	1	04/21/22 15:13	04/22/22 18:37	7439-95-4	
Manganese	480	ug/L	5.0	1.1	1	04/21/22 15:13	04/22/22 18:37	7439-96-5	
Molybdenum	<1.8	ug/L	20.0	1.8	1	04/21/22 15:13	04/22/22 18:37	7439-98-7	
Potassium	5610	ug/L	500	224	1	04/21/22 15:13	04/22/22 18:37	7440-09-7	
Sodium	13700	ug/L	500	166	1	04/21/22 15:13	04/22/22 18:37	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	04/21/22 15:13	04/29/22 17:10	7440-36-0	
Arsenic	45.3	ug/L	1.0	0.14	1	04/21/22 15:13	04/29/22 17:10	7440-38-2	
Cadmium	<0.053	ug/L	0.50	0.053	1	04/21/22 15:13	04/29/22 17:10	7440-43-9	
Chromium	0.38J	ug/L	1.0	0.31	1	04/21/22 15:13	04/29/22 17:10	7440-47-3	B
Selenium	<0.18	ug/L	1.0	0.18	1	04/21/22 15:13	04/29/22 17:10	7782-49-2	
Thallium	<0.15	ug/L	1.0	0.15	1	04/21/22 15:13	04/29/22 17:10	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.12	ug/L	0.20	0.12	1	05/05/22 13:38	05/06/22 14:06	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	442	mg/L	20.0	4.6	1		04/22/22 12:40		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	486	mg/L	10.0	10.0	1		04/22/22 14:25		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	7.6	mg/L	0.050		1		05/03/22 10:01	20074-52-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	0.71	mg/L	0.20	0.060	1		04/26/22 11:55	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Sample: R-P-29S **Lab ID: 60397549017** Collected: 04/15/22 11:52 Received: 04/16/22 04:47 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	<0.021	mg/L	0.050	0.021	1		04/22/22 11:26	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	13.4	mg/L	1.0	0.53	1		04/29/22 19:36	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		04/29/22 19:36	16984-48-8	
Sulfate	0.93J	mg/L	1.0	0.55	1		04/29/22 19:36	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Sample: R-P-29D Lab ID: 60397549018 Collected: 04/15/22 12:40 Received: 04/16/22 04:47 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	156	ug/L	5.0	1.2	1	04/21/22 15:13	04/22/22 18:39	7440-39-3	
Beryllium	<0.24	ug/L	1.0	0.24	1	04/21/22 15:13	04/22/22 18:39	7440-41-7	
Boron	86.5J	ug/L	100	7.1	1	04/21/22 15:13	04/22/22 18:39	7440-42-8	
Calcium	93500	ug/L	200	71.3	1	04/21/22 15:13	04/22/22 18:39	7440-70-2	
Cobalt	<1.4	ug/L	5.0	1.4	1	04/21/22 15:13	04/22/22 18:39	7440-48-4	
Iron	3720	ug/L	50.0	21.1	1	04/21/22 15:13	04/22/22 18:39	7439-89-6	
Lead	<6.1	ug/L	10.0	6.1	1	04/21/22 15:13	04/22/22 18:39	7439-92-1	
Lithium	50.0	ug/L	10.0	1.2	1	04/21/22 15:13	04/22/22 18:39	7439-93-2	
Magnesium	27100	ug/L	50.0	11.7	1	04/21/22 15:13	04/22/22 18:39	7439-95-4	
Manganese	140	ug/L	5.0	1.1	1	04/21/22 15:13	04/22/22 18:39	7439-96-5	
Molybdenum	<1.8	ug/L	20.0	1.8	1	04/21/22 15:13	04/22/22 18:39	7439-98-7	
Potassium	4850	ug/L	500	224	1	04/21/22 15:13	04/22/22 18:39	7440-09-7	
Sodium	71600	ug/L	500	166	1	04/21/22 15:13	04/22/22 18:39	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	04/21/22 15:13	04/29/22 17:17	7440-36-0	
Arsenic	0.97J	ug/L	1.0	0.14	1	04/21/22 15:13	04/29/22 17:17	7440-38-2	
Cadmium	<0.053	ug/L	0.50	0.053	1	04/21/22 15:13	04/29/22 17:17	7440-43-9	
Chromium	<0.31	ug/L	1.0	0.31	1	04/21/22 15:13	04/29/22 17:17	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	04/21/22 15:13	04/29/22 17:17	7782-49-2	
Thallium	<0.15	ug/L	1.0	0.15	1	04/21/22 15:13	04/29/22 17:17	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.12	ug/L	0.20	0.12	1	05/05/22 13:38	05/06/22 12:46	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	319	mg/L	20.0	4.6	1		04/22/22 12:48		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	1660	mg/L	40.0	40.0	1		04/22/22 14:25		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	3.6	mg/L	0.050		1		05/03/22 10:01	20074-52-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	0.088J	mg/L	0.20	0.060	1		04/26/22 11:41	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Sample: R-P-29D **Lab ID: 60397549018** Collected: 04/15/22 12:40 Received: 04/16/22 04:47 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	<0.021	mg/L	0.050	0.021	1		04/22/22 11:26	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	661	mg/L	100	52.7	100		05/02/22 17:06	16887-00-6	
Fluoride	0.89	mg/L	0.20	0.12	1		04/29/22 20:04	16984-48-8	
Sulfate	167	mg/L	10.0	5.5	10		04/29/22 20:18	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Sample: R-P-30S Lab ID: 60397549019 Collected: 04/15/22 14:03 Received: 04/16/22 04:47 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	101	ug/L	5.0	1.2	1	04/21/22 15:13	04/22/22 18:48	7440-39-3	
Beryllium	<0.24	ug/L	1.0	0.24	1	04/21/22 15:13	04/22/22 18:48	7440-41-7	
Boron	912	ug/L	100	7.1	1	04/21/22 15:13	04/22/22 18:48	7440-42-8	
Calcium	136000	ug/L	200	38.2	1	04/21/22 15:13	04/25/22 17:19	7440-70-2	
Cobalt	<1.4	ug/L	5.0	1.4	1	04/21/22 15:13	04/22/22 18:48	7440-48-4	
Iron	429	ug/L	50.0	21.1	1	04/21/22 15:13	04/22/22 18:48	7439-89-6	
Lead	<6.1	ug/L	10.0	6.1	1	04/21/22 15:13	04/22/22 18:48	7439-92-1	
Lithium	33.3	ug/L	10.0	1.1	1	04/21/22 15:13	04/25/22 17:19	7439-93-2	
Magnesium	23100	ug/L	50.0	11.7	1	04/21/22 15:13	04/22/22 18:48	7439-95-4	
Manganese	375	ug/L	5.0	1.1	1	04/21/22 15:13	04/22/22 18:48	7439-96-5	
Molybdenum	2.6J	ug/L	20.0	1.8	1	04/21/22 15:13	04/22/22 18:48	7439-98-7	
Potassium	6700	ug/L	500	224	1	04/21/22 15:13	04/22/22 18:48	7440-09-7	
Sodium	60900	ug/L	500	166	1	04/21/22 15:13	04/22/22 18:48	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	04/21/22 15:13	04/29/22 17:21	7440-36-0	
Arsenic	0.97J	ug/L	1.0	0.14	1	04/21/22 15:13	04/29/22 17:21	7440-38-2	
Cadmium	<0.053	ug/L	0.50	0.053	1	04/21/22 15:13	04/29/22 17:21	7440-43-9	
Chromium	<0.31	ug/L	1.0	0.31	1	04/21/22 15:13	04/29/22 17:21	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	04/21/22 15:13	04/29/22 17:21	7782-49-2	
Thallium	<0.15	ug/L	1.0	0.15	1	04/21/22 15:13	04/29/22 17:21	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.12	ug/L	0.20	0.12	1	05/05/22 13:38	05/06/22 12:48	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	340	mg/L	20.0	4.6	1		04/22/22 12:54		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	714	mg/L	10.0	10.0	1		04/22/22 14:25		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	0.43	mg/L	0.050		1		05/03/22 10:05	20074-52-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	<0.060	mg/L	0.20	0.060	1		04/26/22 11:41	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Sample: R-P-30S **Lab ID: 60397549019** Collected: 04/15/22 14:03 Received: 04/16/22 04:47 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	<0.021	mg/L	0.050	0.021	1		04/22/22 11:26	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	56.3	mg/L	20.0	10.5	20		04/29/22 21:55	16887-00-6	
Fluoride	0.16J	mg/L	0.20	0.12	1		04/29/22 20:32	16984-48-8	
Sulfate	153	mg/L	20.0	11.0	20		04/29/22 21:55	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Sample: R-P-31S Lab ID: 60397549020 Collected: 04/14/22 16:30 Received: 04/16/22 04:47 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	142	ug/L	5.0	1.2	1	04/21/22 15:13	04/22/22 18:55	7440-39-3	
Beryllium	<0.24	ug/L	1.0	0.24	1	04/21/22 15:13	04/22/22 18:55	7440-41-7	
Boron	321	ug/L	100	7.1	1	04/21/22 15:13	04/22/22 18:55	7440-42-8	
Calcium	53900	ug/L	200	71.3	1	04/21/22 15:13	04/22/22 18:55	7440-70-2	
Cobalt	<1.4	ug/L	5.0	1.4	1	04/21/22 15:13	04/22/22 18:55	7440-48-4	
Iron	3560	ug/L	50.0	21.1	1	04/21/22 15:13	04/22/22 18:55	7439-89-6	
Lead	<6.1	ug/L	10.0	6.1	1	04/21/22 15:13	04/22/22 18:55	7439-92-1	
Lithium	7.3J	ug/L	10.0	1.2	1	04/21/22 15:13	04/22/22 18:55	7439-93-2	
Magnesium	10400	ug/L	50.0	11.7	1	04/21/22 15:13	04/22/22 18:55	7439-95-4	
Manganese	1350	ug/L	5.0	1.1	1	04/21/22 15:13	04/22/22 18:55	7439-96-5	
Molybdenum	8.3J	ug/L	20.0	1.8	1	04/21/22 15:13	04/22/22 18:55	7439-98-7	
Potassium	3750	ug/L	500	224	1	04/21/22 15:13	04/22/22 18:55	7440-09-7	
Sodium	10800	ug/L	500	166	1	04/21/22 15:13	04/22/22 18:55	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	04/21/22 15:13	04/29/22 17:35	7440-36-0	
Arsenic	25.3	ug/L	1.0	0.14	1	04/21/22 15:13	04/29/22 17:35	7440-38-2	
Cadmium	<0.053	ug/L	0.50	0.053	1	04/21/22 15:13	04/29/22 17:35	7440-43-9	
Chromium	0.37J	ug/L	1.0	0.31	1	04/21/22 15:13	04/29/22 17:35	7440-47-3	B
Selenium	<0.18	ug/L	1.0	0.18	1	04/21/22 15:13	04/29/22 17:35	7782-49-2	
Thallium	<0.15	ug/L	1.0	0.15	1	04/21/22 15:13	04/29/22 17:35	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.12	ug/L	0.20	0.12	1	05/05/22 13:38	05/06/22 13:00	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	195	mg/L	20.0	4.6	1		04/21/22 13:48		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	238	mg/L	5.0	5.0	1		04/21/22 15:02		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	3.3	mg/L	0.050		1		05/03/22 10:05	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	0.060	1		04/26/22 11:51	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Sample: R-P-31S **Lab ID: 60397549020** Collected: 04/14/22 16:30 Received: 04/16/22 04:47 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	<0.021	mg/L	0.050	0.021	1		04/21/22 17:32	18496-25-8	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Kansas City								
Chloride	1.2	mg/L	1.0	0.53	1		04/29/22 22:50	16887-00-6	
Fluoride	0.38	mg/L	0.20	0.12	1		04/29/22 22:50	16984-48-8	
Sulfate	9.9	mg/L	1.0	0.55	1		04/29/22 22:50	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Sample: R-CA-DUP-1 Lab ID: 60397549021 Collected: 04/14/22 00:00 Received: 04/16/22 04:47 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	141	ug/L	5.0	1.2	1	04/21/22 15:13	04/22/22 18:57	7440-39-3	
Beryllium	<0.24	ug/L	1.0	0.24	1	04/21/22 15:13	04/22/22 18:57	7440-41-7	
Boron	4890	ug/L	100	7.1	1	04/21/22 15:13	04/22/22 18:57	7440-42-8	
Calcium	113000	ug/L	200	38.2	1	04/21/22 15:13	04/25/22 17:36	7440-70-2	
Cobalt	<1.4	ug/L	5.0	1.4	1	04/21/22 15:13	04/22/22 18:57	7440-48-4	
Iron	2590	ug/L	50.0	21.1	1	04/21/22 15:13	04/22/22 18:57	7439-89-6	
Lead	<6.1	ug/L	10.0	6.1	1	04/21/22 15:13	04/22/22 18:57	7439-92-1	
Lithium	164	ug/L	10.0	1.1	1	04/21/22 15:13	04/25/22 17:36	7439-93-2	
Magnesium	39500	ug/L	50.0	11.7	1	04/21/22 15:13	04/22/22 18:57	7439-95-4	
Manganese	898	ug/L	5.0	1.1	1	04/21/22 15:13	04/22/22 18:57	7439-96-5	
Molybdenum	350	ug/L	20.0	1.8	1	04/21/22 15:13	04/22/22 18:57	7439-98-7	
Potassium	10700	ug/L	500	224	1	04/21/22 15:13	04/22/22 18:57	7440-09-7	
Sodium	419000	ug/L	500	166	1	04/21/22 15:13	04/22/22 18:57	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	04/21/22 15:13	04/29/22 17:39	7440-36-0	
Arsenic	0.52J	ug/L	1.0	0.14	1	04/21/22 15:13	04/29/22 17:39	7440-38-2	
Cadmium	0.11J	ug/L	0.50	0.053	1	04/21/22 15:13	04/29/22 17:39	7440-43-9	
Chromium	0.36J	ug/L	1.0	0.31	1	04/21/22 15:13	04/29/22 17:39	7440-47-3	B
Selenium	<0.18	ug/L	1.0	0.18	1	04/21/22 15:13	04/29/22 17:39	7782-49-2	
Thallium	<0.15	ug/L	1.0	0.15	1	04/21/22 15:13	04/29/22 17:39	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.12	ug/L	0.20	0.12	1	05/05/22 13:38	05/06/22 13:02	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	317	mg/L	20.0	4.6	1		04/21/22 13:54		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	562	mg/L	10.0	10.0	1		04/21/22 15:02		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	1.3	mg/L	0.050		1		05/03/22 10:05	20074-52-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	1.3	mg/L	0.20	0.060	1		04/26/22 11:45	15438-31-0	H6

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Sample: R-CA-DUP-1 **Lab ID: 60397549021** Collected: 04/14/22 00:00 Received: 04/16/22 04:47 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	<0.021	mg/L	0.050	0.021	1		04/21/22 17:32	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	114	mg/L	10.0	5.3	10		04/29/22 23:32	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		04/29/22 23:18	16984-48-8	
Sulfate	30.9	mg/L	10.0	5.5	10		04/29/22 23:32	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Sample: R-CA-DUP-2 Lab ID: 60397549022 Collected: 04/14/22 00:00 Received: 04/16/22 04:47 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	1.2	1	04/21/22 15:13	04/22/22 18:59	7440-39-3	
Beryllium	<0.24	ug/L	1.0	0.24	1	04/21/22 15:13	04/22/22 18:59	7440-41-7	
Boron	477	ug/L	100	7.1	1	04/21/22 15:13	04/22/22 18:59	7440-42-8	
Calcium	160000	ug/L	200	38.2	1	04/21/22 15:13	04/25/22 17:39	7440-70-2	
Cobalt	3.2J	ug/L	5.0	1.4	1	04/21/22 15:13	04/22/22 18:59	7440-48-4	
Iron	41800	ug/L	50.0	21.1	1	04/21/22 15:13	04/22/22 18:59	7439-89-6	
Lead	<6.1	ug/L	10.0	6.1	1	04/21/22 15:13	04/22/22 18:59	7439-92-1	
Lithium	47.9	ug/L	10.0	1.1	1	04/21/22 15:13	04/25/22 17:39	7439-93-2	
Magnesium	34600	ug/L	50.0	11.7	1	04/21/22 15:13	04/22/22 18:59	7439-95-4	
Manganese	711	ug/L	5.0	1.1	1	04/21/22 15:13	04/22/22 18:59	7439-96-5	
Molybdenum	13.2J	ug/L	20.0	1.8	1	04/21/22 15:13	04/22/22 18:59	7439-98-7	
Potassium	6780	ug/L	500	224	1	04/21/22 15:13	04/22/22 18:59	7440-09-7	
Sodium	57800	ug/L	500	166	1	04/21/22 15:13	04/22/22 18:59	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	0.12J	ug/L	1.0	0.12	1	04/21/22 15:13	04/29/22 17:42	7440-36-0	
Arsenic	69.8	ug/L	1.0	0.14	1	04/21/22 15:13	04/29/22 17:42	7440-38-2	
Cadmium	0.35J	ug/L	0.50	0.053	1	04/21/22 15:13	04/29/22 17:42	7440-43-9	
Chromium	0.61J	ug/L	1.0	0.31	1	04/21/22 15:13	04/29/22 17:42	7440-47-3	B
Selenium	2.0	ug/L	1.0	0.18	1	04/21/22 15:13	04/29/22 17:42	7782-49-2	
Thallium	<0.15	ug/L	1.0	0.15	1	04/21/22 15:13	04/29/22 17:42	7440-28-0	
7470 Mercury									
Analytical Method: EPA 7470 Preparation Method: EPA 7470									
Pace Analytical Services - Kansas City									
Mercury	<0.12	ug/L	0.20	0.12	1	05/05/22 13:38	05/06/22 13:04	7439-97-6	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	435	mg/L	20.0	4.6	1		04/21/22 14:00		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	780	mg/L	10.0	10.0	1		04/21/22 15:02		
Iron, Ferric (Calculation)									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferric	41.1	mg/L	0.050		1		05/03/22 10:05	20074-52-6	
Iron, Ferrous									
Analytical Method: SM 3500-Fe B#4									
Pace Analytical Services - Kansas City									
Iron, Ferrous	0.70	mg/L	0.20	0.060	1		04/26/22 11:47	15438-31-0	H6

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Sample: R-CA-DUP-2 **Lab ID: 60397549022** Collected: 04/14/22 00:00 Received: 04/16/22 04:47 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	<0.021	mg/L	0.050	0.021	1		04/21/22 17:33	18496-25-8	
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	37.0	mg/L	10.0	5.3	10		04/30/22 00:41	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		04/30/22 00:27	16984-48-8	
Sulfate	189	mg/L	10.0	5.5	10		04/30/22 00:41	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

QC Batch:	783583	Analysis Method:	EPA 7470
QC Batch Method:	EPA 7470	Analysis Description:	7470 Mercury
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60397549001, 60397549002, 60397549003, 60397549004

METHOD BLANK: 3124795 Matrix: Water
Associated Lab Samples: 60397549001, 60397549002, 60397549003, 60397549004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	<0.12	0.20	0.12	04/28/22 09:31	

LABORATORY CONTROL SAMPLE: 3124796

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	5.1	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3124797 3124798

Parameter	Units	3124797		3124798		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Mercury	ug/L	<0.12	5	5	5.0	5.1	101	103	75-125	2	20

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

QC Batch:	785114	Analysis Method:	EPA 7470
QC Batch Method:	EPA 7470	Analysis Description:	7470 Mercury
		Laboratory:	Pace Analytical Services - Kansas City
Associated Lab Samples:	60397549005, 60397549006, 60397549007, 60397549008, 60397549009, 60397549010, 60397549011, 60397549012, 60397549013, 60397549014, 60397549015, 60397549016, 60397549017		

METHOD BLANK:	3130302	Matrix:	Water
Associated Lab Samples:	60397549005, 60397549006, 60397549007, 60397549008, 60397549009, 60397549010, 60397549011, 60397549012, 60397549013, 60397549014, 60397549015, 60397549016, 60397549017		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	<0.12	0.20	0.12	05/06/22 13:07	

LABORATORY CONTROL SAMPLE: 3130303						
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.9	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3130304												3130305	
Parameter	Units	60397546008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
Mercury	ug/L	<0.12	5	5	4.8	4.7	97	94	75-125	3	20		

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

QC Batch: 785115

Analysis Method: EPA 7470

QC Batch Method: EPA 7470

Analysis Description: 7470 Mercury

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60397549018, 60397549019, 60397549020, 60397549021, 60397549022

METHOD BLANK: 3130306

Matrix: Water

Associated Lab Samples: 60397549018, 60397549019, 60397549020, 60397549021, 60397549022

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	ug/L	<0.12	0.20	0.12	05/06/22 12:42	

LABORATORY CONTROL SAMPLE: 3130307

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	5	4.9	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3130308 3130309

Parameter	Units	3130308		3130309		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60397549019 Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
Mercury	ug/L	<0.12	5	5	4.8	4.8	95	96	75-125	1	20

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

QC Batch:	782329	Analysis Method:	EPA 200.7
QC Batch Method:	EPA 200.7	Analysis Description:	200.7 Metals, Total
		Laboratory:	Pace Analytical Services - Kansas City
Associated Lab Samples:	60397549005, 60397549006, 60397549007, 60397549008, 60397549009, 60397549010, 60397549011, 60397549012, 60397549013		

METHOD BLANK:	3120014	Matrix:	Water
Associated Lab Samples:	60397549005, 60397549006, 60397549007, 60397549008, 60397549009, 60397549010, 60397549011, 60397549012, 60397549013		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<1.7	5.0	1.7	04/21/22 20:55	
Beryllium	ug/L	<0.31	1.0	0.31	04/21/22 20:55	
Boron	ug/L	<13.5	100	13.5	04/21/22 20:55	
Calcium	ug/L	<38.2	200	38.2	04/21/22 20:55	
Cobalt	ug/L	<0.78	5.0	0.78	04/21/22 20:55	
Iron	ug/L	<23.9	50.0	23.9	04/21/22 20:55	
Lead	ug/L	<4.3	10.0	4.3	04/21/22 20:55	
Lithium	ug/L	<1.1	10.0	1.1	04/21/22 20:55	
Magnesium	ug/L	<43.0	50.0	43.0	04/21/22 20:55	
Manganese	ug/L	<3.8	5.0	3.8	04/21/22 20:55	
Molybdenum	ug/L	<1.4	20.0	1.4	04/21/22 20:55	
Potassium	ug/L	<167	500	167	04/21/22 20:55	
Sodium	ug/L	<64.8	500	64.8	04/21/22 20:55	

LABORATORY CONTROL SAMPLE: 3120015

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	959	96	85-115	
Beryllium	ug/L	1000	977	98	85-115	
Boron	ug/L	1000	895	90	85-115	
Calcium	ug/L	10000	9260	93	85-115	
Cobalt	ug/L	1000	864	86	85-115	
Iron	ug/L	10000	8780	88	85-115	
Lead	ug/L	1000	905	91	85-115	
Lithium	ug/L	1000	901	90	85-115	
Magnesium	ug/L	10000	9320	93	85-115	
Manganese	ug/L	1000	946	95	85-115	
Molybdenum	ug/L	1000	887	89	85-115	
Potassium	ug/L	10000	9020	90	85-115	
Sodium	ug/L	10000	8840	88	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3120016 3120017

Parameter	Units	60397546008 Result	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
			Spike Conc.	MS Result	MSD Result							
Barium	ug/L	372	1000	1000	1410	1420	104	105	70-130	1	20	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3120016 3120017												
Parameter	Units	60397546008		MS	MSD	MS		MSD		% Rec Limits	Max RPD	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec			
Beryllium	ug/L	<0.31	1000	1000	1090	1100	109	110	70-130	1	20	
Boron	ug/L	2410	1000	1000	3400	3440	99	103	70-130	1	20	
Calcium	ug/L	96300	10000	10000	105000	107000	90	111	70-130	2	20	
Cobalt	ug/L	<0.78	1000	1000	931	946	93	95	70-130	2	20	
Iron	ug/L	6930	10000	10000	16300	16500	94	96	70-130	1	20	
Lead	ug/L	<4.3	1000	1000	967	980	97	98	70-130	1	20	
Lithium	ug/L	37.7	1000	1000	1080	1100	104	107	70-130	2	20	
Magnesium	ug/L	20000	10000	10000	29900	30200	98	102	70-130	1	20	
Manganese	ug/L	408	1000	1000	1430	1450	102	104	70-130	1	20	
Molybdenum	ug/L	52.4	1000	1000	1040	1050	98	100	70-130	1	20	
Potassium	ug/L	5300	10000	10000	15000	15200	97	99	70-130	1	20	
Sodium	ug/L	39300	10000	10000	48500	49000	91	97	70-130	1	20	

MATRIX SPIKE SAMPLE: 3120018							
Parameter	Units	60397549009	Spike	MS	MS	% Rec	Qualifiers
		Result	Conc.	Result	% Rec	Limits	
Barium	ug/L	296	1000	1350	105	70-130	
Beryllium	ug/L	<0.31	1000	1100	110	70-130	
Boron	ug/L	385	1000	1400	102	70-130	
Calcium	ug/L	113000	10000	125000	116	70-130	
Cobalt	ug/L	<0.78	1000	939	94	70-130	
Iron	ug/L	11000	10000	20600	96	70-130	
Lead	ug/L	<4.3	1000	977	98	70-130	
Lithium	ug/L	33.3	1000	1100	106	70-130	
Magnesium	ug/L	21900	10000	32300	105	70-130	
Manganese	ug/L	800	1000	1850	105	70-130	
Molybdenum	ug/L	3.4J	1000	995	99	70-130	
Potassium	ug/L	5800	10000	15900	101	70-130	
Sodium	ug/L	20400	10000	30300	99	70-130	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

QC Batch:	782606	Analysis Method:	EPA 200.7
QC Batch Method:	EPA 200.7	Analysis Description:	200.7 Metals, Total
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60397549001, 60397549002, 60397549003, 60397549004, 60397549014, 60397549015, 60397549016, 60397549017, 60397549018, 60397549019, 60397549020, 60397549021, 60397549022

METHOD BLANK:	3120965	Matrix:	Water
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Associated Lab Samples: 60397549001, 60397549002, 60397549003, 60397549004, 60397549014, 60397549015, 60397549016, 60397549017, 60397549018, 60397549019, 60397549020, 60397549021, 60397549022

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<1.2	5.0	1.2	04/22/22 18:10	
Beryllium	ug/L	<0.24	1.0	0.24	04/22/22 18:10	
Boron	ug/L	<7.1	100	7.1	04/22/22 18:10	
Calcium	ug/L	<38.2	200	38.2	04/22/22 18:10	
Cobalt	ug/L	<1.4	5.0	1.4	04/22/22 18:10	
Iron	ug/L	<21.1	50.0	21.1	04/22/22 18:10	
Lead	ug/L	<6.1	10.0	6.1	04/22/22 18:10	
Lithium	ug/L	<1.1	10.0	1.1	04/22/22 18:10	
Magnesium	ug/L	<11.7	50.0	11.7	04/22/22 18:10	
Manganese	ug/L	<1.1	5.0	1.1	04/22/22 18:10	
Molybdenum	ug/L	<1.8	20.0	1.8	04/22/22 18:10	
Potassium	ug/L	<224	500	224	04/22/22 18:10	
Sodium	ug/L	<166	500	166	04/22/22 18:10	

LABORATORY CONTROL SAMPLE: 3120966

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	1010	101	85-115	
Beryllium	ug/L	1000	1030	103	85-115	
Boron	ug/L	1000	950	95	85-115	
Calcium	ug/L	10000	9590	96	85-115	
Cobalt	ug/L	1000	978	98	85-115	
Iron	ug/L	10000	9680	97	85-115	
Lead	ug/L	1000	1010	101	85-115	
Lithium	ug/L	1000	864	86	85-115	
Magnesium	ug/L	10000	10200	102	85-115	
Manganese	ug/L	1000	984	98	85-115	
Molybdenum	ug/L	1000	970	97	85-115	
Potassium	ug/L	10000	9830	98	85-115	
Sodium	ug/L	10000	9830	98	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3120967 3120968

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Spike Conc.	Spike Conc.	MS Result	MSD Result						
Barium	ug/L	101	1000	1000	1110	1080	101	98	70-130	3	20

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3120967 3120968												
Parameter	Units	60397549019		MS	MSD	MS		MSD		% Rec Limits	Max RPD	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec			
Beryllium	ug/L	<0.24	1000	1000	1040	1010	104	101	70-130	3	20	
Boron	ug/L	912	1000	1000	1920	1890	101	98	70-130	1	20	
Calcium	ug/L	136000	10000	10000	147000	145000	108	92	70-130	1	20	
Cobalt	ug/L	<1.4	1000	1000	979	949	98	95	70-130	3	20	
Iron	ug/L	429	10000	10000	10200	9940	98	95	70-130	3	20	
Lead	ug/L	<6.1	1000	1000	1000	971	100	97	70-130	3	20	
Lithium	ug/L	33.3	1000	1000	1000	957	97	92	70-130	5	20	
Magnesium	ug/L	23100	10000	10000	32300	31800	92	87	70-130	1	20	
Manganese	ug/L	375	1000	1000	1380	1350	101	97	70-130	3	20	
Molybdenum	ug/L	2.6J	1000	1000	1010	978	101	98	70-130	3	20	
Potassium	ug/L	6700	10000	10000	17200	17100	105	104	70-130	1	20	
Sodium	ug/L	60900	10000	10000	72700	72700	118	118	70-130	0	20	

MATRIX SPIKE SAMPLE: 3120969								
Parameter	Units	60397549022	Spike	MS	MS	% Rec		Qualifiers
		Result	Conc.	Result	% Rec	Limits		
Barium	ug/L	245	1000	1240	99	70-130		
Beryllium	ug/L	<0.24	1000	1030	103	70-130		
Boron	ug/L	477	1000	1460	98	70-130		
Calcium	ug/L	160000	10000	169000	91	70-130		
Cobalt	ug/L	3.2J	1000	964	96	70-130		
Iron	ug/L	41800	10000	51100	93	70-130		
Lead	ug/L	<6.1	1000	990	99	70-130		
Lithium	ug/L	47.9	1000	1000	95	70-130		
Magnesium	ug/L	34600	10000	42300	77	70-130		
Manganese	ug/L	711	1000	1710	100	70-130		
Molybdenum	ug/L	13.2J	1000	1000	99	70-130		
Potassium	ug/L	6780	10000	17400	107	70-130		
Sodium	ug/L	57800	10000	68600	108	70-130		

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

QC Batch:	782328	Analysis Method:	EPA 200.8
QC Batch Method:	EPA 200.8	Analysis Description:	200.8 MET
		Laboratory:	Pace Analytical Services - Kansas City
Associated Lab Samples:	60397549005, 60397549006, 60397549007, 60397549008, 60397549009, 60397549010, 60397549011, 60397549012, 60397549013		

METHOD BLANK:	3120008	Matrix:	Water
Associated Lab Samples:	60397549005, 60397549006, 60397549007, 60397549008, 60397549009, 60397549010, 60397549011, 60397549012, 60397549013		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.12	1.0	0.12	04/29/22 17:53	
Arsenic	ug/L	<0.14	1.0	0.14	04/29/22 17:53	
Cadmium	ug/L	<0.053	0.50	0.053	04/29/22 17:53	
Chromium	ug/L	<0.31	1.0	0.31	04/29/22 17:53	
Selenium	ug/L	<0.18	1.0	0.18	04/29/22 17:53	
Thallium	ug/L	<0.15	1.0	0.15	04/29/22 17:53	

LABORATORY CONTROL SAMPLE: 3120009

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	38.9	97	85-115	
Arsenic	ug/L	40	40.7	102	85-115	
Cadmium	ug/L	40	40.7	102	85-115	
Chromium	ug/L	40	41.6	104	85-115	
Selenium	ug/L	40	40.9	102	85-115	
Thallium	ug/L	40	38.7	97	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3120010 3120011

Parameter	Units	60397546008		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec					
Antimony	ug/L	<0.12	40	40	39.1	39.1	98	98	70-130	0	20		
Arsenic	ug/L	14.2	40	40	55.4	55.3	103	103	70-130	0	20		
Cadmium	ug/L	<0.053	40	40	39.3	39.0	98	97	70-130	1	20		
Chromium	ug/L	0.73J	40	40	40.7	40.8	100	100	70-130	0	20		
Selenium	ug/L	<0.18	40	40	39.6	39.7	99	99	70-130	0	20		
Thallium	ug/L	<0.15	40	40	37.9	37.8	95	94	70-130	0	20		

MATRIX SPIKE SAMPLE: 3120012

Parameter	Units	60397549009 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	<0.12	40	39.4	99	70-130	
Arsenic	ug/L	14.5	40	56.3	105	70-130	
Cadmium	ug/L	<0.053	40	39.2	98	70-130	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

MATRIX SPIKE SAMPLE:		3120012					
Parameter	Units	60397549009 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chromium	ug/L	0.51J	40	40.4	100	70-130	
Selenium	ug/L	<0.18	40	40.0	100	70-130	
Thallium	ug/L	<0.15	40	37.7	94	70-130	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

QC Batch:	782603	Analysis Method:	EPA 200.8
QC Batch Method:	EPA 200.8	Analysis Description:	200.8 MET
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60397549001, 60397549002, 60397549003, 60397549004, 60397549014, 60397549015, 60397549016, 60397549017, 60397549018, 60397549019, 60397549020, 60397549021, 60397549022

METHOD BLANK: 3120956 Matrix: Water

Associated Lab Samples: 60397549001, 60397549002, 60397549003, 60397549004, 60397549014, 60397549015, 60397549016, 60397549017, 60397549018, 60397549019, 60397549020, 60397549021, 60397549022

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.12	1.0	0.12	04/29/22 16:39	
Arsenic	ug/L	<0.14	1.0	0.14	04/29/22 16:39	
Cadmium	ug/L	<0.053	0.50	0.053	04/29/22 16:39	
Chromium	ug/L	0.82J	1.0	0.31	04/29/22 16:39	
Selenium	ug/L	<0.18	1.0	0.18	04/29/22 16:39	
Thallium	ug/L	<0.15	1.0	0.15	04/29/22 16:39	

LABORATORY CONTROL SAMPLE: 3120957

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	40.0	100	85-115	
Arsenic	ug/L	40	41.3	103	85-115	
Cadmium	ug/L	40	42.1	105	85-115	
Chromium	ug/L	40	42.0	105	85-115	
Selenium	ug/L	40	41.9	105	85-115	
Thallium	ug/L	40	39.7	99	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3120958 3120959

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60397549019 Result	Spike Conc.	Spike Conc.	MS Result						
Antimony	ug/L	<0.12	40	40	39.3	39.3	98	98	70-130	0	20
Arsenic	ug/L	0.97J	40	40	43.0	43.2	105	106	70-130	0	20
Cadmium	ug/L	<0.053	40	40	39.1	39.2	98	98	70-130	0	20
Chromium	ug/L	<0.31	40	40	39.3	39.5	98	98	70-130	0	20
Selenium	ug/L	<0.18	40	40	39.6	39.8	99	99	70-130	0	20
Thallium	ug/L	<0.15	40	40	37.8	38.2	94	96	70-130	1	20

MATRIX SPIKE SAMPLE: 3120960

Parameter	Units	60397549022 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	0.12J	40	38.6	96	70-130	
Arsenic	ug/L	69.8	40	112	106	70-130	
Cadmium	ug/L	0.35J	40	38.2	95	70-130	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

MATRIX SPIKE SAMPLE:		3120960					
Parameter	Units	60397549022 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chromium	ug/L	0.61J	40	39.3	97	70-130	
Selenium	ug/L	2.0	40	41.7	99	70-130	
Thallium	ug/L	<0.15	40	38.1	95	70-130	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

QC Batch: 782418	Analysis Method: SM 2320B
QC Batch Method: SM 2320B	Analysis Description: 2320B Alkalinity
	Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60397549001, 60397549002, 60397549003, 60397549004

METHOD BLANK: 3120304 Matrix: Water
Associated Lab Samples: 60397549001, 60397549002, 60397549003, 60397549004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<4.6	20.0	4.6	04/21/22 09:55	

LABORATORY CONTROL SAMPLE: 3120305

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	471	94	90-110	

SAMPLE DUPLICATE: 3120306

Parameter	Units	60397546004 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	330	328	1	10	

SAMPLE DUPLICATE: 3120307

Parameter	Units	60397785001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	202	203	0	10	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

QC Batch:	782420	Analysis Method:	SM 2320B
QC Batch Method:	SM 2320B	Analysis Description:	2320B Alkalinity
		Laboratory:	Pace Analytical Services - Kansas City
Associated Lab Samples:	60397549005, 60397549006, 60397549007, 60397549008, 60397549009, 60397549010, 60397549011, 60397549013, 60397549014, 60397549015, 60397549016, 60397549020, 60397549021, 60397549022		

METHOD BLANK:	3120310	Matrix:	Water
Associated Lab Samples:	60397549005, 60397549006, 60397549007, 60397549008, 60397549009, 60397549010, 60397549011, 60397549013, 60397549014, 60397549015, 60397549016, 60397549020, 60397549021, 60397549022		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<4.6	20.0	4.6	04/21/22 12:49	

LABORATORY CONTROL SAMPLE: 3120311						
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	476	95	90-110	

SAMPLE DUPLICATE: 3120312						
Parameter	Units	60397546008 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	370	375	1	10	

SAMPLE DUPLICATE: 3120313						
Parameter	Units	60397546009 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	328	330	0	10	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

QC Batch:	782696	Analysis Method:	SM 2320B
QC Batch Method:	SM 2320B	Analysis Description:	2320B Alkalinity
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60397549012, 60397549017, 60397549018, 60397549019

METHOD BLANK: 3121248 Matrix: Water
Associated Lab Samples: 60397549012, 60397549017, 60397549018, 60397549019

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<4.6	20.0	4.6	04/22/22 11:15	

LABORATORY CONTROL SAMPLE: 3121249

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	478	96	90-110	

SAMPLE DUPLICATE: 3121250

Parameter	Units	60398172001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	1550	1550	0	10	

SAMPLE DUPLICATE: 3121251

Parameter	Units	60397549019 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	340	343	1	10	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

QC Batch: 782149	Analysis Method: SM 2540C
QC Batch Method: SM 2540C	Analysis Description: 2540C Total Dissolved Solids
	Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60397549001, 60397549002, 60397549003, 60397549004

METHOD BLANK: 3119400 Matrix: Water
Associated Lab Samples: 60397549001, 60397549002, 60397549003, 60397549004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	04/19/22 14:43	

LABORATORY CONTROL SAMPLE: 3119401

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	880	88	80-120	

SAMPLE DUPLICATE: 3119402

Parameter	Units	60397546005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	25.0	22.5	11	10	D6

SAMPLE DUPLICATE: 3119403

Parameter	Units	60397549004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	11.5	12.5	8	10	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

QC Batch:	782575	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60397549005, 60397549006, 60397549007, 60397549008, 60397549013, 60397549014, 60397549015, 60397549016, 60397549020, 60397549021, 60397549022

METHOD BLANK: 3120906 Matrix: Water

Associated Lab Samples: 60397549005, 60397549006, 60397549007, 60397549008, 60397549013, 60397549014, 60397549015, 60397549016, 60397549020, 60397549021, 60397549022

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	04/21/22 15:00	

LABORATORY CONTROL SAMPLE: 3120907

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	925	92	80-120	

SAMPLE DUPLICATE: 3120908

Parameter	Units	60397546006 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	789	810	3	10	

SAMPLE DUPLICATE: 3120909

Parameter	Units	60397546008 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	462	451	2	10	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

QC Batch:	782851	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60397549009, 60397549010, 60397549011, 60397549012, 60397549017, 60397549018, 60397549019

METHOD BLANK: 3121877 Matrix: Water

Associated Lab Samples: 60397549009, 60397549010, 60397549011, 60397549012, 60397549017, 60397549018, 60397549019

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	04/22/22 14:22	

LABORATORY CONTROL SAMPLE: 3121878

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	990	99	80-120	

SAMPLE DUPLICATE: 3121879

Parameter	Units	60397549019 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	714	682	5	10	

SAMPLE DUPLICATE: 3121880

Parameter	Units	60398186006 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	509	524	3	10	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

QC Batch: 782077

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: 60397549001, 60397549002, 60397549003, 60397549004

METHOD BLANK: 3119130

Matrix: Water

Associated Lab Samples: 60397549001, 60397549002, 60397549003, 60397549004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron, Ferrous	mg/L	<0.060	0.20	0.060	04/19/22 16:40	H6

LABORATORY CONTROL SAMPLE: 3119131

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron, Ferrous	mg/L	2	2.0	102	90-110	H6

SAMPLE DUPLICATE: 3119132

Parameter	Units	60397418002 Result	Dup Result	RPD	Max RPD	Qualifiers
Iron, Ferrous	mg/L	ND	0.13J		20	H6

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

QC Batch: 782776

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: 60397549005, 60397549006, 60397549007, 60397549008, 60397549009, 60397549010, 60397549011, 60397549013, 60397549014, 60397549015, 60397549016, 60397549017, 60397549020, 60397549021, 60397549022

METHOD BLANK: 3121488

Matrix: Water

Associated Lab Samples: 60397549005, 60397549006, 60397549007, 60397549008, 60397549009, 60397549010, 60397549011, 60397549013, 60397549014, 60397549015, 60397549016, 60397549017, 60397549020, 60397549021, 60397549022

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron, Ferrous	mg/L	<0.060	0.20	0.060	04/26/22 11:45	H6

LABORATORY CONTROL SAMPLE: 3121489

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron, Ferrous	mg/L	2	2.1	106	90-110	H6

SAMPLE DUPLICATE: 3121490

Parameter	Units	60397546008 Result	Dup Result	RPD	Max RPD	Qualifiers
Iron, Ferrous	mg/L	0.68	0.68	0	20	H6

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

QC Batch:	782777	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: 60397549012, 60397549018, 60397549019

METHOD BLANK: 3121491 Matrix: Water

Associated Lab Samples: 60397549012, 60397549018, 60397549019

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Iron, Ferrous	mg/L	<0.060	0.20	0.060	04/26/22 11:40	H6

LABORATORY CONTROL SAMPLE: 3121492

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron, Ferrous	mg/L	2	2.2	109	90-110	H6

SAMPLE DUPLICATE: 3121493

Parameter	Units	60397549019 Result	Dup Result	RPD	Max RPD	Qualifiers
Iron, Ferrous	mg/L	<0.060	<0.060		20	H6

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

QC Batch:	781332	Analysis Method:	SM 4500-S-2 D
QC Batch Method:	SM 4500-S-2 D	Analysis Description:	4500S2D Sulfide, Total
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60397549001, 60397549002, 60397549003, 60397549004

METHOD BLANK: 3116170 Matrix: Water
Associated Lab Samples: 60397549001, 60397549002, 60397549003, 60397549004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.021	0.050	0.021	04/14/22 16:28	

LABORATORY CONTROL SAMPLE: 3116171

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.5	0.50	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3116172 3116173

Parameter	Units	60397616001		3116172		3116173		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MSD Result						
Sulfide, Total	mg/L	0.18	0.5	0.5	0.5	0.66	0.66	95	96	75-125	0	20	

SAMPLE DUPLICATE: 3116174

Parameter	Units	60397346017 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.021	<0.021		20	

SAMPLE DUPLICATE: 3116175

Parameter	Units	60397546004 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.021	<0.021		20	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

QC Batch:	782478	Analysis Method:	SM 4500-S-2 D
QC Batch Method:	SM 4500-S-2 D	Analysis Description:	4500S2D Sulfide, Total
		Laboratory:	Pace Analytical Services - Kansas City
Associated Lab Samples:	60397549005, 60397549006, 60397549007, 60397549008, 60397549009, 60397549010, 60397549011, 60397549013, 60397549014, 60397549015, 60397549016, 60397549020, 60397549021, 60397549022		

METHOD BLANK:	3120475	Matrix:	Water
Associated Lab Samples:	60397549005, 60397549006, 60397549007, 60397549008, 60397549009, 60397549010, 60397549011, 60397549013, 60397549014, 60397549015, 60397549016, 60397549020, 60397549021, 60397549022		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.021	0.050	0.021	04/21/22 17:28	

LABORATORY CONTROL SAMPLE: 3120476						
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.5	0.49	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3120477												3120478	
Parameter	Units	60397546008 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	<0.021	0.5	0.5	0.46	0.46	91	91	75-125	0	20		

SAMPLE DUPLICATE: 3120479						
Parameter	Units	60397546008 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.021	<0.021		20	

SAMPLE DUPLICATE: 3120480						
Parameter	Units	60397546009 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.021	<0.021		20	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

QC Batch: 782765	Analysis Method: SM 4500-S-2 D
QC Batch Method: SM 4500-S-2 D	Analysis Description: 4500S2D Sulfide, Total
	Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60397549012, 60397549017, 60397549018, 60397549019

METHOD BLANK: 3121435 Matrix: Water
Associated Lab Samples: 60397549012, 60397549017, 60397549018, 60397549019

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide, Total	mg/L	<0.021	0.050	0.021	04/22/22 11:25	

LABORATORY CONTROL SAMPLE: 3121436

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Total	mg/L	0.5	0.48	95	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3121438 3121439

Parameter	Units	60397549019		3121439		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Result	MS Spike Conc.	MSD Result	MSD Spike Conc.						
Sulfide, Total	mg/L	<0.021	0.5	0.56	0.56	111	111	75-125	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3121441 3121442

Parameter	Units	60398273004		3121442		% Rec	% Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Result	MS Spike Conc.	MSD Result	MSD Spike Conc.						
Sulfide, Total	mg/L	<0.021	0.5	0.39	0.39	79	79	75-125	0	20	

SAMPLE DUPLICATE: 3121437

Parameter	Units	60397549019 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.021	<0.021		20	

SAMPLE DUPLICATE: 3121440

Parameter	Units	60398273004 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Total	mg/L	<0.021	<0.021		20	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

QC Batch:	783678	Analysis Method:	EPA 300.0
QC Batch Method:	EPA 300.0	Analysis Description:	300.0 IC Anions
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60397549005, 60397549006, 60397549007

METHOD BLANK: 3125086 Matrix: Water
Associated Lab Samples: 60397549005, 60397549006, 60397549007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	04/28/22 09:01	
Fluoride	mg/L	<0.12	0.20	0.12	04/28/22 09:01	
Sulfate	mg/L	<0.55	1.0	0.55	04/28/22 09:01	

METHOD BLANK: 3126817 Matrix: Water
Associated Lab Samples: 60397549005, 60397549006, 60397549007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.61J	1.0	0.53	04/29/22 06:33	
Fluoride	mg/L	<0.12	0.20	0.12	04/29/22 06:33	
Sulfate	mg/L	<0.55	1.0	0.55	04/29/22 06:33	

LABORATORY CONTROL SAMPLE: 3125087

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	100	90-110	
Sulfate	mg/L	5	5.0	99	90-110	

LABORATORY CONTROL SAMPLE: 3126818

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.8	97	90-110	
Fluoride	mg/L	2.5	2.6	104	90-110	
Sulfate	mg/L	5	5.0	100	90-110	

MATRIX SPIKE SAMPLE: 3125090

Parameter	Units	60398489003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	206	50	262	112	80-120	E
Fluoride	mg/L	0.21	2.5	2.6	97	80-120	
Sulfate	mg/L	189	50	245	111	80-120	E

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3125093												3125092		
Parameter	Units	60397546008		MS	MSD	MS	MSD	MS	MSD	% Rec	Limits	RPD	Max	Qual
		Result	Spike	Spike	Result									
Chloride	mg/L	15.8	5	5	21.0	20.9	105	103	80-120	0	15	E		
Fluoride	mg/L	0.65	2.5	2.5	3.2	3.1	102	100	80-120	2	15			
Sulfate	mg/L	13.3	5	5	18.5	18.4	102	101	80-120	0	15			

SAMPLE DUPLICATE: 3125094

Parameter	Units	60397546008		Dup	RPD	Max	Qualifiers
		Result	Result				
Chloride	mg/L	15.8	15.8	15.8	0	15	
Fluoride	mg/L	0.65	0.65	0.65	1	15	
Sulfate	mg/L	13.3	13.3	13.3	0	15	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

QC Batch:	783929	Analysis Method:	EPA 300.0
QC Batch Method:	EPA 300.0	Analysis Description:	300.0 IC Anions
		Laboratory:	Pace Analytical Services - Kansas City
Associated Lab Samples:	60397549008, 60397549009, 60397549010, 60397549011, 60397549012, 60397549013, 60397549014, 60397549015, 60397549016, 60397549017, 60397549018, 60397549019, 60397549020, 60397549021, 60397549022		

METHOD BLANK:	3126061	Matrix:	Water
Associated Lab Samples:	60397549008, 60397549009, 60397549010, 60397549011, 60397549012, 60397549013, 60397549014, 60397549015, 60397549016, 60397549017, 60397549018, 60397549019, 60397549020, 60397549021, 60397549022		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	04/29/22 13:09	
Fluoride	mg/L	<0.12	0.20	0.12	04/29/22 13:09	
Sulfate	mg/L	<0.55	1.0	0.55	04/29/22 13:09	

METHOD BLANK:	3128828	Matrix:	Water
Associated Lab Samples:	60397549008, 60397549009, 60397549010, 60397549011, 60397549012, 60397549013, 60397549014, 60397549015, 60397549016, 60397549017, 60397549018, 60397549019, 60397549020, 60397549021, 60397549022		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	05/02/22 09:06	
Fluoride	mg/L	<0.12	0.20	0.12	05/02/22 09:06	
Sulfate	mg/L	<0.55	1.0	0.55	05/02/22 09:06	

LABORATORY CONTROL SAMPLE:	3126062					
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.7	95	90-110	
Fluoride	mg/L	2.5	2.5	100	90-110	
Sulfate	mg/L	5	4.9	99	90-110	

LABORATORY CONTROL SAMPLE:	3128829					
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.5	90	90-110	
Sulfate	mg/L	5	4.6	93	90-110	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3126066												3126067	
Parameter	Units	60397549019		MS	MSD	MS	MSD	MS	MSD	% Rec	Max		
		Result	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qual	
Chloride	mg/L	56.3	100	100	147	148	91	92	80-120	0	15		
Fluoride	mg/L	0.16J	2.5	2.5	2.5	2.5	94	95	80-120	1	15		
Sulfate	mg/L	153	100	100	257	258	104	105	80-120	0	15		

SAMPLE DUPLICATE: 3126068

Parameter	Units	60397549019		Dup Result	RPD	Max RPD	Qualifiers
		Result	Spike Conc.				
Chloride	mg/L	56.3	100	57.5	2	15	
Fluoride	mg/L	0.16J	2.5	0.16J		15	
Sulfate	mg/L	153	100	154	1	15	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

QC Batch: 783933 Analysis Method: EPA 300.0
 QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
 Laboratory: Pace Analytical Services - Kansas City
 Associated Lab Samples: 60397549001, 60397549002, 60397549003, 60397549004

METHOD BLANK: 3126081 Matrix: Water
 Associated Lab Samples: 60397549001, 60397549002, 60397549003, 60397549004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	04/29/22 13:58	
Fluoride	mg/L	<0.12	0.20	0.12	04/29/22 13:58	
Sulfate	mg/L	<0.55	1.0	0.55	04/29/22 13:58	

METHOD BLANK: 3128018 Matrix: Water
 Associated Lab Samples: 60397549001, 60397549002, 60397549003, 60397549004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	05/02/22 09:06	
Fluoride	mg/L	<0.12	0.20	0.12	05/02/22 09:06	
Sulfate	mg/L	<0.55	1.0	0.55	05/02/22 09:06	

LABORATORY CONTROL SAMPLE: 3126082

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	2.5	99	90-110	
Sulfate	mg/L	5	4.9	98	90-110	

LABORATORY CONTROL SAMPLE: 3128019

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.5	90	90-110	
Sulfate	mg/L	5	4.6	93	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3126083 3126084

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60398382001 Result	Spike Conc.	Spike Conc.	MS Result								
Chloride	mg/L	168	50	50	239	238	117	116	80-120	0	15	E	
Fluoride	mg/L	<2.0	25	25	25.6	25.7	103	103	80-120	0	15		
Sulfate	mg/L	220	250	250	472	472	97	97	80-120	0	15		

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

MATRIX SPIKE SAMPLE:		3126085					
Parameter	Units	60397549004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	0.57J	5	4.7	83	80-120	
Fluoride	mg/L	<0.12	2.5	2.5	101	80-120	
Sulfate	mg/L	<0.55	5	4.9	98	80-120	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Sample: R-P-10S **Lab ID: 60397549001** Collected: 04/12/22 13:40 Received: 04/13/22 03:45 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	0.131 ± 0.258 (0.471) C:NA T:85%	pCi/L	05/09/22 15:59	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.433 ± 0.414 (0.857) C:76% T:85%	pCi/L	05/02/22 12:49	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Sample: R-P-16S **Lab ID: 60397549002** Collected: 04/12/22 16:17 Received: 04/13/22 03:45 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	0.0404 ± 0.184 (0.375) C:NA T:94%	pCi/L	05/09/22 15:59	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.478 ± 0.433 (0.892) C:70% T:94%	pCi/L	05/02/22 12:49	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Sample: R-CA-FB-1 **Lab ID: 60397549003** Collected: 04/12/22 14:09 Received: 04/13/22 03:45 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	0.128 ± 0.196 (0.116) C:NA T:92%	pCi/L	05/09/22 15:59	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	-0.516 ± 0.406 (0.990) C:73% T:92%	pCi/L	05/02/22 12:49	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: R-CA-FB-2 Lab ID: 60397549004 Collected: 04/12/22 16:27 Received: 04/13/22 03:45 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.196 ± 0.385 (0.692) C:NA T:93%	pCi/L	05/09/22 15:59	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.506 ± 0.354 (0.686) C:74% T:93%	pCi/L	05/02/22 12:52	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Sample: R-P-05S **Lab ID: 60397549005** Collected: 04/15/22 12:30 Received: 04/16/22 04:47 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	0.370 ± 0.314 (0.389) C:NA T:93%	pCi/L	05/12/22 12:32	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.434 ± 0.433 (0.895) C:62% T:95%	pCi/L	05/12/22 15:49	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Sample: R-P-17S **Lab ID: 60397549006** Collected: 04/14/22 10:22 Received: 04/16/22 04:47 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	0.0501 ± 0.354 (0.706) C:NA T:91%	pCi/L	05/12/22 12:32	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.539 ± 0.407 (0.805) C:83% T:83%	pCi/L	05/12/22 15:49	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Sample: R-P-171 **Lab ID: 60397549007** Collected: 04/14/22 11:01 Received: 04/16/22 04:47 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	-0.211 ± 0.294 (0.745) C:NA T:89%	pCi/L	05/12/22 12:32	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.860 ± 0.465 (0.827) C:70% T:82%	pCi/L	05/12/22 15:50	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Sample: R-P-17D **Lab ID: 60397549008** Collected: 04/14/22 09:18 Received: 04/16/22 04:47 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	0.673 ± 0.426 (0.481) C:NA T:92%	pCi/L	05/12/22 12:32	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.618 ± 0.375 (0.690) C:80% T:81%	pCi/L	05/12/22 15:50	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Sample: R-P-19S **Lab ID: 60397549009** Collected: 04/14/22 10:42 Received: 04/16/22 04:47 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	0.419 ± 0.484 (0.787) C:NA T:94%	pCi/L	05/12/22 12:32	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.659 ± 0.347 (0.601) C:81% T:90%	pCi/L	05/12/22 15:50	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Sample: R-P-19I **Lab ID: 60397549010** Collected: 04/14/22 11:29 Received: 04/16/22 04:47 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	0.147 ± 0.419 (0.777) C:NA T:96%	pCi/L	05/12/22 12:32	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.524 ± 0.492 (1.01) C:74% T:72%	pCi/L	05/12/22 15:50	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Sample: R-P-19D **Lab ID: 60397549011** Collected: 04/14/22 12:27 Received: 04/16/22 04:47 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 ± 0.272 (0.525) C:NA T:86%	pCi/L	05/12/22 12:48	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.188 ± 0.317 (0.690) C:80% T:84%	pCi/L	05/12/22 15:50	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Sample: R-P-21S **Lab ID: 60397549012** Collected: 04/14/22 12:57 Received: 04/16/22 04:47 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	0.510 ± 0.373 (0.417) C:NA T:92%	pCi/L	05/12/22 12:48	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	0.351 ± 0.297 (0.588) C:81% T:86%	pCi/L	05/12/22 15:50	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Sample: R-P-211 **Lab ID: 60397549013** Collected: 04/14/22 13:37 Received: 04/16/22 04:47 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	-0.0547 ± 0.283 (0.656) C:NA T:89%	pCi/L	05/12/22 12:48	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.120 ± 0.323 (0.725) C:78% T:84%	pCi/L	05/12/22 15:50	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Sample: R-P-21D **Lab ID: 60397549014** Collected: 04/14/22 14:27 Received: 04/16/22 04:47 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	0.644 ± 0.453 (0.578) C:NA T:93%	pCi/L	05/12/22 12:48	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.886 ± 0.404 (0.665) C:83% T:84%	pCi/L	05/12/22 15:50	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Sample: R-P-22S **Lab ID: 60397549015** Collected: 04/14/22 16:00 Received: 04/16/22 04:47 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	-0.129 ± 0.506 (1.07) C:NA T:83%	pCi/L	05/12/22 12:48	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	0.610 ± 0.323 (0.552) C:85% T:86%	pCi/L	05/12/22 15:50	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Sample: R-P-22D **Lab ID: 60397549016** Collected: 04/14/22 16:47 Received: 04/16/22 04:47 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 ± 0.319 (0.502) C:NA T:95%	pCi/L	05/12/22 12:48	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.738 ± 0.437 (0.792) C:70% T:81%	pCi/L	05/12/22 15:50	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Sample: R-P-29S **Lab ID: 60397549017** Collected: 04/15/22 11:52 Received: 04/16/22 04:47 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 ± 0.461 (0.933) C:NA T:88%	pCi/L	05/12/22 12:48	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	0.0893 ± 0.292 (0.658) C:86% T:93%	pCi/L	05/12/22 15:51	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Sample: R-P-29D **Lab ID: 60397549018** Collected: 04/15/22 12:40 Received: 04/16/22 04:47 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	0.478 ± 0.524 (0.843) C:NA T:90%	pCi/L	05/12/22 12:48	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.357 ± 0.342 (0.701) C:85% T:87%	pCi/L	05/12/22 15:51	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Sample: R-P-30S **Lab ID: 60397549019** Collected: 04/15/22 14:03 Received: 04/16/22 04:47 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	0.0407 ± 0.186 (0.299) C:NA T:91%	pCi/L	05/12/22 13:12	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	0.240 ± 0.319 (0.680) C:84% T:82%	pCi/L	05/12/22 15:51	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Sample: R-P-31S **Lab ID: 60397549020** Collected: 04/14/22 16:30 Received: 04/16/22 04:47 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	0.103 ± 0.318 (0.616) C:NA T:100%	pCi/L	05/12/22 13:12	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	0.254 ± 0.313 (0.661) C:86% T:84%	pCi/L	05/12/22 15:51	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Sample: R-CA-DUP-1 **Lab ID: 60397549021** Collected: 04/14/22 00:00 Received: 04/16/22 04:47 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	0.624 ± 0.407 (0.418) C:NA T:84%	pCi/L	05/12/22 13:12	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	1.19 ± 0.488 (0.779) C:82% T:81%	pCi/L	05/12/22 15:51	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Sample: R-CA-DUP-2 **Lab ID: 60397549022** Collected: 04/14/22 00:00 Received: 04/16/22 04:47 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	0.101 ± 0.313 (0.607) C:NA T:90%	pCi/L	05/12/22 13:12	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.197 ± 0.339 (0.740) C:78% T:79%	pCi/L	05/12/22 15:51	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Sample: R-CA-MS-1 **Lab ID: 60397549023** Collected: 04/15/22 14:03 Received: 04/16/22 04:47 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	73.77 %REC ± NA (NA) C:NA T:NA%	pCi/L	05/12/22 13:23	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	79.89 %REC ± NA (NA) C:NA T:NA	pCi/L	05/12/22 15:51	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Sample: R-CA-MSD-2 **Lab ID: 60397549024** Collected: 04/15/22 14:03 Received: 04/16/22 04:47 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	90.08 %REC 19.91 RPD ± NA (NA) C:NA T:NA%	pCi/L	05/12/22 13:12	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	75.18 %REC 6.06 RPD ± NA (NA) C:NA T:NA	pCi/L	05/12/22 15:51	15262-20-1	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

QC Batch: 499299

Analysis Method: EPA 903.1

QC Batch Method: EPA 903.1

Analysis Description: 903.1 Radium-226

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 60397549001, 60397549002, 60397549003, 60397549004

METHOD BLANK: 2416724

Matrix: Water

Associated Lab Samples: 60397549001, 60397549002, 60397549003, 60397549004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0861 ± 0.197 (0.117) C:NA T:93%	pCi/L	05/09/22 15:29	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

QC Batch: 500375

Analysis Method: EPA 903.1

QC Batch Method: EPA 903.1

Analysis Description: 903.1 Radium-226

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 60397549005, 60397549006, 60397549007, 60397549008, 60397549009, 60397549010, 60397549011, 60397549012, 60397549013, 60397549014, 60397549015, 60397549016, 60397549017, 60397549018, 60397549019, 60397549020, 60397549021, 60397549022, 60397549023, 60397549024

METHOD BLANK: 2421784

Matrix: Water

Associated Lab Samples: 60397549005, 60397549006, 60397549007, 60397549008, 60397549009, 60397549010, 60397549011, 60397549012, 60397549013, 60397549014, 60397549015, 60397549016, 60397549017, 60397549018, 60397549019, 60397549020, 60397549021, 60397549022, 60397549023, 60397549024

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	-0.159 ± 0.247 (0.597) C:NA T:96%	pCi/L	05/12/22 12:32	

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 - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

QC Batch:	500377	Analysis Method:	EPA 904.0
QC Batch Method:	EPA 904.0	Analysis Description:	904.0 Radium 228
		Laboratory:	Pace Analytical Services - Greensburg

Associated Lab Samples: 60397549005, 60397549006, 60397549007, 60397549008, 60397549009, 60397549010, 60397549011, 60397549012, 60397549013, 60397549014, 60397549015, 60397549016, 60397549017, 60397549018, 60397549019, 60397549020, 60397549021, 60397549022, 60397549023, 60397549024

METHOD BLANK:	2421790	Matrix:	Water
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Associated Lab Samples: 60397549005, 60397549006, 60397549007, 60397549008, 60397549009, 60397549010, 60397549011, 60397549012, 60397549013, 60397549014, 60397549015, 60397549016, 60397549017, 60397549018, 60397549019, 60397549020, 60397549021, 60397549022, 60397549023, 60397549024

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.315 ± 0.338 (0.701) C:77% T:80%	pCi/L	05/12/22 12:41	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

QC Batch: 499300

Analysis Method: EPA 904.0

QC Batch Method: EPA 904.0

Analysis Description: 904.0 Radium 228

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 60397549001, 60397549002, 60397549003, 60397549004

METHOD BLANK: 2416725

Matrix: Water

Associated Lab Samples: 60397549001, 60397549002, 60397549003, 60397549004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.317 ± 0.272 (0.543) C:80% T:93%	pCi/L	05/02/22 12:51	

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 RIEC RCPA-CA

Pace Project No.: 60397549

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.

E Analyte concentration exceeded the calibration range. The reported result is estimated.

H3 Sample was received or analysis requested beyond the recognized method holding time.

H6 Analysis initiated outside of the 15 minute EPA required holding time.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60397549001	R-P-10S	EPA 200.7	782606	EPA 200.7	782679
60397549002	R-P-16S	EPA 200.7	782606	EPA 200.7	782679
60397549003	R-CA-FB-1	EPA 200.7	782606	EPA 200.7	782679
60397549004	R-CA-FB-2	EPA 200.7	782606	EPA 200.7	782679
60397549005	R-P-05S	EPA 200.7	782329	EPA 200.7	782412
60397549006	R-P-17S	EPA 200.7	782329	EPA 200.7	782412
60397549007	R-P-17I	EPA 200.7	782329	EPA 200.7	782412
60397549008	R-P-17D	EPA 200.7	782329	EPA 200.7	782412
60397549009	R-P-19S	EPA 200.7	782329	EPA 200.7	782412
60397549010	R-P-19I	EPA 200.7	782329	EPA 200.7	782412
60397549011	R-P-19D	EPA 200.7	782329	EPA 200.7	782412
60397549012	R-P-21S	EPA 200.7	782329	EPA 200.7	782412
60397549013	R-P-21I	EPA 200.7	782329	EPA 200.7	782412
60397549014	R-P-21D	EPA 200.7	782606	EPA 200.7	782679
60397549015	R-P-22S	EPA 200.7	782606	EPA 200.7	782679
60397549016	R-P-22D	EPA 200.7	782606	EPA 200.7	782679
60397549017	R-P-29S	EPA 200.7	782606	EPA 200.7	782679
60397549018	R-P-29D	EPA 200.7	782606	EPA 200.7	782679
60397549019	R-P-30S	EPA 200.7	782606	EPA 200.7	782679
60397549020	R-P-31S	EPA 200.7	782606	EPA 200.7	782679
60397549021	R-CA-DUP-1	EPA 200.7	782606	EPA 200.7	782679
60397549022	R-CA-DUP-2	EPA 200.7	782606	EPA 200.7	782679
60397549001	R-P-10S	EPA 200.8	782603	EPA 200.8	782678
60397549002	R-P-16S	EPA 200.8	782603	EPA 200.8	782678
60397549003	R-CA-FB-1	EPA 200.8	782603	EPA 200.8	782678
60397549004	R-CA-FB-2	EPA 200.8	782603	EPA 200.8	782678
60397549005	R-P-05S	EPA 200.8	782328	EPA 200.8	782411
60397549006	R-P-17S	EPA 200.8	782328	EPA 200.8	782411
60397549007	R-P-17I	EPA 200.8	782328	EPA 200.8	782411
60397549008	R-P-17D	EPA 200.8	782328	EPA 200.8	782411
60397549009	R-P-19S	EPA 200.8	782328	EPA 200.8	782411
60397549010	R-P-19I	EPA 200.8	782328	EPA 200.8	782411
60397549011	R-P-19D	EPA 200.8	782328	EPA 200.8	782411
60397549012	R-P-21S	EPA 200.8	782328	EPA 200.8	782411
60397549013	R-P-21I	EPA 200.8	782328	EPA 200.8	782411
60397549014	R-P-21D	EPA 200.8	782603	EPA 200.8	782678
60397549015	R-P-22S	EPA 200.8	782603	EPA 200.8	782678
60397549016	R-P-22D	EPA 200.8	782603	EPA 200.8	782678
60397549017	R-P-29S	EPA 200.8	782603	EPA 200.8	782678
60397549018	R-P-29D	EPA 200.8	782603	EPA 200.8	782678
60397549019	R-P-30S	EPA 200.8	782603	EPA 200.8	782678
60397549020	R-P-31S	EPA 200.8	782603	EPA 200.8	782678
60397549021	R-CA-DUP-1	EPA 200.8	782603	EPA 200.8	782678
60397549022	R-CA-DUP-2	EPA 200.8	782603	EPA 200.8	782678
60397549001	R-P-10S	EPA 7470	783583	EPA 7470	783737
60397549002	R-P-16S	EPA 7470	783583	EPA 7470	783737

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60397549003	R-CA-FB-1	EPA 7470	783583	EPA 7470	783737
60397549004	R-CA-FB-2	EPA 7470	783583	EPA 7470	783737
60397549005	R-P-05S	EPA 7470	785114	EPA 7470	785353
60397549006	R-P-17S	EPA 7470	785114	EPA 7470	785353
60397549007	R-P-17I	EPA 7470	785114	EPA 7470	785353
60397549008	R-P-17D	EPA 7470	785114	EPA 7470	785353
60397549009	R-P-19S	EPA 7470	785114	EPA 7470	785353
60397549010	R-P-19I	EPA 7470	785114	EPA 7470	785353
60397549011	R-P-19D	EPA 7470	785114	EPA 7470	785353
60397549012	R-P-21S	EPA 7470	785114	EPA 7470	785353
60397549013	R-P-21I	EPA 7470	785114	EPA 7470	785353
60397549014	R-P-21D	EPA 7470	785114	EPA 7470	785353
60397549015	R-P-22S	EPA 7470	785114	EPA 7470	785353
60397549016	R-P-22D	EPA 7470	785114	EPA 7470	785353
60397549017	R-P-29S	EPA 7470	785114	EPA 7470	785353
60397549018	R-P-29D	EPA 7470	785115	EPA 7470	785350
60397549019	R-P-30S	EPA 7470	785115	EPA 7470	785350
60397549020	R-P-31S	EPA 7470	785115	EPA 7470	785350
60397549021	R-CA-DUP-1	EPA 7470	785115	EPA 7470	785350
60397549022	R-CA-DUP-2	EPA 7470	785115	EPA 7470	785350
60397549001	R-P-10S	EPA 903.1	499299		
60397549002	R-P-16S	EPA 903.1	499299		
60397549003	R-CA-FB-1	EPA 903.1	499299		
60397549004	R-CA-FB-2	EPA 903.1	499299		
60397549005	R-P-05S	EPA 903.1	500375		
60397549006	R-P-17S	EPA 903.1	500375		
60397549007	R-P-17I	EPA 903.1	500375		
60397549008	R-P-17D	EPA 903.1	500375		
60397549009	R-P-19S	EPA 903.1	500375		
60397549010	R-P-19I	EPA 903.1	500375		
60397549011	R-P-19D	EPA 903.1	500375		
60397549012	R-P-21S	EPA 903.1	500375		
60397549013	R-P-21I	EPA 903.1	500375		
60397549014	R-P-21D	EPA 903.1	500375		
60397549015	R-P-22S	EPA 903.1	500375		
60397549016	R-P-22D	EPA 903.1	500375		
60397549017	R-P-29S	EPA 903.1	500375		
60397549018	R-P-29D	EPA 903.1	500375		
60397549019	R-P-30S	EPA 903.1	500375		
60397549020	R-P-31S	EPA 903.1	500375		
60397549021	R-CA-DUP-1	EPA 903.1	500375		
60397549022	R-CA-DUP-2	EPA 903.1	500375		
60397549023	R-CA-MS-1	EPA 903.1	500375		
60397549024	R-CA-MSD-2	EPA 903.1	500375		
60397549001	R-P-10S	EPA 904.0	499300		
60397549002	R-P-16S	EPA 904.0	499300		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60397549003	R-CA-FB-1	EPA 904.0	499300		
60397549004	R-CA-FB-2	EPA 904.0	499300		
60397549005	R-P-05S	EPA 904.0	500377		
60397549006	R-P-17S	EPA 904.0	500377		
60397549007	R-P-17I	EPA 904.0	500377		
60397549008	R-P-17D	EPA 904.0	500377		
60397549009	R-P-19S	EPA 904.0	500377		
60397549010	R-P-19I	EPA 904.0	500377		
60397549011	R-P-19D	EPA 904.0	500377		
60397549012	R-P-21S	EPA 904.0	500377		
60397549013	R-P-21I	EPA 904.0	500377		
60397549014	R-P-21D	EPA 904.0	500377		
60397549015	R-P-22S	EPA 904.0	500377		
60397549016	R-P-22D	EPA 904.0	500377		
60397549017	R-P-29S	EPA 904.0	500377		
60397549018	R-P-29D	EPA 904.0	500377		
60397549019	R-P-30S	EPA 904.0	500377		
60397549020	R-P-31S	EPA 904.0	500377		
60397549021	R-CA-DUP-1	EPA 904.0	500377		
60397549022	R-CA-DUP-2	EPA 904.0	500377		
60397549023	R-CA-MS-1	EPA 904.0	500377		
60397549024	R-CA-MSD-2	EPA 904.0	500377		
60397549001	R-P-10S	SM 2320B	782418		
60397549002	R-P-16S	SM 2320B	782418		
60397549003	R-CA-FB-1	SM 2320B	782418		
60397549004	R-CA-FB-2	SM 2320B	782418		
60397549005	R-P-05S	SM 2320B	782420		
60397549006	R-P-17S	SM 2320B	782420		
60397549007	R-P-17I	SM 2320B	782420		
60397549008	R-P-17D	SM 2320B	782420		
60397549009	R-P-19S	SM 2320B	782420		
60397549010	R-P-19I	SM 2320B	782420		
60397549011	R-P-19D	SM 2320B	782420		
60397549012	R-P-21S	SM 2320B	782696		
60397549013	R-P-21I	SM 2320B	782420		
60397549014	R-P-21D	SM 2320B	782420		
60397549015	R-P-22S	SM 2320B	782420		
60397549016	R-P-22D	SM 2320B	782420		
60397549017	R-P-29S	SM 2320B	782696		
60397549018	R-P-29D	SM 2320B	782696		
60397549019	R-P-30S	SM 2320B	782696		
60397549020	R-P-31S	SM 2320B	782420		
60397549021	R-CA-DUP-1	SM 2320B	782420		
60397549022	R-CA-DUP-2	SM 2320B	782420		
60397549001	R-P-10S	SM 2540C	782149		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60397549002	R-P-16S	SM 2540C	782149		
60397549003	R-CA-FB-1	SM 2540C	782149		
60397549004	R-CA-FB-2	SM 2540C	782149		
60397549005	R-P-05S	SM 2540C	782575		
60397549006	R-P-17S	SM 2540C	782575		
60397549007	R-P-17I	SM 2540C	782575		
60397549008	R-P-17D	SM 2540C	782575		
60397549009	R-P-19S	SM 2540C	782851		
60397549010	R-P-19I	SM 2540C	782851		
60397549011	R-P-19D	SM 2540C	782851		
60397549012	R-P-21S	SM 2540C	782851		
60397549013	R-P-21I	SM 2540C	782575		
60397549014	R-P-21D	SM 2540C	782575		
60397549015	R-P-22S	SM 2540C	782575		
60397549016	R-P-22D	SM 2540C	782575		
60397549017	R-P-29S	SM 2540C	782851		
60397549018	R-P-29D	SM 2540C	782851		
60397549019	R-P-30S	SM 2540C	782851		
60397549020	R-P-31S	SM 2540C	782575		
60397549021	R-CA-DUP-1	SM 2540C	782575		
60397549022	R-CA-DUP-2	SM 2540C	782575		
60397549001	R-P-10S	SM 3500-Fe B#4	784653		
60397549002	R-P-16S	SM 3500-Fe B#4	784653		
60397549003	R-CA-FB-1	SM 3500-Fe B#4	784653		
60397549004	R-CA-FB-2	SM 3500-Fe B#4	784653		
60397549005	R-P-05S	SM 3500-Fe B#4	784651		
60397549006	R-P-17S	SM 3500-Fe B#4	784651		
60397549007	R-P-17I	SM 3500-Fe B#4	784651		
60397549008	R-P-17D	SM 3500-Fe B#4	784651		
60397549009	R-P-19S	SM 3500-Fe B#4	784651		
60397549010	R-P-19I	SM 3500-Fe B#4	784651		
60397549011	R-P-19D	SM 3500-Fe B#4	784651		
60397549012	R-P-21S	SM 3500-Fe B#4	784651		
60397549013	R-P-21I	SM 3500-Fe B#4	784651		
60397549014	R-P-21D	SM 3500-Fe B#4	784651		
60397549015	R-P-22S	SM 3500-Fe B#4	784651		
60397549016	R-P-22D	SM 3500-Fe B#4	784651		
60397549017	R-P-29S	SM 3500-Fe B#4	784651		
60397549018	R-P-29D	SM 3500-Fe B#4	784651		
60397549019	R-P-30S	SM 3500-Fe B#4	784653		
60397549020	R-P-31S	SM 3500-Fe B#4	784653		
60397549021	R-CA-DUP-1	SM 3500-Fe B#4	784653		
60397549022	R-CA-DUP-2	SM 3500-Fe B#4	784653		
60397549001	R-P-10S	SM 3500-Fe B#4	782077		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60397549

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60397549002	R-P-16S	SM 3500-Fe B#4	782077		
60397549003	R-CA-FB-1	SM 3500-Fe B#4	782077		
60397549004	R-CA-FB-2	SM 3500-Fe B#4	782077		
60397549005	R-P-05S	SM 3500-Fe B#4	782776		
60397549006	R-P-17S	SM 3500-Fe B#4	782776		
60397549007	R-P-17I	SM 3500-Fe B#4	782776		
60397549008	R-P-17D	SM 3500-Fe B#4	782776		
60397549009	R-P-19S	SM 3500-Fe B#4	782776		
60397549010	R-P-19I	SM 3500-Fe B#4	782776		
60397549011	R-P-19D	SM 3500-Fe B#4	782776		
60397549012	R-P-21S	SM 3500-Fe B#4	782777		
60397549013	R-P-21I	SM 3500-Fe B#4	782776		
60397549014	R-P-21D	SM 3500-Fe B#4	782776		
60397549015	R-P-22S	SM 3500-Fe B#4	782776		
60397549016	R-P-22D	SM 3500-Fe B#4	782776		
60397549017	R-P-29S	SM 3500-Fe B#4	782776		
60397549018	R-P-29D	SM 3500-Fe B#4	782777		
60397549019	R-P-30S	SM 3500-Fe B#4	782777		
60397549020	R-P-31S	SM 3500-Fe B#4	782776		
60397549021	R-CA-DUP-1	SM 3500-Fe B#4	782776		
60397549022	R-CA-DUP-2	SM 3500-Fe B#4	782776		
60397549001	R-P-10S	SM 4500-S-2 D	781332		
60397549002	R-P-16S	SM 4500-S-2 D	781332		
60397549003	R-CA-FB-1	SM 4500-S-2 D	781332		
60397549004	R-CA-FB-2	SM 4500-S-2 D	781332		
60397549005	R-P-05S	SM 4500-S-2 D	782478		
60397549006	R-P-17S	SM 4500-S-2 D	782478		
60397549007	R-P-17I	SM 4500-S-2 D	782478		
60397549008	R-P-17D	SM 4500-S-2 D	782478		
60397549009	R-P-19S	SM 4500-S-2 D	782478		
60397549010	R-P-19I	SM 4500-S-2 D	782478		
60397549011	R-P-19D	SM 4500-S-2 D	782478		
60397549012	R-P-21S	SM 4500-S-2 D	782765		
60397549013	R-P-21I	SM 4500-S-2 D	782478		
60397549014	R-P-21D	SM 4500-S-2 D	782478		
60397549015	R-P-22S	SM 4500-S-2 D	782478		
60397549016	R-P-22D	SM 4500-S-2 D	782478		
60397549017	R-P-29S	SM 4500-S-2 D	782765		
60397549018	R-P-29D	SM 4500-S-2 D	782765		
60397549019	R-P-30S	SM 4500-S-2 D	782765		
60397549020	R-P-31S	SM 4500-S-2 D	782478		
60397549021	R-CA-DUP-1	SM 4500-S-2 D	782478		
60397549022	R-CA-DUP-2	SM 4500-S-2 D	782478		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN RIEC RCPA-CA

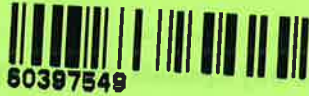
Pace Project No.: 60397549

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60397549001	R-P-10S	EPA 300.0	783933		
60397549002	R-P-16S	EPA 300.0	783933		
60397549003	R-CA-FB-1	EPA 300.0	783933		
60397549004	R-CA-FB-2	EPA 300.0	783933		
60397549005	R-P-05S	EPA 300.0	783678		
60397549006	R-P-17S	EPA 300.0	783678		
60397549007	R-P-17I	EPA 300.0	783678		
60397549008	R-P-17D	EPA 300.0	783929		
60397549009	R-P-19S	EPA 300.0	783929		
60397549010	R-P-19I	EPA 300.0	783929		
60397549011	R-P-19D	EPA 300.0	783929		
60397549012	R-P-21S	EPA 300.0	783929		
60397549013	R-P-21I	EPA 300.0	783929		
60397549014	R-P-21D	EPA 300.0	783929		
60397549015	R-P-22S	EPA 300.0	783929		
60397549016	R-P-22D	EPA 300.0	783929		
60397549017	R-P-29S	EPA 300.0	783929		
60397549018	R-P-29D	EPA 300.0	783929		
60397549019	R-P-30S	EPA 300.0	783929		
60397549020	R-P-31S	EPA 300.0	783929		
60397549021	R-CA-DUP-1	EPA 300.0	783929		
60397549022	R-CA-DUP-2	EPA 300.0	783929		

REPORT OF LABORATORY ANALYSIS

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WO#: 60397549



DC#_Title: ENV-FRM-LENE-0009_Sample Con

Revision: 2

Effective Date: 01/12/2022

Issued By: Lenexa

Client Name: Golden

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: T301 Type of Ice: Wet Blue None

Cooler Temperature (°C): As-read 2.7/2.1 Corr. Factor -0.2 Corrected 1.7/1.1/1.4

Date and initials of person examining contents: 4/13/22

Temperature should be above freezing to 6°C 12.4 -1.0

Chain of Custody present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Chain of Custody relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples arrived within holding time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Short Hold Time analyses (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Rush Turn Around Time requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Sufficient volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Correct containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Pace containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Filtered volume received for dissolved tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Sample labels match COC: Date / time / ID / analyses	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples contain multiple phases? Matrix: <u>WT</u>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Containers requiring pH preservation in compliance? (HNO ₃ , H ₂ SO ₄ , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> 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)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Potassium iodide test strip turns blue/purple? (Preserve)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Headspace in VOA vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Samples from USDA Regulated Area: State:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> 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: _____



CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: 1 of 2

Section A Required Client Information: Company: Golder Associates Report To: Jeffrey Ingram

Section B Required Project Information: Report To: Jeffrey Ingram Copy To: Eric Schnieder, Ryan Feldman Address: 13515 Barrett Parkway Dr., Ste 260 Ballwin, MO 63021

Section C Invoice Information: Attention: Company Name: Golder Associates Inc Regulatory Agency NPDES [] GROUND WATER [] DRINKING WATER []

Main analytical data table with columns for Item #, Matrix Codes, Sample ID, Preservatives, Analysis Test, Date, Time, and Sample Conditions. Includes handwritten entries for samples R-P055 to R-P21D.

Section D Required Client Information: SAMPLE ID (A-Z, 0-9 / - / -) Sample IDs MUST BE UNIQUE. SAMPNER NAME AND SIGNATURE: Eric Schnieder. DATE SIGNED: 4/12/22



CHAIN-OF-CUSTODY / Analytical Request Document

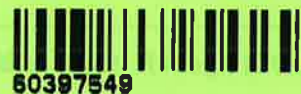
The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A Required Client Information: **Section B** Required Project Information: **Section C** Invoice Information:

Company: Golder Associates	Report To: Jeffrey Ingram	Attention: Eric Schnieder, Ryan Feidman	Company Name: Golder Associates Inc	REGULATORY AGENCY
Address: 13515 Barrett Parkway Dr., Ste 260 Ballwin, MO 63021	Copy To: Eric Schnieder, Ryan Feidman	Address: Eric Schnieder, Ryan Feidman	Company Name: Golder Associates Inc	NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER
Email To: jeffrey_ingram@golder.com	Purchase Order No.: COC #6	Address: Eric Schnieder, Ryan Feidman	Company Name: Golder Associates Inc	UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER <input type="checkbox"/>
Phone: 636-724-9191	Project Name: Ameren Rush Island EC RCPA-CA	Address: Eric Schnieder, Ryan Feidman	Company Name: Golder Associates Inc	Site Location MO
Requested Due Date/TAT: Standard	Project Number: 153140602.0002A	Address: Eric Schnieder, Ryan Feidman	Company Name: Golder Associates Inc	STATE: MO

ITEM #	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 W/P AR W/P AR OT OT TS TS	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives H ₂ SO ₄ HNO ₃ HCl NaOH Na ₂ S ₂ O ₃ Methanol Other	Analysis Test Chloride/Fluoride/Sulfate App III and Cat/An Metals Alkalinity TDS Appendix IV Metals ** Mercury Radium 226 Radium 226 Ferrous/Ferric Iron SM4500-S2D Sulfide	Requested Analysis Filtered (Y/N)	Temp In °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)	
					COMPOSITE START	COMPOSITE END/GRAB										DATE
1	R-P22S		WT	G												
2	R-P22D		WT	G												
3	R-P29S		WT	G												
4	R-P29D		WT	G												
5	R-P30S		WT	G												
6	R-P31S		WT	G												
7	R-CA-DUP-1		WT	G												
8	R-CA-DUP-2		WT	G												
9	R-CA-FB-1		WT	G												
10	R-CA-FB-2		WT	G												
11	R-CA-MS-1		WT	G												
12	R-CA-MSD-2		WT	G												

RELIQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
<i>[Signature]</i>	4/12/22	1815	<i>[Signature]</i>	4/13	0354	1-7 Y 1-1 Y 1-4 Y
ADDITIONAL COMMENTS						
*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, Ti						
SAMPLER NAME AND SIGNATURE						
PRINT Name of SAMPLER: <i>Eric Schnieder</i>						
SIGNATURE of SAMPLER: <i>[Signature]</i>						
DATE Signed (MM/DD/YY): <i>04/12/22</i>						



DC#_Title: ENV-FRM-LENE-0009_Sample Con

Revision: 2

Effective Date: 01/12/2022

Issued By: Lenexa

Client Name: Goldner

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: T 301 Type of Ice: Wet Blue None

Cooler Temperature (°C): 2.1/5.0/2.8/1.5 As-read 3.7/13.2/12.3/14.2 Corr. Factor -1.0 Corrected 1.1/4.0/1.8/0.5 Date and initials of person examining contents: 2.7/12.2/11.3/13.2 pmj/19/22

Chain of Custody present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Chain of Custody relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples arrived within holding time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Short Hold Time analyses (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Rush Turn Around Time requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Sufficient volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Correct containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Pace containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Filtered volume received for dissolved tests?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Sample labels match COC: Date / time / ID / analyses	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples contain multiple phases? Matrix: <u>WT</u>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Containers requiring pH preservation in compliance? (HNO ₃ , H ₂ SO ₄ , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> 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)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Potassium iodide test strip turns blue/purple? (Preserve)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Headspace in VOA vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Samples from USDA Regulated Area: State:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	

LOT#: 55192/55193

Client Notification/ Resolution:

Copy COC to Client? Y / N

Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____

Date: _____

CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	Golder Associates	Report To:	Jeffrey Ingram	Attention:	
Address:	13515 Barrett Parkway Dr., Ste 260 Ballwin, MO 63021	Copy To:	Eric Schmieder, Ryan Feldman	Company Name:	Golder Associates Inc
Email To:	jeffrey_ingram@golder.com	Purchase Order No.:	COC #6	Address:	
Phone:	636-724-9191	Project Name:	Ameren Rush Island EC RC/PA-CA	Pace Quote Reference:	
Requested Due Date/TAT:	Standard	Project Number:	153140602.0002A	Pace Project Manager:	Jamie Church
			REGULATORY AGENCY		
			NPDES <input type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER		
			UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER <input type="checkbox"/>		
Site Location			MO		
STATE:					

ITEM #	Section D. Required Client Information		Valid Matrix Codes		MATRIX CODE (see valid codes to left)		SAMPLE TYPE (G=GRAB C=COMP)		COLLECTED		PRESERVATIVES		Requested Analysis Filtered (Y/N)		Residual Chlorine (Y/N)												
	Sample ID (A-Z, 0-9 / -)	Sample IDs MUST BE UNIQUE	MATRIX	CODE	DATE	TIME	DATE	TIME	DATE	TIME	DATE	TIME	DATE	TIME		DATE	TIME										
					COMPOSITE START	COMPOSITE END/GRAB	COMPOSITE START	COMPOSITE END/GRAB	DATE	TIME	DATE	TIME	DATE	TIME		DATE	TIME										
1	R-P05S		WT	G			4-15-22	1230						X	X	X	X	X	X	X	X	X	X	X	X		
2	R-P10S		WT	G																							
3	R-P16S		WT	G																							
4	R-P17S		WT	G																							
5	R-P17I		WT	G																							
6	R-P17D		WT	G																							
7	R-P19S		WT	G																							
8	R-P-19I		WT	G																							
9	R-P19D		WT	G																							
10	R-P21S		WT	G																							
11	R-P21I		WT	G																							
12	R-P21D		WT	G																							

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
<i>[Signature]</i>	4/15/22	1655	<i>[Signature]</i>	4/16	0447
				12-2	N
					Y
					Y
					Y

ADDITIONAL COMMENTS

*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

Temp in °C: _____

Received on (Y/N): _____

Cooler (Y/N): _____

Custody Sealed (Y/N): _____

Samples Intact (Y/N): _____

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Grant Morey
 SIGNATURE of SAMPLER: *[Signature]*

DATE Signed (MM/DD/YYYY): 04/15/22

CHAIN-OF-CUSTODY / Analytical Request Document

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



Section A Required Client Information:

Company: **Golder Associates**

Address: **13515 Barrett Parkway Dr., Ste 260
Ballwin, MO 63021**

Email To: **jeffrey.ingram@golder.com**

Phone: **636-724-9191** Fax: **636-724-9323**

Requested Due Date/TAT: **Standard**

Section B Required Project Information:

Report To: **Jeffrey Ingram**

Copy To: **Eric Schmieder, Ryan Feldman**

Address: **Eric Schmieder, Ryan Feldman
Golder Associates Inc**

Company Name: **Golder Associates Inc**

Project Name: **Ameren Rush Island EC RCPA-CA**

Purchase Order No.: **COC #6**

Project Number: **153140602.0002A**

Preservatives:

- Unpreserved
- H₂SO₄
- HNO₃
- HCl
- NaOH
- Na₂S₂O₃
- Methanol
- Other

Section C Invoice Information:

Page: **1** of **2**

Attention:

Company Name: **Golder Associates Inc**

Address: **Eric Schmieder, Ryan Feldman
Golder Associates Inc**

Site Location: **MO**

Requested Analysis Filtered (Y/N):

NPDES GROUND WATER DRINKING WATER

UST RCRA OTHER

State: **MO**

Section D Required Client Information

MATRIX CODE
 DRINKING WATER DW
 WASTE WATER WW
 PRODUCT P
 SOILSOLID SL
 OIL OL
 WP
 AR
 OT
 TS

VALID MATRIX CODES

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

ITEM #	MATRIX CODE	DATE	TIME	DATE	TIME	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	UNPRESERVED	H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₃	Methanol	Other	Analysis Test	Chloride/Fluoride/Sulfate	App III and Cat/An Metals	Alkalinity	TDS	Appendix IV Metals *	Mercury	Radium 226	Radium 226	Ferrous/Ferric Iron	SM4500-S2D Sulfide	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.			
1	R-P05S					WT G	G												X	X	X	X	X	X	X	X	X						
2	R-P10S					WT G	G																										
3	R-P16S					WT G	G																										
4	R-P17S	4/14/22	1022			WT G	G		6	2		3		1					X	X	X	X	X	X	X	X	X		60997549				
5	R-P17I					WT G	G																										
6	R-P17D					WT G	G																										
7	R-P19S					WT G	G																										
8	R-P19I					WT G	G																										
9	R-P19D					WT G	G																										
10	R-P21S					WT G	G																										
11	R-P21I					WT G	G																										
12	R-P21D	4-14-22	1427			WT G	G		6	2		3		1					X	X	X	X	X	X	X	X	X						

RELINQUISHED BY / AFFILIATION: *Eric Schmieder Golder* DATE: **04/15/22** TIME: **10:55**

ACCEPTED BY / AFFILIATION: *Grant Mory* DATE: **4/16** TIME: **0447**

RECEIVED ON: **4-11-22**

COOLER SEALED: **Y**

ICE (Y/N): **Y**

RESIDUAL CHLORINE (Y/N): **Y**

SAMPLE CONDITIONS: **Y**

SAMPLES INTACT (Y/N): **Y**

DATE SIGNED (MM/DD/YY): **04/15/22**

PRINT Name of SAMPLER: *Eric Schmieder*

SIGNATURE of SAMPLER: *Eric Schmieder*

SAMPLER NAME AND SIGNATURE: *Grant Mory*

PRINT Name of SAMPLER: *Grant Mory*

SIGNATURE of SAMPLER: *Grant Mory*



MEMORANDUM

DATE January 26, 2023

Project No. 153140604.0002

TO Project File
WSP USA Inc.

CC Amanda Derhake, Jeff Ingram

FROM Rahel Pommerenke

EMAIL rahel.pommerenke@wsp.com

DATA VALIDATION SUMMARY, RUSH ISLAND ENERGY CENTER – RCPA-CA – CORRECTIVE ACTION SAMPLING APRIL 2022 - DATA PACKAGE 60397549REV1 (2023-01-12)

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 MDL and the PQL the results were recorded at the detection value and qualified as estimates (J).
- When duplicate criterion was not met, the associated sample result was qualified as an estimate (J for detects, UJ for non-detects).
- When a compound was analyzed outside of hold time, associated sample results were qualified as estimates (J for detects, UJ for non-detects).

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Company Name: WSP USA Inc.
 Project Name: Ameren - RIEC - RCPA-CA
 Reviewer: R. Pommerenke

Project Manager: J. Ingram
 Project Number: GL153140604.0002
 Validation Date: 1/26/2023

Laboratory: Pace Analytical

SDG #: 60397549rev1(2023-01-12)

Analytical Method (type and no.): EPA 200.7/200.8/7470 (Total Metals); SM2320B (Alkalinity); SM2540C (TDS); EPA 300.0 (Anions); EPA 903.1/904.0 (Radium 226/228)

Matrix: Air Soil/Sed. Water Waste SM 3500-FE (Ferric Iron); SM 4500-S-2 (Sulfide)

Sample Names R-CA-DUP-1, R-CA-DUP-2, R-CA-FB-1, R-CA-FB-2, R-P-05S, R-P-10S, R-P-16S, R-P-17D, R-P-17I, R-P-17S, R-P-19D, R-P-19I, R-P-19S, R-P-21D, R-P-21I, R-P-21S, R-P-22D, R-P-22S, R-P-29D, R-P-29S, R-P-30S, R-P-31S

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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>4/12/2022 - 4/15/2022</u>
b) Sampling team indicated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
c) Sample location noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
d) Sample depth indicated (Soils)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u></u>
e) Sample type indicated (grab/composite)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Grab</u>
f) Field QC noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>See Notes</u>
g) Field parameters collected (note types)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>pH, Sp.Cond, ORP, Temp, DO, Turb</u>
h) Field Calibration within control limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
i) Notations of unacceptable field conditions/performances from field logs or field notes?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u></u>
j) Does the laboratory narrative indicate deficiencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u></u>
Note Deficiencies: <u></u>				
<u></u>				
<u></u>				

Chain-of-Custody (COC)	YES	NO	NA	COMMENTS
a) Was the COC properly completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
b) Was the COC signed by both field and laboratory personnel?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
c) Were samples received in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>

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

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Blanks	YES	NO	NA	COMMENTS
a) Were analytes detected in the method blank(s)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See Notes
b) Were analytes detected in the field blank(s)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See Notes
c) Were analytes detected in the equipment blank(s)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
d) Were analytes detected in the trip blank(s)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Laboratory Control Sample (LCS)	YES	NO	NA	COMMENTS
a) Was a LCS analyzed once per SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
b) Were the proper analytes included in the LCS?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
c) Was the LCS accuracy criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Duplicates	YES	NO	NA	COMMENTS
a) Were field duplicates collected (note original and duplicate sample names)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
b) Were field dup. precision criteria met (note RPD)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Notes
c) Were lab duplicates analyzed (note original and duplicate samples)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
d) Were lab dup. precision criteria met (note RPD)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See Notes

Blind Standards	YES	NO	NA	COMMENTS
a) Was a blind standard used (indicate name, analytes included and concentrations)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
b) Was the %D within control limits?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Matrix Spike/Matrix Spike Duplicate (MS/MSD)	YES	NO	NA	COMMENTS
a) Was MS accuracy criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Recovery could not be calculated since sample contained high concentration of analyte?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
b) Was MSD accuracy criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Recovery could not be calculated since sample contained high concentration of analyte?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
c) Were MS/MSD precision criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Comments/Notes:

R-P-17S, R-P-17I, R-P-17D, R-P-19S, R-P-19I, R-P-19D, R-P-21S collection date updated from 4/15/2022 to 4/14/2022

Total Dissolved Solids and iron analyzed out of hold time: qualified as estimate.

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

Chloride and sulfate were analyzed at a dilution in several samples, no qualification necessary.

QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

Comments/Notes:

Blanks:

MB 3120956: Chromium (0.82J). Associated with results -001 through -004, -014 through -022. Results <RL reported at RL and qualified as estimate. NDs not qualified. Results >RL but <10x blank qualified as estimates.

MB 3126817: Chloride (0.61J). Associated with results -005 through -007. Results >RL and 10x blank not qualified.

R-CA-FB-1 @ R-P-10S: Magnesium (14.2J), TDS (11.5), ferric iron (0.0044J), chloride (0.58J), radium-226 (0.128 ± 0.196) Results >RL and 10x blank not qualified. ND results not qualified. No qualification necessary.

R-CA-FB-2 @ R-P-16S: TDS (11.5), ferric iron (0.0056J), chloride (0.57J). Results >RL and 10x blank not qualified. Results >RL but <10x blank qualified as estimates.

Duplicates:

R-CA-DUP-1 @ R-P-21D: Fluoride detected in parent sample, ND in dup; RPD exceeds limit (20%) for chromium (41.8%), chloride (141.2%), sulfate (137.5%), alkalinity (26.4%), TDS (73.8%), and Radium-228 (29.3%).

R-CA-DUP-2 @ R-P-22S: Antimony ND in parent sample, detected in dup; RPD exceeds limit (20%) for cobalt (51.0%), iron (142.6%), arsenic (157.5%), cadmium (97.9%), chromium (30.2%), selenium (130.6%), ferric iron (143.2%), and ferrous iron (107.7%).

Lab Sample Duplicate 3119402: RPD exceeds limit (10%) for TDS (11%). Duplicate performed on unrelated sample, no qualification necessary.

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason
R-P-10S	Ferrous Iron	0.060	UJ	Analyzed outside of hold time, non-detect
R-P-16S	"	0.060	UJ	"
R-CA-FB-1	"	0.060	UJ	"
R-CA-FB-2	"	0.060	UJ	"
R-P-30S	"	0.060	UJ	"
R-P-05S	"	2.2	J	Analyzed outside of hold time
R-P-17S	"	0.74	J	"
R-P-17I	"	0.41	J	"
R-P-17D	"	0.89	J	"
R-P-19S	"	0.73	J	"
R-P-19I	"	0.28	J	"
R-P-19D	"	1.6	J	"
R-P-21S	"	0.76	J	"
R-P-21I	"	0.51	J	"
R-P-21D	"	1.3	J	"
R-P-22S	"	0.21	J	Analyzed outside of hold time; dup RPD exceeds limit
R-P-22D	"	2.8	J	Analyzed outside of hold time
R-P-29S	"	0.71	J	"
R-P-29D	"	0.088	J	"
R-P-31S	"	0.28	J	"
R-CA-DUP-1	"	1.3	J	"
R-CA-DUP-2	"	0.70	J	Analyzed outside of hold time; dup RPD exceeds limit
R-P-10S	Chromium	1.0	UJ	Detected in MB, RL > result
R-P-21D	"	1.0	UJ	Detected in MB, RL > result; dup RPD exceeds limit
R-P-22S	"	1.0	UJ	"
R-P-29S	"	1.0	UJ	Detected in MB, RL > result
R-P-31S	"	1.0	UJ	"
R-CA-DUP-1	"	1.0	UJ	Detected in MB, RL > result; dup RPD exceeds limit
R-CA-DUP-2	"	1.0	UJ	"
R-P-22D	"	1.5	J	Detected in MB, 10x blank > result > RL
R-P-16S	Chloride	1.4	J	Detected in FB, 10x blank > result > RL
R-P-21D	Fluoride	0.89	J	Detected in parent, ND in dup
"	Chloride	661	J	Dup RPD exceeds limit
"	Sulfate	167	J	"

QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason
R-P-21D	Alkalinity	243	J	Dup RPD exceeds limit
"	TDS	1220	J	"
"	Radium-228	0.886 ± 0.404	J	"
R-CA-DUP-1	Fluoride	0.12	UJ	Detected in parent, ND in dup
	Chloride	114	J	Dup RPD exceeds limit
"	Sulfate	30.9	J	
"	Alkalinity	317	J	"
"	TDS	562	J	"
"	Radium-228	1.19 ± 0.488	J	"
R-P-22S	Antimony	0.12	UJ	ND in parent, detected in dup
"	Cobalt	1.9	J	Dup RPD exceeds limit
"	Iron	7000	J	"
"	Arsenic	8.3	J	"
"	Cadmium	0.12	J	"
"	Selenium	0.42	J	"
"	Ferric Iron	6.8	J	"
R-CA-DUP-2	Antimony	0.12	J	ND in parent, detected in dup
"	Cobalt	3.2	J	Dup RPD exceeds limit
"	Iron	41800	J	"
"	Arsenic	69.8	J	"
"	Cadmium	0.35	J	"
"	Selenium	2.0	J	"
"	Ferric Iron	41.1	J	"
R-P-19D	Total Dissolved Solids	595	J	Analyzed outside of hold time
R-P-19I	"	1140	J	"
R-P-19S	"	474	J	"
R-P-21S	"	667	J	"

Signature: _____  _____

Date: 1/26/2023

June 17, 2022

Jeffrey Ingram
Golder Associates
701 Emerson Road, Suite 250
Saint Louis, MO 63141

RE: Project: AMEREN VERIFICATION RCPA
Pace Project No.: 60402481

Dear Jeffrey Ingram:

Enclosed are the analytical results for sample(s) received by the laboratory on June 09, 2022. 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: Ryan Feldmann, Golder
Mark Haddock, Golder Associates
Eric Schneider, Golder Associates
Brendan Talbert, Golder Associates



REPORT OF LABORATORY ANALYSIS

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

CERTIFICATIONS

Project: AMEREN VERIFICATION RCPA

Pace Project No.: 60402481

Pace Analytical Services Kansas

9608 Loiret Boulevard, Lenexa, KS 66219

Missouri Inorganic Drinking Water Certification #: 10090

Arkansas Drinking Water

Arkansas Certification #: 20-020-0

Arkansas Drinking Water

Illinois Certification #: 2000302021-3

Iowa Certification #: 118

Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055

Nevada Certification #: KS000212020-2

Oklahoma Certification #: 9205/9935

Florida: Cert E871149 SEKS WET

Texas Certification #: T104704407-21-15

Utah Certification #: KS000212019-9

Illinois Certification #: 004592

Kansas Field Laboratory Accreditation: # E-92587

Missouri SEKS Micro Certification: 10070

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: AMEREN VERIFICATION RCPA

Pace Project No.: 60402481

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60402481001	R-MW-3	Water	06/08/22 10:41	06/09/22 04:24
60402481002	R-RCPA-DUP-1	Water	06/08/22 08:00	06/09/22 04:24
60402481003	R-RCPA-FB-1	Water	06/08/22 10:51	06/09/22 04:24

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: AMEREN VERIFICATION RCPA

Pace Project No.: 60402481

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60402481001	R-MW-3	SM 2540C	BLA	1	PASI-K
60402481002	R-RCPA-DUP-1	SM 2540C	BLA	1	PASI-K
60402481003	R-RCPA-FB-1	SM 2540C	BLA	1	PASI-K

PASI-K = Pace Analytical Services - Kansas City

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN VERIFICATION RCPA

Pace Project No.: 60402481

Sample: R-MW-3 **Lab ID: 60402481001** Collected: 06/08/22 10:41 Received: 06/09/22 04:24 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	901	mg/L	10.0	10.0	1		06/15/22 15:21		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN VERIFICATION RCPA

Pace Project No.: 60402481

Sample: R-RCPA-DUP-1 **Lab ID: 60402481002** Collected: 06/08/22 08:00 Received: 06/09/22 04:24 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	921	mg/L	10.0	10.0	1		06/15/22 15:21		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN VERIFICATION RCPA

Pace Project No.: 60402481

Sample: R-RCPA-FB-1 **Lab ID: 60402481003** Collected: 06/08/22 10:51 Received: 06/09/22 04:24 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
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		06/15/22 15:21		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN VERIFICATION RCPA

Pace Project No.: 60402481

QC Batch:	792479	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60402481001, 60402481002, 60402481003

METHOD BLANK: 3157338 Matrix: Water

Associated Lab Samples: 60402481001, 60402481002, 60402481003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	06/15/22 15:20	

LABORATORY CONTROL SAMPLE: 3157339

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1080	108	80-120	

SAMPLE DUPLICATE: 3157340

Parameter	Units	60402702001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	285000	288000	1	10	H1

SAMPLE DUPLICATE: 3157341

Parameter	Units	60402481001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	901	895	1	10	

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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QUALIFIERS

Project: AMEREN VERIFICATION RCPA

Pace Project No.: 60402481

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

H1 Analysis conducted outside the EPA method holding time.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN VERIFICATION RCPA

Pace Project No.: 60402481

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60402481001	R-MW-3	SM 2540C	792479		
60402481002	R-RCPA-DUP-1	SM 2540C	792479		
60402481003	R-RCPA-FB-1	SM 2540C	792479		

REPORT OF LABORATORY ANALYSIS

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WO#: 60402481



60402481



DC#_ Title: ENV-FRM-LENE-0009_Sample C

Revision: 2

Effective Date: 01/12/2022

Issued By: Lenexa

Client Name: Golden Associates

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: T301 Type of Ice: Wet Blue None

Cooler Temperature (°C): As-read 1.4 Corr. Factor -1.0 Corrected 0.4

Date and initials of person examining contents:
P 6/9/22

Temperature should be above freezing to 6°C

Chain of Custody present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Chain of Custody relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples arrived within holding time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Short Hold Time analyses (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Rush Turn Around Time requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Sufficient volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Correct containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Pace containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Filtered volume received for dissolved tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Sample labels match COC: Date / time / ID / analyses	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples contain multiple phases? Matrix: <u>WT</u>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Containers requiring pH preservation in compliance? (HNO ₃ , H ₂ SO ₄ , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) LOT#:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> 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)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Potassium iodide test strip turns blue/purple? (Preserve)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Headspace in VOA vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Samples from USDA Regulated Area: State:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> 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: _____



CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A Required Client Information: Company: Golder Associates; Section B Required Project Information: Report To: Jeffrey Ingram; Section C Invoice Information: Attention: Eric Schnieder, Ryan Feldman, Brendan Talbert; Regulatory Agency: NPDES, UST, RCRA, OTHER; Site Location: MO

Main table with 12 rows (ITEM # 1-12) and multiple columns including Valid Matrix Codes, Matrix Code, Sample ID, Date/Time, Matrix Code, Sample Type, Matrix Code, Relinquished By/Affiliation, Date, Time, Accepted By/Affiliation, Date, Time, Sample Conditions, and Residual Chlorine.

*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.

MEMORANDUM

DATE June 22, 2022

Project No. 153140604.0002

TO Project File
Golder Associates

CC Amanda Derhake, Jeff Ingram

FROM Annie Muehlfarth

EMAIL ann.muehlfarth@wsp.com

DATA VALIDATION SUMMARY, RUSH ISLAND ENERGY CENTER – RCPA – VERIFICATION SAMPLING - DATA PACKAGE 60402481

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

- None.

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Company Name: Golder Associates USA Inc / WSP
 Project Name: Ameren- RIEC - RCPA VS
 Reviewer: A. Muehlfarth

Project Manager: J. Ingram
 Project Number: 153140604.0002
 Validation Date: 6/22/2022

Laboratory: Pace Analytical Services

SDG #: 60402481

Analytical Method (type and no.): SM2540C (TDS)

Matrix: Air Soil/Sed. Water Waste

Sample Names R-MW-3, R-RCPA-DUP-1, R-RCPA-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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>6/8/2022</u>
b) Sampling team indicated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>GTM</u>
c) Sample location noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
d) Sample depth indicated (Soils)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u></u>
e) Sample type indicated (grab/composite)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Grab</u>
f) Field QC noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>See Notes</u>
g) Field parameters collected (note types)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>pH, Sp.Cond, ORP, Temp, DO, Turb</u>
h) Field Calibration within control limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
i) Notations of unacceptable field conditions/performances from field logs or field notes?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u></u>
j) Does the laboratory narrative indicate deficiencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u></u>

Note Deficiencies:

Chain-of-Custody (COC)	YES	NO	NA	COMMENTS
a) Was the COC properly completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
b) Was the COC signed by both field and laboratory personnel?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
c) Were samples received in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>

General (reference QAPP or Method)	YES	NO	NA	COMMENTS
a) Were hold times met for sample pretreatment?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
b) Were hold times met for sample analysis?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
c) Were the correct preservatives used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
d) Was the correct method used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
e) Were appropriate reporting limits achieved?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
f) Were any sample dilutions noted?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u></u>
g) Were any matrix problems noted?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u></u>

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Blanks	YES	NO	NA	COMMENTS
a) Were analytes detected in the method blank(s)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
b) Were analytes detected in the field blank(s)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	R-RCPA-FB-1 @ R-MW-3
c) Were analytes detected in the equipment blank(s)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
d) Were analytes detected in the trip blank(s)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Laboratory Control Sample (LCS)	YES	NO	NA	COMMENTS
a) Was a LCS analyzed once per SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
b) Were the proper analytes included in the LCS?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
c) Was the LCS accuracy criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Duplicates	YES	NO	NA	COMMENTS
a) Were field duplicates collected (note original and duplicate sample names)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	R-RCPA-DUP-1 @ R-MW-3
b) Were field dup. precision criteria met (note RPD)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Max RPD: 2.2% [<20%]
c) Were lab duplicates analyzed (note original and duplicate samples)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
d) Were lab dup. precision criteria met (note RPD)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Max RPD: 1% [<10%]

Blind Standards	YES	NO	NA	COMMENTS
a) Was a blind standard used (indicate name, analytes included and concentrations)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
b) Was the %D within control limits?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Matrix Spike/Matrix Spike Duplicate (MS/MSD)	YES	NO	NA	COMMENTS
a) Was MS accuracy criteria met?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Recovery could not be calculated since sample contained high concentration of analyte?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
b) Was MSD accuracy criteria met?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Recovery could not be calculated since sample contained high concentration of analyte?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
c) Were MS/MSD precision criteria met?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Comments/Notes:

QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason

Signature: _____ *Ann Marshall* _____

Date: 6/22/2022

November 30, 2022

Jeffrey Ingram
WSP Golder
701 Emerson Road
Suite 250
Saint Louis, MO 63141

RE: Project: AMEREN RIEC RCPA
Pace Project No.: 60414790

Dear Jeffrey Ingram:

Enclosed are the analytical results for sample(s) received by the laboratory between November 03, 2022 and November 05, 2022. 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: Mark Haddock, Golder Associates
Lisa Meyer, Ameren
Grant Morey, WSP Golder
Ann Muehlfarth, WSP Golder
Eric Schneider, WSP Golder



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: AMEREN RIEC RCPA

Pace Project No.: 60414790

Pace Analytical Services Pennsylvania

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601

ANAB DOD-ELAP Rad Accreditation #: L2417

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 04222CA

Colorado Certification #: PA01547

Connecticut Certification #: PH-0694

Delaware Certification

EPA Region 4 DW Rad

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Florida: Cert E871149 SEKS WET

Guam Certification

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas/TNI Certification #: E-10358

Kentucky Certification #: KY90133

KY WW Permit #: KY0098221

KY WW Permit #: KY0000221

Louisiana DHH/TNI Certification #: LA180012

Louisiana DEQ/TNI Certification #: 4086

Maine Certification #: 2017020

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 #: PA014572018-1

New Hampshire/TNI Certification #: 297617

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 #: PA200002-010

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: 02867

Texas/TNI Certification #: T104704188-17-3

Utah/TNI Certification #: PA014572017-9

USDA Soil Permit #: P330-17-00091

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

Wyoming Certification #: 8TMS-L

Pace Analytical Services Kansas

9608 Loiret Boulevard, Lenexa, KS 66219

Missouri Inorganic Drinking Water Certification #: 10090

Arkansas Drinking Water

Arkansas Certification #: 22-031-0

Illinois Certification #: 2000302021-3

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 #: T104704407-21-15

Utah Certification #: KS000212022-12

Illinois Certification #: 004592

Kansas Field Laboratory Accreditation: # E-92587

Missouri SEKS Micro Certification: 10070

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: AMEREN RIEC RCPA

Pace Project No.: 60414790

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60414790001	R-MW-2	Water	11/02/22 12:48	11/03/22 03:55
60414790002	R-MW-3	Water	11/01/22 11:35	11/03/22 03:55
60414790003	R-MW-4	Water	11/01/22 09:47	11/03/22 03:55
60414790004	R-MW-5	Water	11/01/22 10:53	11/03/22 03:55
60414790005	R-MW-6	Water	11/01/22 10:02	11/03/22 03:55
60414790006	R-MW-7(r)	Water	10/31/22 15:36	11/03/22 03:55
60414790007	R-DUP-1	Water	11/01/22 00:00	11/03/22 03:55
60414790008	R-FB-1	Water	11/01/22 10:12	11/03/22 03:55
60414790009	R-MS-1	Water	10/31/22 15:36	11/03/22 03:55
60414790010	R-MSD-1	Water	10/31/22 15:36	11/03/22 03:55
60414790011	R-MW-1	Water	11/03/22 16:00	11/05/22 05:00
60414790012	R-MW-B1	Water	11/03/22 12:00	11/05/22 05:00
60414790013	R-MW-B2	Water	11/03/22 10:25	11/05/22 05:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: AMEREN RIEC RCPA

Pace Project No.: 60414790

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60414790001	R-MW-2	EPA 200.7	JDS	11	PASI-K
		EPA 200.8	MRV	4	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	KJD	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
60414790002	R-MW-3	EPA 200.7	JDS	11	PASI-K
		EPA 200.8	MRV	4	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
60414790003	R-MW-4	EPA 200.7	JDS	11	PASI-K
		EPA 200.8	MRV	4	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
60414790004	R-MW-5	EPA 200.7	JDS	11	PASI-K
		EPA 200.8	MRV	4	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
60414790005	R-MW-6	EPA 200.7	JDS	11	PASI-K
		EPA 200.8	MRV	4	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
60414790006	R-MW-7(r)	EPA 200.7	JDS	11	PASI-K
		EPA 200.8	MRV	4	PASI-K

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SAMPLE ANALYTE COUNT

Project: AMEREN RIEC RCPA

Pace Project No.: 60414790

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60414790007	R-DUP-1	EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JDS	11	PASI-K
		EPA 200.8	MRV	4	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
60414790008	R-FB-1	SM 2540C	BLA	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JDS	11	PASI-K
		EPA 200.8	MRV	4	PASI-K
		EPA 903.1	CLM	1	PASI-PA
		EPA 904.0	JJS1	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
		EPA 903.1	CLM	1	PASI-PA
60414790009	R-MS-1	EPA 904.0	JJS1	1	PASI-PA
		EPA 903.1	CLM	1	PASI-PA
60414790010	R-MSD-1	EPA 904.0	JJS1	1	PASI-PA
60414790011	R-MW-1	EPA 200.7	JDS	11	PASI-K
		EPA 200.8	MRV	4	PASI-K
		EPA 903.1	GDH	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	KJD	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JDS	11	PASI-K
		EPA 200.8	MRV	4	PASI-K
		EPA 903.1	GDH	1	PASI-PA
60414790012	R-MW-B1	EPA 904.0	VAL	1	PASI-PA
		SM 2320B	SZ	1	PASI-K
		SM 2540C	KJD	1	PASI-K
		EPA 300.0	RKA	3	PASI-K

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SAMPLE ANALYTE COUNT

Project: AMEREN RIEC RCPA

Pace Project No.: 60414790

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60414790013	R-MW-B2	EPA 200.7	JDS	11	PASI-K
		EPA 200.8	MRV	4	PASI-K
		EPA 903.1	GDH	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	SZ	1	PASI-K
		SM 2540C	KJD	1	PASI-K
		EPA 300.0	RKA	3	PASI-K

PASI-K = Pace Analytical Services - Kansas City

PASI-PA = Pace Analytical Services - Greensburg

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA

Pace Project No.: 60414790

Sample: R-MW-2 **Lab ID: 60414790001** Collected: 11/02/22 12:48 Received: 11/03/22 03:55 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	10.7	ug/L	5.0	0.51	1	11/15/22 14:22	11/29/22 15:57	7440-39-3	
Boron	3350	ug/L	100	4.2	1	11/15/22 14:22	11/29/22 15:57	7440-42-8	
Calcium	9950	ug/L	200	33.7	1	11/15/22 14:22	11/29/22 15:57	7440-70-2	
Iron	76.7	ug/L	50.0	5.6	1	11/15/22 14:22	11/29/22 15:57	7439-89-6	
Lead	12.2	ug/L	10.0	8.6	1	11/15/22 14:22	11/29/22 15:57	7439-92-1	
Lithium	<5.6	ug/L	10.0	5.6	1	11/15/22 14:22	11/29/22 15:57	7439-93-2	
Magnesium	<27.1	ug/L	50.0	27.1	1	11/15/22 14:22	11/29/22 15:57	7439-95-4	
Manganese	1.6J	ug/L	5.0	0.24	1	11/15/22 14:22	11/29/22 15:57	7439-96-5	
Molybdenum	126	ug/L	20.0	0.90	1	11/15/22 14:22	11/29/22 15:57	7439-98-7	
Potassium	3280	ug/L	500	87.6	1	11/15/22 14:22	11/29/22 15:57	7440-09-7	
Sodium	232000	ug/L	500	73.2	1	11/15/22 14:22	11/29/22 15:57	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	3.3	ug/L	1.0	0.12	1	11/15/22 14:22	11/21/22 12:53	7440-36-0	
Arsenic	260	ug/L	3.0	0.42	3	11/15/22 14:22	11/21/22 13:46	7440-38-2	
Chromium	<0.94	ug/L	3.0	0.94	3	11/15/22 14:22	11/21/22 13:46	7440-47-3	D3
Selenium	2.1J	ug/L	3.0	0.55	3	11/15/22 14:22	11/21/22 13:46	7782-49-2	D3
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	227	mg/L	20.0	4.6	1		11/15/22 14:57		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	814	mg/L	10.0	10.0	1		11/08/22 14:50		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	24.1	mg/L	5.0	2.6	5		11/18/22 10:38	16887-00-6	B
Fluoride	0.98	mg/L	0.20	0.12	1		11/18/22 10:25	16984-48-8	
Sulfate	269	mg/L	50.0	27.5	50		11/18/22 10:51	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA

Pace Project No.: 60414790

Sample: R-MW-3 **Lab ID: 60414790002** Collected: 11/01/22 11:35 Received: 11/03/22 03:55 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	31.8	ug/L	5.0	0.51	1	11/15/22 14:22	11/29/22 15:59	7440-39-3	M1
Boron	14500	ug/L	100	4.2	1	11/15/22 14:22	11/29/22 15:59	7440-42-8	M1
Calcium	9220	ug/L	200	33.7	1	11/15/22 14:22	11/29/22 15:59	7440-70-2	M1
Iron	194	ug/L	50.0	5.6	1	11/15/22 14:22	11/29/22 15:59	7439-89-6	M1
Lead	<8.6	ug/L	10.0	8.6	1	11/15/22 14:22	11/29/22 15:59	7439-92-1	
Lithium	<5.6	ug/L	10.0	5.6	1	11/15/22 14:22	11/29/22 15:59	7439-93-2	
Magnesium	722	ug/L	50.0	27.1	1	11/15/22 14:22	11/29/22 15:59	7439-95-4	M1
Manganese	14.8	ug/L	5.0	0.24	1	11/15/22 14:22	11/29/22 15:59	7439-96-5	M1
Molybdenum	928	ug/L	20.0	0.90	1	11/15/22 14:22	11/29/22 15:59	7439-98-7	M1
Potassium	2440	ug/L	500	87.6	1	11/15/22 14:22	11/29/22 15:59	7440-09-7	M1
Sodium	268000	ug/L	500	73.2	1	11/15/22 14:22	11/29/22 15:59	7440-23-5	M1
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	11/15/22 14:22	11/21/22 12:56	7440-36-0	
Arsenic	35.4	ug/L	3.0	0.42	3	11/15/22 14:22	11/21/22 13:49	7440-38-2	M1
Chromium	<0.94	ug/L	3.0	0.94	3	11/15/22 14:22	11/21/22 13:49	7440-47-3	D3
Selenium	0.58J	ug/L	3.0	0.55	3	11/15/22 14:22	11/21/22 13:49	7782-49-2	D3
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	236	mg/L	20.0	4.6	1		11/14/22 14:19		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	855	mg/L	10.0	10.0	1		11/07/22 13:23		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	26.7	mg/L	2.0	1.1	2		11/18/22 11:45	16887-00-6	
Fluoride	1.1	mg/L	0.20	0.12	1		11/18/22 11:31	16984-48-8	
Sulfate	335	mg/L	20.0	11.0	20		11/18/22 11:58	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA

Pace Project No.: 60414790

Sample: R-MW-4 **Lab ID: 60414790003** Collected: 11/01/22 09:47 Received: 11/03/22 03:55 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	368	ug/L	5.0	0.51	1	11/15/22 14:22	11/29/22 16:01	7440-39-3	
Boron	2100	ug/L	100	4.2	1	11/15/22 14:22	11/29/22 16:01	7440-42-8	
Calcium	104000	ug/L	200	33.7	1	11/15/22 14:22	11/29/22 16:01	7440-70-2	
Iron	7690	ug/L	50.0	5.6	1	11/15/22 14:22	11/29/22 16:01	7439-89-6	
Lead	<8.6	ug/L	10.0	8.6	1	11/15/22 14:22	11/29/22 16:01	7439-92-1	
Lithium	34.3	ug/L	10.0	5.6	1	11/15/22 14:22	11/29/22 16:01	7439-93-2	
Magnesium	21100	ug/L	50.0	27.1	1	11/15/22 14:22	11/29/22 16:01	7439-95-4	
Manganese	417	ug/L	5.0	0.24	1	11/15/22 14:22	11/29/22 16:01	7439-96-5	
Molybdenum	49.3	ug/L	20.0	0.90	1	11/15/22 14:22	11/29/22 16:01	7439-98-7	
Potassium	5590	ug/L	500	87.6	1	11/15/22 14:22	11/29/22 16:01	7440-09-7	
Sodium	39800	ug/L	500	73.2	1	11/15/22 14:22	11/29/22 16:01	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	11/15/22 14:22	11/21/22 12:59	7440-36-0	
Arsenic	14.5	ug/L	1.0	0.14	1	11/15/22 14:22	11/21/22 12:59	7440-38-2	
Chromium	<0.31	ug/L	1.0	0.31	1	11/15/22 14:22	11/21/22 12:59	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/15/22 14:22	11/21/22 12:59	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	410	mg/L	20.0	4.6	1		11/14/22 14:19		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	461	mg/L	10.0	10.0	1		11/07/22 13:23		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	14.4	mg/L	1.0	0.53	1		11/18/22 12:11	16887-00-6	
Fluoride	0.34	mg/L	0.20	0.12	1		11/18/22 12:11	16984-48-8	
Sulfate	9.7	mg/L	1.0	0.55	1		11/18/22 12:11	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA

Pace Project No.: 60414790

Sample: R-MW-5 **Lab ID: 60414790004** Collected: 11/01/22 10:53 Received: 11/03/22 03:55 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	337	ug/L	5.0	0.51	1	11/15/22 14:22	11/29/22 16:03	7440-39-3	
Boron	57.4J	ug/L	100	4.2	1	11/15/22 14:22	11/29/22 16:03	7440-42-8	
Calcium	118000	ug/L	200	33.7	1	11/15/22 14:22	11/29/22 16:03	7440-70-2	
Iron	8550	ug/L	50.0	5.6	1	11/15/22 14:22	11/29/22 16:03	7439-89-6	
Lead	<8.6	ug/L	10.0	8.6	1	11/15/22 14:22	11/29/22 16:03	7439-92-1	
Lithium	<5.6	ug/L	10.0	5.6	1	11/15/22 14:22	11/29/22 16:03	7439-93-2	
Magnesium	16100	ug/L	50.0	27.1	1	11/15/22 14:22	11/29/22 16:03	7439-95-4	
Manganese	333	ug/L	5.0	0.24	1	11/15/22 14:22	11/29/22 16:03	7439-96-5	
Molybdenum	<0.90	ug/L	20.0	0.90	1	11/15/22 14:22	11/29/22 16:03	7439-98-7	
Potassium	1950	ug/L	500	87.6	1	11/15/22 14:22	11/29/22 16:03	7440-09-7	
Sodium	4360	ug/L	500	73.2	1	11/15/22 14:22	11/29/22 16:03	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	11/15/22 14:22	11/21/22 13:04	7440-36-0	
Arsenic	1.7	ug/L	1.0	0.14	1	11/15/22 14:22	11/21/22 13:04	7440-38-2	
Chromium	<0.31	ug/L	1.0	0.31	1	11/15/22 14:22	11/21/22 13:04	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/15/22 14:22	11/21/22 13:04	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	343	mg/L	20.0	4.6	1		11/14/22 14:19		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	388	mg/L	5.0	5.0	1		11/07/22 13:23		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	3.4	mg/L	1.0	0.53	1		11/18/22 12:51	16887-00-6	B
Fluoride	0.19J	mg/L	0.20	0.12	1		11/18/22 12:51	16984-48-8	
Sulfate	28.2	mg/L	10.0	5.5	10		11/21/22 16:18	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA

Pace Project No.: 60414790

Sample: R-MW-6 **Lab ID: 60414790005** Collected: 11/01/22 10:02 Received: 11/03/22 03:55 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	112	ug/L	5.0	0.51	1	11/15/22 14:22	11/29/22 16:05	7440-39-3	
Boron	540	ug/L	100	4.2	1	11/15/22 14:22	11/29/22 16:05	7440-42-8	
Calcium	96800	ug/L	200	33.7	1	11/15/22 14:22	11/29/22 16:05	7440-70-2	
Iron	330	ug/L	50.0	5.6	1	11/15/22 14:22	11/29/22 16:05	7439-89-6	
Lead	<8.6	ug/L	10.0	8.6	1	11/15/22 14:22	11/29/22 16:05	7439-92-1	
Lithium	<5.6	ug/L	10.0	5.6	1	11/15/22 14:22	11/29/22 16:05	7439-93-2	
Magnesium	12800	ug/L	50.0	27.1	1	11/15/22 14:22	11/29/22 16:05	7439-95-4	
Manganese	63.9	ug/L	5.0	0.24	1	11/15/22 14:22	11/29/22 16:05	7439-96-5	
Molybdenum	1.5J	ug/L	20.0	0.90	1	11/15/22 14:22	11/29/22 16:05	7439-98-7	
Potassium	1210	ug/L	500	87.6	1	11/15/22 14:22	11/29/22 16:05	7440-09-7	
Sodium	11500	ug/L	500	73.2	1	11/15/22 14:22	11/29/22 16:05	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	11/15/22 14:22	11/21/22 13:07	7440-36-0	
Arsenic	0.53J	ug/L	1.0	0.14	1	11/15/22 14:22	11/21/22 13:07	7440-38-2	
Chromium	<0.31	ug/L	1.0	0.31	1	11/15/22 14:22	11/21/22 13:07	7440-47-3	
Selenium	0.41J	ug/L	1.0	0.18	1	11/15/22 14:22	11/21/22 13:07	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	280	mg/L	20.0	4.6	1		11/14/22 14:19		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	312	mg/L	5.0	5.0	1		11/07/22 13:23		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	4.3	mg/L	1.0	0.53	1		11/18/22 13:05	16887-00-6	B
Fluoride	0.27	mg/L	0.20	0.12	1		11/18/22 13:05	16984-48-8	
Sulfate	23.8	mg/L	2.0	1.1	2		11/18/22 13:18	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA

Pace Project No.: 60414790

Sample: R-MW-7(r) **Lab ID: 60414790006** Collected: 10/31/22 15:36 Received: 11/03/22 03:55 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	249	ug/L	5.0	0.51	1	11/15/22 14:22	11/29/22 16:07	7440-39-3	
Boron	1660	ug/L	100	4.2	1	11/15/22 14:22	11/29/22 16:07	7440-42-8	
Calcium	71100	ug/L	200	33.7	1	11/15/22 14:22	11/29/22 16:07	7440-70-2	
Iron	14400	ug/L	50.0	5.6	1	11/15/22 14:22	11/29/22 16:07	7439-89-6	
Lead	<8.6	ug/L	10.0	8.6	1	11/15/22 14:22	11/29/22 16:07	7439-92-1	
Lithium	28.1	ug/L	10.0	5.6	1	11/15/22 14:22	11/29/22 16:07	7439-93-2	
Magnesium	20300	ug/L	50.0	27.1	1	11/15/22 14:22	11/29/22 16:07	7439-95-4	
Manganese	305	ug/L	5.0	0.24	1	11/15/22 14:22	11/29/22 16:07	7439-96-5	
Molybdenum	55.0	ug/L	20.0	0.90	1	11/15/22 14:22	11/29/22 16:07	7439-98-7	
Potassium	5500	ug/L	500	87.6	1	11/15/22 14:22	11/29/22 16:07	7440-09-7	
Sodium	34100	ug/L	500	73.2	1	11/15/22 14:22	11/29/22 16:07	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	11/15/22 14:22	11/21/22 13:09	7440-36-0	
Arsenic	120	ug/L	1.0	0.14	1	11/15/22 14:22	11/21/22 13:09	7440-38-2	
Chromium	1.2	ug/L	1.0	0.31	1	11/15/22 14:22	11/21/22 13:09	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/15/22 14:22	11/21/22 13:09	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	325	mg/L	20.0	4.6	1		11/11/22 16:12		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	370	mg/L	10.0	10.0	1		11/07/22 13:18		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	6.9	mg/L	1.0	0.53	1		11/21/22 16:58	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		11/21/22 16:58	16984-48-8	
Sulfate	16.2	mg/L	1.0	0.55	1		11/21/22 16:58	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA

Pace Project No.: 60414790

Sample: R-DUP-1 **Lab ID: 60414790007** Collected: 11/01/22 00:00 Received: 11/03/22 03:55 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	32.3	ug/L	5.0	0.51	1	11/15/22 14:22	11/29/22 16:19	7440-39-3	
Boron	14400	ug/L	100	4.2	1	11/15/22 14:22	11/29/22 16:19	7440-42-8	
Calcium	9200	ug/L	200	33.7	1	11/15/22 14:22	11/29/22 16:19	7440-70-2	
Iron	188	ug/L	50.0	5.6	1	11/15/22 14:22	11/29/22 16:19	7439-89-6	
Lead	<8.6	ug/L	10.0	8.6	1	11/15/22 14:22	11/29/22 16:19	7439-92-1	
Lithium	6.6J	ug/L	10.0	5.6	1	11/15/22 14:22	11/29/22 16:19	7439-93-2	
Magnesium	726	ug/L	50.0	27.1	1	11/15/22 14:22	11/29/22 16:19	7439-95-4	
Manganese	14.5	ug/L	5.0	0.24	1	11/15/22 14:22	11/29/22 16:19	7439-96-5	
Molybdenum	916	ug/L	20.0	0.90	1	11/15/22 14:22	11/29/22 16:19	7439-98-7	
Potassium	2450	ug/L	500	87.6	1	11/15/22 14:22	11/29/22 16:19	7440-09-7	
Sodium	262000	ug/L	500	73.2	1	11/15/22 14:22	11/29/22 16:19	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.35	ug/L	3.0	0.35	3	11/15/22 14:22	11/21/22 13:58	7440-36-0	D3
Arsenic	34.6	ug/L	3.0	0.42	3	11/15/22 14:22	11/21/22 13:58	7440-38-2	
Chromium	<0.94	ug/L	3.0	0.94	3	11/15/22 14:22	11/21/22 13:58	7440-47-3	D3
Selenium	0.64J	ug/L	3.0	0.55	3	11/15/22 14:22	11/21/22 13:58	7782-49-2	D3
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	240	mg/L	20.0	4.6	1		11/15/22 14:57		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	858	mg/L	10.0	10.0	1		11/07/22 13:23		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	63.8	mg/L	5.0	2.6	5		11/18/22 11:44	16887-00-6	
Fluoride	1.2	mg/L	0.20	0.12	1		11/18/22 11:30	16984-48-8	
Sulfate	440	mg/L	100	55.0	100		11/22/22 12:15	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA

Pace Project No.: 60414790

Sample: R-FB-1 **Lab ID: 60414790008** Collected: 11/01/22 10:12 Received: 11/03/22 03:55 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	<0.51	ug/L	5.0	0.51	1	11/15/22 14:22	11/29/22 16:21	7440-39-3	
Boron	9.7J	ug/L	100	4.2	1	11/15/22 14:22	11/29/22 16:21	7440-42-8	
Calcium	<33.7	ug/L	200	33.7	1	11/15/22 14:22	11/29/22 16:21	7440-70-2	
Iron	<5.6	ug/L	50.0	5.6	1	11/15/22 14:22	11/29/22 16:21	7439-89-6	
Lead	<8.6	ug/L	10.0	8.6	1	11/15/22 14:22	11/29/22 16:21	7439-92-1	
Lithium	<5.6	ug/L	10.0	5.6	1	11/15/22 14:22	11/29/22 16:21	7439-93-2	
Magnesium	<27.1	ug/L	50.0	27.1	1	11/15/22 14:22	11/29/22 16:21	7439-95-4	
Manganese	<0.24	ug/L	5.0	0.24	1	11/15/22 14:22	11/29/22 16:21	7439-96-5	
Molybdenum	<0.90	ug/L	20.0	0.90	1	11/15/22 14:22	11/29/22 16:21	7439-98-7	
Potassium	<87.6	ug/L	500	87.6	1	11/15/22 14:22	11/29/22 16:21	7440-09-7	
Sodium	212J	ug/L	500	73.2	1	11/15/22 14:22	11/29/22 16:21	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	11/15/22 14:22	11/21/22 13:23	7440-36-0	
Arsenic	<0.14	ug/L	1.0	0.14	1	11/15/22 14:22	11/21/22 13:23	7440-38-2	
Chromium	<0.31	ug/L	1.0	0.31	1	11/15/22 14:22	11/21/22 13:23	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/15/22 14:22	11/21/22 13:23	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	7.7J	mg/L	20.0	4.6	1		11/15/22 14:57		
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		11/07/22 13:23		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	0.60J	mg/L	1.0	0.53	1		11/18/22 12:10	16887-00-6	B
Fluoride	<0.12	mg/L	0.20	0.12	1		11/18/22 12:10	16984-48-8	
Sulfate	<0.55	mg/L	1.0	0.55	1		11/18/22 12:10	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA

Pace Project No.: 60414790

Sample: R-MW-1 **Lab ID: 60414790011** Collected: 11/03/22 16:00 Received: 11/05/22 05:00 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	33.4	ug/L	5.0	0.51	1	11/15/22 14:22	11/29/22 16:23	7440-39-3	
Boron	2450	ug/L	100	4.2	1	11/15/22 14:22	11/29/22 16:23	7440-42-8	
Calcium	46500	ug/L	200	33.7	1	11/15/22 14:22	11/29/22 16:23	7440-70-2	
Iron	42.9J	ug/L	50.0	5.6	1	11/15/22 14:22	11/29/22 16:23	7439-89-6	
Lead	<8.6	ug/L	10.0	8.6	1	11/15/22 14:22	11/29/22 16:23	7439-92-1	
Lithium	<5.6	ug/L	10.0	5.6	1	11/15/22 14:22	11/29/22 16:23	7439-93-2	
Magnesium	7050	ug/L	50.0	27.1	1	11/15/22 14:22	11/29/22 16:23	7439-95-4	
Manganese	50.2	ug/L	5.0	0.24	1	11/15/22 14:22	11/29/22 16:23	7439-96-5	
Molybdenum	82.8	ug/L	20.0	0.90	1	11/15/22 14:22	11/29/22 16:23	7439-98-7	
Potassium	6060	ug/L	500	87.6	1	11/15/22 14:22	11/29/22 16:23	7440-09-7	
Sodium	143000	ug/L	500	73.2	1	11/15/22 14:22	11/29/22 16:23	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	0.12J	ug/L	1.0	0.12	1	11/15/22 14:22	11/21/22 13:25	7440-36-0	
Arsenic	2.5	ug/L	1.0	0.14	1	11/15/22 14:22	11/21/22 13:25	7440-38-2	
Chromium	<0.31	ug/L	1.0	0.31	1	11/15/22 14:22	11/21/22 13:25	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/15/22 14:22	11/21/22 13:25	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	208	mg/L	20.0	4.6	1		11/16/22 16:56		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	603	mg/L	10.0	10.0	1		11/10/22 14:51		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	23.7	mg/L	10.0	5.3	10		11/17/22 18:48	16887-00-6	
Fluoride	0.33	mg/L	0.20	0.12	1		11/17/22 18:34	16984-48-8	
Sulfate	229	mg/L	20.0	11.0	20		11/17/22 19:01	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA

Pace Project No.: 60414790

Sample: R-MW-B1 **Lab ID: 60414790012** Collected: 11/03/22 12:00 Received: 11/05/22 05:00 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	537	ug/L	5.0	0.51	1	11/15/22 14:22	11/29/22 16:25	7440-39-3	
Boron	106	ug/L	100	4.2	1	11/15/22 14:22	11/29/22 16:25	7440-42-8	
Calcium	166000	ug/L	200	33.7	1	11/15/22 14:22	11/29/22 16:25	7440-70-2	
Iron	28700	ug/L	50.0	5.6	1	11/15/22 14:22	11/29/22 16:25	7439-89-6	
Lead	<8.6	ug/L	10.0	8.6	1	11/15/22 14:22	11/29/22 16:25	7439-92-1	
Lithium	57.5	ug/L	10.0	5.6	1	11/15/22 14:22	11/29/22 16:25	7439-93-2	
Magnesium	54400	ug/L	50.0	27.1	1	11/15/22 14:22	11/29/22 16:25	7439-95-4	
Manganese	1340	ug/L	5.0	0.24	1	11/15/22 14:22	11/29/22 16:25	7439-96-5	
Molybdenum	<0.90	ug/L	20.0	0.90	1	11/15/22 14:22	11/29/22 16:25	7439-98-7	
Potassium	8930	ug/L	500	87.6	1	11/15/22 14:22	11/29/22 16:25	7440-09-7	
Sodium	27200	ug/L	500	73.2	1	11/15/22 14:22	11/29/22 16:25	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	<0.12	ug/L	1.0	0.12	1	11/15/22 14:22	11/21/22 13:28	7440-36-0	
Arsenic	28.4	ug/L	1.0	0.14	1	11/15/22 14:22	11/21/22 13:28	7440-38-2	
Chromium	<0.31	ug/L	1.0	0.31	1	11/15/22 14:22	11/21/22 13:28	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/15/22 14:22	11/21/22 13:28	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	582	mg/L	20.0	4.6	1		11/17/22 15:58		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	727	mg/L	10.0	10.0	1		11/10/22 14:51		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	59.8	mg/L	5.0	2.6	5		11/17/22 19:55	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		11/17/22 19:41	16984-48-8	
Sulfate	41.1	mg/L	5.0	2.8	5		11/17/22 19:55	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA

Pace Project No.: 60414790

Sample: R-MW-B2 **Lab ID: 60414790013** Collected: 11/03/22 10:25 Received: 11/05/22 05:00 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	373	ug/L	5.0	0.51	1	11/15/22 14:22	11/29/22 16:29	7440-39-3	
Boron	37.5J	ug/L	100	4.2	1	11/15/22 14:22	11/29/22 16:29	7440-42-8	
Calcium	104000	ug/L	200	33.7	1	11/15/22 14:22	11/29/22 16:29	7440-70-2	
Iron	8660	ug/L	50.0	5.6	1	11/15/22 14:22	11/29/22 16:29	7439-89-6	
Lead	<8.6	ug/L	10.0	8.6	1	11/15/22 14:22	11/29/22 16:29	7439-92-1	
Lithium	7.5J	ug/L	10.0	5.6	1	11/15/22 14:22	11/29/22 16:29	7439-93-2	
Magnesium	19000	ug/L	50.0	27.1	1	11/15/22 14:22	11/29/22 16:29	7439-95-4	
Manganese	225	ug/L	5.0	0.24	1	11/15/22 14:22	11/29/22 16:29	7439-96-5	
Molybdenum	1.1J	ug/L	20.0	0.90	1	11/15/22 14:22	11/29/22 16:29	7439-98-7	
Potassium	1810	ug/L	500	87.6	1	11/15/22 14:22	11/29/22 16:29	7440-09-7	
Sodium	16900	ug/L	500	73.2	1	11/15/22 14:22	11/29/22 16:29	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	11/15/22 14:22	11/21/22 13:30	7440-36-0	
Arsenic	3.8	ug/L	1.0	0.14	1	11/15/22 14:22	11/21/22 13:30	7440-38-2	
Chromium	<0.31	ug/L	1.0	0.31	1	11/15/22 14:22	11/21/22 13:30	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/15/22 14:22	11/21/22 13:30	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	342	mg/L	20.0	4.6	1		11/17/22 16:13		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	377	mg/L	10.0	10.0	1		11/10/22 14:51		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	26.1	mg/L	5.0	2.6	5		11/17/22 20:35	16887-00-6	
Fluoride	0.17J	mg/L	0.20	0.12	1		11/17/22 20:21	16984-48-8	
Sulfate	12.0	mg/L	1.0	0.55	1		11/17/22 20:21	14808-79-8	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA

Pace Project No.: 60414790

QC Batch:	818363	Analysis Method:	EPA 200.7
QC Batch Method:	EPA 200.7	Analysis Description:	200.7 Metals, Total
		Laboratory:	Pace Analytical Services - Kansas City
Associated Lab Samples:	60414790001, 60414790002, 60414790003, 60414790004, 60414790005, 60414790006, 60414790007, 60414790008, 60414790011, 60414790012, 60414790013		

METHOD BLANK:	3254749	Matrix:	Water
Associated Lab Samples:	60414790001, 60414790002, 60414790003, 60414790004, 60414790005, 60414790006, 60414790007, 60414790008, 60414790011, 60414790012, 60414790013		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	<0.51	5.0	0.51	11/29/22 15:53	
Boron	ug/L	<4.2	100	4.2	11/29/22 15:53	
Calcium	ug/L	<33.7	200	33.7	11/29/22 15:53	
Iron	ug/L	<5.6	50.0	5.6	11/29/22 15:53	
Lead	ug/L	<8.6	10.0	8.6	11/29/22 15:53	
Lithium	ug/L	<5.6	10.0	5.6	11/29/22 15:53	
Magnesium	ug/L	<27.1	50.0	27.1	11/29/22 15:53	
Manganese	ug/L	<0.24	5.0	0.24	11/29/22 15:53	
Molybdenum	ug/L	<0.90	20.0	0.90	11/29/22 15:53	
Potassium	ug/L	<87.6	500	87.6	11/29/22 15:53	
Sodium	ug/L	<73.2	500	73.2	11/29/22 15:53	

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	977	98	85-115	
Boron	ug/L	1000	937	94	85-115	
Calcium	ug/L	10000	10200	102	85-115	
Iron	ug/L	10000	9840	98	85-115	
Lead	ug/L	1000	1000	100	85-115	
Lithium	ug/L	1000	944	94	85-115	
Magnesium	ug/L	10000	10000	100	85-115	
Manganese	ug/L	1000	977	98	85-115	
Molybdenum	ug/L	1000	963	96	85-115	
Potassium	ug/L	10000	9930	99	85-115	
Sodium	ug/L	10000	10400	104	85-115	

Parameter	Units	3254751		3254752		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.						
Barium	ug/L	249	1000	1210	1210	96	96	70-130	0	20	
Boron	ug/L	1660	1000	2560	2560	90	90	70-130	0	20	
Calcium	ug/L	71100	10000	79100	79200	80	82	70-130	0	20	
Iron	ug/L	14400	10000	23800	24100	93	97	70-130	1	20	
Lead	ug/L	<8.6	1000	968	986	97	98	70-130	2	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA

Pace Project No.: 60414790

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3254751 3254752											
Parameter	Units	60414790006		MS	MSD	MS	MSD	MS	MSD	% Rec	Max
		Result	Conc.	Spike	Spike	Result	Result	% Rec	% Rec	Limits	RPD
Lithium	ug/L	28.1	1000	1000	982	979	95	95	70-130	0	20
Magnesium	ug/L	20300	10000	10000	29900	30400	96	101	70-130	2	20
Manganese	ug/L	305	1000	1000	1250	1260	95	96	70-130	1	20
Molybdenum	ug/L	55.0	1000	1000	1010	1020	96	97	70-130	1	20
Potassium	ug/L	5500	10000	10000	15400	15400	99	99	70-130	0	20
Sodium	ug/L	34100	10000	10000	43500	44700	94	105	70-130	3	20

MATRIX SPIKE SAMPLE: 3254753								
Parameter	Units	60414790002	Spike	MS	MS	% Rec	Qualifiers	
		Result	Conc.	Result	% Rec	Limits		
Barium	ug/L	31.8	1000	1510	148	70-130	M1	
Boron	ug/L	14500	1000	1060	-1340	70-130	M1	
Calcium	ug/L	9220	10000	173000	1640	70-130	M1	
Iron	ug/L	194	10000	38100	379	70-130	M1	
Lead	ug/L	<8.6	1000	995	99	70-130		
Lithium	ug/L	<5.6	1000	1040	104	70-130		
Magnesium	ug/L	722	10000	63300	626	70-130	M1	
Manganese	ug/L	14.8	1000	2350	234	70-130	M1	
Molybdenum	ug/L	928	1000	1000	7	70-130	M1	
Potassium	ug/L	2440	10000	19000	166	70-130	M1	
Sodium	ug/L	268000	10000	36900	-2310	70-130	M1	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA

Pace Project No.: 60414790

QC Batch:	818364	Analysis Method:	EPA 200.8
QC Batch Method:	EPA 200.8	Analysis Description:	200.8 MET
		Laboratory:	Pace Analytical Services - Kansas City
Associated Lab Samples:	60414790001, 60414790002, 60414790003, 60414790004, 60414790005, 60414790006, 60414790007, 60414790008, 60414790011, 60414790012, 60414790013		

METHOD BLANK:	3254754	Matrix:	Water
Associated Lab Samples:	60414790001, 60414790002, 60414790003, 60414790004, 60414790005, 60414790006, 60414790007, 60414790008, 60414790011, 60414790012, 60414790013		

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.12	1.0	0.12	11/21/22 12:48	
Arsenic	ug/L	<0.14	1.0	0.14	11/21/22 12:48	
Chromium	ug/L	<0.31	1.0	0.31	11/21/22 12:48	
Selenium	ug/L	<0.18	1.0	0.18	11/21/22 12:48	

LABORATORY CONTROL SAMPLE: 3254755

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	41.1	103	85-115	
Arsenic	ug/L	40	40.4	101	85-115	
Chromium	ug/L	40	39.2	98	85-115	
Selenium	ug/L	40	44.5	111	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3254756 3254757

Parameter	Units	60414790006		3254757		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Antimony	ug/L	<0.12	40	40	36.5	35.9	91	90	70-130	1	20
Arsenic	ug/L	120	40	40	158	157	97	93	70-130	1	20
Chromium	ug/L	1.2	40	40	36.6	35.7	88	86	70-130	2	20
Selenium	ug/L	<0.18	40	40	43.6	42.2	109	105	70-130	3	20

MATRIX SPIKE SAMPLE: 3254758

Parameter	Units	60414790002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	<0.12	40	35.7	89	70-130	
Arsenic	ug/L	35.4	40	44.3	22	70-130 M1	
Chromium	ug/L	<0.94	40	35.4	87	70-130	
Selenium	ug/L	0.58J	40	48.4	119	70-130	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA
Pace Project No.: 60414790

QC Batch: 817839	Analysis Method: SM 2320B
QC Batch Method: SM 2320B	Analysis Description: 2320B Alkalinity
	Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60414790006

METHOD BLANK: 3252545 Matrix: Water

Associated Lab Samples: 60414790006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	8.0J	20.0	4.6	11/11/22 16:12	

LABORATORY CONTROL SAMPLE: 3252546

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	483	97	90-110	

SAMPLE DUPLICATE: 3252547

Parameter	Units	60413956031 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	493	496	0	10	

SAMPLE DUPLICATE: 3252548

Parameter	Units	60414790006 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	325	322	1	10	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA

Pace Project No.: 60414790

QC Batch: 818065

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60414790002, 60414790003, 60414790004, 60414790005

METHOD BLANK: 3253668

Matrix: Water

Associated Lab Samples: 60414790002, 60414790003, 60414790004, 60414790005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	<4.6	20.0	4.6	11/14/22 14:19	

LABORATORY CONTROL SAMPLE: 3253669

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	500	487	97	90-110	

SAMPLE DUPLICATE: 3253671

Parameter	Units	60414563005 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	359	353	2	10	

SAMPLE DUPLICATE: 3253678

Parameter	Units	60414529003 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	749	746	0	10	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA

Pace Project No.: 60414790

QC Batch: 818329

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Laboratory:

Pace Analytical Services - Kansas City

Associated Lab Samples: 60414790001, 60414790007, 60414790008

METHOD BLANK: 3254568

Matrix: Water

Associated Lab Samples: 60414790001, 60414790007, 60414790008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<4.6	20.0	4.6	11/15/22 14:57	

LABORATORY CONTROL SAMPLE: 3254569

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	489	98	90-110	

SAMPLE DUPLICATE: 3254570

Parameter	Units	60414790007 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	240	236	2	10	

SAMPLE DUPLICATE: 3254571

Parameter	Units	60415270004 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	428	434	1	10	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA
Pace Project No.: 60414790

QC Batch: 818571	Analysis Method: SM 2320B
QC Batch Method: SM 2320B	Analysis Description: 2320B Alkalinity
	Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60414790011

METHOD BLANK: 3255372 Matrix: Water

Associated Lab Samples: 60414790011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	6.7J	20.0	4.6	11/16/22 15:16	

LABORATORY CONTROL SAMPLE: 3255373

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	500	487	97	90-110	

SAMPLE DUPLICATE: 3255374

Parameter	Units	60414795016 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	144	140	3	10	

SAMPLE DUPLICATE: 3255375

Parameter	Units	60415011002 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	244	233	5	10	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA

Pace Project No.: 60414790

QC Batch: 818572

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60414790012, 60414790013

METHOD BLANK: 3255377

Matrix: Water

Associated Lab Samples: 60414790012, 60414790013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	<4.6	20.0	4.6	11/17/22 15:48	

LABORATORY CONTROL SAMPLE: 3255378

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	500	492	98	90-110	

SAMPLE DUPLICATE: 3255379

Parameter	Units	60414790012 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	582	588	1	10	

SAMPLE DUPLICATE: 3255380

Parameter	Units	60415020008 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	242	241	0	10	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA
Pace Project No.: 60414790

QC Batch: 816659	Analysis Method: SM 2540C
QC Batch Method: SM 2540C	Analysis Description: 2540C Total Dissolved Solids
	Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60414790006

METHOD BLANK: 3248226 Matrix: Water

Associated Lab Samples: 60414790006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	11/07/22 13:18	

LABORATORY CONTROL SAMPLE: 3248227

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	984	98	80-120	

SAMPLE DUPLICATE: 3248228

Parameter	Units	60414790006 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	370	363	2	10	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA

Pace Project No.: 60414790

QC Batch:	816862	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60414790002, 60414790003, 60414790004, 60414790005, 60414790007, 60414790008

METHOD BLANK: 3248991 Matrix: Water
Associated Lab Samples: 60414790002, 60414790003, 60414790004, 60414790005, 60414790007, 60414790008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	11/07/22 13:21	

LABORATORY CONTROL SAMPLE: 3248992

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1010	101	80-120	

SAMPLE DUPLICATE: 3248995

Parameter	Units	60414563005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	5390	5610	4	10	

SAMPLE DUPLICATE: 3248996

Parameter	Units	60414572005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	5760	5040	13	10 D6	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA
Pace Project No.: 60414790

QC Batch: 817151	Analysis Method: SM 2540C
QC Batch Method: SM 2540C	Analysis Description: 2540C Total Dissolved Solids
	Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60414790001

METHOD BLANK: 3249844 Matrix: Water

Associated Lab Samples: 60414790001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	11/08/22 14:50	

LABORATORY CONTROL SAMPLE: 3249845

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1010	101	80-120	

SAMPLE DUPLICATE: 3249846

Parameter	Units	60414648003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	5200	4780	9	10	

SAMPLE DUPLICATE: 3249847

Parameter	Units	60414795009 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1040	977	6	10	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA

Pace Project No.: 60414790

QC Batch:	817532	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60414790011, 60414790012, 60414790013

METHOD BLANK: 3251289 Matrix: Water

Associated Lab Samples: 60414790011, 60414790012, 60414790013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	11/10/22 14:50	

LABORATORY CONTROL SAMPLE: 3251290

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	999	100	80-120	

SAMPLE DUPLICATE: 3251291

Parameter	Units	60414795020 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	712	743	4	10	

SAMPLE DUPLICATE: 3251298

Parameter	Units	60415011002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1250	1250	0	10	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA

Pace Project No.: 60414790

QC Batch: 818723 Analysis Method: EPA 300.0
 QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
 Laboratory: Pace Analytical Services - Kansas City
 Associated Lab Samples: 60414790011, 60414790012, 60414790013

METHOD BLANK: 3255965 Matrix: Water
 Associated Lab Samples: 60414790011, 60414790012, 60414790013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.59J	1.0	0.53	11/17/22 11:01	
Fluoride	mg/L	<0.12	0.20	0.12	11/17/22 11:01	
Sulfate	mg/L	<0.55	1.0	0.55	11/17/22 11:01	

METHOD BLANK: 3259139 Matrix: Water
 Associated Lab Samples: 60414790011, 60414790012, 60414790013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	11/18/22 08:51	
Fluoride	mg/L	<0.12	0.20	0.12	11/18/22 08:51	
Sulfate	mg/L	<0.55	1.0	0.55	11/18/22 08:51	

LABORATORY CONTROL SAMPLE: 3255966

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	2.5	101	90-110	
Sulfate	mg/L	5	4.7	94	90-110	

LABORATORY CONTROL SAMPLE: 3259140

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.5	91	90-110	
Fluoride	mg/L	2.5	2.7	106	90-110	
Sulfate	mg/L	5	4.9	98	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3255968 3255969

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60414795016 Result	Spike Conc.	Spike Conc.	Result						
Chloride	mg/L	29.1	25	25	52.1	51.3	92	89	80-120	1	15
Fluoride	mg/L	1.9	2.5	2.5	4.8	4.8	114	114	80-120	0	15
Sulfate	mg/L	325	200	100	659	442	167	117	80-120	39	15 E,M1, R1

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA

Pace Project No.: 60414790

SAMPLE DUPLICATE: 3255967

Parameter	Units	60414795016 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	29.1	28.0	4	15	
Fluoride	mg/L	1.9	1.9	0	15	
Sulfate	mg/L	325	355	9	15	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA

Pace Project No.: 60414790

QC Batch: 819032 Analysis Method: EPA 300.0
 QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
 Laboratory: Pace Analytical Services - Kansas City
 Associated Lab Samples: 60414790001, 60414790002, 60414790003, 60414790004, 60414790005

METHOD BLANK: 3256988 Matrix: Water
 Associated Lab Samples: 60414790001, 60414790002, 60414790003, 60414790004, 60414790005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	11/18/22 08:51	
Fluoride	mg/L	<0.12	0.20	0.12	11/18/22 08:51	
Sulfate	mg/L	<0.55	1.0	0.55	11/18/22 08:51	

METHOD BLANK: 3259947 Matrix: Water
 Associated Lab Samples: 60414790001, 60414790002, 60414790003, 60414790004, 60414790005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	11/21/22 09:09	
Fluoride	mg/L	<0.12	0.20	0.12	11/21/22 09:09	
Sulfate	mg/L	<0.55	1.0	0.55	11/21/22 09:09	

METHOD BLANK: 3261497 Matrix: Water
 Associated Lab Samples: 60414790001, 60414790002, 60414790003, 60414790004, 60414790005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.65J	1.0	0.53	11/22/22 08:55	
Fluoride	mg/L	<0.12	0.20	0.12	11/22/22 08:55	
Sulfate	mg/L	<0.55	1.0	0.55	11/22/22 08:55	

LABORATORY CONTROL SAMPLE: 3256989

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.5	91	90-110	
Fluoride	mg/L	2.5	2.7	106	90-110	
Sulfate	mg/L	5	4.9	98	90-110	

LABORATORY CONTROL SAMPLE: 3259948

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.5	91	90-110	
Fluoride	mg/L	2.5	2.5	102	90-110	
Sulfate	mg/L	5	4.9	98	90-110	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA

Pace Project No.: 60414790

LABORATORY CONTROL SAMPLE: 3261498

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.5	90	90-110	
Fluoride	mg/L	2.5	2.6	104	90-110	
Sulfate	mg/L	5	4.9	98	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3256990 3256991

Parameter	Units	60415776001		MS		MSD		% Rec		Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec					
Chloride	mg/L	1050	500	500	1770	1550	143	100	80-120	13	15	M1	
Fluoride	mg/L	ND	25	25	29.1	31.4	116	125	80-120	8	15	M1	
Sulfate	mg/L	34.4	50	50	86.0	94.8	103	121	80-120	10	15	M1	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA

Pace Project No.: 60414790

QC Batch:	819035	Analysis Method:	EPA 300.0
QC Batch Method:	EPA 300.0	Analysis Description:	300.0 IC Anions
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60414790006, 60414790007, 60414790008

METHOD BLANK: 3257000 Matrix: Water

Associated Lab Samples: 60414790006, 60414790007, 60414790008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.60J	1.0	0.53	11/18/22 08:50	
Fluoride	mg/L	<0.12	0.20	0.12	11/18/22 08:50	
Sulfate	mg/L	<0.55	1.0	0.55	11/18/22 08:50	

METHOD BLANK: 3259951 Matrix: Water

Associated Lab Samples: 60414790006, 60414790007, 60414790008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	11/21/22 09:09	
Fluoride	mg/L	<0.12	0.20	0.12	11/21/22 09:09	
Sulfate	mg/L	<0.55	1.0	0.55	11/21/22 09:09	

METHOD BLANK: 3261491 Matrix: Water

Associated Lab Samples: 60414790006, 60414790007, 60414790008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.65J	1.0	0.53	11/22/22 08:55	
Fluoride	mg/L	<0.12	0.20	0.12	11/22/22 08:55	
Sulfate	mg/L	<0.55	1.0	0.55	11/22/22 08:55	

LABORATORY CONTROL SAMPLE: 3257001

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.7	95	90-110	
Fluoride	mg/L	2.5	2.6	104	90-110	
Sulfate	mg/L	5	4.8	96	90-110	

LABORATORY CONTROL SAMPLE: 3259952

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.5	91	90-110	
Fluoride	mg/L	2.5	2.5	102	90-110	
Sulfate	mg/L	5	4.9	98	90-110	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA

Pace Project No.: 60414790

LABORATORY CONTROL SAMPLE: 3261492

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.5	90	90-110	
Fluoride	mg/L	2.5	2.6	104	90-110	
Sulfate	mg/L	5	4.9	98	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3257003 3257004

Parameter	Units	60414790006		MS		MSD		% Rec		Limits	RPD	Max RPD	Qual
		Result	Conc.	Spike Conc.	Spike Conc.	Result	Result	% Rec	% Rec				
Chloride	mg/L	6.9	5	5	5	11.7	11.7	96	95	80-120	1	15	
Fluoride	mg/L	<0.12	2.5	2.5	2.5	2.9	2.9	113	115	80-120	2	15	
Sulfate	mg/L	16.2	5	5	5	21.2	21.3	100	103	80-120	1	15	E

SAMPLE DUPLICATE: 3257002

Parameter	Units	60414790006 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	6.9	6.9	0	15	
Fluoride	mg/L	<0.12	0.32		15	
Sulfate	mg/L	16.2	16.0	1	15	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA

Pace Project No.: 60414790

Sample: R-MW-2 **Lab ID: 60414790001** Collected: 11/02/22 12:48 Received: 11/03/22 03:55 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	-0.104 ± 0.612 (1.36) C:NA T:70%	pCi/L	11/27/22 14:17	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	-0.0448 ± 0.349 (0.825) C:70% T:80%	pCi/L	11/29/22 12:07	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA

Pace Project No.: 60414790

Sample: R-MW-3 **Lab ID: 60414790002** Collected: 11/01/22 11:35 Received: 11/03/22 03:55 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	-0.256 ± 0.471 (1.07) C:NA T:99%	pCi/L	11/27/22 14:17	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	0.477 ± 0.400 (0.801) C:68% T:85%	pCi/L	11/29/22 12:08	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA

Pace Project No.: 60414790

Sample: R-MW-4 **Lab ID: 60414790003** Collected: 11/01/22 09:47 Received: 11/03/22 03:55 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	0.000 ± 0.517 (1.05) C:NA T:98%	pCi/L	11/27/22 14:17	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	0.376 ± 0.277 (0.535) C:81% T:96%	pCi/L	11/29/22 12:08	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA

Pace Project No.: 60414790

Sample: R-MW-5 **Lab ID: 60414790004** Collected: 11/01/22 10:53 Received: 11/03/22 03:55 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	0.690 ± 0.548 (0.712) C:NA T:94%	pCi/L	11/27/22 14:17	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.434 ± 0.298 (0.565) C:82% T:90%	pCi/L	11/29/22 12:08	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA

Pace Project No.: 60414790

Sample: R-MW-6 **Lab ID: 60414790005** Collected: 11/01/22 10:02 Received: 11/03/22 03:55 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	0.140 ± 0.433 (0.839) C:NA T:93%	pCi/L	11/27/22 14:17	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.261 ± 0.328 (0.696) C:80% T:87%	pCi/L	11/29/22 12:08	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA

Pace Project No.: 60414790

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: R-MW-7(r) Lab ID: 60414790006 Collected: 10/31/22 15:36 Received: 11/03/22 03:55 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.442 ± 0.408 (0.595) C:NA T:92%	pCi/L	11/27/22 14:38	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.771 ± 0.425 (0.781) C:80% T:83%	pCi/L	11/29/22 12:08	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA

Pace Project No.: 60414790

Sample: R-DUP-1 **Lab ID: 60414790007** Collected: 11/01/22 00:00 Received: 11/03/22 03:55 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	-0.154 ± 0.477 (1.08) C:NA T:101%	pCi/L	11/27/22 14:38	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	0.353 ± 0.421 (0.892) C:74% T:86%	pCi/L	11/29/22 12:08	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA

Pace Project No.: 60414790

Sample: R-FB-1 **Lab ID: 60414790008** Collected: 11/01/22 10:12 Received: 11/03/22 03:55 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	0.0737 ± 0.382 (0.793) C:NA T:92%	pCi/L	11/27/22 14:38	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.0862 ± 0.375 (0.845) C:76% T:89%	pCi/L	11/29/22 12:08	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA

Pace Project No.: 60414790

Sample: R-MS-1 **Lab ID: 60414790009** Collected: 10/31/22 15:36 Received: 11/03/22 03:55 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	95.63 %REC ± NA (NA) C:NA T:NA	pCi/L	11/27/22 14:38	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	79.5 %REC ± NA (NA) C:NA T:NA	pCi/L	11/29/22 12:08	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA

Pace Project No.: 60414790

Sample: R-MSD-1 **Lab ID: 60414790010** Collected: 10/31/22 15:36 Received: 11/03/22 03:55 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	87.24 %REC 9.17RPD ± NA (NA) C:NA T:NA	pCi/L	11/27/22 14:38	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	101.24 %REC 24.06RPD ± NA (NA) C:NA T:NA	pCi/L	11/29/22 12:08	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA

Pace Project No.: 60414790

Sample: R-MW-1 **Lab ID: 60414790011** Collected: 11/03/22 16:00 Received: 11/05/22 05:00 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	0.000 ± 0.267 (0.543) C:NA T:96%	pCi/L	11/27/22 15:18	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.513 ± 0.331 (0.620) C:84% T:92%	pCi/L	11/26/22 14:39	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA

Pace Project No.: 60414790

Sample: R-MW-B1 **Lab ID: 60414790012** Collected: 11/03/22 12:00 Received: 11/05/22 05:00 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	0.693 ± 0.613 (0.908) C:NA T:96%	pCi/L	11/27/22 15:06	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.983 ± 0.416 (0.636) C:83% T:89%	pCi/L	11/26/22 14:39	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA

Pace Project No.: 60414790

Sample: R-MW-B2 **Lab ID: 60414790013** Collected: 11/03/22 10:25 Received: 11/05/22 05:00 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	0.281 ± 0.293 (0.413) C:NA T:99%	pCi/L	11/27/22 15:06	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	1.07 ± 0.461 (0.749) C:77% T:92%	pCi/L	11/26/22 14:40	15262-20-1	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA

Pace Project No.: 60414790

QC Batch: 545774

Analysis Method: EPA 903.1

QC Batch Method: EPA 903.1

Analysis Description: 903.1 Radium-226

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 60414790001, 60414790002, 60414790003, 60414790004, 60414790005, 60414790006, 60414790007, 60414790008, 60414790009, 60414790010

METHOD BLANK: 2649816

Matrix: Water

Associated Lab Samples: 60414790001, 60414790002, 60414790003, 60414790004, 60414790005, 60414790006, 60414790007, 60414790008, 60414790009, 60414790010

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0614 ± 0.280 (0.166) C:NA T:92%	pCi/L	11/27/22 13:59	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA

Pace Project No.: 60414790

QC Batch:	545782	Analysis Method:	EPA 903.1
QC Batch Method:	EPA 903.1	Analysis Description:	903.1 Radium-226
		Laboratory:	Pace Analytical Services - Greensburg

Associated Lab Samples: 60414790011, 60414790012, 60414790013

METHOD BLANK: 2649835 Matrix: Water

Associated Lab Samples: 60414790011, 60414790012, 60414790013

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.000 ± 0.205 (0.417) C:NA T:99%	pCi/L	11/27/22 15:06	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA

Pace Project No.: 60414790

QC Batch: 545783

Analysis Method: EPA 904.0

QC Batch Method: EPA 904.0

Analysis Description: 904.0 Radium 228

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 60414790011, 60414790012, 60414790013

METHOD BLANK: 2649836

Matrix: Water

Associated Lab Samples: 60414790011, 60414790012, 60414790013

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.459 ± 0.320 (0.616) C:88% T:94%	pCi/L	11/26/22 14:39	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA

Pace Project No.: 60414790

QC Batch: 545775

Analysis Method: EPA 904.0

QC Batch Method: EPA 904.0

Analysis Description: 904.0 Radium 228

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 60414790001, 60414790002, 60414790003, 60414790004, 60414790005, 60414790006, 60414790007, 60414790008, 60414790009, 60414790010

METHOD BLANK: 2649817

Matrix: Water

Associated Lab Samples: 60414790001, 60414790002, 60414790003, 60414790004, 60414790005, 60414790006, 60414790007, 60414790008, 60414790009, 60414790010

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.409 ± 0.288 (0.549) C:84% T:89%	pCi/L	11/29/22 12:06	

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QUALIFIERS

Project: AMEREN RIEC RCPA

Pace Project No.: 60414790

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.

D3 Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

D6 The precision between the sample and sample duplicate exceeded laboratory control limits.

E Analyte concentration exceeded the calibration range. The reported 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 RIEC RCPA

Pace Project No.: 60414790

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60414790001	R-MW-2	EPA 200.7	818363	EPA 200.7	818500
60414790002	R-MW-3	EPA 200.7	818363	EPA 200.7	818500
60414790003	R-MW-4	EPA 200.7	818363	EPA 200.7	818500
60414790004	R-MW-5	EPA 200.7	818363	EPA 200.7	818500
60414790005	R-MW-6	EPA 200.7	818363	EPA 200.7	818500
60414790006	R-MW-7(r)	EPA 200.7	818363	EPA 200.7	818500
60414790007	R-DUP-1	EPA 200.7	818363	EPA 200.7	818500
60414790008	R-FB-1	EPA 200.7	818363	EPA 200.7	818500
60414790011	R-MW-1	EPA 200.7	818363	EPA 200.7	818500
60414790012	R-MW-B1	EPA 200.7	818363	EPA 200.7	818500
60414790013	R-MW-B2	EPA 200.7	818363	EPA 200.7	818500
60414790001	R-MW-2	EPA 200.8	818364	EPA 200.8	818501
60414790002	R-MW-3	EPA 200.8	818364	EPA 200.8	818501
60414790003	R-MW-4	EPA 200.8	818364	EPA 200.8	818501
60414790004	R-MW-5	EPA 200.8	818364	EPA 200.8	818501
60414790005	R-MW-6	EPA 200.8	818364	EPA 200.8	818501
60414790006	R-MW-7(r)	EPA 200.8	818364	EPA 200.8	818501
60414790007	R-DUP-1	EPA 200.8	818364	EPA 200.8	818501
60414790008	R-FB-1	EPA 200.8	818364	EPA 200.8	818501
60414790011	R-MW-1	EPA 200.8	818364	EPA 200.8	818501
60414790012	R-MW-B1	EPA 200.8	818364	EPA 200.8	818501
60414790013	R-MW-B2	EPA 200.8	818364	EPA 200.8	818501
60414790001	R-MW-2	EPA 903.1	545774		
60414790002	R-MW-3	EPA 903.1	545774		
60414790003	R-MW-4	EPA 903.1	545774		
60414790004	R-MW-5	EPA 903.1	545774		
60414790005	R-MW-6	EPA 903.1	545774		
60414790006	R-MW-7(r)	EPA 903.1	545774		
60414790007	R-DUP-1	EPA 903.1	545774		
60414790008	R-FB-1	EPA 903.1	545774		
60414790009	R-MS-1	EPA 903.1	545774		
60414790010	R-MSD-1	EPA 903.1	545774		
60414790011	R-MW-1	EPA 903.1	545782		
60414790012	R-MW-B1	EPA 903.1	545782		
60414790013	R-MW-B2	EPA 903.1	545782		
60414790001	R-MW-2	EPA 904.0	545775		
60414790002	R-MW-3	EPA 904.0	545775		
60414790003	R-MW-4	EPA 904.0	545775		
60414790004	R-MW-5	EPA 904.0	545775		
60414790005	R-MW-6	EPA 904.0	545775		
60414790006	R-MW-7(r)	EPA 904.0	545775		
60414790007	R-DUP-1	EPA 904.0	545775		
60414790008	R-FB-1	EPA 904.0	545775		
60414790009	R-MS-1	EPA 904.0	545775		
60414790010	R-MSD-1	EPA 904.0	545775		
60414790011	R-MW-1	EPA 904.0	545783		

REPORT OF LABORATORY ANALYSIS

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without the written consent of Pace Analytical Services, LLC.

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN RIEC RCPA

Pace Project No.: 60414790

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60414790012	R-MW-B1	EPA 904.0	545783		
60414790013	R-MW-B2	EPA 904.0	545783		
60414790001	R-MW-2	SM 2320B	818329		
60414790002	R-MW-3	SM 2320B	818065		
60414790003	R-MW-4	SM 2320B	818065		
60414790004	R-MW-5	SM 2320B	818065		
60414790005	R-MW-6	SM 2320B	818065		
60414790006	R-MW-7(r)	SM 2320B	817839		
60414790007	R-DUP-1	SM 2320B	818329		
60414790008	R-FB-1	SM 2320B	818329		
60414790011	R-MW-1	SM 2320B	818571		
60414790012	R-MW-B1	SM 2320B	818572		
60414790013	R-MW-B2	SM 2320B	818572		
60414790001	R-MW-2	SM 2540C	817151		
60414790002	R-MW-3	SM 2540C	816862		
60414790003	R-MW-4	SM 2540C	816862		
60414790004	R-MW-5	SM 2540C	816862		
60414790005	R-MW-6	SM 2540C	816862		
60414790006	R-MW-7(r)	SM 2540C	816659		
60414790007	R-DUP-1	SM 2540C	816862		
60414790008	R-FB-1	SM 2540C	816862		
60414790011	R-MW-1	SM 2540C	817532		
60414790012	R-MW-B1	SM 2540C	817532		
60414790013	R-MW-B2	SM 2540C	817532		
60414790001	R-MW-2	EPA 300.0	819032		
60414790002	R-MW-3	EPA 300.0	819032		
60414790003	R-MW-4	EPA 300.0	819032		
60414790004	R-MW-5	EPA 300.0	819032		
60414790005	R-MW-6	EPA 300.0	819032		
60414790006	R-MW-7(r)	EPA 300.0	819035		
60414790007	R-DUP-1	EPA 300.0	819035		
60414790008	R-FB-1	EPA 300.0	819035		
60414790011	R-MW-1	EPA 300.0	818723		
60414790012	R-MW-B1	EPA 300.0	818723		
60414790013	R-MW-B2	EPA 300.0	818723		

REPORT OF LABORATORY ANALYSIS

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WO#: 60414790



DC#_Title: ENV-FRM-LENE-0009_Sample

Revision: 2

Effective Date: 01/12/2022

Issued By: Lenexa

Client Name: WSP Golden

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: 7299 Type of Ice: Wet Blue None

Cooler Temperature (°C): As-read 1.1/0.8 Corr. Factor 0.0 Corrected 1.1/0.8

Date and initials of person examining contents: PN 1/13/22

Temperature should be above freezing to 6°C 13.9/15.3

Chain of Custody present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Chain of Custody relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples arrived within holding time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Short Hold Time analyses (<72hr):	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Rush Turn Around Time requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Sufficient volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Correct containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Pace containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Filtered volume received for dissolved tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Sample labels match COC: Date / time / ID / analyses	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples contain multiple phases? Matrix: <u>WT</u>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Containers requiring pH preservation in compliance? (HNO ₃ , H ₂ SO ₄ , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> 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)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Potassium iodide test strip turns blue/purple? (Preserve)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Headspace in VOA vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Samples from USDA Regulated Area: State:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> 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: _____

CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A Required Client Information:				Section B Required Project Information:				Section C Invoice Information:			
Company: WSP Golder				Report To: Jeffrey Ingram				Attention:			
Address: 701 Emerson Road, Suite 250				Copy To: Eric Schneider				Company Name: WSP Golder			
Creve Coeur, Missouri, 63141								Address:			
Email To: jeffrey_ingram@golder.com				Purchase Order No.: COC #5				Pace Quote Reference:			
Phone: 636-724-9191 Fax: 636-724-9323				Project Name: Ameren Rush Island Energy Center RCPA				Pace Project Manager: Jamie Church			
Requested Due Date/TAT: Standard				Project Number: 153140604.0002				Pace Profile #: 9285			
				Site Location				MO			
				STATE:				MO			

ITEM #	Valid Matrix Codes MATRIX CODE DRINKING WATER DW WATER WT WASTE WATER WW PRODUCT P SOLID SL OIL OL WP AR OT TS	Sample ID (A-Z, 0-9 / -) Sample IDs MUST BE UNIQUE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		# OF CONTAINERS	Preservatives			Analysis Test ↑	Requested Analysis Filtered (Y/N)												Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.															
					COMPOSITE START	DATE		TIME	DATE	TIME		DATE	TIME	DATE	TIME	DATE	TIME	DATE	TIME	DATE	TIME																			
					COMPOSITE END/GRAB																																			
1		R-MW-1	WT	G																																				
2		R-MW-2	WT	G		11-22	1248	4																																
3		R-MW-3	WT	G		11-22	1135	4																																
4		R-MW-4	WT	G		11-22	0947	4																																
5		R-MW-5	WT	G		11-22	1053	4																																
6		R-MW-6	WT	G		11-22	1002	4																																
7		R-MW-7(f)	WT	G		07-22	1536	4																																
8		R-MW-B1	WT	G																																				
9		R-MW-B2	WT	G																																				
10		R-DUP-1	WT	G		11-22		4																																
11		R-FB-1	WT	G		11-22	1012	4																																
12		R-MS-1	WT	G		10-22	1536	4																																

RELINQUISHED BY / AFFILIATION				ACCEPTED BY / AFFILIATION				SAMPLE CONDITIONS			
Sand Beavers				Grant Mory							
DATE: 11/22				DATE: 11/3							
TIME: 15:40				TIME: 0855							
RECEIVED ON				RECEIVED ON							
Temp in C				Temp in C							
Custody Sealed				Custody Sealed							
Samples Intact				Samples Intact							



CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A

Required Client Information:

Company: **WSP Golder**
 Address: **701 Emerson Road, Suite 250**
 Creve Coeur, Missouri, 63141
 Email To: **jeffrey.ingram@golder.com**
 Phone: **636-724-9191** Fax: **636-724-9323**
 Requested Due Date/TAT: **Standard**

Section B

Required Project Information:

Report To: **Jeffrey Ingram**
 Copy To: **Eric Schnieder**
 Purchase Order No.: **COC #5**
 Project Name: **Ameren Rush Island Energy Center RCRA**
 Project Number: **153140604.0002**

Section C

Invoice Information:

Attention: _____
 Company Name: **WSP Golder**
 Address: _____
 Regulatory Agency: _____
 NPDES GROUND WATER DRINKING WATER
 UST RCRA OTHER _____
 Site Location: **MO**
 STATE: _____


ITEM #	Valid Matrix Codes MATRIX CODE DRINKING WATER DW WASTE WATER WW WATER P PRODUCT P SOIL/SOLID SL OIL OL WP AR OT TS	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		# OF CONTAINERS	Preservatives NaOH HCl HNO ₃ H ₂ SO ₄ Unpreserved	Analysis Test Y/N Chloride/Fluoride/Sulfate App III and Cat/An Metals Alkalinity TDS Appendix IV Metals * Radium 226 Radium 228	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)	Temp In °C	Received on	Cooler (Y/N)	Custody Sealed	Samples Intact
			COMPOSITE START	COMPOSITE END/GRAB										
1	R-MSD-1	WT G	10/22/15	1536	4									
2		WT G												
3		WT G												
4		WT G												
5		WT G												
6		WT G												
7		WT G												
8		WT G												
9		WT G												
10		WT G												
11		WT G												
12		WT G												

6011490
 Pace Project No./ Lab I.D.
 Collected @ R-MY-770

ACCEPTED BY / AFFILIATION
 Sand Beams
 11/2/21 15:40
 J. Ingrame

SAMPLER NAME AND SIGNATURE
 PRINT Name of SAMPLER: **Grant Mory**
 SIGNATURE of SAMPLER: *Grant Mory*
 DATE Signed (MM/DD/YY): **11/02/21**

WO#: 60414790

	DC#_Title: ENV-FRM-LENE-001	
	Revision: 2	Effective Date:



60414790

Client Name: WSP Golder

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: T-299 Type of Ice: Wet Blue None

Cooler Temperature (°C): As-read 16.1/15.0 Corr. Factor 0 Corrected 16.1/15.0/15.5 Date and initials of person examining contents: Be11/15

Temperature should be above freezing to 6°C 15.5

Chain of Custody present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	BPIN incubators with temps -16.1, 15.0, 15.5
Chain of Custody relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples arrived within holding time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Short Hold Time analyses (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Rush Turn Around Time requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Sufficient volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Correct containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Pace containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Filtered volume received for dissolved tests?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Sample labels match COC: Date / time / ID / analyses	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples contain multiple phases? Matrix:	<input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Containers requiring pH preservation in compliance? (HNO ₃ , H ₂ SO ₄ , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> 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)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Potassium iodide test strip turns blue/purple? (Preserve)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Headspace in VOA vials (>6mm):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Samples from USDA Regulated Area: State:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> 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: _____



CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: 1 of 2

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company: Golder Associates	Report To: Jeffrey Ingram	Report To: Jeffrey Ingram	Company Name: Golder Associates USA, Inc	Attention:	
Address: 701 Emerson Road, Suite 250 Creve Coeur, Missouri, 63141	Copy To: Eric Schnieder, Ryan Feldman, Brendan Talbert	Address: 701 Emerson Road, Suite 250 Creve Coeur, Missouri, 63141	Address:		
Email To: jeffrey_ingram@golder.com	Purchase Order No.: COG #5	Purchase Order No.: COG #5	Piece Quote Reference:		
Phone: 636-724-9191 Fax: 636-724-9323	Project Name: Ameren Rush Island Energy Center RCPA	Project Name: Ameren Rush Island Energy Center RCPA	Piece Project Manager:	Jamie Church	
Requested Due Date/TAT: Standard	Project Number: 153140604, 0002	Project Number: 153140604, 0002	Piece Profile #:	9285	

REGULATORY AGENCY	
<input type="checkbox"/> NPDES <input checked="" type="checkbox"/> GROUND WATER <input type="checkbox"/> DRINKING WATER	<input type="checkbox"/> UST <input type="checkbox"/> RCRA <input type="checkbox"/> OTHER
Site Location:	MO
STATE:	

ITEM #	Valid Matrix Codes DRINKING WATER WATER WATER PRODUCT SOLID SOLID OL	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Requested Analysis Filtered (Y/N)											Pace Project No./ Lab I.D.
				DATE	TIME			DATE	TIME	Analysis Test	Chloride/Fluoride/Sulfate	App III and Car/An Metals	Alkalinity	TDS	Appendix IV Metals**	Radium 226	Radium 228	Residual Chlorine (Y/N)	
1	R-MW-1	WT G	WT G	11-3-27	1600		4	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	60414796	
2	R-MW-2	WT G	WT G																
3	R-MW-3	WT G	WT G																
4	R-MW-4	WT G	WT G																
6	R-MW-5	WT G	WT G																
6	R-MW-6	WT G	WT G																
7	R-MW-7(r)	WT G	WT G																
8	R-MW-B1	WT G	WT G	11-3-27	1260		4	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
9	R-MW-B2	WT G	WT G	11-3-27	1025		4	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
10	R-DUP-1	WT G	WT G																
11	R-FB-1	WT G	WT G																
12	R-MS-1	WT G	WT G																

ADDITIONAL COMMENTS	
Relinquished By / Affiliation: Sarah Burns	Date: 11-27
Accepted By / Affiliation: Pace	Date: 11/5 0550 16.9
Temp in °C:	
Received on:	
Ice (Y/N):	
Custody Sealed Cooler (Y/N):	Y
Samples Intact (Y/N):	

SAMPLER NAME AND SIGNATURE	
PRINT Name of SAMPLER: Grant M. Oley	DATE Signed (MM/DD/YYYY): 11/03/22
SIGNATURE of SAMPLER: <i>Grant M. Oley</i>	

*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.

MEMORANDUM

DATE December 12, 2022

Project No. 153140604.0002

TO Project File
Golder Associates

CC Amanda Derhake, Jeff Ingram

FROM Rahel Pommerenke

EMAIL rahel.pommerenke@wsp.com

DATA VALIDATION SUMMARY, RUSH ISLAND ENERGY CENTER – RCPA – DETECTION MONITORING AND ASSESSMENT MONITORING – DATA PACKAGE 60414790

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 MDL and the PQL the results were recorded at the detection value and qualified as estimates (J).
- When duplicate criterion was not met, the associated sample result was qualified as an estimate (J for detects, UJ for non-detects).
- When matrix spike/matrix spike duplicate (MS/MSD) criterion was not met, the associated sample result was qualified as an estimate (J, J+ for estimates biased high, and J- for estimates biased low).

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Company Name: Golder / WSP
 Project Name: Ameren RIEC - RCPA
 Reviewer: R.Pommerenke

Project Manager: J. Ingram
 Project Number: 153140604
 Validation Date: 12/12/2022

Laboratory: Pace Analytical Services SDG #: 60414790
 Analytical Method (type and no.): EPA 200.7/200.8 (Total Metals); EPA 903.1/904.0 (Radium 226/228); SM2320B (Alkalinity);
 Matrix: Air Soil/Sed. Water Waste SM2540C (TDS); EPA 300.0 (Anions)
 Sample Names R-MW-2, R-MW-3, R-MW-4, R-MW-5, R-MW-6, R-MW-7(r), R-DUP-1, R-FB-1, R-MS-1, R-MSD-1, R-MW-1, R-MW-B1, R-MW-B2

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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>10/31/2022 - 11/03/2022</u>
b) Sampling team indicated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>GTM/JAB</u>
c) Sample location noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
d) Sample depth indicated (Soils)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u></u>
e) Sample type indicated (grab/composite)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Grab</u>
f) Field QC noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>See notes.</u>
g) Field parameters collected (note types)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>pH, Sp.Cond, ORP, Temp, DO, Turb</u>
h) Field Calibration within control limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
i) Notations of unacceptable field conditions/performances from field logs or field notes?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u></u>
j) Does the laboratory narrative indicate deficiencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u></u>
Note Deficiencies: <u></u>				

Chain-of-Custody (COC)	YES	NO	NA	COMMENTS
a) Was the COC properly completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
b) Was the COC signed by both field and laboratory personnel?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
c) Were samples received in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>

General (reference QAPP or Method)	YES	NO	NA	COMMENTS
a) Were hold times met for sample pretreatment?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
b) Were hold times met for sample analysis?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
c) Were the correct preservatives used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
d) Was the correct method used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
e) Were appropriate reporting limits achieved?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
f) Were any sample dilutions noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>See notes.</u>
g) Were any matrix problems noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>See notes.</u>

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Blanks	YES	NO	NA	COMMENTS
a) Were analytes detected in the method blank(s)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See notes.
b) Were analytes detected in the field blank(s)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See notes.
c) Were analytes detected in the equipment blank(s)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
d) Were analytes detected in the trip blank(s)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Laboratory Control Sample (LCS)	YES	NO	NA	COMMENTS
a) Was a LCS analyzed once per SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
b) Were the proper analytes included in the LCS?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
c) Was the LCS accuracy criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Duplicates	YES	NO	NA	COMMENTS
a) Were field duplicates collected (note original and duplicate sample names)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	R-DUP-1 @ R-MW-3
b) Were field dup. precision criteria met (note RPD)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See notes.
c) Were lab duplicates analyzed (note original and duplicate samples)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
d) Were lab dup. precision criteria met (note RPD)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See notes.

Blind Standards	YES	NO	NA	COMMENTS
a) Was a blind standard used (indicate name, analytes included and concentrations)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
b) Was the %D within control limits?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Matrix Spike/Matrix Spike Duplicate (MS/MSD)	YES	NO	NA	COMMENTS
a) Was MS accuracy criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See notes.
Recovery could not be calculated since sample contained high concentration of analyte?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
b) Was MSD accuracy criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See notes.
Recovery could not be calculated since sample contained high concentration of analyte?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
c) Were MS/MSD precision criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See notes.

Comments/Notes:

Dilutions:

Arsenic, Antimony, Chromium, Selenium, Chloride, and Sulfate analyzed at a dilution. No qualification necessary.

Blanks:

MB3252545: Alkalinity (8.0J). Associated with sample -006.

Result > x10 blank and RL: not qualified.

QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

Comments/Notes:

MB3255372: Alkalinity (6.7J). Associated with sample -011.

Result > x10 blank and RL: not qualified.

MB3255965: Chloride (0.59J). Associated with samples -011 through -013.

Result > x10 blank and RL: not qualified.

MB3261497: Chloride (0.65J). Associated with samples -001 through -005.

Results < x10 blank and > RL, qualified as estimates. Results > x10 blank and RL, not qualified.

MB3257000: Chloride (0.60J). Associated with samples -006 through -008.

Results < RL, qualified as ND at RL. Results > x10 blank and RL, not qualified.

MB3261491: Chloride (0.65J). Associated with samples -006 through -008.

Results < RL, qualified as ND at RL. Results > x10 blank and RL, not qualified.

R-FB-1 @ R-MW-6: Boron (9.7J), Sodium (212J), Alkalinity (7.7J), Chloride (0.60J).

Results > x10 blank and > RL: not qualified. Results < x10 blank and > RL, reported as estimates.

Duplicates:

R-DUP-1 @ R-MW-3: RPD exceeds limit (20%) for chloride and sulfate. Lithium detected in duplicate sample, ND in parent sample.

Sample Duplicate 3248996: RPD limit (10%) exceeded for Total Dissolved Solids (13%). Performed on unrelated sample: not qualified.

MS/MSD:

3254753: MS % recovery low for (<10%) Boron, Molybdenum, and Sodium. Parent sample concentrations for boron and sodium are greater than 4x the spike concentration, no qualification necessary. Associated molybdenum result is greater than RL, qualified as estimate. MS % recovery high for Barium, Calcium, Iron, Magnesium, Manganese, and Potassium. Only one QC indicator outside control limits for barium, calcium, iron, magnesium, manganese, and potassium: no qualification necessary. Associated with R-MW-3.

3255968/3255969: MS % recovery high for Sulfate. MS/MSR RPD (39%) exceeds RPD limit. Performed on unrelated sample: not qualified.

3256990/3256991: MS % recovery high for chloride. Fluoride detected in MS, not detected in parent sample.

MS % recovery low for Sulfate. MS/MSD % recovery high for fluoride and sulfate. Performed on unrelated sample: not qualified.

3254758: MS % recovery low for arsenic. Associated with sample -002. Only one QC indicator outside of control limits, no qualification necessary.

QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason
R-MW-5	Chloride	3.4	J	Detected in MB, x10 blank > result > RL
R-MW-6	Chloride	4.3	J	Detected in MB/FB, x10 blank > result > RL
R-FB-1	Chloride	1.0	U	Detection in MB, Result < RL
R-DUP-1	Chloride	63.8	J	DUP RPD exceeds limit
R-DUP-1	Sulfate	440	J	"
R-MW-3	Chloride	26.7	J	"
R-MW-3	Sulfate	335	J	"
R-DUP-1	Lithium	6.6	J	Detected in dup, ND in parent sample
R-MW-3	Lithium	5.6	UJ	"
R-MW-3	Molybdenum	928	J-	Spike recovery < 10%, result > QL.

Signature: Robert Penick

Date: 12/12/2022

December 02, 2022

Jeffrey Ingram
WSP Golder
701 Emerson Road
Suite 250
Saint Louis, MO 63141

RE: Project: AMEREN RIEC RCPA-CA
Pace Project No.: 60414795

Dear Jeffrey Ingram:

Enclosed are the analytical results for sample(s) received by the laboratory between November 03, 2022 and November 05, 2022. 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: Mark Haddock, Golder Associates
Lisa Meyer, Ameren
Grant Morey, WSP Golder
Ann Muehlfarth, WSP Golder
Eric Schneider, WSP Golder



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

Pace Analytical Services Pennsylvania

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601

ANAB DOD-ELAP Rad Accreditation #: L2417

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 04222CA

Colorado Certification #: PA01547

Connecticut Certification #: PH-0694

Delaware Certification

EPA Region 4 DW Rad

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Guam Certification

Florida: Cert E871149 SEKS WET

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas/TNI Certification #: E-10358

Kentucky Certification #: KY90133

KY WW Permit #: KY0098221

KY WW Permit #: KY0000221

Louisiana DHH/TNI Certification #: LA180012

Louisiana DEQ/TNI Certification #: 4086

Maine Certification #: 2017020

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 #: PA014572018-1

New Hampshire/TNI Certification #: 297617

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 #: PA200002-010

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: 02867

Texas/TNI Certification #: T104704188-17-3

Utah/TNI Certification #: PA014572017-9

USDA Soil Permit #: P330-17-00091

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

Wyoming Certification #: 8TMS-L

Pace Analytical Services Kansas

9608 Loiret Boulevard, Lenexa, KS 66219

Missouri Inorganic Drinking Water Certification #: 10090

Arkansas Drinking Water

Arkansas Certification #: 22-031-0

Illinois Certification #: 2000302021-3

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 #: T104704407-21-15

Utah Certification #: KS000212022-12

Illinois Certification #: 004592

Kansas Field Laboratory Accreditation: # E-92587

Missouri SEKS Micro Certification: 10070

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60414795001	R-P-05S	Water	11/01/22 14:34	11/03/22 03:55
60414795002	R-P-10S	Water	10/31/22 16:50	11/03/22 03:55
60414795003	R-P-17D	Water	11/02/22 13:52	11/03/22 03:55
60414795004	R-P-19S	Water	11/02/22 11:28	11/03/22 03:55
60414795005	R-P-19I	Water	11/02/22 10:35	11/03/22 03:55
60414795006	R-P-19D	Water	11/02/22 09:49	11/03/22 03:55
60414795007	R-P-21S	Water	11/02/22 11:00	11/03/22 03:55
60414795008	R-P-21I	Water	11/02/22 11:54	11/03/22 03:55
60414795009	R-P-21D	Water	11/02/22 12:45	11/03/22 03:55
60414795010	R-P-22S	Water	11/01/22 17:04	11/03/22 03:55
60414795011	R-CA-DUP-2	Water	11/02/22 00:00	11/03/22 03:55
60414795012	R-CA-FB-1	Water	11/02/22 11:10	11/03/22 03:55
60414795013	R-CA-RB-1	Water	11/03/22 17:30	11/05/22 10:14
60414795014	R-P-16S	Water	11/03/22 16:53	11/05/22 05:00
60414795015	R-P-17S	Water	11/02/22 15:26	11/05/22 05:00
60414795016	R-P-17I	Water	11/02/22 16:30	11/05/22 05:00
60414795017	R-P-22D	Water	11/03/22 16:20	11/05/22 05:00
60414795018	R-P-29S	Water	11/03/22 11:52	11/05/22 05:00
60414795019	R-P-29D	Water	11/03/22 09:20	11/05/22 05:00
60414795020	R-P-30S	Water	11/03/22 14:03	11/05/22 05:00
60414795021	R-P-31S	Water	11/03/22 14:19	11/05/22 05:00
60414795022	R-CA-DUP-1	Water	11/03/22 00:00	11/05/22 05:00
60414795023	R-CA-MS-1	Water	11/02/22 16:30	11/05/22 05:00
60414795024	R-CA-MSD-1	Water	11/02/22 16:30	11/05/22 05:00
60414795025	R-CA-FB-2	Water	11/03/22 09:30	11/05/22 05:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60414795001	R-P-05S	EPA 200.7	JDS	11	PASI-K
		EPA 200.8	MRV	4	PASI-K
		EPA 903.1	JDZ	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
60414795002	R-P-10S	EPA 200.7	JDS	11	PASI-K
		EPA 200.8	MRV	4	PASI-K
		EPA 903.1	JDZ	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
60414795003	R-P-17D	EPA 200.7	JDS	11	PASI-K
		EPA 200.8	MRV	4	PASI-K
		EPA 903.1	JDZ	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	KJD	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
60414795004	R-P-19S	EPA 200.7	JDS	11	PASI-K
		EPA 200.8	MRV	4	PASI-K
		EPA 903.1	JDZ	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	KJD	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
60414795005	R-P-19I	EPA 200.7	JDS	11	PASI-K
		EPA 200.8	MRV	4	PASI-K
		EPA 903.1	JDZ	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	KJD	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
60414795006	R-P-19D	EPA 200.7	JDS	11	PASI-K
		EPA 200.8	MRV	4	PASI-K

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60414795007	R-P-21S	EPA 903.1	JDZ	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	KJD	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JDS	11	PASI-K
		EPA 200.8	MRV	4	PASI-K
		EPA 903.1	JDZ	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
60414795008	R-P-21I	SM 2540C	KJD	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JDS	11	PASI-K
		EPA 200.8	MRV	4	PASI-K
		EPA 903.1	JDZ	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	KJD	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JDS	11	PASI-K
60414795009	R-P-21D	EPA 200.8	MRV	4	PASI-K
		EPA 903.1	JDZ	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	KJD	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JDS	11	PASI-K
		EPA 200.8	MRV	4	PASI-K
		EPA 903.1	JDZ	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
60414795010	R-P-22S	SM 2320B	BLA	1	PASI-K
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JDS	11	PASI-K
		EPA 200.8	MRV	4	PASI-K
		EPA 903.1	JDZ	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	BLA	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
60414795011	R-CA-DUP-2	EPA 200.7	JDS	11	PASI-K
		EPA 200.8	MRV	4	PASI-K
		EPA 903.1	JDZ	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60414795012	R-CA-FB-1	SM 2320B	BLA	1	PASI-K
		SM 2540C	KJD	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JDS	11	PASI-K
		EPA 200.8	MRV	4	PASI-K
		EPA 903.1	JDZ	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
60414795013	R-CA-RB-1	SM 2540C	KJD	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JDS	11	PASI-K
		EPA 200.8	MRV	4	PASI-K
		EPA 903.1	JDZ	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	TML	1	PASI-K
60414795014	R-P-16S	EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JDS	11	PASI-K
		EPA 200.8	MRV	4	PASI-K
		EPA 903.1	JDZ	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	TML	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
60414795015	R-P-17S	EPA 200.7	JDS	11	PASI-K
		EPA 200.8	MRV	4	PASI-K
		EPA 903.1	JDZ	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	KJD	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JDS	11	PASI-K
60414795016	R-P-17I	EPA 200.8	MRV	4	PASI-K
		EPA 903.1	JDZ	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	KJD	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JDS	11	PASI-K
		EPA 200.8	MRV	4	PASI-K

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60414795017	R-P-22D	EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JDS	11	PASI-K
		EPA 200.8	MRV	4	PASI-K
		EPA 903.1	JDZ	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	TML	1	PASI-K
60414795018	R-P-29S	EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JDS	11	PASI-K
		EPA 200.8	MRV	4	PASI-K
		EPA 903.1	JDZ	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	TML	1	PASI-K
60414795019	R-P-29D	EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JDS	11	PASI-K
		EPA 200.8	MRV	4	PASI-K
		EPA 903.1	GDH	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	TML	1	PASI-K
60414795020	R-P-30S	EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JDS	11	PASI-K
		EPA 200.8	MRV	4	PASI-K
		EPA 903.1	GDH	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	KJD	1	PASI-K
60414795021	R-P-31S	EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JDS	11	PASI-K
		EPA 200.8	MRV	4	PASI-K
		EPA 903.1	GDH	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	KJD	1	PASI-K
60414795022	R-CA-DUP-1	EPA 300.0	RKA	3	PASI-K
		EPA 200.7	JDS	11	PASI-K

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SAMPLE ANALYTE COUNT

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 200.8	MRV	4	PASI-K
		EPA 903.1	GDH	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	BLA	1	PASI-K
		SM 2540C	KJD	1	PASI-K
		EPA 300.0	RKA	3	PASI-K
60414795023	R-CA-MS-1	EPA 903.1	JDZ	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
60414795024	R-CA-MSD-1	EPA 903.1	JDZ	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
60414795025	R-CA-FB-2	EPA 200.7	JDS	11	PASI-K
		EPA 200.8	MRV	4	PASI-K
		EPA 903.1	GDH	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		SM 2320B	SZ	1	PASI-K
		SM 2540C	KJD	1	PASI-K
		EPA 300.0	RKA	3	PASI-K

PASI-K = Pace Analytical Services - Kansas City

PASI-PA = Pace Analytical Services - Greensburg

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

Sample: R-P-05S **Lab ID: 60414795001** Collected: 11/01/22 14:34 Received: 11/03/22 03:55 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	162	ug/L	5.0	0.51	1	11/21/22 16:35	11/29/22 17:33	7440-39-3	
Boron	4260	ug/L	100	4.2	1	11/21/22 16:35	11/29/22 17:33	7440-42-8	
Calcium	66000	ug/L	200	33.7	1	11/21/22 16:35	11/29/22 17:33	7440-70-2	
Iron	9420	ug/L	50.0	5.6	1	11/21/22 16:35	11/29/22 17:33	7439-89-6	
Lead	<8.6	ug/L	10.0	8.6	1	11/21/22 16:35	11/29/22 17:33	7439-92-1	
Lithium	13.6	ug/L	10.0	5.6	1	11/21/22 16:35	11/29/22 17:33	7439-93-2	
Magnesium	21900	ug/L	50.0	27.1	1	11/21/22 16:35	11/29/22 17:33	7439-95-4	
Manganese	221	ug/L	5.0	0.24	1	11/21/22 16:35	11/29/22 17:33	7439-96-5	
Molybdenum	7.8J	ug/L	20.0	0.90	1	11/21/22 16:35	11/29/22 17:33	7439-98-7	
Potassium	5770	ug/L	500	87.6	1	11/21/22 16:35	11/29/22 17:33	7440-09-7	
Sodium	33000	ug/L	500	73.2	1	11/21/22 16:35	11/29/22 17:33	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	11/21/22 16:35	11/30/22 12:00	7440-36-0	
Arsenic	164	ug/L	1.0	0.14	1	11/21/22 16:35	11/30/22 12:00	7440-38-2	
Chromium	0.39J	ug/L	1.0	0.31	1	11/21/22 16:35	11/30/22 12:00	7440-47-3	
Selenium	0.25J	ug/L	1.0	0.18	1	11/21/22 16:35	11/30/22 12:00	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	286	mg/L	20.0	4.6	1		11/15/22 14:57		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	358	mg/L	5.0	5.0	1		11/07/22 13:23		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	25.3	mg/L	2.0	1.1	2		11/18/22 12:37	16887-00-6	
Fluoride	0.33	mg/L	0.20	0.12	1		11/18/22 12:24	16984-48-8	
Sulfate	19.3	mg/L	1.0	0.55	1		11/18/22 12:24	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

Sample: R-P-10S **Lab ID: 60414795002** Collected: 10/31/22 16:50 Received: 11/03/22 03:55 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	168	ug/L	5.0	0.51	1	11/21/22 16:35	11/29/22 17:35	7440-39-3	
Boron	2850	ug/L	100	4.2	1	11/21/22 16:35	11/29/22 17:35	7440-42-8	
Calcium	69800	ug/L	200	33.7	1	11/21/22 16:35	11/29/22 17:35	7440-70-2	
Iron	1900	ug/L	50.0	5.6	1	11/21/22 16:35	11/29/22 17:35	7439-89-6	
Lead	<8.6	ug/L	10.0	8.6	1	11/21/22 16:35	11/29/22 17:35	7439-92-1	
Lithium	11.2	ug/L	10.0	5.6	1	11/21/22 16:35	11/29/22 17:35	7439-93-2	
Magnesium	9900	ug/L	50.0	27.1	1	11/21/22 16:35	11/29/22 17:35	7439-95-4	
Manganese	917	ug/L	5.0	0.24	1	11/21/22 16:35	11/29/22 17:35	7439-96-5	
Molybdenum	101	ug/L	20.0	0.90	1	11/21/22 16:35	11/29/22 17:35	7439-98-7	
Potassium	4190	ug/L	500	87.6	1	11/21/22 16:35	11/29/22 17:35	7440-09-7	
Sodium	101000	ug/L	500	73.2	1	11/21/22 16:35	11/29/22 17:35	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	0.12J	ug/L	1.0	0.12	1	11/21/22 16:35	11/30/22 12:02	7440-36-0	
Arsenic	11.9	ug/L	1.0	0.14	1	11/21/22 16:35	11/30/22 12:02	7440-38-2	
Chromium	0.80J	ug/L	1.0	0.31	1	11/21/22 16:35	11/30/22 12:02	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/21/22 16:35	11/30/22 12:02	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	300	mg/L	20.0	4.6	1		11/11/22 16:12		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	518	mg/L	10.0	10.0	1		11/07/22 13:18		
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		11/18/22 12:51	16887-00-6	
Fluoride	0.46	mg/L	0.20	0.12	1		11/18/22 12:51	16984-48-8	
Sulfate	115	mg/L	10.0	5.5	10		11/18/22 13:04	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

Sample: R-P-17D **Lab ID: 60414795003** Collected: 11/02/22 13:52 Received: 11/03/22 03:55 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	95.7	ug/L	5.0	0.51	1	11/21/22 16:35	11/29/22 17:37	7440-39-3	
Boron	7810	ug/L	100	4.2	1	11/21/22 16:35	11/29/22 17:37	7440-42-8	
Calcium	45800	ug/L	200	33.7	1	11/21/22 16:35	11/29/22 17:37	7440-70-2	
Iron	2460	ug/L	50.0	5.6	1	11/21/22 16:35	11/29/22 17:37	7439-89-6	
Lead	<8.6	ug/L	10.0	8.6	1	11/21/22 16:35	11/29/22 17:37	7439-92-1	
Lithium	35.1	ug/L	10.0	5.6	1	11/21/22 16:35	11/29/22 17:37	7439-93-2	
Magnesium	10200	ug/L	50.0	27.1	1	11/21/22 16:35	11/29/22 17:37	7439-95-4	
Manganese	401	ug/L	5.0	0.24	1	11/21/22 16:35	11/29/22 17:37	7439-96-5	
Molybdenum	663	ug/L	20.0	0.90	1	11/21/22 16:35	11/29/22 17:37	7439-98-7	
Potassium	7360	ug/L	500	87.6	1	11/21/22 16:35	11/29/22 17:37	7440-09-7	
Sodium	127000	ug/L	500	73.2	1	11/21/22 16:35	11/29/22 17:37	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	11/21/22 16:35	11/30/22 12:10	7440-36-0	
Arsenic	1.1	ug/L	1.0	0.14	1	11/21/22 16:35	11/30/22 12:10	7440-38-2	
Chromium	0.75J	ug/L	1.0	0.31	1	11/21/22 16:35	11/30/22 12:10	7440-47-3	
Selenium	0.24J	ug/L	1.0	0.18	1	11/21/22 16:35	11/30/22 12:10	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	720	mg/L	20.0	4.6	1		11/15/22 14:57		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	621	mg/L	10.0	10.0	1		11/08/22 14:51		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	27.8	mg/L	2.0	1.1	2		11/18/22 13:31	16887-00-6	
Fluoride	0.59	mg/L	0.20	0.12	1		11/18/22 13:17	16984-48-8	
Sulfate	250	mg/L	20.0	11.0	20		11/18/22 14:11	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

Sample: R-P-19S **Lab ID: 60414795004** Collected: 11/02/22 11:28 Received: 11/03/22 03:55 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	170	ug/L	5.0	0.51	1	11/21/22 16:35	11/29/22 17:39	7440-39-3	
Boron	274	ug/L	100	4.2	1	11/21/22 16:35	11/29/22 17:39	7440-42-8	
Calcium	84700	ug/L	200	33.7	1	11/21/22 16:35	11/29/22 17:39	7440-70-2	
Iron	5750	ug/L	50.0	5.6	1	11/21/22 16:35	11/29/22 17:39	7439-89-6	
Lead	<8.6	ug/L	10.0	8.6	1	11/21/22 16:35	11/29/22 17:39	7439-92-1	
Lithium	17.3	ug/L	10.0	5.6	1	11/21/22 16:35	11/29/22 17:39	7439-93-2	
Magnesium	16100	ug/L	50.0	27.1	1	11/21/22 16:35	11/29/22 17:39	7439-95-4	
Manganese	618	ug/L	5.0	0.24	1	11/21/22 16:35	11/29/22 17:39	7439-96-5	
Molybdenum	4.2J	ug/L	20.0	0.90	1	11/21/22 16:35	11/29/22 17:39	7439-98-7	
Potassium	4720	ug/L	500	87.6	1	11/21/22 16:35	11/29/22 17:39	7440-09-7	
Sodium	13000	ug/L	500	73.2	1	11/21/22 16:35	11/29/22 17:39	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	11/21/22 16:35	11/30/22 13:19	7440-36-0	
Arsenic	11.6	ug/L	1.0	0.14	1	11/21/22 16:35	11/30/22 13:19	7440-38-2	
Chromium	0.46J	ug/L	1.0	0.31	1	11/21/22 16:35	11/30/22 13:19	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/21/22 16:35	11/30/22 13:19	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	302	mg/L	20.0	4.6	1		11/15/22 14:57		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	324	mg/L	5.0	5.0	1		11/08/22 14:51		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	1.6	mg/L	1.0	0.53	1		11/18/22 14:24	16887-00-6	B
Fluoride	0.33	mg/L	0.20	0.12	1		11/18/22 14:24	16984-48-8	
Sulfate	13.6	mg/L	1.0	0.55	1		11/18/22 14:24	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

Sample: R-P-19I **Lab ID: 60414795005** Collected: 11/02/22 10:35 Received: 11/03/22 03:55 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	37.9	ug/L	5.0	0.51	1	11/21/22 16:35	11/29/22 17:41	7440-39-3	
Boron	3570	ug/L	100	4.2	1	11/21/22 16:35	11/29/22 17:41	7440-42-8	
Calcium	11300	ug/L	200	33.7	1	11/21/22 16:35	11/29/22 17:41	7440-70-2	
Iron	46.6J	ug/L	50.0	5.6	1	11/21/22 16:35	11/29/22 17:41	7439-89-6	B
Lead	<8.6	ug/L	10.0	8.6	1	11/21/22 16:35	11/29/22 17:41	7439-92-1	
Lithium	126	ug/L	10.0	5.6	1	11/21/22 16:35	11/29/22 17:41	7439-93-2	
Magnesium	321	ug/L	50.0	27.1	1	11/21/22 16:35	11/29/22 17:41	7439-95-4	
Manganese	2.5J	ug/L	5.0	0.24	1	11/21/22 16:35	11/29/22 17:41	7439-96-5	
Molybdenum	100	ug/L	20.0	0.90	1	11/21/22 16:35	11/29/22 17:41	7439-98-7	
Potassium	30400	ug/L	500	87.6	1	11/21/22 16:35	11/29/22 17:41	7440-09-7	
Sodium	209000	ug/L	500	73.2	1	11/21/22 16:35	11/29/22 17:41	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	0.47J	ug/L	1.0	0.12	1	11/21/22 16:35	11/30/22 13:22	7440-36-0	
Arsenic	28.5	ug/L	1.0	0.14	1	11/21/22 16:35	11/30/22 13:22	7440-38-2	
Chromium	0.46J	ug/L	1.0	0.31	1	11/21/22 16:35	11/30/22 13:22	7440-47-3	
Selenium	0.28J	ug/L	1.0	0.18	1	11/21/22 16:35	11/30/22 13:22	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	371	mg/L	20.0	4.6	1		11/15/22 14:57		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	693	mg/L	10.0	10.0	1		11/08/22 14:51		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	23.7	mg/L	5.0	2.6	5		11/18/22 15:18	16887-00-6	B
Fluoride	0.43	mg/L	0.20	0.12	1		11/18/22 15:04	16984-48-8	
Sulfate	121	mg/L	50.0	27.5	50		11/18/22 15:31	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

Sample: R-P-19D **Lab ID: 60414795006** Collected: 11/02/22 09:49 Received: 11/03/22 03:55 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	89.5	ug/L	5.0	0.51	1	11/21/22 16:35	11/29/22 17:43	7440-39-3	
Boron	10500	ug/L	100	4.2	1	11/21/22 16:35	11/29/22 17:43	7440-42-8	
Calcium	30200	ug/L	200	33.7	1	11/21/22 16:35	11/29/22 17:43	7440-70-2	
Iron	1840	ug/L	50.0	5.6	1	11/21/22 16:35	11/29/22 17:43	7439-89-6	
Lead	<8.6	ug/L	10.0	8.6	1	11/21/22 16:35	11/29/22 17:43	7439-92-1	
Lithium	15.2	ug/L	10.0	5.6	1	11/21/22 16:35	11/29/22 17:43	7439-93-2	
Magnesium	4360	ug/L	50.0	27.1	1	11/21/22 16:35	11/29/22 17:43	7439-95-4	
Manganese	241	ug/L	5.0	0.24	1	11/21/22 16:35	11/29/22 17:43	7439-96-5	
Molybdenum	892	ug/L	20.0	0.90	1	11/21/22 16:35	11/29/22 17:43	7439-98-7	
Potassium	3570	ug/L	500	87.6	1	11/21/22 16:35	11/29/22 17:43	7440-09-7	
Sodium	165000	ug/L	500	73.2	1	11/21/22 16:35	11/29/22 17:43	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	11/21/22 16:35	11/30/22 13:24	7440-36-0	
Arsenic	0.62J	ug/L	1.0	0.14	1	11/21/22 16:35	11/30/22 13:24	7440-38-2	
Chromium	0.80J	ug/L	1.0	0.31	1	11/21/22 16:35	11/30/22 13:24	7440-47-3	
Selenium	0.31J	ug/L	1.0	0.18	1	11/21/22 16:35	11/30/22 13:24	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	242	mg/L	20.0	4.6	1		11/15/22 14:57		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	633	mg/L	10.0	10.0	1		11/08/22 14:51		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	26.3	mg/L	5.0	2.6	5		11/18/22 15:58	16887-00-6	B
Fluoride	2.2	mg/L	0.20	0.12	1		11/18/22 15:44	16984-48-8	
Sulfate	161	mg/L	20.0	11.0	20		11/18/22 16:11	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

Sample: R-P-21S **Lab ID: 60414795007** Collected: 11/02/22 11:00 Received: 11/03/22 03:55 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	278	ug/L	5.0	0.51	1	11/21/22 16:35	11/29/22 17:45	7440-39-3	
Boron	483	ug/L	100	4.2	1	11/21/22 16:35	11/29/22 17:45	7440-42-8	
Calcium	154000	ug/L	200	33.7	1	11/21/22 16:35	11/29/22 17:45	7440-70-2	
Iron	34000	ug/L	50.0	5.6	1	11/21/22 16:35	11/29/22 17:45	7439-89-6	
Lead	<8.6	ug/L	10.0	8.6	1	11/21/22 16:35	11/29/22 17:45	7439-92-1	
Lithium	14.8	ug/L	10.0	5.6	1	11/21/22 16:35	11/29/22 17:45	7439-93-2	
Magnesium	43500	ug/L	50.0	27.1	1	11/21/22 16:35	11/29/22 17:45	7439-95-4	
Manganese	1630	ug/L	5.0	0.24	1	11/21/22 16:35	11/29/22 17:45	7439-96-5	
Molybdenum	<0.90	ug/L	20.0	0.90	1	11/21/22 16:35	11/29/22 17:45	7439-98-7	
Potassium	4260	ug/L	500	87.6	1	11/21/22 16:35	11/29/22 17:45	7440-09-7	
Sodium	28200	ug/L	500	73.2	1	11/21/22 16:35	11/29/22 17:45	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	11/21/22 16:35	11/30/22 13:27	7440-36-0	
Arsenic	125	ug/L	1.0	0.14	1	11/21/22 16:35	11/30/22 13:27	7440-38-2	
Chromium	0.46J	ug/L	1.0	0.31	1	11/21/22 16:35	11/30/22 13:27	7440-47-3	
Selenium	0.29J	ug/L	1.0	0.18	1	11/21/22 16:35	11/30/22 13:27	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	582	mg/L	20.0	4.6	1		11/15/22 14:57		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	630	mg/L	10.0	10.0	1		11/08/22 14:51		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	11.5	mg/L	1.0	0.53	1		11/18/22 16:51	16887-00-6	
Fluoride	0.24	mg/L	0.20	0.12	1		11/18/22 16:51	16984-48-8	
Sulfate	15.5	mg/L	1.0	0.55	1		11/18/22 16:51	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

Sample: R-P-211 **Lab ID: 60414795008** Collected: 11/02/22 11:54 Received: 11/03/22 03:55 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	51.1	ug/L	5.0	0.51	1	11/21/22 16:35	11/29/22 17:53	7440-39-3	
Boron	3170	ug/L	100	4.2	1	11/21/22 16:35	11/29/22 17:53	7440-42-8	
Calcium	25200	ug/L	200	33.7	1	11/21/22 16:35	11/29/22 17:53	7440-70-2	
Iron	283	ug/L	50.0	5.6	1	11/21/22 16:35	11/29/22 17:53	7439-89-6	
Lead	<8.6	ug/L	10.0	8.6	1	11/21/22 16:35	11/29/22 17:53	7439-92-1	
Lithium	20.0	ug/L	10.0	5.6	1	11/21/22 16:35	11/29/22 17:53	7439-93-2	
Magnesium	2980	ug/L	50.0	27.1	1	11/21/22 16:35	11/29/22 17:53	7439-95-4	
Manganese	57.9	ug/L	5.0	0.24	1	11/21/22 16:35	11/29/22 17:53	7439-96-5	
Molybdenum	203	ug/L	20.0	0.90	1	11/21/22 16:35	11/29/22 17:53	7439-98-7	
Potassium	5600	ug/L	500	87.6	1	11/21/22 16:35	11/29/22 17:53	7440-09-7	
Sodium	109000	ug/L	500	73.2	1	11/21/22 16:35	11/29/22 17:53	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	11/21/22 16:35	11/30/22 13:31	7440-36-0	
Arsenic	5.0	ug/L	1.0	0.14	1	11/21/22 16:35	11/30/22 13:31	7440-38-2	
Chromium	0.43J	ug/L	1.0	0.31	1	11/21/22 16:35	11/30/22 13:31	7440-47-3	
Selenium	0.35J	ug/L	1.0	0.18	1	11/21/22 16:35	11/30/22 13:31	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	170	mg/L	20.0	4.6	1		11/15/22 14:57		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	420	mg/L	10.0	10.0	1		11/08/22 14:51		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	49.2	mg/L	10.0	5.3	10		11/18/22 17:31	16887-00-6	B
Fluoride	0.90	mg/L	0.20	0.12	1		11/18/22 17:18	16984-48-8	
Sulfate	88.3	mg/L	10.0	5.5	10		11/18/22 17:31	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

Sample: R-P-21D **Lab ID: 60414795009** Collected: 11/02/22 12:45 Received: 11/03/22 03:55 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	62.7	ug/L	5.0	0.51	1	11/21/22 16:35	11/29/22 17:55	7440-39-3	
Boron	5590	ug/L	100	4.2	1	11/21/22 16:35	11/29/22 17:55	7440-42-8	
Calcium	58400	ug/L	200	33.7	1	11/21/22 16:35	11/29/22 17:55	7440-70-2	
Iron	1350	ug/L	50.0	5.6	1	11/21/22 16:35	11/29/22 17:55	7439-89-6	
Lead	<8.6	ug/L	10.0	8.6	1	11/21/22 16:35	11/29/22 17:55	7439-92-1	
Lithium	89.2	ug/L	10.0	5.6	1	11/21/22 16:35	11/29/22 17:55	7439-93-2	
Magnesium	20500	ug/L	50.0	27.1	1	11/21/22 16:35	11/29/22 17:55	7439-95-4	
Manganese	463	ug/L	5.0	0.24	1	11/21/22 16:35	11/29/22 17:55	7439-96-5	
Molybdenum	417	ug/L	20.0	0.90	1	11/21/22 16:35	11/29/22 17:55	7439-98-7	
Potassium	6820	ug/L	500	87.6	1	11/21/22 16:35	11/29/22 17:55	7440-09-7	
Sodium	261000	ug/L	500	73.2	1	11/21/22 16:35	11/29/22 17:55	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	11/21/22 16:35	11/30/22 13:34	7440-36-0	
Arsenic	0.52J	ug/L	1.0	0.14	1	11/21/22 16:35	11/30/22 13:34	7440-38-2	
Chromium	0.60J	ug/L	1.0	0.31	1	11/21/22 16:35	11/30/22 13:34	7440-47-3	
Selenium	0.22J	ug/L	1.0	0.18	1	11/21/22 16:35	11/30/22 13:34	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO ₃	260	mg/L	20.0	4.6	1		11/15/22 14:57		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	1040	mg/L	13.3	13.3	1		11/08/22 14:51		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	433	mg/L	100	52.7	100		11/18/22 18:11	16887-00-6	B
Fluoride	1.4	mg/L	0.20	0.12	1		11/18/22 17:44	16984-48-8	
Sulfate	97.9	mg/L	10.0	5.5	10		11/18/22 17:57	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

Sample: R-P-22S **Lab ID: 60414795010** Collected: 11/01/22 17:04 Received: 11/03/22 03:55 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	162	ug/L	5.0	0.51	1	11/21/22 16:35	11/29/22 17:57	7440-39-3	
Boron	515	ug/L	100	4.2	1	11/21/22 16:35	11/29/22 17:57	7440-42-8	
Calcium	194000	ug/L	200	33.7	1	11/21/22 16:35	11/29/22 17:57	7440-70-2	
Iron	1900	ug/L	50.0	5.6	1	11/21/22 16:35	11/29/22 17:57	7439-89-6	
Lead	<8.6	ug/L	10.0	8.6	1	11/21/22 16:35	11/29/22 17:57	7439-92-1	
Lithium	50.0	ug/L	10.0	5.6	1	11/21/22 16:35	11/29/22 17:57	7439-93-2	
Magnesium	46100	ug/L	50.0	27.1	1	11/21/22 16:35	11/29/22 17:57	7439-95-4	
Manganese	424	ug/L	5.0	0.24	1	11/21/22 16:35	11/29/22 17:57	7439-96-5	
Molybdenum	7.1J	ug/L	20.0	0.90	1	11/21/22 16:35	11/29/22 17:57	7439-98-7	
Potassium	7520	ug/L	500	87.6	1	11/21/22 16:35	11/29/22 17:57	7440-09-7	
Sodium	64000	ug/L	500	73.2	1	11/21/22 16:35	11/29/22 17:57	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	11/21/22 16:35	11/30/22 13:36	7440-36-0	
Arsenic	2.0	ug/L	1.0	0.14	1	11/21/22 16:35	11/30/22 13:36	7440-38-2	
Chromium	<0.31	ug/L	1.0	0.31	1	11/21/22 16:35	11/30/22 13:36	7440-47-3	
Selenium	0.49J	ug/L	1.0	0.18	1	11/21/22 16:35	11/30/22 13:36	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	566	mg/L	20.0	4.6	1		11/15/22 14:57		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	887	mg/L	13.3	13.3	1		11/07/22 13:24		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	46.0	mg/L	20.0	10.5	20		11/18/22 18:51	16887-00-6	B
Fluoride	<0.12	mg/L	0.20	0.12	1		11/18/22 18:24	16984-48-8	
Sulfate	188	mg/L	20.0	11.0	20		11/18/22 18:51	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

Sample: R-CA-DUP-2 **Lab ID: 60414795011** Collected: 11/02/22 00:00 Received: 11/03/22 03:55 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	166	ug/L	5.0	0.51	1	11/21/22 16:35	11/29/22 17:59	7440-39-3	
Boron	259	ug/L	100	4.2	1	11/21/22 16:35	11/29/22 17:59	7440-42-8	
Calcium	82800	ug/L	200	33.7	1	11/21/22 16:35	11/29/22 17:59	7440-70-2	M1
Iron	5670	ug/L	50.0	5.6	1	11/21/22 16:35	11/29/22 17:59	7439-89-6	
Lead	<8.6	ug/L	10.0	8.6	1	11/21/22 16:35	11/29/22 17:59	7439-92-1	
Lithium	16.8	ug/L	10.0	5.6	1	11/21/22 16:35	11/29/22 17:59	7439-93-2	
Magnesium	16000	ug/L	50.0	27.1	1	11/21/22 16:35	11/29/22 17:59	7439-95-4	
Manganese	617	ug/L	5.0	0.24	1	11/21/22 16:35	11/29/22 17:59	7439-96-5	
Molybdenum	4.2J	ug/L	20.0	0.90	1	11/21/22 16:35	11/29/22 17:59	7439-98-7	
Potassium	4600	ug/L	500	87.6	1	11/21/22 16:35	11/29/22 17:59	7440-09-7	
Sodium	13100	ug/L	500	73.2	1	11/21/22 16:35	11/29/22 17:59	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	11/21/22 16:35	11/30/22 13:39	7440-36-0	
Arsenic	11.9	ug/L	1.0	0.14	1	11/21/22 16:35	11/30/22 13:39	7440-38-2	
Chromium	0.55J	ug/L	1.0	0.31	1	11/21/22 16:35	11/30/22 13:39	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/21/22 16:35	11/30/22 13:39	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	299	mg/L	20.0	4.6	1		11/15/22 14:57		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	332	mg/L	5.0	5.0	1		11/08/22 14:51		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	1.5	mg/L	1.0	0.53	1		11/18/22 19:31	16887-00-6	B
Fluoride	0.33	mg/L	0.20	0.12	1		11/18/22 19:31	16984-48-8	
Sulfate	13.6	mg/L	1.0	0.55	1		11/18/22 19:31	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

Sample: R-CA-FB-1 **Lab ID: 60414795012** Collected: 11/02/22 11:10 Received: 11/03/22 03:55 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	1.0J	ug/L	5.0	0.51	1	11/21/22 16:35	11/29/22 18:03	7440-39-3	B
Boron	4.4J	ug/L	100	4.2	1	11/21/22 16:35	11/29/22 18:03	7440-42-8	
Calcium	56.9J	ug/L	200	33.7	1	11/21/22 16:35	11/29/22 18:03	7440-70-2	
Iron	10.6J	ug/L	50.0	5.6	1	11/21/22 16:35	11/29/22 18:03	7439-89-6	B
Lead	<8.6	ug/L	10.0	8.6	1	11/21/22 16:35	11/29/22 18:03	7439-92-1	
Lithium	<5.6	ug/L	10.0	5.6	1	11/21/22 16:35	11/29/22 18:03	7439-93-2	
Magnesium	<27.1	ug/L	50.0	27.1	1	11/21/22 16:35	11/29/22 18:03	7439-95-4	
Manganese	<0.24	ug/L	5.0	0.24	1	11/21/22 16:35	11/29/22 18:03	7439-96-5	
Molybdenum	<0.90	ug/L	20.0	0.90	1	11/21/22 16:35	11/29/22 18:03	7439-98-7	
Potassium	<87.6	ug/L	500	87.6	1	11/21/22 16:35	11/29/22 18:03	7440-09-7	
Sodium	<73.2	ug/L	500	73.2	1	11/21/22 16:35	11/29/22 18:03	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	11/21/22 16:35	11/30/22 13:41	7440-36-0	
Arsenic	<0.14	ug/L	1.0	0.14	1	11/21/22 16:35	11/30/22 13:41	7440-38-2	
Chromium	0.41J	ug/L	1.0	0.31	1	11/21/22 16:35	11/30/22 13:41	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/21/22 16:35	11/30/22 13:41	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	8.8J	mg/L	20.0	4.6	1		11/16/22 15:16		B
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		11/08/22 14:52		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	0.62J	mg/L	1.0	0.53	1		11/18/22 20:11	16887-00-6	B
Fluoride	<0.12	mg/L	0.20	0.12	1		11/18/22 20:11	16984-48-8	
Sulfate	<0.55	mg/L	1.0	0.55	1		11/18/22 20:11	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

Sample: R-CA-RB-1 **Lab ID: 60414795013** Collected: 11/03/22 17:30 Received: 11/05/22 10:14 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	1.1J	ug/L	5.0	0.51	1	11/21/22 16:35	11/29/22 18:05	7440-39-3	B
Boron	<4.2	ug/L	100	4.2	1	11/21/22 16:35	11/29/22 18:05	7440-42-8	
Calcium	52.3J	ug/L	200	33.7	1	11/21/22 16:35	11/29/22 18:05	7440-70-2	
Iron	15.8J	ug/L	50.0	5.6	1	11/21/22 16:35	11/29/22 18:05	7439-89-6	B
Lead	<8.6	ug/L	10.0	8.6	1	11/21/22 16:35	11/29/22 18:05	7439-92-1	
Lithium	<5.6	ug/L	10.0	5.6	1	11/21/22 16:35	11/29/22 18:05	7439-93-2	
Magnesium	<27.1	ug/L	50.0	27.1	1	11/21/22 16:35	11/29/22 18:05	7439-95-4	
Manganese	0.61J	ug/L	5.0	0.24	1	11/21/22 16:35	11/29/22 18:05	7439-96-5	
Molybdenum	<0.90	ug/L	20.0	0.90	1	11/21/22 16:35	11/29/22 18:05	7439-98-7	
Potassium	<87.6	ug/L	500	87.6	1	11/21/22 16:35	11/29/22 18:05	7440-09-7	
Sodium	111J	ug/L	500	73.2	1	11/21/22 16:35	11/29/22 18:05	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	11/21/22 16:35	11/30/22 13:46	7440-36-0	
Arsenic	<0.14	ug/L	1.0	0.14	1	11/21/22 16:35	11/30/22 13:46	7440-38-2	
Chromium	0.80J	ug/L	1.0	0.31	1	11/21/22 16:35	11/30/22 13:46	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/21/22 16:35	11/30/22 13:46	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<4.6	mg/L	20.0	4.6	1		11/16/22 16:56		
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		11/09/22 14:50		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	0.60J	mg/L	1.0	0.53	1		11/17/22 20:47	16887-00-6	B
Fluoride	<0.12	mg/L	0.20	0.12	1		11/17/22 20:47	16984-48-8	
Sulfate	<0.55	mg/L	1.0	0.55	1		11/17/22 20:47	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

Sample: R-P-16S **Lab ID: 60414795014** Collected: 11/03/22 16:53 Received: 11/05/22 05:00 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	144	ug/L	5.0	0.51	1	11/21/22 16:35	11/29/22 18:07	7440-39-3	
Boron	438	ug/L	100	4.2	1	11/21/22 16:35	11/29/22 18:07	7440-42-8	
Calcium	123000	ug/L	200	33.7	1	11/21/22 16:35	11/29/22 18:07	7440-70-2	
Iron	52.0	ug/L	50.0	5.6	1	11/21/22 16:35	11/29/22 18:07	7439-89-6	B
Lead	<8.6	ug/L	10.0	8.6	1	11/21/22 16:35	11/29/22 18:07	7439-92-1	
Lithium	23.0	ug/L	10.0	5.6	1	11/21/22 16:35	11/29/22 18:07	7439-93-2	
Magnesium	29200	ug/L	50.0	27.1	1	11/21/22 16:35	11/29/22 18:07	7439-95-4	
Manganese	228	ug/L	5.0	0.24	1	11/21/22 16:35	11/29/22 18:07	7439-96-5	
Molybdenum	9.4J	ug/L	20.0	0.90	1	11/21/22 16:35	11/29/22 18:07	7439-98-7	
Potassium	4050	ug/L	500	87.6	1	11/21/22 16:35	11/29/22 18:07	7440-09-7	
Sodium	24200	ug/L	500	73.2	1	11/21/22 16:35	11/29/22 18:07	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	11/21/22 16:35	11/30/22 13:49	7440-36-0	
Arsenic	1.0	ug/L	1.0	0.14	1	11/21/22 16:35	11/30/22 13:49	7440-38-2	
Chromium	0.35J	ug/L	1.0	0.31	1	11/21/22 16:35	11/30/22 13:49	7440-47-3	
Selenium	0.46J	ug/L	1.0	0.18	1	11/21/22 16:35	11/30/22 13:49	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	416	mg/L	20.0	4.6	1		11/16/22 16:56		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	477	mg/L	10.0	10.0	1		11/09/22 14:50		
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		11/17/22 21:14	16887-00-6	B
Fluoride	<0.12	mg/L	0.20	0.12	1		11/17/22 21:14	16984-48-8	
Sulfate	59.1	mg/L	5.0	2.8	5		11/17/22 21:27	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

Sample: R-P-17S **Lab ID: 60414795015** Collected: 11/02/22 15:26 Received: 11/05/22 05:00 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	38.4	ug/L	5.0	0.51	1	11/21/22 16:35	11/29/22 18:25	7440-39-3	
Boron	1700	ug/L	100	4.2	1	11/21/22 16:35	11/29/22 18:25	7440-42-8	
Calcium	35400	ug/L	200	33.7	1	11/21/22 16:35	11/29/22 18:25	7440-70-2	
Iron	401	ug/L	50.0	5.6	1	11/21/22 16:35	11/29/22 18:25	7439-89-6	
Lead	<8.6	ug/L	10.0	8.6	1	11/21/22 16:35	11/29/22 18:25	7439-92-1	
Lithium	10.4	ug/L	10.0	5.6	1	11/21/22 16:35	11/29/22 18:25	7439-93-2	
Magnesium	6000	ug/L	50.0	27.1	1	11/21/22 16:35	11/29/22 18:25	7439-95-4	
Manganese	263	ug/L	5.0	0.24	1	11/21/22 16:35	11/29/22 18:25	7439-96-5	
Molybdenum	26.9	ug/L	20.0	0.90	1	11/21/22 16:35	11/29/22 18:25	7439-98-7	
Potassium	2100	ug/L	500	87.6	1	11/21/22 16:35	11/29/22 18:25	7440-09-7	
Sodium	399000	ug/L	500	73.2	1	11/21/22 16:35	11/29/22 18:25	7440-23-5	
200.8 MET ICPMS									
Analytical Method: EPA 200.8 Preparation Method: EPA 200.8									
Pace Analytical Services - Kansas City									
Antimony	0.46J	ug/L	1.0	0.12	1	11/21/22 16:35	11/30/22 14:04	7440-36-0	
Arsenic	40.1	ug/L	1.0	0.14	1	11/21/22 16:35	11/30/22 14:04	7440-38-2	
Chromium	0.64J	ug/L	1.0	0.31	1	11/21/22 16:35	11/30/22 14:04	7440-47-3	
Selenium	0.44J	ug/L	1.0	0.18	1	11/21/22 16:35	11/30/22 14:04	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	605	mg/L	20.0	4.6	1		11/16/22 15:16		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	1240	mg/L	13.3	13.3	1		11/08/22 14:58		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	74.1	mg/L	5.0	2.6	5		11/17/22 21:54	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		11/17/22 21:41	16984-48-8	
Sulfate	369	mg/L	20.0	11.0	20		11/17/22 22:07	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

Sample: R-P-17I **Lab ID: 60414795016** Collected: 11/02/22 16:30 Received: 11/05/22 05:00 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	30.1	ug/L	5.0	0.51	1	11/21/22 16:35	11/29/22 18:09	7440-39-3	
Boron	2630	ug/L	100	4.2	1	11/21/22 16:35	11/29/22 18:09	7440-42-8	
Calcium	19800	ug/L	200	33.7	1	11/21/22 16:35	11/29/22 18:09	7440-70-2	
Iron	243	ug/L	50.0	5.6	1	11/21/22 16:35	11/29/22 18:09	7439-89-6	
Lead	<8.6	ug/L	10.0	8.6	1	11/21/22 16:35	11/29/22 18:09	7439-92-1	
Lithium	<5.6	ug/L	10.0	5.6	1	11/21/22 16:35	11/29/22 18:09	7439-93-2	
Magnesium	1090	ug/L	50.0	27.1	1	11/21/22 16:35	11/29/22 18:09	7439-95-4	
Manganese	10.3	ug/L	5.0	0.24	1	11/21/22 16:35	11/29/22 18:09	7439-96-5	
Molybdenum	165	ug/L	20.0	0.90	1	11/21/22 16:35	11/29/22 18:09	7439-98-7	
Potassium	3200	ug/L	500	87.6	1	11/21/22 16:35	11/29/22 18:09	7440-09-7	
Sodium	214000	ug/L	500	73.2	1	11/21/22 16:35	11/29/22 18:09	7440-23-5	M1
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	11/21/22 16:35	11/30/22 13:51	7440-36-0	
Arsenic	29.1	ug/L	1.0	0.14	1	11/21/22 16:35	11/30/22 13:51	7440-38-2	
Chromium	0.91J	ug/L	1.0	0.31	1	11/21/22 16:35	11/30/22 13:51	7440-47-3	
Selenium	1.0	ug/L	1.0	0.18	1	11/21/22 16:35	11/30/22 13:51	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	144	mg/L	20.0	4.6	1		11/16/22 15:16		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	768	mg/L	10.0	10.0	1		11/08/22 14:59		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	29.1	mg/L	5.0	2.6	5		11/17/22 12:48	16887-00-6	
Fluoride	1.9	mg/L	0.20	0.12	1		11/17/22 11:54	16984-48-8	
Sulfate	325	mg/L	20.0	11.0	20		11/17/22 13:41	14808-79-8	M1,R1

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

Sample: R-P-22D **Lab ID: 60414795017** Collected: 11/03/22 16:20 Received: 11/05/22 05:00 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	67.6	ug/L	5.0	0.51	1	11/21/22 16:35	11/29/22 18:29	7440-39-3	
Boron	8520	ug/L	100	4.2	1	11/21/22 16:35	11/29/22 18:29	7440-42-8	
Calcium	21200	ug/L	200	33.7	1	11/21/22 16:35	11/29/22 18:29	7440-70-2	
Iron	1300	ug/L	50.0	5.6	1	11/21/22 16:35	11/29/22 18:29	7439-89-6	
Lead	<8.6	ug/L	10.0	8.6	1	11/21/22 16:35	11/29/22 18:29	7439-92-1	
Lithium	21.5	ug/L	10.0	5.6	1	11/21/22 16:35	11/29/22 18:29	7439-93-2	
Magnesium	2890	ug/L	50.0	27.1	1	11/21/22 16:35	11/29/22 18:29	7439-95-4	
Manganese	74.8	ug/L	5.0	0.24	1	11/21/22 16:35	11/29/22 18:29	7439-96-5	
Molybdenum	318	ug/L	20.0	0.90	1	11/21/22 16:35	11/29/22 18:29	7439-98-7	
Potassium	4240	ug/L	500	87.6	1	11/21/22 16:35	11/29/22 18:29	7440-09-7	
Sodium	173000	ug/L	500	73.2	1	11/21/22 16:35	11/29/22 18:29	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	11/21/22 16:35	11/30/22 14:07	7440-36-0	
Arsenic	9.9	ug/L	1.0	0.14	1	11/21/22 16:35	11/30/22 14:07	7440-38-2	
Chromium	2.2	ug/L	1.0	0.31	1	11/21/22 16:35	11/30/22 14:07	7440-47-3	
Selenium	1.0	ug/L	1.0	0.18	1	11/21/22 16:35	11/30/22 14:07	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	293	mg/L	20.0	4.6	1		11/16/22 16:56		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	588	mg/L	10.0	10.0	1		11/09/22 14:50		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	28.8	mg/L	5.0	2.6	5		11/17/22 15:15	16887-00-6	
Fluoride	2.5	mg/L	0.20	0.12	1		11/17/22 15:01	16984-48-8	
Sulfate	97.5	mg/L	20.0	11.0	20		11/17/22 15:28	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

Sample: R-P-29S **Lab ID: 60414795018** Collected: 11/03/22 11:52 Received: 11/05/22 05:00 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	434	ug/L	5.0	0.51	1	11/21/22 16:35	11/29/22 18:31	7440-39-3	
Boron	113	ug/L	100	4.2	1	11/21/22 16:35	11/29/22 18:31	7440-42-8	
Calcium	166000	ug/L	200	33.7	1	11/21/22 16:35	11/29/22 18:31	7440-70-2	
Iron	19300	ug/L	50.0	5.6	1	11/21/22 16:35	11/29/22 18:31	7439-89-6	
Lead	<8.6	ug/L	10.0	8.6	1	11/21/22 16:35	11/29/22 18:31	7439-92-1	
Lithium	21.0	ug/L	10.0	5.6	1	11/21/22 16:35	11/29/22 18:31	7439-93-2	
Magnesium	31300	ug/L	50.0	27.1	1	11/21/22 16:35	11/29/22 18:31	7439-95-4	
Manganese	761	ug/L	5.0	0.24	1	11/21/22 16:35	11/29/22 18:31	7439-96-5	
Molybdenum	1.1J	ug/L	20.0	0.90	1	11/21/22 16:35	11/29/22 18:31	7439-98-7	B
Potassium	5380	ug/L	500	87.6	1	11/21/22 16:35	11/29/22 18:31	7440-09-7	
Sodium	18700	ug/L	500	73.2	1	11/21/22 16:35	11/29/22 18:31	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	11/21/22 16:35	11/30/22 14:09	7440-36-0	
Arsenic	22.7	ug/L	1.0	0.14	1	11/21/22 16:35	11/30/22 14:09	7440-38-2	
Chromium	<0.31	ug/L	1.0	0.31	1	11/21/22 16:35	11/30/22 14:09	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/21/22 16:35	11/30/22 14:09	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	512	mg/L	20.0	4.6	1		11/16/22 16:56		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	599	mg/L	10.0	10.0	1		11/09/22 14:50		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	35.9	mg/L	5.0	2.6	5		11/18/22 22:25	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		11/17/22 15:41	16984-48-8	
Sulfate	22.3	mg/L	5.0	2.8	5		11/18/22 22:25	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

Sample: R-P-29D **Lab ID: 60414795019** Collected: 11/03/22 09:20 Received: 11/05/22 05:00 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	149	ug/L	5.0	0.51	1	11/21/22 16:35	11/29/22 18:33	7440-39-3	
Boron	71.0J	ug/L	100	4.2	1	11/21/22 16:35	11/29/22 18:33	7440-42-8	
Calcium	92600	ug/L	200	33.7	1	11/21/22 16:35	11/29/22 18:33	7440-70-2	
Iron	4040	ug/L	50.0	5.6	1	11/21/22 16:35	11/29/22 18:33	7439-89-6	
Lead	<8.6	ug/L	10.0	8.6	1	11/21/22 16:35	11/29/22 18:33	7439-92-1	
Lithium	31.7	ug/L	10.0	5.6	1	11/21/22 16:35	11/29/22 18:33	7439-93-2	
Magnesium	25900	ug/L	50.0	27.1	1	11/21/22 16:35	11/29/22 18:33	7439-95-4	
Manganese	161	ug/L	5.0	0.24	1	11/21/22 16:35	11/29/22 18:33	7439-96-5	
Molybdenum	<0.90	ug/L	20.0	0.90	1	11/21/22 16:35	11/29/22 18:33	7439-98-7	
Potassium	3870	ug/L	500	87.6	1	11/21/22 16:35	11/29/22 18:33	7440-09-7	
Sodium	42600	ug/L	500	73.2	1	11/21/22 16:35	11/29/22 18:33	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	11/21/22 16:35	11/30/22 14:14	7440-36-0	
Arsenic	0.96J	ug/L	1.0	0.14	1	11/21/22 16:35	11/30/22 14:14	7440-38-2	
Chromium	0.50J	ug/L	1.0	0.31	1	11/21/22 16:35	11/30/22 14:14	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/21/22 16:35	11/30/22 14:14	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	327	mg/L	20.0	4.6	1		11/16/22 16:56		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	448	mg/L	10.0	10.0	1		11/09/22 14:51		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	67.5	mg/L	10.0	5.3	10		11/17/22 16:08	16887-00-6	
Fluoride	0.22	mg/L	0.20	0.12	1		11/17/22 15:55	16984-48-8	
Sulfate	21.5	mg/L	10.0	5.5	10		11/17/22 16:08	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

Sample: R-P-30S **Lab ID: 60414795020** Collected: 11/03/22 14:03 Received: 11/05/22 05:00 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	111	ug/L	5.0	0.51	1	11/21/22 16:35	11/29/22 18:41	7440-39-3	
Boron	884	ug/L	100	4.2	1	11/21/22 16:35	11/29/22 18:41	7440-42-8	
Calcium	162000	ug/L	200	33.7	1	11/21/22 16:35	11/29/22 18:41	7440-70-2	
Iron	513	ug/L	50.0	5.6	1	11/21/22 16:35	11/29/22 18:41	7439-89-6	
Lead	<8.6	ug/L	10.0	8.6	1	11/21/22 16:35	11/29/22 18:41	7439-92-1	
Lithium	41.0	ug/L	10.0	5.6	1	11/21/22 16:35	11/29/22 18:41	7439-93-2	
Magnesium	28900	ug/L	50.0	27.1	1	11/21/22 16:35	11/29/22 18:41	7439-95-4	
Manganese	379	ug/L	5.0	0.24	1	11/21/22 16:35	11/29/22 18:41	7439-96-5	
Molybdenum	1.1J	ug/L	20.0	0.90	1	11/21/22 16:35	11/29/22 18:41	7439-98-7	B
Potassium	7030	ug/L	500	87.6	1	11/21/22 16:35	11/29/22 18:41	7440-09-7	
Sodium	55000	ug/L	500	73.2	1	11/21/22 16:35	11/29/22 18:41	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	11/21/22 16:35	11/30/22 14:19	7440-36-0	
Arsenic	1.2	ug/L	1.0	0.14	1	11/21/22 16:35	11/30/22 14:19	7440-38-2	
Chromium	0.38J	ug/L	1.0	0.31	1	11/21/22 16:35	11/30/22 14:19	7440-47-3	
Selenium	2.2	ug/L	1.0	0.18	1	11/21/22 16:35	11/30/22 14:19	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	442	mg/L	20.0	4.6	1		11/16/22 16:56		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	712	mg/L	10.0	10.0	1		11/10/22 14:51		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	40.9	mg/L	20.0	10.5	20		11/17/22 17:14	16887-00-6	
Fluoride	0.27	mg/L	0.20	0.12	1		11/17/22 17:01	16984-48-8	
Sulfate	144	mg/L	20.0	11.0	20		11/17/22 17:14	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

Sample: R-P-31S **Lab ID: 60414795021** Collected: 11/03/22 14:19 Received: 11/05/22 05:00 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	152	ug/L	5.0	0.51	1	11/21/22 16:35	11/29/22 18:43	7440-39-3	
Boron	281	ug/L	100	4.2	1	11/21/22 16:35	11/29/22 18:43	7440-42-8	
Calcium	54200	ug/L	200	33.7	1	11/21/22 16:35	11/29/22 18:43	7440-70-2	
Iron	3120	ug/L	50.0	5.6	1	11/21/22 16:35	11/29/22 18:43	7439-89-6	
Lead	<8.6	ug/L	10.0	8.6	1	11/21/22 16:35	11/29/22 18:43	7439-92-1	
Lithium	7.0J	ug/L	10.0	5.6	1	11/21/22 16:35	11/29/22 18:43	7439-93-2	
Magnesium	10100	ug/L	50.0	27.1	1	11/21/22 16:35	11/29/22 18:43	7439-95-4	
Manganese	1540	ug/L	5.0	0.24	1	11/21/22 16:35	11/29/22 18:43	7439-96-5	
Molybdenum	7.6J	ug/L	20.0	0.90	1	11/21/22 16:35	11/29/22 18:43	7439-98-7	B
Potassium	3440	ug/L	500	87.6	1	11/21/22 16:35	11/29/22 18:43	7440-09-7	
Sodium	10900	ug/L	500	73.2	1	11/21/22 16:35	11/29/22 18:43	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	11/21/22 16:35	11/30/22 14:22	7440-36-0	
Arsenic	29.5	ug/L	1.0	0.14	1	11/21/22 16:35	11/30/22 14:22	7440-38-2	
Chromium	0.41J	ug/L	1.0	0.31	1	11/21/22 16:35	11/30/22 14:22	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/21/22 16:35	11/30/22 14:22	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	191	mg/L	20.0	4.6	1		11/16/22 16:56		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	240	mg/L	5.0	5.0	1		11/10/22 14:51		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	3.2	mg/L	1.0	0.53	1		11/17/22 17:28	16887-00-6	
Fluoride	0.34	mg/L	0.20	0.12	1		11/17/22 17:28	16984-48-8	
Sulfate	17.2	mg/L	1.0	0.55	1		11/17/22 17:28	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

Sample: R-CA-DUP-1 **Lab ID: 60414795022** Collected: 11/03/22 00:00 Received: 11/05/22 05:00 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	113	ug/L	5.0	0.51	1	11/21/22 16:35	11/29/22 18:45	7440-39-3	
Boron	902	ug/L	100	4.2	1	11/21/22 16:35	11/29/22 18:45	7440-42-8	
Calcium	165000	ug/L	200	33.7	1	11/21/22 16:35	11/29/22 18:45	7440-70-2	
Iron	482	ug/L	50.0	5.6	1	11/21/22 16:35	11/29/22 18:45	7439-89-6	
Lead	<8.6	ug/L	10.0	8.6	1	11/21/22 16:35	11/29/22 18:45	7439-92-1	
Lithium	43.5	ug/L	10.0	5.6	1	11/21/22 16:35	11/29/22 18:45	7439-93-2	
Magnesium	29600	ug/L	50.0	27.1	1	11/21/22 16:35	11/29/22 18:45	7439-95-4	
Manganese	398	ug/L	5.0	0.24	1	11/21/22 16:35	11/29/22 18:45	7439-96-5	
Molybdenum	1.2J	ug/L	20.0	0.90	1	11/21/22 16:35	11/29/22 18:45	7439-98-7	B
Potassium	7190	ug/L	500	87.6	1	11/21/22 16:35	11/29/22 18:45	7440-09-7	
Sodium	56900	ug/L	500	73.2	1	11/21/22 16:35	11/29/22 18:45	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	11/21/22 16:35	11/30/22 14:24	7440-36-0	
Arsenic	1.1	ug/L	1.0	0.14	1	11/21/22 16:35	11/30/22 14:24	7440-38-2	
Chromium	0.38J	ug/L	1.0	0.31	1	11/21/22 16:35	11/30/22 14:24	7440-47-3	
Selenium	2.4	ug/L	1.0	0.18	1	11/21/22 16:35	11/30/22 14:24	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	449	mg/L	20.0	4.6	1		11/16/22 16:56		
2540C Total Dissolved Solids									
Analytical Method: SM 2540C									
Pace Analytical Services - Kansas City									
Total Dissolved Solids	741	mg/L	10.0	10.0	1		11/10/22 14:51		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	35.4	mg/L	10.0	5.3	10		11/17/22 18:08	16887-00-6	
Fluoride	0.26	mg/L	0.20	0.12	1		11/17/22 17:54	16984-48-8	
Sulfate	150	mg/L	10.0	5.5	10		11/17/22 18:08	14808-79-8	

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ANALYTICAL RESULTS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

Sample: R-CA-FB-2 **Lab ID: 60414795025** Collected: 11/03/22 09:30 Received: 11/05/22 05:00 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	<0.51	ug/L	5.0	0.51	1	11/21/22 16:35	11/29/22 18:47	7440-39-3	
Boron	<4.2	ug/L	100	4.2	1	11/21/22 16:35	11/29/22 18:47	7440-42-8	
Calcium	133J	ug/L	200	33.7	1	11/21/22 16:35	11/29/22 18:47	7440-70-2	
Iron	7.3J	ug/L	50.0	5.6	1	11/21/22 16:35	11/29/22 18:47	7439-89-6	B
Lead	<8.6	ug/L	10.0	8.6	1	11/21/22 16:35	11/29/22 18:47	7439-92-1	
Lithium	<5.6	ug/L	10.0	5.6	1	11/21/22 16:35	11/29/22 18:47	7439-93-2	
Magnesium	44.1J	ug/L	50.0	27.1	1	11/21/22 16:35	11/29/22 18:47	7439-95-4	
Manganese	0.24J	ug/L	5.0	0.24	1	11/21/22 16:35	11/29/22 18:47	7439-96-5	B
Molybdenum	<0.90	ug/L	20.0	0.90	1	11/21/22 16:35	11/29/22 18:47	7439-98-7	
Potassium	<87.6	ug/L	500	87.6	1	11/21/22 16:35	11/29/22 18:47	7440-09-7	
Sodium	171J	ug/L	500	73.2	1	11/21/22 16:35	11/29/22 18:47	7440-23-5	B
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	11/21/22 16:35	11/30/22 14:29	7440-36-0	
Arsenic	<0.14	ug/L	1.0	0.14	1	11/21/22 16:35	11/30/22 14:29	7440-38-2	
Chromium	0.33J	ug/L	1.0	0.31	1	11/21/22 16:35	11/30/22 14:29	7440-47-3	
Selenium	<0.18	ug/L	1.0	0.18	1	11/21/22 16:35	11/30/22 14:29	7782-49-2	
2320B Alkalinity									
Analytical Method: SM 2320B									
Pace Analytical Services - Kansas City									
Alkalinity, Total as CaCO3	<4.6	mg/L	20.0	4.6	1		11/17/22 16:19		
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		11/10/22 14:51		
300.0 IC Anions 28 Days									
Analytical Method: EPA 300.0									
Pace Analytical Services - Kansas City									
Chloride	0.67J	mg/L	1.0	0.53	1		11/17/22 20:48	16887-00-6	
Fluoride	<0.12	mg/L	0.20	0.12	1		11/17/22 20:48	16984-48-8	
Sulfate	<0.55	mg/L	1.0	0.55	1		11/17/22 20:48	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

QC Batch:	819427	Analysis Method:	EPA 200.7
QC Batch Method:	EPA 200.7	Analysis Description:	200.7 Metals, Total
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60414795001, 60414795002, 60414795003, 60414795004, 60414795005, 60414795006, 60414795007, 60414795008, 60414795009, 60414795010, 60414795011, 60414795012, 60414795013, 60414795014, 60414795016

METHOD BLANK: 3258774 Matrix: Water

Associated Lab Samples: 60414795001, 60414795002, 60414795003, 60414795004, 60414795005, 60414795006, 60414795007, 60414795008, 60414795009, 60414795010, 60414795011, 60414795012, 60414795013, 60414795014, 60414795016

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	0.73J	5.0	0.51	11/29/22 17:29	
Boron	ug/L	<4.2	100	4.2	11/29/22 17:29	
Calcium	ug/L	<33.7	200	33.7	11/29/22 17:29	
Iron	ug/L	8.1J	50.0	5.6	11/29/22 17:29	
Lead	ug/L	<8.6	10.0	8.6	11/29/22 17:29	
Lithium	ug/L	<5.6	10.0	5.6	11/29/22 17:29	
Magnesium	ug/L	<27.1	50.0	27.1	11/29/22 17:29	
Manganese	ug/L	<0.24	5.0	0.24	11/29/22 17:29	
Molybdenum	ug/L	<0.90	20.0	0.90	11/29/22 17:29	
Potassium	ug/L	<87.6	500	87.6	11/29/22 17:29	
Sodium	ug/L	<73.2	500	73.2	11/29/22 17:29	

LABORATORY CONTROL SAMPLE: 3258775

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	992	99	85-115	
Boron	ug/L	1000	950	95	85-115	
Calcium	ug/L	10000	10300	103	85-115	
Iron	ug/L	10000	10300	103	85-115	
Lead	ug/L	1000	1000	100	85-115	
Lithium	ug/L	1000	959	96	85-115	
Magnesium	ug/L	10000	10000	100	85-115	
Manganese	ug/L	1000	1020	102	85-115	
Molybdenum	ug/L	1000	997	100	85-115	
Potassium	ug/L	10000	9950	99	85-115	
Sodium	ug/L	10000	9970	100	85-115	

MATRIX SPIKE SAMPLE: 3258776

Parameter	Units	60414795011 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	166	1000	1170	100	70-130	
Boron	ug/L	259	1000	1240	98	70-130	
Calcium	ug/L	82800	10000	96700	140	70-130 M1	
Iron	ug/L	5670	10000	16100	104	70-130	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

MATRIX SPIKE SAMPLE:		3258776					
Parameter	Units	60414795011 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Lead	ug/L	<8.6	1000	989	99	70-130	
Lithium	ug/L	16.8	1000	998	98	70-130	
Magnesium	ug/L	16000	10000	26200	102	70-130	
Manganese	ug/L	617	1000	1580	96	70-130	
Molybdenum	ug/L	4.2J	1000	976	97	70-130	
Potassium	ug/L	4600	10000	15100	105	70-130	
Sodium	ug/L	13100	10000	23900	108	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:		3258777			3258778							
Parameter	Units	60414795016 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Barium	ug/L	30.1	1000	1000	1020	999	99	97	70-130	2	20	
Boron	ug/L	2630	1000	1000	3600	3530	97	91	70-130	2	20	
Calcium	ug/L	19800	10000	10000	29700	29000	99	91	70-130	2	20	
Iron	ug/L	243	10000	10000	10200	10100	100	98	70-130	2	20	
Lead	ug/L	<8.6	1000	1000	982	980	97	97	70-130	0	20	
Lithium	ug/L	<5.6	1000	1000	994	974	99	97	70-130	2	20	
Magnesium	ug/L	1090	10000	10000	11100	11000	100	99	70-130	1	20	
Manganese	ug/L	10.3	1000	1000	975	978	96	97	70-130	0	20	
Molybdenum	ug/L	165	1000	1000	1120	1120	96	96	70-130	0	20	
Potassium	ug/L	3200	10000	10000	13700	13300	105	101	70-130	2	20	
Sodium	ug/L	214000	10000	10000	228000	227000	141	132	70-130	0	20 M1	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA
Pace Project No.: 60414795

QC Batch: 819429 Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 Analysis Description: 200.7 Metals, Total
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60414795015, 60414795017, 60414795018, 60414795019, 60414795020, 60414795021, 60414795022, 60414795025

METHOD BLANK: 3258784 Matrix: Water
Associated Lab Samples: 60414795015, 60414795017, 60414795018, 60414795019, 60414795020, 60414795021, 60414795022, 60414795025

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Barium	ug/L	0.54J	5.0	0.51	11/29/22 18:21	
Boron	ug/L	<4.2	100	4.2	11/29/22 18:21	
Calcium	ug/L	<33.7	200	33.7	11/29/22 18:21	
Iron	ug/L	8.0J	50.0	5.6	11/29/22 18:21	
Lead	ug/L	<8.6	10.0	8.6	11/29/22 18:21	
Lithium	ug/L	<5.6	10.0	5.6	11/29/22 18:21	
Magnesium	ug/L	<27.1	50.0	27.1	11/29/22 18:21	
Manganese	ug/L	0.55J	5.0	0.24	11/29/22 18:21	
Molybdenum	ug/L	0.90J	20.0	0.90	11/29/22 18:21	
Potassium	ug/L	<87.6	500	87.6	11/29/22 18:21	
Sodium	ug/L	186J	500	73.2	11/29/22 18:21	

LABORATORY CONTROL SAMPLE: 3258785

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	1000	989	99	85-115	
Boron	ug/L	1000	939	94	85-115	
Calcium	ug/L	10000	10200	102	85-115	
Iron	ug/L	10000	9940	99	85-115	
Lead	ug/L	1000	1020	102	85-115	
Lithium	ug/L	1000	946	95	85-115	
Magnesium	ug/L	10000	10100	101	85-115	
Manganese	ug/L	1000	995	99	85-115	
Molybdenum	ug/L	1000	971	97	85-115	
Potassium	ug/L	10000	9800	98	85-115	
Sodium	ug/L	10000	10200	102	85-115	

MATRIX SPIKE SAMPLE: 3258786

Parameter	Units	60414795015 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Barium	ug/L	38.4	1000	987	95	70-130	
Boron	ug/L	1700	1000	2570	87	70-130	
Calcium	ug/L	35400	10000	44300	90	70-130	
Iron	ug/L	401	10000	10200	98	70-130	
Lead	ug/L	<8.6	1000	975	97	70-130	
Lithium	ug/L	10.4	1000	966	96	70-130	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

MATRIX SPIKE SAMPLE:		3258786					
Parameter	Units	60414795015 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Magnesium	ug/L	6000	10000	15400	94	70-130	
Manganese	ug/L	263	1000	1250	98	70-130	
Molybdenum	ug/L	26.9	1000	999	97	70-130	
Potassium	ug/L	2100	10000	12100	100	70-130	
Sodium	ug/L	399000	10000	406000	76	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:		3258787			3258788							
Parameter	Units	60414980005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Barium	ug/L	42.5	1000	1000	1050	1010	101	96	70-130	4	20	
Boron	ug/L	20300	1000	1000	21300	20600	107	34	70-130	3	20	M1
Calcium	ug/L	385000	10000	10000	394000	382000	90	-34	70-130	3	20	M1
Iron	ug/L	32.2J	10000	10000	10400	10000	104	100	70-130	4	20	
Lead	ug/L	<8.6	1000	1000	978	974	98	97	70-130	0	20	
Lithium	ug/L	44.4	1000	1000	1070	1030	103	98	70-130	4	20	
Magnesium	ug/L	24000	10000	10000	33300	32700	92	87	70-130	2	20	
Manganese	ug/L	2.6J	1000	1000	1010	982	101	98	70-130	3	20	
Molybdenum	ug/L	294	1000	1000	1290	1270	100	98	70-130	2	20	
Potassium	ug/L	20700	10000	10000	31400	30200	108	95	70-130	4	20	
Sodium	ug/L	108000	10000	10000	116000	112000	75	40	70-130	3	20	M1

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA
Pace Project No.: 60414795

QC Batch: 819428 Analysis Method: EPA 200.8
QC Batch Method: EPA 200.8 Analysis Description: 200.8 MET
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60414795001, 60414795002, 60414795003, 60414795004, 60414795005, 60414795006, 60414795007, 60414795008, 60414795009, 60414795010, 60414795011, 60414795012, 60414795013, 60414795014, 60414795016

METHOD BLANK: 3258779 Matrix: Water
Associated Lab Samples: 60414795001, 60414795002, 60414795003, 60414795004, 60414795005, 60414795006, 60414795007, 60414795008, 60414795009, 60414795010, 60414795011, 60414795012, 60414795013, 60414795014, 60414795016

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.12	1.0	0.12	11/30/22 11:56	
Arsenic	ug/L	<0.14	1.0	0.14	11/30/22 11:56	
Chromium	ug/L	<0.31	1.0	0.31	11/30/22 11:56	
Selenium	ug/L	<0.18	1.0	0.18	11/30/22 11:56	

LABORATORY CONTROL SAMPLE: 3258780

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	40.0	100	85-115	
Arsenic	ug/L	40	39.0	97	85-115	
Chromium	ug/L	40	40.1	100	85-115	
Selenium	ug/L	40	40.0	100	85-115	

MATRIX SPIKE SAMPLE: 3258781

Parameter	Units	60414795002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	0.12J	40	36.7	91	70-130	
Arsenic	ug/L	11.9	40	50.2	96	70-130	
Chromium	ug/L	0.80J	40	41.1	101	70-130	
Selenium	ug/L	<0.18	40	36.9	92	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3258782 3258783

Parameter	Units	60414795016 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	0.18J	40	40	35.8	35.6	89	88	70-130	1	20	
Arsenic	ug/L	29.1	40	40	65.8	66.2	92	93	70-130	1	20	
Chromium	ug/L	0.91J	40	40	42.5	42.3	104	104	70-130	0	20	
Selenium	ug/L	1.0	40	40	32.0	31.4	77	76	70-130	2	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

QC Batch:	819431	Analysis Method:	EPA 200.8
QC Batch Method:	EPA 200.8	Analysis Description:	200.8 MET
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60414795015, 60414795017, 60414795018, 60414795019, 60414795020, 60414795021, 60414795022, 60414795025

METHOD BLANK:	3258793	Matrix:	Water
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Associated Lab Samples: 60414795015, 60414795017, 60414795018, 60414795019, 60414795020, 60414795021, 60414795022, 60414795025

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	ug/L	<0.12	1.0	0.12	11/30/22 14:01	
Arsenic	ug/L	<0.14	1.0	0.14	11/30/22 14:01	
Chromium	ug/L	<0.31	1.0	0.31	11/30/22 14:01	
Selenium	ug/L	<0.18	1.0	0.18	11/30/22 14:01	

LABORATORY CONTROL SAMPLE: 3258794

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	40	40.7	102	85-115	
Arsenic	ug/L	40	38.9	97	85-115	
Chromium	ug/L	40	40.3	101	85-115	
Selenium	ug/L	40	40.2	101	85-115	

MATRIX SPIKE SAMPLE: 3258795

Parameter	Units	60414795019 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Antimony	ug/L	<0.12	40	38.6	97	70-130	
Arsenic	ug/L	0.96J	40	39.8	97	70-130	
Chromium	ug/L	0.50J	40	40.6	100	70-130	
Selenium	ug/L	<0.18	40	39.6	99	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3258796 3258797

Parameter	Units	60414980005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	ug/L	0.41J	40	40	35.7	35.5	88	88	70-130	1	20	
Arsenic	ug/L	3.3	40	40	42.5	42.6	98	98	70-130	0	20	
Chromium	ug/L	0.39J	40	40	40.0	40.0	99	99	70-130	0	20	
Selenium	ug/L	36.4	40	40	77.1	77.7	102	103	70-130	1	20	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

QC Batch: 817839

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60414795002

METHOD BLANK: 3252545

Matrix: Water

Associated Lab Samples: 60414795002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	8.0J	20.0	4.6	11/11/22 16:12	

LABORATORY CONTROL SAMPLE: 3252546

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	500	483	97	90-110	

SAMPLE DUPLICATE: 3252547

Parameter	Units	60413956031 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	493	496	0	10	

SAMPLE DUPLICATE: 3252548

Parameter	Units	60414790006 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	325	322	1	10	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

QC Batch:	818329	Analysis Method:	SM 2320B
QC Batch Method:	SM 2320B	Analysis Description:	2320B Alkalinity
		Laboratory:	Pace Analytical Services - Kansas City

Associated Lab Samples: 60414795001, 60414795003, 60414795004, 60414795005, 60414795006, 60414795007, 60414795008, 60414795009, 60414795010, 60414795011

METHOD BLANK: 3254568 Matrix: Water

Associated Lab Samples: 60414795001, 60414795003, 60414795004, 60414795005, 60414795006, 60414795007, 60414795008, 60414795009, 60414795010, 60414795011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<4.6	20.0	4.6	11/15/22 14:57	

LABORATORY CONTROL SAMPLE: 3254569

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	489	98	90-110	

SAMPLE DUPLICATE: 3254570

Parameter	Units	60414790007 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	240	236	2	10	

SAMPLE DUPLICATE: 3254571

Parameter	Units	60415270004 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	428	434	1	10	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

QC Batch: 818571

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60414795012, 60414795013, 60414795014, 60414795015, 60414795016, 60414795017, 60414795018, 60414795019, 60414795020, 60414795021, 60414795022

METHOD BLANK: 3255372

Matrix: Water

Associated Lab Samples: 60414795012, 60414795013, 60414795014, 60414795015, 60414795016, 60414795017, 60414795018, 60414795019, 60414795020, 60414795021, 60414795022

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	6.7J	20.0	4.6	11/16/22 15:16	

LABORATORY CONTROL SAMPLE: 3255373

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	500	487	97	90-110	

SAMPLE DUPLICATE: 3255374

Parameter	Units	60414795016 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	144	140	3	10	

SAMPLE DUPLICATE: 3255375

Parameter	Units	60415011002 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	244	233	5	10	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

QC Batch: 818572

Analysis Method: SM 2320B

QC Batch Method: SM 2320B

Analysis Description: 2320B Alkalinity

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60414795025

METHOD BLANK: 3255377

Matrix: Water

Associated Lab Samples: 60414795025

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	<4.6	20.0	4.6	11/17/22 15:48	

LABORATORY CONTROL SAMPLE: 3255378

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	500	492	98	90-110	

SAMPLE DUPLICATE: 3255379

Parameter	Units	60414790012 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	582	588	1	10	

SAMPLE DUPLICATE: 3255380

Parameter	Units	60415020008 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	242	241	0	10	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

QC Batch: 816659	Analysis Method: SM 2540C
QC Batch Method: SM 2540C	Analysis Description: 2540C Total Dissolved Solids
	Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60414795002

METHOD BLANK: 3248226 Matrix: Water

Associated Lab Samples: 60414795002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	11/07/22 13:18	

LABORATORY CONTROL SAMPLE: 3248227

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	984	98	80-120	

SAMPLE DUPLICATE: 3248228

Parameter	Units	60414790006 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	370	363	2	10	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

QC Batch: 816862

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60414795001, 60414795010

METHOD BLANK: 3248991

Matrix: Water

Associated Lab Samples: 60414795001, 60414795010

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	11/07/22 13:21	

LABORATORY CONTROL SAMPLE: 3248992

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1010	101	80-120	

SAMPLE DUPLICATE: 3248995

Parameter	Units	60414563005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	5390	5610	4	10	

SAMPLE DUPLICATE: 3248996

Parameter	Units	60414572005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	5760	5040	13	10 D6	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

QC Batch: 817151

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60414795003, 60414795004, 60414795005, 60414795006, 60414795007, 60414795008, 60414795009, 60414795011, 60414795012

METHOD BLANK: 3249844

Matrix: Water

Associated Lab Samples: 60414795003, 60414795004, 60414795005, 60414795006, 60414795007, 60414795008, 60414795009, 60414795011, 60414795012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	11/08/22 14:50	

LABORATORY CONTROL SAMPLE: 3249845

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	1010	101	80-120	

SAMPLE DUPLICATE: 3249846

Parameter	Units	60414648003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	5200	4780	9	10	

SAMPLE DUPLICATE: 3249847

Parameter	Units	60414795009 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1040	977	6	10	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

QC Batch: 817153

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60414795015, 60414795016

METHOD BLANK: 3249850

Matrix: Water

Associated Lab Samples: 60414795015, 60414795016

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	11/08/22 14:55	

LABORATORY CONTROL SAMPLE: 3249851

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	981	98	80-120	

SAMPLE DUPLICATE: 3249852

Parameter	Units	60414795016 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	768	758	1	10	

SAMPLE DUPLICATE: 3250743

Parameter	Units	60414879001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	4400	3720	17	10 D6	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

QC Batch: 817371

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60414795013, 60414795014, 60414795017, 60414795018, 60414795019

METHOD BLANK: 3250653

Matrix: Water

Associated Lab Samples: 60414795013, 60414795014, 60414795017, 60414795018, 60414795019

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	11/09/22 14:48	

LABORATORY CONTROL SAMPLE: 3250654

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	961	96	80-120	

SAMPLE DUPLICATE: 3250744

Parameter	Units	60414968003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1280	1290	1	10	

SAMPLE DUPLICATE: 3252309

Parameter	Units	60414949006 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	928	931	0	10	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

QC Batch: 817532

Analysis Method: SM 2540C

QC Batch Method: SM 2540C

Analysis Description: 2540C Total Dissolved Solids

Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60414795020, 60414795021, 60414795022, 60414795025

METHOD BLANK: 3251289

Matrix: Water

Associated Lab Samples: 60414795020, 60414795021, 60414795022, 60414795025

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<5.0	5.0	5.0	11/10/22 14:50	

LABORATORY CONTROL SAMPLE: 3251290

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	999	100	80-120	

SAMPLE DUPLICATE: 3251291

Parameter	Units	60414795020 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	712	743	4	10	

SAMPLE DUPLICATE: 3251298

Parameter	Units	60415011002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1250	1250	0	10	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA
Pace Project No.: 60414795

QC Batch: 818719 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Kansas City

Associated Lab Samples: 60414795013, 60414795014, 60414795015

METHOD BLANK: 3255954 Matrix: Water
Associated Lab Samples: 60414795013, 60414795014, 60414795015

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.54J	1.0	0.53	11/17/22 14:46	
Fluoride	mg/L	<0.12	0.20	0.12	11/17/22 14:46	
Sulfate	mg/L	<0.55	1.0	0.55	11/17/22 14:46	

METHOD BLANK: 3259145 Matrix: Water
Associated Lab Samples: 60414795013, 60414795014, 60414795015

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	11/18/22 08:51	
Fluoride	mg/L	<0.12	0.20	0.12	11/18/22 08:51	
Sulfate	mg/L	<0.55	1.0	0.55	11/18/22 08:51	

LABORATORY CONTROL SAMPLE: 3255955

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	91	90-110	
Sulfate	mg/L	5	4.8	96	90-110	

LABORATORY CONTROL SAMPLE: 3259146

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.5	91	90-110	
Fluoride	mg/L	2.5	2.7	106	90-110	
Sulfate	mg/L	5	4.9	98	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3255956 3255957

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60414152001 Result	Spike Conc.	Spike Conc.	Result						
Chloride	mg/L	338	250	250	586	99	101	80-120	1	15	
Fluoride	mg/L	1.7	5	5	4.4	55	56	80-120	0	15 M1	
Sulfate	mg/L	181	250	250	434	101	103	80-120	1	15	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA
Pace Project No.: 60414795

QC Batch: 818723 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60414795016, 60414795017, 60414795018, 60414795019, 60414795020, 60414795021, 60414795022, 60414795025

METHOD BLANK: 3255965 Matrix: Water
Associated Lab Samples: 60414795016, 60414795017, 60414795018, 60414795019, 60414795020, 60414795021, 60414795022, 60414795025

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.59J	1.0	0.53	11/17/22 11:01	
Fluoride	mg/L	<0.12	0.20	0.12	11/17/22 11:01	
Sulfate	mg/L	<0.55	1.0	0.55	11/17/22 11:01	

METHOD BLANK: 3259139 Matrix: Water
Associated Lab Samples: 60414795016, 60414795017, 60414795018, 60414795019, 60414795020, 60414795021, 60414795022, 60414795025

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	11/18/22 08:51	
Fluoride	mg/L	<0.12	0.20	0.12	11/18/22 08:51	
Sulfate	mg/L	<0.55	1.0	0.55	11/18/22 08:51	

LABORATORY CONTROL SAMPLE: 3255966

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	2.5	101	90-110	
Sulfate	mg/L	5	4.7	94	90-110	

LABORATORY CONTROL SAMPLE: 3259140

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.5	91	90-110	
Fluoride	mg/L	2.5	2.7	106	90-110	
Sulfate	mg/L	5	4.9	98	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3255968 3255969

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Spike Conc.	Result	Spike Conc.	Result						
Chloride	mg/L	29.1	25	25	52.1	51.3	92	89	80-120	1	15
Fluoride	mg/L	1.9	2.5	2.5	4.8	4.8	114	114	80-120	0	15

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3255968 3255969

Parameter	Units	60414795016		3255969		% Rec	% Rec	% Rec	% Rec	Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result								
Sulfate	mg/L	325	200	659	442	167	117	80-120	39	15	E,M1, R1		

SAMPLE DUPLICATE: 3255967

Parameter	Units	60414795016 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	29.1	28.0	4	15	
Fluoride	mg/L	1.9	1.9	0	15	
Sulfate	mg/L	325	355	9	15	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA
Pace Project No.: 60414795

QC Batch: 819035 Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Kansas City
Associated Lab Samples: 60414795001, 60414795002, 60414795003, 60414795004, 60414795005, 60414795006, 60414795007, 60414795008, 60414795009, 60414795010, 60414795011, 60414795012

METHOD BLANK: 3257000 Matrix: Water
Associated Lab Samples: 60414795001, 60414795002, 60414795003, 60414795004, 60414795005, 60414795006, 60414795007, 60414795008, 60414795009, 60414795010, 60414795011, 60414795012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.60J	1.0	0.53	11/18/22 08:50	
Fluoride	mg/L	<0.12	0.20	0.12	11/18/22 08:50	
Sulfate	mg/L	<0.55	1.0	0.55	11/18/22 08:50	

METHOD BLANK: 3259951 Matrix: Water
Associated Lab Samples: 60414795001, 60414795002, 60414795003, 60414795004, 60414795005, 60414795006, 60414795007, 60414795008, 60414795009, 60414795010, 60414795011, 60414795012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	<0.53	1.0	0.53	11/21/22 09:09	
Fluoride	mg/L	<0.12	0.20	0.12	11/21/22 09:09	
Sulfate	mg/L	<0.55	1.0	0.55	11/21/22 09:09	

METHOD BLANK: 3261491 Matrix: Water
Associated Lab Samples: 60414795001, 60414795002, 60414795003, 60414795004, 60414795005, 60414795006, 60414795007, 60414795008, 60414795009, 60414795010, 60414795011, 60414795012

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	0.65J	1.0	0.53	11/22/22 08:55	
Fluoride	mg/L	<0.12	0.20	0.12	11/22/22 08:55	
Sulfate	mg/L	<0.55	1.0	0.55	11/22/22 08:55	

LABORATORY CONTROL SAMPLE: 3257001

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.7	95	90-110	
Fluoride	mg/L	2.5	2.6	104	90-110	
Sulfate	mg/L	5	4.8	96	90-110	

LABORATORY CONTROL SAMPLE: 3259952

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.5	91	90-110	

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QUALITY CONTROL DATA

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

LABORATORY CONTROL SAMPLE: 3259952

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2.5	2.5	102	90-110	
Sulfate	mg/L	5	4.9	98	90-110	

LABORATORY CONTROL SAMPLE: 3261492

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	5	4.5	90	90-110	
Fluoride	mg/L	2.5	2.6	104	90-110	
Sulfate	mg/L	5	4.9	98	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3257003 3257004

Parameter	Units	60414790006		3257003		3257004		% Rec Limits	RPD	Max RPD	Qual	
		MS Result	MS Spike Conc.	MS Result	MS Spike Conc.	MSD Result	MSD Spike Conc.					MSD Result
Chloride	mg/L	6.9	5	5	5	11.7	11.7	96	95	80-120	1	15
Fluoride	mg/L	<0.12	2.5	2.5	2.5	2.9	2.9	113	115	80-120	2	15
Sulfate	mg/L	16.2	5	5	5	21.2	21.3	100	103	80-120	1	15 E

SAMPLE DUPLICATE: 3257002

Parameter	Units	60414790006 Result	Dup Result	RPD	Max RPD	Qualifiers
Chloride	mg/L	6.9	6.9	0	15	
Fluoride	mg/L	<0.12	0.32		15	
Sulfate	mg/L	16.2	16.0	1	15	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

Sample: R-P-05S **Lab ID: 60414795001** Collected: 11/01/22 14:34 Received: 11/03/22 03:55 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	-0.0630 ± 0.445 (0.946) C:NA T:96%	pCi/L	11/28/22 14:10	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.227 ± 0.314 (0.674) C:82% T:86%	pCi/L	11/29/22 11:50	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

Sample: R-P-10S **Lab ID: 60414795002** Collected: 10/31/22 16:50 Received: 11/03/22 03:55 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	-0.0719 ± 0.467 (1.01) C:NA T:91%	pCi/L	11/28/22 14:30	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.826 ± 0.463 (0.845) C:83% T:72%	pCi/L	11/29/22 11:51	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

Sample: R-P-17D **Lab ID: 60414795003** Collected: 11/02/22 13:52 Received: 11/03/22 03:55 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	0.510 ± 0.615 (1.01) C:NA T:88%	pCi/L	11/28/22 14:30	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	1.00 ± 0.455 (0.741) C:83% T:74%	pCi/L	11/29/22 11:51	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

Sample: R-P-19S **Lab ID: 60414795004** Collected: 11/02/22 11:28 Received: 11/03/22 03:55 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	0.146 ± 0.495 (0.954) C:NA T:90%	pCi/L	11/28/22 14:41	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.500 ± 0.321 (0.602) C:84% T:89%	pCi/L	11/29/22 11:51	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

Sample: R-P-19I **Lab ID: 60414795005** Collected: 11/02/22 10:35 Received: 11/03/22 03:55 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	-0.411 ± 0.467 (1.14) C:NA T:82%	pCi/L	11/28/22 14:41	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	0.989 ± 0.461 (0.771) C:79% T:76%	pCi/L	11/29/22 11:51	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

Sample: R-P-19D **Lab ID: 60414795006** Collected: 11/02/22 09:49 Received: 11/03/22 03:55 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	0.0697 ± 0.318 (0.647) C:NA T:83%	pCi/L	11/28/22 14:41	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.329 ± 0.280 (0.549) C:80% T:81%	pCi/L	11/29/22 14:54	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

Sample: R-P-21S **Lab ID: 60414795007** Collected: 11/02/22 11:00 Received: 11/03/22 03:55 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	0.313 ± 0.370 (0.581) C:NA T:95%	pCi/L	11/28/22 14:41	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.181 ± 0.345 (0.759) C:73% T:85%	pCi/L	11/29/22 14:54	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

Sample: R-P-211 **Lab ID: 60414795008** Collected: 11/02/22 11:54 Received: 11/03/22 03:55 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	-0.0704 ± 0.458 (0.992) C:NA T:82%	pCi/L	11/28/22 14:41	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.585 ± 0.407 (0.780) C:80% T:73%	pCi/L	11/29/22 14:54	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

Sample: R-P-21D **Lab ID: 60414795009** Collected: 11/02/22 12:45 Received: 11/03/22 03:55 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	-0.233 ± 0.355 (0.932) C:NA T:89%	pCi/L	11/28/22 14:41	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.591 ± 0.341 (0.603) C:80% T:80%	pCi/L	11/29/22 14:54	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

Sample: R-P-22S **Lab ID: 60414795010** Collected: 11/01/22 17:04 Received: 11/03/22 03:55 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	0.471 ± 0.655 (1.11) C:NA T:83%	pCi/L	11/28/22 14:41	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.360 ± 0.341 (0.696) C:75% T:90%	pCi/L	11/29/22 14:54	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

Sample: R-CA-DUP-2 **Lab ID: 60414795011** Collected: 11/02/22 00:00 Received: 11/03/22 03:55 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	0.617 ± 0.490 (0.637) C:NA T:93%	pCi/L	11/28/22 14:52	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.358 ± 0.369 (0.766) C:81% T:81%	pCi/L	11/29/22 14:54	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: R-CA-FB-1 Lab ID: 60414795012 Collected: 11/02/22 11:10 Received: 11/03/22 03:55 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.0732 ± 0.334 (0.680) C:NA T:92%	pCi/L	11/28/22 15:02	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.498 ± 0.325 (0.616) C:87% T:89%	pCi/L	11/29/22 14:54	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

Sample: R-CA-RB-1 **Lab ID: 60414795013** Collected: 11/03/22 17:30 Received: 11/05/22 10:14 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	0.336 ± 0.397 (0.624) C:NA T:96%	pCi/L	11/28/22 15:02	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.0582 ± 0.283 (0.649) C:78% T:90%	pCi/L	11/29/22 14:54	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

Sample: R-P-16S **Lab ID: 60414795014** Collected: 11/03/22 16:53 Received: 11/05/22 05:00 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	-0.252 ± 0.303 (0.824) C:NA T:93%	pCi/L	11/28/22 15:14	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	0.356 ± 0.340 (0.694) C:74% T:86%	pCi/L	11/29/22 14:55	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

Sample: R-P-17S **Lab ID: 60414795015** Collected: 11/02/22 15:26 Received: 11/05/22 05:00 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	0.231 ± 0.544 (1.01) C:NA T:85%	pCi/L	11/28/22 15:02	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.222 ± 0.330 (0.711) C:82% T:82%	pCi/L	11/29/22 14:55	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

Sample: R-P-171 **Lab ID: 60414795016** Collected: 11/02/22 16:30 Received: 11/05/22 05:00 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	0.207 ± 0.359 (0.642) C:NA T:73%	pCi/L	11/28/22 15:02	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.395 ± 0.379 (0.773) C:77% T:72%	pCi/L	11/29/22 14:55	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

Sample: R-P-22D **Lab ID: 60414795017** Collected: 11/03/22 16:20 Received: 11/05/22 05:00 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	0.000 ± 0.398 (0.892) C:NA T:79%	pCi/L	11/28/22 15:02	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.0903 ± 0.364 (0.828) C:76% T:75%	pCi/L	11/29/22 14:55	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

Sample: R-P-29S **Lab ID: 60414795018** Collected: 11/03/22 11:52 Received: 11/05/22 05:00 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	0.659 ± 0.489 (0.612) C:NA T:90%	pCi/L	11/28/22 15:02	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.701 ± 0.407 (0.749) C:75% T:89%	pCi/L	11/29/22 14:55	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

Sample: R-P-29D **Lab ID: 60414795019** Collected: 11/03/22 09:20 Received: 11/05/22 05:00 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	0.124 ± 0.386 (0.747) C:NA T:98%	pCi/L	11/27/22 15:06	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.619 ± 0.397 (0.754) C:85% T:89%	pCi/L	11/26/22 14:40	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

Sample: R-P-30S **Lab ID: 60414795020** Collected: 11/03/22 14:03 Received: 11/05/22 05:00 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	-0.0588 ± 0.268 (0.633) C:NA T:96%	pCi/L	11/27/22 15:29	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.828 ± 0.409 (0.693) C:83% T:89%	pCi/L	11/26/22 14:40	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

Sample: R-P-31S **Lab ID: 60414795021** Collected: 11/03/22 14:19 Received: 11/05/22 05:00 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	-0.144 ± 0.329 (0.776) C:NA T:90%	pCi/L	11/27/22 15:29	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	0.684 ± 0.379 (0.679) C:80% T:93%	pCi/L	11/26/22 14:40	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Sample: R-CA-DUP-1 Lab ID: 60414795022 Collected: 11/03/22 00:00 Received: 11/05/22 05:00 Matrix: Water PWS: Site ID: Sample Type:						
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	0.121 ± 0.277 (0.446) C:NA T:96%	pCi/L	11/27/22 15:29	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.572 ± 0.393 (0.752) C:82% T:85%	pCi/L	11/26/22 14:40	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

Sample: R-CA-MS-1 **Lab ID: 60414795023** Collected: 11/02/22 16:30 Received: 11/05/22 05:00 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	80.02% REC ± NA (NA) C:NA T:NA	pCi/L	11/28/22 15:15	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	82.46 %REC ± NA (NA) C:NA T:NA	pCi/L	11/29/22 14:55	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Pace Analytical Services - Greensburg						
Radium-226	EPA 903.1	109.50%REC 31.11RPD ± NA (NA) C:NA T:NA	pCi/L	11/28/22 15:15	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	69.23 %REC 17.43RPD ± NA (NA) C:NA T:NA	pCi/L	11/29/22 14:55	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

Sample: R-CA-FB-2 **Lab ID: 60414795025** Collected: 11/03/22 09:30 Received: 11/05/22 05:00 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	0.187 ± 0.325 (0.580) C:NA T:99%	pCi/L	11/27/22 15:29	13982-63-3	
Pace Analytical Services - Greensburg						
Radium-228	EPA 904.0	0.0867 ± 0.296 (0.670) C:80% T:95%	pCi/L	11/26/22 14:41	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

QC Batch: 545782

Analysis Method: EPA 903.1

QC Batch Method: EPA 903.1

Analysis Description: 903.1 Radium-226

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 60414795019, 60414795020, 60414795021, 60414795022, 60414795025

METHOD BLANK: 2649835

Matrix: Water

Associated Lab Samples: 60414795019, 60414795020, 60414795021, 60414795022, 60414795025

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.000 ± 0.205 (0.417) C:NA T:99%	pCi/L	11/27/22 15:06	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

QC Batch: 545777

Analysis Method: EPA 903.1

QC Batch Method: EPA 903.1

Analysis Description: 903.1 Radium-226

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 60414795001, 60414795002, 60414795003, 60414795004, 60414795005, 60414795006, 60414795007, 60414795008, 60414795009, 60414795010, 60414795011, 60414795012, 60414795013, 60414795014, 60414795015, 60414795016, 60414795017, 60414795018, 60414795023, 60414795024

METHOD BLANK: 2649818

Matrix: Water

Associated Lab Samples: 60414795001, 60414795002, 60414795003, 60414795004, 60414795005, 60414795006, 60414795007, 60414795008, 60414795009, 60414795010, 60414795011, 60414795012, 60414795013, 60414795014, 60414795015, 60414795016, 60414795017, 60414795018, 60414795023, 60414795024

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0514 ± 0.235 (0.477) C:NA T:89%	pCi/L	11/28/22 14:10	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

QC Batch: 545783

Analysis Method: EPA 904.0

QC Batch Method: EPA 904.0

Analysis Description: 904.0 Radium 228

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 60414795019, 60414795020, 60414795021, 60414795022, 60414795025

METHOD BLANK: 2649836

Matrix: Water

Associated Lab Samples: 60414795019, 60414795020, 60414795021, 60414795022, 60414795025

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.459 ± 0.320 (0.616) C:88% T:94%	pCi/L	11/26/22 14:39	

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QUALITY CONTROL - RADIOCHEMISTRY

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

QC Batch: 545778

Analysis Method: EPA 904.0

QC Batch Method: EPA 904.0

Analysis Description: 904.0 Radium 228

Laboratory: Pace Analytical Services - Greensburg

Associated Lab Samples: 60414795001, 60414795002, 60414795003, 60414795004, 60414795005, 60414795006, 60414795007, 60414795008, 60414795009, 60414795010, 60414795011, 60414795012, 60414795013, 60414795014, 60414795015, 60414795016, 60414795017, 60414795018, 60414795023, 60414795024

METHOD BLANK: 2649819

Matrix: Water

Associated Lab Samples: 60414795001, 60414795002, 60414795003, 60414795004, 60414795005, 60414795006, 60414795007, 60414795008, 60414795009, 60414795010, 60414795011, 60414795012, 60414795013, 60414795014, 60414795015, 60414795016, 60414795017, 60414795018, 60414795023, 60414795024

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.302 ± 0.274 (0.548) C:82% T:93%	pCi/L	11/29/22 11:50	

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QUALIFIERS

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

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.

E Analyte concentration exceeded the calibration range. The reported 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.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60414795001	R-P-05S	EPA 200.7	819427	EPA 200.7	819563
60414795002	R-P-10S	EPA 200.7	819427	EPA 200.7	819563
60414795003	R-P-17D	EPA 200.7	819427	EPA 200.7	819563
60414795004	R-P-19S	EPA 200.7	819427	EPA 200.7	819563
60414795005	R-P-19I	EPA 200.7	819427	EPA 200.7	819563
60414795006	R-P-19D	EPA 200.7	819427	EPA 200.7	819563
60414795007	R-P-21S	EPA 200.7	819427	EPA 200.7	819563
60414795008	R-P-21I	EPA 200.7	819427	EPA 200.7	819563
60414795009	R-P-21D	EPA 200.7	819427	EPA 200.7	819563
60414795010	R-P-22S	EPA 200.7	819427	EPA 200.7	819563
60414795011	R-CA-DUP-2	EPA 200.7	819427	EPA 200.7	819563
60414795012	R-CA-FB-1	EPA 200.7	819427	EPA 200.7	819563
60414795013	R-CA-RB-1	EPA 200.7	819427	EPA 200.7	819563
60414795014	R-P-16S	EPA 200.7	819427	EPA 200.7	819563
60414795015	R-P-17S	EPA 200.7	819429	EPA 200.7	819565
60414795016	R-P-17I	EPA 200.7	819427	EPA 200.7	819563
60414795017	R-P-22D	EPA 200.7	819429	EPA 200.7	819565
60414795018	R-P-29S	EPA 200.7	819429	EPA 200.7	819565
60414795019	R-P-29D	EPA 200.7	819429	EPA 200.7	819565
60414795020	R-P-30S	EPA 200.7	819429	EPA 200.7	819565
60414795021	R-P-31S	EPA 200.7	819429	EPA 200.7	819565
60414795022	R-CA-DUP-1	EPA 200.7	819429	EPA 200.7	819565
60414795025	R-CA-FB-2	EPA 200.7	819429	EPA 200.7	819565
60414795001	R-P-05S	EPA 200.8	819428	EPA 200.8	819564
60414795002	R-P-10S	EPA 200.8	819428	EPA 200.8	819564
60414795003	R-P-17D	EPA 200.8	819428	EPA 200.8	819564
60414795004	R-P-19S	EPA 200.8	819428	EPA 200.8	819564
60414795005	R-P-19I	EPA 200.8	819428	EPA 200.8	819564
60414795006	R-P-19D	EPA 200.8	819428	EPA 200.8	819564
60414795007	R-P-21S	EPA 200.8	819428	EPA 200.8	819564
60414795008	R-P-21I	EPA 200.8	819428	EPA 200.8	819564
60414795009	R-P-21D	EPA 200.8	819428	EPA 200.8	819564
60414795010	R-P-22S	EPA 200.8	819428	EPA 200.8	819564
60414795011	R-CA-DUP-2	EPA 200.8	819428	EPA 200.8	819564
60414795012	R-CA-FB-1	EPA 200.8	819428	EPA 200.8	819564
60414795013	R-CA-RB-1	EPA 200.8	819428	EPA 200.8	819564
60414795014	R-P-16S	EPA 200.8	819428	EPA 200.8	819564
60414795015	R-P-17S	EPA 200.8	819431	EPA 200.8	819566
60414795016	R-P-17I	EPA 200.8	819428	EPA 200.8	819564
60414795017	R-P-22D	EPA 200.8	819431	EPA 200.8	819566
60414795018	R-P-29S	EPA 200.8	819431	EPA 200.8	819566
60414795019	R-P-29D	EPA 200.8	819431	EPA 200.8	819566
60414795020	R-P-30S	EPA 200.8	819431	EPA 200.8	819566
60414795021	R-P-31S	EPA 200.8	819431	EPA 200.8	819566
60414795022	R-CA-DUP-1	EPA 200.8	819431	EPA 200.8	819566

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60414795025	R-CA-FB-2	EPA 200.8	819431	EPA 200.8	819566
60414795001	R-P-05S	EPA 903.1	545777		
60414795002	R-P-10S	EPA 903.1	545777		
60414795003	R-P-17D	EPA 903.1	545777		
60414795004	R-P-19S	EPA 903.1	545777		
60414795005	R-P-19I	EPA 903.1	545777		
60414795006	R-P-19D	EPA 903.1	545777		
60414795007	R-P-21S	EPA 903.1	545777		
60414795008	R-P-21I	EPA 903.1	545777		
60414795009	R-P-21D	EPA 903.1	545777		
60414795010	R-P-22S	EPA 903.1	545777		
60414795011	R-CA-DUP-2	EPA 903.1	545777		
60414795012	R-CA-FB-1	EPA 903.1	545777		
60414795013	R-CA-RB-1	EPA 903.1	545777		
60414795014	R-P-16S	EPA 903.1	545777		
60414795015	R-P-17S	EPA 903.1	545777		
60414795016	R-P-17I	EPA 903.1	545777		
60414795017	R-P-22D	EPA 903.1	545777		
60414795018	R-P-29S	EPA 903.1	545777		
60414795019	R-P-29D	EPA 903.1	545782		
60414795020	R-P-30S	EPA 903.1	545782		
60414795021	R-P-31S	EPA 903.1	545782		
60414795022	R-CA-DUP-1	EPA 903.1	545782		
60414795023	R-CA-MS-1	EPA 903.1	545777		
60414795024	R-CA-MSD-1	EPA 903.1	545777		
60414795025	R-CA-FB-2	EPA 903.1	545782		
60414795001	R-P-05S	EPA 904.0	545778		
60414795002	R-P-10S	EPA 904.0	545778		
60414795003	R-P-17D	EPA 904.0	545778		
60414795004	R-P-19S	EPA 904.0	545778		
60414795005	R-P-19I	EPA 904.0	545778		
60414795006	R-P-19D	EPA 904.0	545778		
60414795007	R-P-21S	EPA 904.0	545778		
60414795008	R-P-21I	EPA 904.0	545778		
60414795009	R-P-21D	EPA 904.0	545778		
60414795010	R-P-22S	EPA 904.0	545778		
60414795011	R-CA-DUP-2	EPA 904.0	545778		
60414795012	R-CA-FB-1	EPA 904.0	545778		
60414795013	R-CA-RB-1	EPA 904.0	545778		
60414795014	R-P-16S	EPA 904.0	545778		
60414795015	R-P-17S	EPA 904.0	545778		
60414795016	R-P-17I	EPA 904.0	545778		
60414795017	R-P-22D	EPA 904.0	545778		
60414795018	R-P-29S	EPA 904.0	545778		
60414795019	R-P-29D	EPA 904.0	545783		
60414795020	R-P-30S	EPA 904.0	545783		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60414795021	R-P-31S	EPA 904.0	545783		
60414795022	R-CA-DUP-1	EPA 904.0	545783		
60414795023	R-CA-MS-1	EPA 904.0	545778		
60414795024	R-CA-MSD-1	EPA 904.0	545778		
60414795025	R-CA-FB-2	EPA 904.0	545783		
60414795001	R-P-05S	SM 2320B	818329		
60414795002	R-P-10S	SM 2320B	817839		
60414795003	R-P-17D	SM 2320B	818329		
60414795004	R-P-19S	SM 2320B	818329		
60414795005	R-P-19I	SM 2320B	818329		
60414795006	R-P-19D	SM 2320B	818329		
60414795007	R-P-21S	SM 2320B	818329		
60414795008	R-P-21I	SM 2320B	818329		
60414795009	R-P-21D	SM 2320B	818329		
60414795010	R-P-22S	SM 2320B	818329		
60414795011	R-CA-DUP-2	SM 2320B	818329		
60414795012	R-CA-FB-1	SM 2320B	818571		
60414795013	R-CA-RB-1	SM 2320B	818571		
60414795014	R-P-16S	SM 2320B	818571		
60414795015	R-P-17S	SM 2320B	818571		
60414795016	R-P-17I	SM 2320B	818571		
60414795017	R-P-22D	SM 2320B	818571		
60414795018	R-P-29S	SM 2320B	818571		
60414795019	R-P-29D	SM 2320B	818571		
60414795020	R-P-30S	SM 2320B	818571		
60414795021	R-P-31S	SM 2320B	818571		
60414795022	R-CA-DUP-1	SM 2320B	818571		
60414795025	R-CA-FB-2	SM 2320B	818572		
60414795001	R-P-05S	SM 2540C	816862		
60414795002	R-P-10S	SM 2540C	816659		
60414795003	R-P-17D	SM 2540C	817151		
60414795004	R-P-19S	SM 2540C	817151		
60414795005	R-P-19I	SM 2540C	817151		
60414795006	R-P-19D	SM 2540C	817151		
60414795007	R-P-21S	SM 2540C	817151		
60414795008	R-P-21I	SM 2540C	817151		
60414795009	R-P-21D	SM 2540C	817151		
60414795010	R-P-22S	SM 2540C	816862		
60414795011	R-CA-DUP-2	SM 2540C	817151		
60414795012	R-CA-FB-1	SM 2540C	817151		
60414795013	R-CA-RB-1	SM 2540C	817371		
60414795014	R-P-16S	SM 2540C	817371		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: AMEREN RIEC RCPA-CA

Pace Project No.: 60414795

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60414795015	R-P-17S	SM 2540C	817153		
60414795016	R-P-17I	SM 2540C	817153		
60414795017	R-P-22D	SM 2540C	817371		
60414795018	R-P-29S	SM 2540C	817371		
60414795019	R-P-29D	SM 2540C	817371		
60414795020	R-P-30S	SM 2540C	817532		
60414795021	R-P-31S	SM 2540C	817532		
60414795022	R-CA-DUP-1	SM 2540C	817532		
60414795025	R-CA-FB-2	SM 2540C	817532		
60414795001	R-P-05S	EPA 300.0	819035		
60414795002	R-P-10S	EPA 300.0	819035		
60414795003	R-P-17D	EPA 300.0	819035		
60414795004	R-P-19S	EPA 300.0	819035		
60414795005	R-P-19I	EPA 300.0	819035		
60414795006	R-P-19D	EPA 300.0	819035		
60414795007	R-P-21S	EPA 300.0	819035		
60414795008	R-P-21I	EPA 300.0	819035		
60414795009	R-P-21D	EPA 300.0	819035		
60414795010	R-P-22S	EPA 300.0	819035		
60414795011	R-CA-DUP-2	EPA 300.0	819035		
60414795012	R-CA-FB-1	EPA 300.0	819035		
60414795013	R-CA-RB-1	EPA 300.0	818719		
60414795014	R-P-16S	EPA 300.0	818719		
60414795015	R-P-17S	EPA 300.0	818719		
60414795016	R-P-17I	EPA 300.0	818723		
60414795017	R-P-22D	EPA 300.0	818723		
60414795018	R-P-29S	EPA 300.0	818723		
60414795019	R-P-29D	EPA 300.0	818723		
60414795020	R-P-30S	EPA 300.0	818723		
60414795021	R-P-31S	EPA 300.0	818723		
60414795022	R-CA-DUP-1	EPA 300.0	818723		
60414795025	R-CA-FB-2	EPA 300.0	818723		

REPORT OF LABORATORY ANALYSIS

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

WO#: 60414795



DC#_Title: ENV-FRM-LENE-0009_Sample

Revision: 2

Effective Date: 01/12/2022

Issued By: Lenexa

Client Name: WSP Golden

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: 7299 Type of Ice: Wet Blue None

Cooler Temperature (°C): As-read 1.1/0.8 Corr. Factor 0.0 Corrected 1.1/0.8

Date and initials of person examining contents:

Temperature should be above freezing to 6°C 13.9/15.3 13.9/15.3

2/11/3/22

Chain of Custody present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Chain of Custody relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples arrived within holding time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Short Hold Time analyses (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Rush Turn Around Time requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Sufficient volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Correct containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Pace containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Filtered volume received for dissolved tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Sample labels match COC: Date / time / ID / analyses	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples contain multiple phases? Matrix: <u>WT</u>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Containers requiring pH preservation in compliance? (HNO ₃ , H ₂ SO ₄ , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) LOT#: <u>55192</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> 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)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Potassium iodide test strip turns blue/purple? (Preserve)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Headspace in VOA vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Samples from USDA Regulated Area: State:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> 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: _____



CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A Required Client Information:

Company: WSP Golder

Address: 701 Emerson Road, Suite 250
Creve Coeur, Missouri, 63141

Email To: jeffrey_ingram@golder.com

Phone: 636-724-9191 Fax: 636-724-9323

Requested Due Date/TAT: Standard

Section B Report To:

Report To: Jeffrey Ingram

Copy To: Eric Schneider

Purchase Order No.: COC #6

Project Name: Ameren Rush Island EC RCPA-CA

Project Number: 153140604. 0002

Section C Invoice Information:

Attention:

Company Name: WSP Golder

Address:

Pace Quote Reference:

Pace Project Manager: Jamie Church

Pace Profile #: 9285

REGULATORY AGENCY

NPDES GROUND WATER DRINKING WATER

UST RCRA OTHER

Site Location: MO

STATE: MO

Valid Matrix Codes

MATRIX	DW	DRINKING WATER
WT	WT	WASTE WATER
P	P	PRODUCT
SL	SL	SOIL/SOLID
OL	OL	OIL
WP	WP	WASTE PRODUCT
AR	AR	ASBESTOS
OT	OT	OTHER
TS	TS	TOTAL SOLIDS

SAMPLE ID
(A-Z, 0-9 / , -)

Sample IDs MUST BE UNIQUE

Section D
Requested Client Information

Sample ID (A-Z, 0-9 / , -)

Sample IDs MUST BE UNIQUE

ITEM #	MATRIX CODE	COLLECTED		SAMPLE TYPE (G=GRAB C=COMP)	MATRIX CODE (see valid codes to left)	RELINQUISHED BY / AFFILIATION	DATE	TIME	# OF CONTAINERS	Preservatives								Analysis Test ↑	Chloride/Fluoride/Sulfate	App III and Cat/An Metals	Alkalinity	TDS	Appendix IV Metals *	Radium 226	Radium 228	Residual Chlorine (Y/N)
		COMPOSITE START	COMPOSITE END/GRAB							DATE	TIME	NaOH	HCl	HNO ₃	H ₂ SO ₄	Unpreserved	Na ₂ O ₃									

1	R-P-05S	WT	G	11-22	1434	Sared Beavers	11/2/22	15:40	4																	
2	R-P-10S	WT	G	10-31-22	1650				4																	
3	R-P-16S	WT	G																							
4	R-P-17S	WT	G																							
5	R-P-17I	WT	G																							
6	R-P-17D	WT	G	11-22	1352				4																	
7	R-P-19S	WT	G	11-22	1128				4																	
8	R-P-19I	WT	G	11-22	1035				4																	
9	R-P-19D	WT	G	11-22	0949				4																	
10	R-P-21S	WT	G	11-22	1100				4																	
11	R-P-21I	WT	G	11-22	1159				4																	
12	R-P-21D	WT	G	11-22	1745				4																	

Section E
Requested Analysis Filtered (Y/N)

Requested Analysis Filtered (Y/N)

Accepted by / Affiliation: Sared Beavers

DATE: 11/2/22

TIME: 15:40

Signature: Grant More

DATE Signed (MM/DD/YYYY): 11/02/22

Signature of Sampler: Jeffrey Ingram

DATE Signed (MM/DD/YYYY): 11/02/22

Signature of Sampler: Jeffrey Ingram

Temp in °C: 11, 10.8, 13.9, 15.3

Received on: (Y/N)

Cooler (Y/N)

Samples Intact (Y/N)

*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.

CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A
Required Client Information:

Company: WSP Golder
 Address: 701 Emerson Road, Suite 250
 Creve Coeur, Missouri, 63141
 Email To: jeffrey_ingram@golder.com
 Phone: 636-724-9191 Fax: 636-724-9323
 Requested Due Date/TAT: Standard

Section B
Required Project Information:

Report To: Jeffrey Ingram
 Copy To: Eric Schmieder
 Purchase Order No.: COC #6
 Project Name: Ameren Rush Island EC RCPA-CA
 Project Number: 153140604_0002

Section C
Invoice Information:

Attention:
 Company Name: WSP Golder
 Address:
 Pace Quote Reference:
 Pace Project Manager: Jamie Church
 Pace Profile #: 9285

Page: **2** of **2**

REGULATORY AGENCY

NPDES GROUND WATER DRINKING WATER
 UST RCRA OTHER

Site Location
 STATE: MO

Section D
Required Client Information

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

ITEM #	Valid Matrix Codes	MATRIX CODE	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives	Analysis Test [↑]	Requested Analysis Filtered (Y/N)												Residual Chlorine (Y/N)								
				COMPOSITE START	COMPOSITE END/GRAB					DATE	TIME	Y	N	Y	N	Y	N	Y	N	Y	N		Y	N	Y	N	Y	N	Y	N
1	DRINKING WATER	DW	G			11-22 1704	4	Unpreserved	H ₂ O ₂	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2	WATER	WT	G						HCl	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
3	WASTE WATER	WW	G						NaOH	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
4	PRODUCT	P	G						HNO ₃	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
5	SOIL/SOLID	SL	G						H ₂ SO ₄	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
6	OIL	OL	G						HNO ₃	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
7			G						Other	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
8			G						Methanol	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
9			G						Na ₂ S ₂ O ₃	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
10			G						NaOH	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
11			G						HCl	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
12			G						HNO ₃	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	


60414795
 Pace Project No./ Lab I.D.
 APRIL 20 PIN

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	Temp in °C	Received on	Ice (Y/N)	Custody Sealed	Cooler (Y/N)	Samples Intact
	Sand Berens	11/2/22	15:40	Purpase	11/3/22 0355	1-1	1-1	7:45	Y	Y	Y	Y
							0-8	Y	Y	Y	Y	Y
							13-9	N	Y	Y	Y	Y
							15-3	N	Y	Y	Y	Y

SAMPLER NAME AND SIGNATURE
 PRINT Name of SAMPLER: Grant Morley
 SIGNATURE OF SAMPLER: [Signature]

DATE Signed (MM/DD/YY): 11/02/22

*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.
 F-ALL-Q-020rev.08, 12-Oct-2007

	DC#_ Title: ENV-FRM-LENE-0009_	
	Revision: 2	Effective Date: 01/

WO#: 60414795



60414795

Client Name: WSP Golder

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: T-299 Type of Ice: Wet Blue None

Cooler Temperature (°C): As-read 16.1/15.0/15.5 Corr. Factor 0 Corrected 16.1/15.0/15.5 Date and initials of person examining contents: Be 1/15

Temperature should be above freezing to 6°C 15.5

Chain of Custody present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<u>SPIN in coolers with temps -16.1, 15.0, 15.5</u>
Chain of Custody relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples arrived within holding time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Short Hold Time analyses (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Rush Turn Around Time requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Sufficient volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Correct containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Pace containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Unpreserved 5035A / TX1005/1006 soils frozen in 48hrs?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Filtered volume received for dissolved tests?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Sample labels match COC: Date / time / ID / analyses	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Samples contain multiple phases? Matrix:	<input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Containers requiring pH preservation in compliance? (HNO ₃ , H ₂ SO ₄ , HCl<2; NaOH>9 Sulfide, NaOH>10 Cyanide) (Exceptions: VOA, Micro, O&G, KS TPH, OK-DRO) LOT#: <u>55192</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> 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)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Potassium iodide test strip turns blue/purple? (Preserve)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Headspace in VOA vials (>6mm):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Samples from USDA Regulated Area: State:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	
Additional labels attached to 5035A / TX1005 vials in the field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> 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: _____



CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A
 Required Client Information:
 Company: **WSP Golder**
 Address: **701 Emerson Road, Suite 250**
Creve Coeur, Missouri, 63141
 Email To: **jeffrey.ingram@golder.com**
 Phone: **636-724-9191** Fax: **636-724-9323**
 Requested Due Date/TAT: **Standard**

Section B
 Required Project Information:
 Report To: **Jeffrey Ingram**
 Copy To: **Eric Schmieder**
 Purchase Order No.: **COC #6**
 Project Name: **Ameren Rush Island EC RCPA-CA**
 Project Number: **153140604. 0002**

Section C
 Invoice Information:
 Attention:
 Company Name: **WSP Golder**
 Address:
 Pace Quote Reference:
 Pace Project Manager: **Jamie Church**
 Pace Profile #: **9285**
 MO

REGULATORY AGENCY
 NPDES GROUND WATER DRINKING WATER
 UST RCRA OTHER

Requested Analysis Filtered (Y/N)

Y	Chloride/Fluoride/Sulfate
N	App III and Cat/An Metals
N	Alkalinity
N	TDS
N	Appendix IV Metals **
N	Radium 226
N	Radium 228
	Residual Chlorine (Y/N)

Preservatives

	Unpreserved
	H ₂ SO ₄
	HNO ₃
	HCl
	NaOH
	Na ₂ S ₂ O ₃
	Methanol
	Other

Analysis Test

	Analysis Test
	App III and Cat/An Metals
	Chloride/Fluoride/Sulfate
	Alkalinity
	TDS
	Appendix IV Metals **
	Radium 226
	Radium 228

60414795
Pace Project No./ Lab I.D.
Ringside Blank

ITEM #	Valid Matrix Codes MATRIX CODE DRINKING WATER DW WASTE WATER WW PRODUCT P SOILSOLID SL OIL OL AR OT TS	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		DATE	TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives	Y/N	Requested Analysis Filtered (Y/N)
				COMPOSITE START	COMPOSITE END/GRAB							
1	R-CA-RB-1	WT	G	DATE	TIME	DATE	TIME	DATE	TIME			
2	R-P-10S	WT	G	11-3-22	1730							
3	R-P-16S	WT	G	11-3-22	1653							
4	R-P-17S	WT	G	11-3-22	1526							
5	R-P-17I	WT	G	11-3-22	1630							
6	R-P-17D	WT	G									
7	R-P-19S	WT	G									
8	R-P-19I	WT	G									
9	R-P-19D	WT	G									
10	R-P-21S	WT	G									
11	R-P-21I	WT	G									
12	R-P-21D	WT	G									

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
Janet Bennett	11-9-22	18:55	Eric Pace	11-15	0500	Y Y X

Section D
 Required Client Information
SAMPLE ID
 (A-Z, 0-9 / - / -)
 Sample IDs MUST BE UNIQUE

ADDITIONAL COMMENTS

** 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, Pb
 200.8 Metals - Sb, As, Cr, Se

SAMPLER NAME AND SIGNATURE
 PRINT Name of SAMPLER: *Grant Morey*
 SIGNATURE of SAMPLER: *[Signature]*
 DATE Signed (MM/DD/YYYY): *10/11/03/22*

Temp in °C
 Received on
 Custody Sealed
 Samples Intact (Y/N)

CHAIN-OF-CUSTODY / Analytical Request Document

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

Section A

Required Client Information:

Company: **WSP Golder**

Address: **701 Emerson Road, Suite 250**

Creve Coeur, Missouri, 63141

Email To: **jeffrey_ingram@golder.com**

Phone: **636-724-9191** Fax: **636-724-9323**

Requested Due Date/TAT: **Standard**

Section B

Required Project Information:

Report To: **Jeffrey Ingram**

Copy To: **Eric Schnieder**

Purchase Order No.: **COC #6**

Project Name: **Ameren Rush Island EC RCPA-CA**

Project Number: **153140604, 0002**

Section C

Invoice Information:

Attention:

Company Name: **WSP Golder**

Address:

Face Quote Reference:

Face Project Manager: **Jamie Church**

Face Profile #: **9285**

Page: **2** of **2**

REGULATORY AGENCY

NPDES GROUND WATER DRINKING WATER

UST RCRA OTHER

Site Location STATE: MO

ITEM #	Section D Required Client Information	Valid Matrix Codes	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED		SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives	Analysis Test ¹	Requested Analysis Filtered (Y/N)													Residual Chlorine (Y/N)	Face Project No./ Lab I.D.				
					COMPOSITE START	COMPOSITE END/GRAB					DATE	TIME	DATE	TIME	W	N	Cl/Fluoride/Sulfate	N	Alkalinity	N	TDS	N	Appendix IV Metals **			N	Radium 226	N	Radium 228
1		R-P-22S	WT G			11-3-22	1620	4	Unpreserved			✓	✓	✓	✓														
2		R-P-22D	WT G			11-3-22	1152	4	HCl			✓	✓	✓	✓														
3		R-P-29S	WT G			11-3-22	0920	4	HNO ₃			✓	✓	✓	✓														
4		R-P-29D	WT G			11-3-22	1403	4	H ₂ SO ₄			✓	✓	✓	✓														
5		R-P-30S	WT G			11-3-22	1419	4	NaOH			✓	✓	✓	✓														
6		R-P-31S	WT G			11-3-22	—	4	HCl			✓	✓	✓	✓														
7		R-CA-DUP-1	WT G																										
8		R-CA-DUP-2	WT G																										
9		R-CA-FB-1	WT G																										
10		R-CA-FB-2	WT G			11-3-22	0930	4	Na ₂ S ₂ O ₃			✓	✓	✓	✓														
11		R-CA-MS-1	WT G			11-3-22	1630	4	NaOH			✓	✓	✓	✓														
12		R-CA-MSD-1	WT G			11-3-22	1630	4	HCl			✓	✓	✓	✓														

Additional Comments: **Sand Bemis**

RELINQUISHED BY / AFFILIATION: **[Signature]** DATE: **11-4-22** TIME: **15:55**

ACCEPTED BY / AFFILIATION: **[Signature]** DATE: **11/5** TIME: **0830**

TEMP IN °C: _____

RECEIVED ON: _____

ICE (Y/N): _____

CUSTODY SEALED: _____

COOLER (Y/N): _____

SAMPLES INTACT (Y/N): _____

DATE SIGNED (MM/DD/YYYY): **11/03/22**

PRINT NAME OF SAMPLER: **Grant Mory**

SIGNATURE OF SAMPLER: **[Signature]**

MEMORANDUM

DATE December 8, 2022

Project No. 153140604.0002

TO Project File
Golder Associates

CC Amanda Derhake, Jeff Ingram

FROM Rahel Pommerenke

EMAIL rahel.pommerenke@wsp.com

DATA VALIDATION SUMMARY, RUSH ISLAND ENERGY CENTER – RCPA-CA – CORRECTIVE ACTION SAMPLING OCTOBER 2022 - DATA PACKAGE 60414795

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, rinsate), and the blank comparison criterion was not met, associated sample results were qualified as estimates (J) or non-detects (U).
- When duplicate criterion was not met, the associated sample result was qualified as an estimate (J for detects, UJ for non-detects).
- When matrix spike/matrix spike duplicate (MS/MSD) criterion was not met, the associated sample result was qualified as an estimate (J, J+ for estimates biased high, and J- for estimates biased low).
- When a compound was detected in a sample result between the MDL and the PQL the results were recorded at the detection value and qualified as estimates (J).

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Company Name: Golder / WSP
 Project Name: Ameren REC - RCPA-CA
 Reviewer: R.Pommerenke

Project Manager: J. Ingram
 Project Number: 153140604
 Validation Date: 12/08/2022

Laboratory: Pace Analytical Services SDG #: 60414795

Analytical Method (type and no.): EPA 200.7/200.8 (Total Metals); EPA 903.1/904.0 (Radium 226/228); SM2320B (Alkalinity);

Matrix: Air Soil/Sed. Water Waste SM2540C (TDS); EPA 300.0 (Anions)

Sample Names R-P-05S, R-P-10S, R-P-17D, R-P-19S, R-P-19I, R-P-19D, R-P-21S, R-P-21I, R-P-21D, R-P-22S, R-CA-DUP-2, R-CA-FB-1, R-CA-RB-1, R-P-16S, R-P-17S, R-P-17I, R-P-22D, R-P-29S, R-P-29D, R-P-30S, R-P-31S, R-CA-DUP-1, R-CA-MS-1, R-CA-MSD-1, R-CA-FB-2

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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>10/31/2022 - 11/03/2022</u>
b) Sampling team indicated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>GTM/JAB</u>
c) Sample location noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
d) Sample depth indicated (Soils)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u></u>
e) Sample type indicated (grab/composite)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Grab</u>
f) Field QC noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>See notes.</u>
g) Field parameters collected (note types)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>pH, Sp.Cond, ORP, Temp, DO, Turb</u>
h) Field Calibration within control limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
i) Notations of unacceptable field conditions/performances from field logs or field notes?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
j) Does the laboratory narrative indicate deficiencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u></u>

Note Deficiencies: _____

Chain-of-Custody (COC)	YES	NO	NA	COMMENTS
a) Was the COC properly completed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
b) Was the COC signed by both field and laboratory personnel?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
c) Were samples received in good condition?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>

General (reference QAPP or Method)	YES	NO	NA	COMMENTS
a) Were hold times met for sample pretreatment?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
b) Were hold times met for sample analysis?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
c) Were the correct preservatives used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
d) Was the correct method used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
e) Were appropriate reporting limits achieved?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
f) Were any sample dilutions noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>See notes.</u>
g) Were any matrix problems noted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>See notes.</u>

QA LEVEL II - INORGANIC DATA EVALUATION CHECKLIST

Blanks	YES	NO	NA	COMMENTS
a) Were analytes detected in the method blank(s)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See notes.
b) Were analytes detected in the field blank(s)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See notes.
c) Were analytes detected in the equipment blank(s)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See notes.
d) Were analytes detected in the trip blank(s)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Laboratory Control Sample (LCS)	YES	NO	NA	COMMENTS
a) Was a LCS analyzed once per SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
b) Were the proper analytes included in the LCS?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
c) Was the LCS accuracy criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Duplicates	YES	NO	NA	COMMENTS
a) Were field duplicates collected (note original and duplicate sample names)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	R-CA-DUP-1 @ R-P-30S
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	R-CA-DUP-2 @ R-P-19S
b) Were field dup. precision criteria met (note RPD)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See notes.
c) Were lab duplicates analyzed (note original and duplicate samples)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
d) Were lab dup. precision criteria met (note RPD)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See notes.

Blind Standards	YES	NO	NA	COMMENTS
a) Was a blind standard used (indicate name, analytes included and concentrations)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
b) Was the %D within control limits?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Matrix Spike/Matrix Spike Duplicate (MS/MSD)	YES	NO	NA	COMMENTS
a) Was MS accuracy criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See notes.
Recovery could not be calculated since sample contained high concentration of analyte?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
b) Was MSD accuracy criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See notes.
Recovery could not be calculated since sample contained high concentration of analyte?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
c) Were MS/MSD precision criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See notes.

Comments/Notes:

Dilutions: Chloride and sulfate analyzed at a dilution. No qualification necessary.

Blanks:

MB3258774: Barium (0.73J) and Iron (8.1J) detected in blank. Associated with samples -001 through -014 and -016.

Results > RL and x10 blank detection, no qualification. Results < RL reported as ND at RL. Results <10x blank but >RL qualified as estimates.

MB3258784: Barium (0.54J), Iron (8.0J), Manganese (0.55J), Molybdenum (0.90J), Sodium (186J). Associated with samples -015, -017

QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

Comments/Notes:

through -022 and -025. Results ND or > RL and x10 blank detection, no qualification. Results < RL reported as ND at RL.

MB3252545: Alkalinity (8.0J). Associated with sample -002. Results > RL and x10 blank detection, no qualification

MB3255372: Alkalinity (6.7J). Associated with samples -012 through -022. Results ND or > x10 blank and RL, no qualification. Results < RL reported as ND at RL.

MB3255954: Chloride (0.54J). Associated with samples -013 through -015. Results < RL reported as ND at RL. Results < x10 blank and > RL, reported as estimate.

MB3255965: Chloride (0.59J). Associated with samples -016 through -022 and -025. Results > x10 blank and RL, no qualification. Results < x10 blank and > RL, reported as estimate. Results < RL reported as ND at RL.

MB3257000: Chloride (0.60J). Associated with samples -001 through -012. Results > x10 blank and RL, no qualification. Results < x10 blank and > RL, reported as estimate. Results < RL reported as ND at RL.

MB3261491: Chloride (0.65J). Associated with samples -001 through -012. Results > x10 blank and RL, no qualification. Results < x10 blank and > RL, reported as estimates. Results < RL reported as ND at RL.

R-CA-FB-1 @ R-P-21S: Barium (1.0J), Boron (4.4J), Calcium (56.9J), Iron (10.6J), Chromium (0.41J), Alkalinity (8.8J), Total Dissolved Solids (7.5J), Chloride (0.62J). Results > x10 blank and RL, no qualification. Results < RL reported as ND at RL.

R-CA-FB-2 @ R-P-29D: Calcium (133J), Iron (7.3J), Magnesium (44.1J), Manganese (0.24J), Sodium (171J), Chromium (0.33J), Chloride (0.67J). Results > x10 blank and RL, no qualification. Results < RL reported as ND at RL.

R-CA-RB-1 @ R-P-16S: Barium (1.1J), Calcium (52.3J), Iron (15.8J), Manganese (0.61J), Sodium (111J), Chromium (0.80J), Chloride (0.60J). Results > x10 blank and RL, no qualification. Results < x10 and > RL, reported as estimate. Result < RL reported as ND at RL.

R-CA-DUP-1 @ R-P-30S: Radium-228 detected in parent sample, ND in duplicate sample.

Sample duplicate 3250743: RPD for TDS (17%) exceeds limit (10%). Performed on unrelated sample, no qualification necessary.

MS/MSD:

3258776: MS % recovery high for calcium. Associated with R-CA-DUP-2. Only one QC indicator outside of control limits, not qualified.

3258777/3258778: MS/MSD % recovery high for sodium. Associated with R-P-17I. Reported as estimate.

3258787/3258788: MSD % recovery low for boron, calcium, and sodium. Performed on unrelated sample, no qualification necessary.

3255956/3255957: MS/MSD % recovery low for fluoride. Performed on unrelated sample, no qualification necessary.

3255968/3255969: MS % recovery high for sulfate. RPD (39%) exceeds RPD limit (20%). Associated with R-P-17I. Qualified as estimate.

QA LEVEL IV - INORGANIC DATA EVALUATION CHECKLIST

Data Qualification:

Sample Name	Constituent(s)	Result	Qualifier	Reason
R-CA-FB-1	Barium	5.0	U	Detection in MB, Result < RL
R-CA-RB-1	"	5.0	U	"
R-P-29S	Molybdenum	20.0	U	"
R-P-30S	"	20.0	U	"
R-P-31S	"	20.0	U	"
R-CA-FB-2	Iron	50.0	U	"
R-CA-FB-2	Manganese	5.0	U	"
R-CA-FB-2	Sodium	500	U	"
R-CA-FB-1	Alkalinity	20.0	U	"
R-CA-RB-1	Chloride	1.0	U	"
R-P-16S	"	4.6	J	Detected in MB/RB, 10x blank > result > RL.
R-P-31S	"	3.2	J	Detected in MB, x10 > result > RL.
R-CA-FB-2	"	1.0	U	Detected in MB, result < RL.
R-P-19S	"	1.6	J	Detected in MB, 10x blank > result > RL.
R-CA-DUP-2	"	1.5	J	"
R-CA-FB-1	"	1.0	U	Detected in MB, result < RL
R-P-21S	Chromium	1.0	U	Detected in FB, result < RL.
R-P-29D	"	1.0	U	"
R-P-16S	Iron	52.0	J	Detected in RB, 10x blank > result > RL.
R-P-16S	Chromium	1.0	U	Detected in RB, result < RL.
R-P-16S	Chloride	4.6	J	Detected in MB, 10x blank > result > RL.
R-CA-DUP-1	Radium-228	0.572	UJ	Detected in parent, ND in dup
R-P-30S	"	0.828	J	"
R-P-17I	Sodium	214000	J+	MS/MSD % outside of control limits
R-P-17I	Sulfate	325	J	MS % recovery high, MS/MSD RPD high
R-P-19I	Iron	50.0	U	Detection in MB, Result < RL
R-CA-FB-1	Iron	50.0	U	"
R-CA-RB-1	Iron	50.0	U	"
R-CA-DUP-1	Molybdenum	20.0	U	"

Signature: _____



Date: _____

12/08/2022

APPENDIX B

**October 2021 Assessment
Monitoring Statistical Evaluation**

TECHNICAL MEMORANDUM

DATE April 14, 2022

Project No. 153140603

TO Bill Kutosky
Ameren Missouri

CC Susan Knowles, Craig Giesman, Charlie Henderson

FROM Jeffrey Ingram, Sean Paulsen, Mark Haddock

EMAIL Jingram@golder.com

ASSESSMENT MONITORING STATISTICAL EVALUATION RCPA SURFACE IMPOUNDMENT RUSH ISLAND ENERGY CENTER, JEFFERSON COUNTY, MISSOURI

This Technical Memorandum provides the results of the Assessment Monitoring Statistical Evaluation from the October 2021 sampling event for the RCPA Surface Impoundment at the Rush Island Energy Center located in Jefferson County, Missouri. Included in this memorandum is a brief 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 tested Appendix IV parameters (**Appendix A** and **Appendix B**).

The Appendix IV constituents were evaluated for SSLs using the methods and procedures outlined in the Groundwater Monitoring Plan's (GMP) Statistical Analysis Plan (SAP). The following statistical outlier(s) were removed prior to the calculation of confidence limits:

- Barium
 - R-MW-6 at 4,370 micrograms per liter ($\mu\text{g/L}$) on 10/27/2021. The result is statistically higher than other values at the same well. A confirmation sample was collected on 2/14/2022 and the result for the confirmation sample was 174 $\mu\text{g/L}$, which is representative of the historical data at the well. The elevated result for 10/27/2021 is considered an outlier.
- Lithium
 - R-MW-5 and R-MW-6 at Non-Detect (ND, $<76.6 \mu\text{g/L}$) on 10/27/2021. Values are statistically higher than other values at the same wells. Analysis of the October 2021 sampling event data revealed that laboratory dilution was required for analysis of the samples. This sample dilution caused the Method Detection Limit (MDL) to be greater than the Groundwater Protection Standard (GWPS). Verification samples were collected on 2/14/2022 and the results for the confirmation sample was ND ($<7.7 \mu\text{g/L}$), which is within the range of concentrations for lithium in R-MW-5 and R-MW-6. The diluted results from 10/27/2021 are considered outliers.
- Lead
 - R-MW-1 at 5.9J $\mu\text{g/L}$ on 4/22/2021. The result is statistically higher than other values at the same well. The high result has not been confirmed during subsequent sampling and is an outlier.

No new SSLs were identified in the October 2021 sampling event. The SSLs reported for the October 2021 monitoring event are shown in **Appendix A** and summarized as follows:

- Arsenic at MW-2, MW-3, and MW-7/MW-7(R)
- Molybdenum at MW-2, MW-3

Golder appreciates this opportunity to provide hydrogeological and engineering support services to Ameren. If you have any questions or comments regarding the information provided, please call our office at (314)-984-8800.

Sincerely,



Jeffrey Ingram
Senior Consultant, Geologist



Sean Paulsen
Senior Lead Consultant, Geologist

JSI/SCP/MNH

Attachments Table 1 – RCPA Groundwater Protection Standards
Appendix A – Sanitas Confidence Interval Statistical Output
Appendix B – Sanitas Trending Confidence Bands Statistical Output

**Table 1 - RCPA Groundwater Protection Standards
RCPA Surface Impoundment
Rush Island Energy Center**

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	30	30
Barium	µg/L	2000	2000	550.5
Beryllium	µg/L	4	4	DQR
Cadmium	µg/L	5	5	DQR
Chromium	µg/L	100	100	2.372
Cobalt	µg/L	6	6	DQR
Fluoride	mg/L	4	4	0.2767
Lead	µg/L	15	15	DQR
Lithium	µg/L	40	64.7	64.7
Mercury	µg/L	2	2	DQR
Molybdenum	µg/L	100	100	DQR
Radium 226 + 228	pCi/L	5	5	2.297
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) Drinking Water Standards and Health Advisories. <http://water.epa.gov/drink/contaminants/index.cfm>.

5. Health Based Groundwater Protection Standards (GWPS) were adopted 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 up through April 2021 from monitoring wells MW-B1 and MW-B2.

Prepared by: EMS

Checked by: SSS

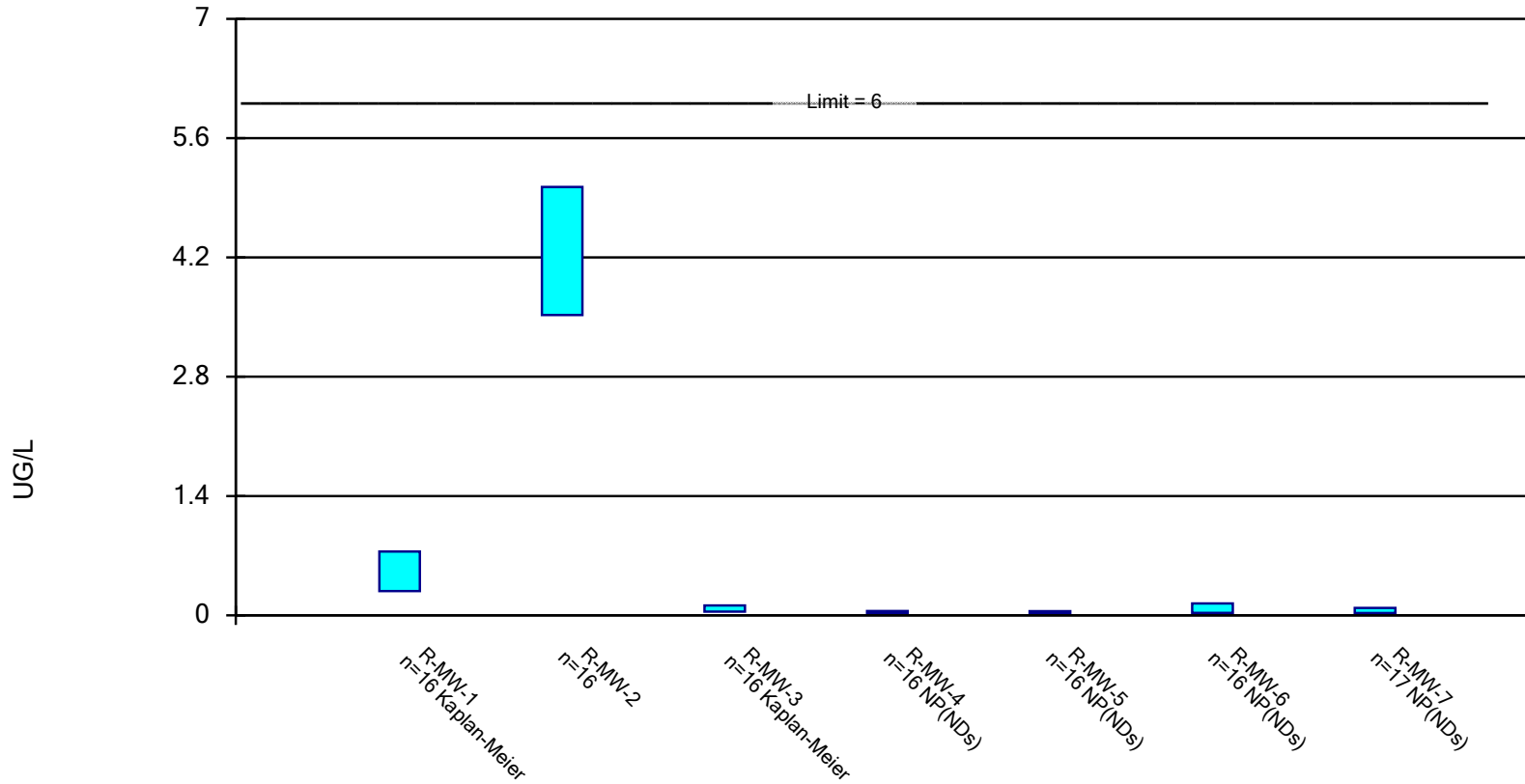
Reviewed by: SCP

APPENDIX A

**Sanitas Confidence Interval
Statistical Output**

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.

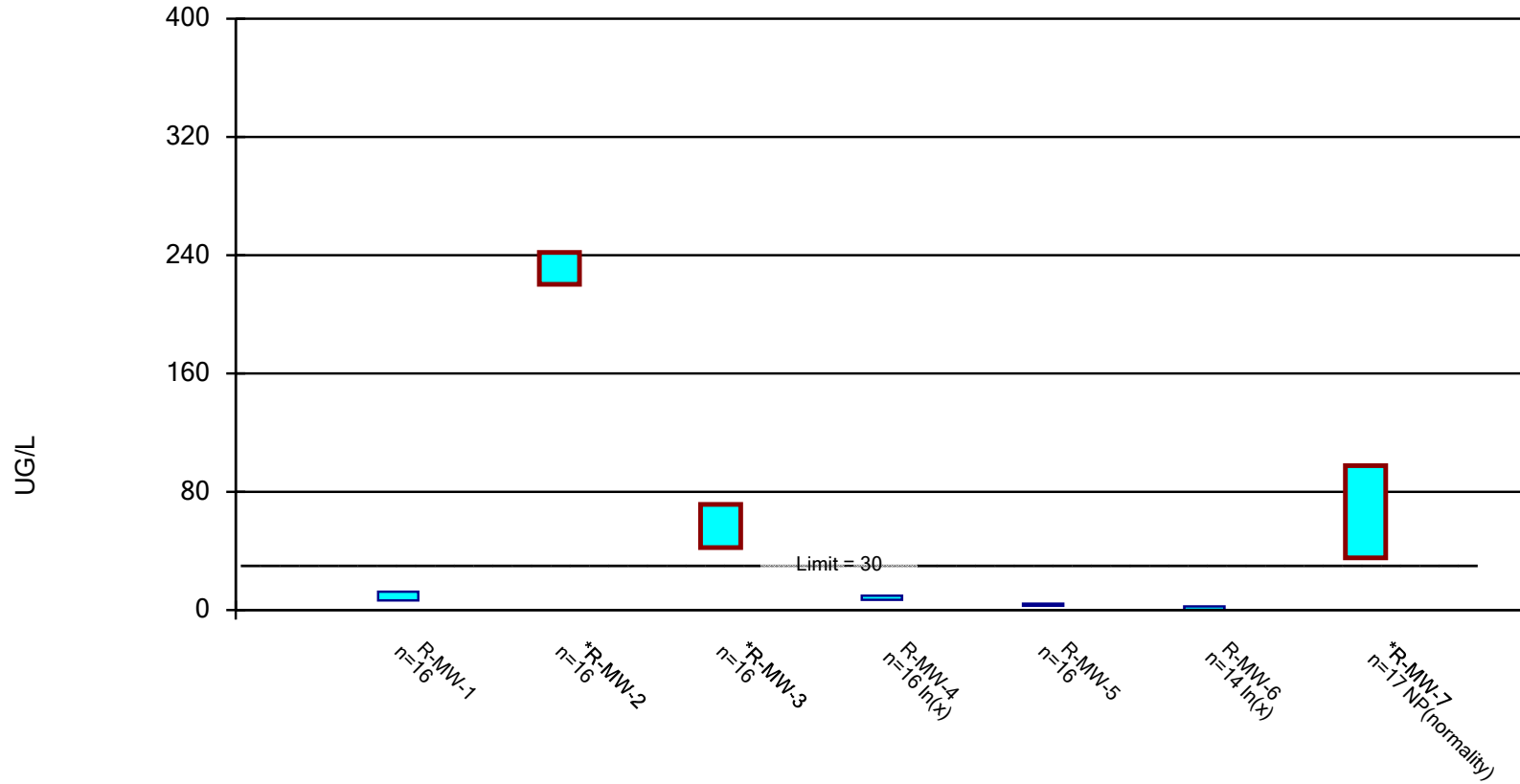


Constituent: ANTIMONY, TOTAL Analysis Run 3/30/2022 9:10 AM

Rush Island E.C. Client: Ameren Data: RIEC Data

Parametric and Non-Parametric (NP) Confidence Interval

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

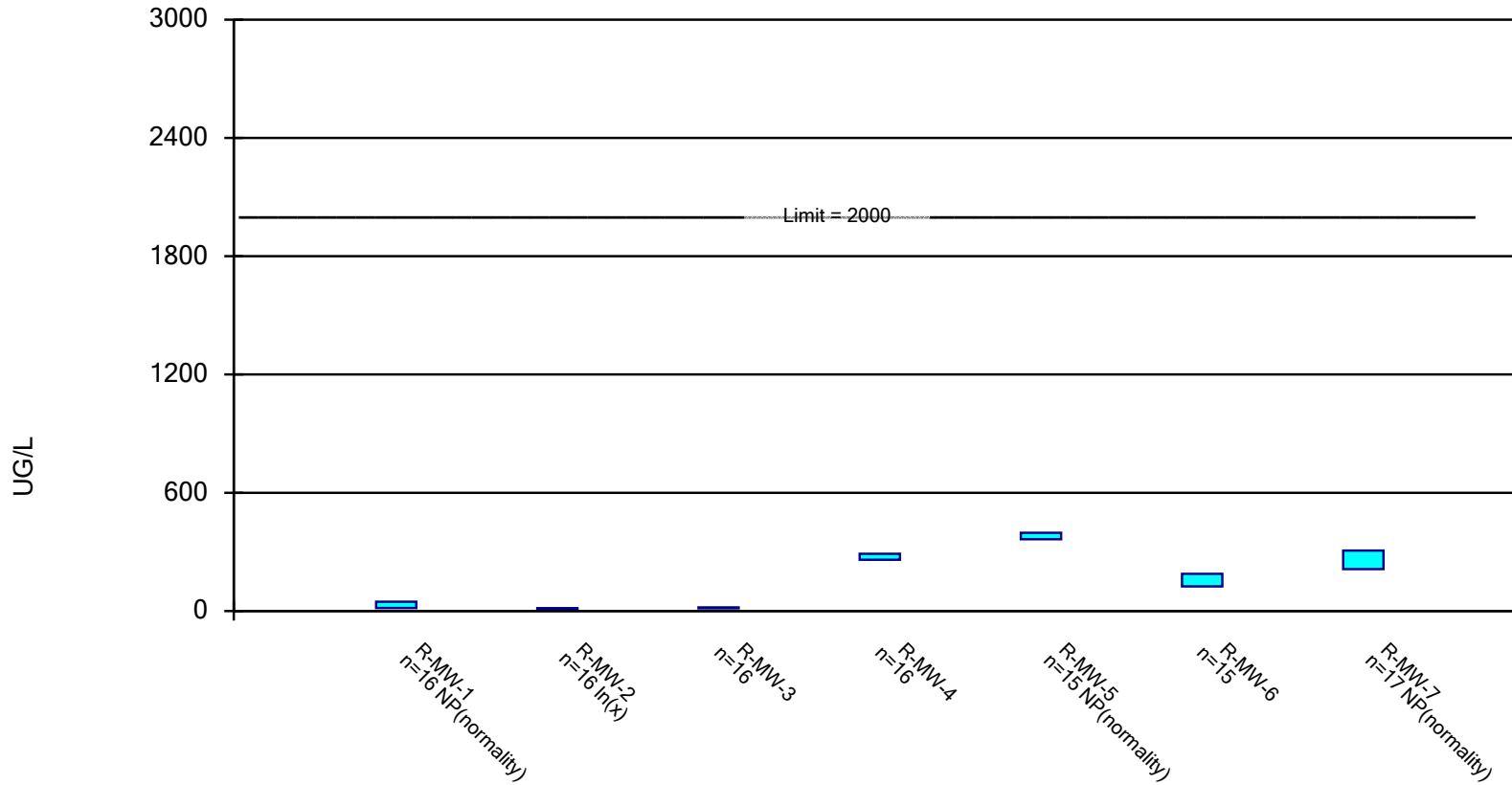


Constituent: ARSENIC, TOTAL Analysis Run 3/30/2022 9:10 AM

Rush Island E.C. Client: Ameren Data: RIEC Data

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.

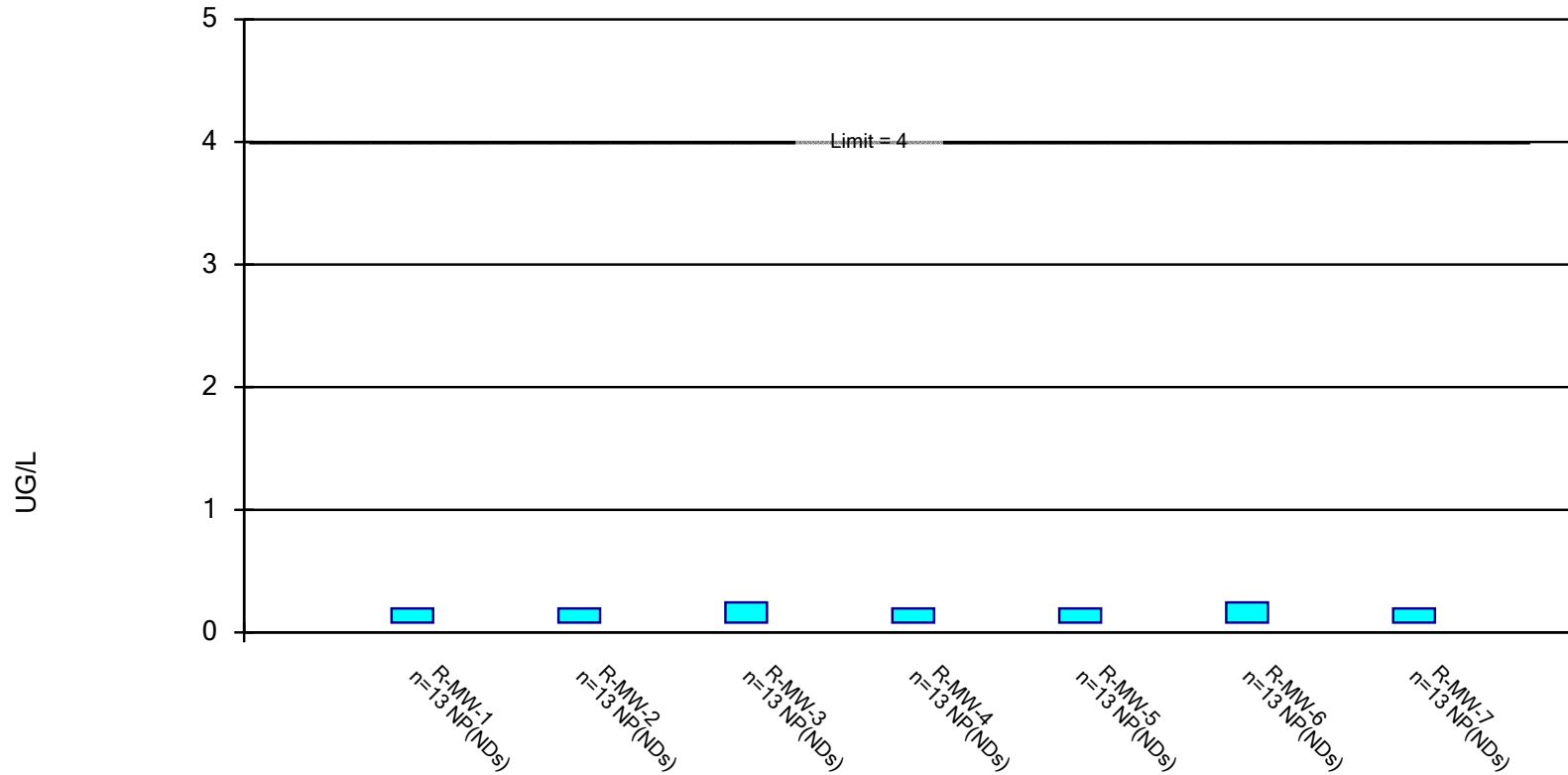


Constituent: BARIUM, TOTAL Analysis Run 3/30/2022 9:10 AM

Rush Island E.C. Client: Ameren Data: RIEC Data

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.

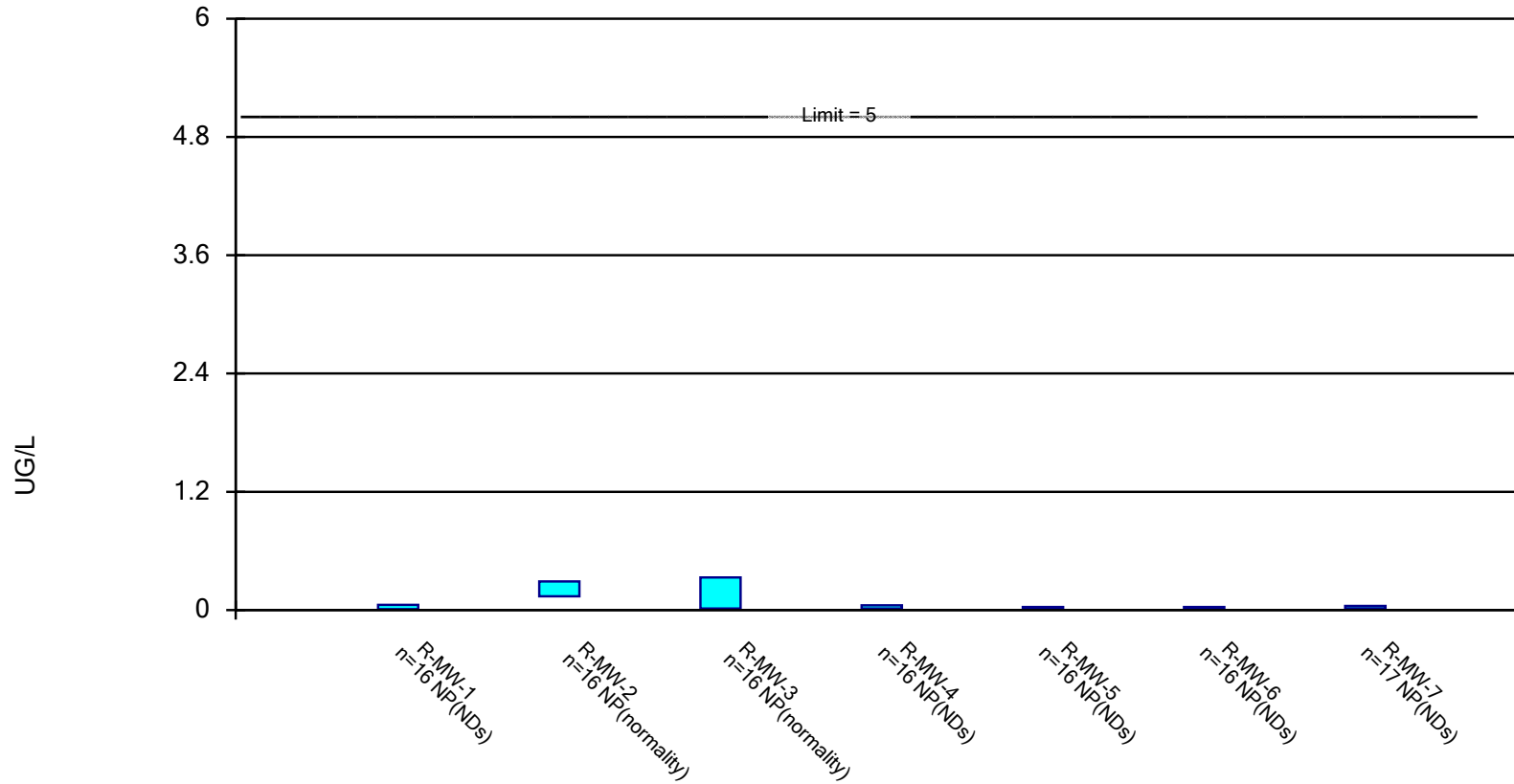


Constituent: BERYLLIUM, TOTAL Analysis Run 3/30/2022 9:10 AM

Rush Island E.C. Client: Ameren Data: RIEC Data

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.

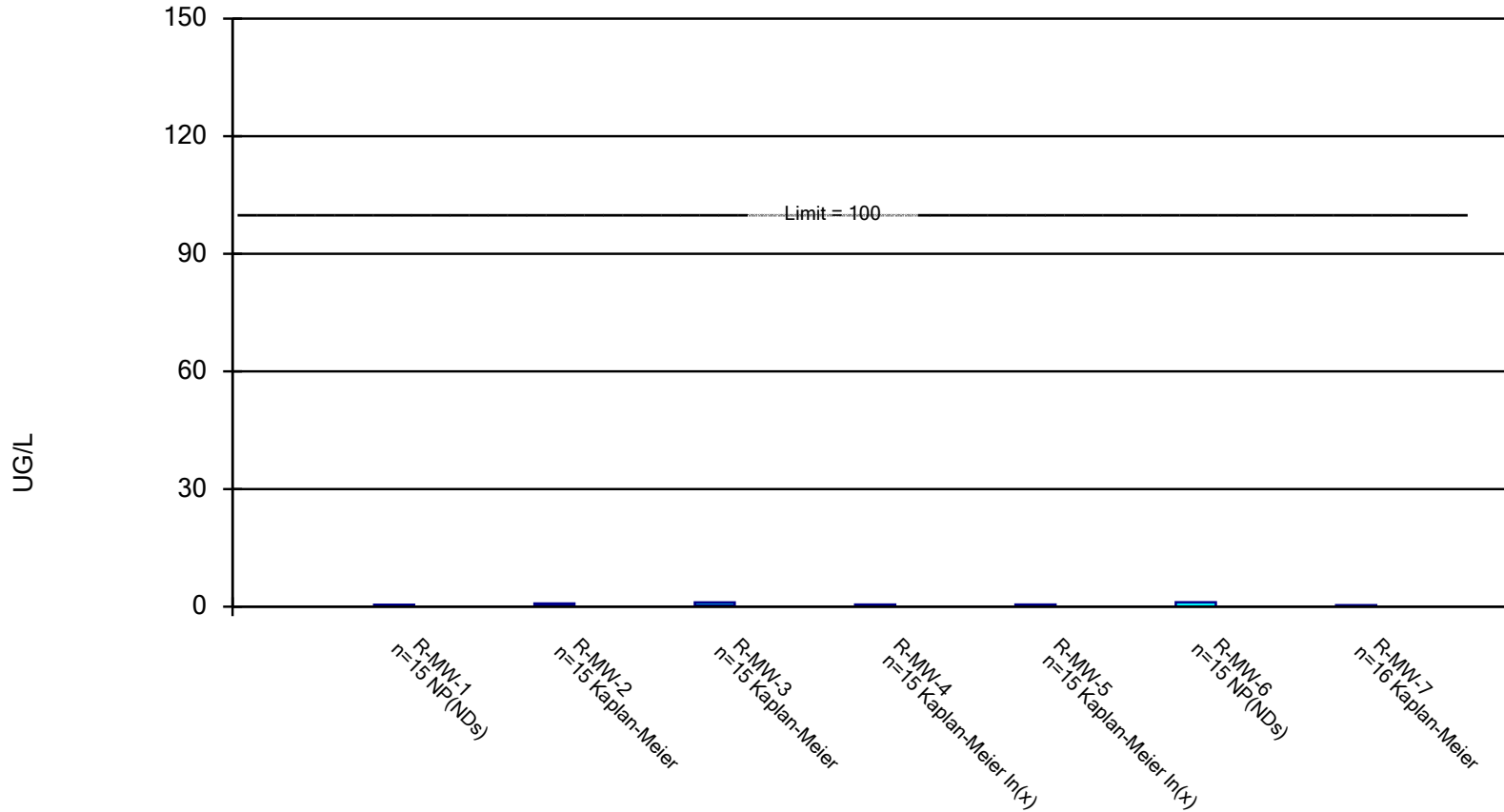


Constituent: CADMIUM, TOTAL Analysis Run 3/30/2022 9:10 AM

Rush Island E.C. Client: Ameren Data: RIEC Data

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.

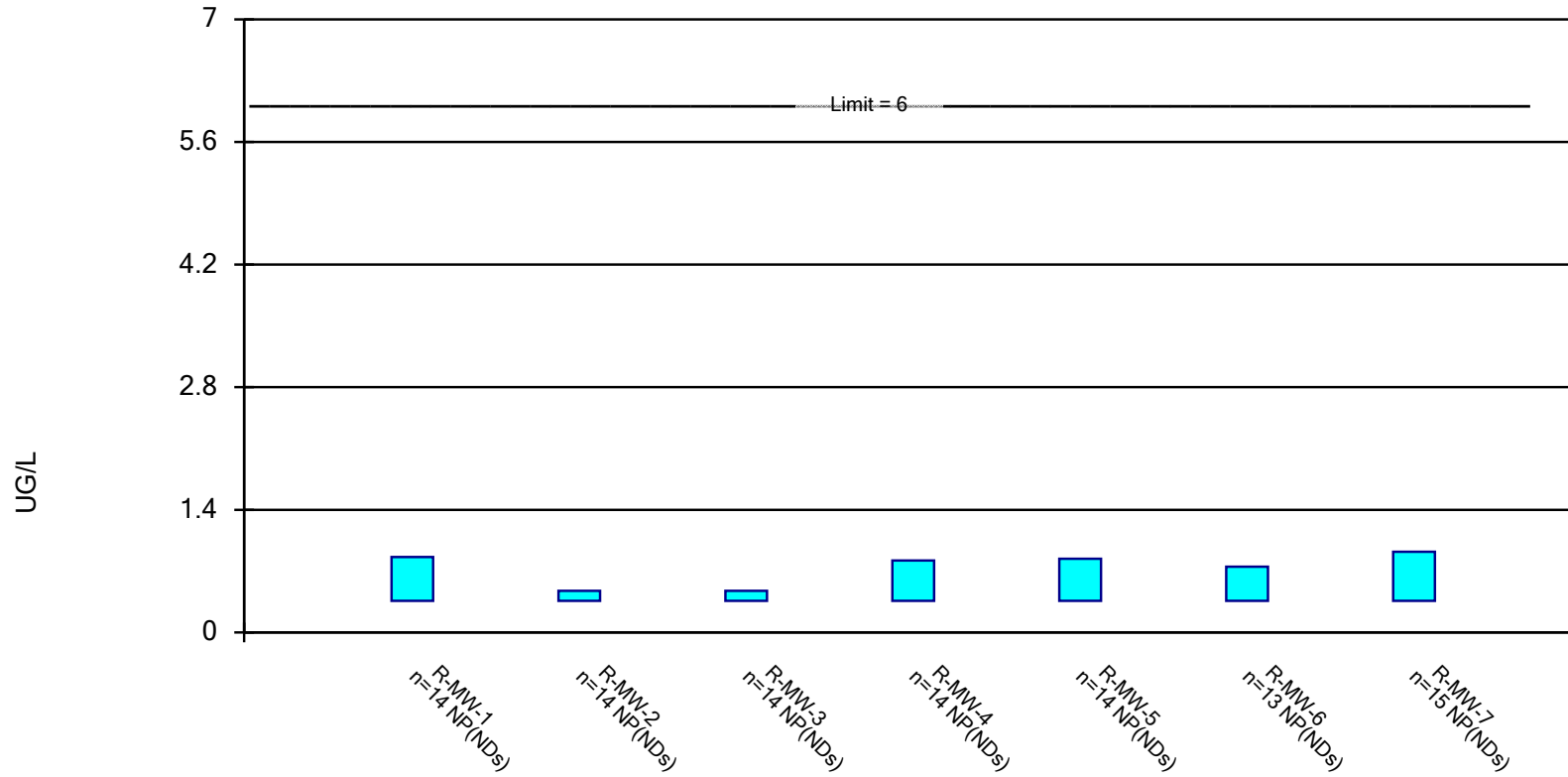


Constituent: CHROMIUM, TOTAL Analysis Run 3/30/2022 9:10 AM

Rush Island E.C. Client: Ameren Data: RIEC Data

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.

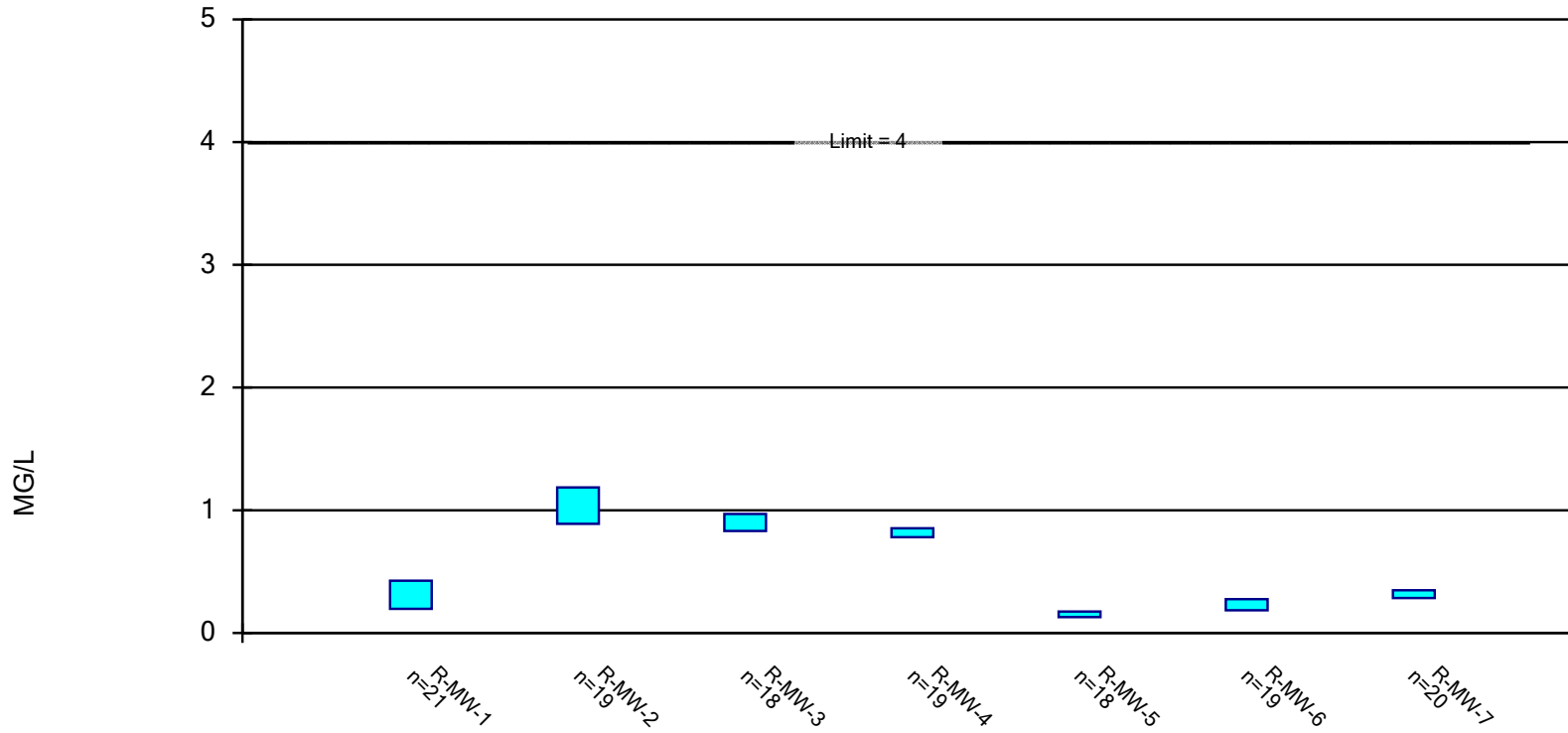


Constituent: COBALT, TOTAL Analysis Run 3/30/2022 9:10 AM

Rush Island E.C. Client: Ameren Data: RIEC Data

Parametric Confidence Interval

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

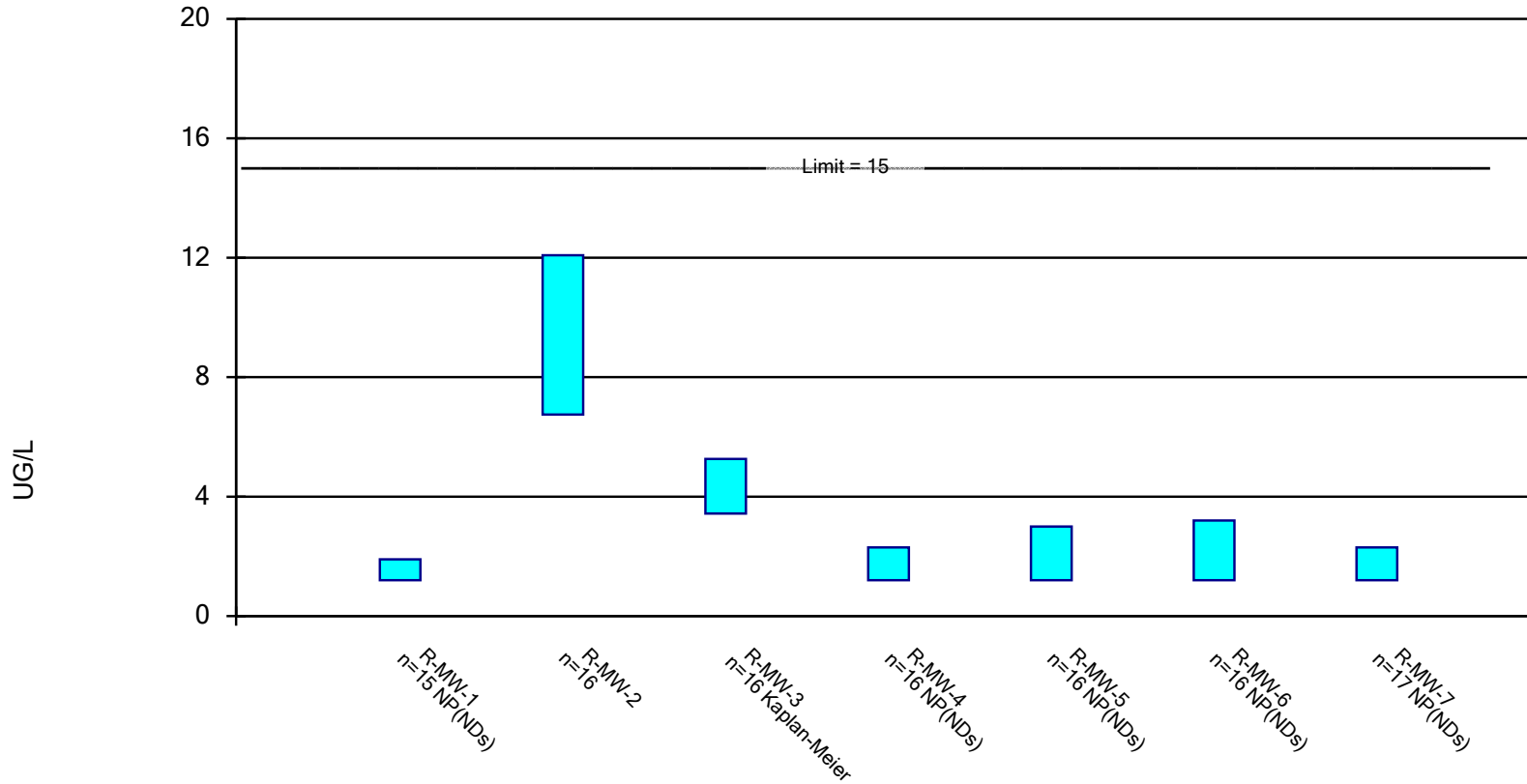


Constituent: FLUORIDE, TOTAL Analysis Run 3/30/2022 9:10 AM

Rush Island E.C. Client: Ameren Data: RIEC Data

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.

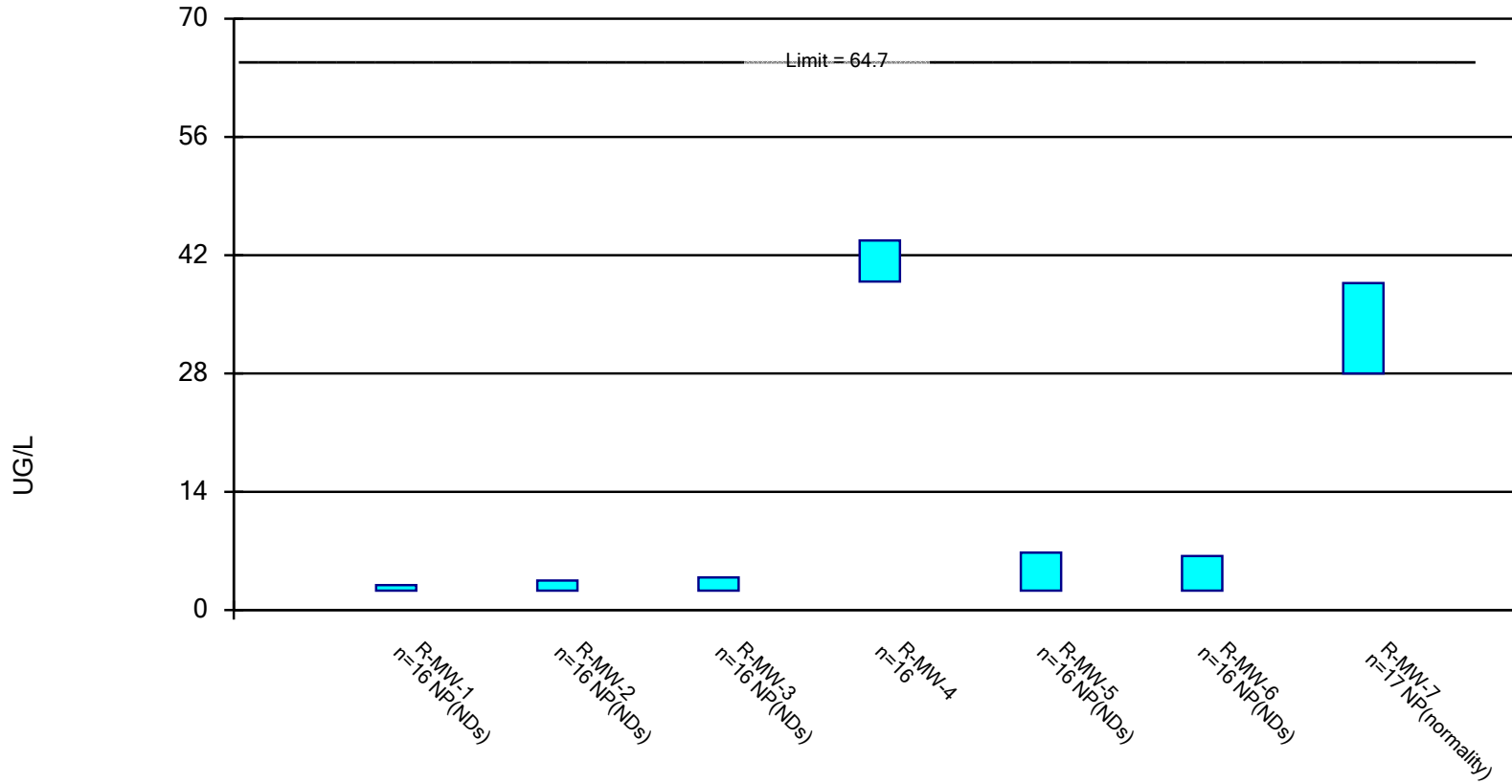


Constituent: LEAD, TOTAL Analysis Run 3/30/2022 9:10 AM

Rush Island E.C. Client: Ameren Data: RIEC Data

Parametric and Non-Parametric (NP) Confidence Interval

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

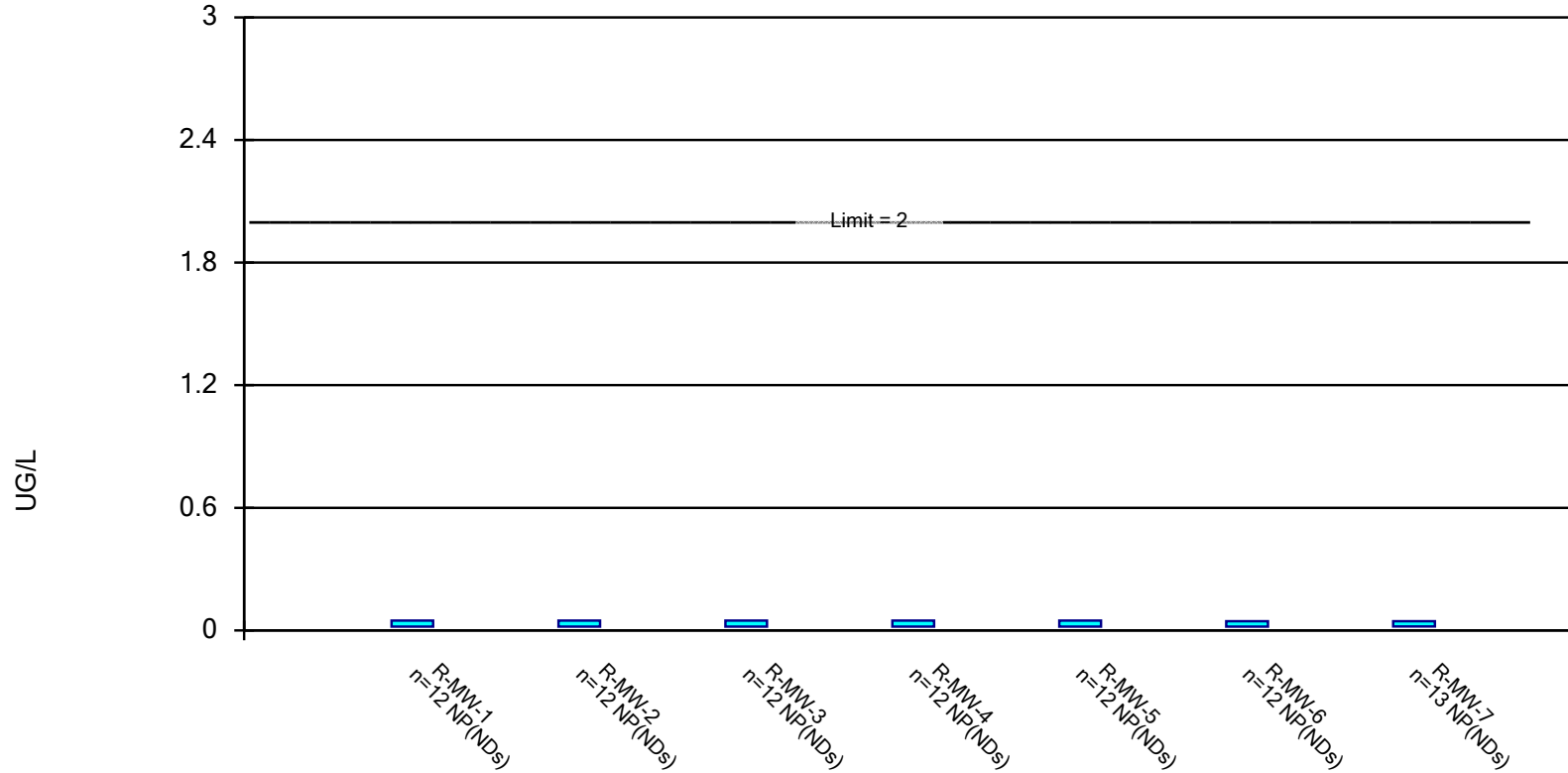


Constituent: LITHIUM, TOTAL Analysis Run 3/30/2022 9:10 AM

Rush Island E.C. Client: Ameren Data: RIEC Data

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.

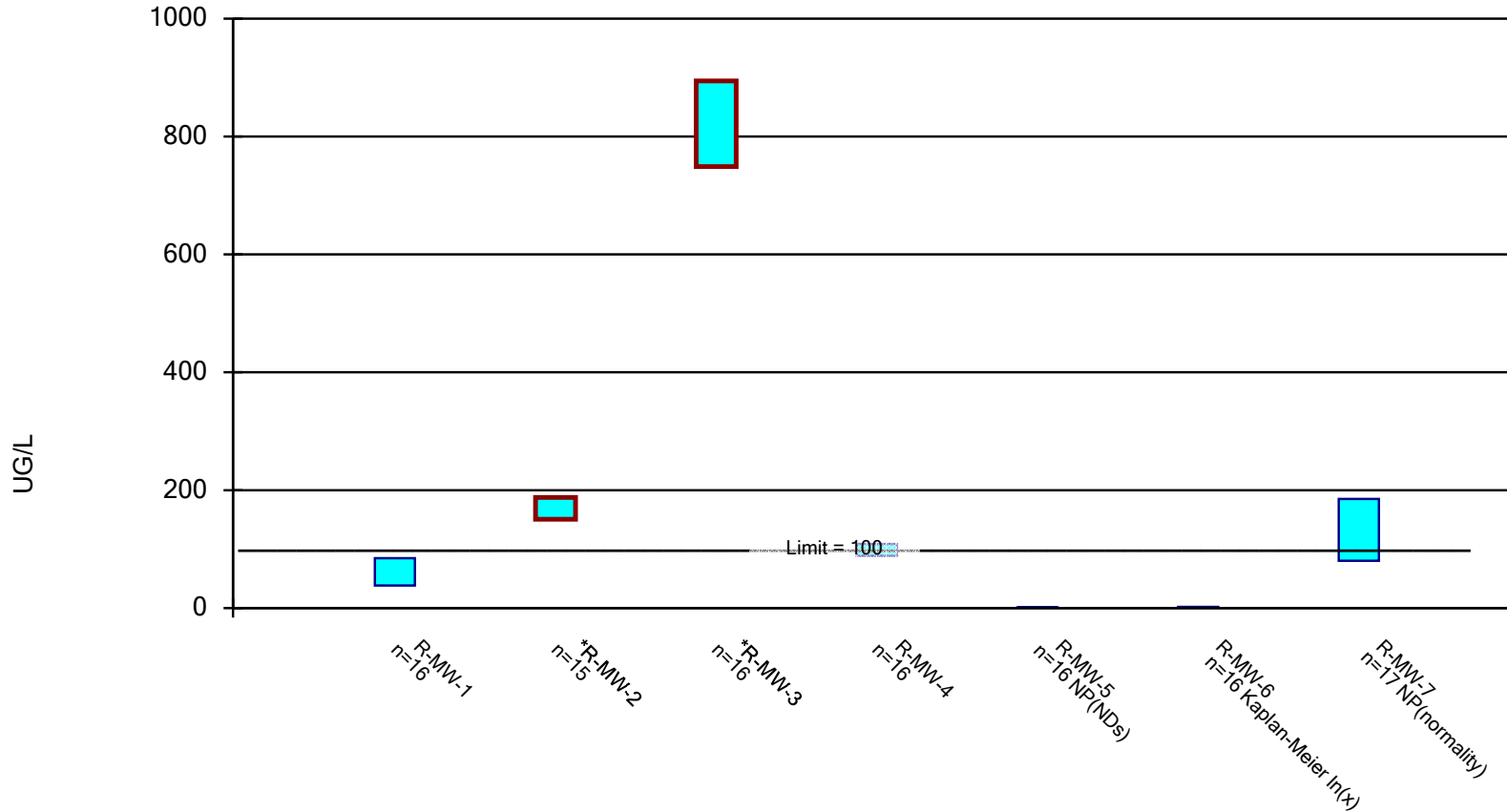


Constituent: MERCURY, TOTAL Analysis Run 3/30/2022 9:10 AM

Rush Island E.C. Client: Ameren Data: RIEC Data

Parametric and Non-Parametric (NP) Confidence Interval

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

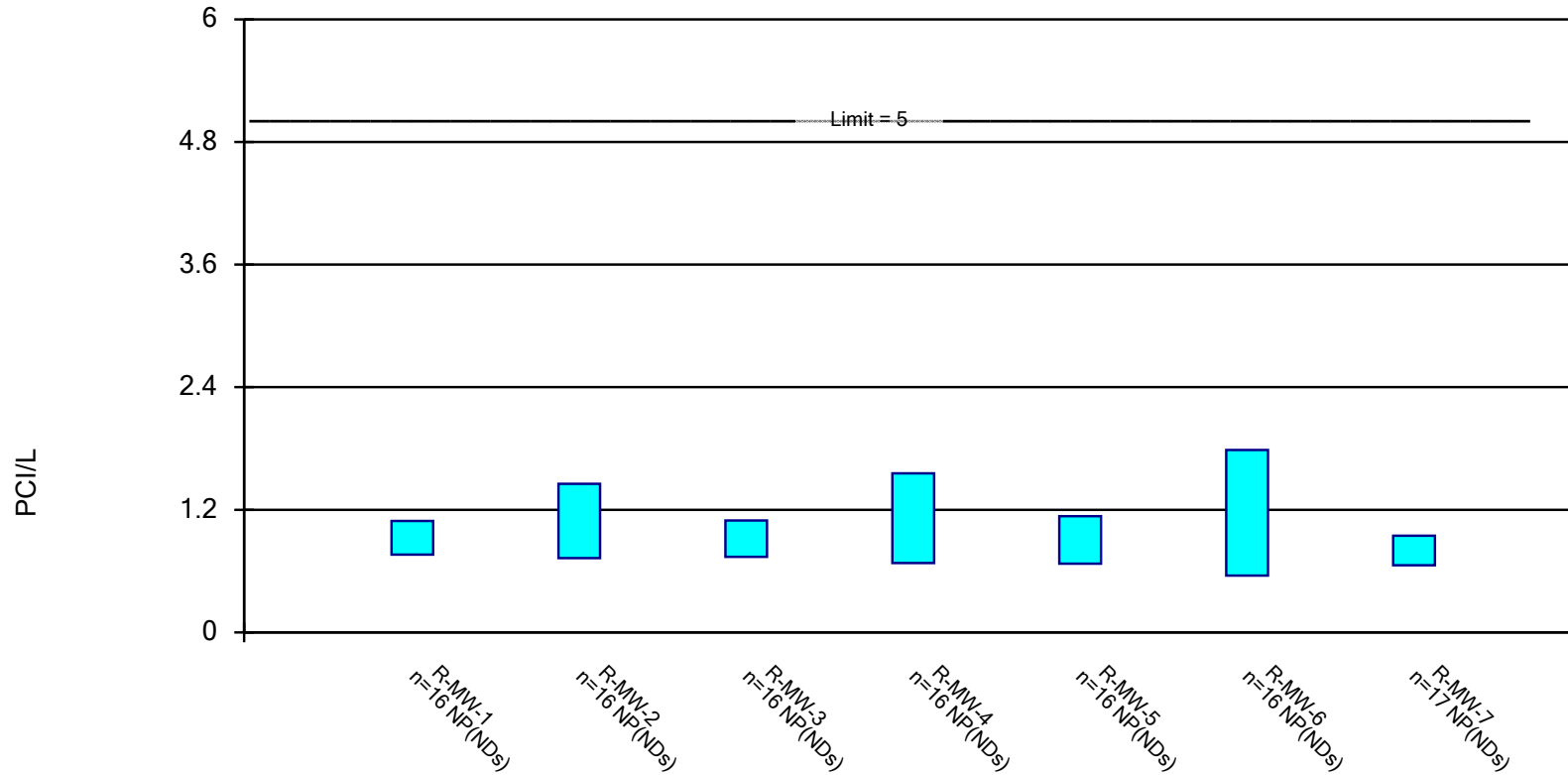


Constituent: MOLYBDENUM, TOTAL Analysis Run 3/30/2022 9:10 AM

Rush Island E.C. Client: Ameren Data: RIEC Data

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.

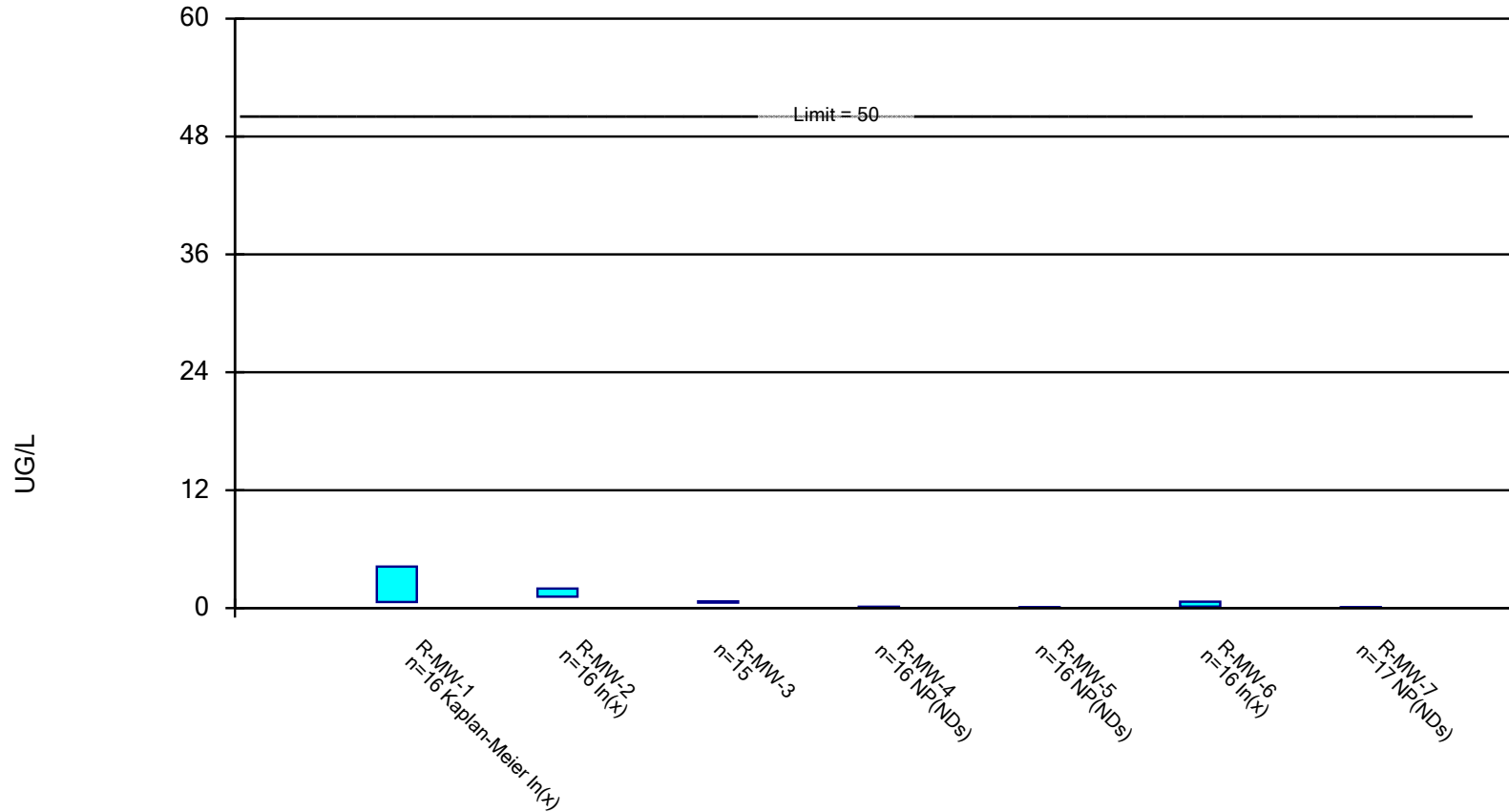


Constituent: RADIUM [226 + 228] Analysis Run 3/30/2022 9:10 AM

Rush Island E.C. Client: Ameren Data: RIEC Data

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.

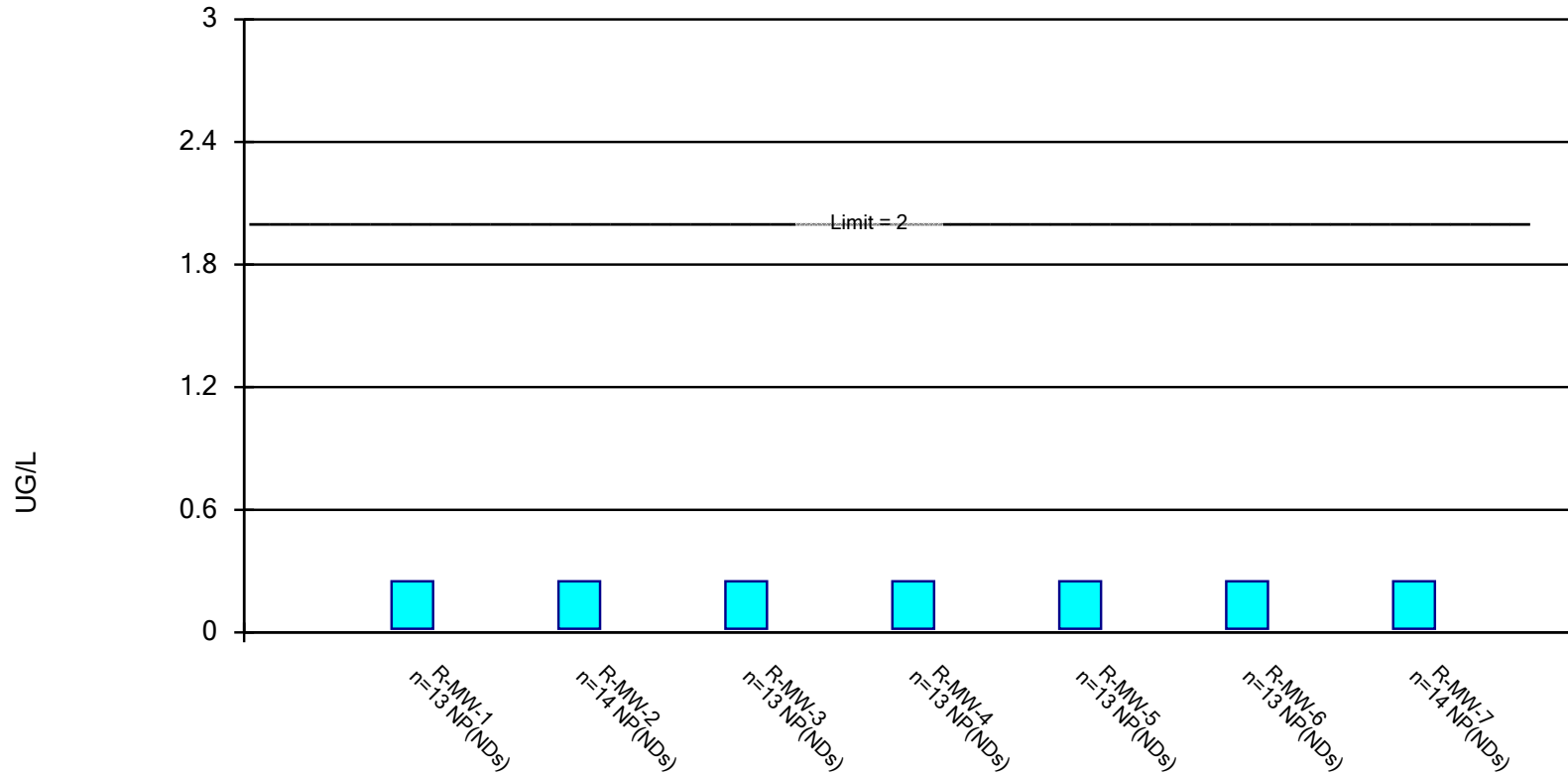


Constituent: SELENIUM, TOTAL Analysis Run 3/30/2022 9:10 AM

Rush Island E.C. Client: Ameren Data: RIEC Data

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: THALLIUM, TOTAL Analysis Run 3/30/2022 9:10 AM

Rush Island E.C. Client: Ameren Data: RIEC Data

Confidence Interval

Rush Island E.C. Client: Ameren Data: RIEC Data Printed 3/30/2022, 9:11 AM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
ANTIMONY, TOTAL (UG/L)	R-MW-1	0.7488	0.2843	6	No	16	18.75	No	0.01	Param.
ANTIMONY, TOTAL (UG/L)	R-MW-2	5.026	3.524	6	No	16	0	No	0.01	Param.
ANTIMONY, TOTAL (UG/L)	R-MW-3	0.1158	0.04259	6	No	16	37.5	No	0.01	Param.
ANTIMONY, TOTAL (UG/L)	R-MW-4	0.05	0.029	6	No	16	81.25	No	0.01	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-MW-5	0.0485	0.0275	6	No	16	93.75	No	0.01	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-MW-6	0.14	0.029	6	No	16	56.25	No	0.01	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-MW-7	0.086	0.0275	6	No	17	76.47	No	0.01	NP (NDs)
ARSENIC, TOTAL (UG/L)	R-MW-1	12.41	6.474	30	No	16	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-MW-2	241.9	220.3	30	Yes	16	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-MW-3	71.42	42.28	30	Yes	16	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-MW-4	9.747	6.938	30	No	16	0	ln(x)	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-MW-5	4.291	2.872	30	No	16	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-MW-6	2.48	0.1693	30	No	14	14.29	ln(x)	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-MW-7	97.7	35.3	30	Yes	17	0	No	0.01	NP (normality)
BARIUM, TOTAL (UG/L)	R-MW-1	47.3	15.5	2000	No	16	0	No	0.01	NP (normality)
BARIUM, TOTAL (UG/L)	R-MW-2	14.42	9.563	2000	No	16	0	ln(x)	0.01	Param.
BARIUM, TOTAL (UG/L)	R-MW-3	18.75	14.13	2000	No	16	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-MW-4	290.4	260	2000	No	16	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-MW-5	397	364	2000	No	15	0	No	0.01	NP (normality)
BARIUM, TOTAL (UG/L)	R-MW-6	188.4	124.7	2000	No	15	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-MW-7	307	213	2000	No	17	0	No	0.01	NP (normality)
BERYLLIUM, TOTAL (UG/L)	R-MW-1	0.195	0.08	4	No	13	100	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	R-MW-2	0.195	0.08	4	No	13	100	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	R-MW-3	0.245	0.08	4	No	13	92.31	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	R-MW-4	0.195	0.08	4	No	13	100	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	R-MW-5	0.195	0.08	4	No	13	100	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	R-MW-6	0.245	0.08	4	No	13	92.31	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	R-MW-7	0.195	0.08	4	No	13	100	No	0.01	NP (NDs)
CADMIUM, TOTAL (UG/L)	R-MW-1	0.052	0.009	5	No	16	75	No	0.01	NP (NDs)
CADMIUM, TOTAL (UG/L)	R-MW-2	0.29	0.14	5	No	16	18.75	No	0.01	NP (normality)
CADMIUM, TOTAL (UG/L)	R-MW-3	0.33	0.0145	5	No	16	50	No	0.01	NP (normality)
CADMIUM, TOTAL (UG/L)	R-MW-4	0.048	0.0145	5	No	16	75	No	0.01	NP (NDs)
CADMIUM, TOTAL (UG/L)	R-MW-5	0.031	0.009	5	No	16	100	No	0.01	NP (NDs)
CADMIUM, TOTAL (UG/L)	R-MW-6	0.031	0.009	5	No	16	93.75	No	0.01	NP (NDs)
CADMIUM, TOTAL (UG/L)	R-MW-7	0.041	0.0145	5	No	17	76.47	No	0.01	NP (NDs)
CHROMIUM, TOTAL (UG/L)	R-MW-1	0.5	0.039	100	No	15	53.33	No	0.01	NP (NDs)
CHROMIUM, TOTAL (UG/L)	R-MW-2	0.816	0.3142	100	No	15	26.67	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	R-MW-3	1.07	0.3321	100	No	15	26.67	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	R-MW-4	0.5536	0.1566	100	No	15	33.33	ln(x)	0.01	Param.
CHROMIUM, TOTAL (UG/L)	R-MW-5	0.5322	0.1543	100	No	15	26.67	ln(x)	0.01	Param.
CHROMIUM, TOTAL (UG/L)	R-MW-6	1.1	0.039	100	No	15	60	No	0.01	NP (NDs)
CHROMIUM, TOTAL (UG/L)	R-MW-7	0.3837	0.1364	100	No	16	37.5	No	0.01	Param.
COBALT, TOTAL (UG/L)	R-MW-1	0.86	0.36	6	No	14	85.71	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	R-MW-2	0.475	0.36	6	No	14	100	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	R-MW-3	0.475	0.36	6	No	14	100	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	R-MW-4	0.82	0.36	6	No	14	78.57	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	R-MW-5	0.84	0.36	6	No	14	85.71	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	R-MW-6	0.75	0.36	6	No	13	92.31	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	R-MW-7	0.92	0.36	6	No	15	80	No	0.01	NP (NDs)
FLUORIDE, TOTAL (MG/L)	R-MW-1	0.4258	0.1961	4	No	21	9.524	No	0.01	Param.

Confidence Interval

Rush Island E.C. Client: Ameren Data: RIEC Data Printed 3/30/2022, 9:11 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
FLUORIDE, TOTAL (MG/L)	R-MW-2	1.186	0.8893	4	No	19	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-MW-3	0.9699	0.8312	4	No	18	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-MW-4	0.8525	0.7812	4	No	19	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-MW-5	0.1741	0.1298	4	No	18	5.556	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-MW-6	0.2758	0.1847	4	No	19	5.263	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-MW-7	0.3477	0.2843	4	No	20	0	No	0.01	Param.
LEAD, TOTAL (UG/L)	R-MW-1	1.9	1.2	15	No	15	100	No	0.01	NP (NDs)
LEAD, TOTAL (UG/L)	R-MW-2	12.08	6.748	15	No	16	6.25	No	0.01	Param.
LEAD, TOTAL (UG/L)	R-MW-3	5.261	3.434	15	No	16	25	No	0.01	Param.
LEAD, TOTAL (UG/L)	R-MW-4	2.3	1.2	15	No	16	93.75	No	0.01	NP (NDs)
LEAD, TOTAL (UG/L)	R-MW-5	3	1.2	15	No	16	81.25	No	0.01	NP (NDs)
LEAD, TOTAL (UG/L)	R-MW-6	3.2	1.2	15	No	16	75	No	0.01	NP (NDs)
LEAD, TOTAL (UG/L)	R-MW-7	2.3	1.2	15	No	17	88.24	No	0.01	NP (NDs)
LITHIUM, TOTAL (UG/L)	R-MW-1	2.95	2.3	64.7	No	16	100	No	0.01	NP (NDs)
LITHIUM, TOTAL (UG/L)	R-MW-2	3.5	2.3	64.7	No	16	87.5	No	0.01	NP (NDs)
LITHIUM, TOTAL (UG/L)	R-MW-3	3.85	2.3	64.7	No	16	93.75	No	0.01	NP (NDs)
LITHIUM, TOTAL (UG/L)	R-MW-4	43.74	38.88	64.7	No	16	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	R-MW-5	6.8	2.3	64.7	No	16	56.25	No	0.01	NP (NDs)
LITHIUM, TOTAL (UG/L)	R-MW-6	6.4	2.3	64.7	No	16	68.75	No	0.01	NP (NDs)
LITHIUM, TOTAL (UG/L)	R-MW-7	38.7	28	64.7	No	17	0	No	0.01	NP (normality)
MERCURY, TOTAL (UG/L)	R-MW-1	0.048	0.0185	2	No	12	91.67	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	R-MW-2	0.048	0.0185	2	No	12	91.67	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	R-MW-3	0.048	0.0185	2	No	12	91.67	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	R-MW-4	0.048	0.0185	2	No	12	91.67	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	R-MW-5	0.048	0.0185	2	No	12	91.67	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	R-MW-6	0.045	0.0185	2	No	12	100	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	R-MW-7	0.045	0.0195	2	No	13	100	No	0.01	NP (NDs)
MOLYBDENUM, TOTAL (UG/L)	R-MW-1	84.72	38.16	100	No	16	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	R-MW-2	187.7	150.7	100	Yes	15	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	R-MW-3	894.2	748.9	100	Yes	16	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	R-MW-4	108.7	88.55	100	No	16	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	R-MW-5	1.3	0.45	100	No	16	75	No	0.01	NP (NDs)
MOLYBDENUM, TOTAL (UG/L)	R-MW-6	2.08	0.7656	100	No	16	50	ln(x)	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	R-MW-7	185	80.3	100	No	17	0	No	0.01	NP (normality)
RADIUM [226 + 228] (PCI/L)	R-MW-1	1.09	0.7615	5	No	16	100	No	0.01	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-MW-2	1.454	0.727	5	No	16	93.75	No	0.01	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-MW-3	1.094	0.7395	5	No	16	93.75	No	0.01	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-MW-4	1.556	0.6785	5	No	16	81.25	No	0.01	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-MW-5	1.137	0.672	5	No	16	87.5	No	0.01	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-MW-6	1.785	0.556	5	No	16	68.75	No	0.01	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-MW-7	0.9465	0.657	5	No	17	88.24	No	0.01	NP (NDs)
SELENIUM, TOTAL (UG/L)	R-MW-1	4.223	0.6129	50	No	16	18.75	ln(x)	0.01	Param.
SELENIUM, TOTAL (UG/L)	R-MW-2	1.983	1.158	50	No	16	0	ln(x)	0.01	Param.
SELENIUM, TOTAL (UG/L)	R-MW-3	0.6839	0.5494	50	No	15	0	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	R-MW-4	0.14	0.09	50	No	16	56.25	No	0.01	NP (NDs)
SELENIUM, TOTAL (UG/L)	R-MW-5	0.09	0.0425	50	No	16	100	No	0.01	NP (NDs)
SELENIUM, TOTAL (UG/L)	R-MW-6	0.6514	0.1563	50	No	16	12.5	ln(x)	0.01	Param.
SELENIUM, TOTAL (UG/L)	R-MW-7	0.097	0.06	50	No	17	76.47	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	R-MW-1	0.25	0.018	2	No	13	92.31	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	R-MW-2	0.25	0.018	2	No	14	100	No	0.01	NP (NDs)

Confidence Interval

Rush Island E.C. Client: Ameren Data: RIEC Data Printed 3/30/2022, 9:11 AM

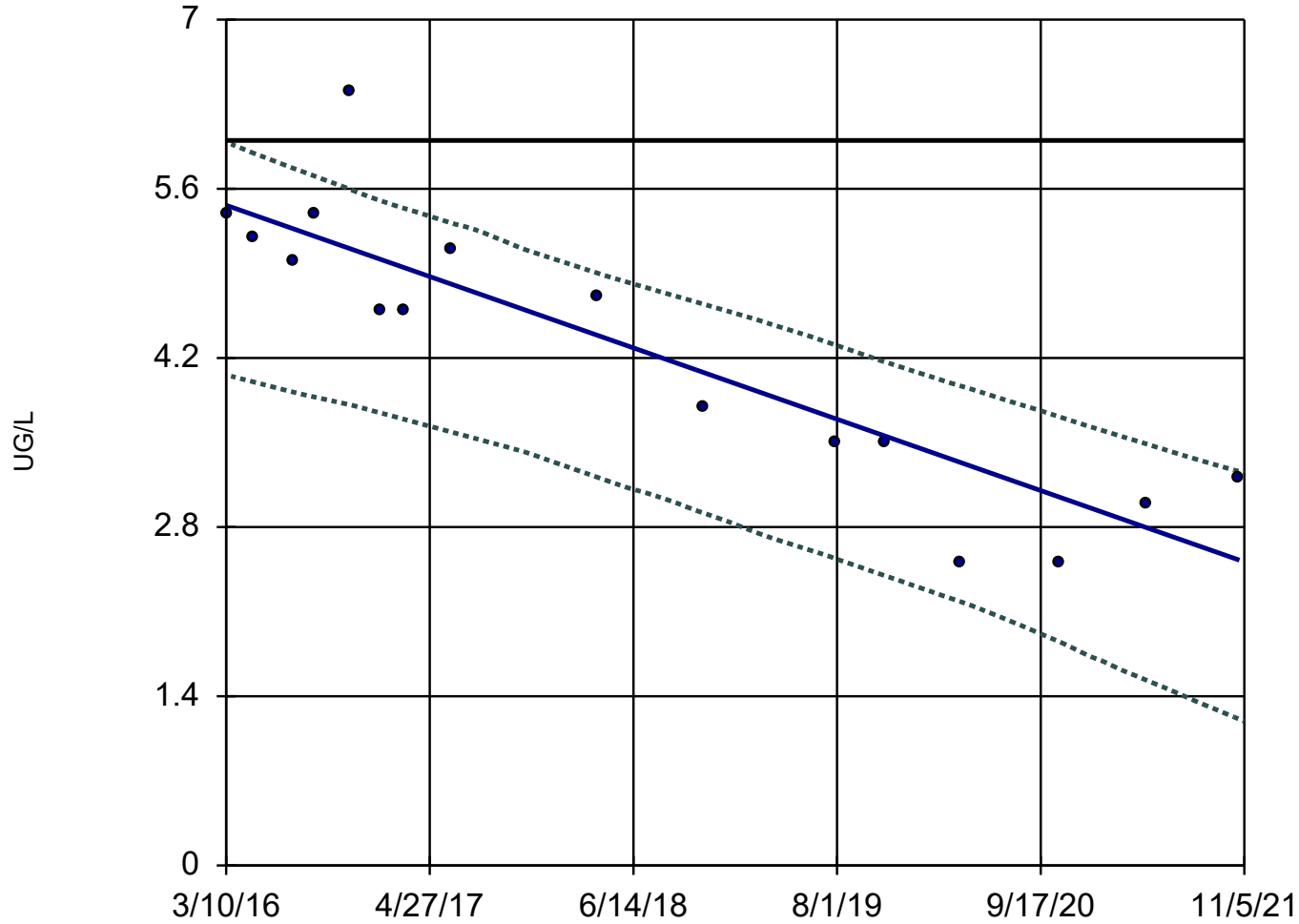
<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
THALLIUM, TOTAL (UG/L)	R-MW-3	0.25	0.018	2	No	13	100	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	R-MW-4	0.25	0.018	2	No	13	100	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	R-MW-5	0.25	0.018	2	No	13	100	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	R-MW-6	0.25	0.018	2	No	13	92.31	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	R-MW-7	0.25	0.018	2	No	14	92.86	No	0.01	NP (NDs)

APPENDIX B

**Sanitas Trending Confidence
Bands Statistical Output**

Sen's Slope and 95% Confidence Band

R-MW-2



n = 16

Slope = -0.5214
units per year.

Mann-Kendall
statistic = -84
critical = -53

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

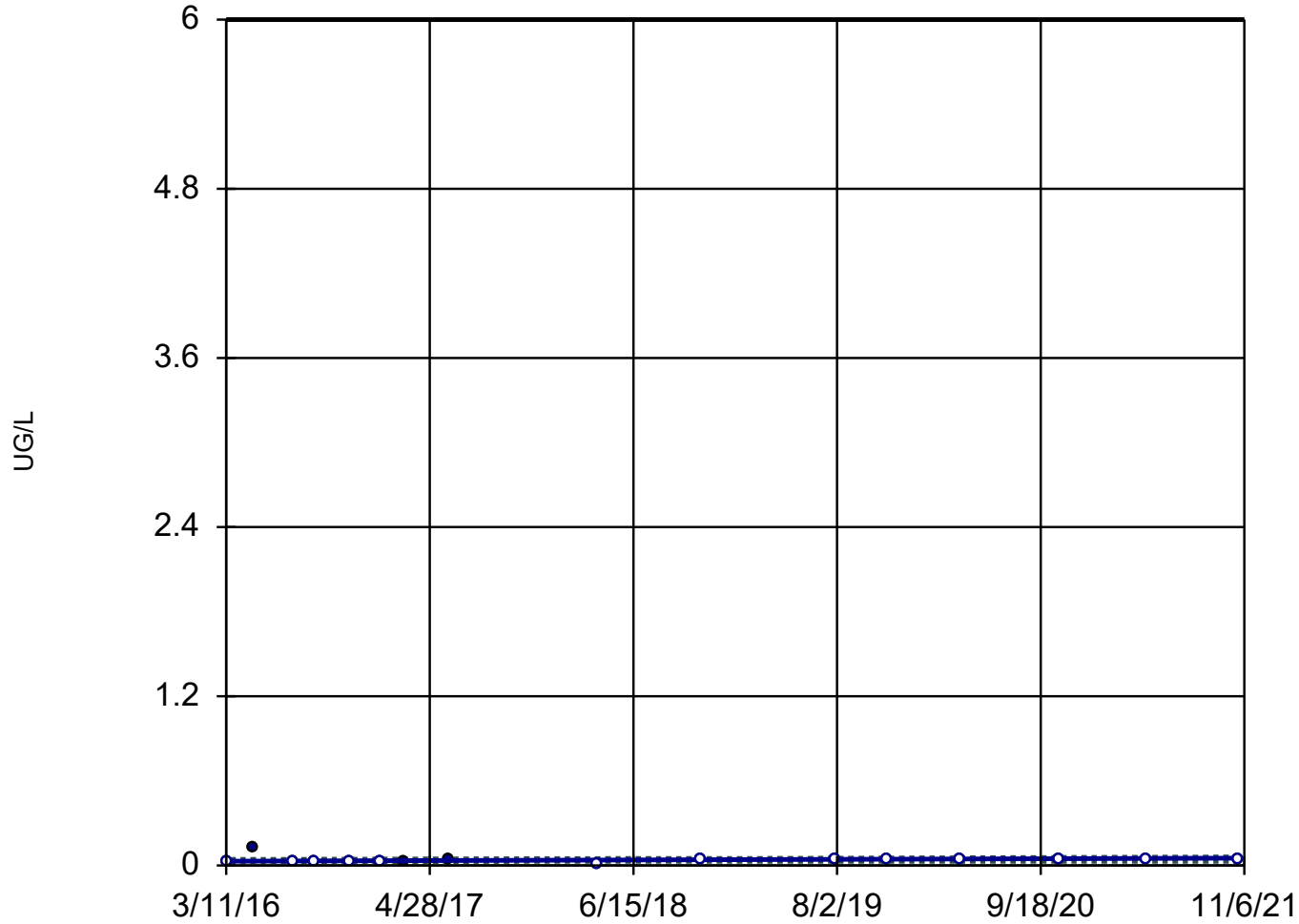
GWPS = 6.

Constituent: ANTIMONY, TOTAL Analysis Run 3/30/2022 9:19 AM

Rush Island E.C. Client: Ameren Data: RIEC Data

Sen's Slope and 95% Confidence Band

R-MW-4



n = 16

Slope = 0.003887
units per year.

Mann-Kendall
statistic = 55
critical = 53

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

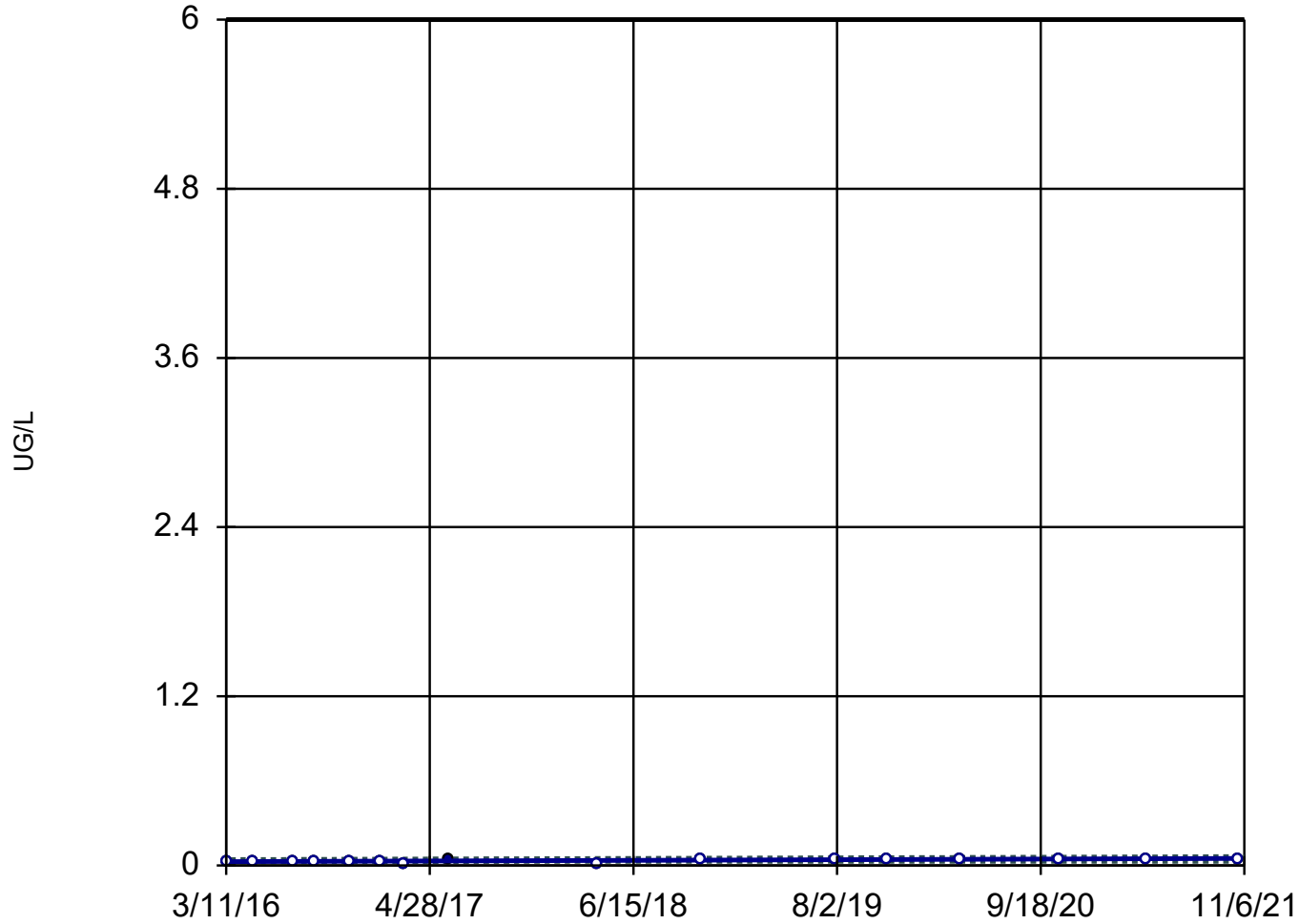
GWPS = 6.

Constituent: ANTIMONY, TOTAL Analysis Run 3/30/2022 9:19 AM

Rush Island E.C. Client: Ameren Data: RIEC Data

Sen's Slope and 95% Confidence Band

R-MW-5



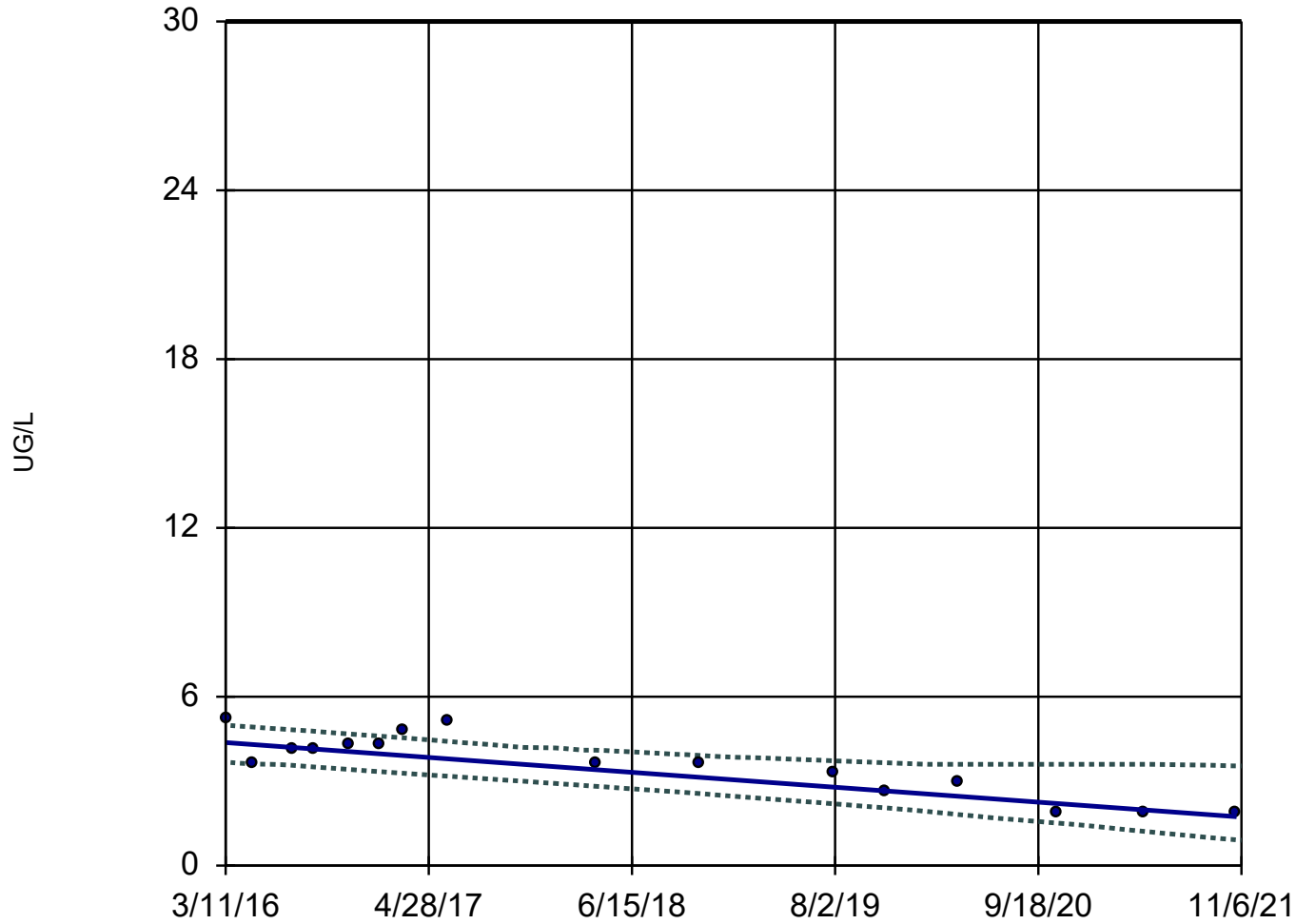
n = 16
Slope = 0.003997
units per year.
Mann-Kendall
statistic = 62
critical = 53
Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).
GWPS = 6.

Constituent: ANTIMONY, TOTAL Analysis Run 3/30/2022 9:19 AM

Rush Island E.C. Client: Ameren Data: RIEC Data

Sen's Slope and 95% Confidence Band

R-MW-5



n = 16

Slope = -0.4675
units per year.

Mann-Kendall
statistic = -72
critical = -53

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

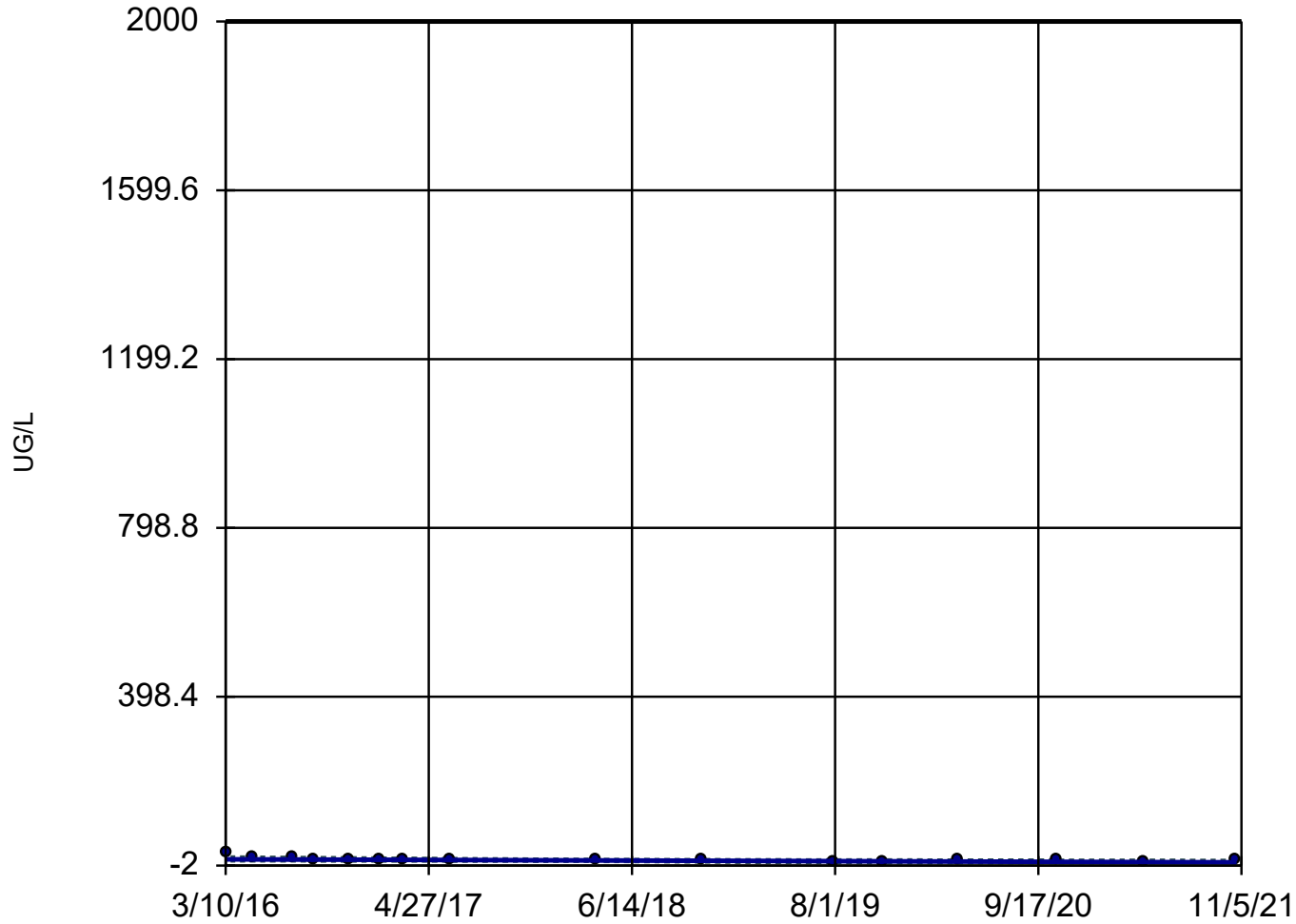
GWPS = 30.

Constituent: ARSENIC, TOTAL Analysis Run 3/30/2022 9:19 AM

Rush Island E.C. Client: Ameren Data: RIEC Data

Sen's Slope and 95% Confidence Band

R-MW-2



n = 16

Slope = -1.28
units per year.

Mann-Kendall
statistic = -81
critical = -53

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

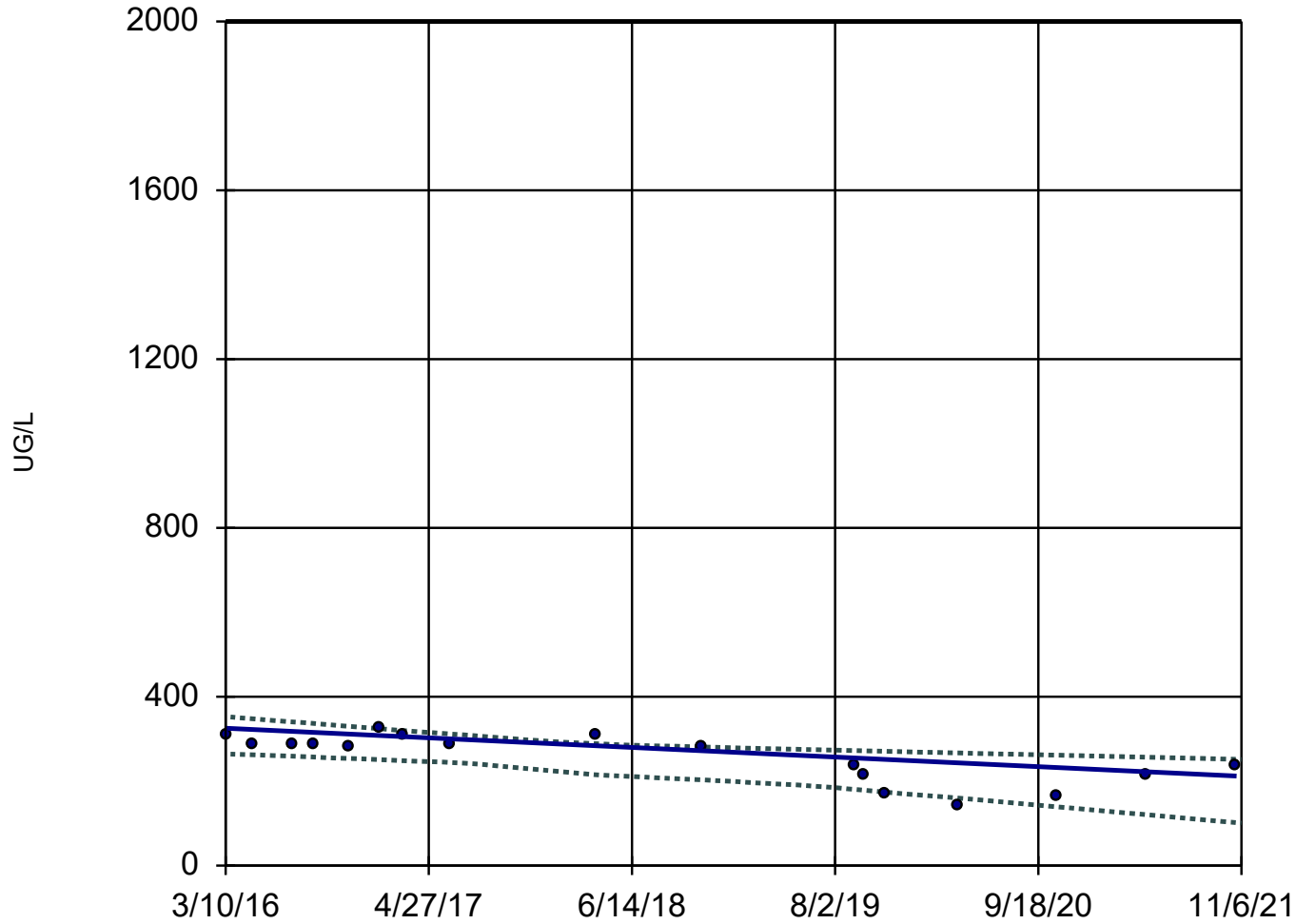
GWPS = 2000.

Constituent: BARIUM, TOTAL Analysis Run 3/30/2022 9:19 AM

Rush Island E.C. Client: Ameren Data: RIEC Data

Sen's Slope and 95% Confidence Band

R-MW-7



n = 17

Slope = -20.06
units per year.

Mann-Kendall
statistic = -79
critical = -58

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

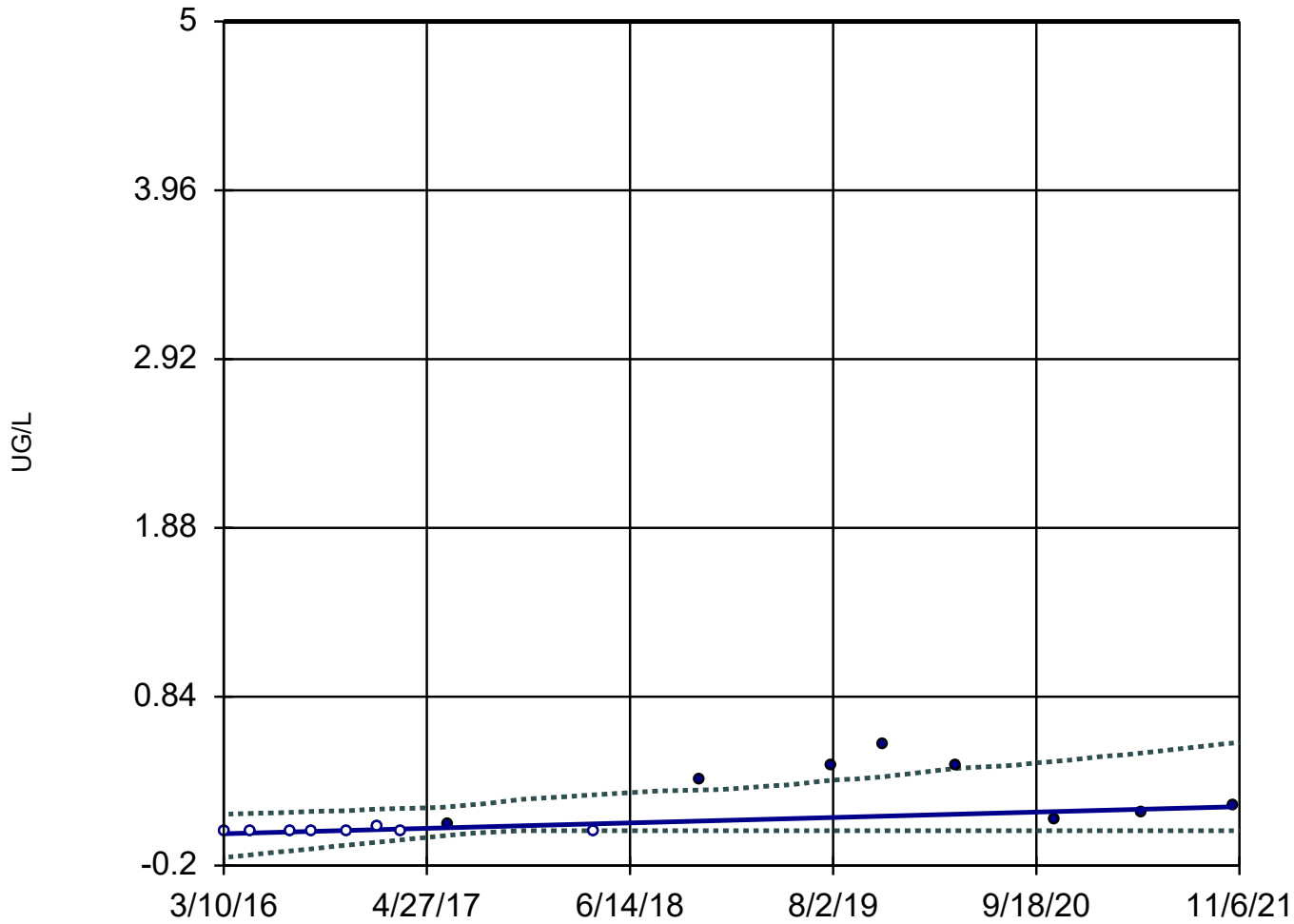
GWPS = 2000.

Constituent: BARIUM, TOTAL Analysis Run 3/30/2022 9:19 AM

Rush Island E.C. Client: Ameren Data: RIEC Data

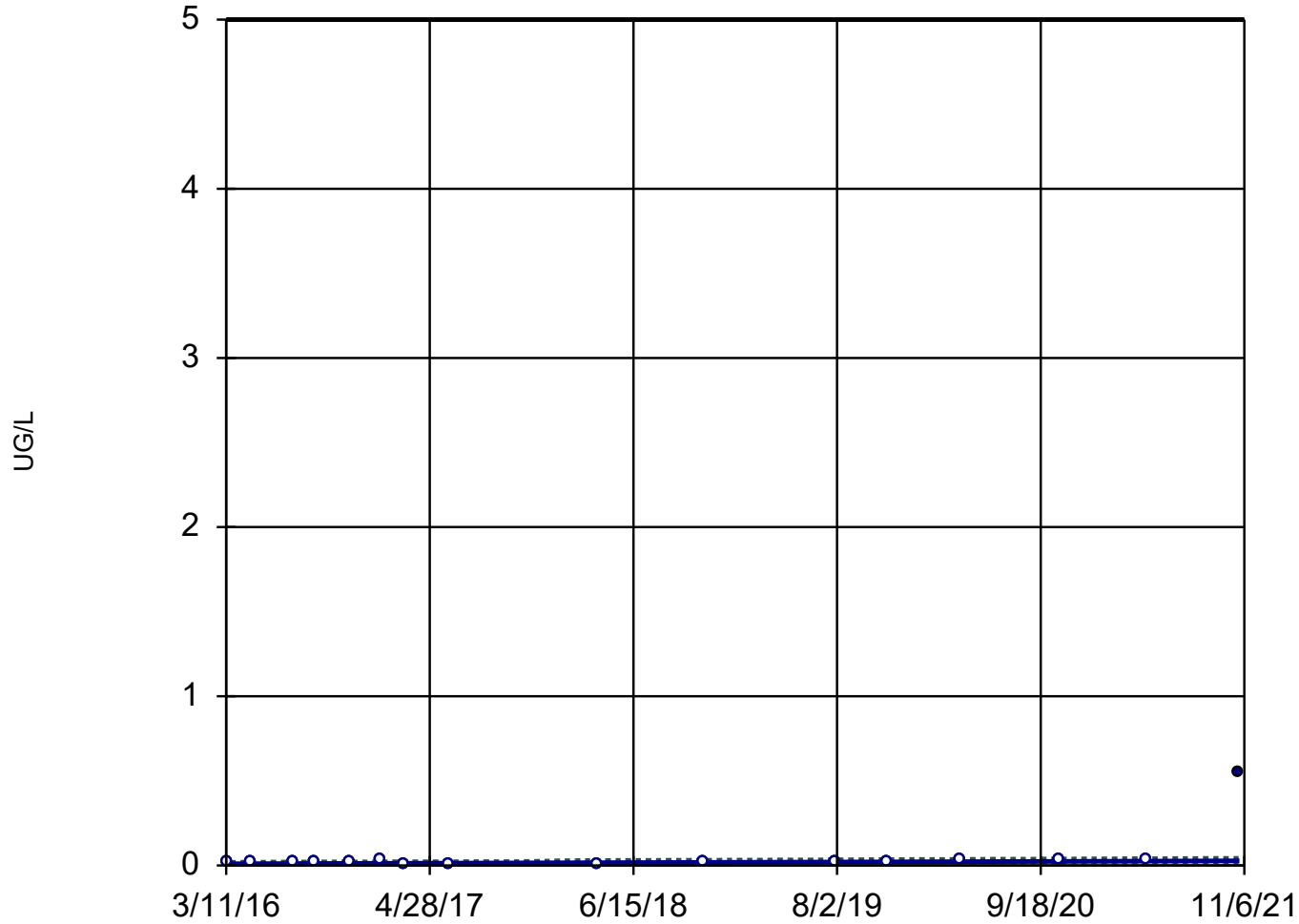
Sen's Slope and 95% Confidence Band

R-MW-3



Sen's Slope and 95% Confidence Band

R-MW-6



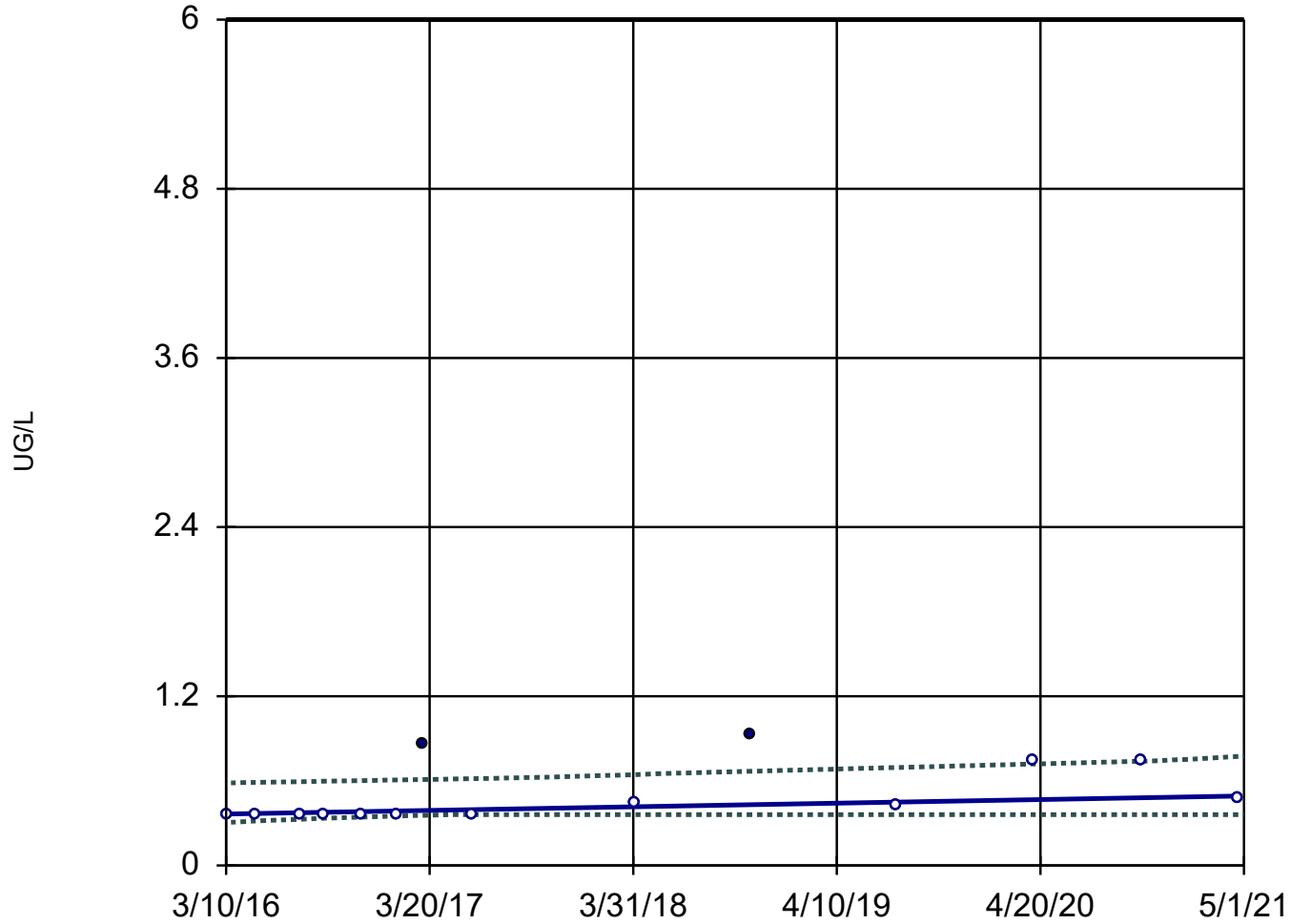
n = 16
Slope = 0.003049
units per year.
Mann-Kendall
statistic = 55
critical = 53
Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).
GWPS = 5.

Constituent: CADMIUM, TOTAL Analysis Run 3/30/2022 9:19 AM

Rush Island E.C. Client: Ameren Data: RIEC Data

Sen's Slope and 95% Confidence Band

R-MW-1



n = 14

Slope = 0.02487
units per year.

Mann-Kendall
statistic = 49
critical = 44

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

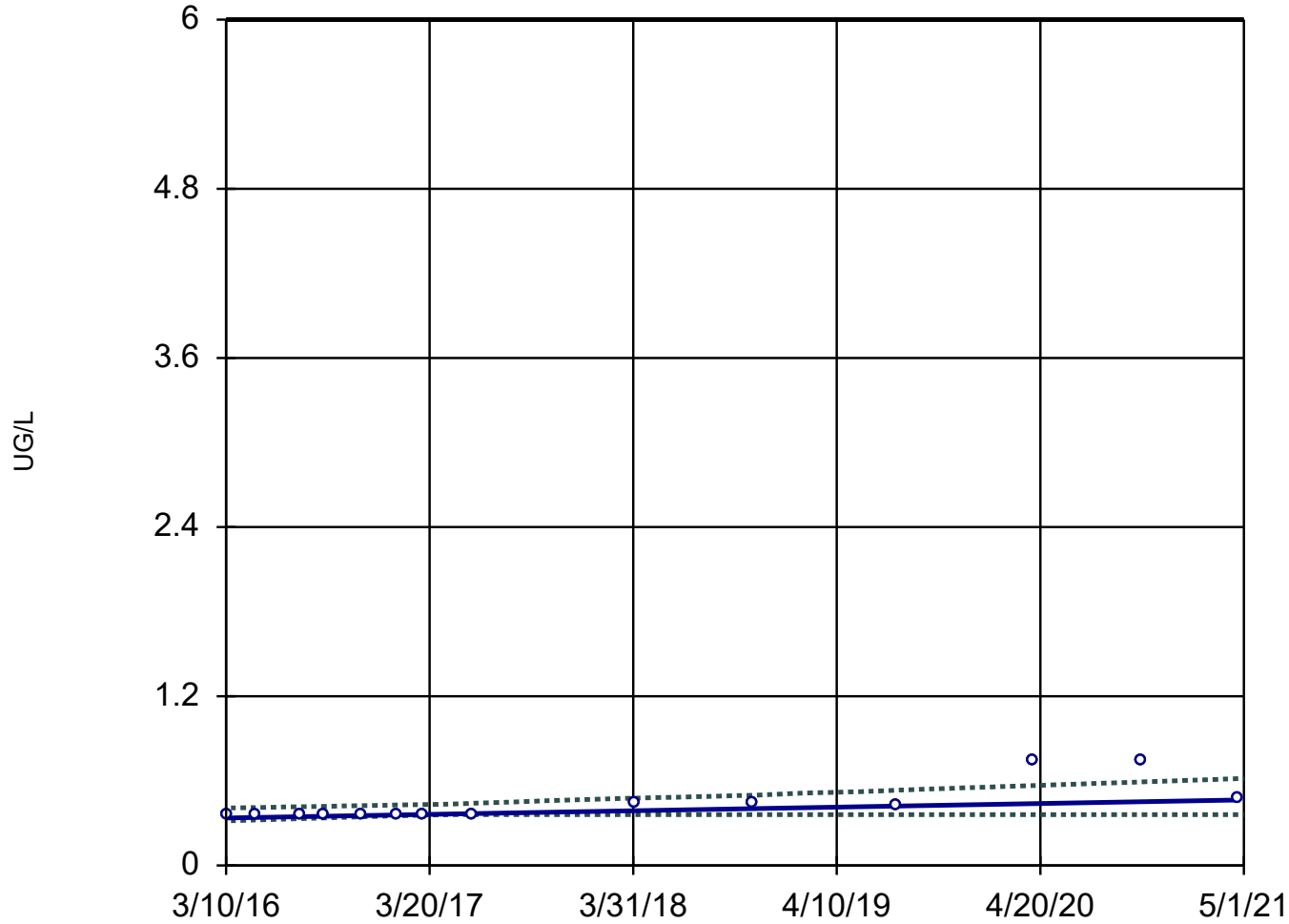
GWPS = 6.

Constituent: COBALT, TOTAL Analysis Run 3/30/2022 9:19 AM

Rush Island E.C. Client: Ameren Data: RIEC Data

Sen's Slope and 95% Confidence Band

R-MW-2



n = 14

Slope = 0.02485
units per year.

Mann-Kendall
statistic = 65
critical = 44

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

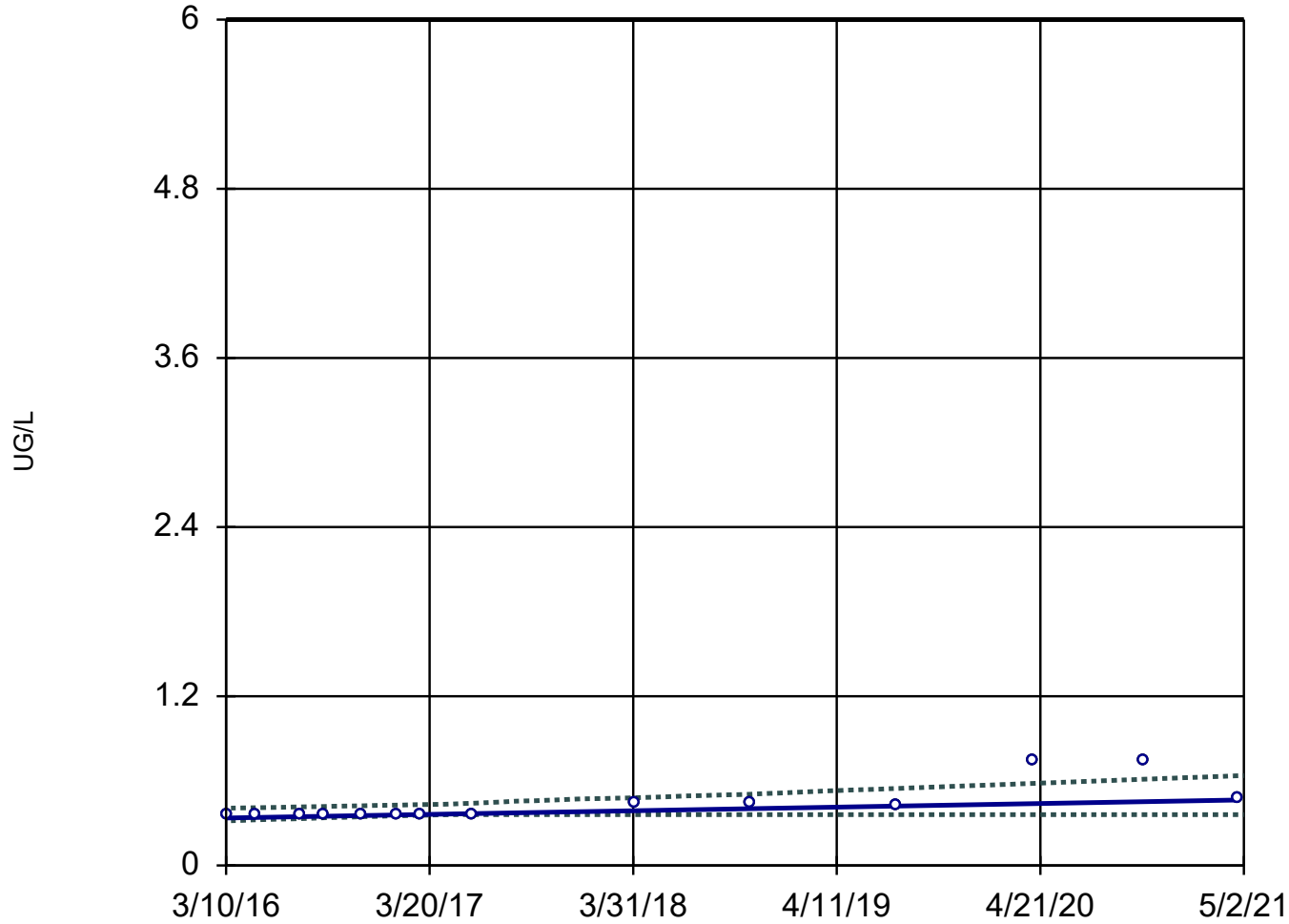
GWPS = 6.

Constituent: COBALT, TOTAL Analysis Run 3/30/2022 9:19 AM

Rush Island E.C. Client: Ameren Data: RIEC Data

Sen's Slope and 95% Confidence Band

R-MW-3



n = 14

Slope = 0.02484
units per year.

Mann-Kendall
statistic = 65
critical = 44

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

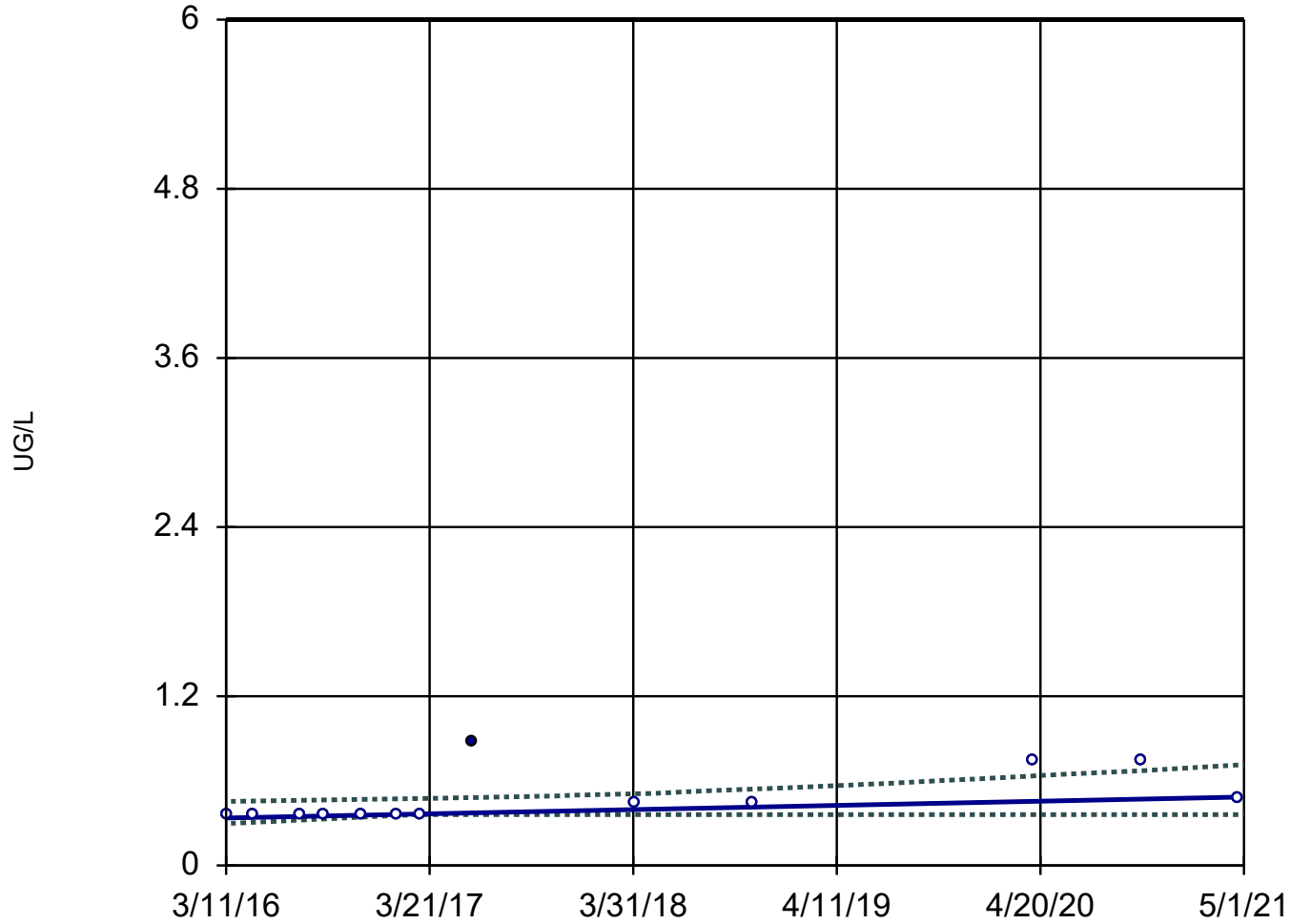
GWPS = 6.

Constituent: COBALT, TOTAL Analysis Run 3/30/2022 9:19 AM

Rush Island E.C. Client: Ameren Data: RIEC Data

Sen's Slope and 95% Confidence Band

R-MW-6



n = 13

Slope = 0.02902
units per year.

Mann-Kendall
statistic = 47
critical = 39

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

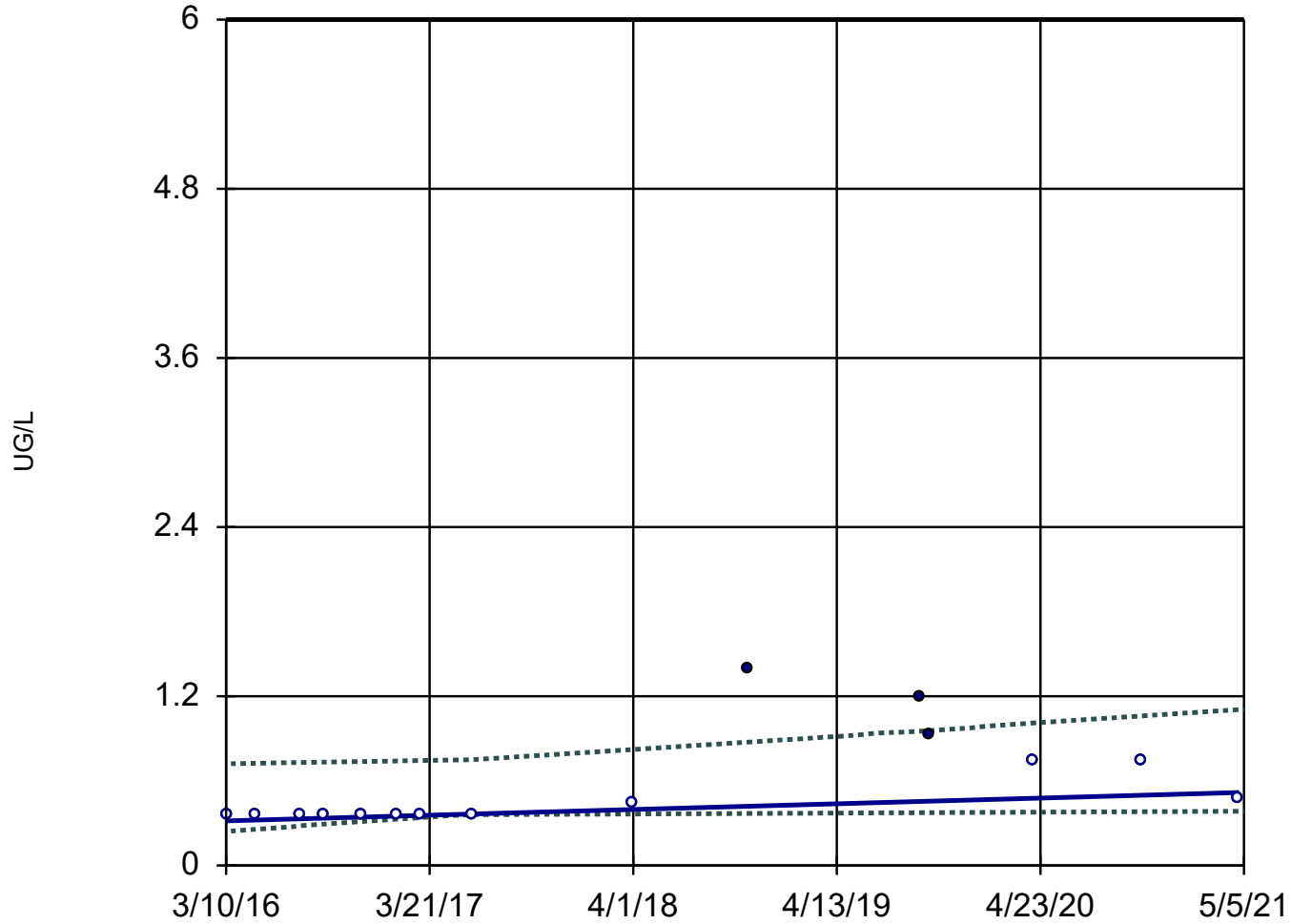
GWPS = 6.

Constituent: COBALT, TOTAL Analysis Run 3/30/2022 9:19 AM

Rush Island E.C. Client: Ameren Data: RIEC Data

Sen's Slope and 95% Confidence Band

R-MW-7



n = 15

Slope = 0.03916
units per year.

Mann-Kendall
statistic = 60
critical = 48

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

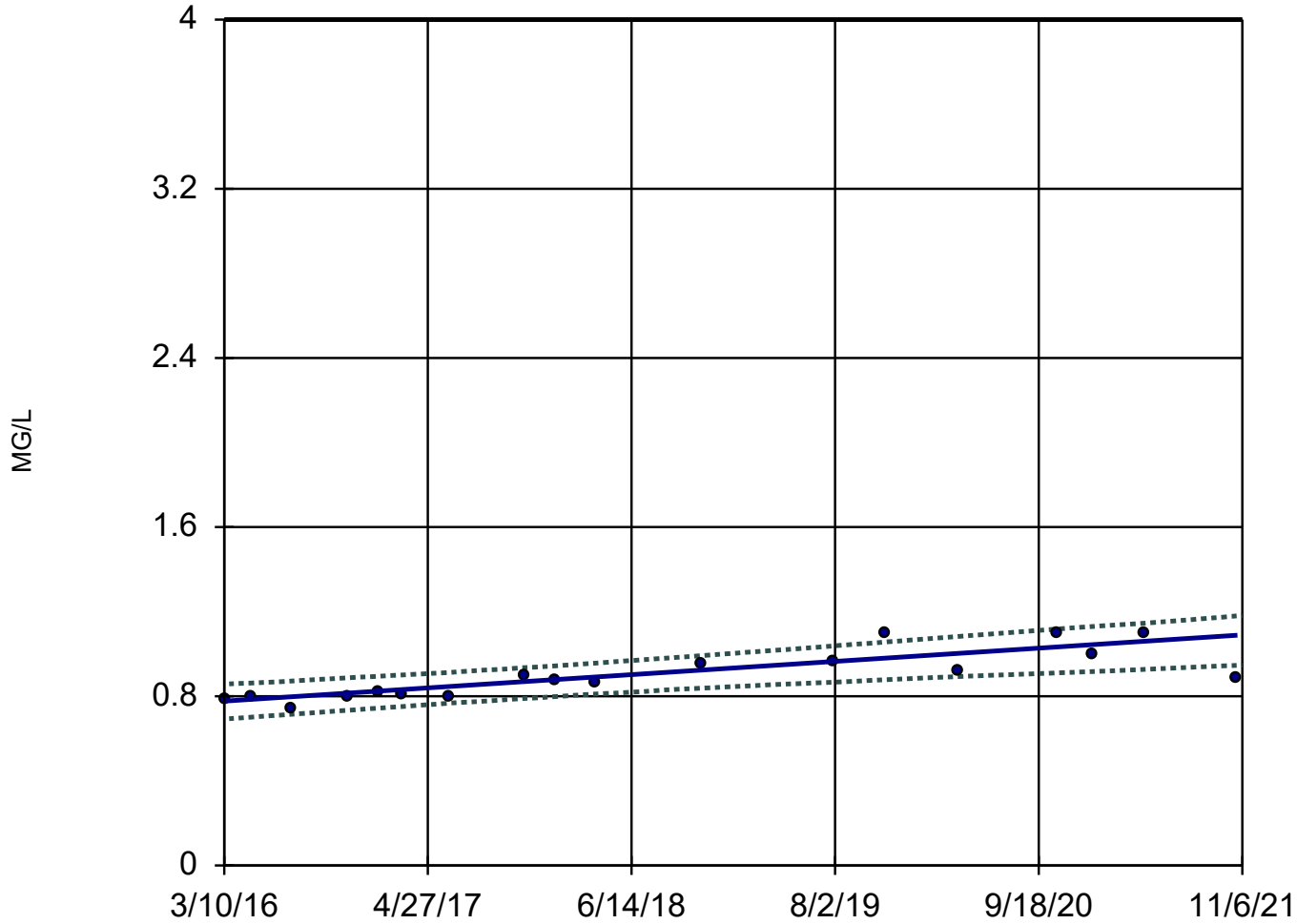
GWPS = 6.

Constituent: COBALT, TOTAL Analysis Run 3/30/2022 9:19 AM

Rush Island E.C. Client: Ameren Data: RIEC Data

Sen's Slope and 95% Confidence Band

R-MW-3



n = 18

Slope = 0.05536
units per year.

Mann-Kendall
statistic = 105
critical = 63

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

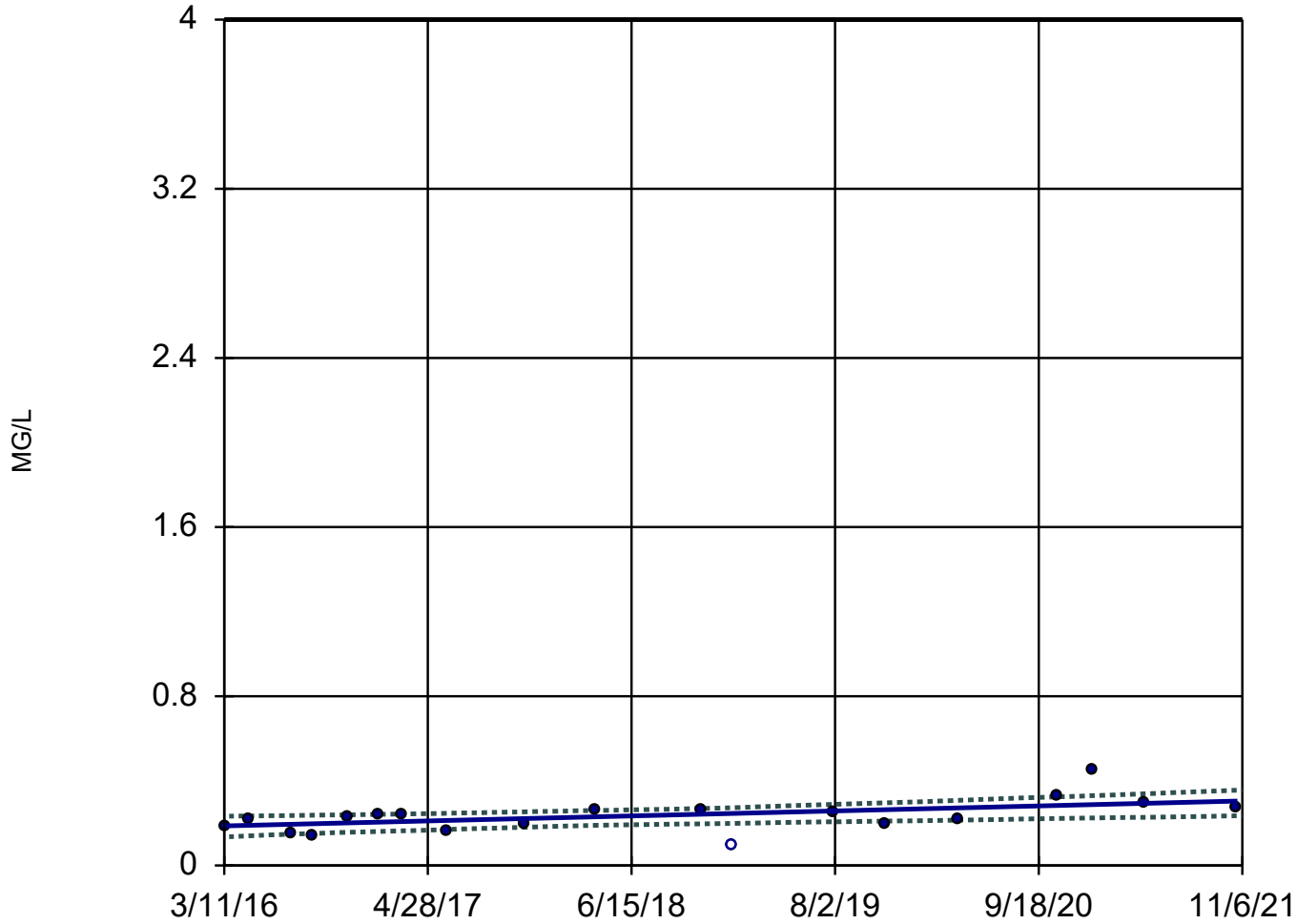
GWPS = 4.

Constituent: FLUORIDE, TOTAL Analysis Run 3/30/2022 9:19 AM

Rush Island E.C. Client: Ameren Data: RIEC Data

Sen's Slope and 95% Confidence Band

R-MW-6



n = 19

Slope = 0.02086
units per year.

Mann-Kendall
statistic = 78
critical = 68

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

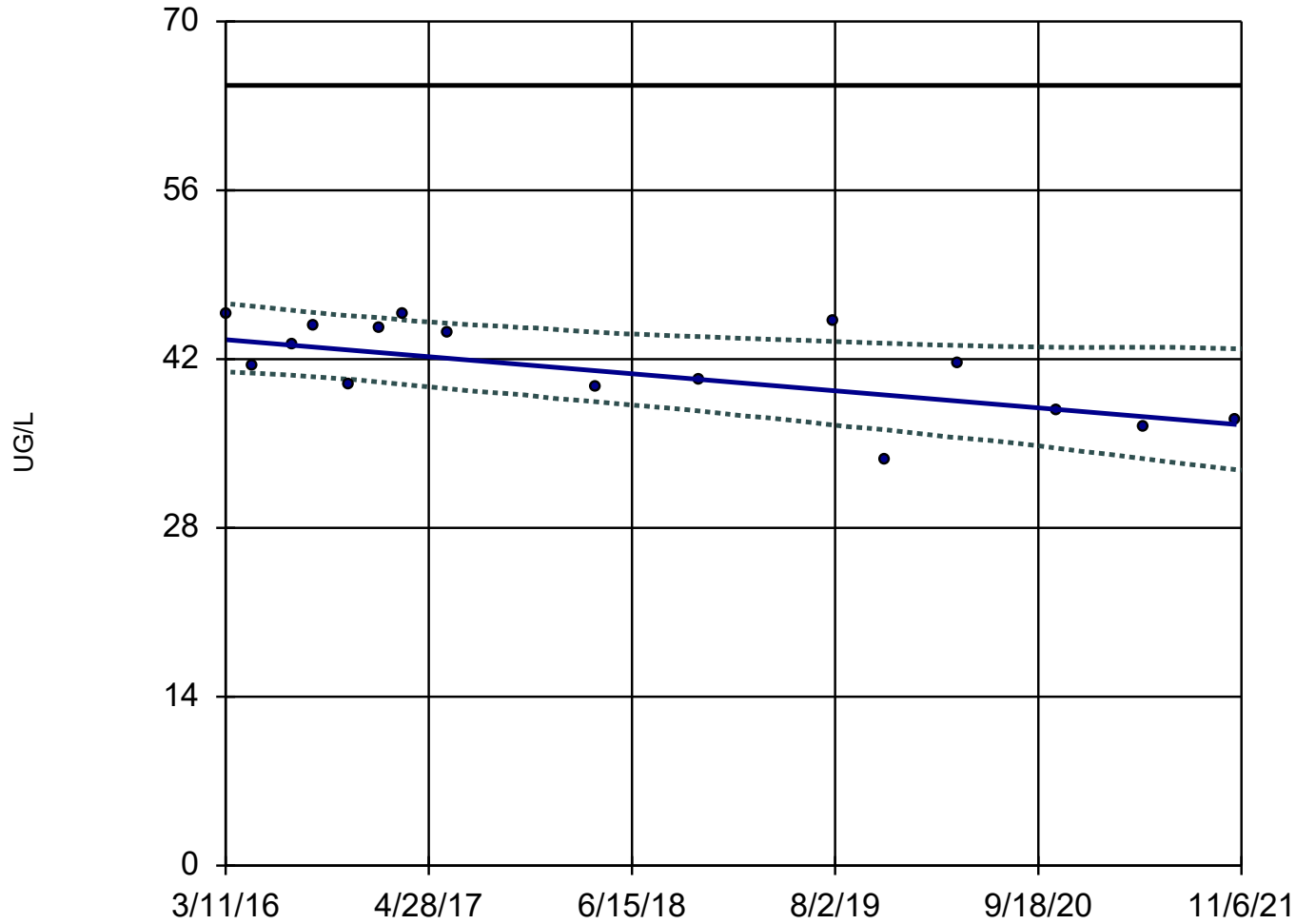
GWPS = 4.

Constituent: FLUORIDE, TOTAL Analysis Run 3/30/2022 9:20 AM

Rush Island E.C. Client: Ameren Data: RIEC Data

Sen's Slope and 95% Confidence Band

R-MW-4



n = 16

Slope = -1.249
units per year.

Mann-Kendall
statistic = -54
critical = -53

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

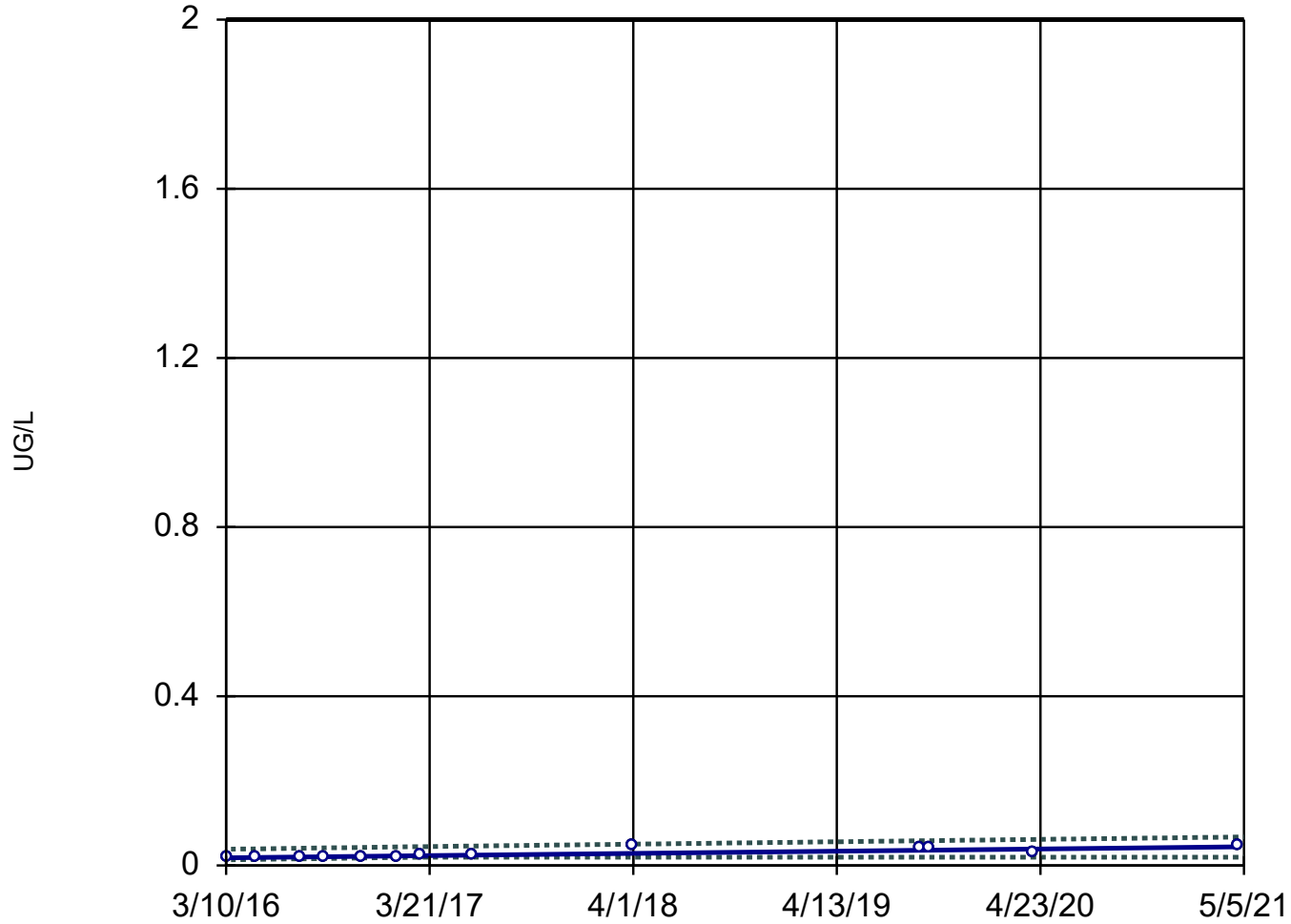
GWPS = 64.7.

Constituent: LITHIUM, TOTAL Analysis Run 3/30/2022 9:20 AM

Rush Island E.C. Client: Ameren Data: RIEC Data

Sen's Slope and 95% Confidence Band

R-MW-7



n = 13

Slope = 0.005108
units per year.

Mann-Kendall
statistic = 51
critical = 39

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

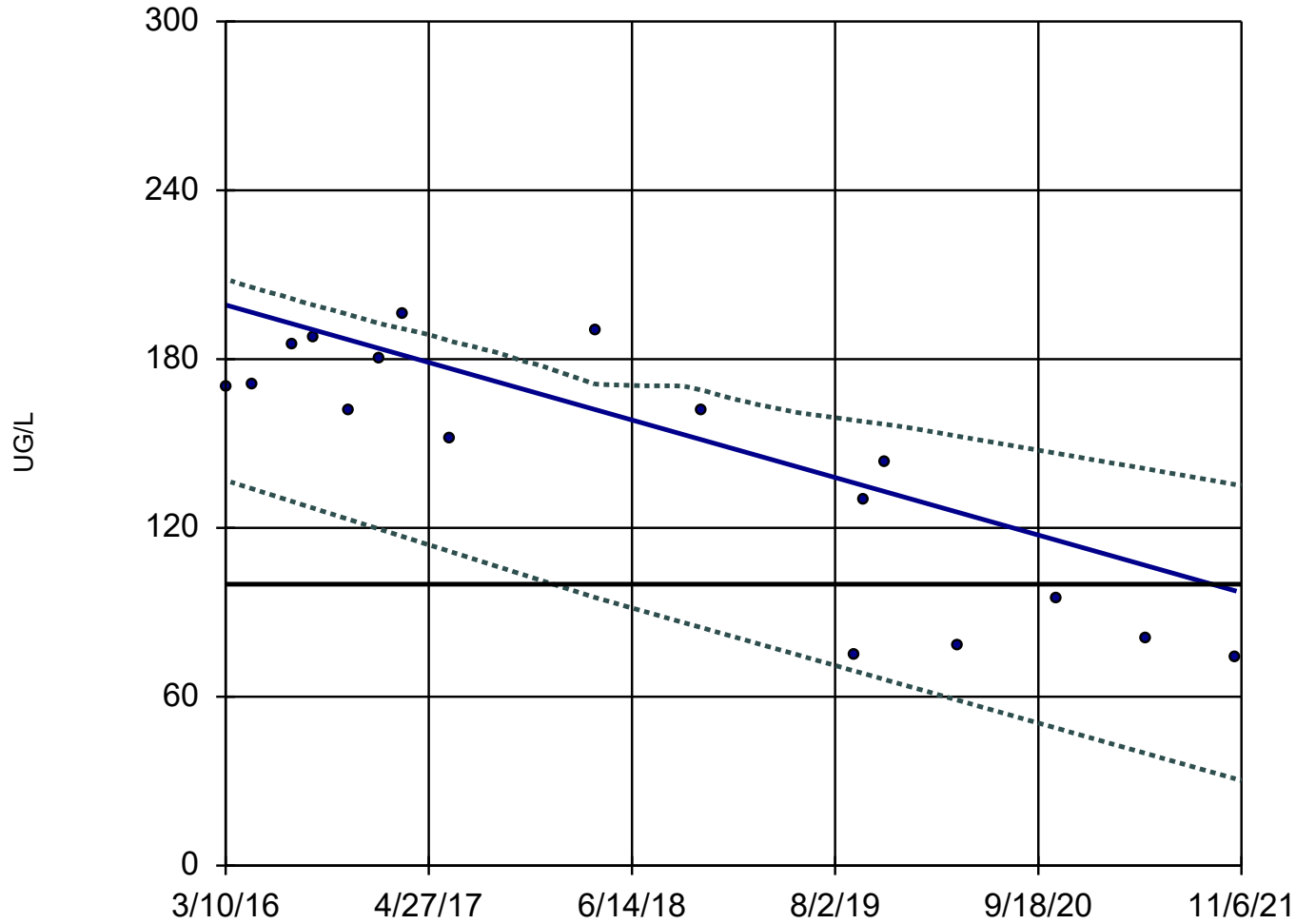
GWPS = 2.

Constituent: MERCURY, TOTAL Analysis Run 3/30/2022 9:20 AM

Rush Island E.C. Client: Ameren Data: RIEC Data

Sen's Slope and 95% Confidence Band

R-MW-7



n = 17

Slope = -18.05
units per year.

Mann-Kendall
statistic = -73
critical = -58

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

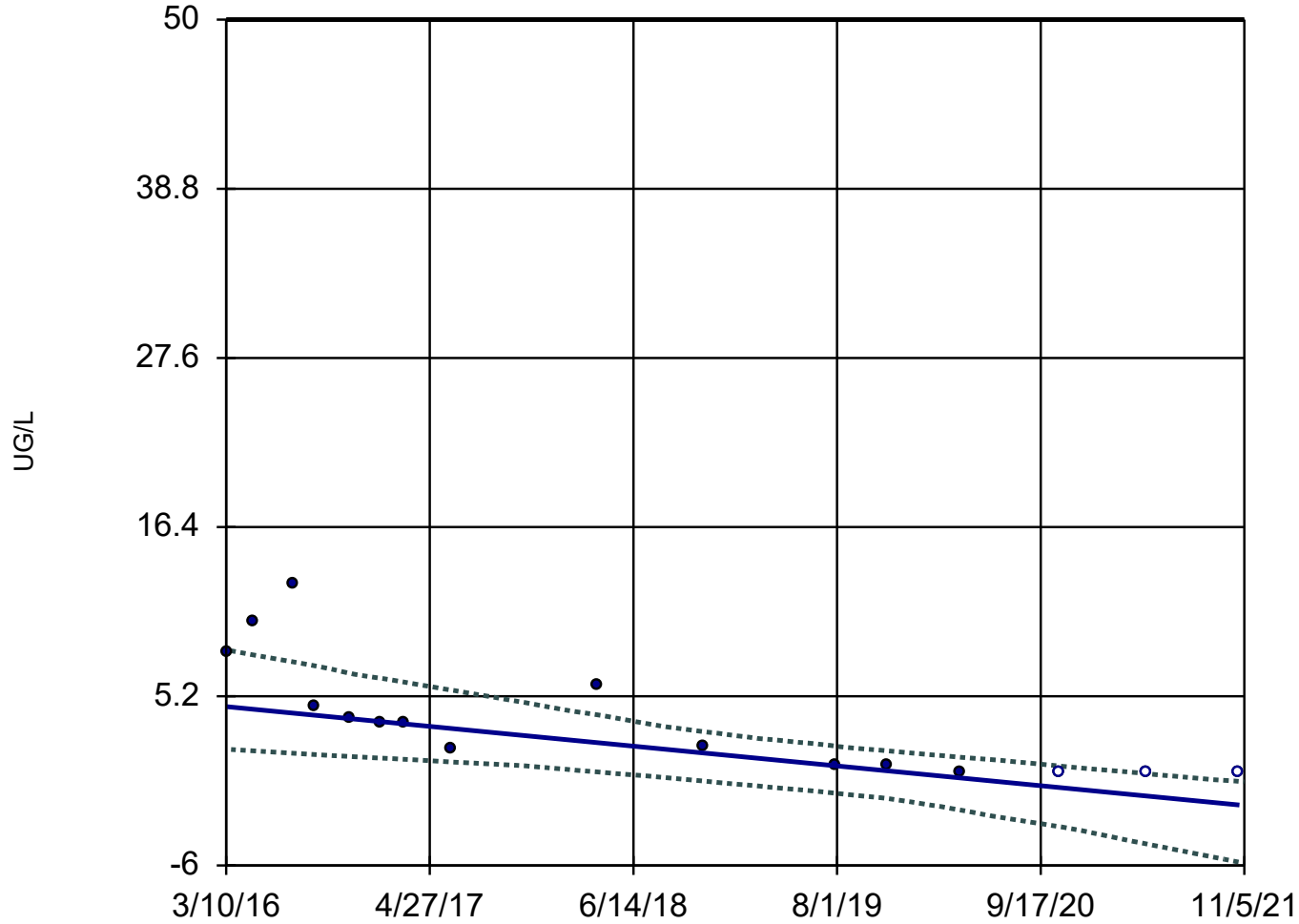
GWPS = 100.

Constituent: MOLYBDENUM, TOTAL Analysis Run 3/30/2022 9:20 AM

Rush Island E.C. Client: Ameren Data: RIEC Data

Sen's Slope and 95% Confidence Band

R-MW-1



n = 16

Slope = -1.157
units per year.

Mann-Kendall
statistic = -97
critical = -53

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

GWPS = 50.

Constituent: SELENIUM, TOTAL Analysis Run 3/30/2022 9:20 AM

Rush Island E.C. Client: Ameren Data: RIEC Data

Trend Test

Rush Island E.C. Client: Ameren Data: RIEC Data Printed 3/30/2022, 9:21 AM

<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Normality</u>	<u>Xform</u>	<u>Alpha</u>	<u>Method</u>
ANTIMONY, TOTAL (UG/L)	R-MW-1	-0.1081	-34	-53	No	16	18.75	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	R-MW-2	-0.5214	-84	-53	Yes	16	0	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	R-MW-3	-0.00...	-22	-53	No	16	37.5	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	R-MW-4	0.003887	55	53	Yes	16	81.25	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	R-MW-5	0.003997	62	53	Yes	16	93.75	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	R-MW-6	0.003927	14	53	No	16	56.25	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	R-MW-7	0.003995	32	58	No	17	76.47	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	R-MW-1	-0.9421	-30	-53	No	16	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	R-MW-2	-4.145	-37	-53	No	16	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	R-MW-3	-0.3591	-4	-53	No	16	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	R-MW-4	0.5944	29	53	No	16	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	R-MW-5	-0.4675	-72	-53	Yes	16	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	R-MW-6	0.3771	31	44	No	14	14.29	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	R-MW-7	2.887	22	58	No	17	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	R-MW-1	2.908	41	53	No	16	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	R-MW-2	-1.28	-81	-53	Yes	16	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	R-MW-3	-0.7449	-30	-53	No	16	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	R-MW-4	2.649	17	53	No	16	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	R-MW-5	-7.147	-44	-48	No	15	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	R-MW-6	4.011	15	48	No	15	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	R-MW-7	-20.06	-79	-58	Yes	17	0	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	R-MW-1	0	-5	-39	No	13	100	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	R-MW-2	0	-5	-39	No	13	100	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	R-MW-3	0	3	39	No	13	92.31	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	R-MW-4	0	-5	-39	No	13	100	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	R-MW-5	0	-5	-39	No	13	100	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	R-MW-6	0	3	39	No	13	92.31	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	R-MW-7	0	-3	-39	No	13	100	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	R-MW-1	0.003608	40	53	No	16	75	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	R-MW-2	0.01613	29	53	No	16	18.75	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	R-MW-3	0.0294	56	53	Yes	16	50	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	R-MW-4	0.00324	44	53	No	16	75	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	R-MW-5	0.002837	52	53	No	16	100	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	R-MW-6	0.003049	55	53	Yes	16	93.75	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	R-MW-7	0.003239	55	58	No	17	76.47	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	R-MW-1	-0.03552	-14	-48	No	15	53.33	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	R-MW-2	-0.08144	-25	-48	No	15	26.67	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	R-MW-3	-0.1056	-25	-48	No	15	26.67	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	R-MW-4	-0.07775	-34	-48	No	15	33.33	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	R-MW-5	-0.05892	-31	-48	No	15	26.67	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	R-MW-6	-0.00...	-6	-48	No	15	60	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	R-MW-7	-0.01875	-12	-53	No	16	37.5	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	R-MW-1	0.02487	49	44	Yes	14	85.71	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	R-MW-2	0.02485	65	44	Yes	14	100	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	R-MW-3	0.02484	65	44	Yes	14	100	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	R-MW-4	0.02593	43	44	No	14	78.57	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	R-MW-5	0.0185	28	44	No	14	85.71	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	R-MW-6	0.02902	47	39	Yes	13	92.31	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	R-MW-7	0.03916	60	48	Yes	15	80	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	R-MW-1	-0.00...	-1	-78	No	21	9.524	n/a	n/a	0.02	NP

Trend Test

Rush Island E.C. Client: Ameren Data: RIEC Data Printed 3/30/2022, 9:21 AM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
FLUORIDE, TOTAL (MG/L)	R-MW-2	0.07087	62	68	No	19	0	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	R-MW-3	0.05536	105	63	Yes	18	0	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	R-MW-4	0	-3	-68	No	19	0	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	R-MW-5	0.009805	49	63	No	18	5.556	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	R-MW-6	0.02086	78	68	Yes	19	5.263	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	R-MW-7	0.006158	24	73	No	20	0	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	R-MW-1	0.1236	37	48	No	15	100	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	R-MW-2	0.18	8	53	No	16	6.25	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	R-MW-3	-0.2787	-21	-53	No	16	25	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	R-MW-4	0.121	28	53	No	16	93.75	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	R-MW-5	0.1321	41	53	No	16	81.25	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	R-MW-6	0.1806	35	53	No	16	75	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	R-MW-7	0.1338	44	58	No	17	88.24	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	R-MW-1	0	16	53	No	16	100	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	R-MW-2	0.1498	30	53	No	16	87.5	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	R-MW-3	0.1528	29	53	No	16	93.75	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	R-MW-4	-1.249	-54	-53	Yes	16	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	R-MW-5	0	1	53	No	16	56.25	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	R-MW-6	0.1624	20	53	No	16	68.75	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	R-MW-7	-0.8226	-31	-58	No	17	0	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	R-MW-1	0.00261	25	35	No	12	91.67	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	R-MW-2	0.00261	25	35	No	12	91.67	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	R-MW-3	0.002607	25	35	No	12	91.67	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	R-MW-4	0.002605	25	35	No	12	91.67	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	R-MW-5	0.002605	25	35	No	12	91.67	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	R-MW-6	0.002722	30	35	No	12	100	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	R-MW-7	0.005108	51	39	Yes	13	100	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	R-MW-1	-0.8549	-2	-53	No	16	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	R-MW-2	-4.131	-13	-48	No	15	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	R-MW-3	-1.418	0	53	No	16	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	R-MW-4	-0.8205	-10	-53	No	16	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	R-MW-5	0.08609	31	53	No	16	75	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	R-MW-6	0.1221	10	53	No	16	50	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	R-MW-7	-18.05	-73	-58	Yes	17	0	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	R-MW-1	0.04211	31	53	No	16	100	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	R-MW-2	0.1534	52	53	No	16	93.75	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	R-MW-3	0.01931	22	53	No	16	93.75	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	R-MW-4	0.02677	18	53	No	16	81.25	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	R-MW-5	0.02002	24	53	No	16	87.5	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	R-MW-6	0.07957	20	53	No	16	68.75	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	R-MW-7	0.02985	32	58	No	17	88.24	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	R-MW-1	-1.157	-97	-53	Yes	16	18.75	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	R-MW-2	-0.02402	-8	-53	No	16	0	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	R-MW-3	-0.02152	-21	-48	No	15	0	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	R-MW-4	0	-3	-53	No	16	56.25	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	R-MW-5	0	-22	-53	No	16	100	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	R-MW-6	0.009292	5	53	No	16	12.5	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	R-MW-7	0	7	58	No	17	76.47	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	R-MW-1	-0.04484	-38	-39	No	13	92.31	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	R-MW-2	-0.03964	-33	-44	No	14	100	n/a	n/a	0.02	NP

Trend Test

Rush Island E.C. Client: Ameren Data: RIEC Data Printed 3/30/2022, 9:21 AM

<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Normality</u>	<u>Xform</u>	<u>Alpha</u>	<u>Method</u>
THALLIUM, TOTAL (UG/L)	R-MW-3	-0.04177	-30	-39	No	13	100	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	R-MW-4	-0.04178	-30	-39	No	13	100	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	R-MW-5	-0.04178	-30	-39	No	13	100	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	R-MW-6	-0.04484	-38	-39	No	13	92.31	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	R-MW-7	-0.04073	-43	-44	No	14	92.86	n/a	n/a	0.02	NP

APPENDIX C

**April 2022 Assessment Monitoring
Statistical Evaluation**

TECHNICAL MEMORANDUM

DATE August 22, 2022

Project No. 153140604

TO Bill Kutosky
Ameren Missouri

CC Susan Knowles, Craig Giesman, Charlie Henderson

FROM Jeffrey Ingram, Mark Haddock

EMAIL Jeffrey.Ingram@wsp.com

ASSESSMENT MONITORING STATISTICAL EVALUATION RCPA SURFACE IMPOUNDMENT RUSH ISLAND ENERGY CENTER, JEFFERSON COUNTY, MISSOURI

This Technical Memorandum provides the results of the Assessment Monitoring Statistical Evaluation from the April 2022 sampling event for the RCPA Surface Impoundment at the Rush Island Energy Center located in Jefferson County, Missouri. Included in this memorandum is a brief 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 tested Appendix IV parameters (**Appendix A** and **Appendix B**).

The Appendix IV constituents were evaluated for SSLs using the methods and procedures outlined in the Groundwater Monitoring Plan's (GMP) Statistical Analysis Plan (SAP). The following statistical outlier(s) were removed prior to the calculation of confidence limits:

- Arsenic
 - R-MW-6 at 49.6 micrograms per liter ($\mu\text{g/L}$) on 10/27/2021. The result is statistically higher than other values at the same well. The high result has not been confirmed during subsequent sampling and is an outlier.
- Barium
 - R-MW-1 at 116 $\mu\text{g/L}$ on 10/26/2020. The result is statistically higher than other values at the same well. The high result has not been confirmed during subsequent sampling and is an outlier.
- Cadmium
 - R-MW-6 at 0.55 J $\mu\text{g/L}$ on 10/27/2021. The result is statistically higher than other values at the same well. The high result has not been confirmed during subsequent sampling and is an outlier.
- Chromium
 - R-MW-4 at 1.6 $\mu\text{g/L}$ on 3/6/2017. The result is statistically higher than other values at the same well. The high result has not been confirmed during subsequent sampling and is an outlier.
 - R-MW-6 at 21.5 $\mu\text{g/L}$ on 10/27/2021. The result is statistically higher than other values at the same well. The high result has not been confirmed during subsequent sampling and is an outlier.
- Lead

- R-MW-1, R-MW-4, R-MW-5, and R-MW-6 at Non-Detect (ND) on 11/11/2019. The results are statistically lower than other values at the same well. The low results have not been confirmed during subsequent sampling and are outliers.
- Lithium
 - R-MW-6 at 13.6 µg/L on 7/31/2019. The result is statistically higher than other values at the same well. The high result has not been confirmed during subsequent sampling and is an outlier.
 - R-MW-7 at 61.8 µg/L, 68.1 µg/L, and 47.8 µg/L on 9/13/2019, 9/30/2019, and 11/11/2019, respectively. The results are statistically higher than other values at the same well. The high results have not been confirmed during subsequent sampling and are outliers.
- Selenium
 - R-MW-6 at 4.7 µg/L on 10/27/2021. The result is statistically higher than other values at the same well. The high result has not been confirmed during subsequent sampling events and is an outlier.

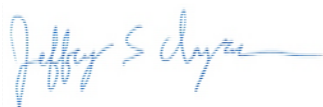
An analysis of the outliers removed to date was completed and all outliers that were previously removed are still considered outliers.

No new SSLs were identified in the April 2022 sampling event. The SSLs reported for the April 2022 monitoring event are shown in **Appendix A** and summarized as follows:

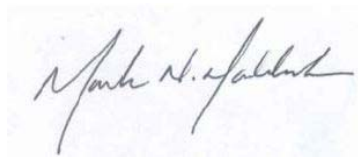
- Arsenic at MW-2, MW-3, and MW-7/MW-7(R)
- Molybdenum at MW-2 and MW-3

Golder appreciates this opportunity to provide hydrogeological and engineering support services to Ameren. If you have any questions or comments regarding the information provided, please call our office at (314)-984-8800.

Sincerely,



Jeffrey Ingram
Senior Consultant, Geologist



Mark Haddock
Principal, Practice Leader

JSI/MNH

Attachments: Table 1 – RCPA Groundwater Protection Standards
Appendix A – Sanitas Confidence Interval Statistical Output
Appendix B – Sanitas Trending Confidence Bands Statistical Output

**Table 1 - RCPA Groundwater Protection Standards
RCPA Surface Impoundment
Rush Island Energy Center**

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	30	30
Barium	µg/L	2000	2000	550.5
Beryllium	µg/L	4	4	DQR
Cadmium	µg/L	5	5	DQR
Chromium	µg/L	100	100	2.372
Cobalt	µg/L	6	6	DQR
Fluoride	mg/L	4	4	0.2767
Lead	µg/L	15	15	DQR
Lithium	µg/L	40	64.7	64.7
Mercury	µg/L	2	2	DQR
Molybdenum	µg/L	100	100	DQR
Radium 226 + 228	pCi/L	5	5	2.297
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) Drinking Water Standards and Health Advisories. <http://water.epa.gov/drink/contaminants/index.cfm>.

5. Health Based Groundwater Protection Standards (GWPS) were adopted 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 up through April 2021 from monitoring wells MW-B1 and MW-B2.

Prepared by: EMS

Checked by: SSS

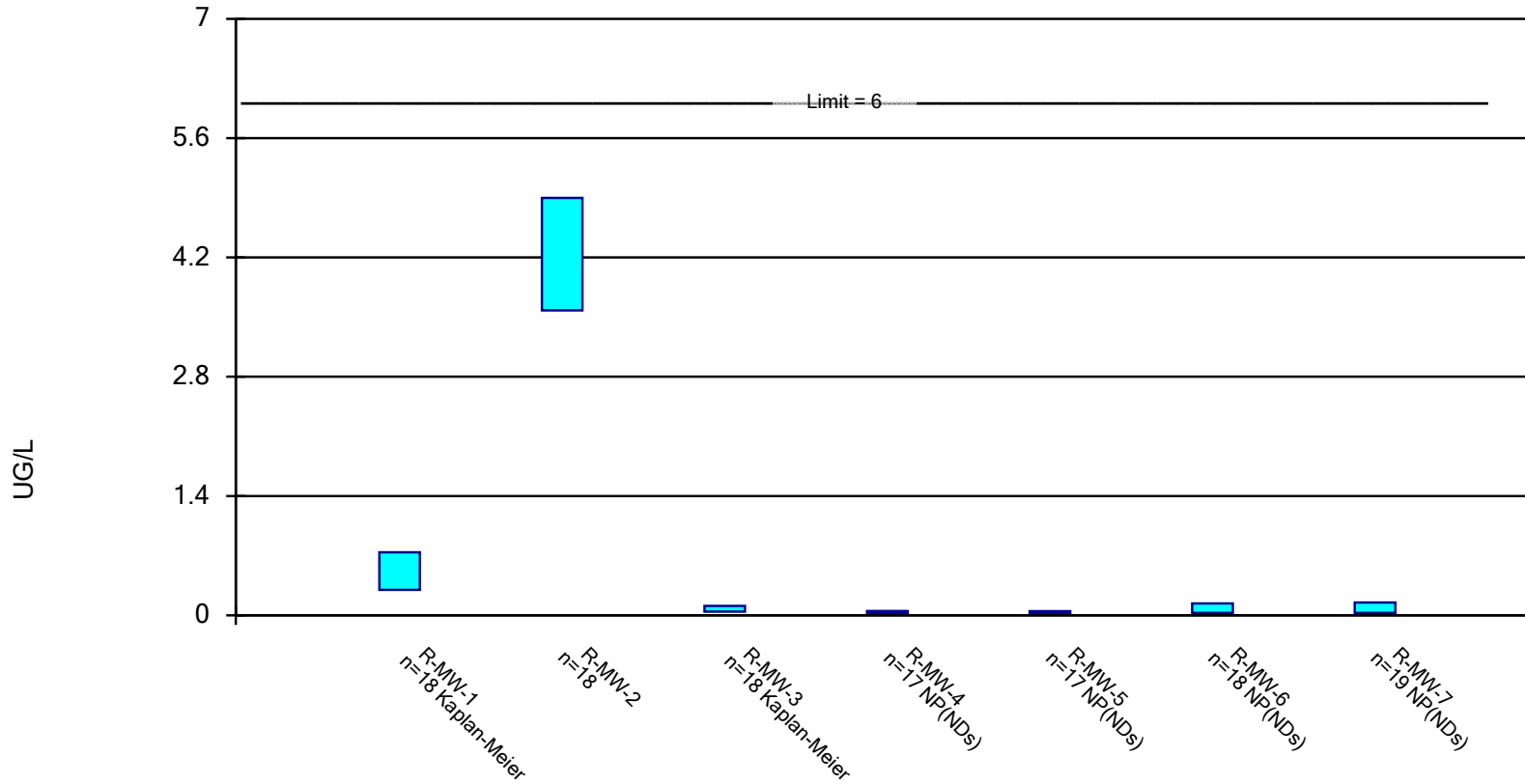
Reviewed by: MNH

APPENDIX A

**Sanitas Confidence Interval
Statistical Output**

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.

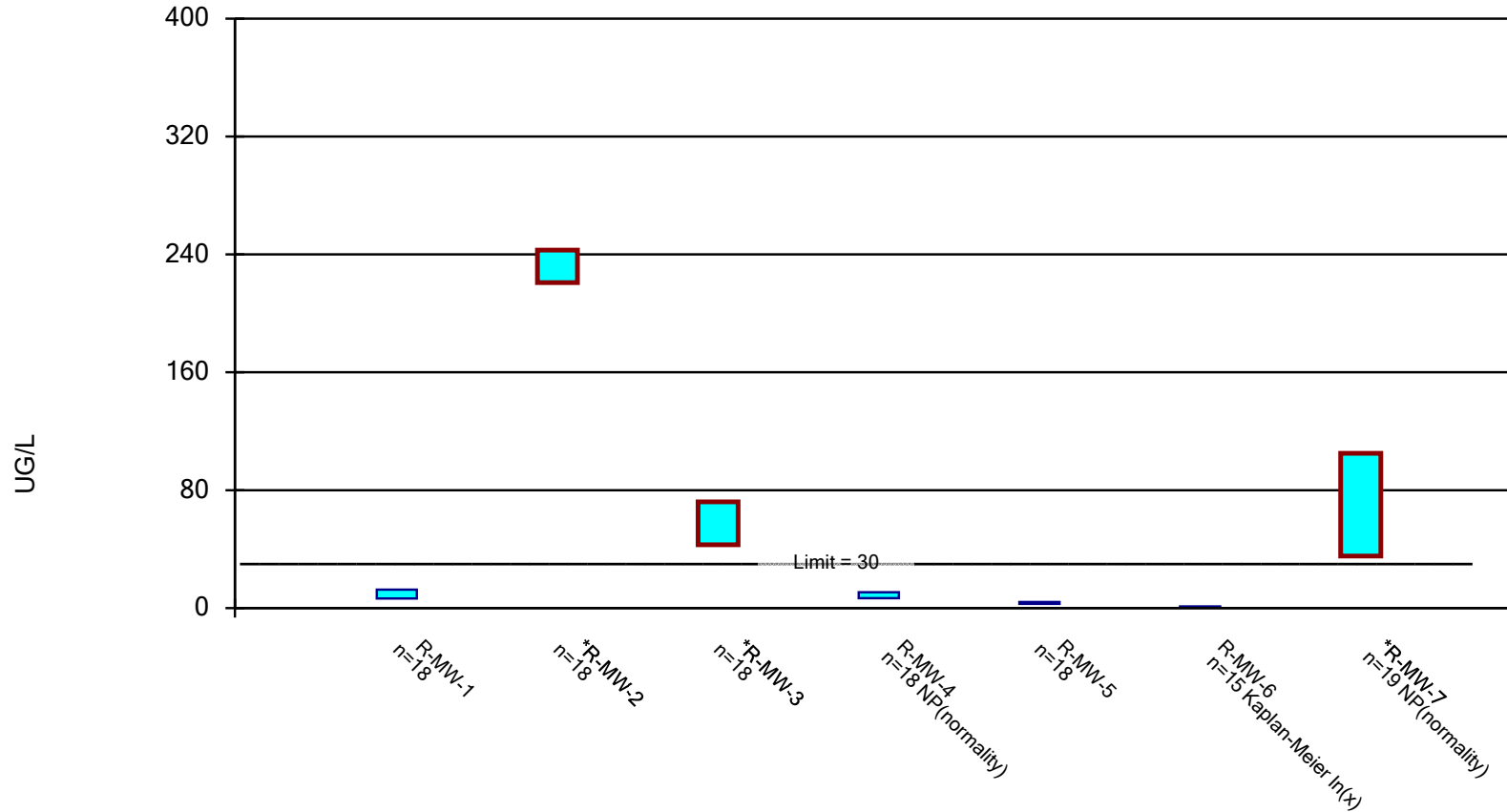


Constituent: ANTIMONY, TOTAL Analysis Run 7/19/2022 2:51 PM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

Parametric and Non-Parametric (NP) Confidence Interval

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

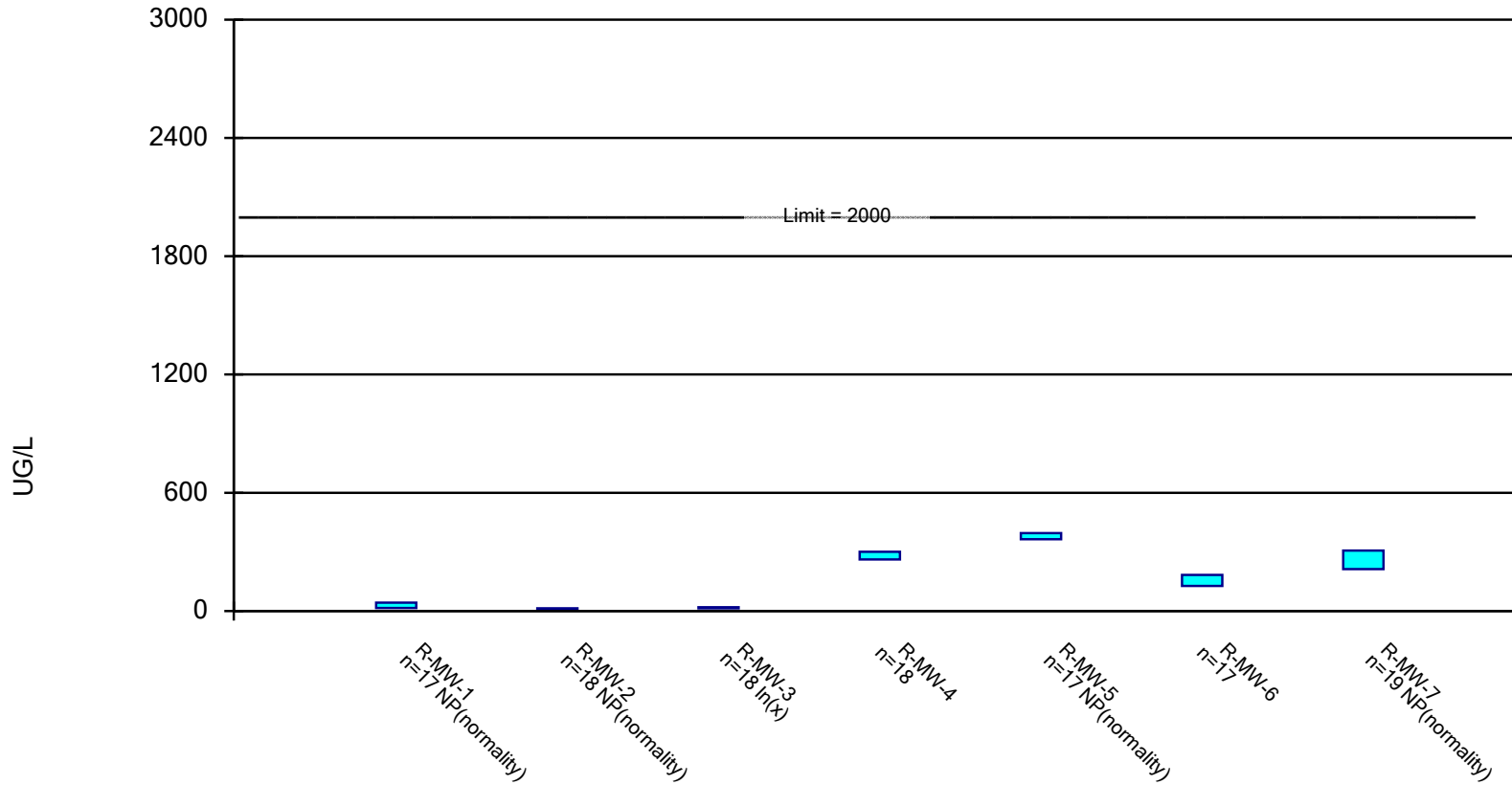


Constituent: ARSENIC, TOTAL Analysis Run 7/19/2022 2:51 PM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

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.

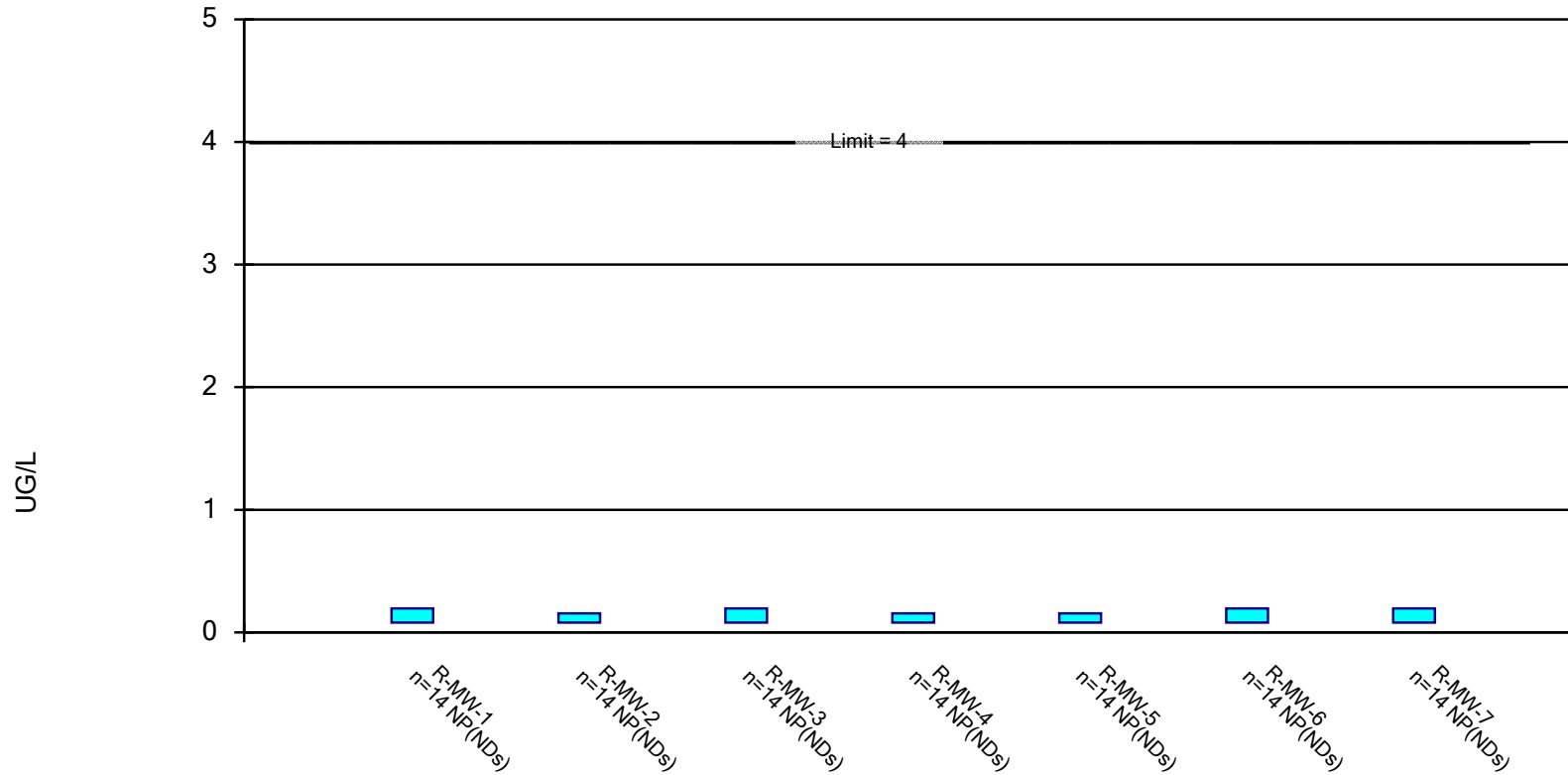


Constituent: BARIUM, TOTAL Analysis Run 7/19/2022 2:51 PM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.

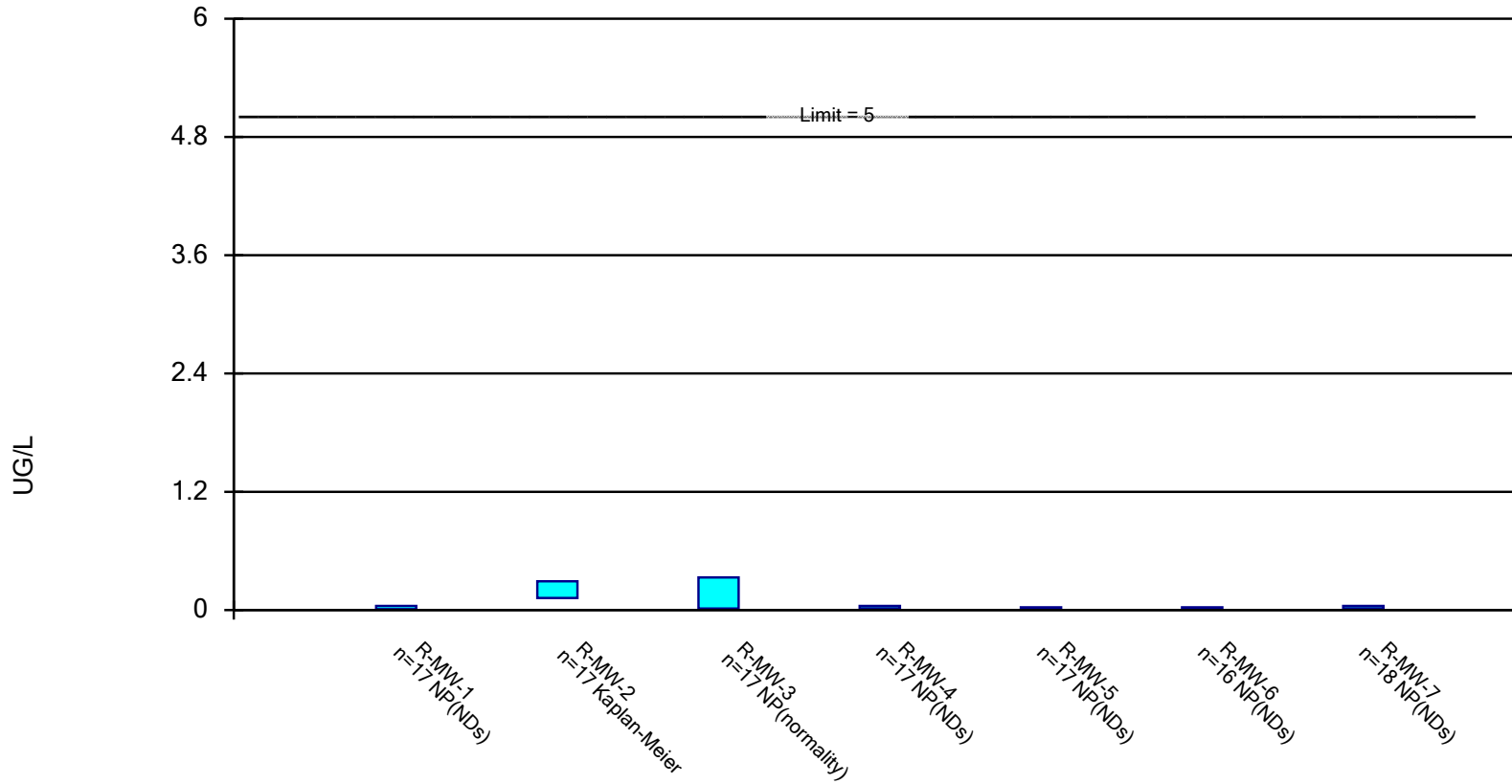


Constituent: BERYLLIUM, TOTAL Analysis Run 7/19/2022 2:51 PM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

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.

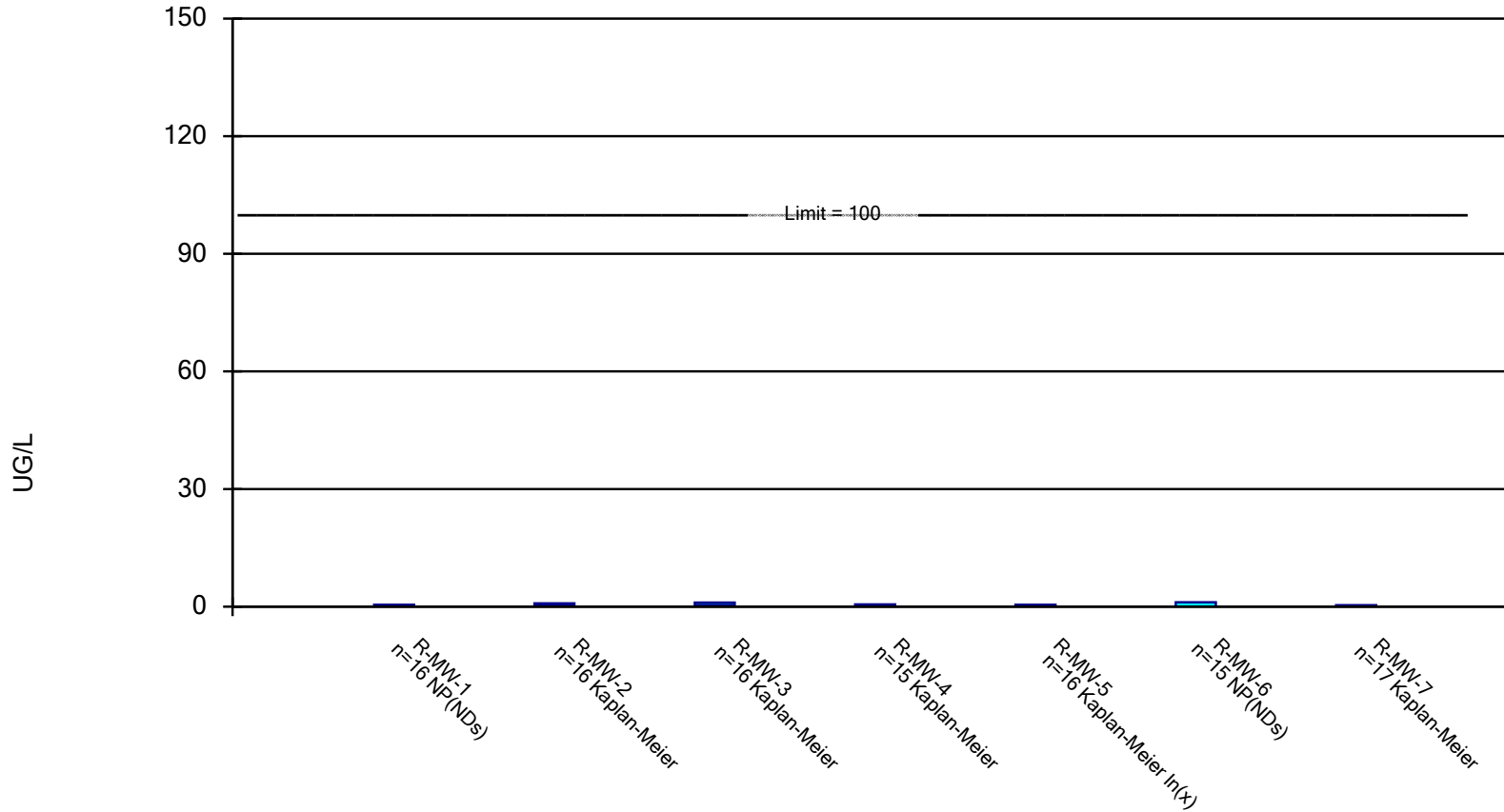


Constituent: CADMIUM, TOTAL Analysis Run 7/19/2022 2:51 PM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

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.

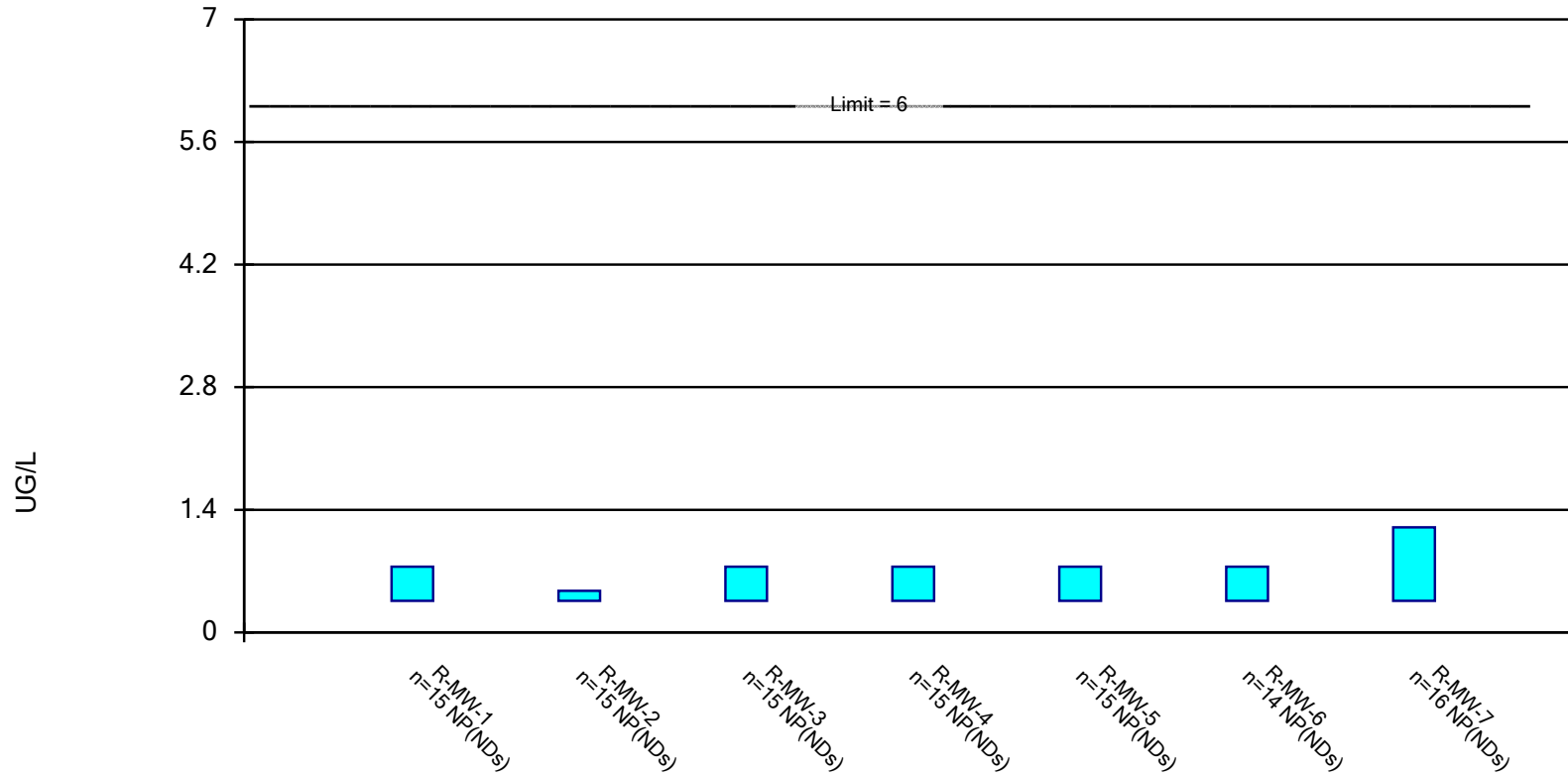


Constituent: CHROMIUM, TOTAL Analysis Run 7/19/2022 2:51 PM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.

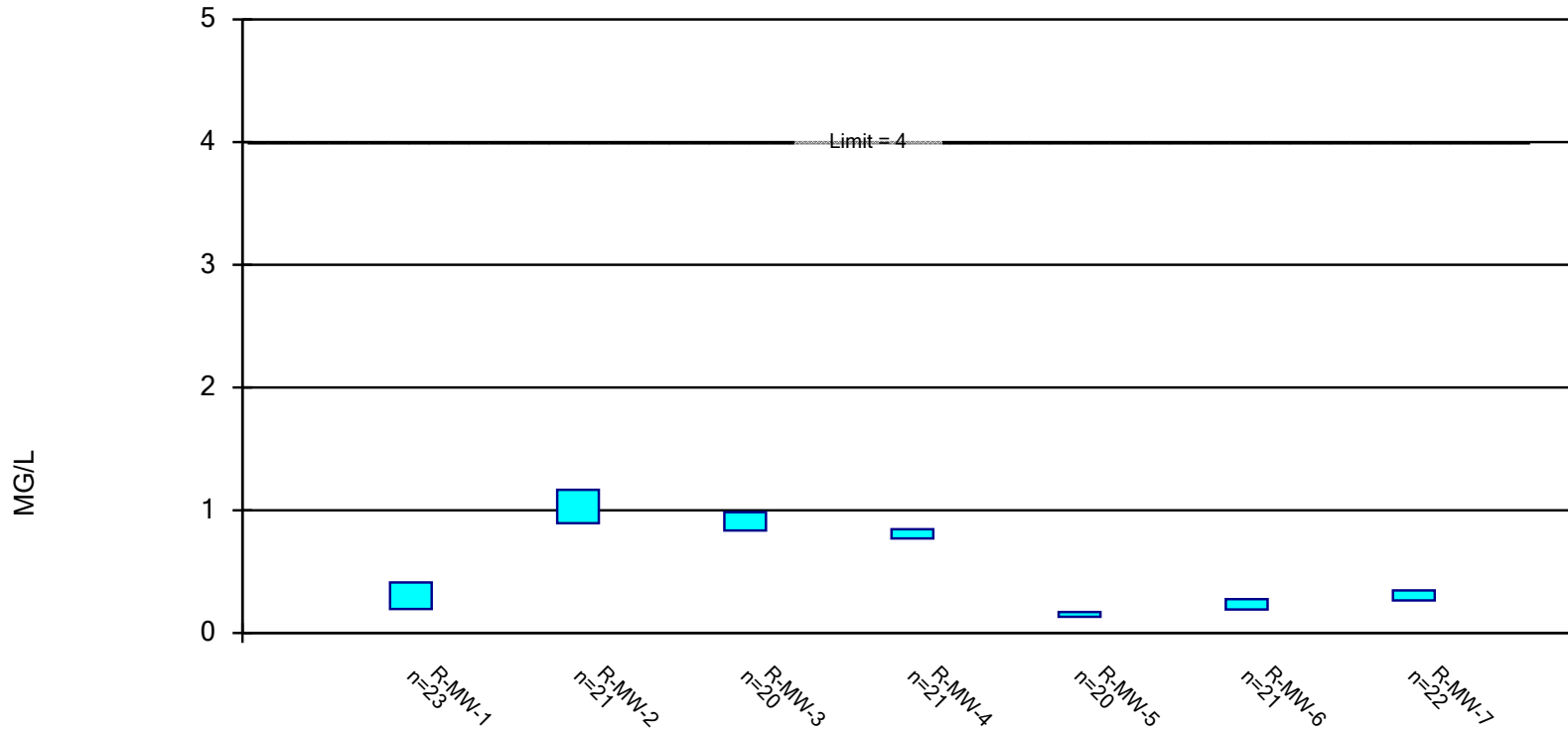


Constituent: COBALT, TOTAL Analysis Run 7/19/2022 2:51 PM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

Parametric Confidence Interval

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

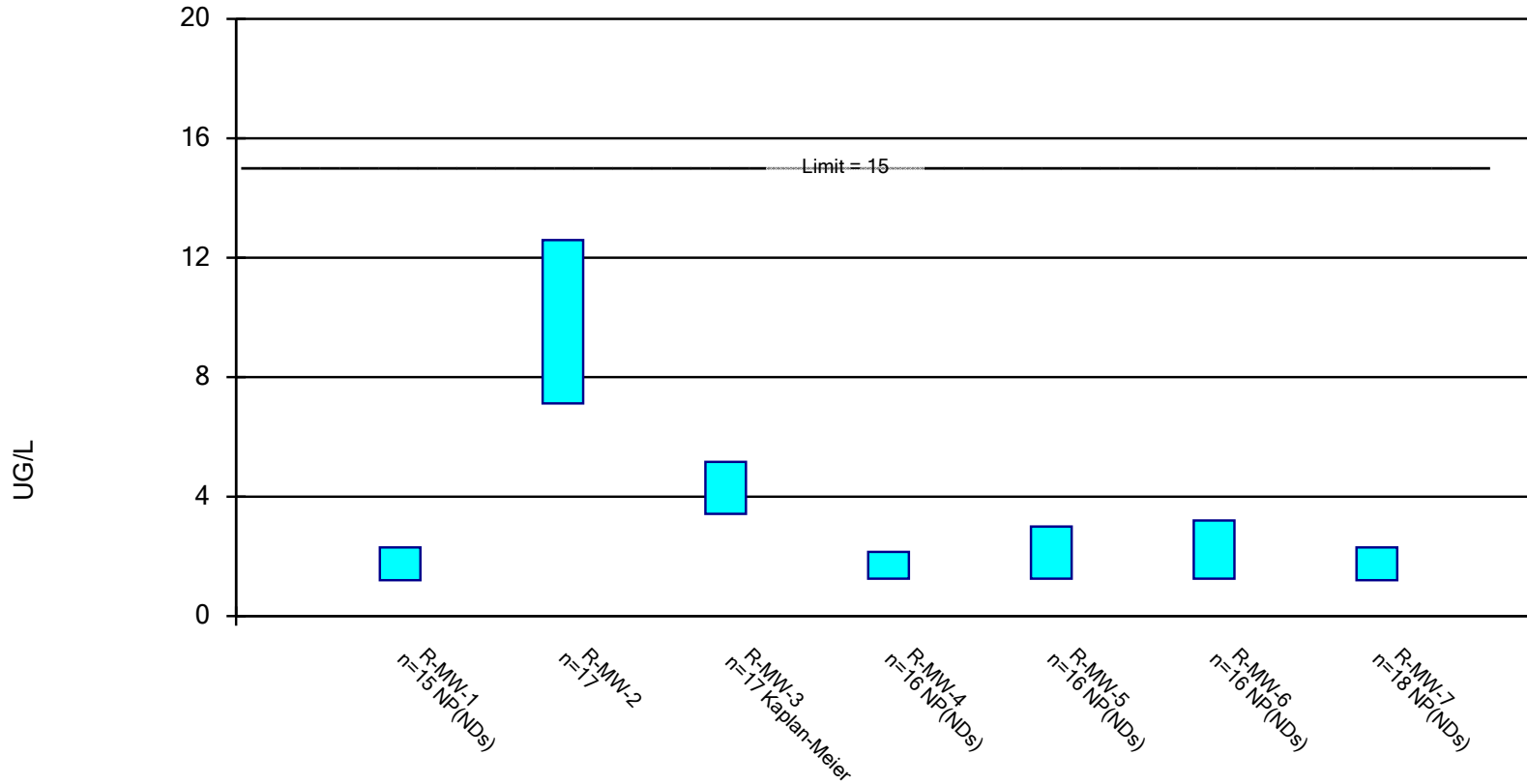


Constituent: FLUORIDE, TOTAL Analysis Run 7/19/2022 2:51 PM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

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.

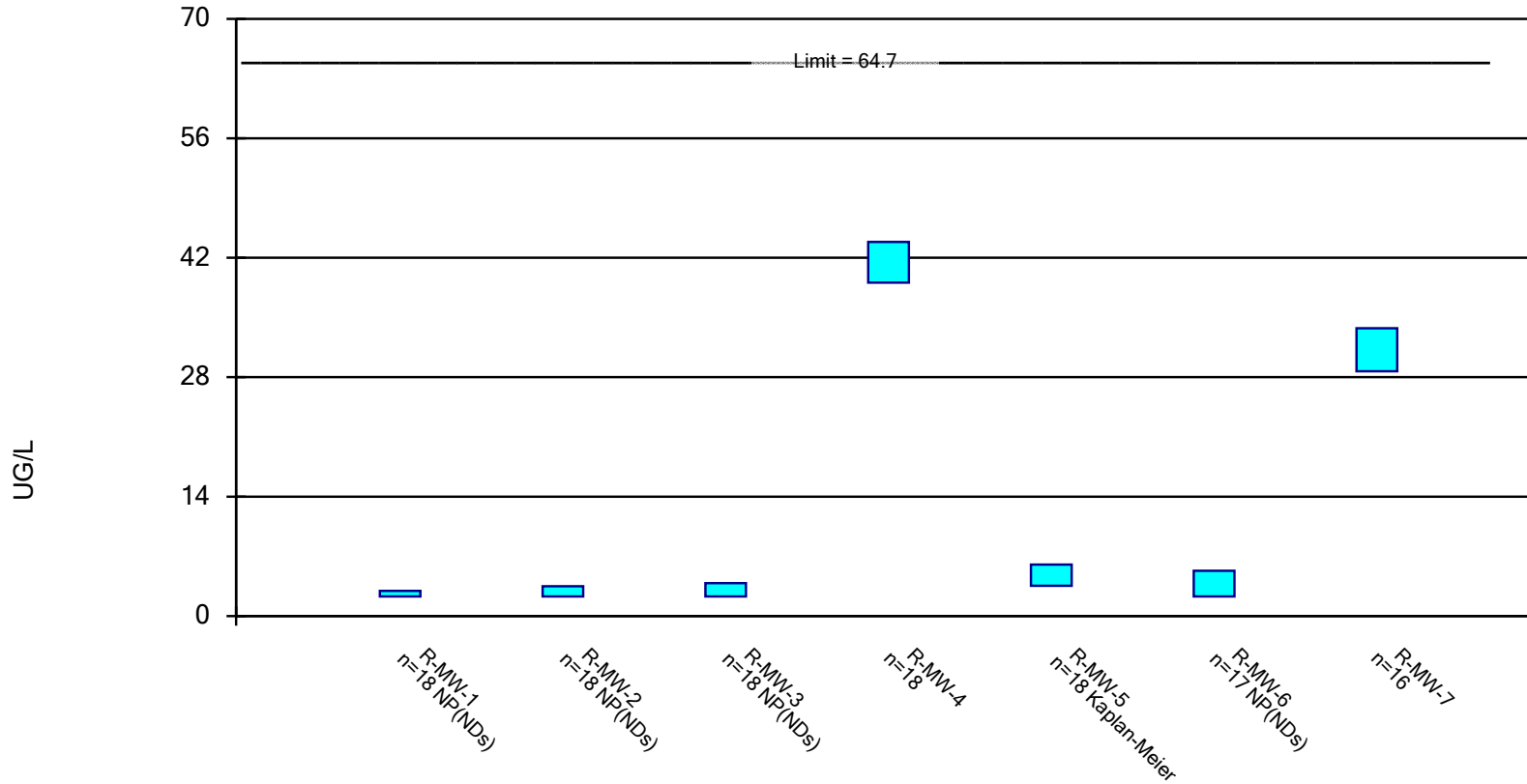


Constituent: LEAD, TOTAL Analysis Run 7/19/2022 2:51 PM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

Parametric and Non-Parametric (NP) Confidence Interval

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

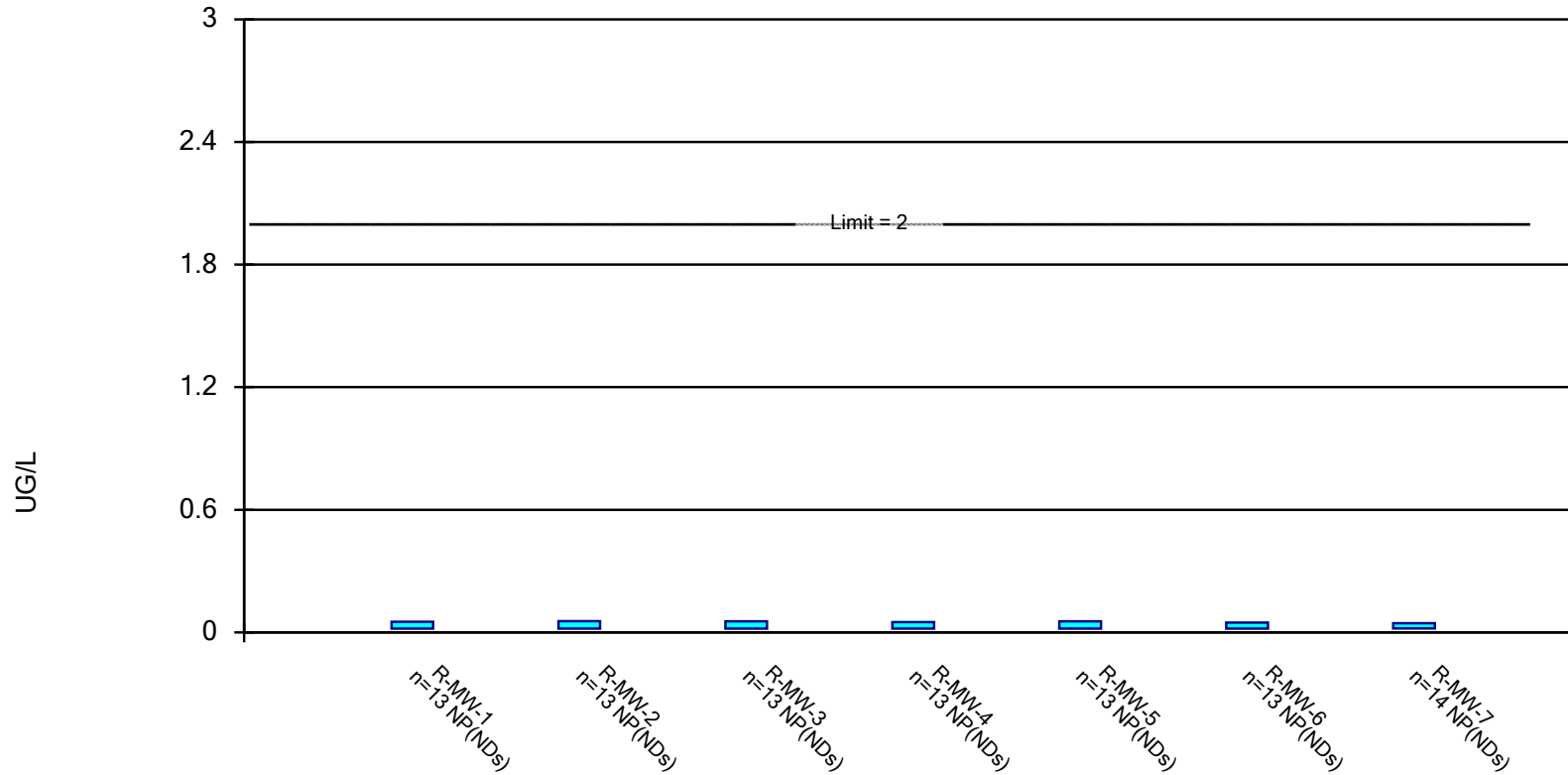


Constituent: LITHIUM, TOTAL Analysis Run 7/19/2022 2:51 PM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.

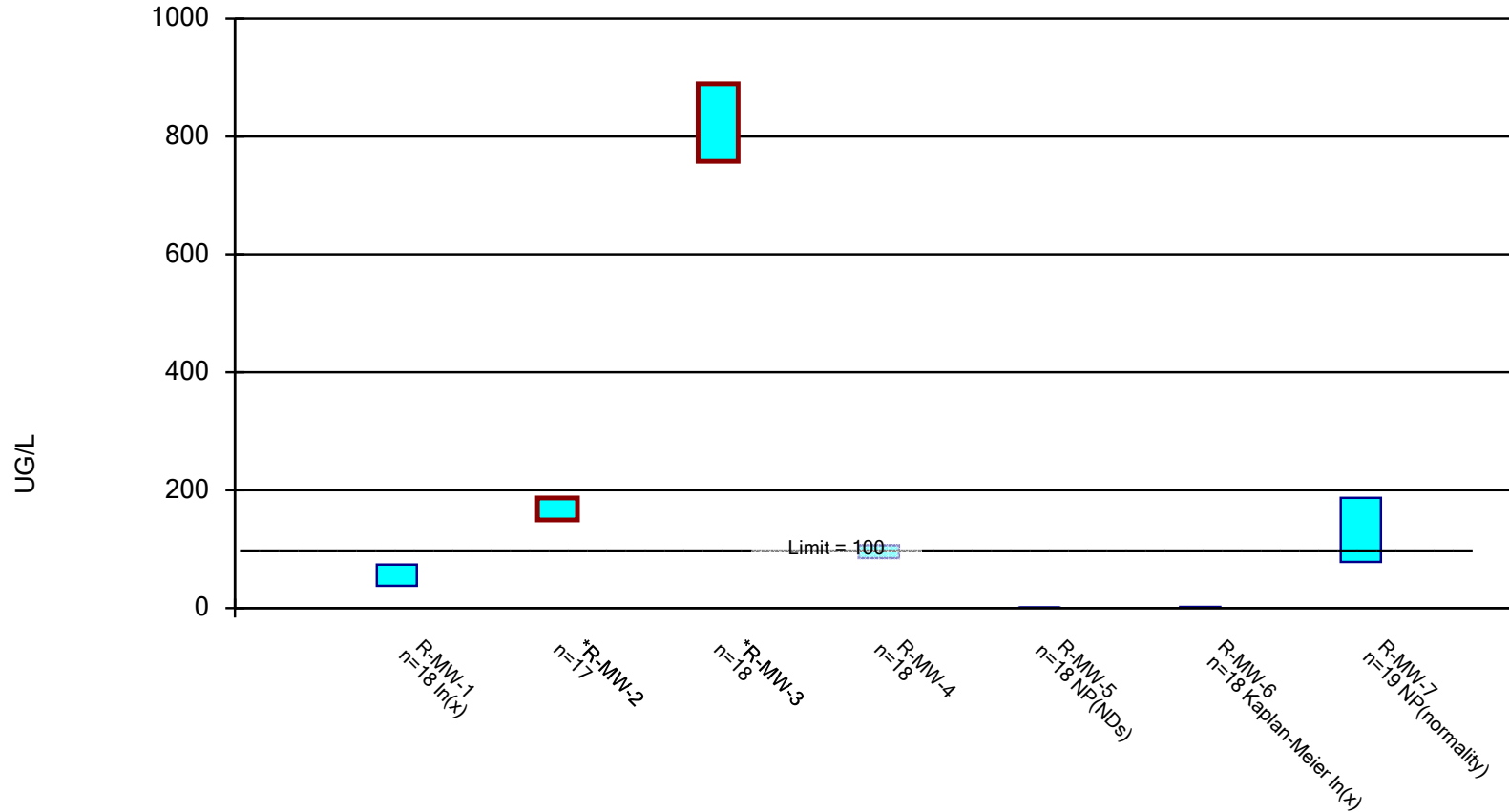


Constituent: MERCURY, TOTAL Analysis Run 7/19/2022 2:51 PM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

Parametric and Non-Parametric (NP) Confidence Interval

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

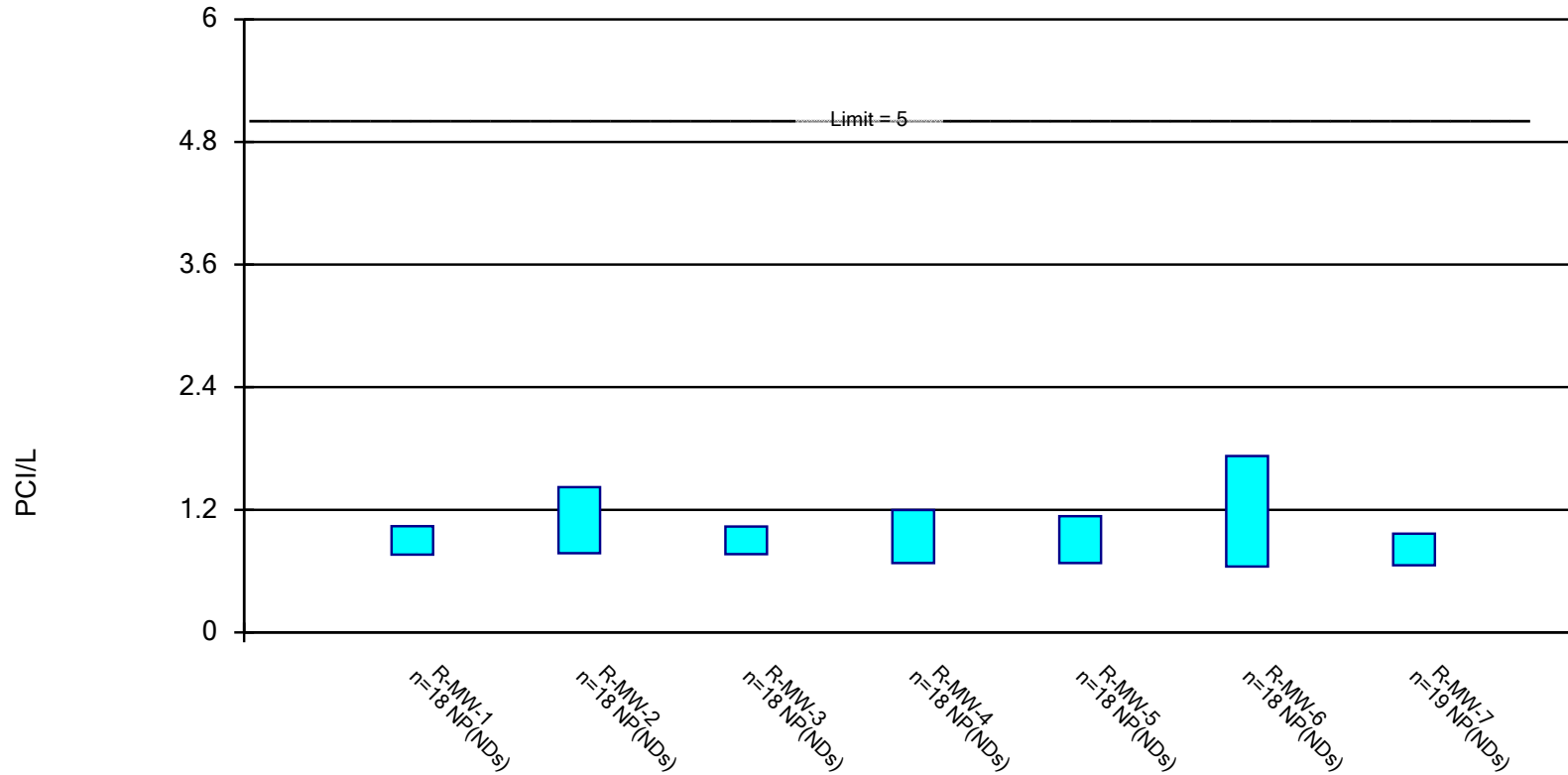


Constituent: MOLYBDENUM, TOTAL Analysis Run 7/19/2022 2:51 PM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.

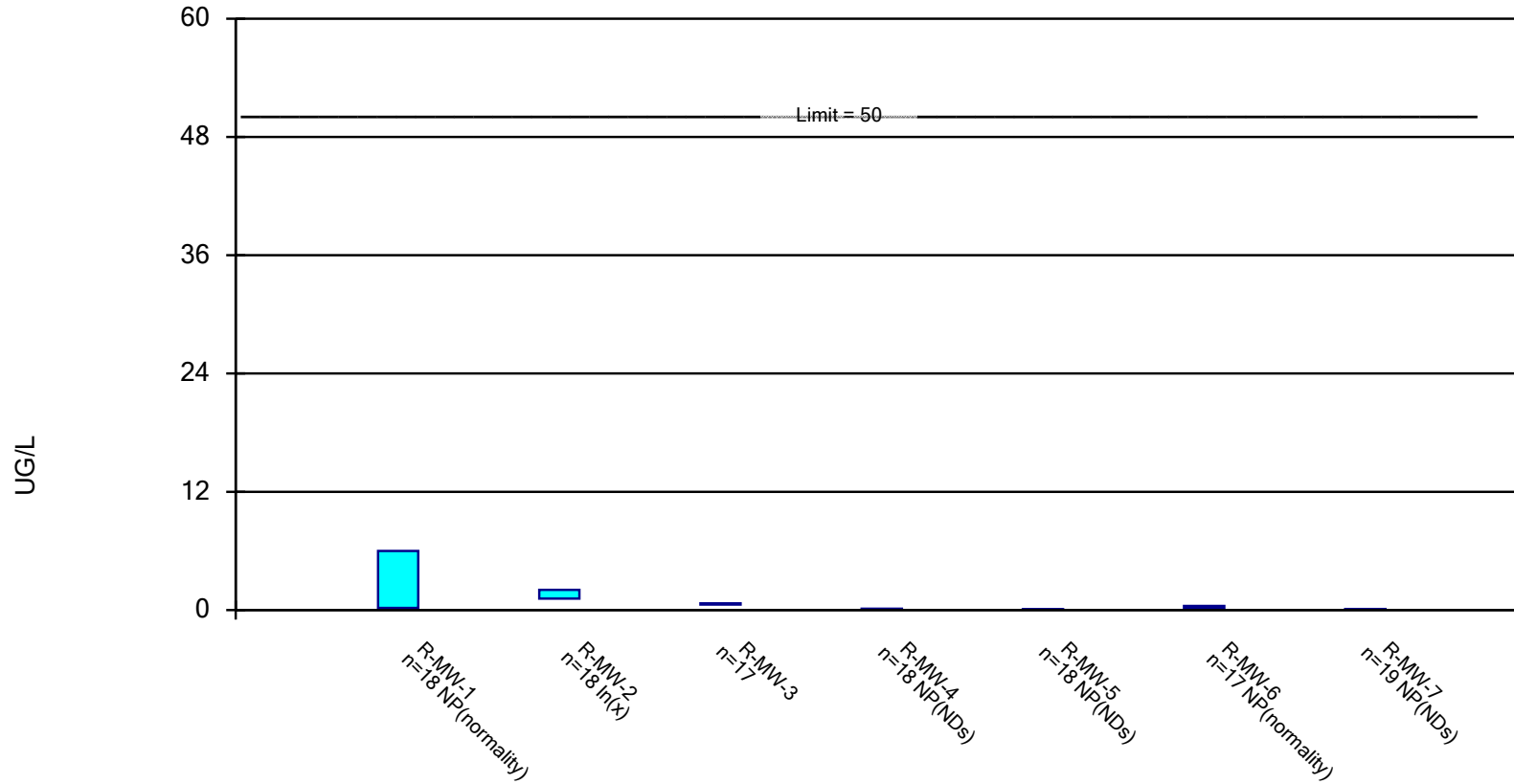


Constituent: RADIUM [226 + 228] Analysis Run 7/19/2022 2:51 PM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

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.

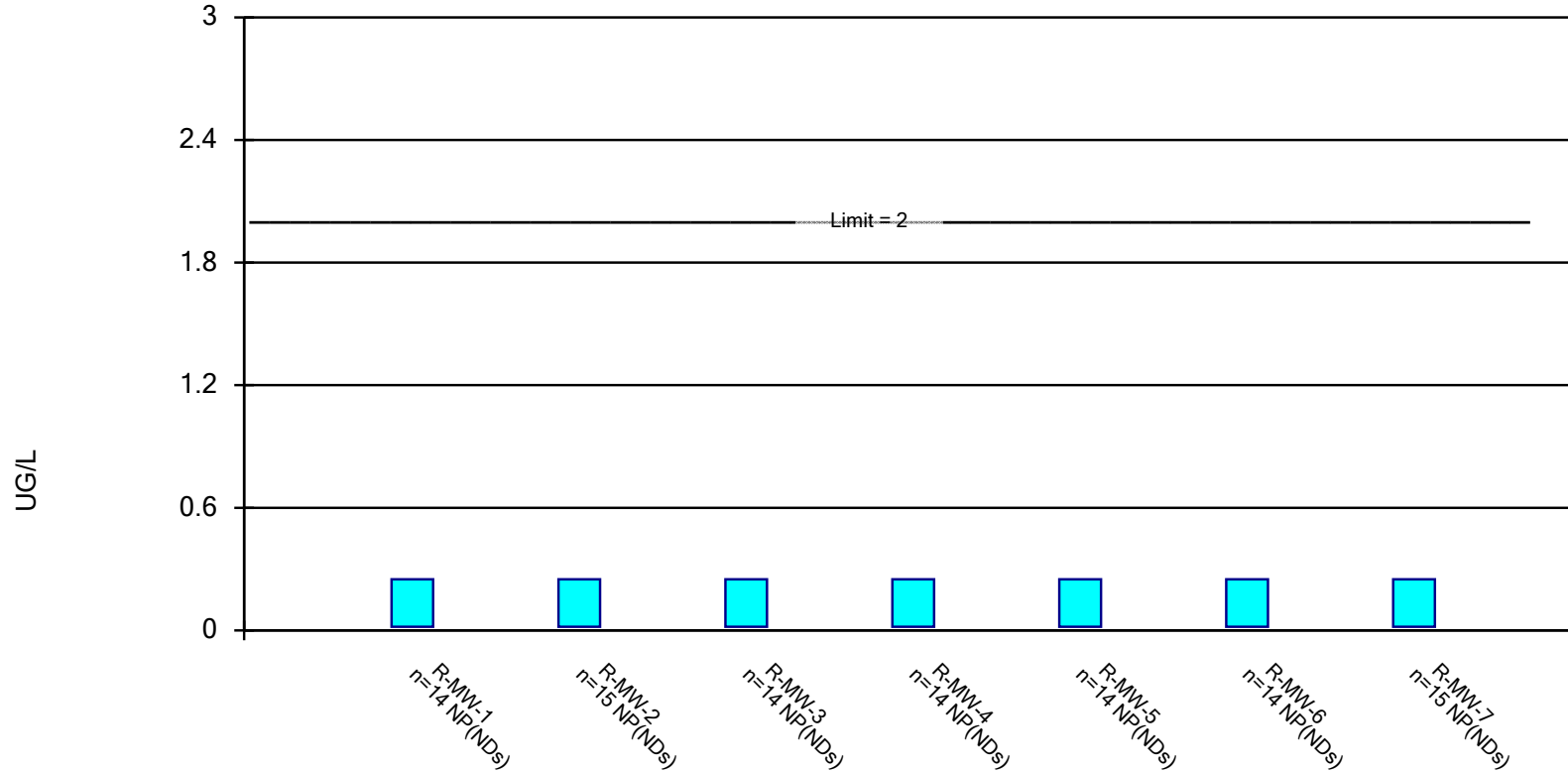


Constituent: SELENIUM, TOTAL Analysis Run 7/19/2022 2:51 PM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.



Constituent: THALLIUM, TOTAL Analysis Run 7/19/2022 2:51 PM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

Confidence Interval

Rush Island E.C. Client: Ameren Data: RIEC Data Printed 7/19/2022, 2:52 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
ANTIMONY, TOTAL (UG/L)	R-MW-1	0.739	0.2993	6	No	18	16.67	No	0.01	Param.
ANTIMONY, TOTAL (UG/L)	R-MW-2	4.898	3.579	6	No	18	0	No	0.01	Param.
ANTIMONY, TOTAL (UG/L)	R-MW-3	0.1109	0.04341	6	No	18	44.44	No	0.01	Param.
ANTIMONY, TOTAL (UG/L)	R-MW-4	0.05	0.029	6	No	17	82.35	No	0.01	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-MW-5	0.0485	0.0275	6	No	17	94.12	No	0.01	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-MW-6	0.14	0.029	6	No	18	61.11	No	0.01	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-MW-7	0.15	0.029	6	No	19	78.95	No	0.01	NP (NDs)
ARSENIC, TOTAL (UG/L)	R-MW-1	12.49	6.5	30	No	18	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-MW-2	242.9	220.8	30	Yes	18	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-MW-3	72.1	43.01	30	Yes	18	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-MW-4	10.7	6.7	30	No	18	0	No	0.01	NP (normality)
ARSENIC, TOTAL (UG/L)	R-MW-5	4.166	2.834	30	No	18	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-MW-6	1.128	0.209	30	No	15	20	ln(x)	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-MW-7	105	35.3	30	Yes	19	0	No	0.01	NP (normality)
BARIUM, TOTAL (UG/L)	R-MW-1	42.2	15.5	2000	No	17	0	No	0.01	NP (normality)
BARIUM, TOTAL (UG/L)	R-MW-2	13.7	9.5	2000	No	18	0	No	0.01	NP (normality)
BARIUM, TOTAL (UG/L)	R-MW-3	19.22	14.17	2000	No	18	0	ln(x)	0.01	Param.
BARIUM, TOTAL (UG/L)	R-MW-4	300.1	261.9	2000	No	18	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-MW-5	395	364	2000	No	17	0	No	0.01	NP (normality)
BARIUM, TOTAL (UG/L)	R-MW-6	183.6	127.3	2000	No	17	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-MW-7	307	213	2000	No	19	0	No	0.01	NP (normality)
BERYLLIUM, TOTAL (UG/L)	R-MW-1	0.195	0.08	4	No	14	100	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	R-MW-2	0.155	0.08	4	No	14	100	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	R-MW-3	0.195	0.08	4	No	14	92.86	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	R-MW-4	0.155	0.08	4	No	14	100	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	R-MW-5	0.155	0.08	4	No	14	100	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	R-MW-6	0.195	0.08	4	No	14	92.86	No	0.01	NP (NDs)
BERYLLIUM, TOTAL (UG/L)	R-MW-7	0.195	0.08	4	No	14	100	No	0.01	NP (NDs)
CADMIUM, TOTAL (UG/L)	R-MW-1	0.041	0.009	5	No	17	76.47	No	0.01	NP (NDs)
CADMIUM, TOTAL (UG/L)	R-MW-2	0.2921	0.1227	5	No	17	17.65	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	R-MW-3	0.33	0.0145	5	No	17	47.06	No	0.01	NP (normality)
CADMIUM, TOTAL (UG/L)	R-MW-4	0.041	0.0145	5	No	17	76.47	No	0.01	NP (NDs)
CADMIUM, TOTAL (UG/L)	R-MW-5	0.028	0.009	5	No	17	100	No	0.01	NP (NDs)
CADMIUM, TOTAL (UG/L)	R-MW-6	0.028	0.009	5	No	16	100	No	0.01	NP (NDs)
CADMIUM, TOTAL (UG/L)	R-MW-7	0.041	0.0145	5	No	18	77.78	No	0.01	NP (NDs)
CHROMIUM, TOTAL (UG/L)	R-MW-1	0.5	0.08	100	No	16	56.25	No	0.01	NP (NDs)
CHROMIUM, TOTAL (UG/L)	R-MW-2	0.8272	0.349	100	No	16	25	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	R-MW-3	1.052	0.3661	100	No	16	25	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	R-MW-4	0.5807	0.198	100	No	15	33.33	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	R-MW-5	0.4939	0.149	100	No	16	25	ln(x)	0.01	Param.
CHROMIUM, TOTAL (UG/L)	R-MW-6	1.1	0.039	100	No	15	60	No	0.01	NP (NDs)
CHROMIUM, TOTAL (UG/L)	R-MW-7	0.3708	0.1368	100	No	17	41.18	No	0.01	Param.
COBALT, TOTAL (UG/L)	R-MW-1	0.75	0.36	6	No	15	86.67	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	R-MW-2	0.475	0.36	6	No	15	100	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	R-MW-3	0.75	0.36	6	No	15	93.33	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	R-MW-4	0.75	0.36	6	No	15	80	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	R-MW-5	0.75	0.36	6	No	15	86.67	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	R-MW-6	0.75	0.36	6	No	14	92.86	No	0.01	NP (NDs)
COBALT, TOTAL (UG/L)	R-MW-7	1.2	0.36	6	No	16	75	No	0.01	NP (NDs)
FLUORIDE, TOTAL (MG/L)	R-MW-1	0.4113	0.1957	4	No	23	13.04	No	0.01	Param.

Confidence Interval

Rush Island E.C. Client: Ameren Data: RIEC Data Printed 7/19/2022, 2:52 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
FLUORIDE, TOTAL (MG/L)	R-MW-2	1.166	0.8948	4	No	21	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-MW-3	0.9838	0.8352	4	No	20	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-MW-4	0.8454	0.7699	4	No	21	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-MW-5	0.1712	0.1313	4	No	20	5	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-MW-6	0.2754	0.1917	4	No	21	4.762	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-MW-7	0.3471	0.2647	4	No	22	4.545	No	0.01	Param.
LEAD, TOTAL (UG/L)	R-MW-1	2.3	1.2	15	No	15	100	No	0.01	NP (NDs)
LEAD, TOTAL (UG/L)	R-MW-2	12.59	7.12	15	No	17	5.882	No	0.01	Param.
LEAD, TOTAL (UG/L)	R-MW-3	5.163	3.425	15	No	17	29.41	No	0.01	Param.
LEAD, TOTAL (UG/L)	R-MW-4	2.15	1.25	15	No	16	93.75	No	0.01	NP (NDs)
LEAD, TOTAL (UG/L)	R-MW-5	3	1.25	15	No	16	81.25	No	0.01	NP (NDs)
LEAD, TOTAL (UG/L)	R-MW-6	3.2	1.25	15	No	16	75	No	0.01	NP (NDs)
LEAD, TOTAL (UG/L)	R-MW-7	2.3	1.2	15	No	18	88.89	No	0.01	NP (NDs)
LITHIUM, TOTAL (UG/L)	R-MW-1	2.95	2.3	64.7	No	18	94.44	No	0.01	NP (NDs)
LITHIUM, TOTAL (UG/L)	R-MW-2	3.5	2.3	64.7	No	18	83.33	No	0.01	NP (NDs)
LITHIUM, TOTAL (UG/L)	R-MW-3	3.85	2.3	64.7	No	18	88.89	No	0.01	NP (NDs)
LITHIUM, TOTAL (UG/L)	R-MW-4	43.86	39.09	64.7	No	18	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	R-MW-5	6.036	3.551	64.7	No	18	50	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	R-MW-6	5.3	2.3	64.7	No	17	70.59	No	0.01	NP (NDs)
LITHIUM, TOTAL (UG/L)	R-MW-7	33.74	28.7	64.7	No	16	0	No	0.01	Param.
MERCURY, TOTAL (UG/L)	R-MW-1	0.052	0.0185	2	No	13	92.31	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	R-MW-2	0.055	0.0185	2	No	13	92.31	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	R-MW-3	0.054	0.0185	2	No	13	92.31	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	R-MW-4	0.05	0.0185	2	No	13	92.31	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	R-MW-5	0.054	0.0185	2	No	13	92.31	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	R-MW-6	0.048	0.0185	2	No	13	100	No	0.01	NP (NDs)
MERCURY, TOTAL (UG/L)	R-MW-7	0.045	0.0195	2	No	14	100	No	0.01	NP (NDs)
MOLYBDENUM, TOTAL (UG/L)	R-MW-1	73.66	37.69	100	No	18	0	ln(x)	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	R-MW-2	186.8	149.3	100	Yes	17	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	R-MW-3	889.5	757.9	100	Yes	18	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	R-MW-4	106.6	84.55	100	No	18	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	R-MW-5	1.1	0.45	100	No	18	77.78	No	0.01	NP (NDs)
MOLYBDENUM, TOTAL (UG/L)	R-MW-6	1.976	0.7802	100	No	18	44.44	ln(x)	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	R-MW-7	187	78.2	100	No	19	0	No	0.01	NP (normality)
RADIUM [226 + 228] (PCI/L)	R-MW-1	1.04	0.7615	5	No	18	100	No	0.01	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-MW-2	1.421	0.7745	5	No	18	94.44	No	0.01	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-MW-3	1.036	0.765	5	No	18	94.44	No	0.01	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-MW-4	1.197	0.6785	5	No	18	83.33	No	0.01	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-MW-5	1.137	0.679	5	No	18	77.78	No	0.01	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-MW-6	1.726	0.645	5	No	18	72.22	No	0.01	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-MW-7	0.9655	0.657	5	No	19	89.47	No	0.01	NP (NDs)
SELENIUM, TOTAL (UG/L)	R-MW-1	6	0.21	50	No	18	22.22	No	0.01	NP (normality)
SELENIUM, TOTAL (UG/L)	R-MW-2	2.044	1.162	50	No	18	0	ln(x)	0.01	Param.
SELENIUM, TOTAL (UG/L)	R-MW-3	0.6826	0.5609	50	No	17	0	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	R-MW-4	0.14	0.09	50	No	18	61.11	No	0.01	NP (NDs)
SELENIUM, TOTAL (UG/L)	R-MW-5	0.09	0.043	50	No	18	100	No	0.01	NP (NDs)
SELENIUM, TOTAL (UG/L)	R-MW-6	0.42	0.22	50	No	17	17.65	No	0.01	NP (normality)
SELENIUM, TOTAL (UG/L)	R-MW-7	0.1	0.06	50	No	19	78.95	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	R-MW-1	0.25	0.018	2	No	14	92.86	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	R-MW-2	0.25	0.018	2	No	15	100	No	0.01	NP (NDs)

Confidence Interval

Rush Island E.C. Client: Ameren Data: RIEC Data Printed 7/19/2022, 2:52 PM

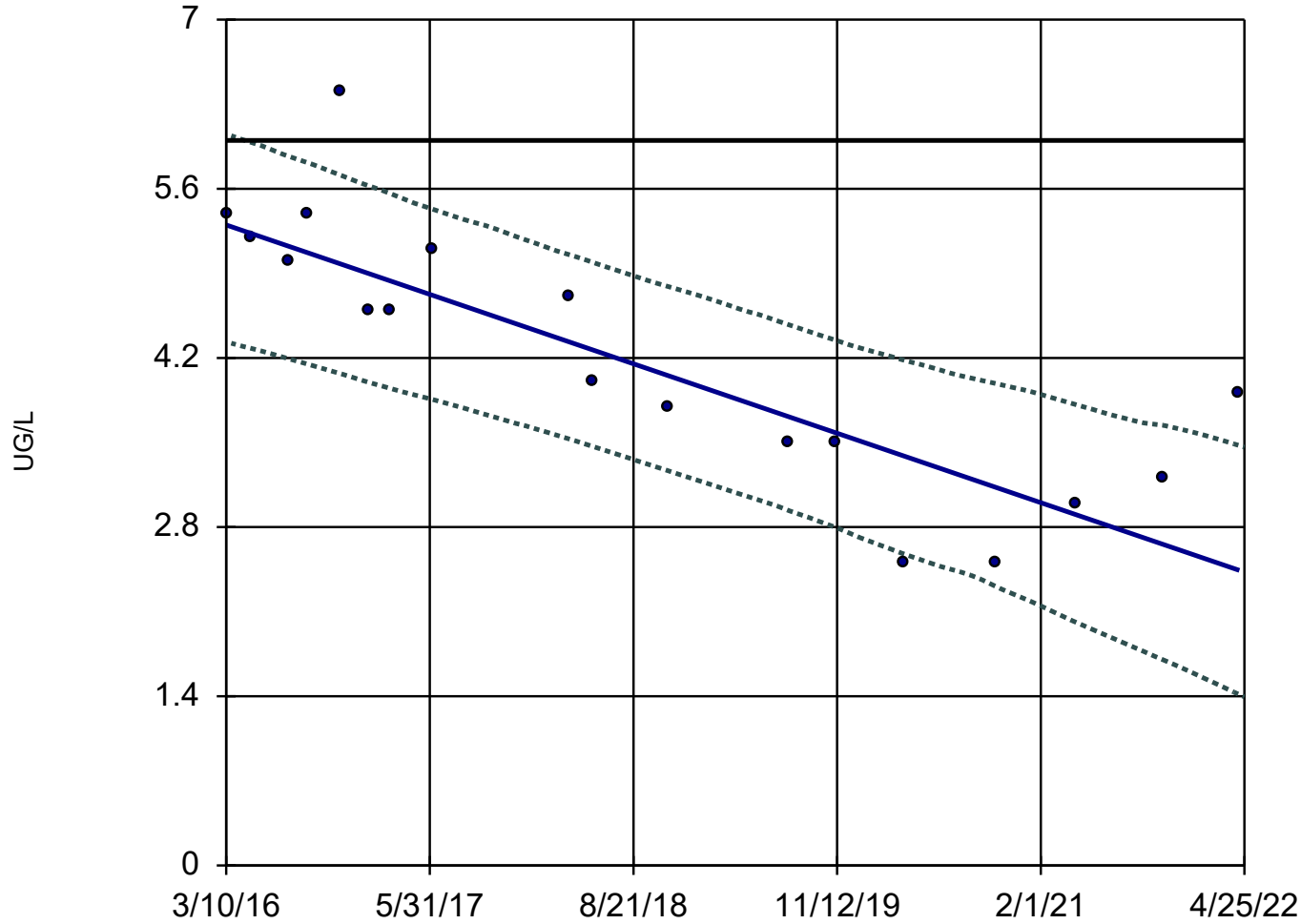
<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
THALLIUM, TOTAL (UG/L)	R-MW-3	0.25	0.018	2	No	14	100	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	R-MW-4	0.25	0.018	2	No	14	100	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	R-MW-5	0.25	0.018	2	No	14	100	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	R-MW-6	0.25	0.018	2	No	14	92.86	No	0.01	NP (NDs)
THALLIUM, TOTAL (UG/L)	R-MW-7	0.25	0.018	2	No	15	93.33	No	0.01	NP (NDs)

APPENDIX B

**Sanitas Trending Confidence
Bands Statistical Output**

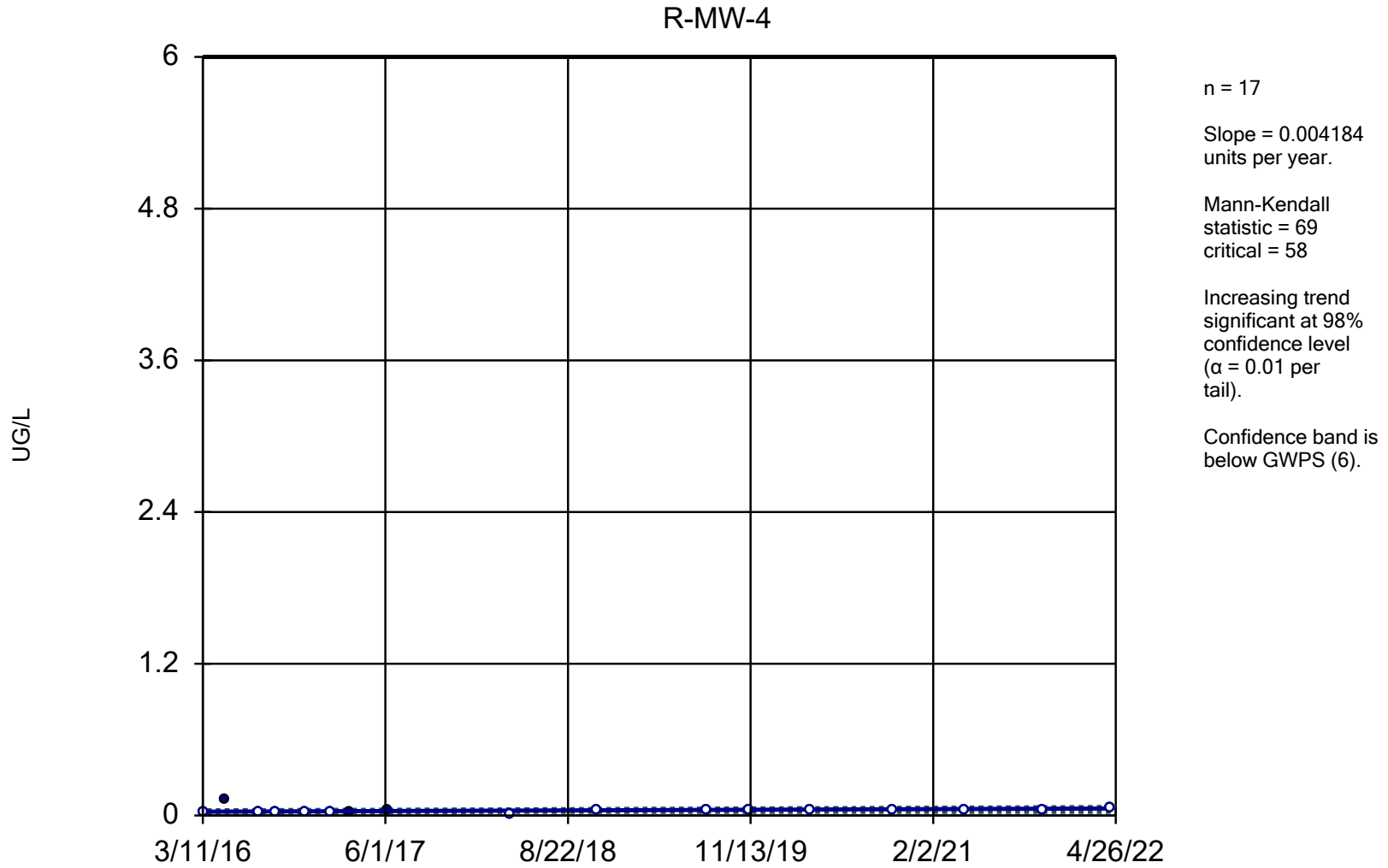
Sen's Slope and 95% Confidence Band

R-MW-2



n = 18
Slope = -0.4687 units per year.
Mann-Kendall statistic = -103 critical = -63
Decreasing trend significant at 98% confidence level ($\alpha = 0.01$ per tail).
Confidence band intersects GWPS (6) on 05/04/16.

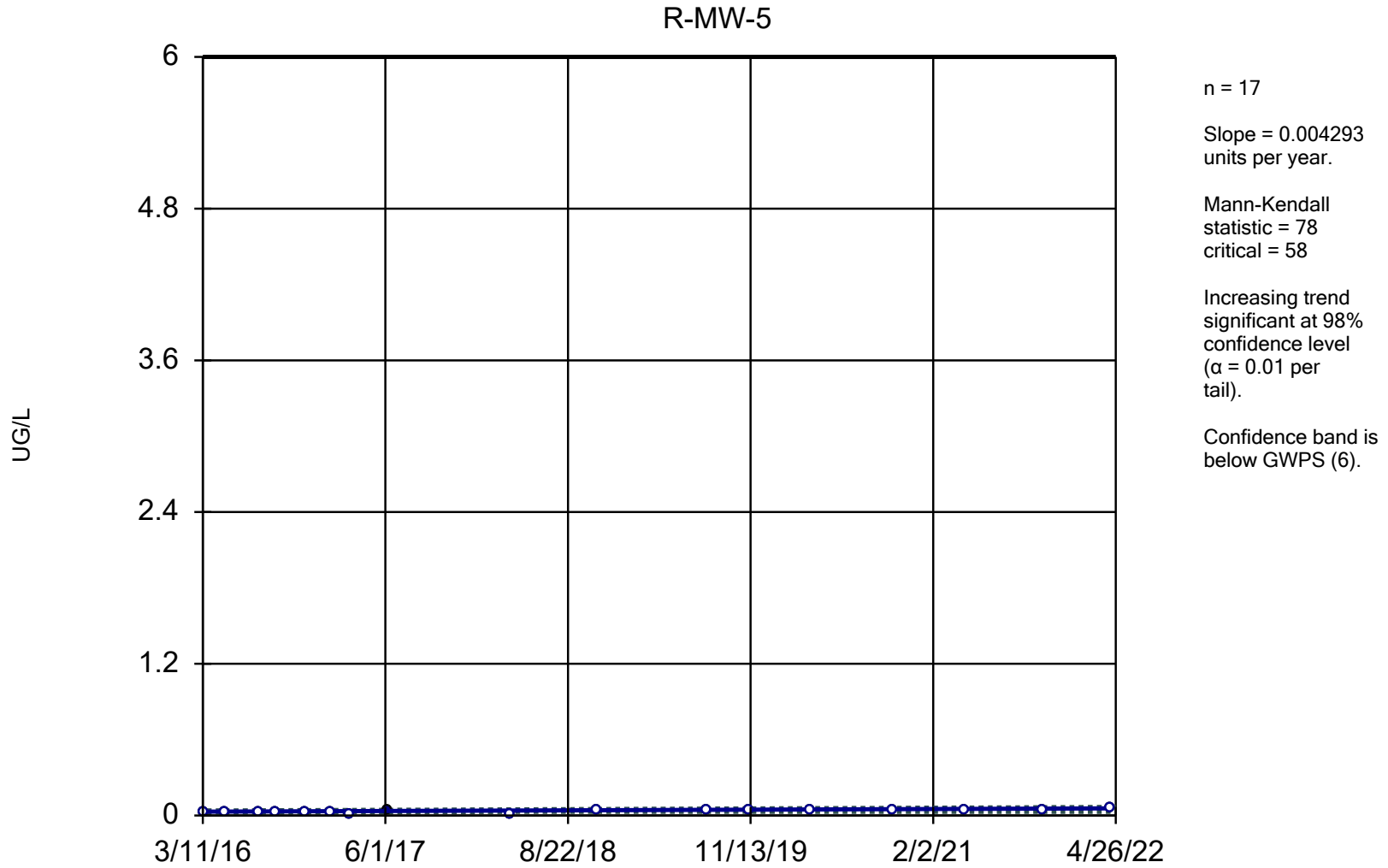
Sen's Slope and 95% Confidence Band



Constituent: ANTIMONY, TOTAL Analysis Run 7/19/2022 2:46 PM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

Sen's Slope and 95% Confidence Band

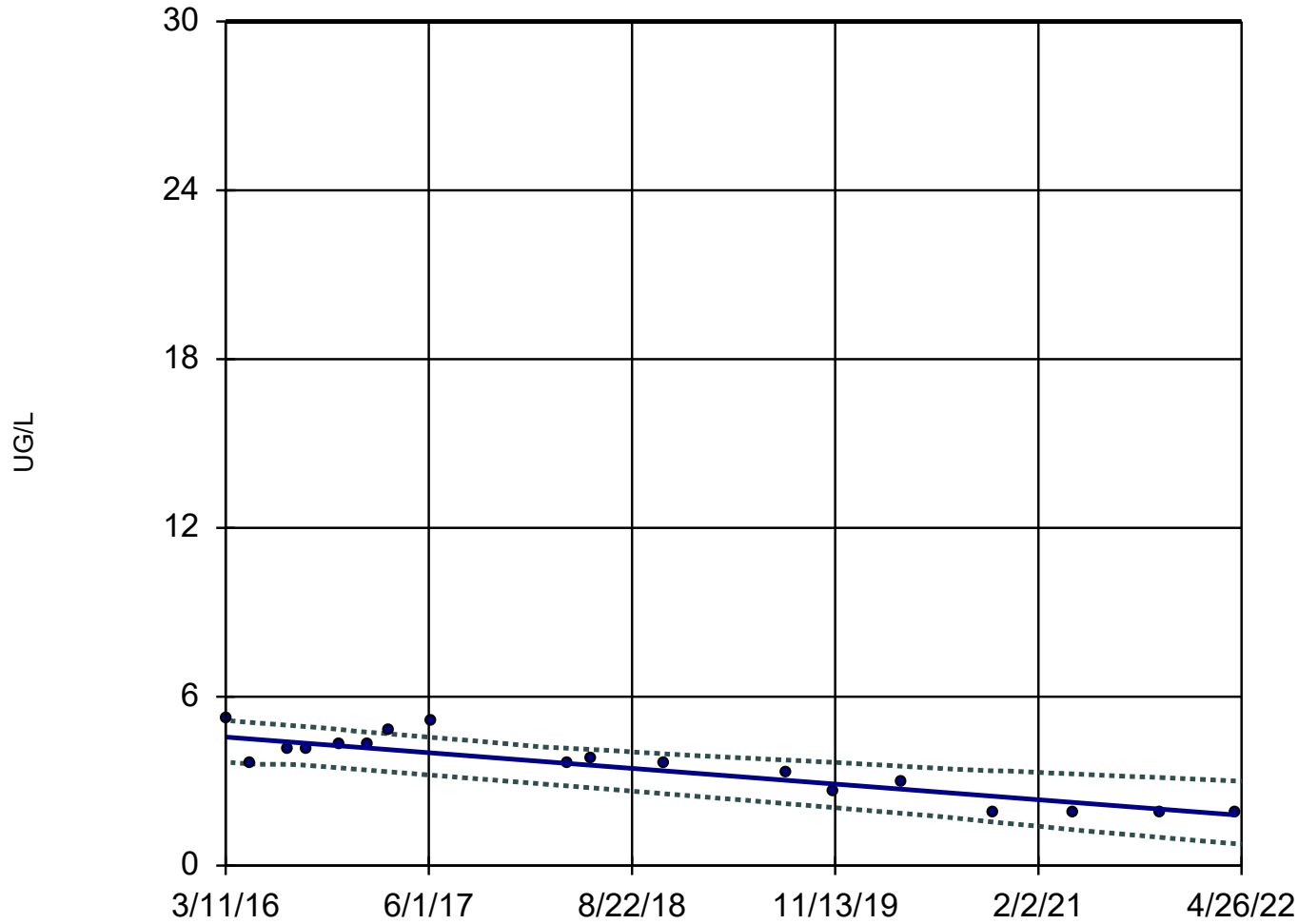


Constituent: ANTIMONY, TOTAL Analysis Run 7/19/2022 2:46 PM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

Sen's Slope and 95% Confidence Band

R-MW-5



n = 18

Slope = -0.4547
units per year.

Mann-Kendall
statistic = -98
critical = -63

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

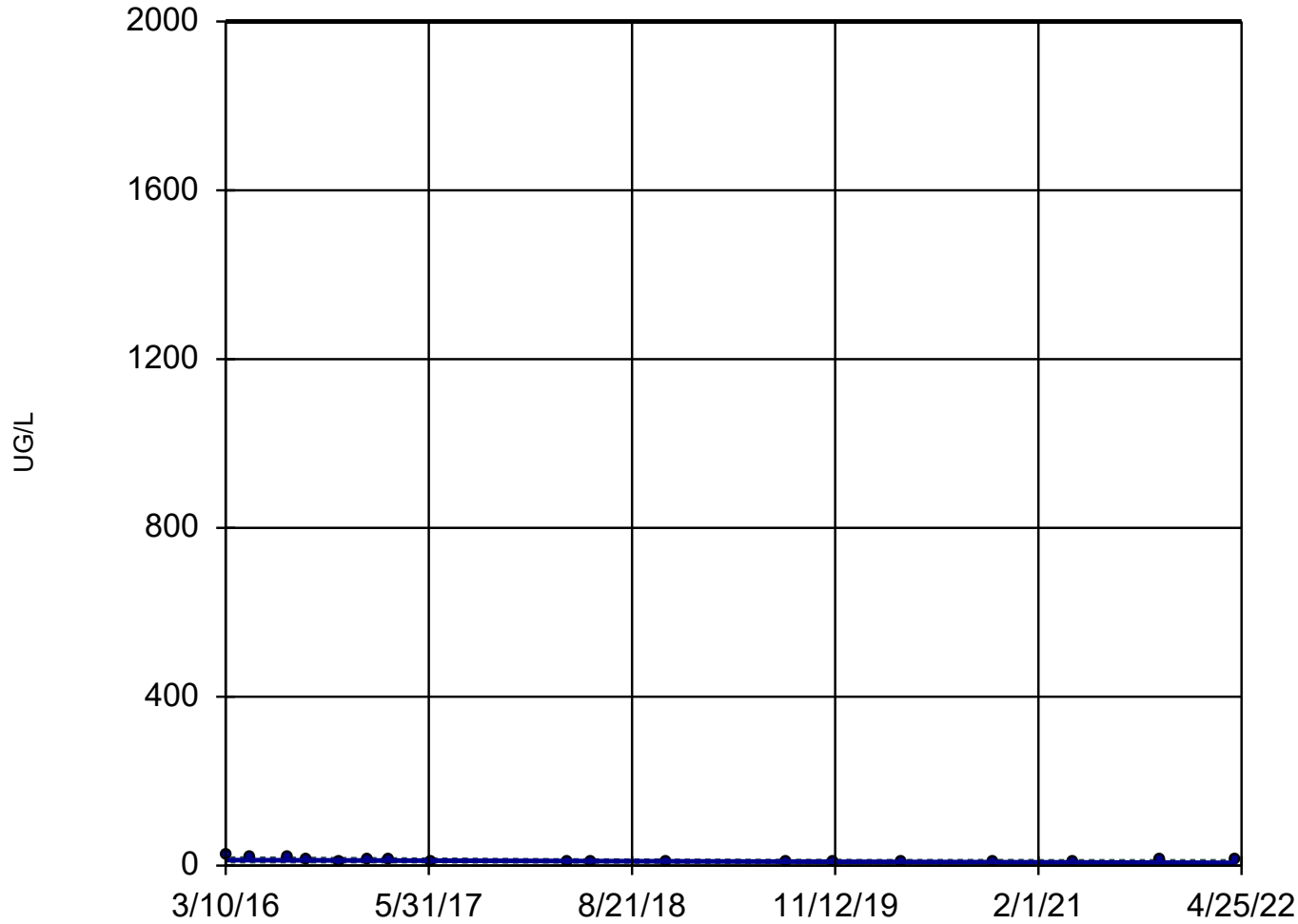
Confidence band is
below GWPS (30).

Constituent: ARSENIC, TOTAL Analysis Run 7/19/2022 2:46 PM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

Sen's Slope and 95% Confidence Band

R-MW-2



n = 18

Slope = -1.063
units per year.

Mann-Kendall
statistic = -86
critical = -63

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

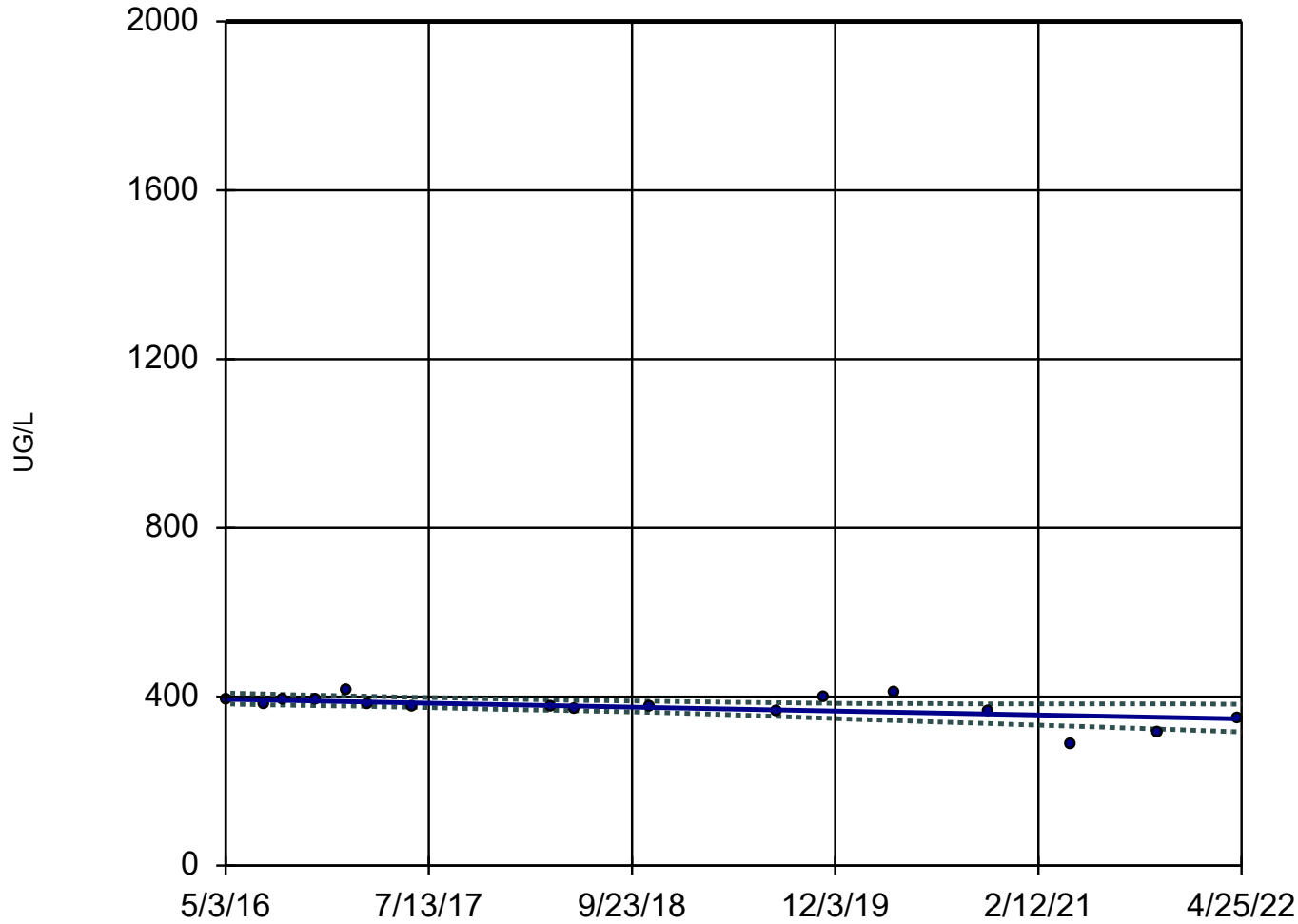
Confidence band is
below GWPS (2000).

Constituent: BARIUM, TOTAL Analysis Run 7/19/2022 2:46 PM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

Sen's Slope and 95% Confidence Band

R-MW-5



n = 17

Slope = -7.761
units per year.

Mann-Kendall
statistic = -65
critical = -58

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

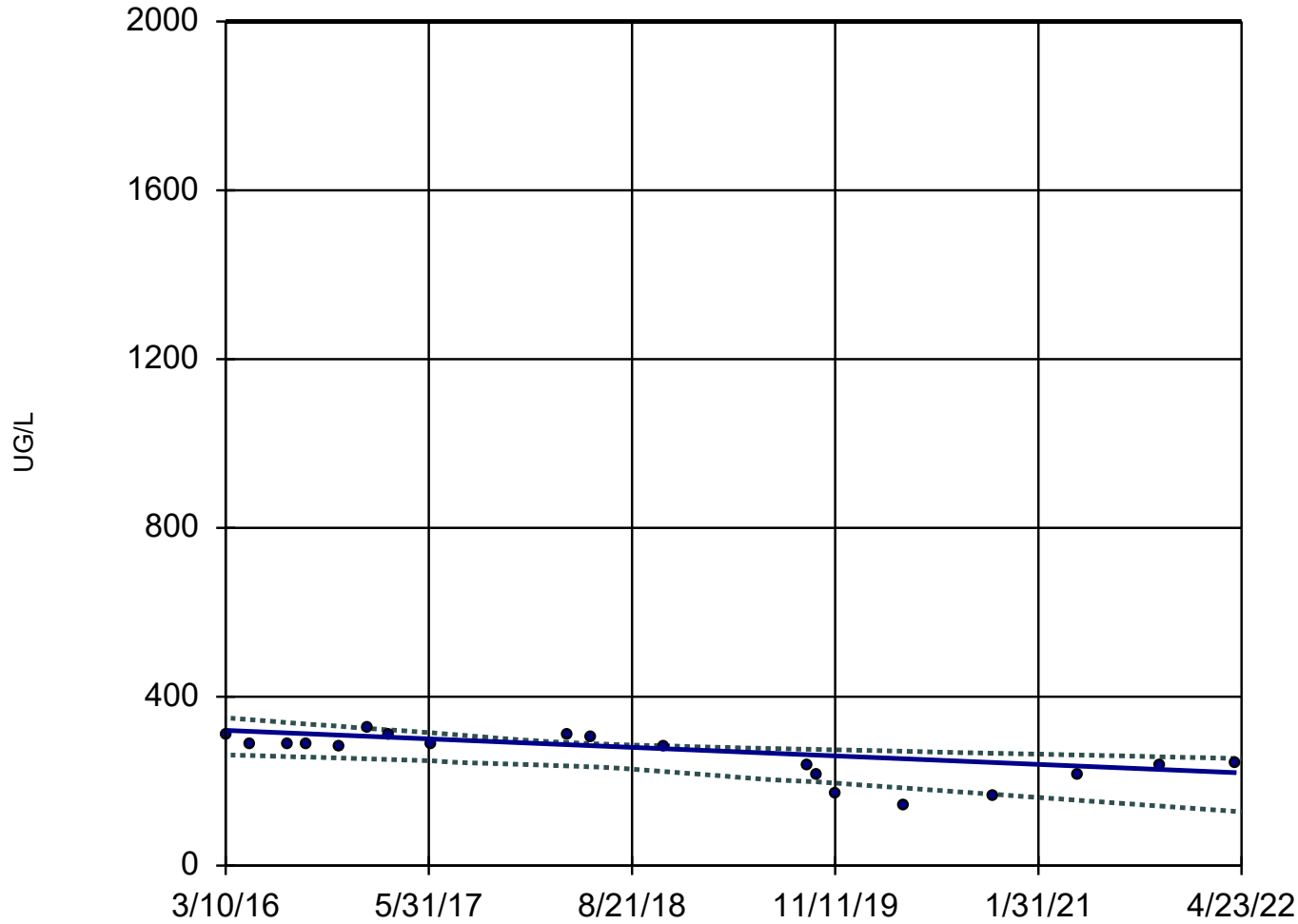
Confidence band is
below GWPS (2000).

Constituent: BARIUM, TOTAL Analysis Run 7/19/2022 2:46 PM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

Sen's Slope and 95% Confidence Band

R-MW-7



n = 19

Slope = -16.47
units per year.

Mann-Kendall
statistic = -90
critical = -68

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

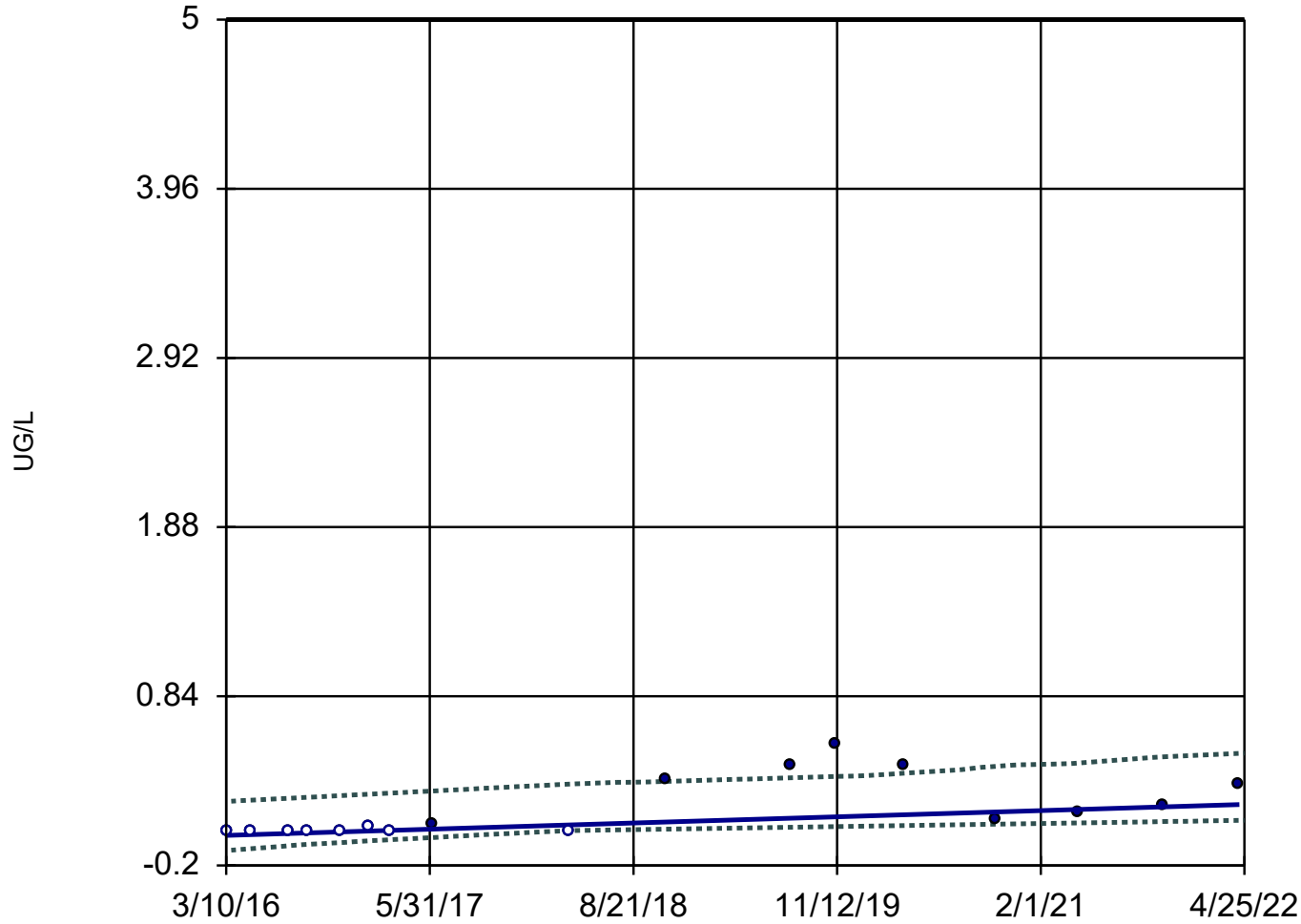
Confidence band is
below GWPS (2000).

Constituent: BARIUM, TOTAL Analysis Run 7/19/2022 2:46 PM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

Sen's Slope and 95% Confidence Band

R-MW-3



n = 17

Slope = 0.03102
units per year.

Mann-Kendall
statistic = 64
critical = 58

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

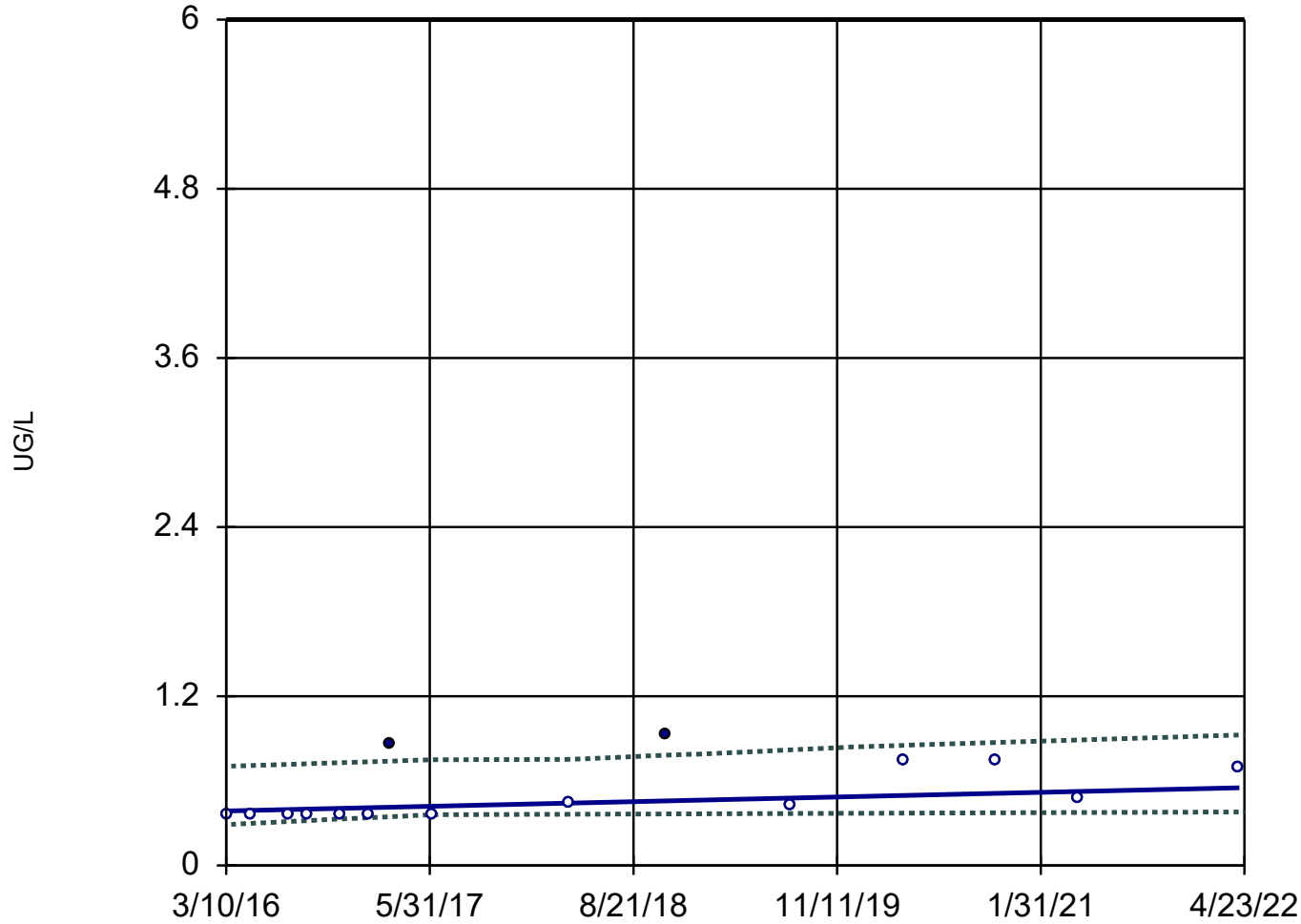
Confidence band is
below GWPS (5).

Constituent: CADMIUM, TOTAL Analysis Run 7/19/2022 2:46 PM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

Sen's Slope and 95% Confidence Band

R-MW-1



n = 15

Slope = 0.02701
units per year.

Mann-Kendall
statistic = 55
critical = 48

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

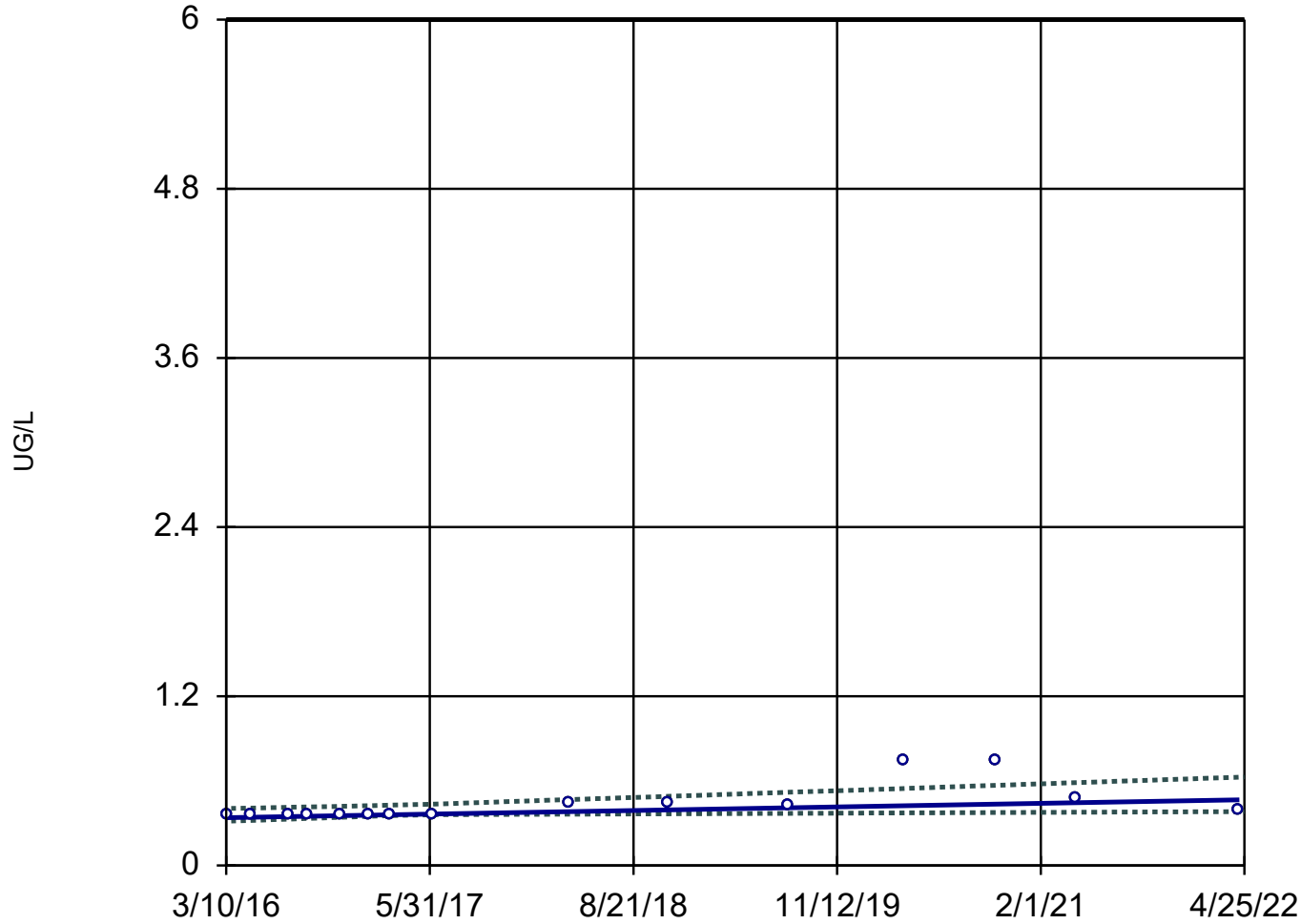
Confidence band is
below GWPS (6).

Constituent: COBALT, TOTAL Analysis Run 7/19/2022 2:46 PM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

Sen's Slope and 95% Confidence Band

R-MW-2



n = 15

Slope = 0.02072
units per year.

Mann-Kendall
statistic = 67
critical = 48

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

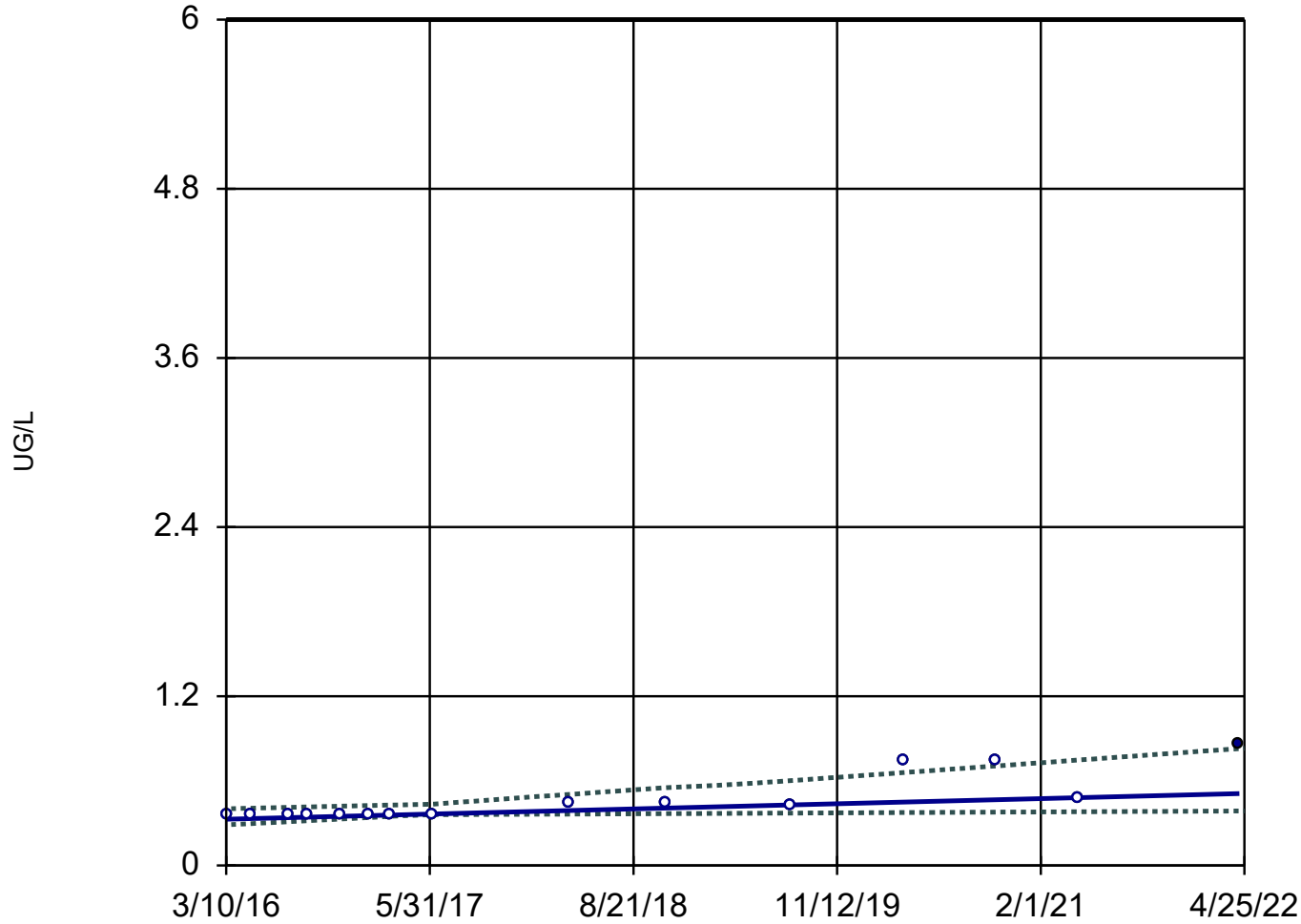
Confidence band is
below GWPS (6).

Constituent: COBALT, TOTAL Analysis Run 7/19/2022 2:46 PM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

Sen's Slope and 95% Confidence Band

R-MW-3



n = 15

Slope = 0.02995
units per year.

Mann-Kendall
statistic = 79
critical = 48

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

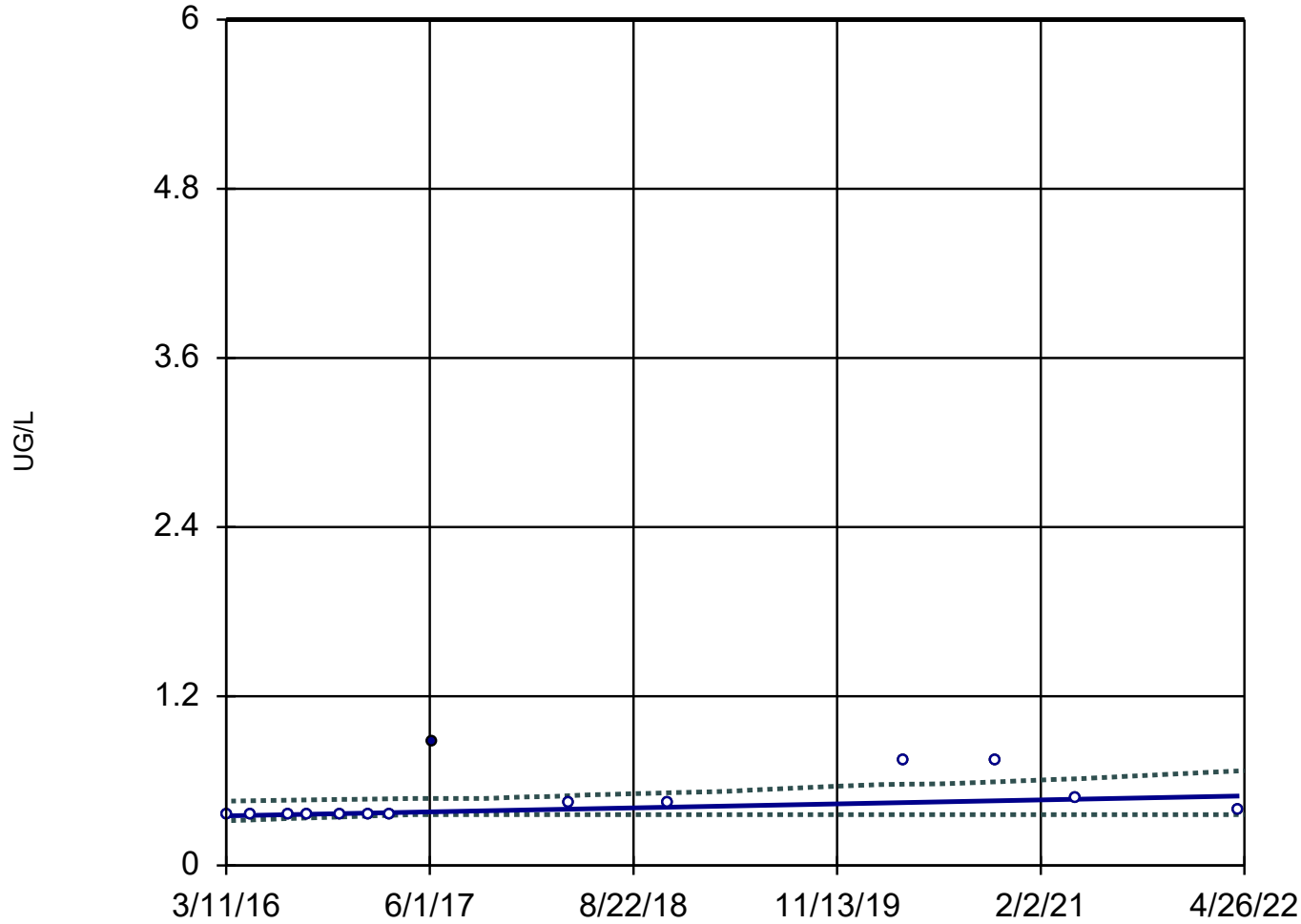
Confidence band is
below GWPS (6).

Constituent: COBALT, TOTAL Analysis Run 7/19/2022 2:46 PM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

Sen's Slope and 95% Confidence Band

R-MW-6



n = 14

Slope = 0.02311
units per year.

Mann-Kendall
statistic = 48
critical = 44

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

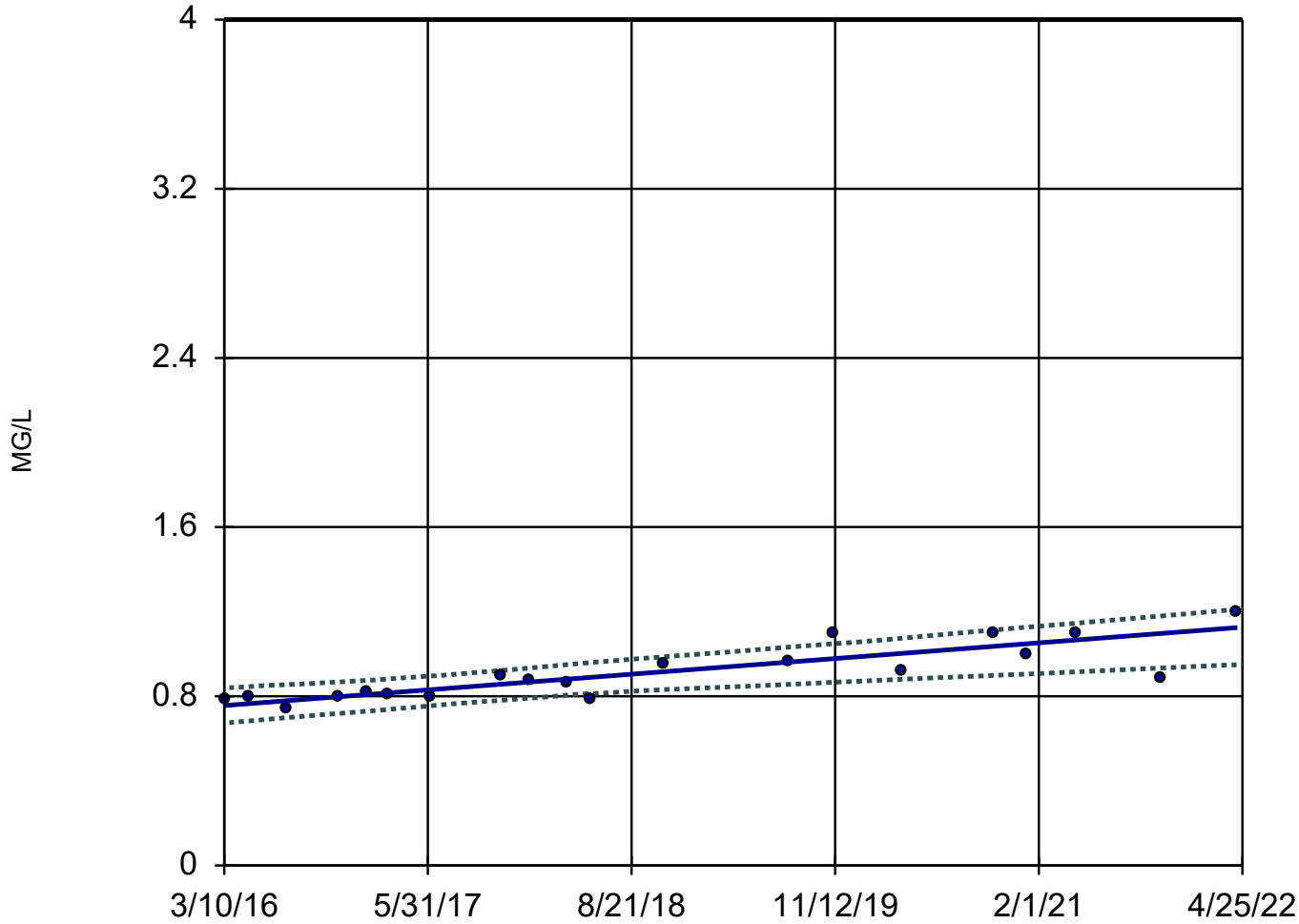
Confidence band is
below GWPS (6).

Constituent: COBALT, TOTAL Analysis Run 7/19/2022 2:46 PM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

Sen's Slope and 95% Confidence Band

R-MW-3



n = 20

Slope = 0.06045
units per year.

Mann-Kendall
statistic = 125
critical = 73

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

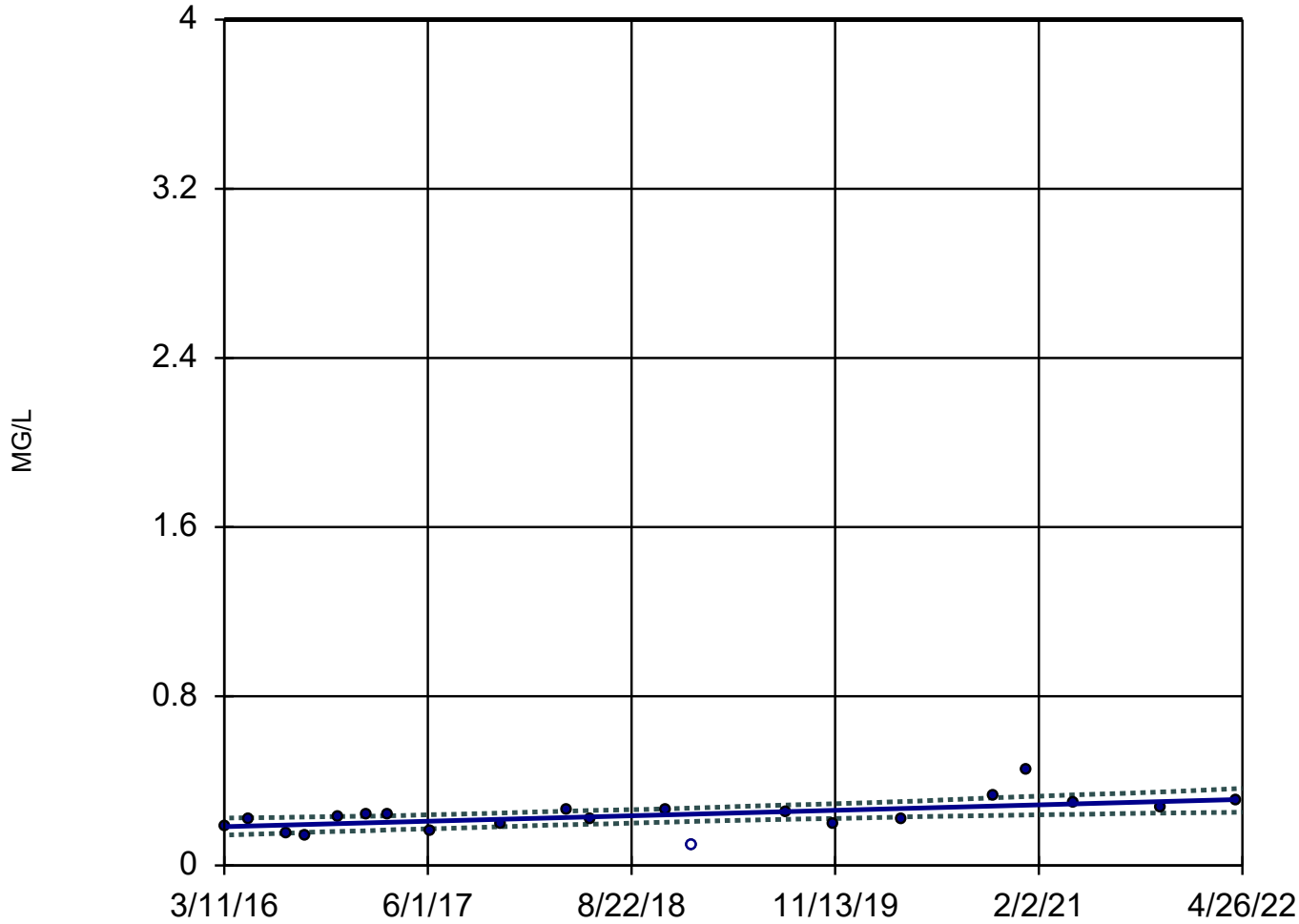
Confidence band is
below GWPS (4).

Constituent: FLUORIDE, TOTAL Analysis Run 7/19/2022 2:46 PM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

Sen's Slope and 95% Confidence Band

R-MW-6



n = 21

Slope = 0.021
units per year.

Mann-Kendall
statistic = 99
critical = 78

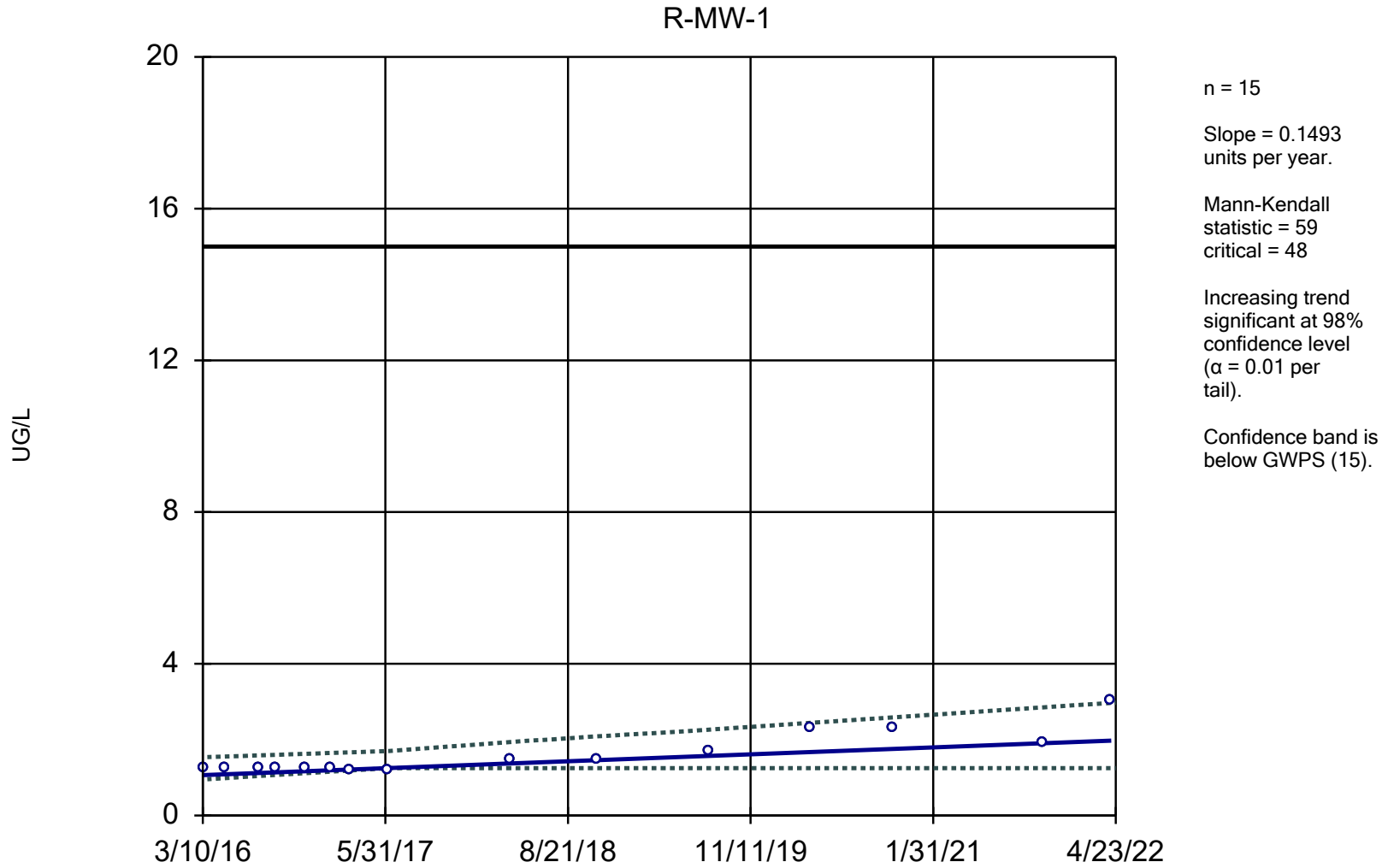
Increasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Confidence band is
below GWPS (4).

Constituent: FLUORIDE, TOTAL Analysis Run 7/19/2022 2:46 PM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

Sen's Slope and 95% Confidence Band

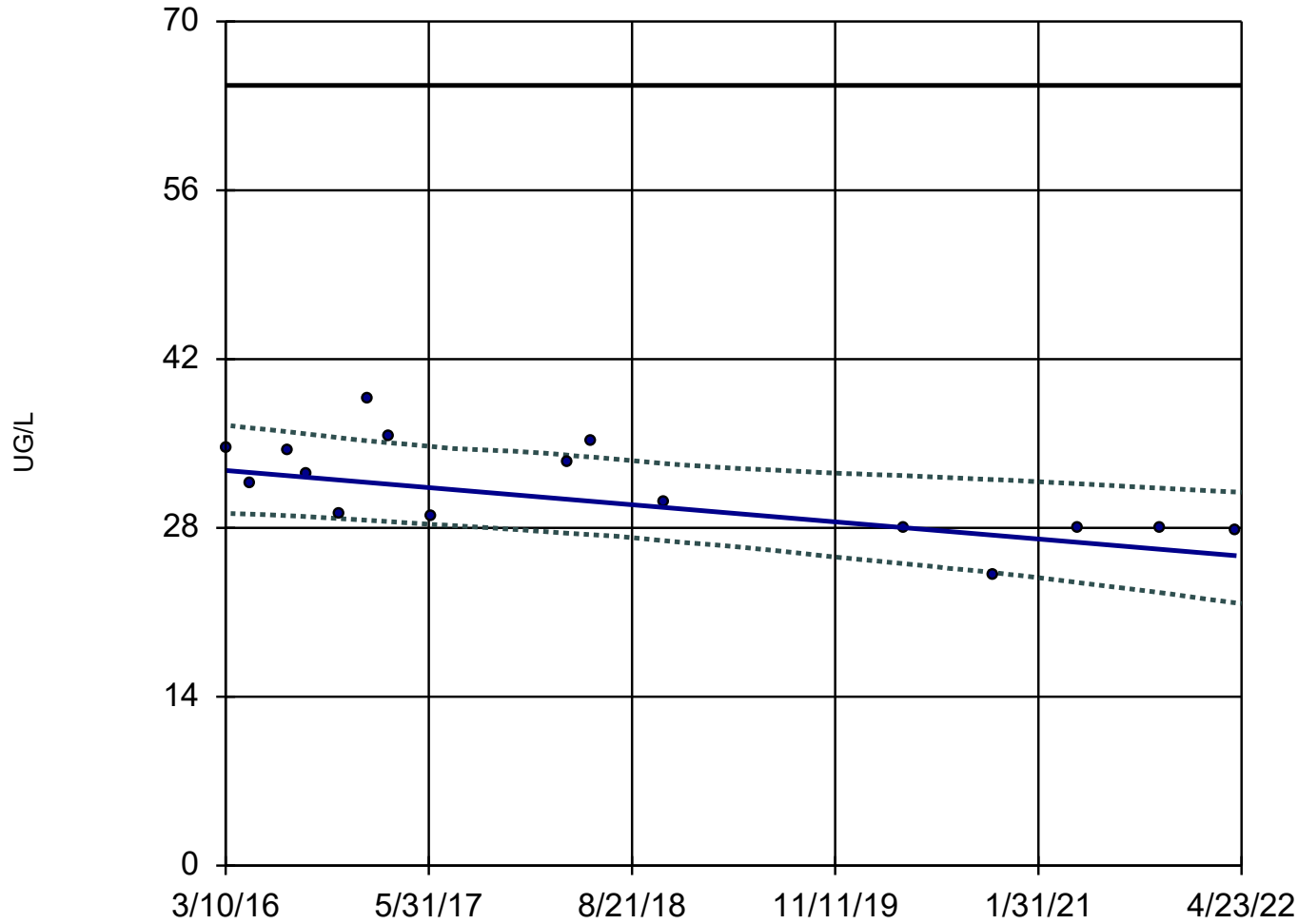


Constituent: LEAD, TOTAL Analysis Run 7/19/2022 2:47 PM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

Sen's Slope and 95% Confidence Band

R-MW-7



n = 16

Slope = -1.16
units per year.

Mann-Kendall
statistic = -61
critical = -53

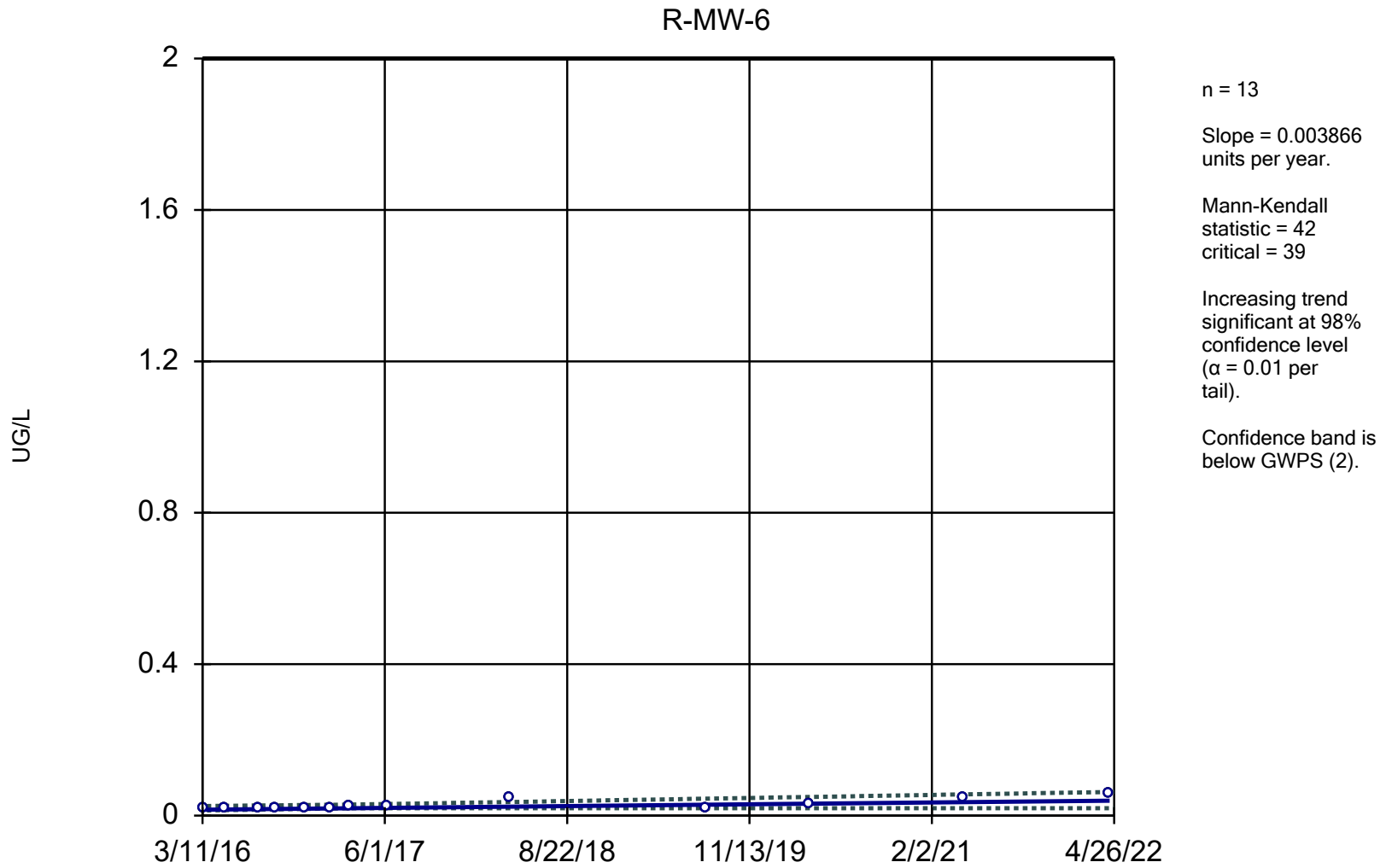
Decreasing trend
significant at 98%
confidence level
($\alpha = 0.01$ per
tail).

Confidence band is
below GWPS (64.7).

Constituent: LITHIUM, TOTAL Analysis Run 7/19/2022 2:47 PM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

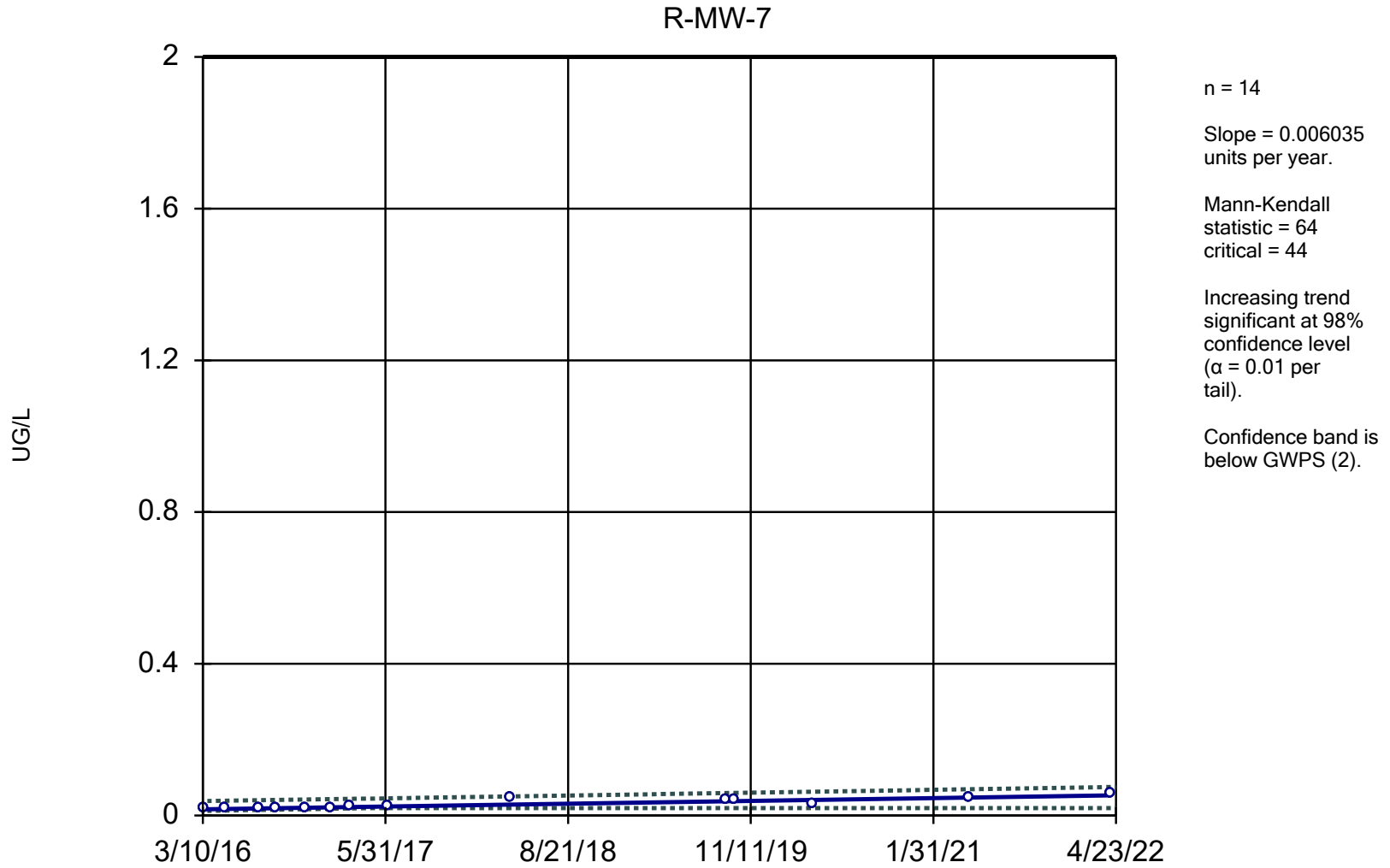
Sen's Slope and 95% Confidence Band



Constituent: MERCURY, TOTAL Analysis Run 7/19/2022 2:47 PM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

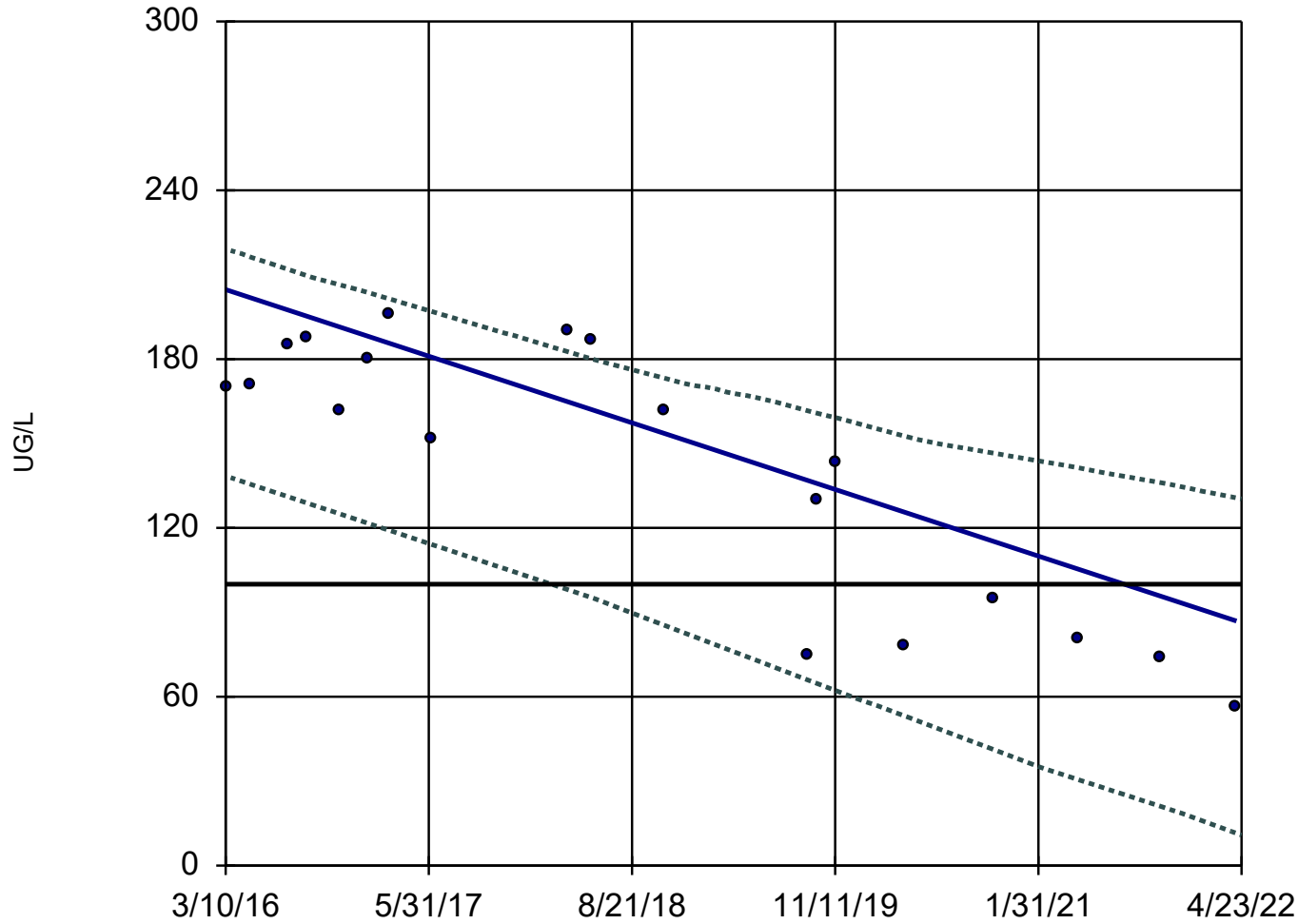
Sen's Slope and 95% Confidence Band



Constituent: MERCURY, TOTAL Analysis Run 7/19/2022 2:47 PM View: Assessment Monitoring
Rush Island E.C. Client: Ameren Data: RIEC Data

Sen's Slope and 95% Confidence Band

R-MW-7



n = 19

Slope = -19.33
units per year.

Mann-Kendall
statistic = -96
critical = -68

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

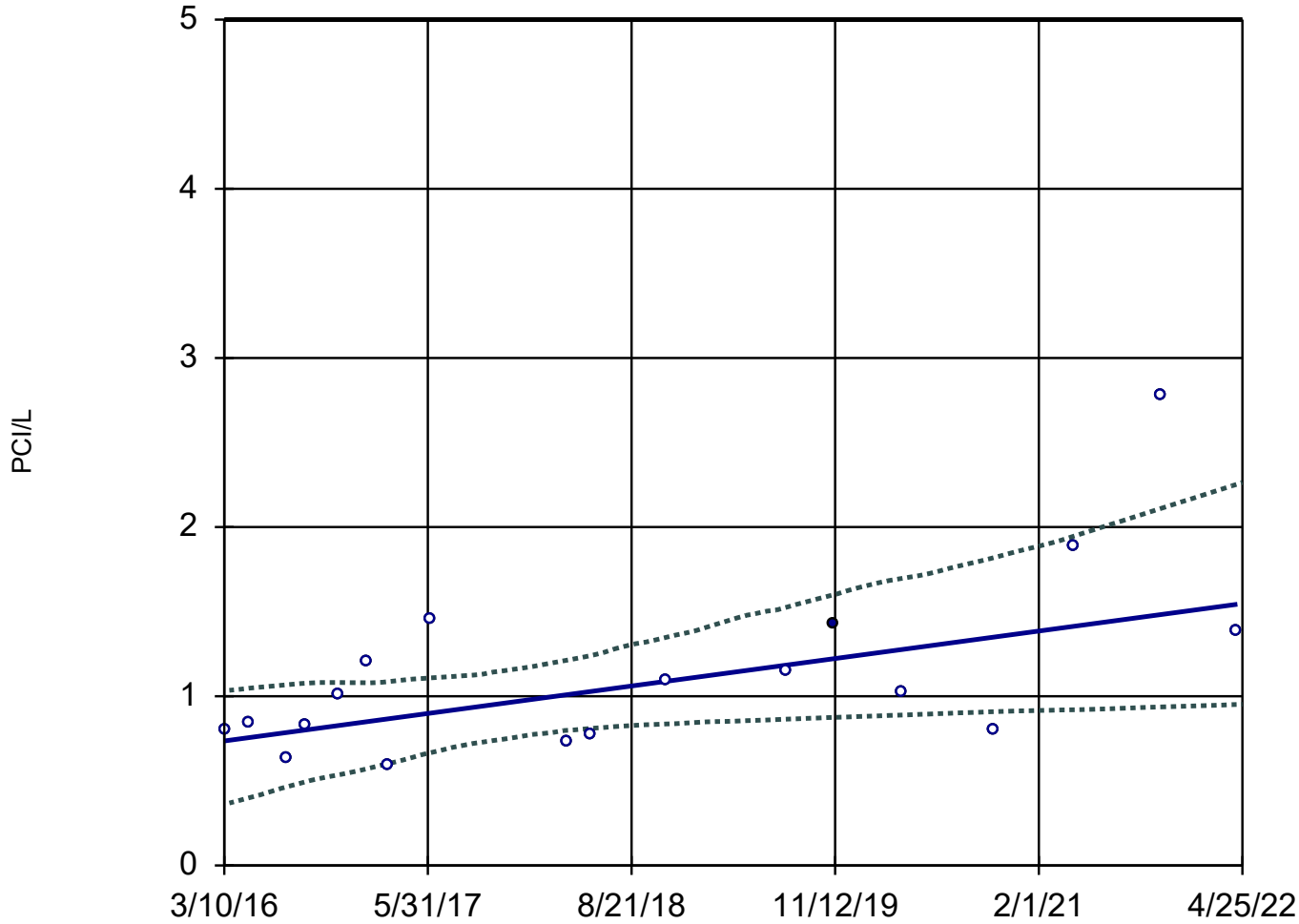
Confidence band intersects
GWPS (100) on 03/02/18.

Constituent: MOLYBDENUM, TOTAL Analysis Run 7/19/2022 2:47 PM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

Sen's Slope and 95% Confidence Band

R-MW-2



n = 18

Slope = 0.1325
units per year.

Mann-Kendall
statistic = 65
critical = 63

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

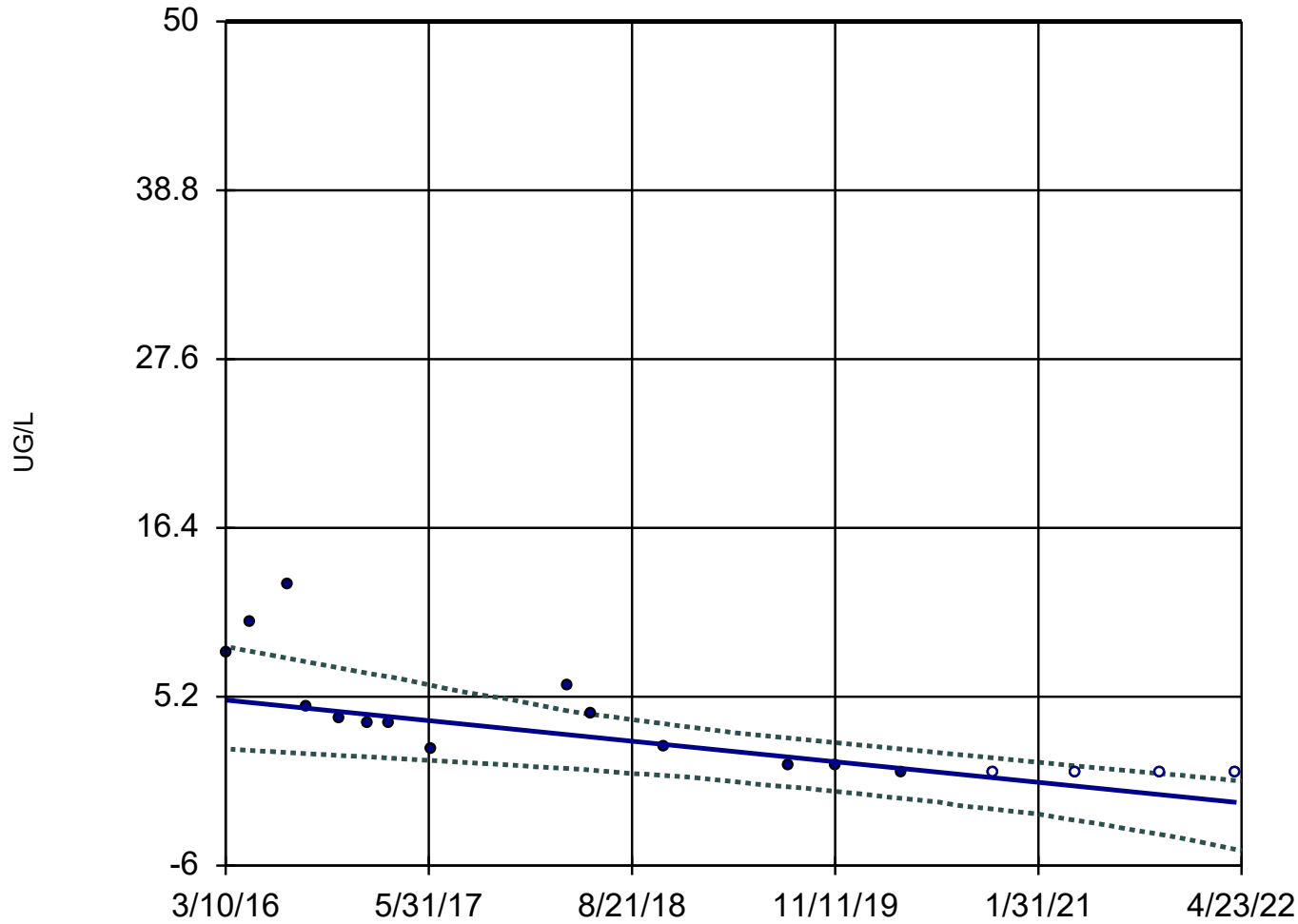
Confidence band is
below GWPS (5).

Constituent: RADIUM [226 + 228] Analysis Run 7/19/2022 2:47 PM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

Sen's Slope and 95% Confidence Band

R-MW-1



n = 18

Slope = -1.114
units per year.

Mann-Kendall
statistic = -119
critical = -63

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

Confidence band is
below GWPS (50).

Constituent: SELENIUM, TOTAL Analysis Run 7/19/2022 2:47 PM View: Assessment Monitoring

Rush Island E.C. Client: Ameren Data: RIEC Data

Trend Test

Rush Island E.C. Client: Ameren Data: RIEC Data Printed 7/19/2022, 2:49 PM

<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Normality</u>	<u>Xform</u>	<u>Alpha</u>	<u>Method</u>
ANTIMONY, TOTAL (UG/L)	R-MW-1	-0.1093	-45	-63	No	18	16.67	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	R-MW-2	-0.4687	-103	-63	Yes	18	0	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	R-MW-3	-0.00...	-25	-63	No	18	44.44	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	R-MW-4	0.004184	69	58	Yes	17	82.35	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	R-MW-5	0.004293	78	58	Yes	17	94.12	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	R-MW-6	0.004103	20	63	No	18	61.11	n/a	n/a	0.02	NP
ANTIMONY, TOTAL (UG/L)	R-MW-7	0.004214	39	68	No	19	78.95	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	R-MW-1	-1.154	-46	-63	No	18	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	R-MW-2	-2.952	-24	-63	No	18	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	R-MW-3	-4.206	-15	-63	No	18	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	R-MW-4	0.8382	51	63	No	18	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	R-MW-5	-0.4547	-98	-63	Yes	18	0	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	R-MW-6	0.1251	21	48	No	15	20	n/a	n/a	0.02	NP
ARSENIC, TOTAL (UG/L)	R-MW-7	4.16	35	68	No	19	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	R-MW-1	2.522	47	58	No	17	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	R-MW-2	-1.063	-86	-63	Yes	18	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	R-MW-3	-0.6555	-21	-63	No	18	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	R-MW-4	5.307	40	63	No	18	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	R-MW-5	-7.761	-65	-58	Yes	17	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	R-MW-6	3.42	21	58	No	17	0	n/a	n/a	0.02	NP
BARIUM, TOTAL (UG/L)	R-MW-7	-16.47	-90	-68	Yes	19	0	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	R-MW-1	0	-10	-44	No	14	100	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	R-MW-2	0	4	44	No	14	100	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	R-MW-3	0	10	44	No	14	92.86	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	R-MW-4	0	4	44	No	14	100	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	R-MW-5	0	4	44	No	14	100	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	R-MW-6	0	10	44	No	14	92.86	n/a	n/a	0.02	NP
BERYLLIUM, TOTAL (UG/L)	R-MW-7	0	-10	-44	No	14	100	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	R-MW-1	0.003314	40	58	No	17	76.47	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	R-MW-2	0.03274	45	58	No	17	17.65	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	R-MW-3	0.03102	64	58	Yes	17	47.06	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	R-MW-4	0.003007	44	58	No	17	76.47	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	R-MW-5	0.002178	58	58	No	17	100	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	R-MW-6	0.001491	47	53	No	16	100	n/a	n/a	0.02	NP
CADMIUM, TOTAL (UG/L)	R-MW-7	0.003007	56	63	No	18	77.78	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	R-MW-1	-0.00...	-4	-53	No	16	56.25	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	R-MW-2	-0.03439	-18	-53	No	16	25	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	R-MW-3	-0.06691	-22	-53	No	16	25	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	R-MW-4	-0.05048	-22	-48	No	15	33.33	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	R-MW-5	-0.04047	-33	-53	No	16	25	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	R-MW-6	-0.00...	-6	-48	No	15	60	n/a	n/a	0.02	NP
CHROMIUM, TOTAL (UG/L)	R-MW-7	-0.01875	-16	-58	No	17	41.18	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	R-MW-1	0.02701	55	48	Yes	15	86.67	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	R-MW-2	0.02072	67	48	Yes	15	100	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	R-MW-3	0.02995	79	48	Yes	15	93.33	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	R-MW-4	0.0207	41	48	No	15	80	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	R-MW-5	0.006636	26	48	No	15	86.67	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	R-MW-6	0.02311	48	44	Yes	14	92.86	n/a	n/a	0.02	NP
COBALT, TOTAL (UG/L)	R-MW-7	0.07468	75	53	Yes	16	75	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	R-MW-1	-0.00...	-16	-89	No	23	13.04	n/a	n/a	0.02	NP

Trend Test

Rush Island E.C. Client: Ameren Data: RIEC Data Printed 7/19/2022, 2:49 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
FLUORIDE, TOTAL (MG/L)	R-MW-2	0.06221	72	78	No	21	0	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	R-MW-3	0.06045	125	73	Yes	20	0	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	R-MW-4	-0.00...	-29	-78	No	21	0	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	R-MW-5	0.006984	44	73	No	20	5	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	R-MW-6	0.021	99	78	Yes	21	4.762	n/a	n/a	0.02	NP
FLUORIDE, TOTAL (MG/L)	R-MW-7	0	6	84	No	22	4.545	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	R-MW-1	0.1493	59	48	Yes	15	100	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	R-MW-2	0.5081	22	58	No	17	5.882	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	R-MW-3	-0.3359	-33	-58	No	17	29.41	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	R-MW-4	0.135	44	53	No	16	93.75	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	R-MW-5	0.1498	53	53	No	16	81.25	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	R-MW-6	0.173	45	53	No	16	75	n/a	n/a	0.02	NP
LEAD, TOTAL (UG/L)	R-MW-7	0.1469	57	63	No	18	88.89	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	R-MW-1	0.1294	29	63	No	18	94.44	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	R-MW-2	0.06685	34	63	No	18	83.33	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	R-MW-3	0.1977	47	63	No	18	88.89	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	R-MW-4	-1.233	-63	-63	No	18	0	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	R-MW-5	0.0978	9	63	No	18	50	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	R-MW-6	0.2388	28	58	No	17	70.59	n/a	n/a	0.02	NP
LITHIUM, TOTAL (UG/L)	R-MW-7	-1.16	-61	-53	Yes	16	0	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	R-MW-1	0.003936	37	39	No	13	92.31	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	R-MW-2	0.003932	37	39	No	13	92.31	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	R-MW-3	0.003932	37	39	No	13	92.31	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	R-MW-4	0.003938	37	39	No	13	92.31	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	R-MW-5	0.003938	37	39	No	13	92.31	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	R-MW-6	0.003866	42	39	Yes	13	100	n/a	n/a	0.02	NP
MERCURY, TOTAL (UG/L)	R-MW-7	0.006035	64	44	Yes	14	100	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	R-MW-1	0.6925	5	63	No	18	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	R-MW-2	-5.67	-22	-58	No	17	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	R-MW-3	9.795	15	63	No	18	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	R-MW-4	-3.219	-33	-63	No	18	0	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	R-MW-5	0.0656	32	63	No	18	77.78	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	R-MW-6	0.09838	12	63	No	18	44.44	n/a	n/a	0.02	NP
MOLYBDENUM, TOTAL (UG/L)	R-MW-7	-19.33	-96	-68	Yes	19	0	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	R-MW-1	0.02886	20	63	No	18	100	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	R-MW-2	0.1325	65	63	Yes	18	94.44	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	R-MW-3	0.02557	37	63	No	18	94.44	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	R-MW-4	0.01359	11	63	No	18	83.33	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	R-MW-5	0.01904	31	63	No	18	77.78	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	R-MW-6	0.02347	9	63	No	18	72.22	n/a	n/a	0.02	NP
RADIUM [226 + 228] (PCI/L)	R-MW-7	0.03558	53	68	No	19	89.47	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	R-MW-1	-1.114	-119	-63	Yes	18	22.22	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	R-MW-2	0	5	63	No	18	0	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	R-MW-3	-0.00...	-13	-58	No	17	0	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	R-MW-4	0	-8	-63	No	18	61.11	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	R-MW-5	0	-14	-63	No	18	100	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	R-MW-6	-0.0111	-21	-58	No	17	17.65	n/a	n/a	0.02	NP
SELENIUM, TOTAL (UG/L)	R-MW-7	0	7	68	No	19	78.95	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	R-MW-1	-0.03127	-37	-44	No	14	92.86	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	R-MW-2	-0.0073	-29	-48	No	15	100	n/a	n/a	0.02	NP

Trend Test

Rush Island E.C. Client: Ameren Data: RIEC Data Printed 7/19/2022, 2:49 PM

<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Normality</u>	<u>Xform</u>	<u>Alpha</u>	<u>Method</u>
THALLIUM, TOTAL (UG/L)	R-MW-3	-0.02869	-27	-44	No	14	100	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	R-MW-4	-0.02869	-27	-44	No	14	100	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	R-MW-5	-0.02869	-27	-44	No	14	100	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	R-MW-6	-0.03056	-37	-44	No	14	92.86	n/a	n/a	0.02	NP
THALLIUM, TOTAL (UG/L)	R-MW-7	-0.02872	-39	-48	No	15	93.33	n/a	n/a	0.02	NP

APPENDIX D

**October 2021 Corrective Action
Statistical Evaluation**

TECHNICAL MEMORANDUM**DATE** March 25, 2022**Project No.** 153140603**TO** Bill Kutosky
Ameren Missouri**CC** Susan Knowles, Craig Giesmann, Charlie Henderson**FROM** Jeffrey Ingram, Sean Paulsen, Mark Haddock**EMAIL** Jingram@golder.com**CORRECTIVE ACTION STATISTICAL EVALUATION FOR RCPA SURFACE IMPOUNDMENT
RUSH ISLAND ENERGY CENTER JEFFERSON COUNTY, MISSOURI**

This Technical Memorandum provides the results of the Corrective Action Monitoring statistical analyses from the October 2021 sampling event for the RCPA Surface Impoundment at the Rush Island Energy Center (RIEC) located in Jefferson County, Missouri. As outlined in the remedy selection report for the RCPA, Corrective Action at the RCPA 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.

Phase 1 of Corrective Action commenced in August 2019, and was substantially completed on December 15, 2020, with the installation of a low permeability cover system. Included in this memorandum is a brief 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**).

The initial Corrective Action sampling event was completed in April 2020, and five (5) sampling events have been completed as a part of the Corrective Action Program at the RIEC. This analysis uses results collected since the beginning of Corrective Action monitoring (April 2020) for the determination of constituents exceeding the GWPS, as data collected prior to this time was collected during active conditions of the RCPA, prior to the cessation of CCR material being added to the RCPA and is thus not representative of groundwater conditions since the initiation of closure. Several constituents were reported at concentrations below the practical quantitation limit (PQL) during the April 2020 sampling events including beryllium, mercury, and thallium. Because these constituents were not detected during the initial Corrective Action sampling event, they were not re-sampled during the subsequent 2020 semi-annual sampling events in May and October-November 2020. Only two results are available for each of these constituents, and therefore, confidence intervals could not be calculated because Corrective Action statistical analyses cannot be completed until a minimum of four (4) sampling events have been completed during the Corrective Action monitoring period. Thus, beryllium, mercury, and thallium were not evaluated in this 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. The following outliers were removed prior to the calculation of confidence limits.

- Fluoride
 - R-P-22S at Non-Detect (ND) on 4/22/2021. The result is statistically lower than other values at the same well. The low result has not been confirmed during subsequent sampling events and is an outlier.
- Lead
 - R-P-10S at 5.2 J micrograms per liter ($\mu\text{g/L}$) on 4/22/2021. The result is statistically higher than other values at the same well. The high result has not been confirmed during subsequent sampling events and is an outlier.
- Lithium
 - R-P-16S, R-P-17S, and R-P-21S at ND on 10/26/2021. Analysis of the October 2021 sampling event data revealed that laboratory dilution was required for analysis of the sample. This sample dilution caused the Method Detection Limit (MDL) to be greater than the Groundwater Protection Standard (GWPS). The samples were re-analyzed on 2/9/2022 and the resultant data are representative of the historical results for these wells. Based on professional judgment the diluted results are considered outliers.
 - R-P-19I at 8.3J $\mu\text{g/L}$ on 4/22/2021. The result is statistically lower than other values at the same well. The low result has not been confirmed during subsequent sampling events and is an outlier.
- Radium 226 & 228
 - R-P-05S at 1.277 picocuries per liter (pCi/L) on 4/9/2020. The result is statistically higher than other values at the same well. The high result has not been confirmed during subsequent sampling events and is an outlier.

An analysis of the outliers removed to date was completed and the statistical outliers that were previously removed are all still considered outliers and were not added back into the dataset.

Following the outlier analysis, the second step in the statistical analysis was to calculate confidence intervals and compare those to the GWPS¹. As stated above, the confidence intervals shown in Appendix A are calculated based on results since April 2020. Molybdenum at R-P-17S, which was identified as a statistical exceedance of the GWPS in the April 2021 sampling event is no longer an exceedance. One new exceedance for arsenic at R-P-31S was identified during the October 2021 sampling event. The other exceedances remained the same for this

¹ The GWPS is the same limit that was used during Assessment Monitoring period, which was the groundwater monitoring phase immediately prior to Corrective Action.

event as those reported for the April 2021 event. A summary of constituents exceeding the GWPS at corresponding well(s) is as follows:

- Arsenic at R-P-05S, R-P-17I, R-P-17S, R-P-19I, R-P-19S, R-P-21S, and R-P-31S
- Lead at R-P-17I and R-P-19I
- Lithium at R-P-16S, R-P-21D, and R-P-22S
- Molybdenum at R-P-10S, R-P-17D, R-P-17I, R-P-19D, R-P-19I, R-P-21D, R-P-21I, and R-P-22D

Typically, following the calculation of confidence intervals, trend tests would be completed using the Sen's Slope / Mann Kendall analysis as outlined in the statistical analysis plan. However, Sen's Slope / Mann Kendall analysis require 8 independent sampling results to complete as outlined in the USEPA Unified Guidance. Since only 5 sampling events have occurred after the cessation of CCR disposal into the RCPA, the Sen's Slope / Mann Kendall test cannot be completed. Therefore, no constituent well pairs were determined to have a significant trend and no trend charts are included with this Technical Memorandum.

Using corrective action statistical methods, GWPS exceedances are reported for Arsenic, Lead, Lithium, and Molybdenum. However, variability in the initial groundwater sampling results during and directly after the closure of the RCPA is expected, especially at wells nearest the CCR unit, where closure grading and disturbance activities were greatest. The concentrations reported during the preliminary events following closure are expected to be variable, but to ultimately decrease over time as stabilization occurs and supplemental corrective measures are put into service.

Golder appreciates this opportunity to provide hydrogeological and engineering support services to Ameren. If you have any questions or comments regarding the information provided, please call our office at (314) 984-8800.

Sincerely,



Jeffrey Ingram
Senior Consultant, Geologist



Sean Paulsen
Senior Lead Consultant, Geologist

JSI/SCP/MNH

Attachments: Table 1 – RCPA Groundwater Protection Standards
Appendix A – Sanitas Confidence Interval Statistical Output

**Table 1 - RCPA Groundwater Protection Standards
RCPA Surface Impoundment
Rush Island Energy Center**

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	30	30
Barium	µg/L	2000	2000	550.5
Beryllium	µg/L	4	4	DQR
Cadmium	µg/L	5	5	DQR
Chromium	µg/L	100	100	2.372
Cobalt	µg/L	6	6	DQR
Fluoride	mg/L	4	4	0.2767
Lead	µg/L	15	15	DQR
Lithium	µg/L	40	64.7	64.7
Mercury	µg/L	2	2	DQR
Molybdenum	µg/L	100	100	DQR
Radium 226 + 228	pCi/L	5	5	2.297
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) Drinking Water Standards and Health Advisories. <http://water.epa.gov/drink/contaminants/index.cfm>.

5. Health Based Groundwater Protection Standards (GWPS) were adopted 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 up through April 2021 from monitoring wells MW-B1 and MW-B2.

Prepared by: EMS

Checked by: SSS

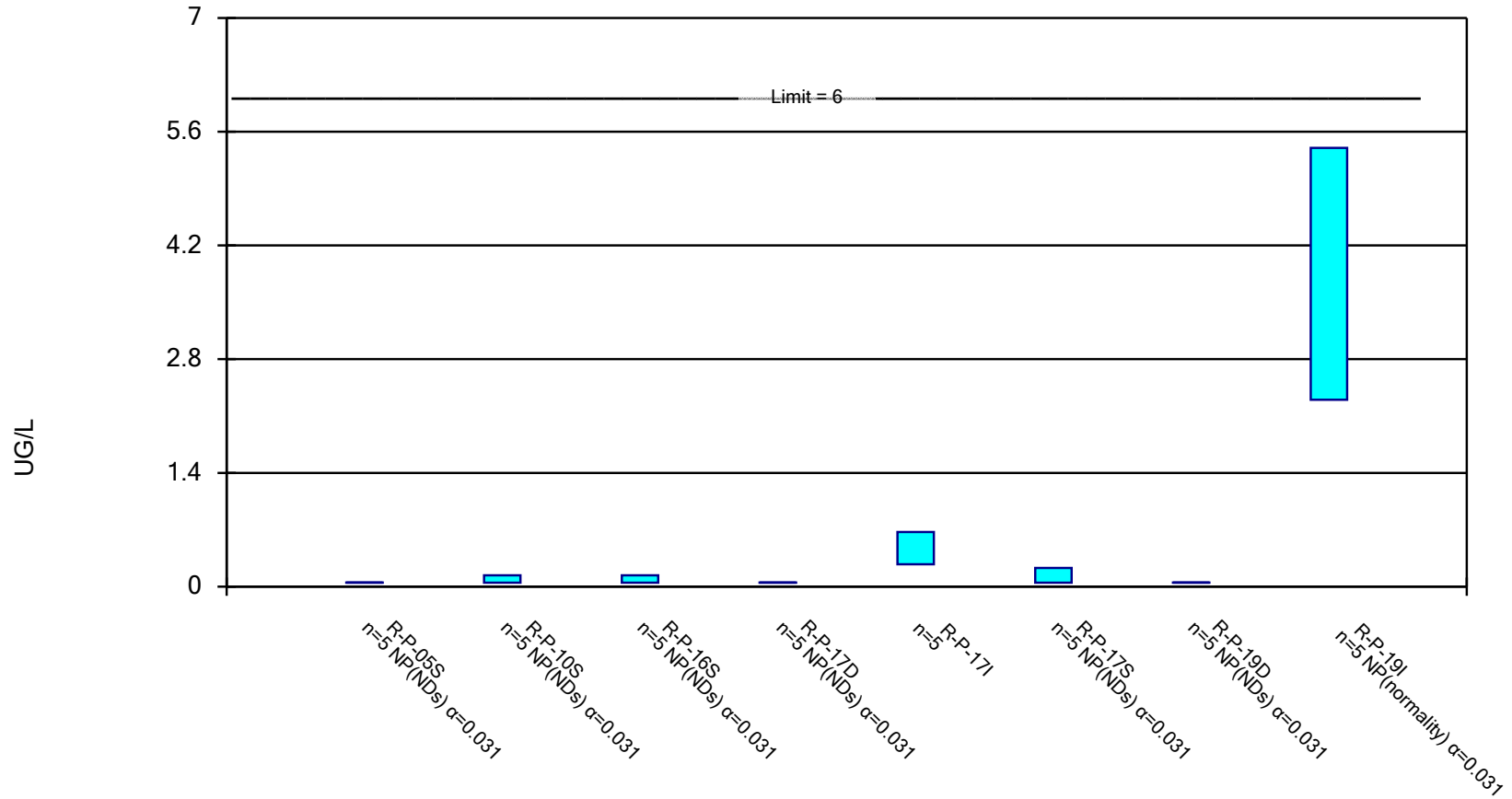
Reviewed by: SCP

APPENDIX A

**Sanitas Confidence Interval
Statistical Output**

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.

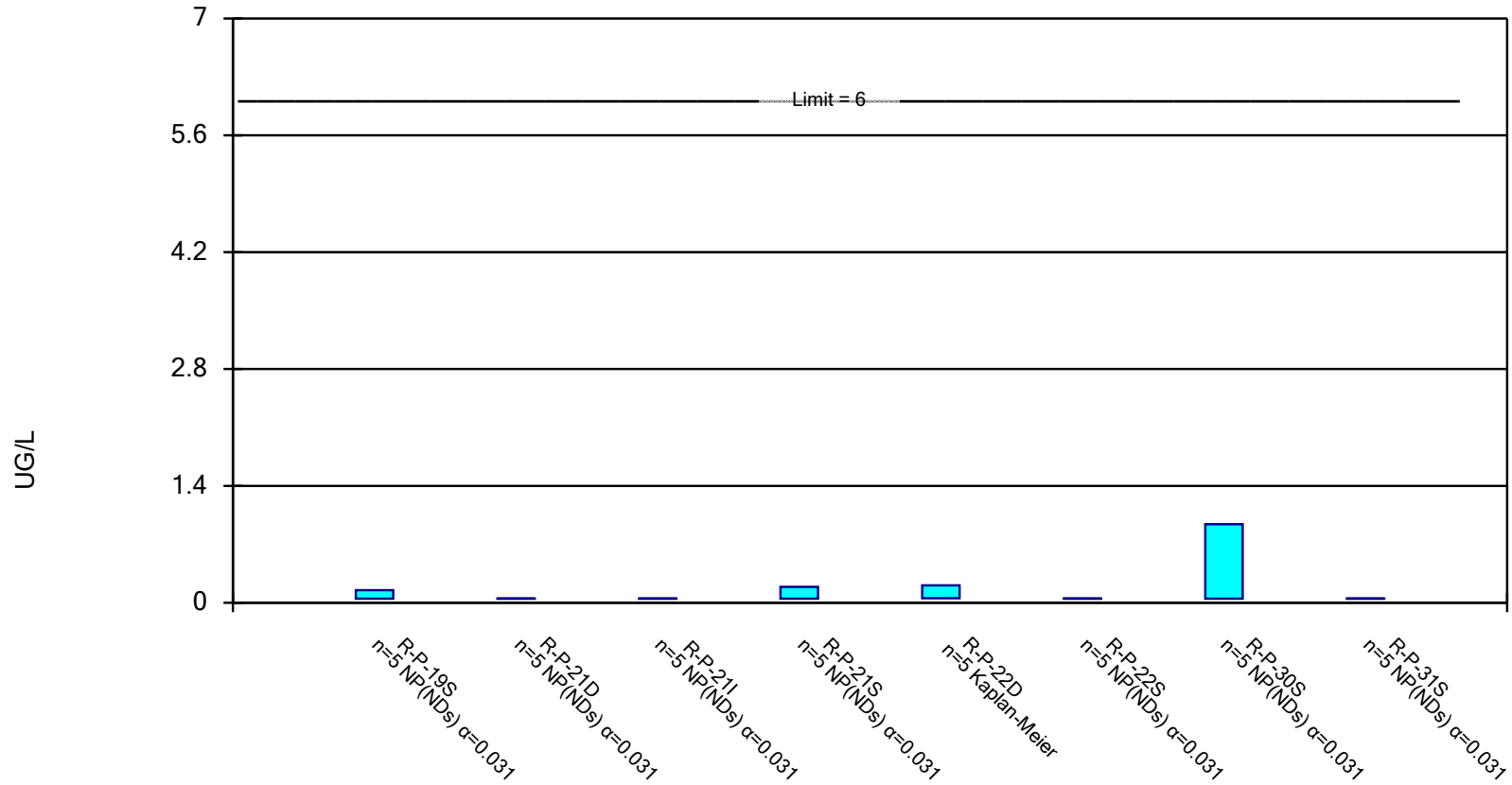


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Rush Island E.C. Client: Ameren Data: RIEC Data

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.

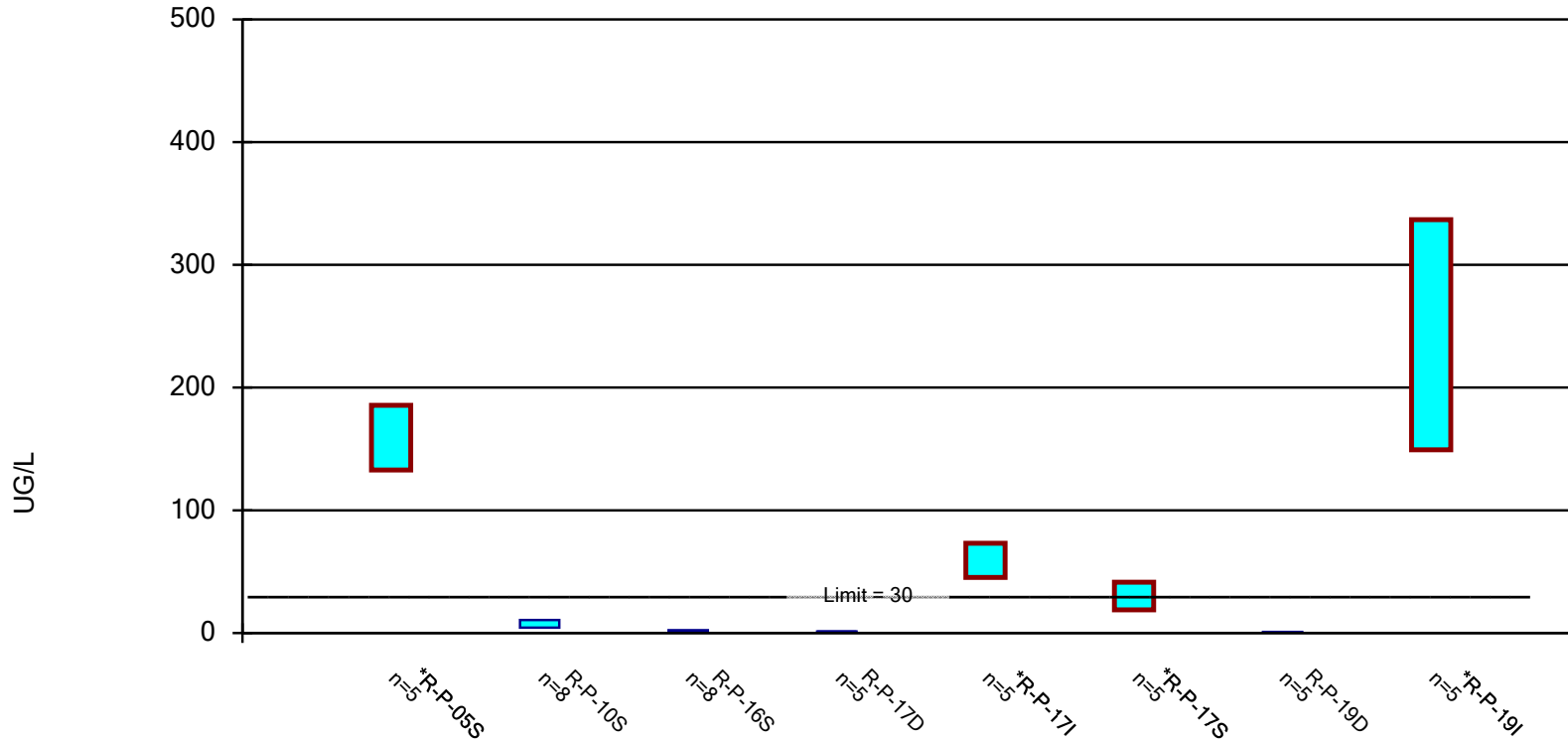


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Rush Island E.C. Client: Ameren Data: RIEC Data

Parametric Confidence Interval, Corrective Action Mode

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

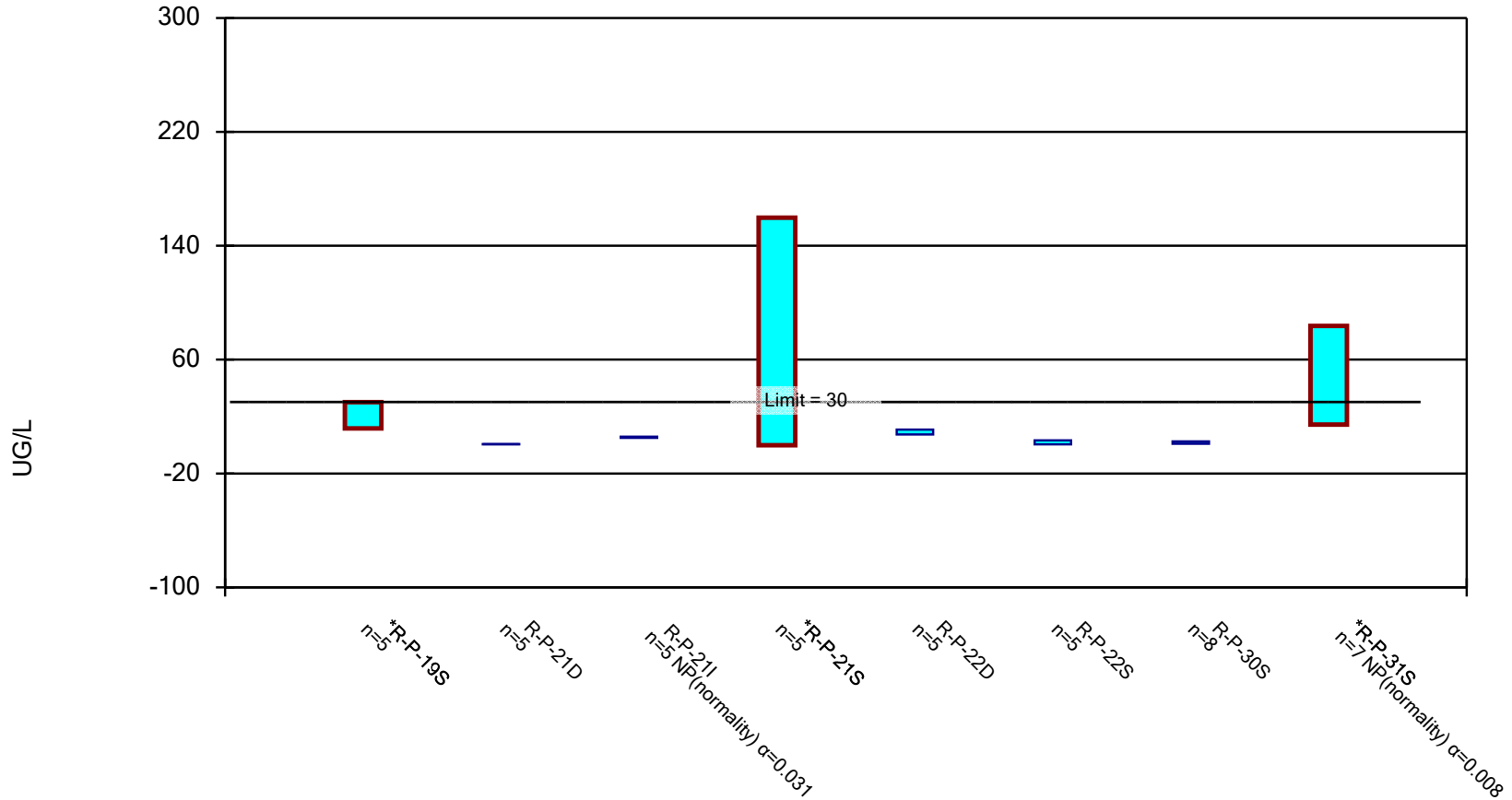


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Rush Island E.C. Client: Ameren Data: RIEC Data

Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

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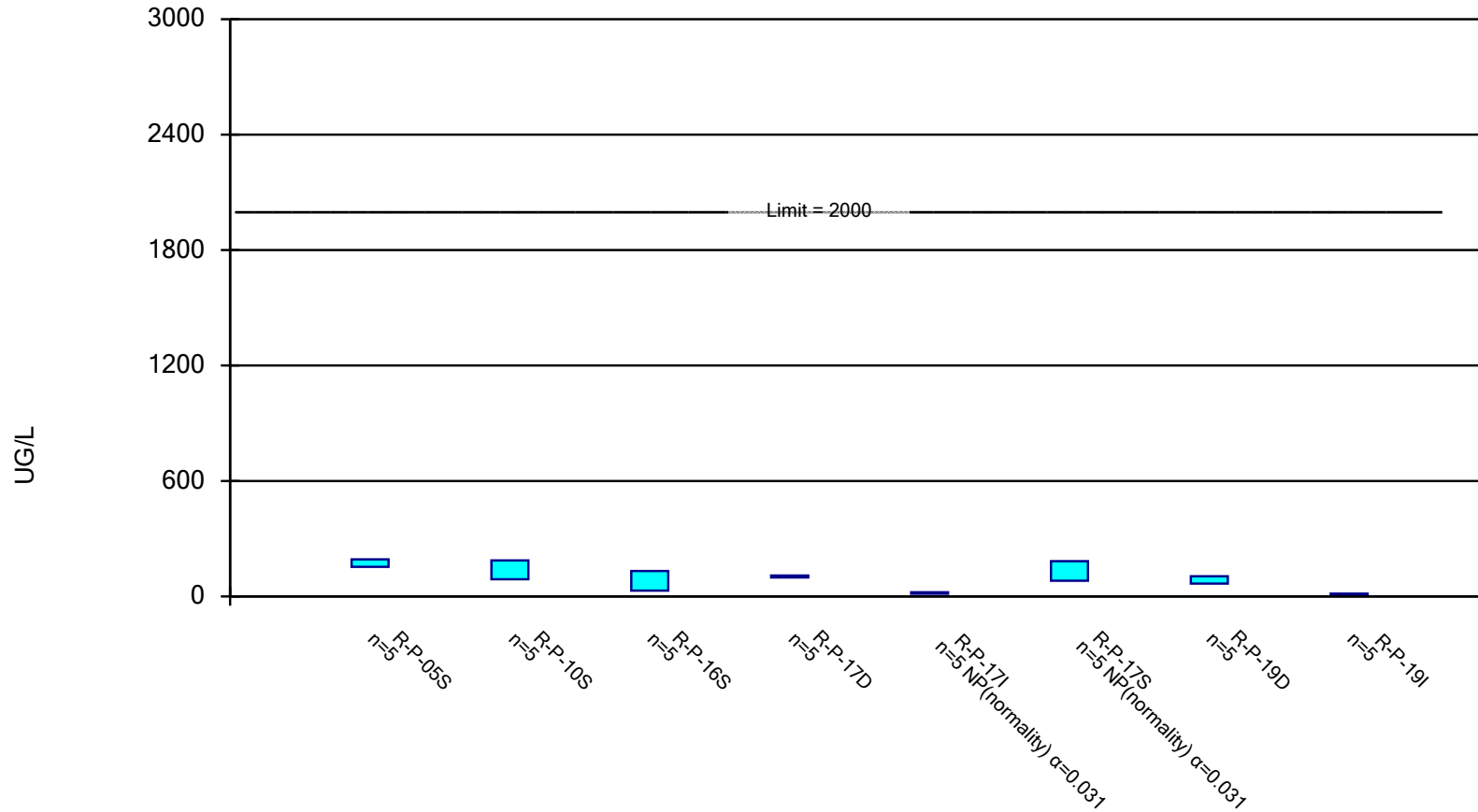


Constituent: ARSENIC, TOTAL Analysis Run 3/22/2022 10:10 AM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC 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.

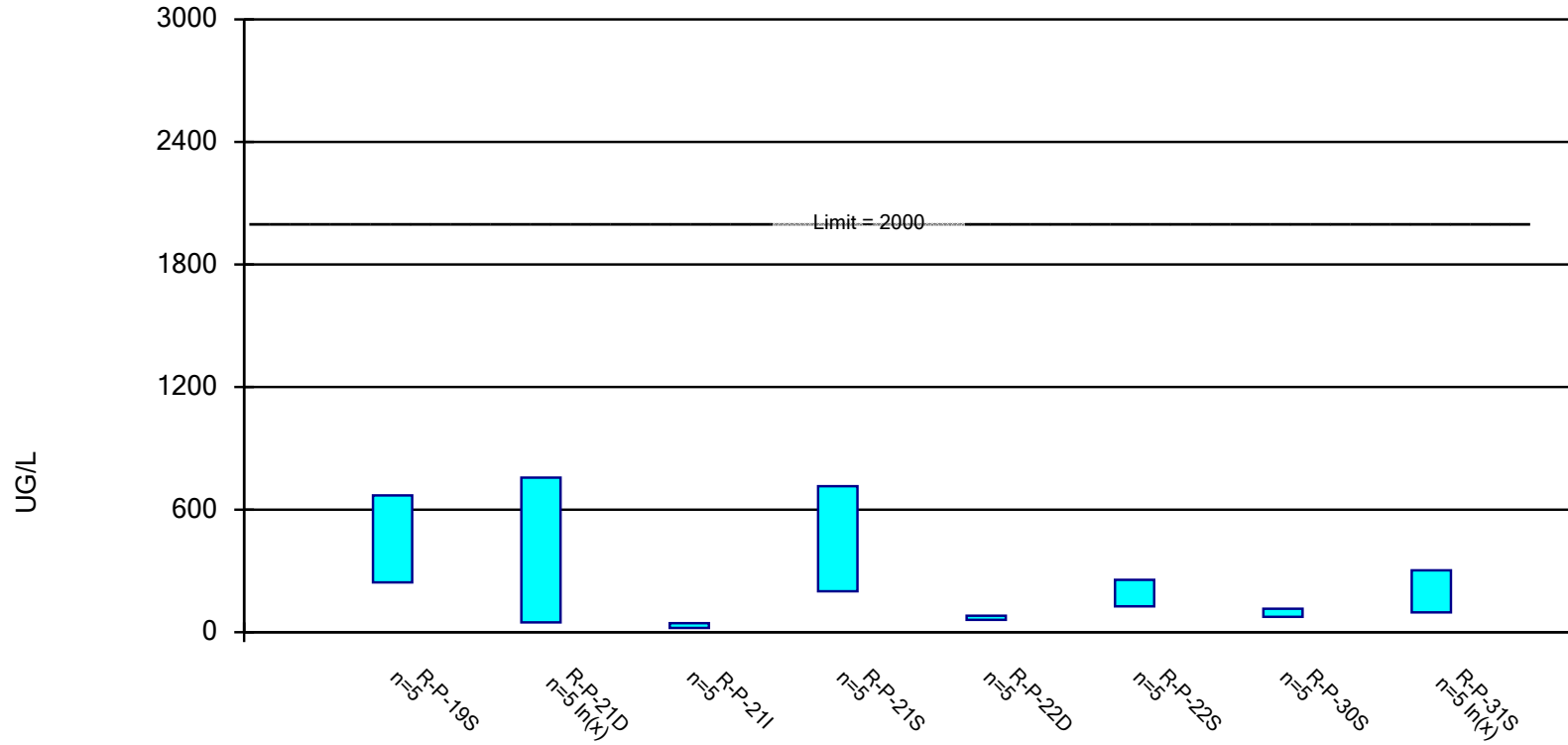


Constituent: BARIUM, TOTAL Analysis Run 3/22/2022 10:10 AM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

Parametric Confidence Interval, Corrective Action Mode

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

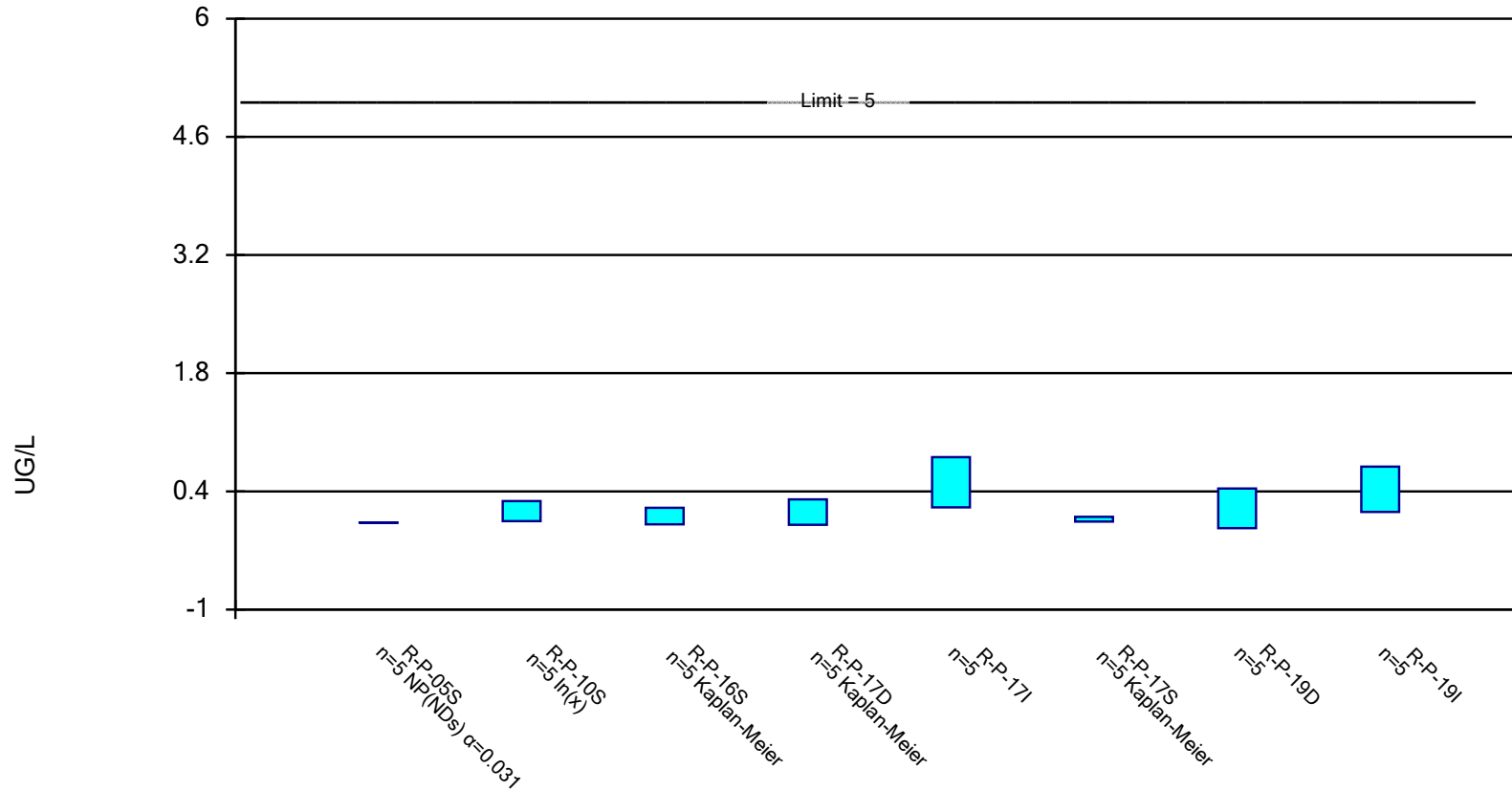


Constituent: BARIUM, TOTAL Analysis Run 3/22/2022 10:10 AM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC 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.

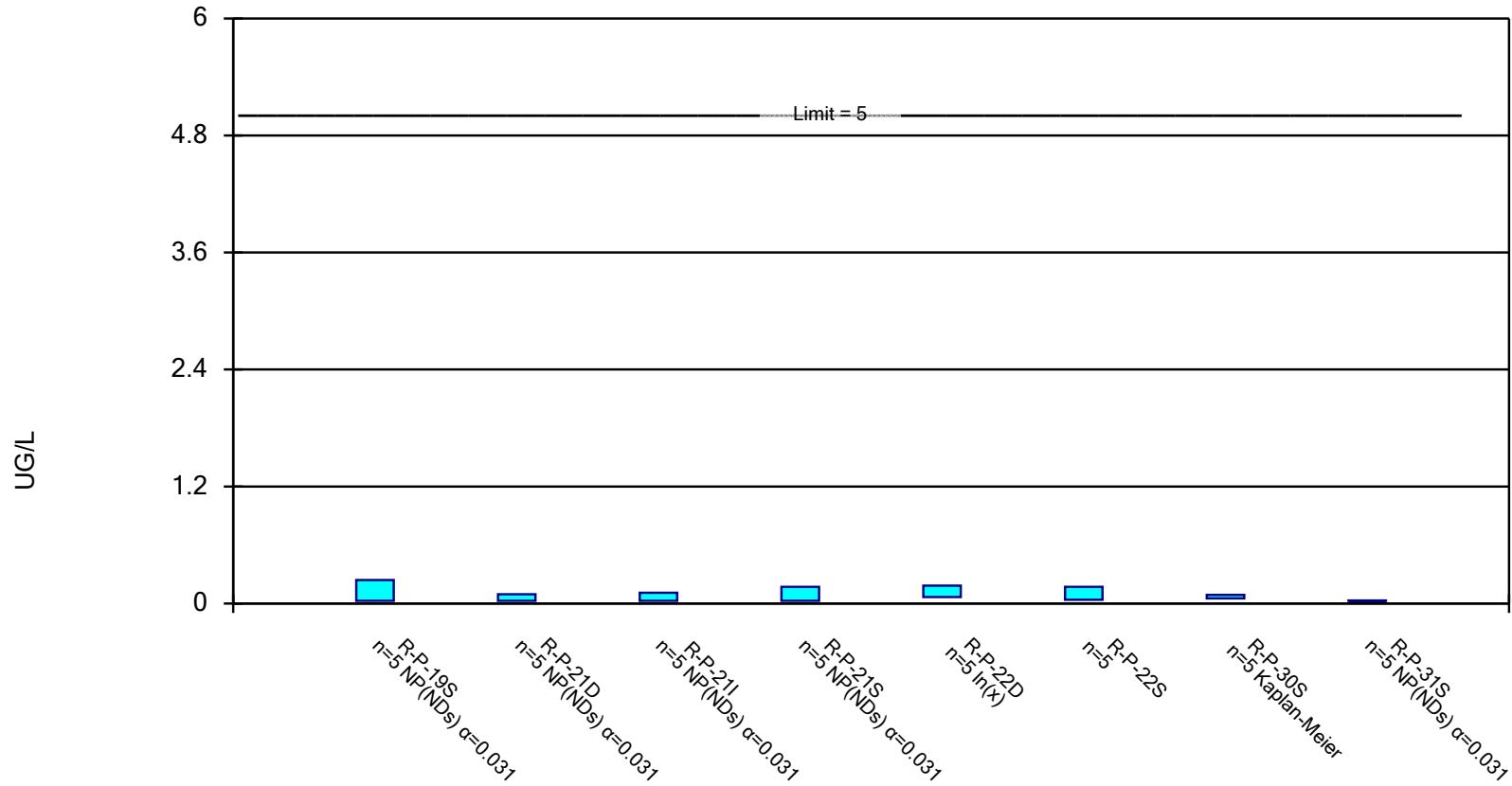


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Rush Island E.C. Client: Ameren Data: RIEC Data

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.

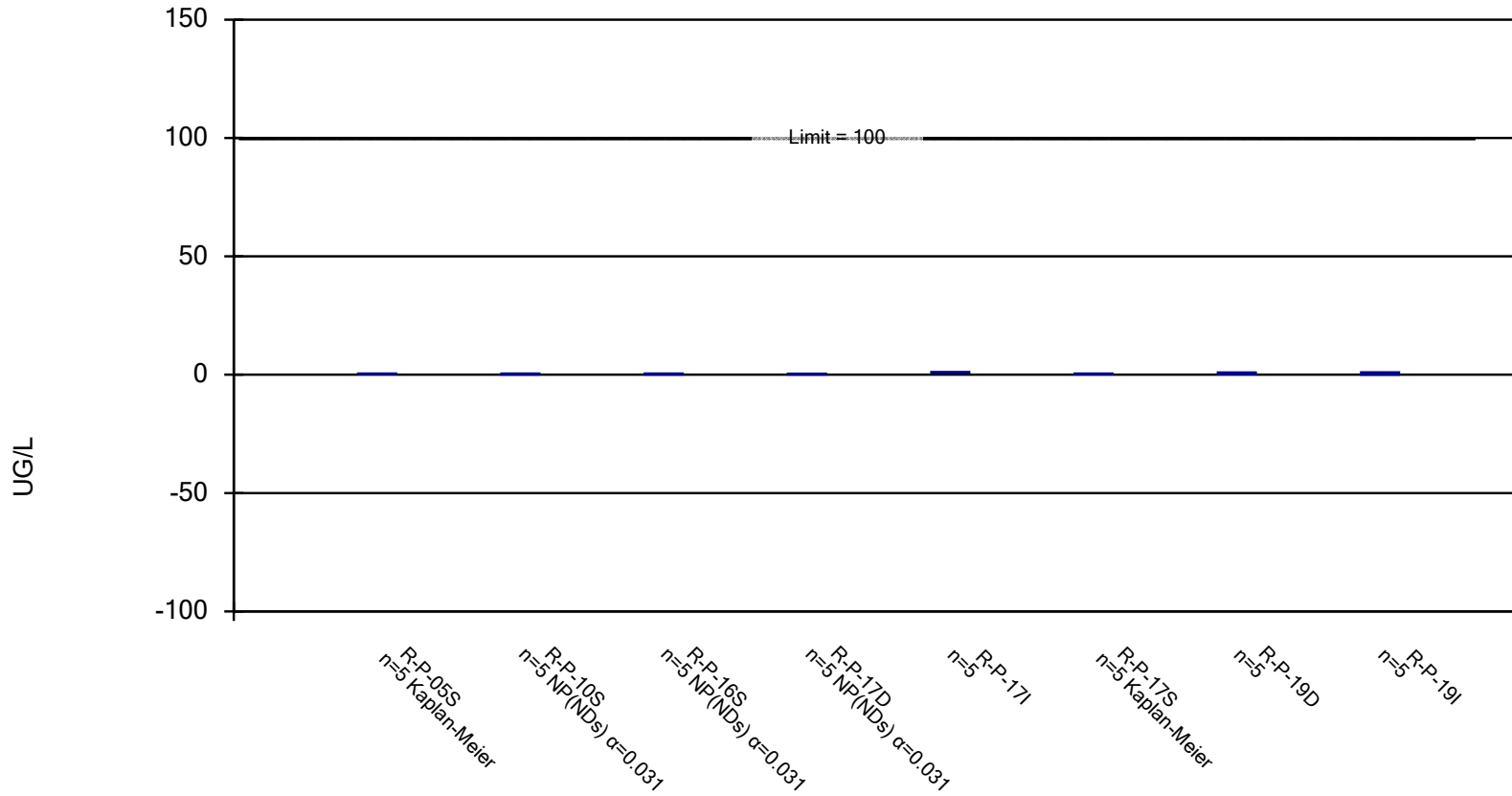


Constituent: CADMIUM, TOTAL Analysis Run 3/22/2022 10:10 AM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC 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.

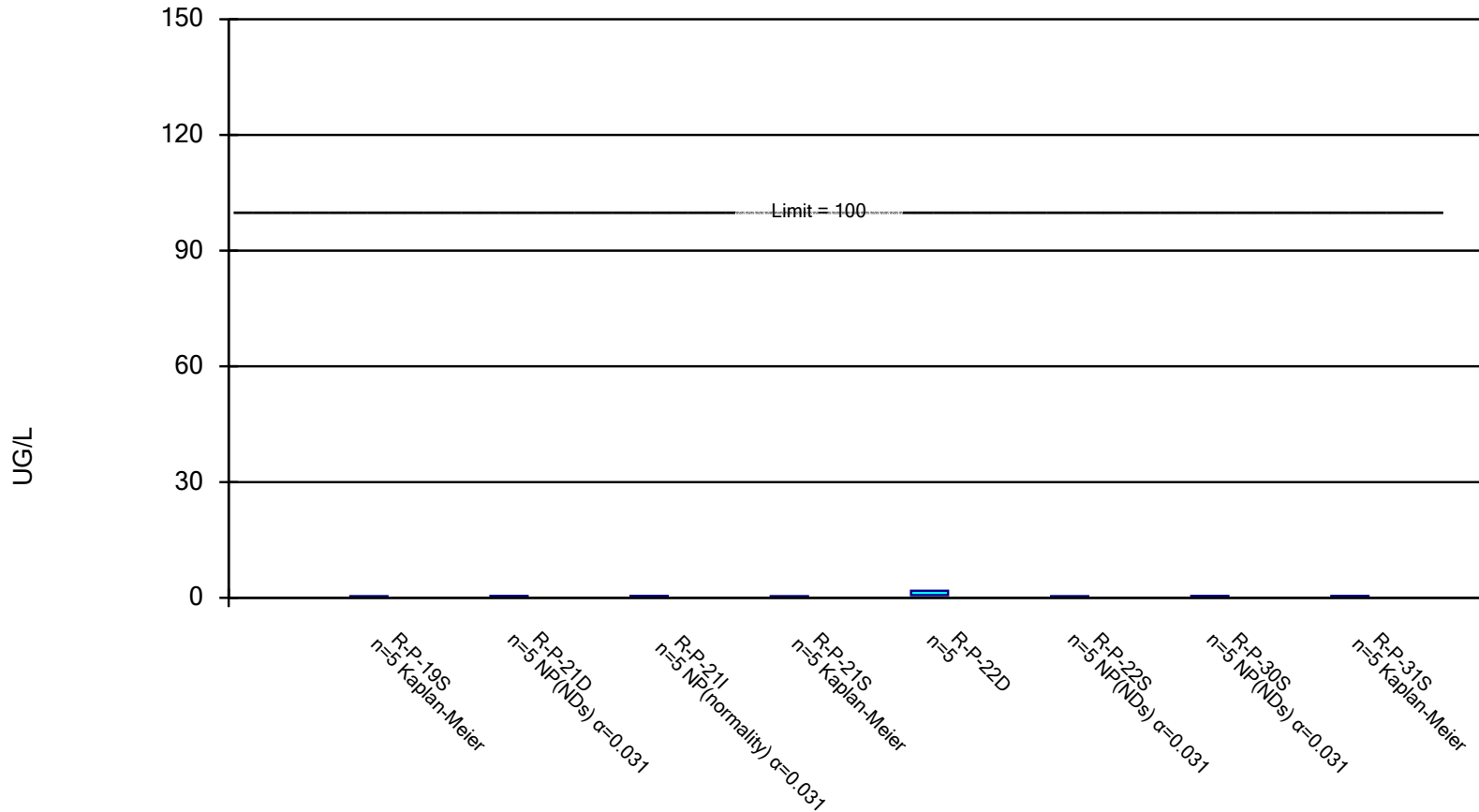


Constituent: CHROMIUM, TOTAL Analysis Run 3/22/2022 10:10 AM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

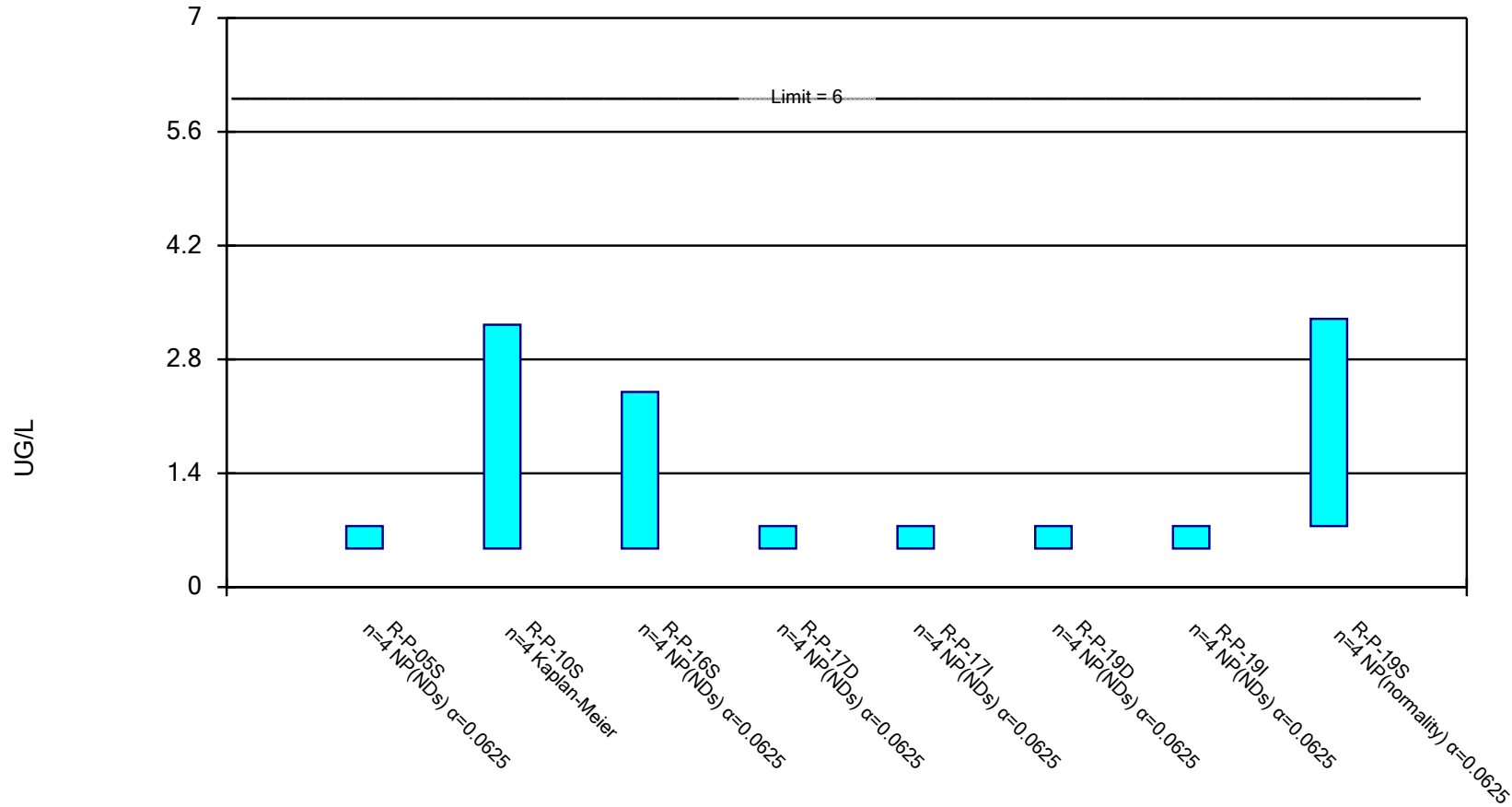
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: CHROMIUM, TOTAL Analysis Run 3/22/2022 10:10 AM View: Corrective Action
Rush Island E.C. Client: Ameren Data: RIEC 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.

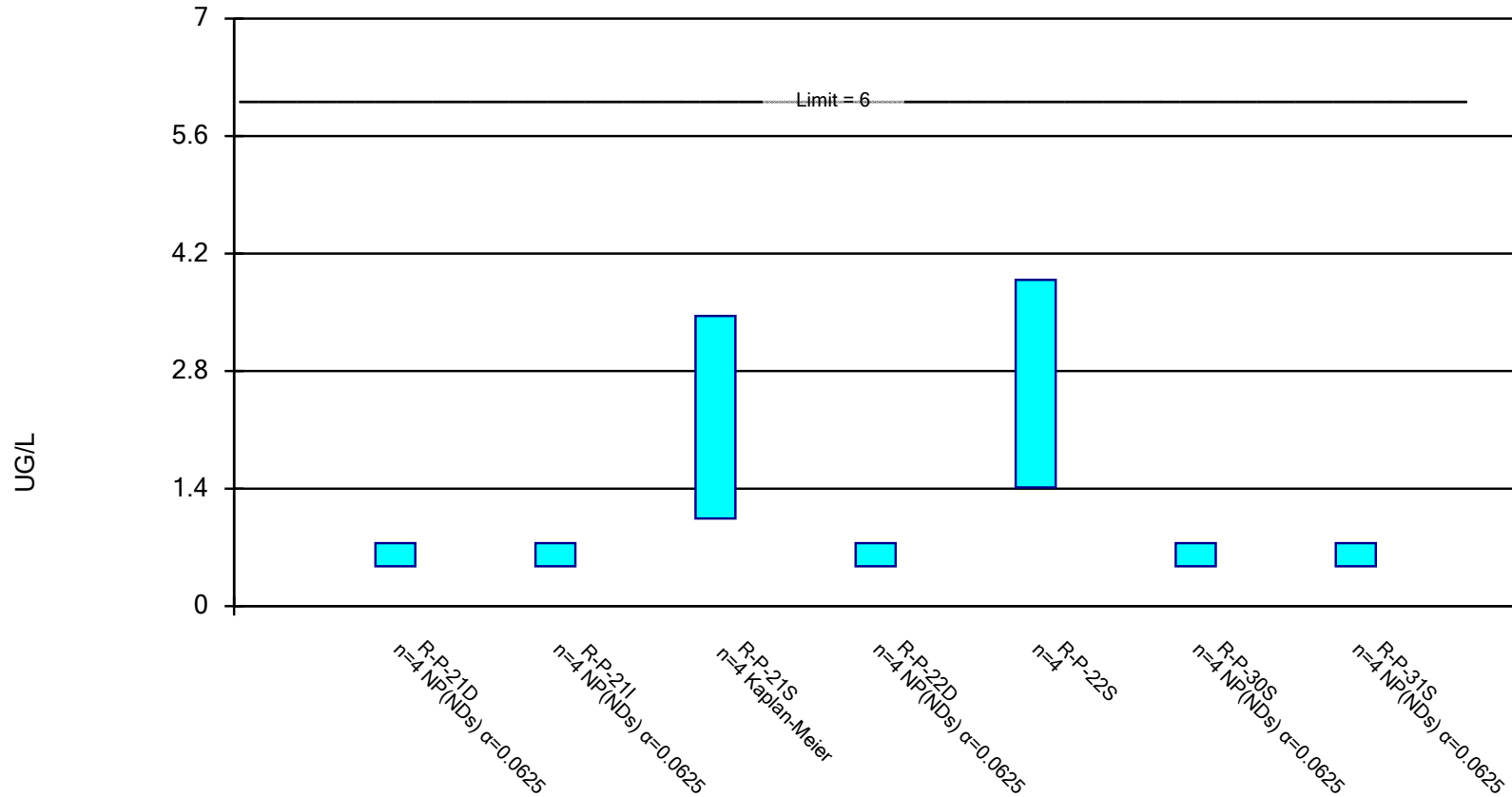


Constituent: COBALT, TOTAL Analysis Run 3/22/2022 10:10 AM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC 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.

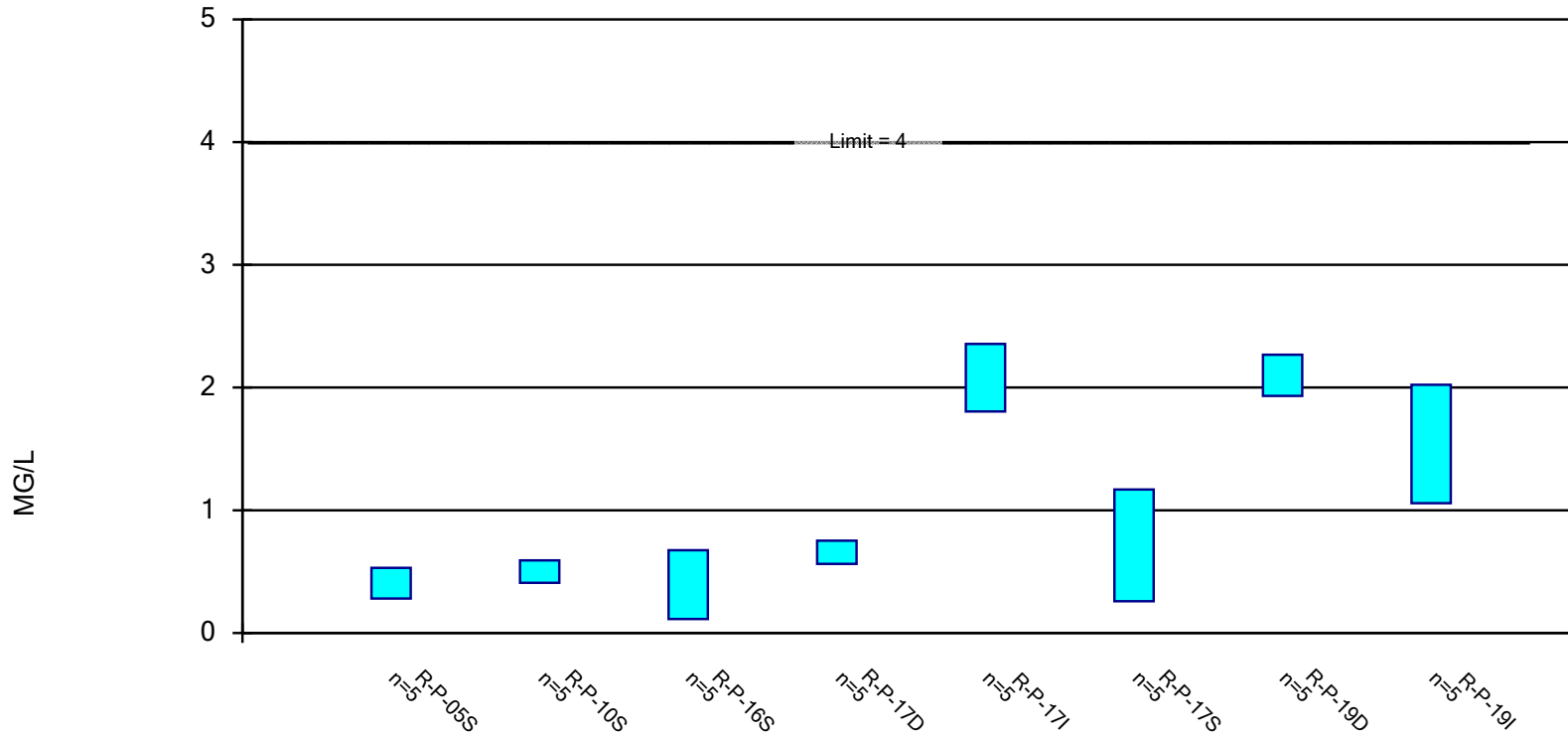


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Rush Island E.C. Client: Ameren Data: RIEC Data

Parametric Confidence Interval, Corrective Action Mode

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

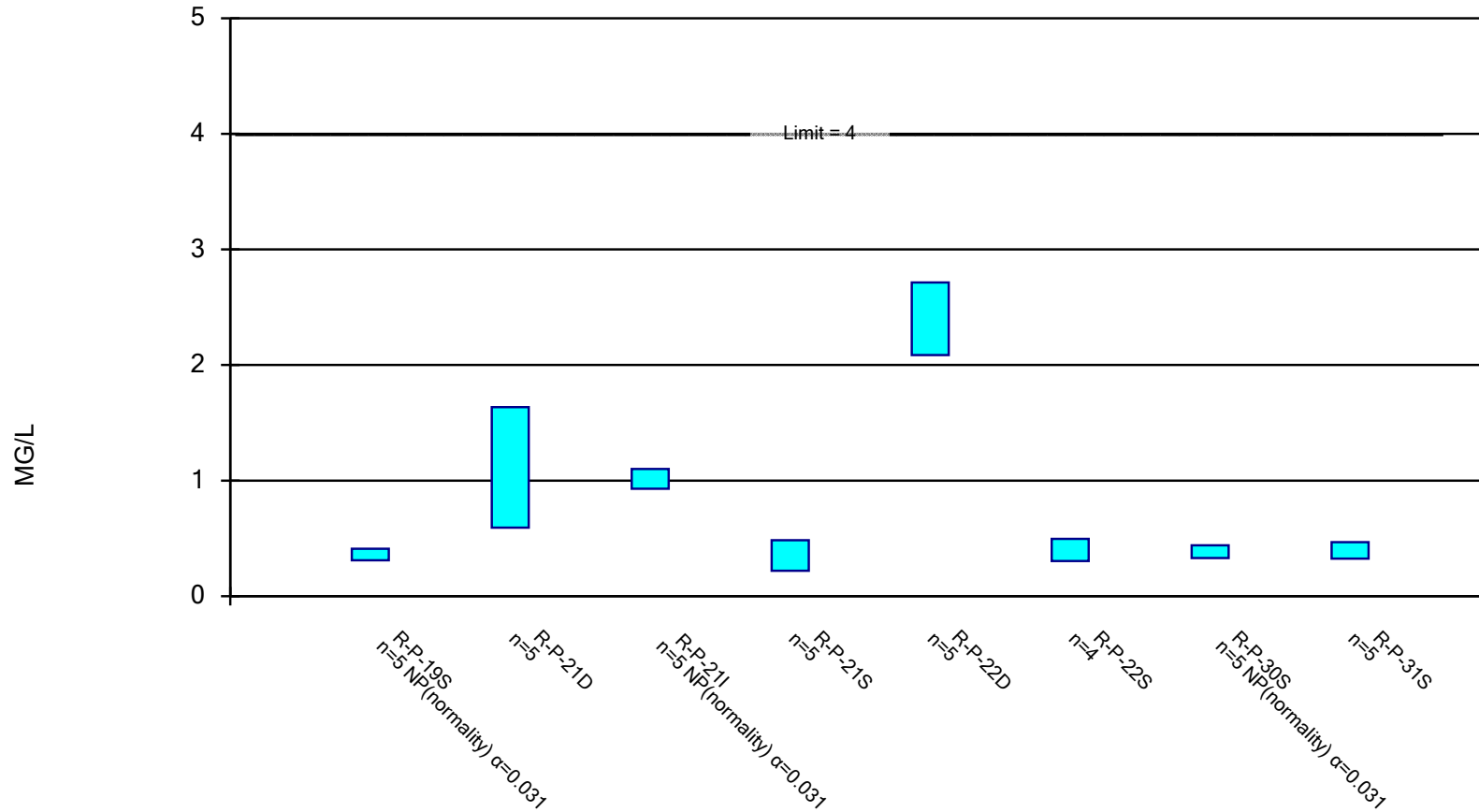


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Rush Island E.C. Client: Ameren Data: RIEC Data

Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

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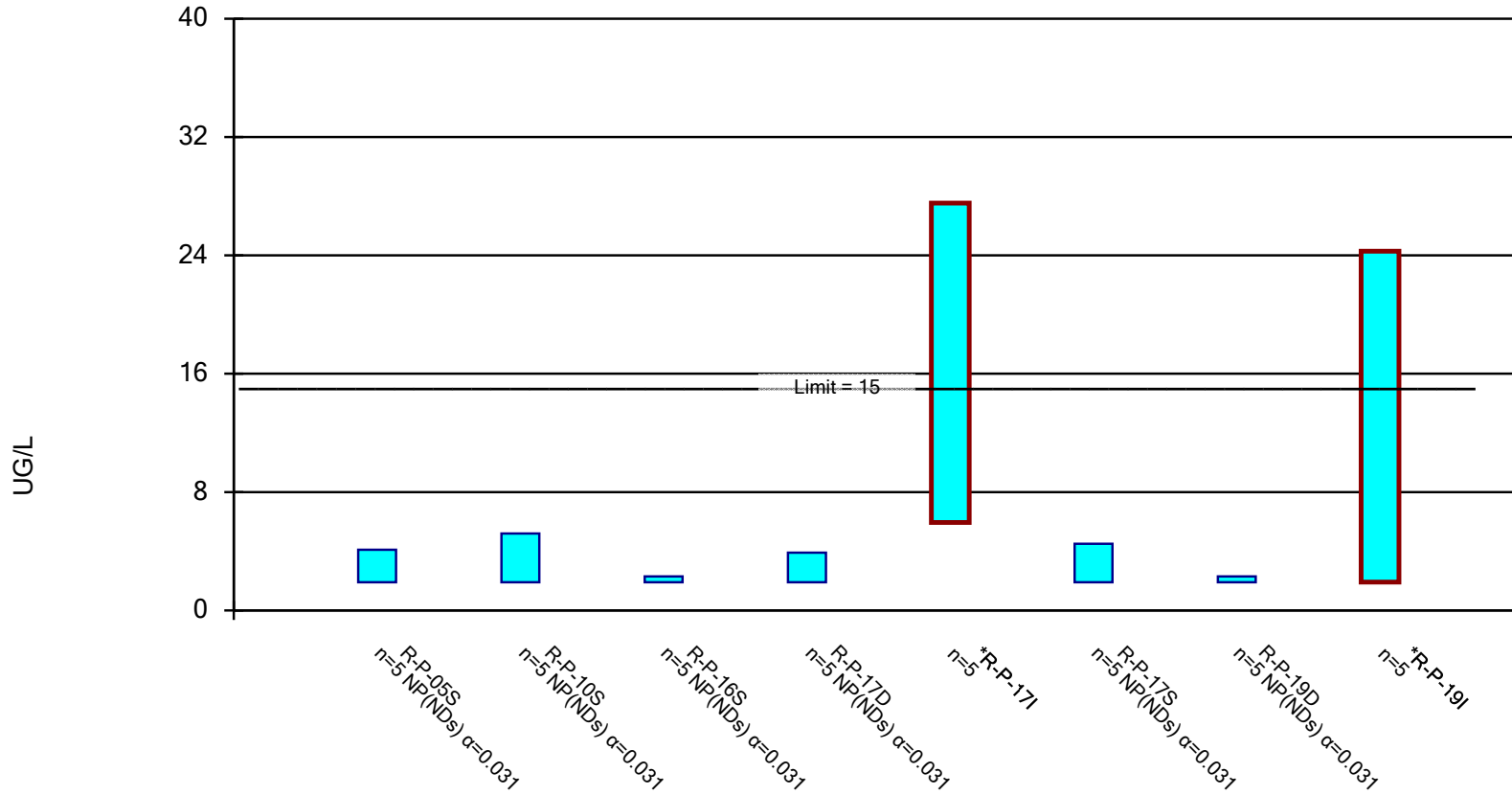


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Rush Island E.C. Client: Ameren Data: RIEC Data

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.

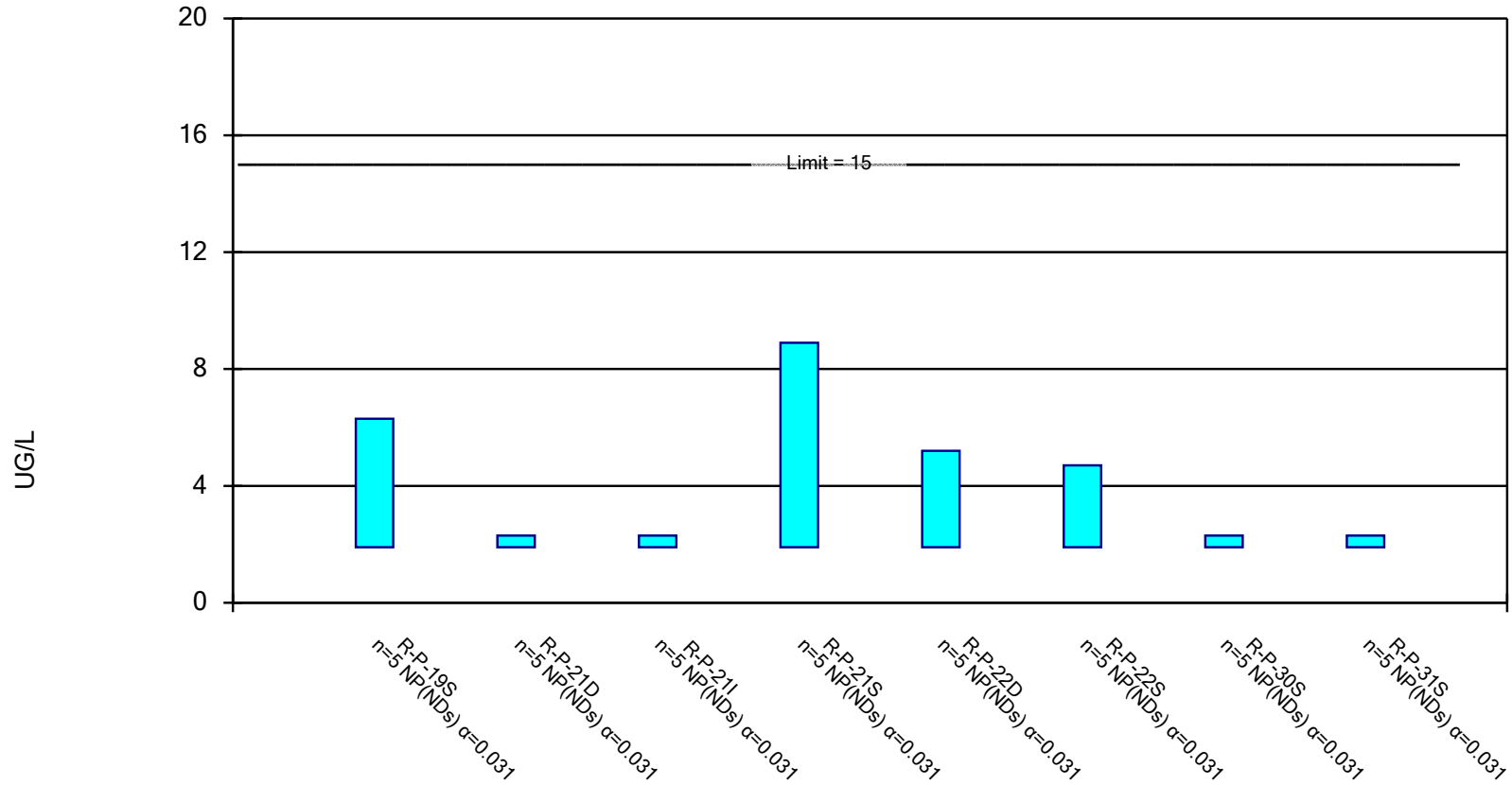


Constituent: LEAD, TOTAL Analysis Run 3/22/2022 10:10 AM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

Non-Parametric Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded.

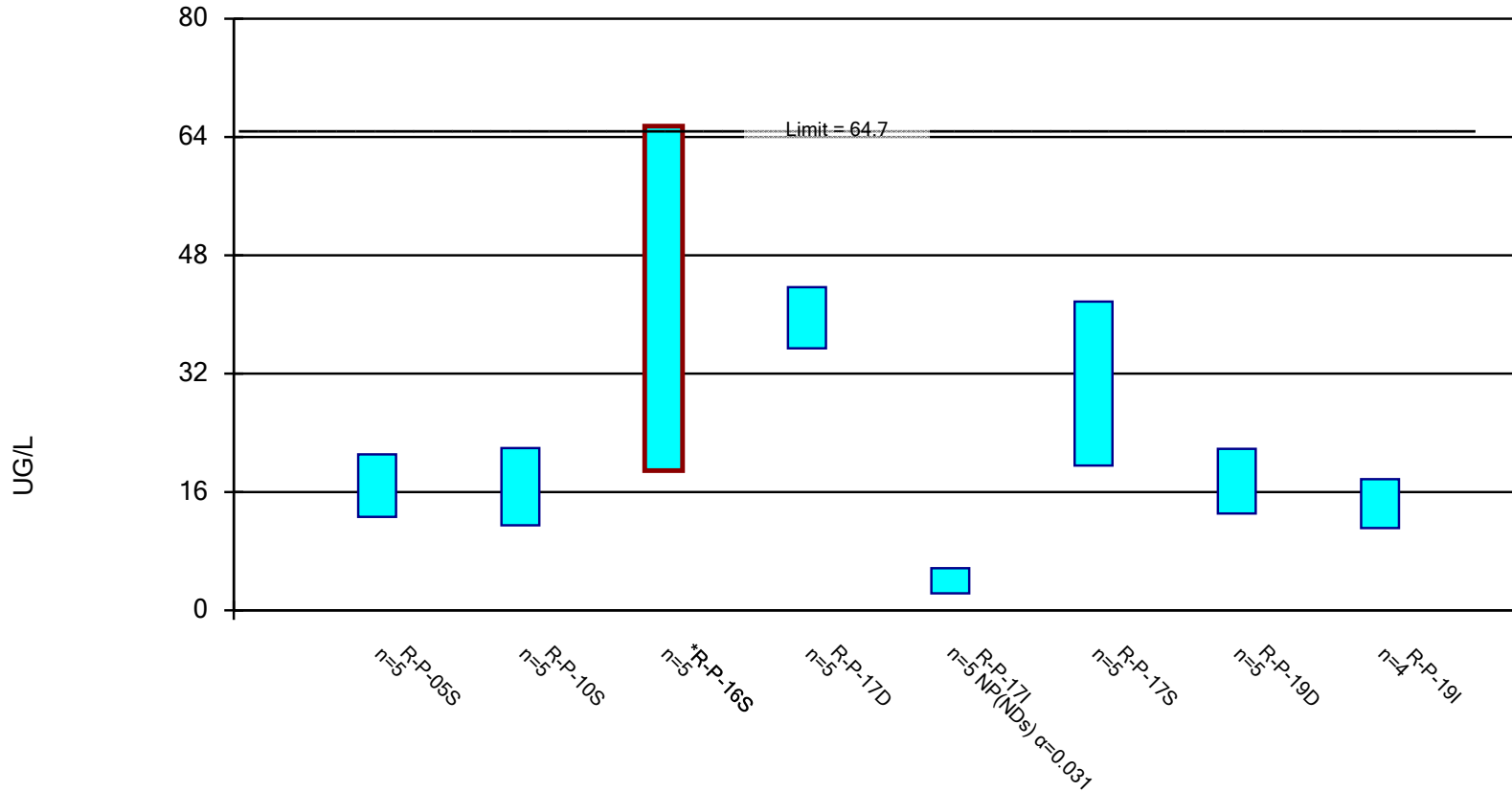


Constituent: LEAD, TOTAL Analysis Run 3/22/2022 10:10 AM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

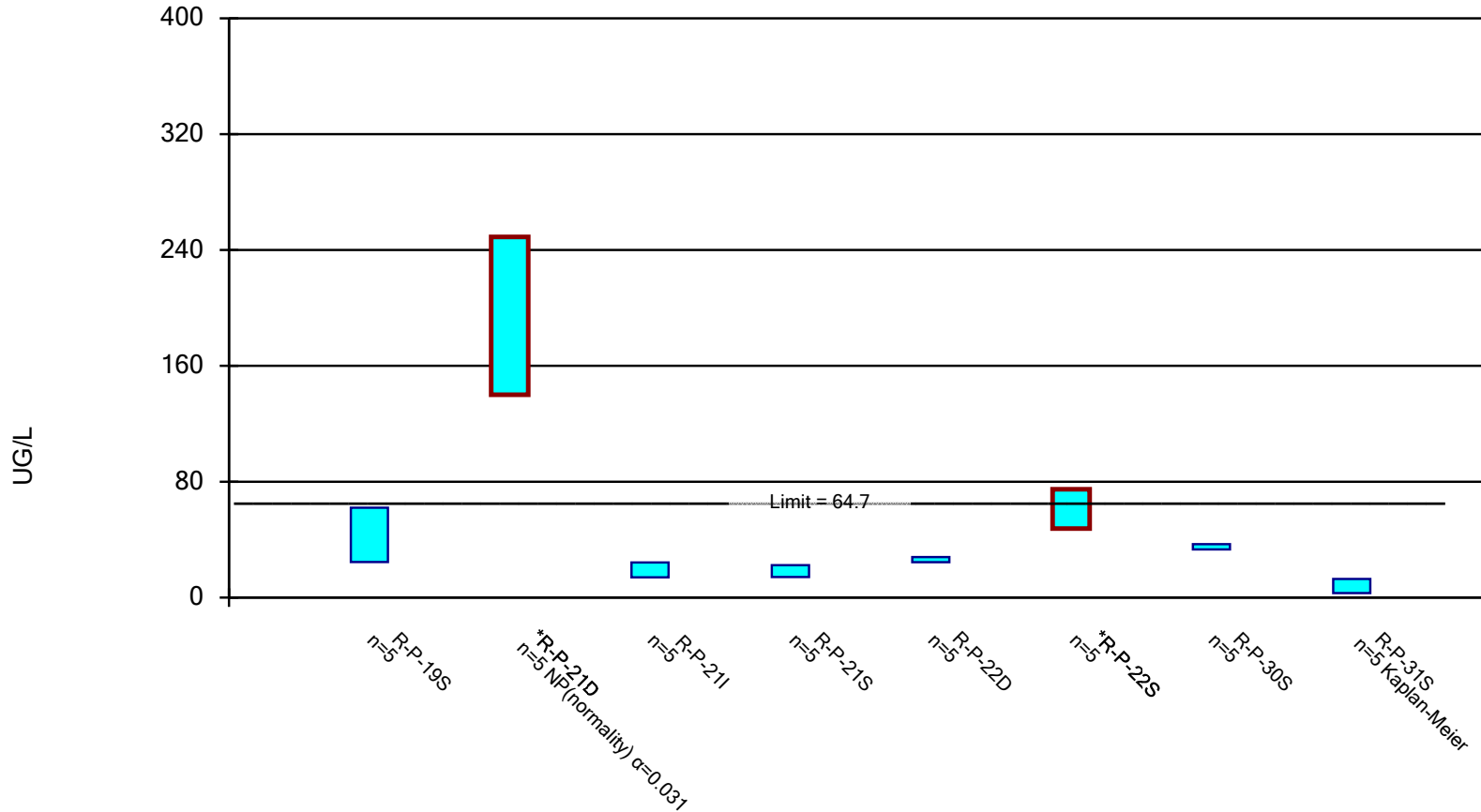
Compliance limit is exceeded.* Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: LITHIUM, TOTAL Analysis Run 3/22/2022 10:10 AM View: Corrective Action
Rush Island E.C. Client: Ameren Data: RIEC Data

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.

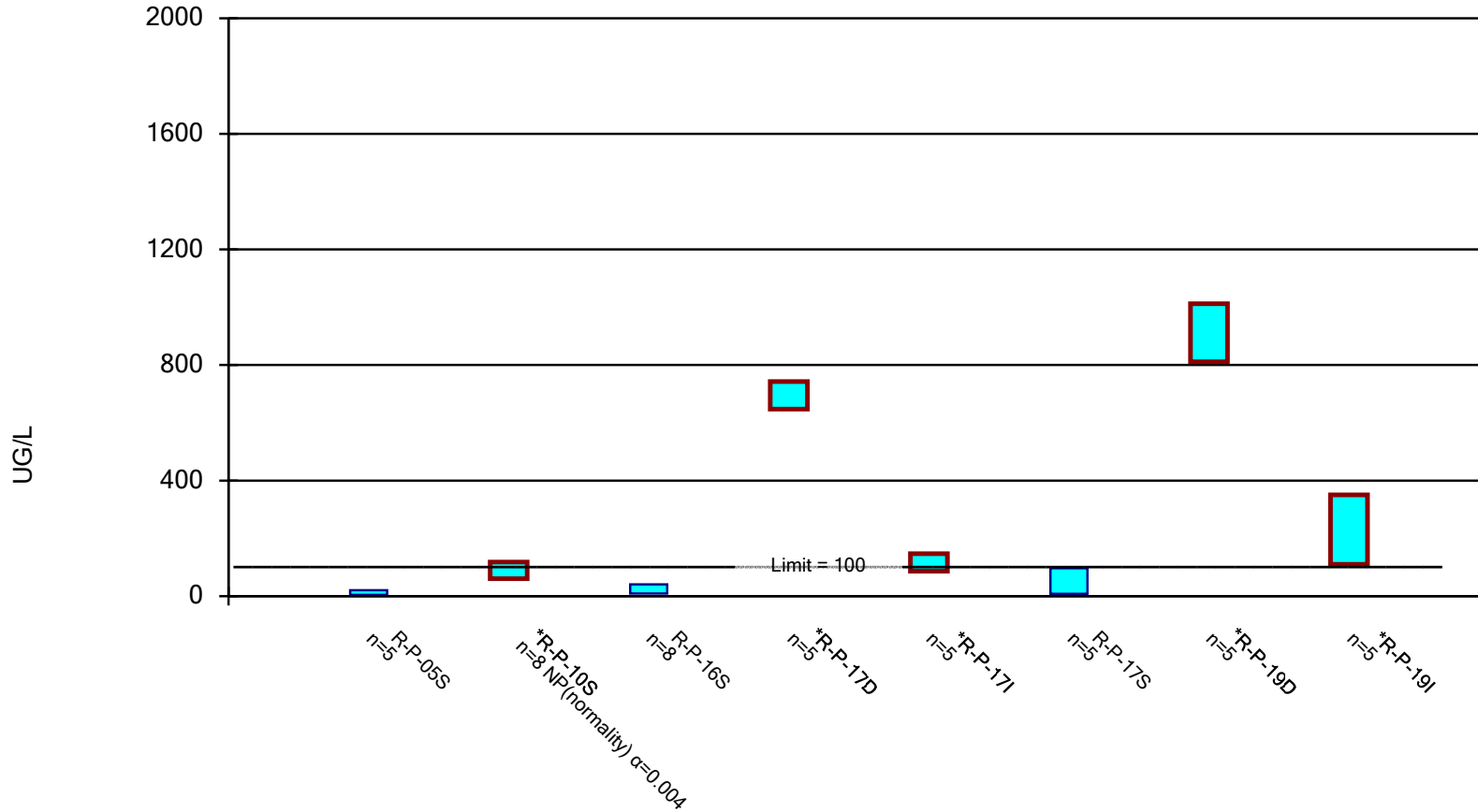


Constituent: LITHIUM, TOTAL Analysis Run 3/22/2022 10:11 AM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

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.

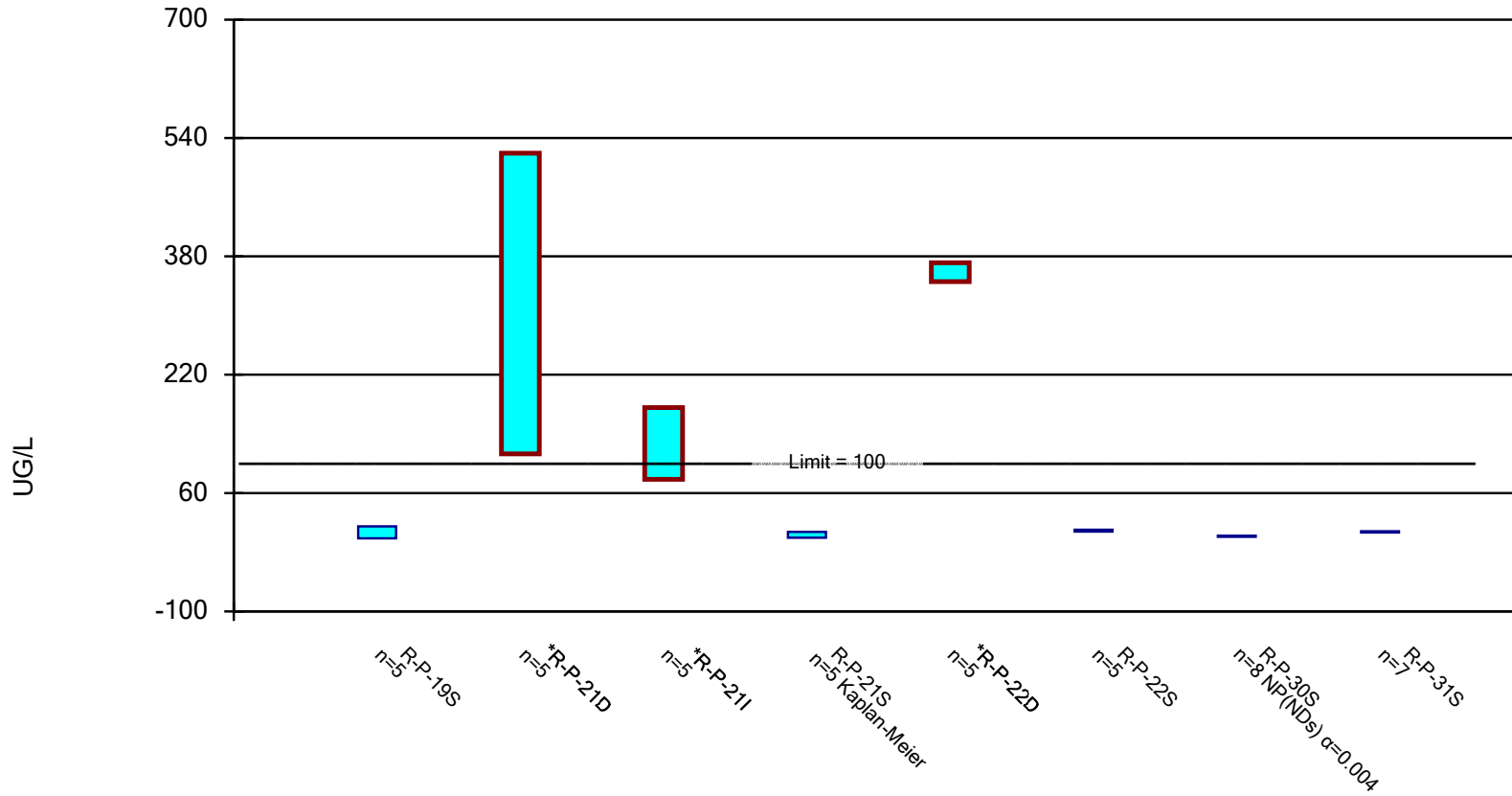


Constituent: MOLYBDENUM, TOTAL Analysis Run 3/22/2022 10:11 AM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

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.

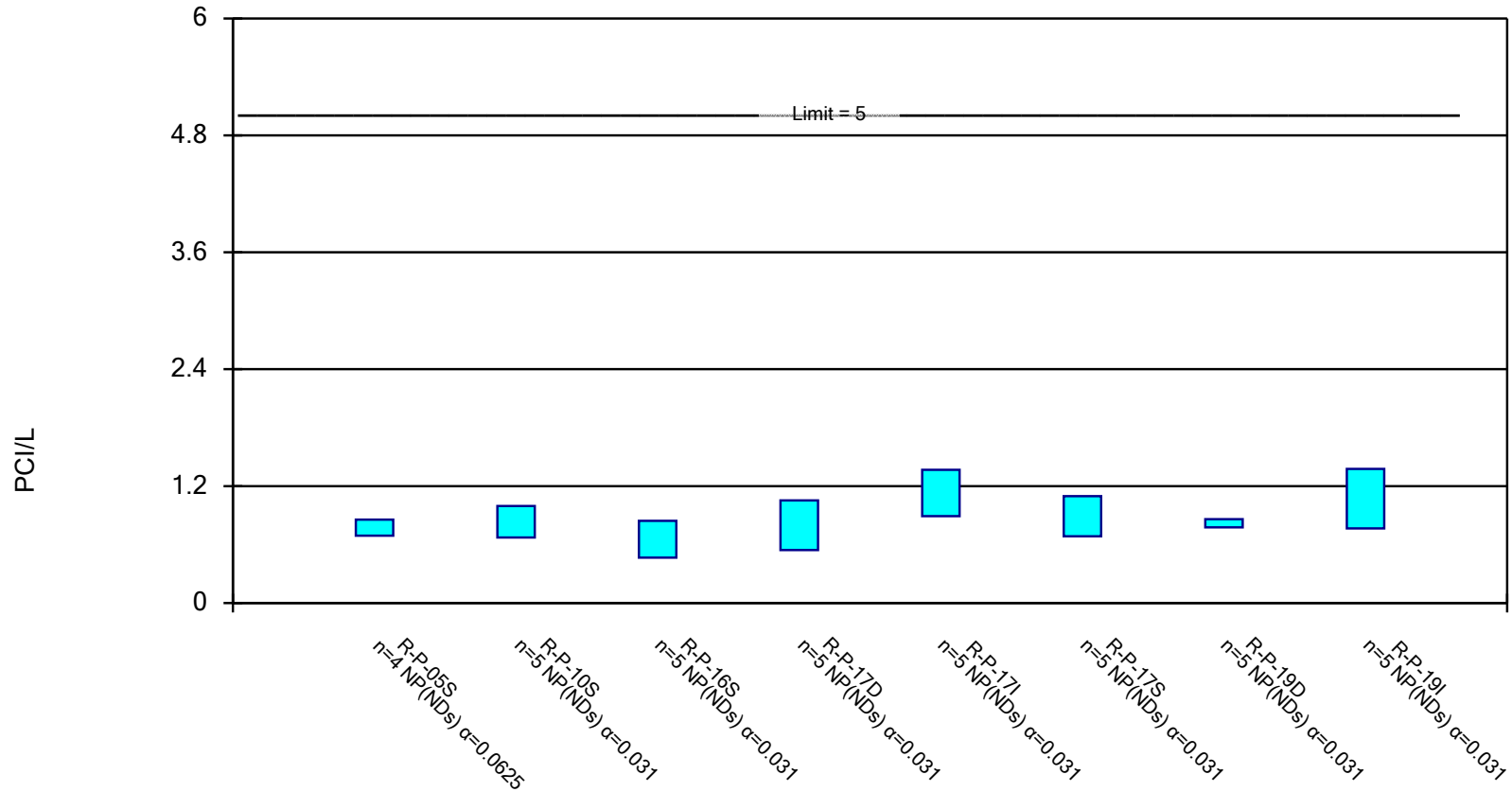


Constituent: MOLYBDENUM, TOTAL Analysis Run 3/22/2022 10:11 AM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

Non-Parametric Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded.

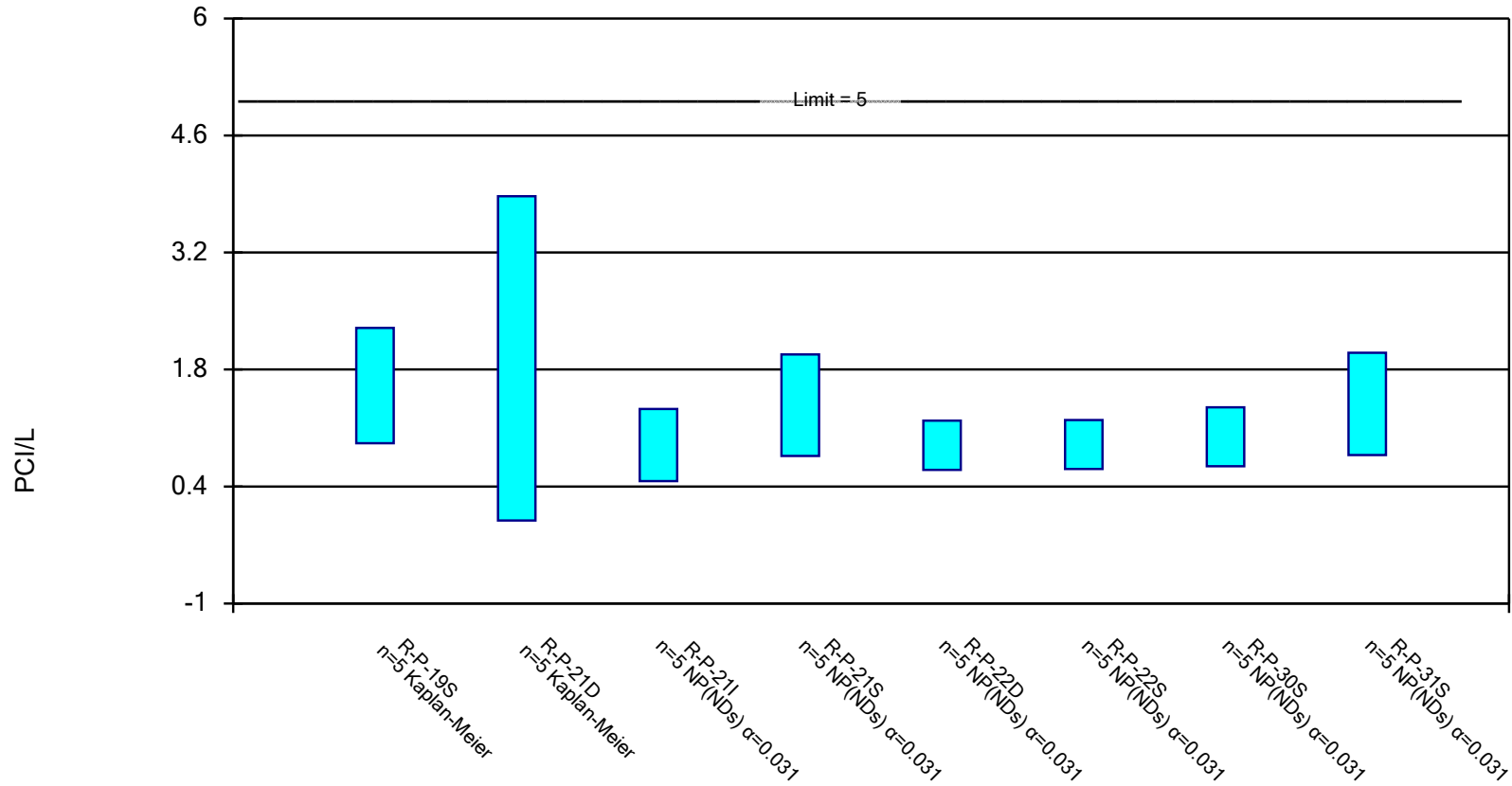


Constituent: RADIUM [226 + 228] Analysis Run 3/22/2022 10:11 AM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC 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.

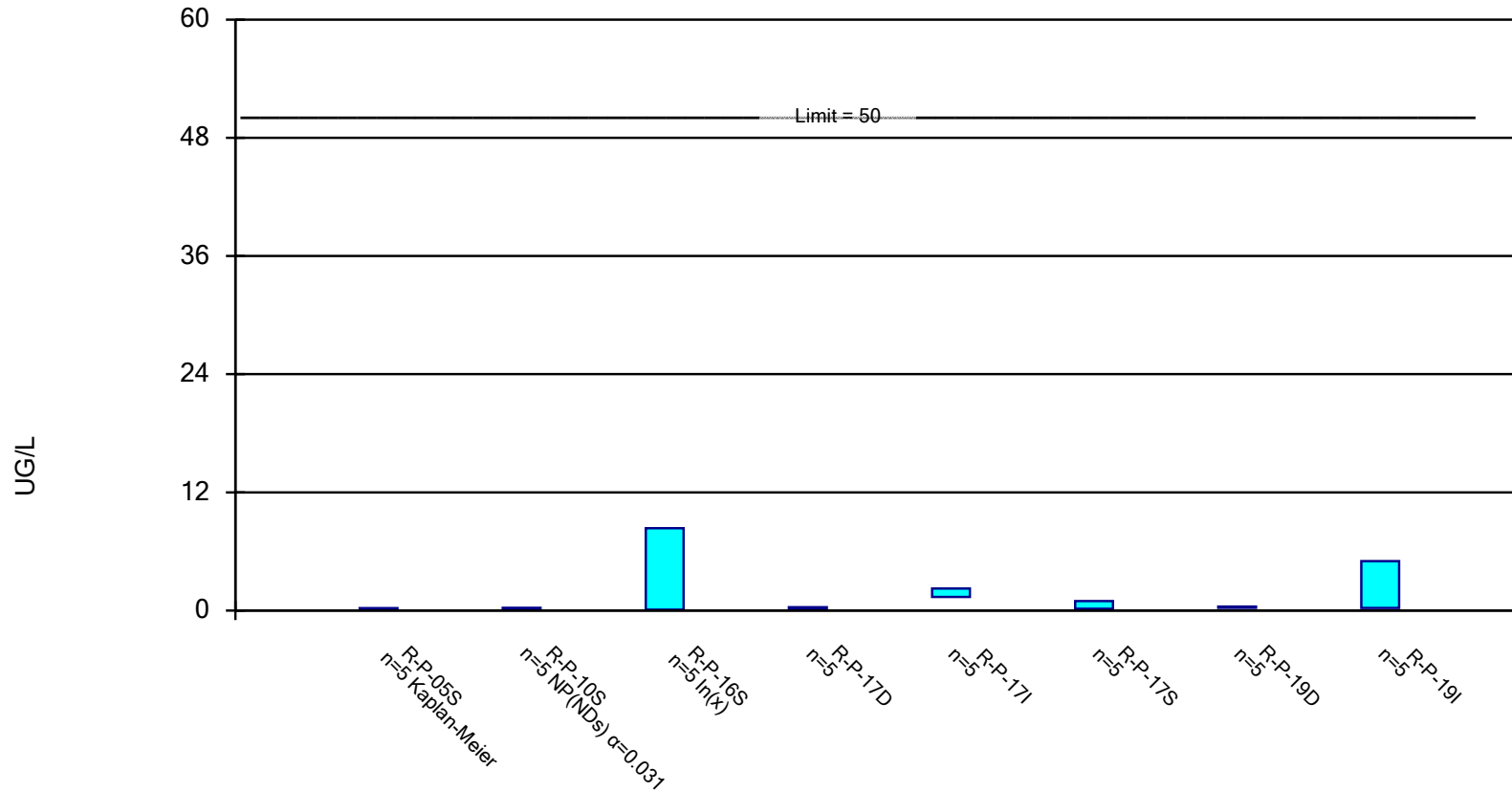


Constituent: RADIUM [226 + 228] Analysis Run 3/22/2022 10:11 AM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

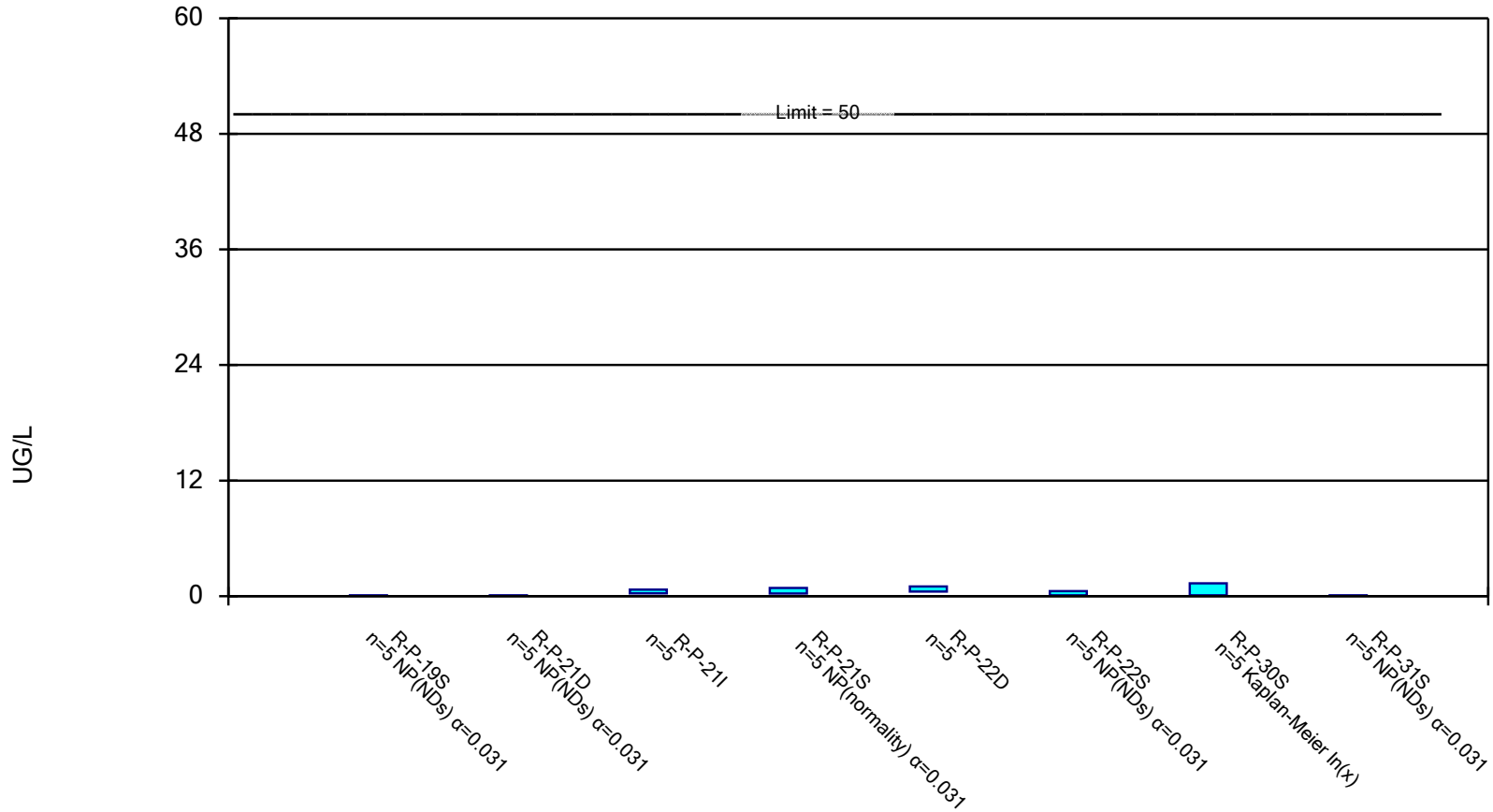
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: SELENIUM, TOTAL Analysis Run 3/22/2022 10:11 AM View: Corrective Action
Rush Island E.C. Client: Ameren Data: RIEC 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 3/22/2022 10:11 AM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

Confidence Interval

Rush Island E.C. Client: Ameren Data: RIEC Data Printed 3/22/2022, 10:16 AM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
ANTIMONY, TOTAL (UG/L)	R-P-05S	0.05	0.0485	6	No	5	100	No	0.031	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-P-10S	0.14	0.0485	6	No	5	60	No	0.031	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-P-16S	0.14	0.0485	6	No	5	80	No	0.031	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-P-17D	0.05	0.0485	6	No	5	100	No	0.031	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-P-17I	0.6728	0.2752	6	No	5	0	No	0.01	Param.
ANTIMONY, TOTAL (UG/L)	R-P-17S	0.23	0.0485	6	No	5	60	No	0.031	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-P-19D	0.05	0.0485	6	No	5	100	No	0.031	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-P-19I	5.4	2.3	6	No	5	0	No	0.031	NP (normality)
ANTIMONY, TOTAL (UG/L)	R-P-19S	0.15	0.0485	6	No	5	80	No	0.031	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-P-21D	0.05	0.0485	6	No	5	100	No	0.031	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-P-21I	0.05	0.0485	6	No	5	100	No	0.031	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-P-21S	0.19	0.0485	6	No	5	80	No	0.031	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-P-22D	0.2082	0.05337	6	No	5	40	No	0.01	Param.
ANTIMONY, TOTAL (UG/L)	R-P-22S	0.05	0.0485	6	No	5	100	No	0.031	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-P-30S	0.94	0.0485	6	No	5	80	No	0.031	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-P-31S	0.05	0.0485	6	No	5	100	No	0.031	NP (NDs)
ARSENIC, TOTAL (UG/L)	R-P-05S	185.6	132.8	30	Yes	5	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-P-10S	10.61	4.411	30	No	8	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-P-16S	2.303	1.022	30	No	8	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-P-17D	1.32	1.04	30	No	5	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-P-17I	73.12	45.36	30	Yes	5	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-P-17S	41.4	18.84	30	Yes	5	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-P-19D	0.8426	0.5294	30	No	5	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-P-19I	336.7	149.3	30	Yes	5	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-P-19S	30.08	11.68	30	Yes	5	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-P-21D	0.6614	0.4666	30	No	5	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-P-21I	5.9	5	30	No	5	0	No	0.031	NP (normality)
ARSENIC, TOTAL (UG/L)	R-P-21S	159.7	-0.1059	30	Yes	5	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-P-22D	10.79	7.451	30	No	5	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-P-22S	3.29	0.4303	30	No	5	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-P-30S	2.528	0.8675	30	No	8	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-P-31S	83.7	14.3	30	Yes	7	0	No	0.008	NP (normality)
BARIUM, TOTAL (UG/L)	R-P-05S	192.6	153.8	2000	No	5	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-P-10S	187.4	89.04	2000	No	5	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-P-16S	131.5	30.44	2000	No	5	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-P-17D	108.7	98.85	2000	No	5	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-P-17I	21.4	13.6	2000	No	5	0	No	0.031	NP (normality)
BARIUM, TOTAL (UG/L)	R-P-17S	183	81.3	2000	No	5	0	No	0.031	NP (normality)
BARIUM, TOTAL (UG/L)	R-P-19D	104.8	66.93	2000	No	5	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-P-19I	14.91	9.814	2000	No	5	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-P-19S	669.8	243.8	2000	No	5	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-P-21D	756.9	47.76	2000	No	5	0	ln(x)	0.01	Param.
BARIUM, TOTAL (UG/L)	R-P-21I	44.47	20.85	2000	No	5	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-P-21S	714.5	199.9	2000	No	5	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-P-22D	80.3	60.42	2000	No	5	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-P-22S	256.6	126.2	2000	No	5	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-P-30S	115	75.27	2000	No	5	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-P-31S	303.1	97.28	2000	No	5	0	ln(x)	0.01	Param.
CADMIUM, TOTAL (UG/L)	R-P-05S	0.031	0.028	5	No	5	100	No	0.031	NP (NDs)
CADMIUM, TOTAL (UG/L)	R-P-10S	0.2855	0.04801	5	No	5	0	ln(x)	0.01	Param.

Confidence Interval

Rush Island E.C. Client: Ameren Data: RIEC Data Printed 3/22/2022, 10:16 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
CADMIUM, TOTAL (UG/L)	R-P-16S	0.2047	0.01009	5	No	5	20	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	R-P-17D	0.3044	0.004381	5	No	5	40	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	R-P-17I	0.8057	0.2103	5	No	5	0	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	R-P-17S	0.09839	0.04281	5	No	5	40	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	R-P-19D	0.4342	-0.03538	5	No	5	0	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	R-P-19I	0.6923	0.1557	5	No	5	0	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	R-P-19S	0.24	0.028	5	No	5	80	No	0.031	NP (NDs)
CADMIUM, TOTAL (UG/L)	R-P-21D	0.095	0.028	5	No	5	60	No	0.031	NP (NDs)
CADMIUM, TOTAL (UG/L)	R-P-21I	0.11	0.028	5	No	5	60	No	0.031	NP (NDs)
CADMIUM, TOTAL (UG/L)	R-P-21S	0.17	0.028	5	No	5	60	No	0.031	NP (NDs)
CADMIUM, TOTAL (UG/L)	R-P-22D	0.1827	0.06673	5	No	5	0	ln(x)	0.01	Param.
CADMIUM, TOTAL (UG/L)	R-P-22S	0.1702	0.0382	5	No	5	0	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	R-P-30S	0.08808	0.05192	5	No	5	20	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	R-P-31S	0.031	0.028	5	No	5	100	No	0.031	NP (NDs)
CHROMIUM, TOTAL (UG/L)	R-P-05S	0.4553	0.2697	100	No	5	20	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	R-P-10S	0.5	0.11	100	No	5	60	No	0.031	NP (NDs)
CHROMIUM, TOTAL (UG/L)	R-P-16S	0.5	0.11	100	No	5	100	No	0.031	NP (NDs)
CHROMIUM, TOTAL (UG/L)	R-P-17D	0.38	0.11	100	No	5	60	No	0.031	NP (NDs)
CHROMIUM, TOTAL (UG/L)	R-P-17I	1.101	0.6913	100	No	5	0	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	R-P-17S	0.4677	0.1223	100	No	5	40	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	R-P-19D	0.9182	0.1458	100	No	5	0	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	R-P-19I	1.013	-0.0006835	100	No	5	0	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	R-P-19S	0.4097	0.1743	100	No	5	40	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	R-P-21D	0.5	0.11	100	No	5	80	No	0.031	NP (NDs)
CHROMIUM, TOTAL (UG/L)	R-P-21I	0.5	0.22	100	No	5	20	No	0.031	NP (normality)
CHROMIUM, TOTAL (UG/L)	R-P-21S	0.4341	0.1459	100	No	5	20	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	R-P-22D	1.826	0.6902	100	No	5	0	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	R-P-22S	0.41	0.11	100	No	5	60	No	0.031	NP (NDs)
CHROMIUM, TOTAL (UG/L)	R-P-30S	0.5	0.11	100	No	5	80	No	0.031	NP (NDs)
CHROMIUM, TOTAL (UG/L)	R-P-31S	0.4929	0.1111	100	No	5	40	No	0.01	Param.
COBALT, TOTAL (UG/L)	R-P-05S	0.75	0.475	6	No	4	100	No	0.0625	NP (NDs)
COBALT, TOTAL (UG/L)	R-P-10S	3.226	0.4737	6	No	4	50	No	0.01	Param.
COBALT, TOTAL (UG/L)	R-P-16S	2.4	0.475	6	No	4	75	No	0.0625	NP (NDs)
COBALT, TOTAL (UG/L)	R-P-17D	0.75	0.475	6	No	4	100	No	0.0625	NP (NDs)
COBALT, TOTAL (UG/L)	R-P-17I	0.75	0.475	6	No	4	100	No	0.0625	NP (NDs)
COBALT, TOTAL (UG/L)	R-P-19D	0.75	0.475	6	No	4	100	No	0.0625	NP (NDs)
COBALT, TOTAL (UG/L)	R-P-19I	0.75	0.475	6	No	4	100	No	0.0625	NP (NDs)
COBALT, TOTAL (UG/L)	R-P-19S	3.3	0.75	6	No	4	50	No	0.0625	NP (normality)
COBALT, TOTAL (UG/L)	R-P-21D	0.75	0.475	6	No	4	100	No	0.0625	NP (NDs)
COBALT, TOTAL (UG/L)	R-P-21I	0.75	0.475	6	No	4	100	No	0.0625	NP (NDs)
COBALT, TOTAL (UG/L)	R-P-21S	3.457	1.043	6	No	4	25	No	0.01	Param.
COBALT, TOTAL (UG/L)	R-P-22D	0.75	0.475	6	No	4	100	No	0.0625	NP (NDs)
COBALT, TOTAL (UG/L)	R-P-22S	3.887	1.413	6	No	4	0	No	0.01	Param.
COBALT, TOTAL (UG/L)	R-P-30S	0.75	0.475	6	No	4	100	No	0.0625	NP (NDs)
COBALT, TOTAL (UG/L)	R-P-31S	0.75	0.475	6	No	4	100	No	0.0625	NP (NDs)
FLUORIDE, TOTAL (MG/L)	R-P-05S	0.5312	0.2808	4	No	5	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-P-10S	0.591	0.409	4	No	5	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-P-16S	0.6738	0.1142	4	No	5	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-P-17D	0.7523	0.5637	4	No	5	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-P-17I	2.355	1.805	4	No	5	0	No	0.01	Param.

Confidence Interval

Rush Island E.C. Client: Ameren Data: RIEC Data Printed 3/22/2022, 10:16 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
FLUORIDE, TOTAL (MG/L)	R-P-17S	1.169	0.2593	4	No	5	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-P-19D	2.268	1.932	4	No	5	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-P-19I	2.023	1.057	4	No	5	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-P-19S	0.41	0.31	4	No	5	0	No	0.031	NP (normality)
FLUORIDE, TOTAL (MG/L)	R-P-21D	1.636	0.5924	4	No	5	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-P-21I	1.1	0.93	4	No	5	0	No	0.031	NP (normality)
FLUORIDE, TOTAL (MG/L)	R-P-21S	0.4836	0.2204	4	No	5	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-P-22D	2.713	2.087	4	No	5	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-P-22S	0.4963	0.3037	4	No	4	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-P-30S	0.44	0.33	4	No	5	0	No	0.031	NP (normality)
FLUORIDE, TOTAL (MG/L)	R-P-31S	0.4677	0.3243	4	No	5	0	No	0.01	Param.
LEAD, TOTAL (UG/L)	R-P-05S	4.1	1.9	15	No	5	80	No	0.031	NP (NDs)
LEAD, TOTAL (UG/L)	R-P-10S	5.2	1.9	15	No	5	80	No	0.031	NP (NDs)
LEAD, TOTAL (UG/L)	R-P-16S	2.3	1.9	15	No	5	100	No	0.031	NP (NDs)
LEAD, TOTAL (UG/L)	R-P-17D	3.9	1.9	15	No	5	80	No	0.031	NP (NDs)
LEAD, TOTAL (UG/L)	R-P-17I	27.53	5.947	15	Yes	5	0	No	0.01	Param.
LEAD, TOTAL (UG/L)	R-P-17S	4.5	1.9	15	No	5	80	No	0.031	NP (NDs)
LEAD, TOTAL (UG/L)	R-P-19D	2.3	1.9	15	No	5	100	No	0.031	NP (NDs)
LEAD, TOTAL (UG/L)	R-P-19I	24.29	1.914	15	Yes	5	0	No	0.01	Param.
LEAD, TOTAL (UG/L)	R-P-19S	6.3	1.9	15	No	5	80	No	0.031	NP (NDs)
LEAD, TOTAL (UG/L)	R-P-21D	2.3	1.9	15	No	5	100	No	0.031	NP (NDs)
LEAD, TOTAL (UG/L)	R-P-21I	2.3	1.9	15	No	5	100	No	0.031	NP (NDs)
LEAD, TOTAL (UG/L)	R-P-21S	8.9	1.9	15	No	5	60	No	0.031	NP (NDs)
LEAD, TOTAL (UG/L)	R-P-22D	5.2	1.9	15	No	5	80	No	0.031	NP (NDs)
LEAD, TOTAL (UG/L)	R-P-22S	4.7	1.9	15	No	5	80	No	0.031	NP (NDs)
LEAD, TOTAL (UG/L)	R-P-30S	2.3	1.9	15	No	5	100	No	0.031	NP (NDs)
LEAD, TOTAL (UG/L)	R-P-31S	2.3	1.9	15	No	5	100	No	0.031	NP (NDs)
LITHIUM, TOTAL (UG/L)	R-P-05S	21.09	12.63	64.7	No	5	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	R-P-10S	21.94	11.5	64.7	No	5	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	R-P-16S	65.47	18.89	64.7	Yes	5	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	R-P-17D	43.68	35.44	64.7	No	5	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	R-P-17I	5.7	2.3	64.7	No	5	80	No	0.031	NP (NDs)
LITHIUM, TOTAL (UG/L)	R-P-17S	41.75	19.57	64.7	No	5	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	R-P-19D	21.83	13.09	64.7	No	5	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	R-P-19I	17.73	11.12	64.7	No	4	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	R-P-19S	62.07	24.57	64.7	No	5	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	R-P-21D	249	140	64.7	Yes	5	0	No	0.031	NP (normality)
LITHIUM, TOTAL (UG/L)	R-P-21I	24.19	14.01	64.7	No	5	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	R-P-21S	22.31	14.21	64.7	No	5	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	R-P-22D	27.96	24.44	64.7	No	5	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	R-P-22S	74.82	47.66	64.7	Yes	5	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	R-P-30S	36.84	33.24	64.7	No	5	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	R-P-31S	12.83	3.092	64.7	No	5	40	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	R-P-05S	20.42	4.661	100	No	5	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	R-P-10S	118	60.3	100	Yes	8	0	No	0.004	NP (normality)
MOLYBDENUM, TOTAL (UG/L)	R-P-16S	40.79	9.406	100	No	8	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	R-P-17D	742.7	647.3	100	Yes	5	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	R-P-17I	146.8	86.32	100	Yes	5	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	R-P-17S	96.66	7.941	100	No	5	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	R-P-19D	1012	811.3	100	Yes	5	0	No	0.01	Param.

Confidence Interval

Rush Island E.C. Client: Ameren Data: RIEC Data Printed 3/22/2022, 10:16 AM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
MOLYBDENUM, TOTAL (UG/L)	R-P-19I	350.8	110.4	100	Yes	5	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	R-P-19S	14.95	-1.114	100	No	5	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	R-P-21D	519.4	113	100	Yes	5	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	R-P-21I	175.6	78.53	100	Yes	5	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	R-P-21S	7.545	-0.4246	100	No	5	40	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	R-P-22D	371.3	345.9	100	Yes	5	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	R-P-22S	10.39	7.894	100	No	5	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	R-P-30S	2.3	0.85	100	No	8	62.5	No	0.004	NP (NDs)
MOLYBDENUM, TOTAL (UG/L)	R-P-31S	8.353	6.676	100	No	7	0	No	0.01	Param.
RADIUM [226 + 228] (PCI/L)	R-P-05S	0.8555	0.691	5	No	4	100	No	0.0625	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-P-10S	0.995	0.673	5	No	5	100	No	0.031	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-P-16S	0.8435	0.4655	5	No	5	100	No	0.031	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-P-17D	1.053	0.544	5	No	5	100	No	0.031	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-P-17I	1.367	0.891	5	No	5	100	No	0.031	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-P-17S	1.096	0.6855	5	No	5	100	No	0.031	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-P-19D	0.861	0.777	5	No	5	100	No	0.031	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-P-19I	1.377	0.766	5	No	5	100	No	0.031	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-P-19S	2.297	0.9172	5	No	5	40	No	0.01	Param.
RADIUM [226 + 228] (PCI/L)	R-P-21D	3.873	-0.007748	5	No	5	40	No	0.01	Param.
RADIUM [226 + 228] (PCI/L)	R-P-21I	1.327	0.465	5	No	5	100	No	0.031	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-P-21S	1.98	0.765	5	No	5	80	No	0.031	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-P-22D	1.187	0.5985	5	No	5	100	No	0.031	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-P-22S	1.196	0.609	5	No	5	80	No	0.031	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-P-30S	1.347	0.6415	5	No	5	100	No	0.031	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-P-31S	2	0.776	5	No	5	80	No	0.031	NP (NDs)
SELENIUM, TOTAL (UG/L)	R-P-05S	0.2462	0.1538	50	No	5	40	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	R-P-10S	0.28	0.09	50	No	5	60	No	0.031	NP (NDs)
SELENIUM, TOTAL (UG/L)	R-P-16S	8.362	0.08445	50	No	5	0	ln(x)	0.01	Param.
SELENIUM, TOTAL (UG/L)	R-P-17D	0.3337	0.1983	50	No	5	0	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	R-P-17I	2.227	1.373	50	No	5	0	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	R-P-17S	0.9562	0.1758	50	No	5	0	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	R-P-19D	0.4081	0.2719	50	No	5	0	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	R-P-19I	5.02	0.2557	50	No	5	0	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	R-P-19S	0.09	0.09	50	No	5	100	No	0.031	NP (NDs)
SELENIUM, TOTAL (UG/L)	R-P-21D	0.09	0.09	50	No	5	100	No	0.031	NP (NDs)
SELENIUM, TOTAL (UG/L)	R-P-21I	0.6742	0.2938	50	No	5	0	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	R-P-21S	0.85	0.28	50	No	5	0	No	0.031	NP (normality)
SELENIUM, TOTAL (UG/L)	R-P-22D	1.008	0.4722	50	No	5	0	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	R-P-22S	0.52	0.09	50	No	5	60	No	0.031	NP (NDs)
SELENIUM, TOTAL (UG/L)	R-P-30S	1.34	0.08673	50	No	5	40	ln(x)	0.01	Param.
SELENIUM, TOTAL (UG/L)	R-P-31S	0.09	0.09	50	No	5	100	No	0.031	NP (NDs)

APPENDIX E

**April 2022 Corrective Action
Statistical Evaluation**

TECHNICAL MEMORANDUM

DATE August 22, 2022

Project No. 153140604

TO Bill Kutosky
Ameren Missouri

CC Susan Knowles, Craig Giesmann, Charlie Henderson

FROM Jeffrey Ingram, Mark Haddock

EMAIL Jeffrey.Ingram@wsp.com

CORRECTIVE ACTION STATISTICAL EVALUATION FOR RCPA SURFACE IMPOUNDMENT RUSH ISLAND ENERGY CENTER JEFFERSON COUNTY, MISSOURI

This Technical Memorandum provides the results of the Corrective Action Monitoring statistical analyses from the April 2022 sampling event for the RCPA Surface Impoundment at the Rush Island Energy Center (RIEC) located in Jefferson County, Missouri. As outlined in the remedy selection report for the RCPA, Corrective Action at the RCPA 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.

Phase 1 of Corrective Action commenced in August 2019, and was substantially completed on December 15, 2020, with the installation of a low permeability cover system. Included in this memorandum is a brief 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**).

The initial Corrective Action sampling event was completed in April 2020, with a total of six (6) sampling events completed for the Corrective Action Program at the RIEC to date. This analysis uses results collected since the beginning of Corrective Action monitoring (April 2020) for the determination of constituents exceeding the GWPS, as data collected prior to this time was collected during active conditions of the RCPA, prior to the cessation of CCR disposal in the RCPA and is thus not representative of groundwater conditions since the initiation of closure. Several constituents were reported at concentrations below the practical quantitation limit (PQL) during the April 2020 sampling events including beryllium, mercury, and thallium. Because these constituents were not detected during the April 2020 Corrective Action sampling event, they were not re-sampled during the subsequent 2020 semi-annual sampling events in May and October-November 2020. Like the 2020 sampling event, the samples collected during the April 2021 event were analyzed for all Appendix IV parameters, and beryllium, mercury, and thallium plus cobalt were not detected above the PQL. Therefore, the samples collected during the October 2021 sampling event were not analyzed for beryllium, cobalt, mercury, and thallium.

Only three results are available for beryllium, mercury and thallium; thus, confidence intervals could not be calculated because Corrective Action statistical analyses require a minimum of four (4) sampling events. Thus, beryllium, mercury, and thallium were not evaluated in this 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. The following outliers were removed prior to the calculation of confidence limits.

- Arsenic
 - R-P-31S at 83.7 micrograms per liter ($\mu\text{g/L}$) on 10/28/2021. The result is statistically higher than other values at the same well. The high result has not been confirmed during subsequent sampling events and is an outlier.
- Barium
 - R-P-31S at 302 $\mu\text{g/L}$ on 10/28/2021. The result is statistically higher than other values at the same well. The high result has not been confirmed during subsequent sampling events and is an outlier.
- Cadmium
 - R-P-19S at 0.24 $\mu\text{g/L}$ on 4/22/2021. The result is statistically higher than other values at the same well. The high result has not been confirmed during subsequent sampling events and is an outlier.
- Cobalt
 - R-P-16S at 2.4 $\mu\text{g/L}$ on 5/20/2020. The result is statistically higher than other values at the same well. The high result has not been confirmed during subsequent sampling events and is an outlier.
 - R-P-17S at 5.9 $\mu\text{g/L}$ on 10/26/2020. The result is statistically higher than other values at the same well. The high result has not been confirmed during subsequent sampling events and is an outlier.
 - R-P-19S at 3.3 $\mu\text{g/L}$ on 10/27/2020. The result is statistically higher than other values at the same well. The high result has not been confirmed during subsequent sampling events and is an outlier.
- Radium 226 & 228
 - R-P-31S at 2.0 picocuries per liter (pCi/L) on 10/28/2021. The result is statistically higher than other values at the same well. The high result has not been confirmed during subsequent sampling events and is an outlier.

An analysis of the outliers removed to date was completed and the following statistical outlier that was previously removed was added back into the dataset prior to the calculation of confidence limits.

- Lithium
 - R-P-19I at 8.3 $\mu\text{g/L}$ on 4/22/2021. Was removed in October 2021 as an outlier because the result was statistically lower than other values at the same well. However, based on review of subsequent sampling data the well displays larger variability in lithium concentrations than observed with the data available

during the October 2021 statistical evaluation. Based on this review, the result is no longer considered an outlier.

Following the outlier analysis, the second step in the statistical analysis was to calculate confidence intervals and compare those to the GWPS¹. As stated above, the confidence intervals shown in Appendix A are calculated based on results since April 2020. Arsenic, which was identified as a statistical exceedance of the GWPS at R-P-19S in April 2021 and R-P-31S in the October 2021 sampling event, is no longer an exceedance. Lithium at R-P-16S, which was also identified as an exceedance of the GWPS in April 2021, is no longer an exceedance. The other exceedances remained the same for this event as those reported for the October 2021 event. A summary of constituents exceeding the GWPS at corresponding well(s) is as follows:

- Arsenic at R-P-05S, R-P-17I², R-P-17S², R-P-19I², and R-P-21S²
- Lead at R-P-17I² and R-P-19I
- Lithium at R-P-21D and R-P-22S²
- Molybdenum at R-P-10S, R-P-17D, R-P-17I, R-P-19D, R-P-19I, R-P-21D, R-P-21I, and R-P-22D

Typically, following the calculation of confidence intervals, trend tests would be completed using the Sen's Slope / Mann Kendall analysis as outlined in the statistical analysis plan. However, Sen's Slope / Mann Kendall analysis require 8 independent sampling results to complete as outlined in the USEPA Unified Guidance. Since only 6 sampling events have been completed since the cessation of CCR disposal into the RCPA, the Sen's Slope / Mann Kendall test cannot be completed. Therefore, no constituent well pairs were determined to have a significant trend and no trend charts are included with this Technical Memorandum. However, a visual/qualitative review of the existing data was performed and those well/constituent combinations showing downward trends were identified (see summary above). The remaining well/constituent combinations are showing no specific trend or possibly slight upward trends. Based on the current sampling schedule, it is anticipated that eight sampling events will be available following the Spring 2023 sampling event, and trend analyses will be completed at that time.

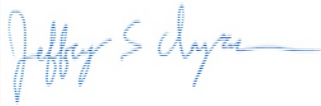
Using Corrective Action statistical methods, GWPS exceedances are reported for arsenic, lead, lithium, and molybdenum. However, variability in the initial groundwater sampling results during and directly after the closure of the RCPA is expected, especially at wells nearest the CCR unit, where closure grading and disturbance activities were greatest. The concentrations reported during the preliminary events following closure are expected to be variable, but to ultimately decrease over time as stabilization occurs and supplemental corrective measures are put into service.

Golder appreciates this opportunity to provide hydrogeological and engineering support services to Ameren. If you have any questions or comments regarding the information provided, please call our office at (314) 984-8800.

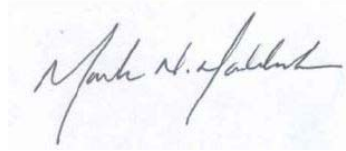
¹ The GWPS is the same limit that was used during Assessment Monitoring period, which was the groundwater monitoring phase immediately prior to Corrective Action.

² Based on visual (qualitative) review of the data, these data sets are showing an overall downward trend since April 2020.

Sincerely,



Jeffrey Ingram
Senior Consultant, Geologist



Mark Haddock
Principal, Practice Leader

JSI/MNH

Attachments: Table 1 – RCPA Groundwater Protection Standards
Appendix A – Sanitas Confidence Interval Statistical Output

**Table 1 - RCPA Groundwater Protection Standards
RCPA Surface Impoundment
Rush Island Energy Center**

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	30	30
Barium	µg/L	2000	2000	550.5
Beryllium	µg/L	4	4	DQR
Cadmium	µg/L	5	5	DQR
Chromium	µg/L	100	100	2.372
Cobalt	µg/L	6	6	DQR
Fluoride	mg/L	4	4	0.2767
Lead	µg/L	15	15	DQR
Lithium	µg/L	40	64.7	64.7
Mercury	µg/L	2	2	DQR
Molybdenum	µg/L	100	100	DQR
Radium 226 + 228	pCi/L	5	5	2.297
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) Drinking Water Standards and Health Advisories. <http://water.epa.gov/drink/contaminants/index.cfm>.

5. Health Based Groundwater Protection Standards (GWPS) were adopted 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 up through April 2021 from monitoring wells MW-B1 and MW-B2.

Prepared by: EMS

Checked by: SSS

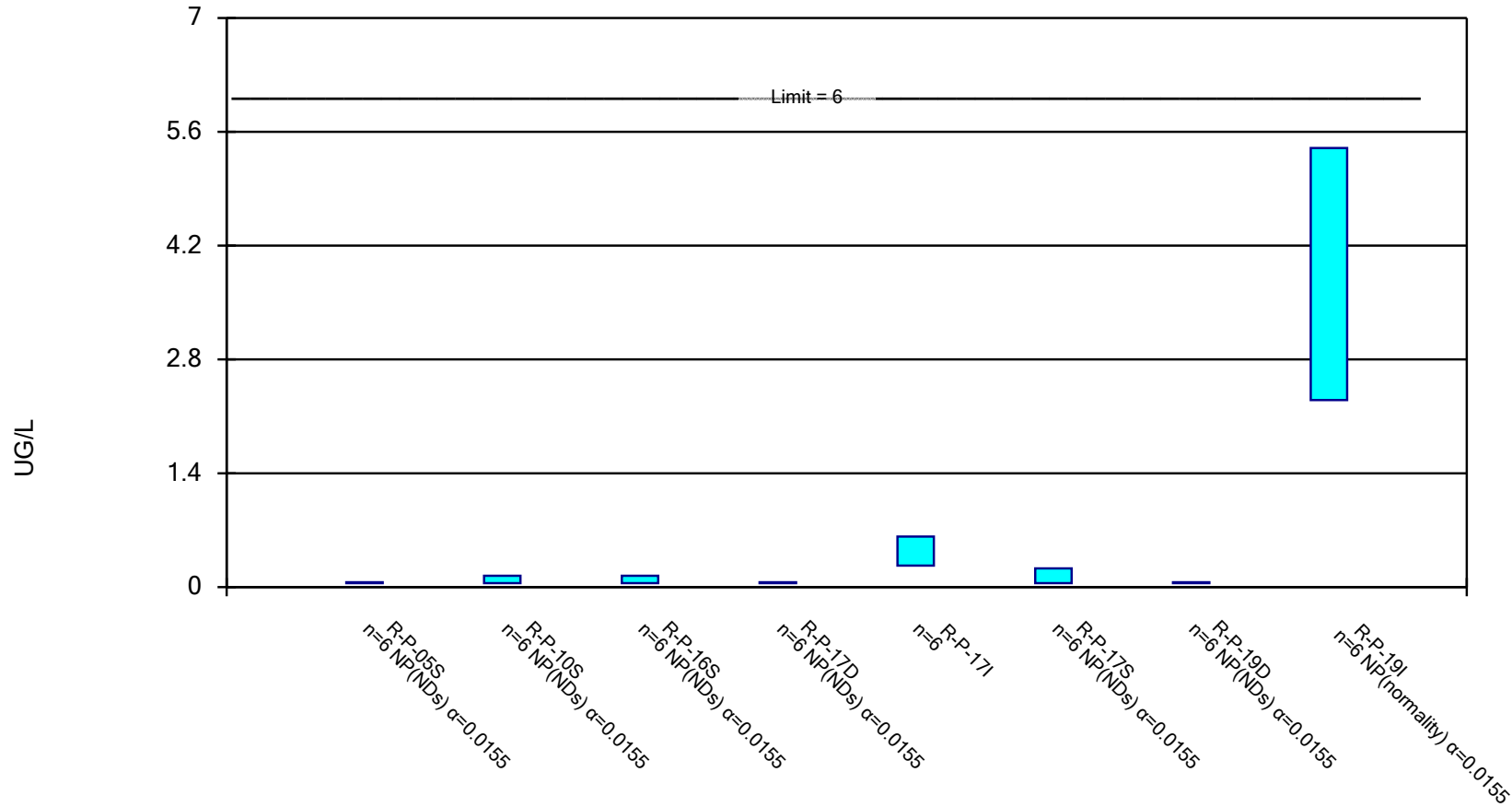
Reviewed by: MNH

APPENDIX A

**Sanitas Confidence Interval
Statistical Output**

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.

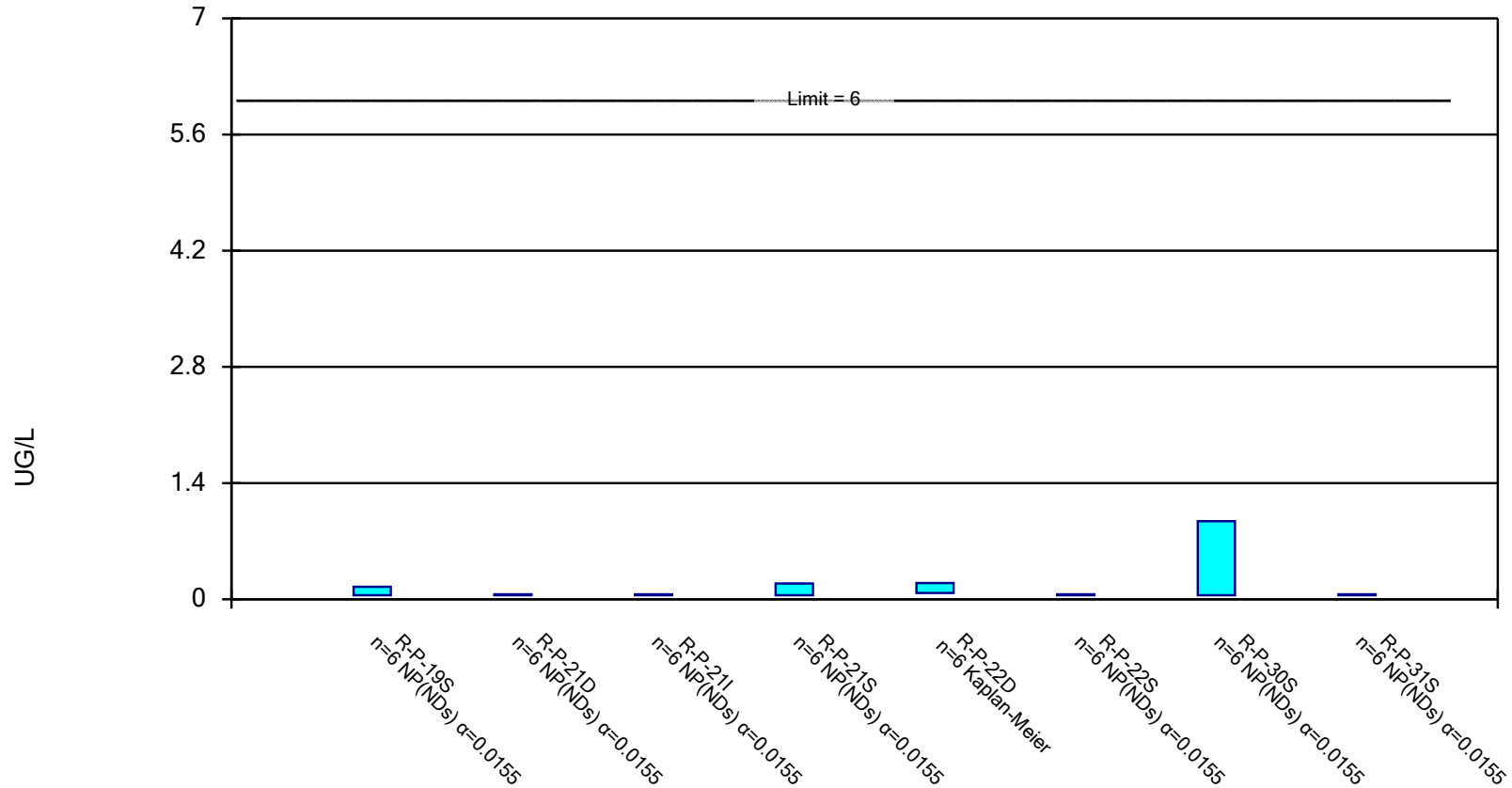


Constituent: ANTIMONY, TOTAL Analysis Run 7/1/2022 2:34 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC 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.

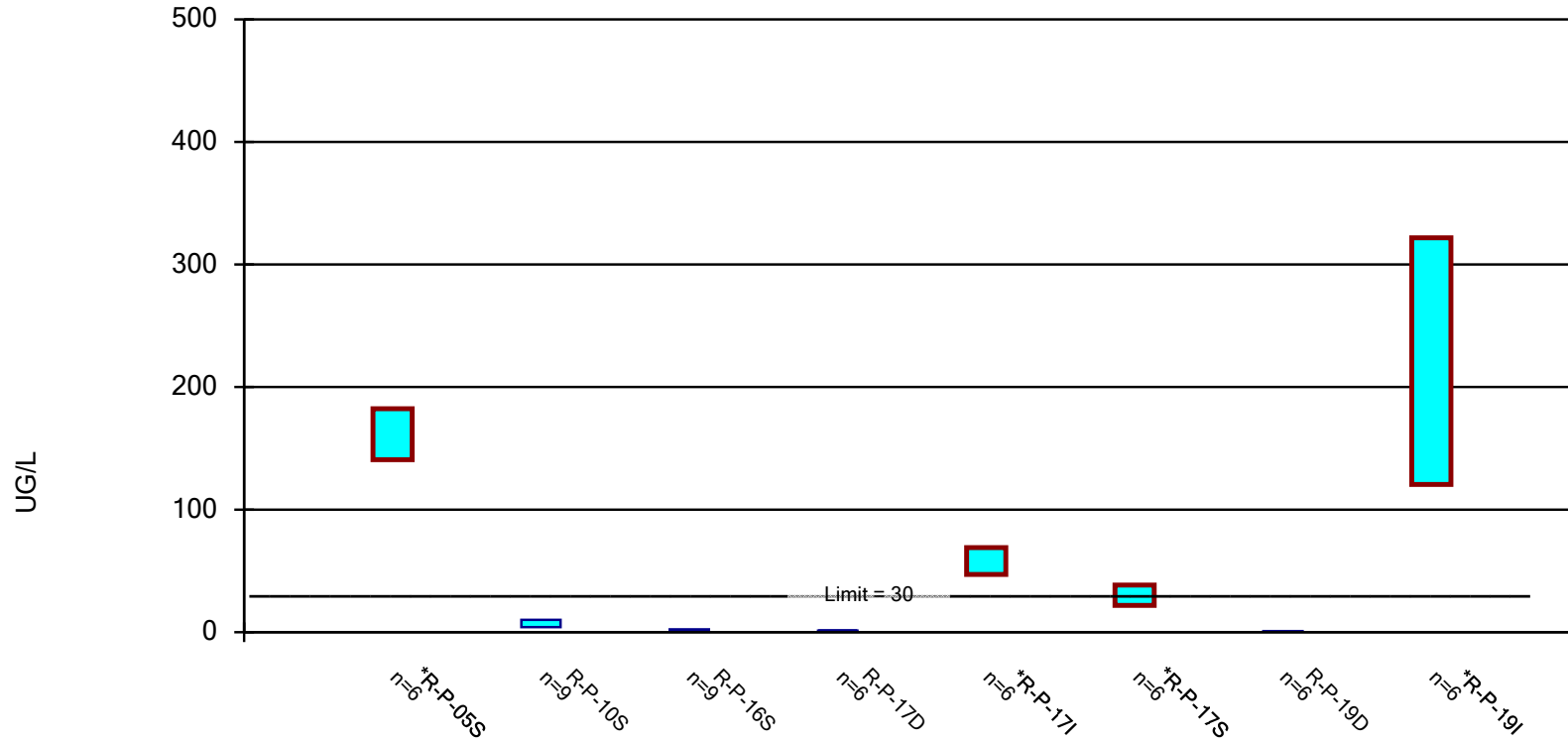


Constituent: ANTIMONY, TOTAL Analysis Run 7/1/2022 2:34 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

Parametric Confidence Interval, Corrective Action Mode

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

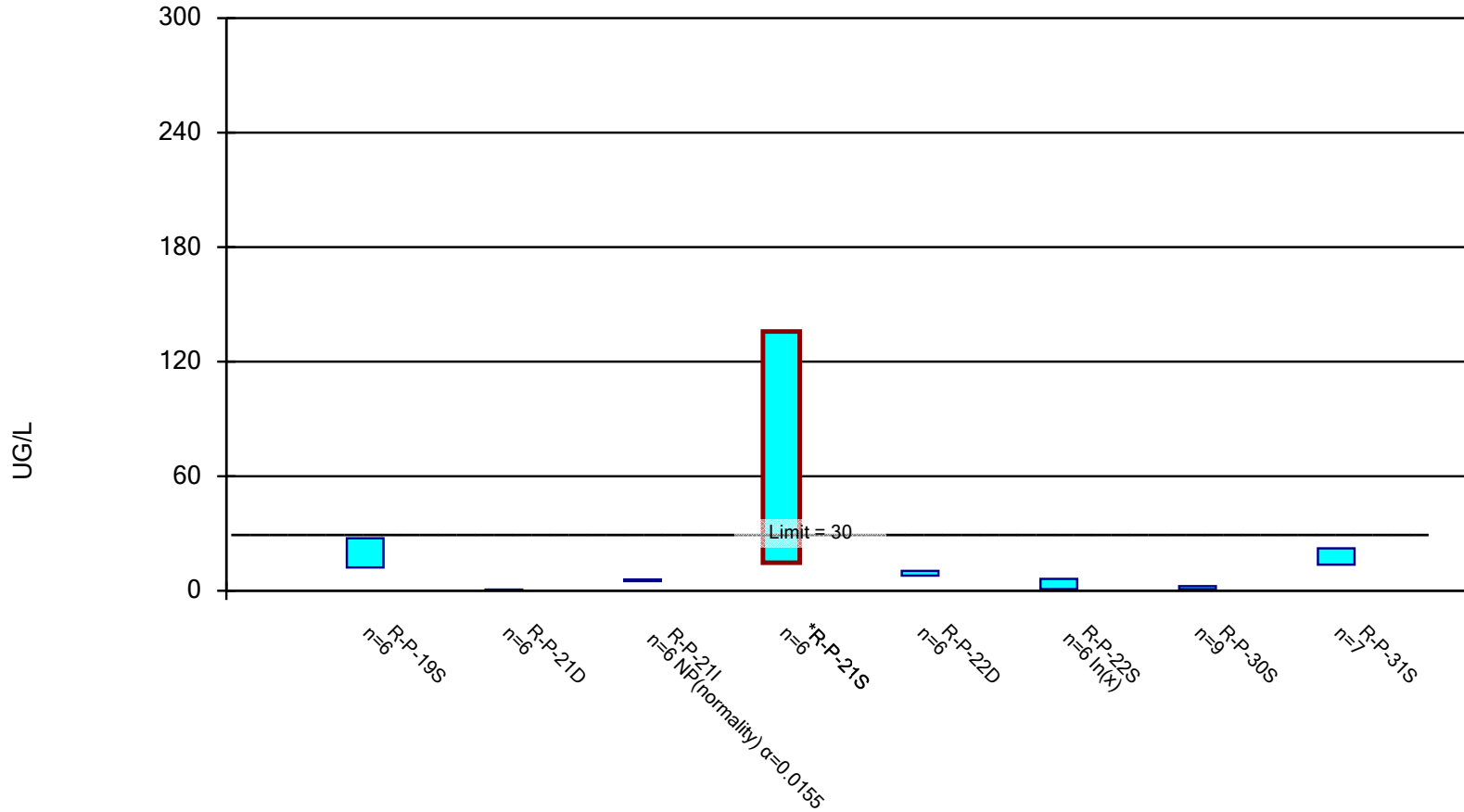


Constituent: ARSENIC, TOTAL Analysis Run 7/1/2022 2:34 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

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.

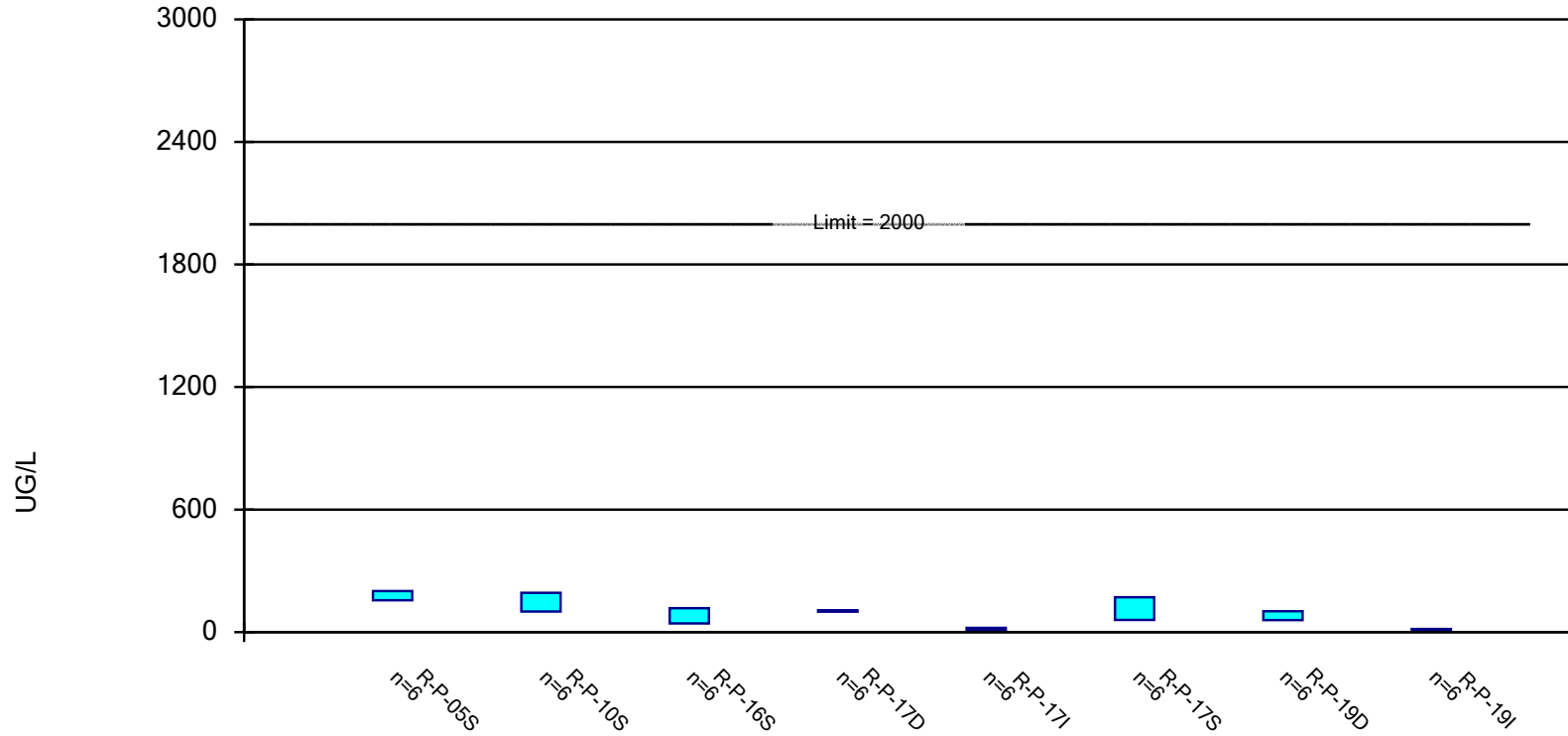


Constituent: ARSENIC, TOTAL Analysis Run 7/1/2022 2:34 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

Parametric Confidence Interval, Corrective Action Mode

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

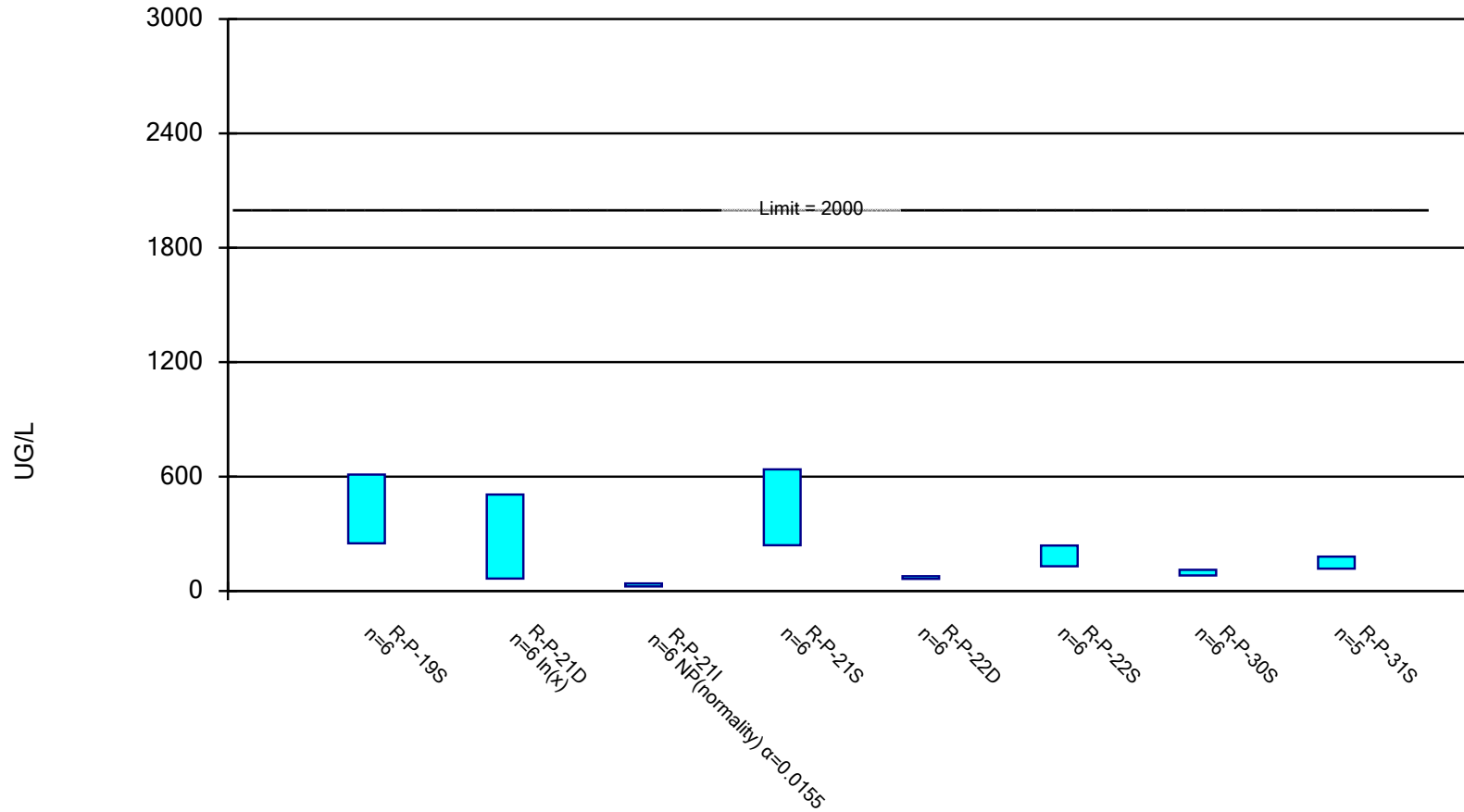


Constituent: BARIUM, TOTAL Analysis Run 7/1/2022 2:34 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC 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.

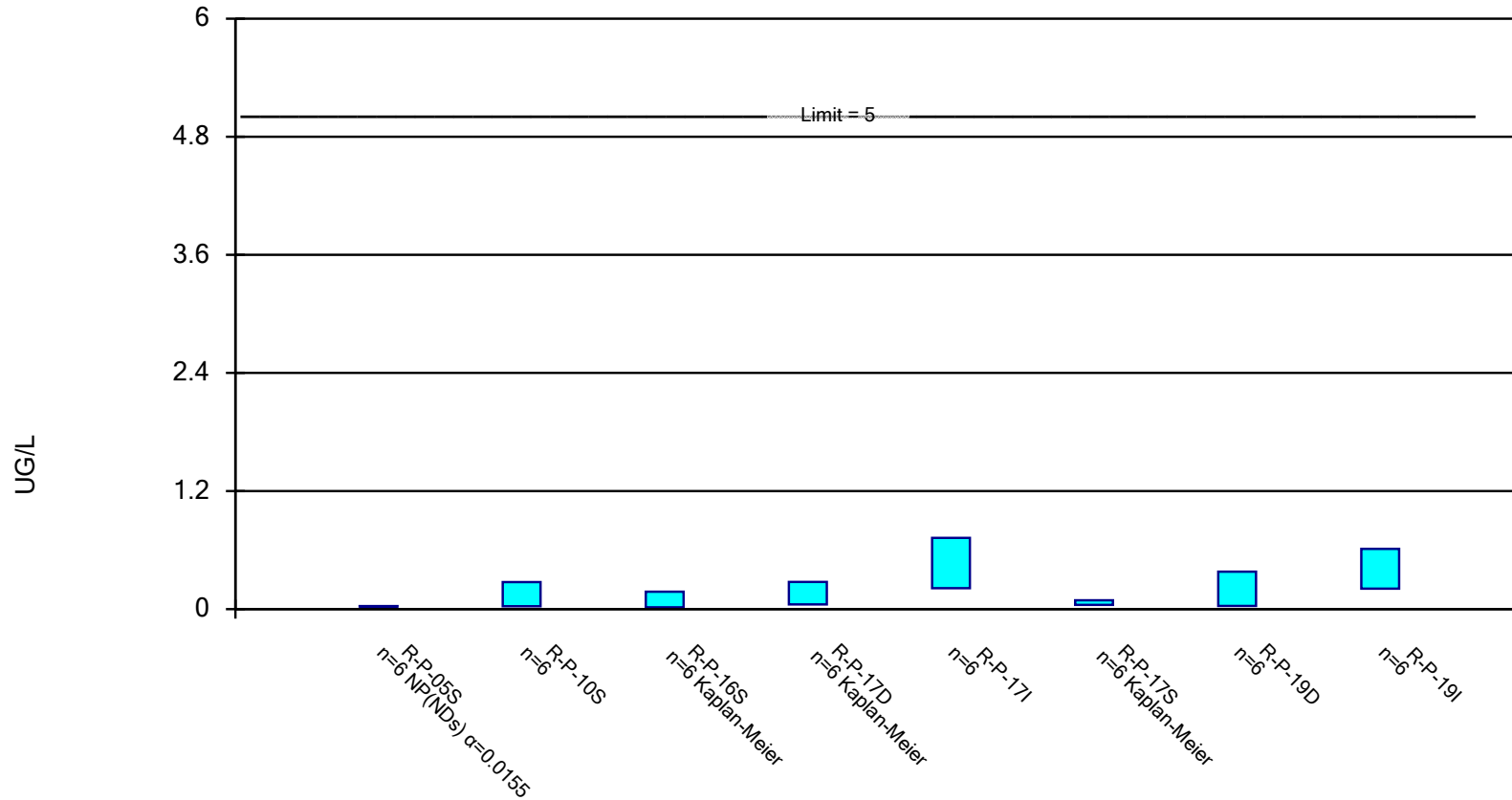


Constituent: BARIUM, TOTAL Analysis Run 7/1/2022 2:34 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC 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.

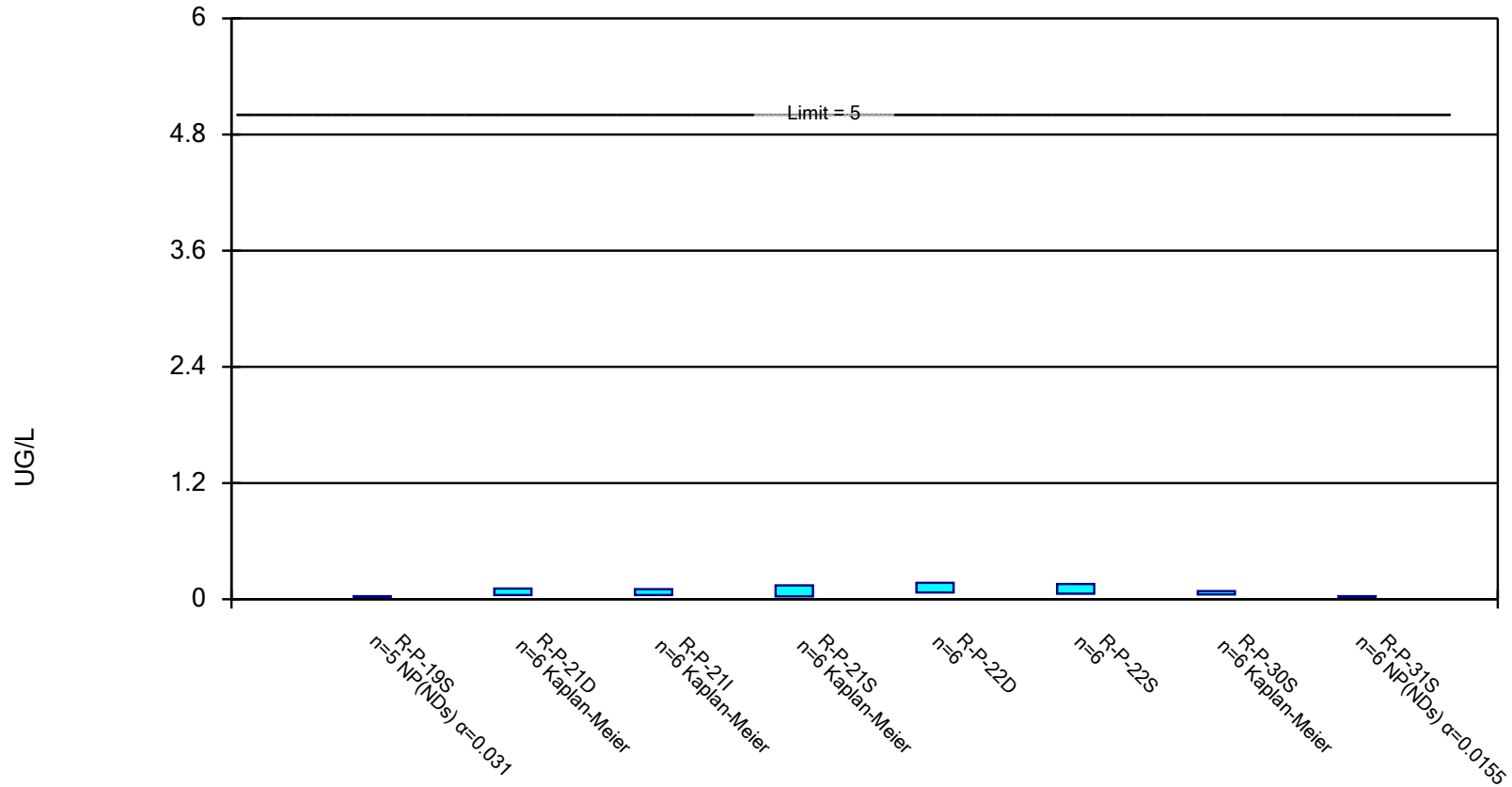


Constituent: CADMIUM, TOTAL Analysis Run 7/1/2022 2:34 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC 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.

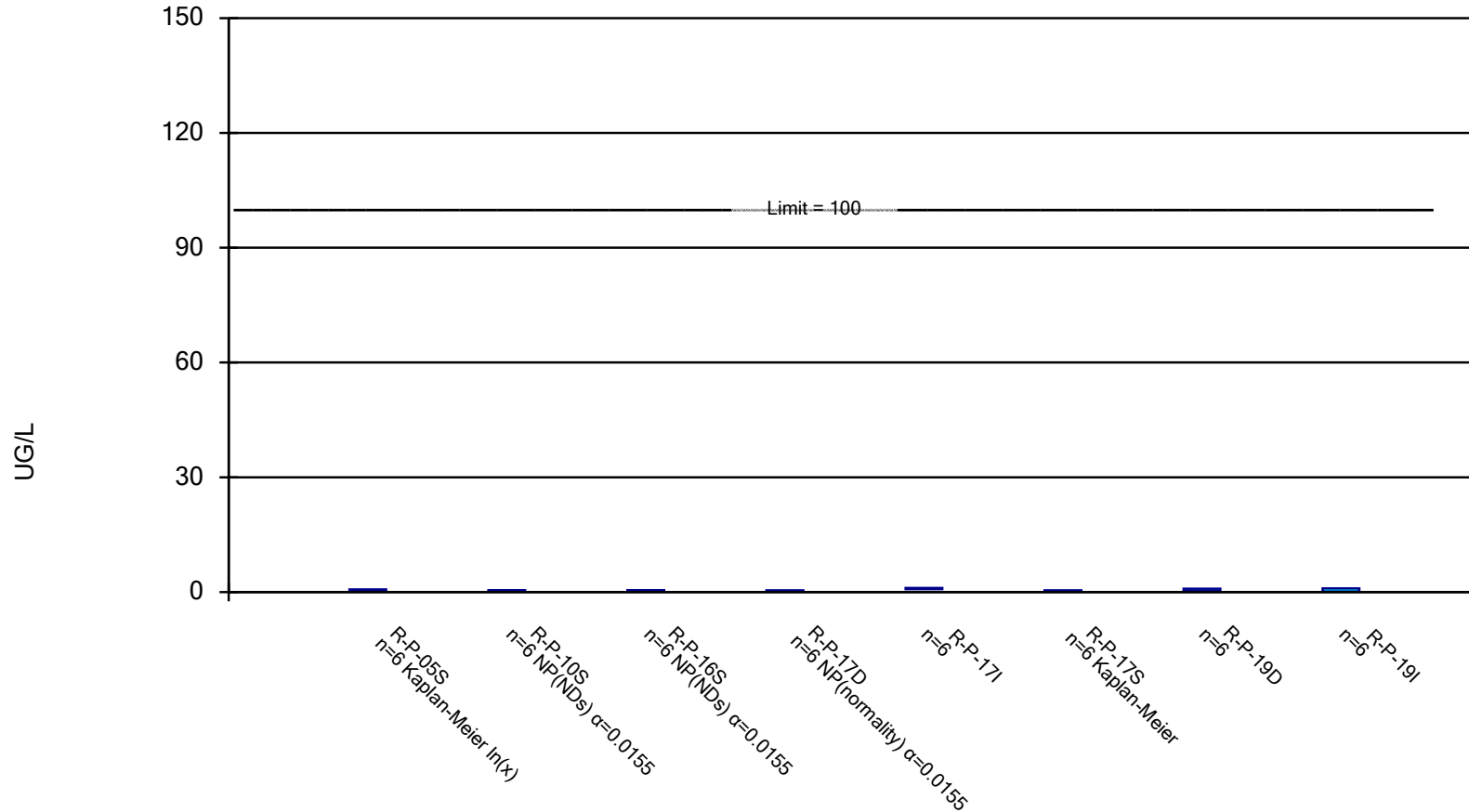


Constituent: CADMIUM, TOTAL Analysis Run 7/1/2022 2:34 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC 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.

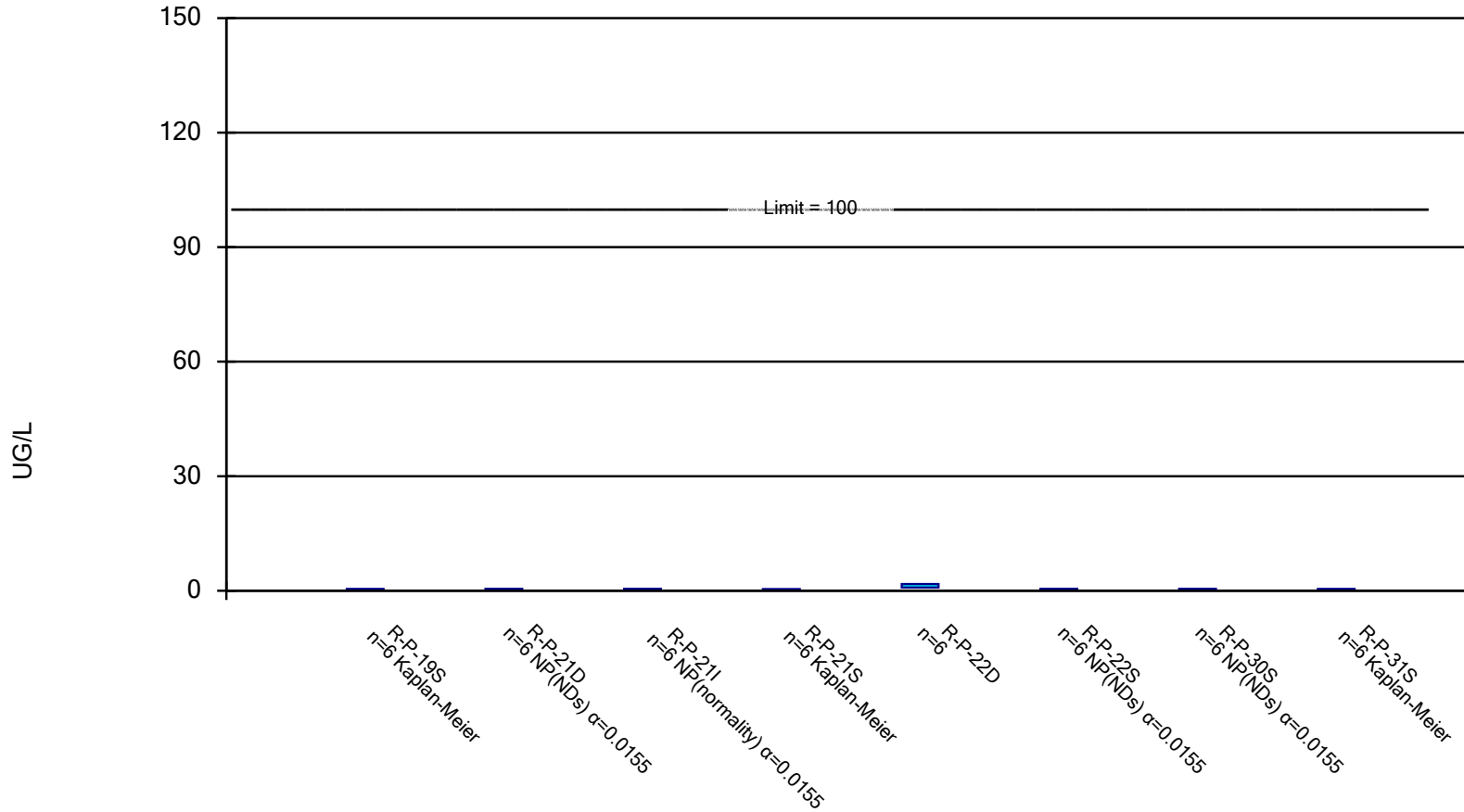


Constituent: CHROMIUM, TOTAL Analysis Run 7/1/2022 2:34 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC 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.

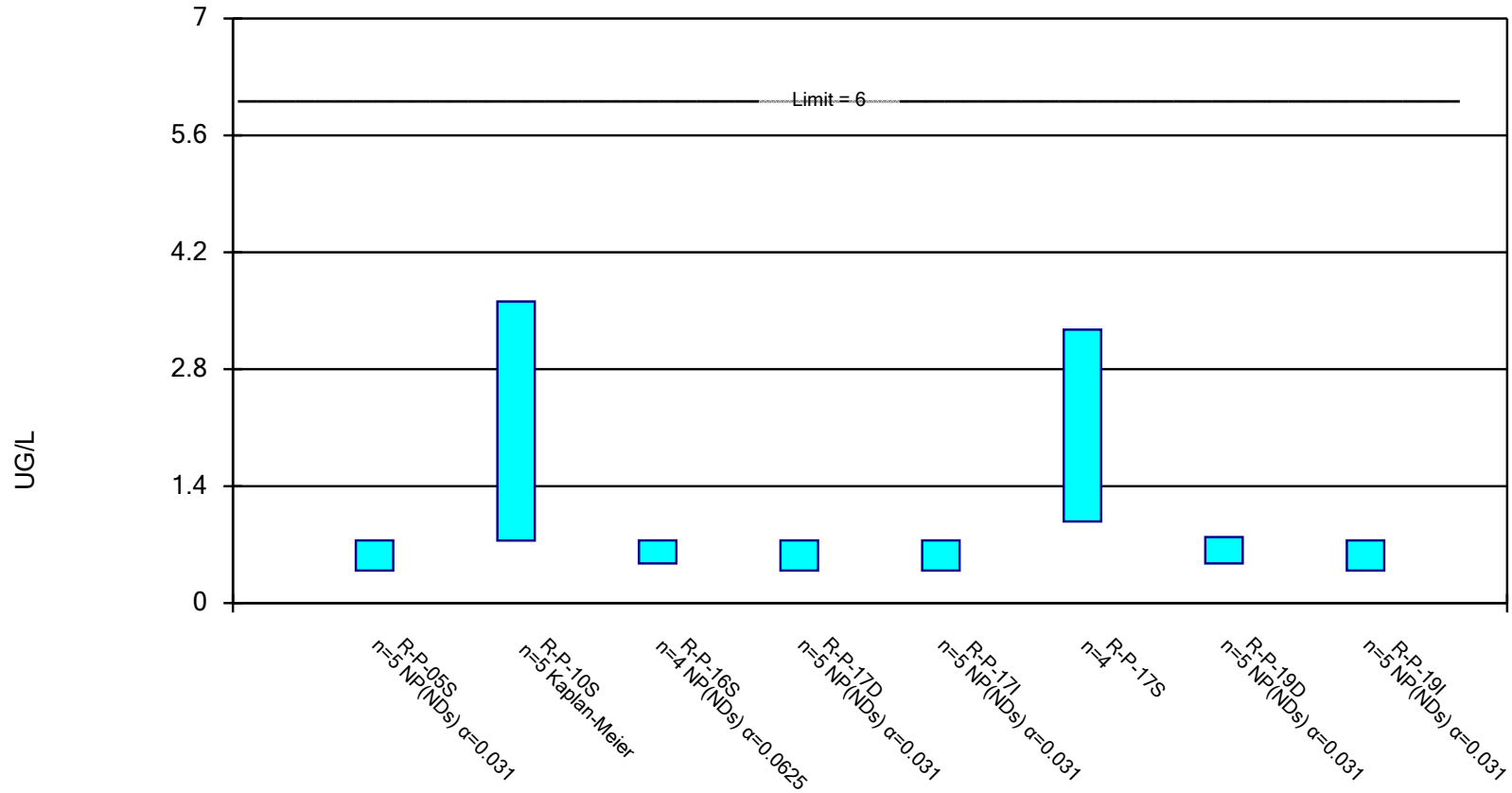


Constituent: CHROMIUM, TOTAL Analysis Run 7/1/2022 2:34 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC 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.

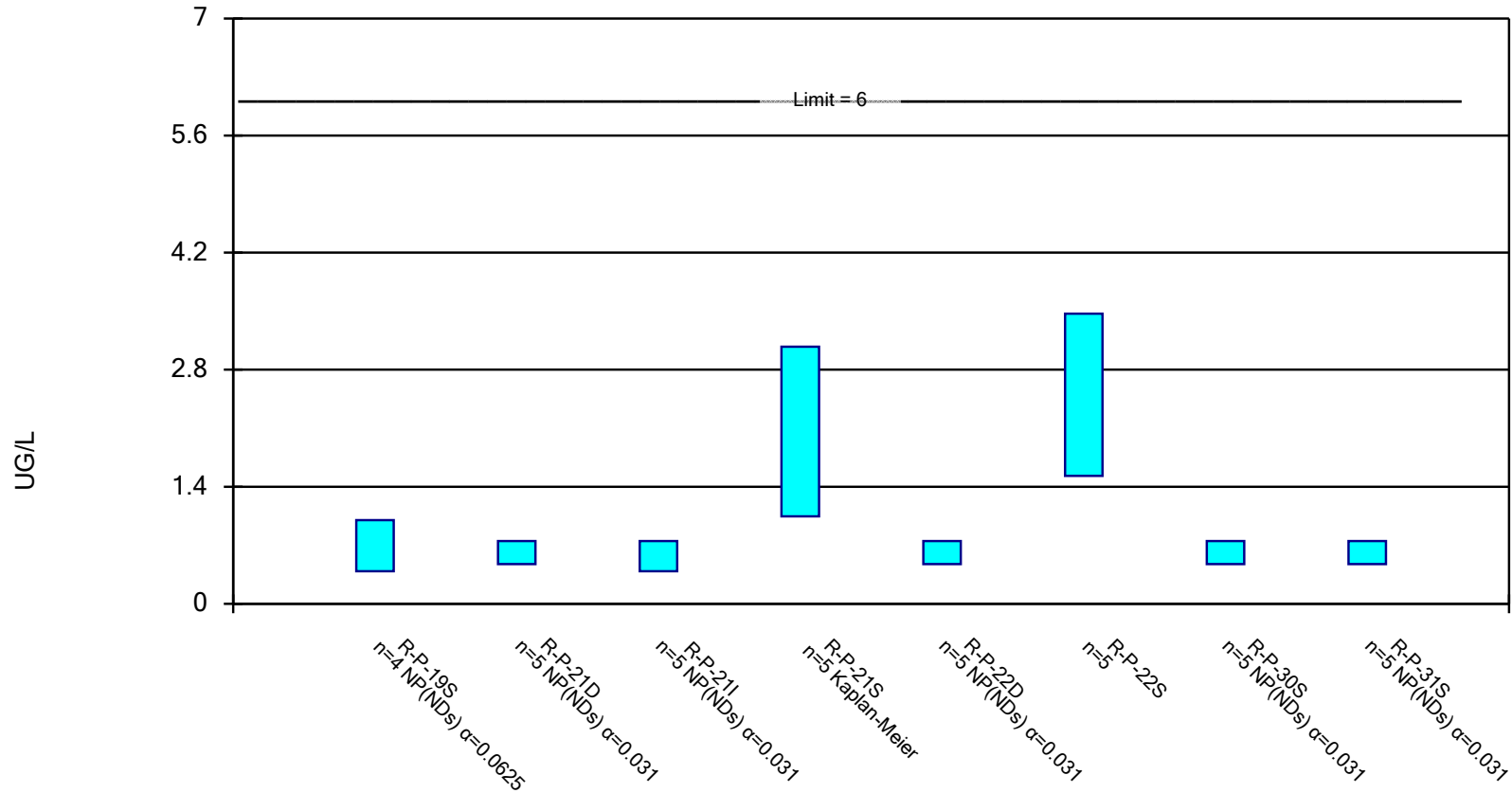


Constituent: COBALT, TOTAL Analysis Run 7/1/2022 2:34 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC 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.

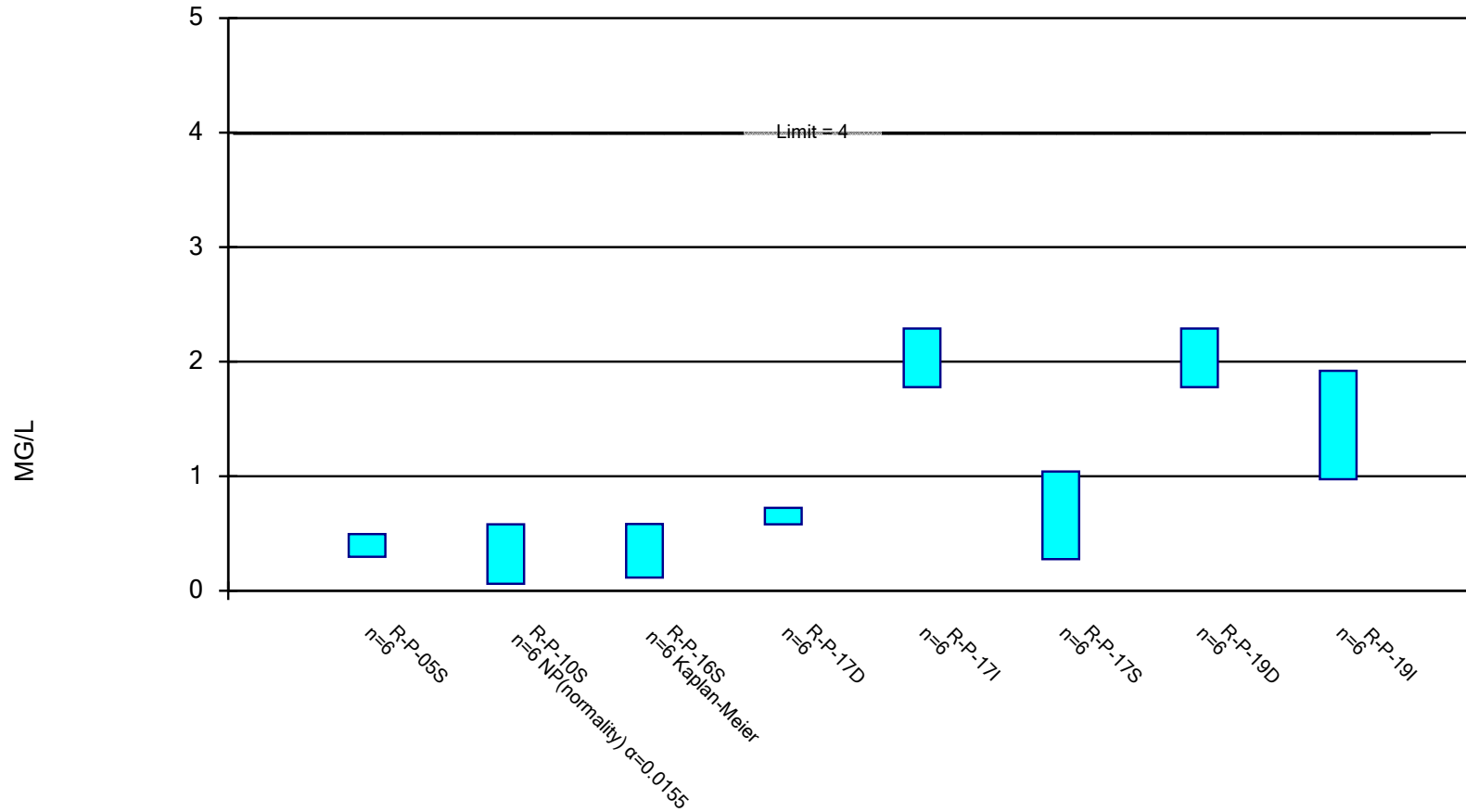


Constituent: COBALT, TOTAL Analysis Run 7/1/2022 2:34 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC 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.

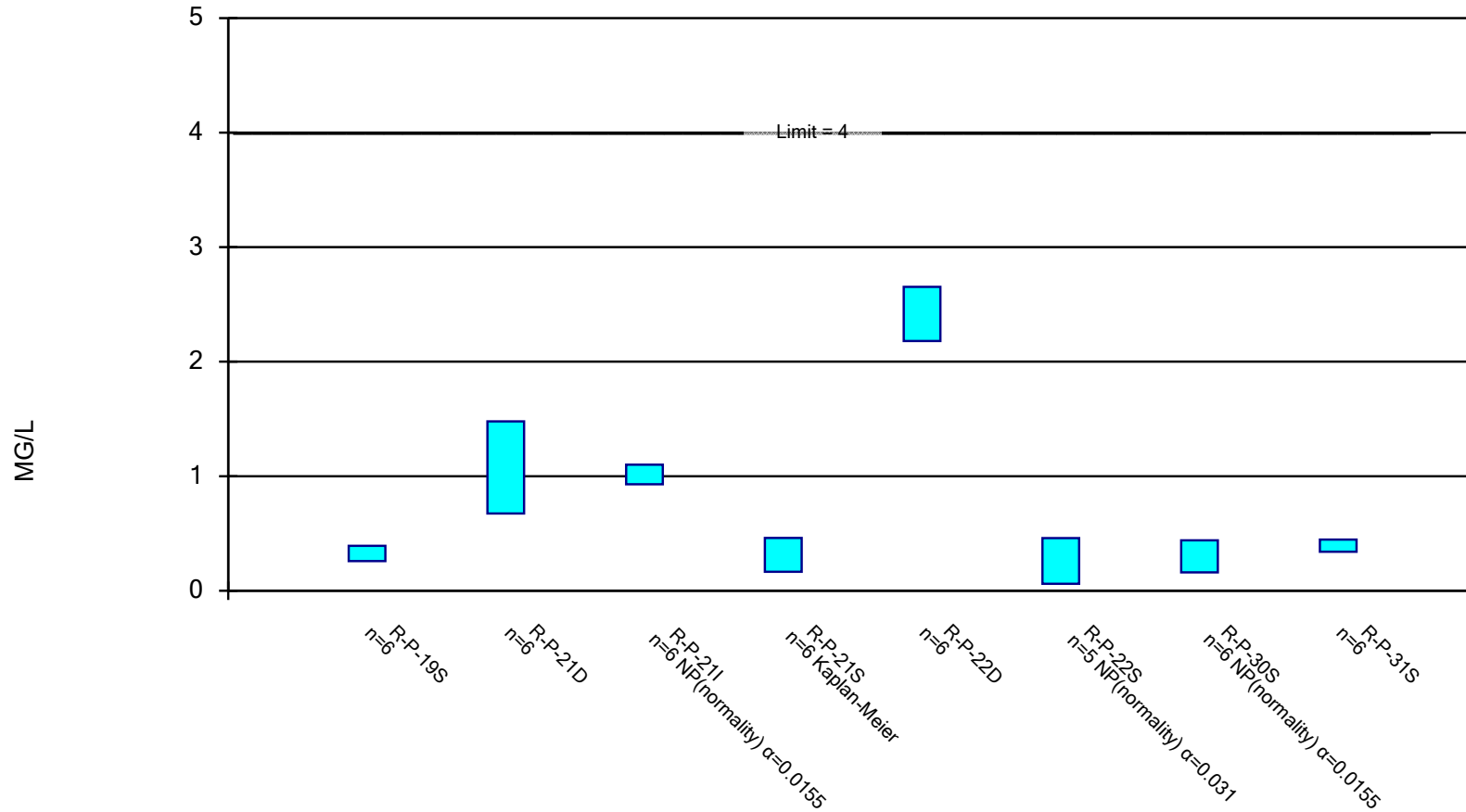


Constituent: FLUORIDE, TOTAL Analysis Run 7/1/2022 2:34 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC 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.

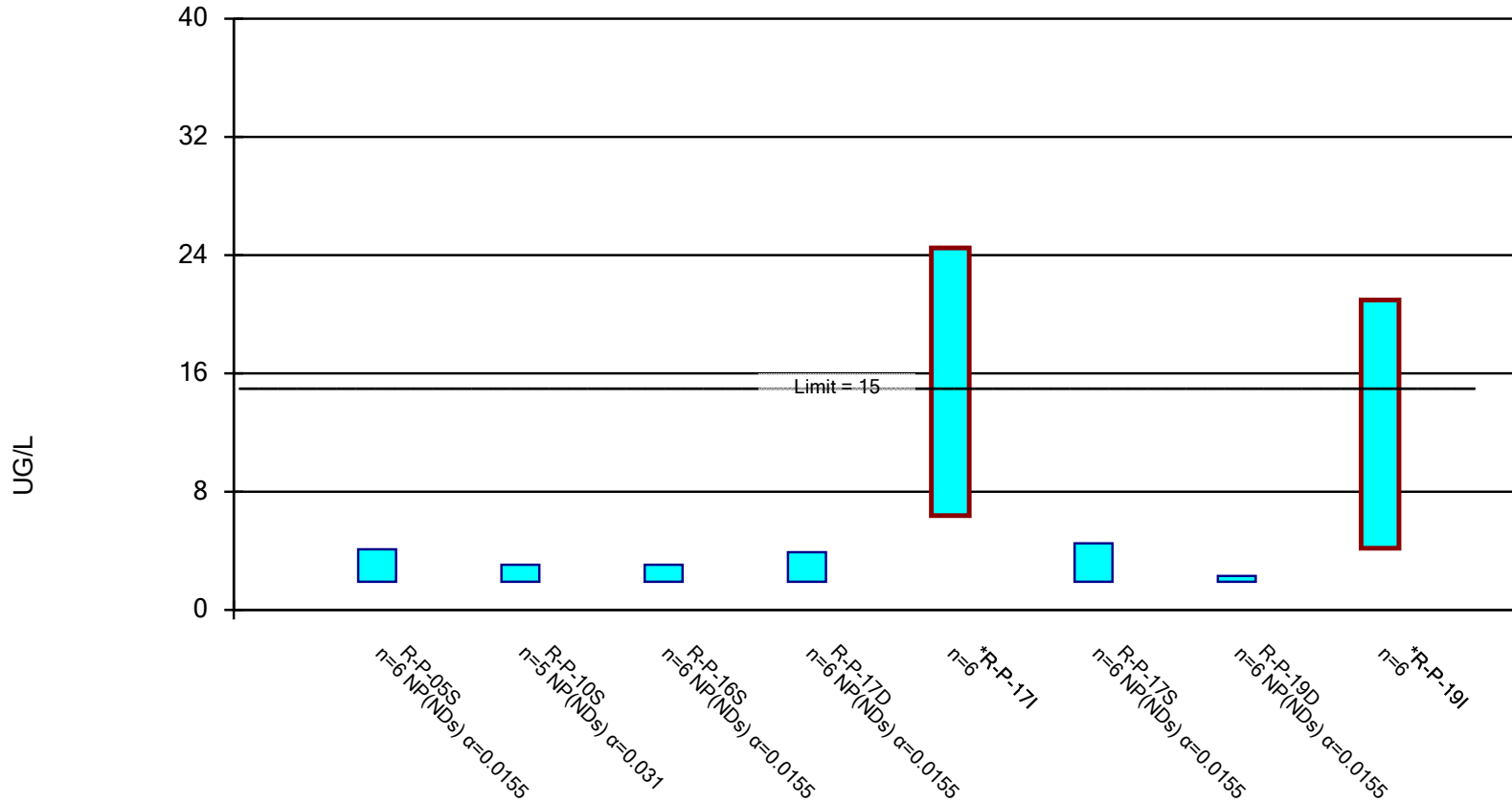


Constituent: FLUORIDE, TOTAL Analysis Run 7/1/2022 2:34 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

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.

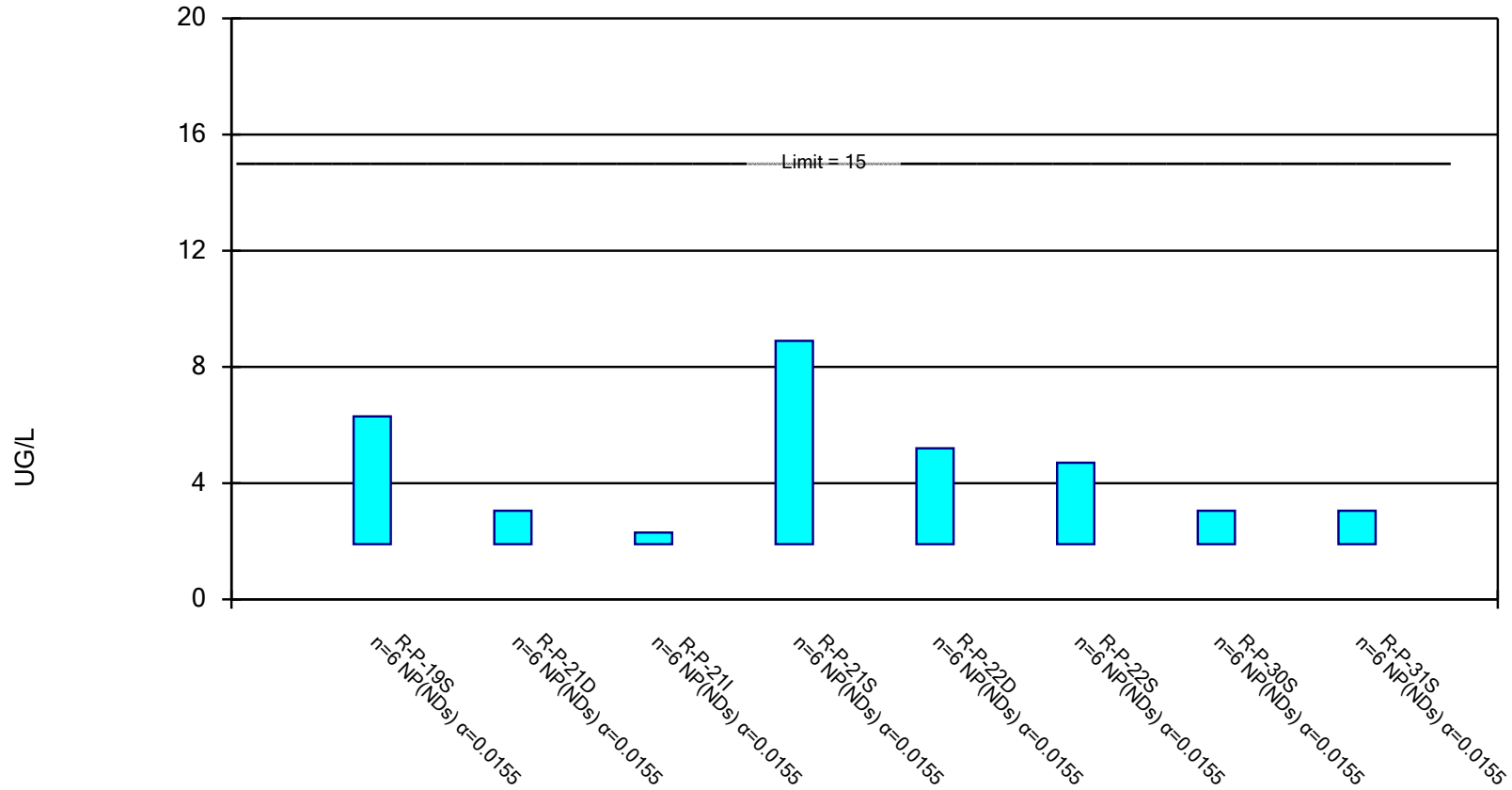


Constituent: LEAD, TOTAL Analysis Run 7/1/2022 2:34 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

Non-Parametric Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded.

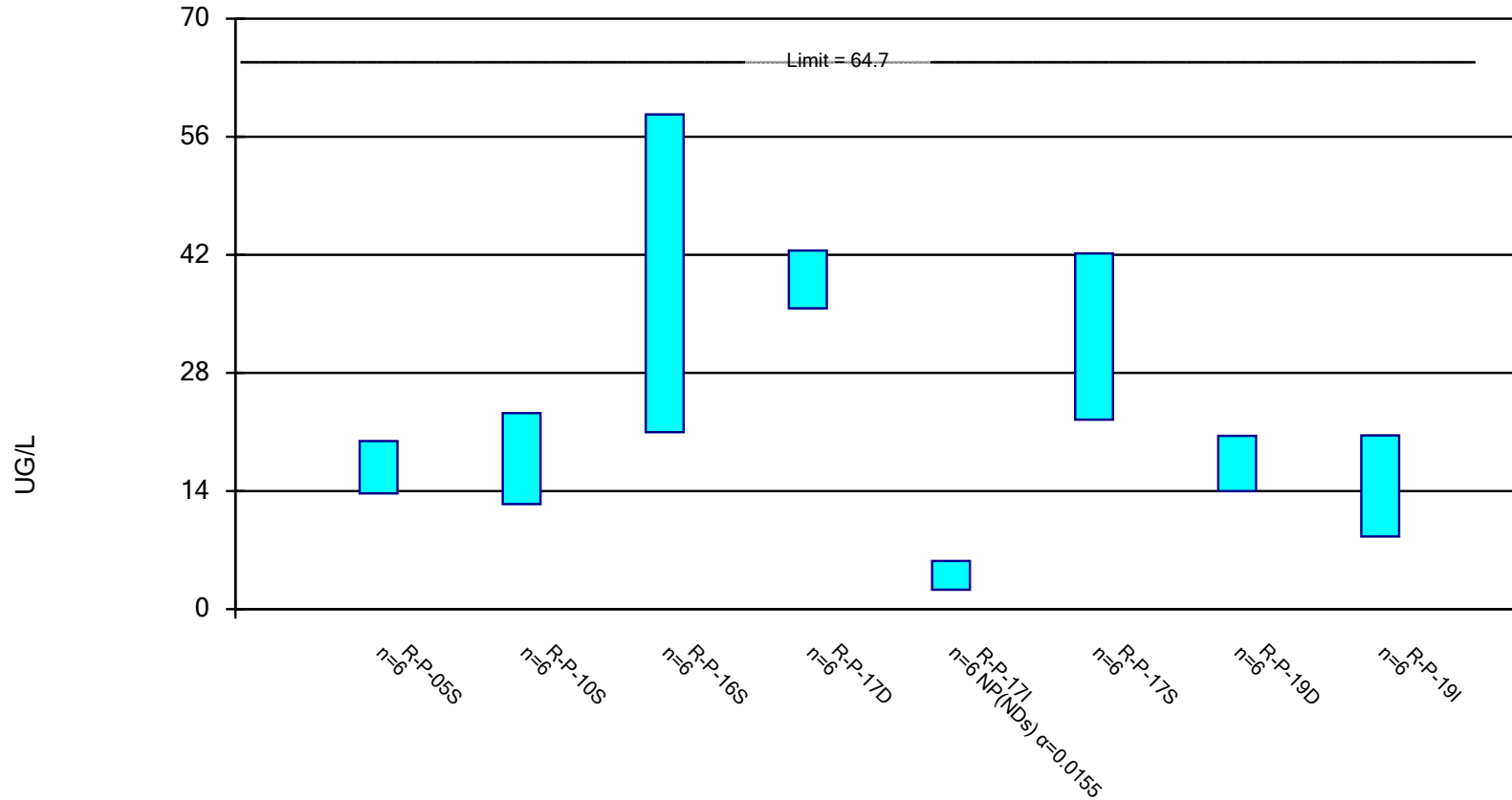


Constituent: LEAD, TOTAL Analysis Run 7/1/2022 2:34 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC 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.

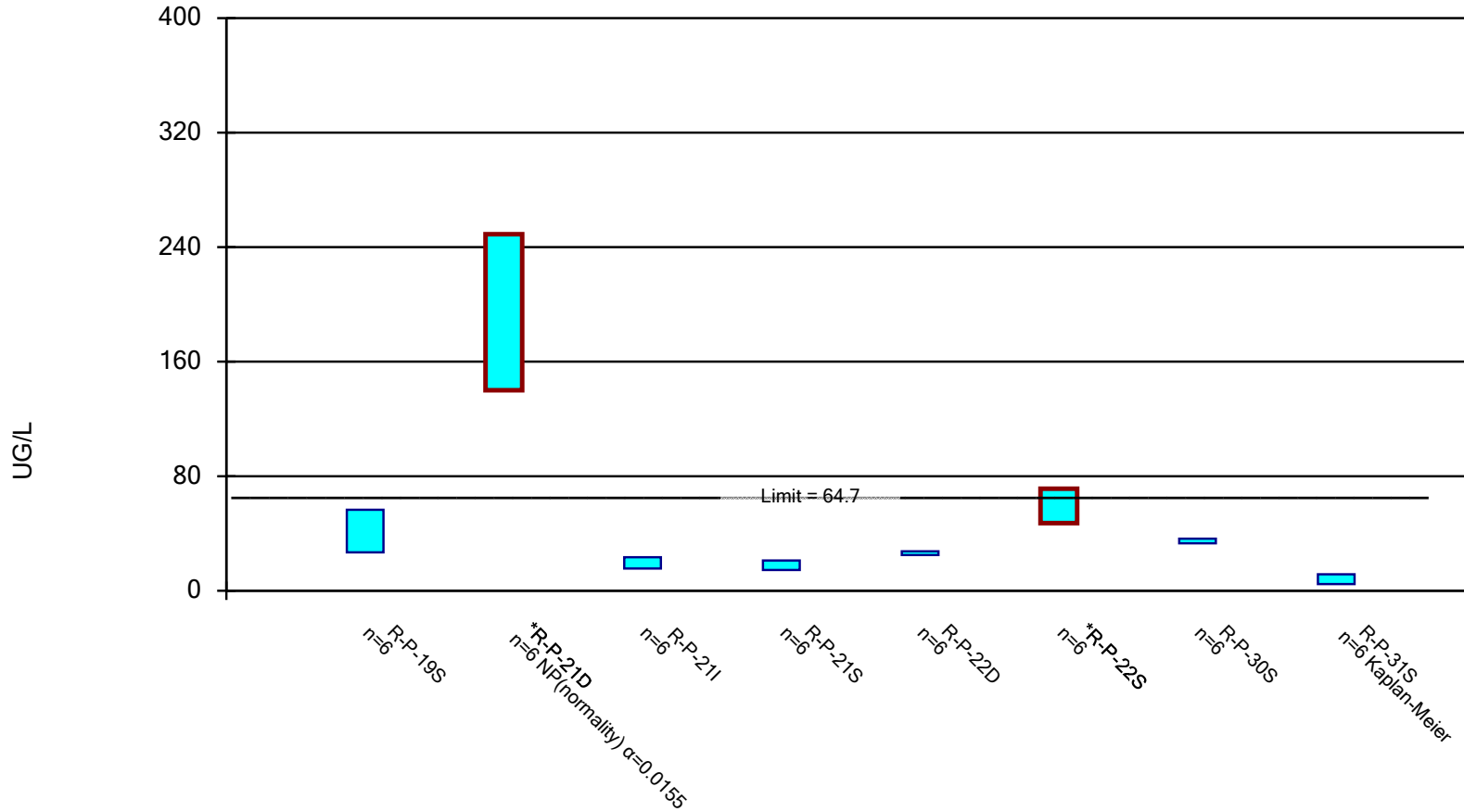


Constituent: LITHIUM, TOTAL Analysis Run 7/1/2022 2:34 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

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.

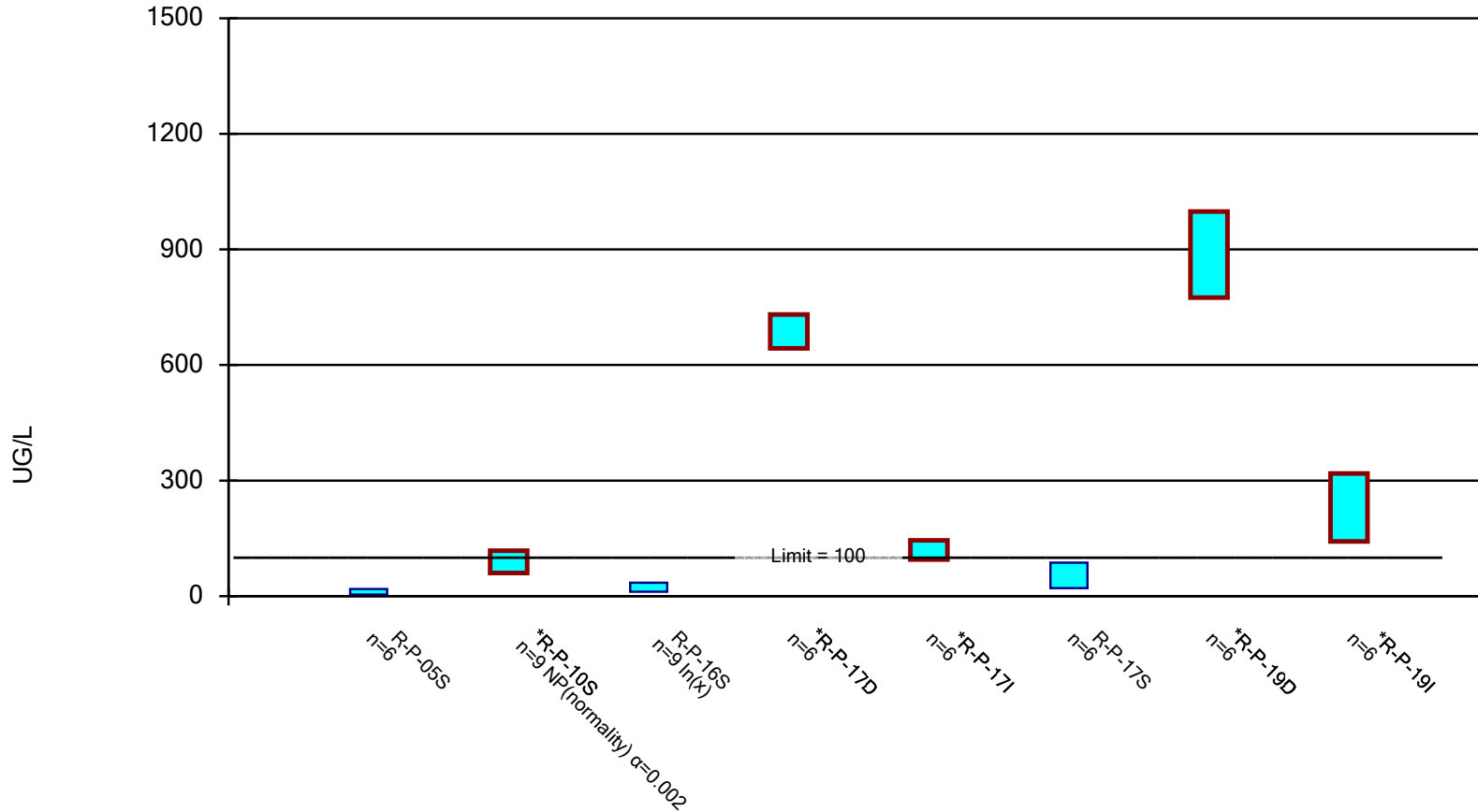


Constituent: LITHIUM, TOTAL Analysis Run 7/1/2022 2:34 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

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.

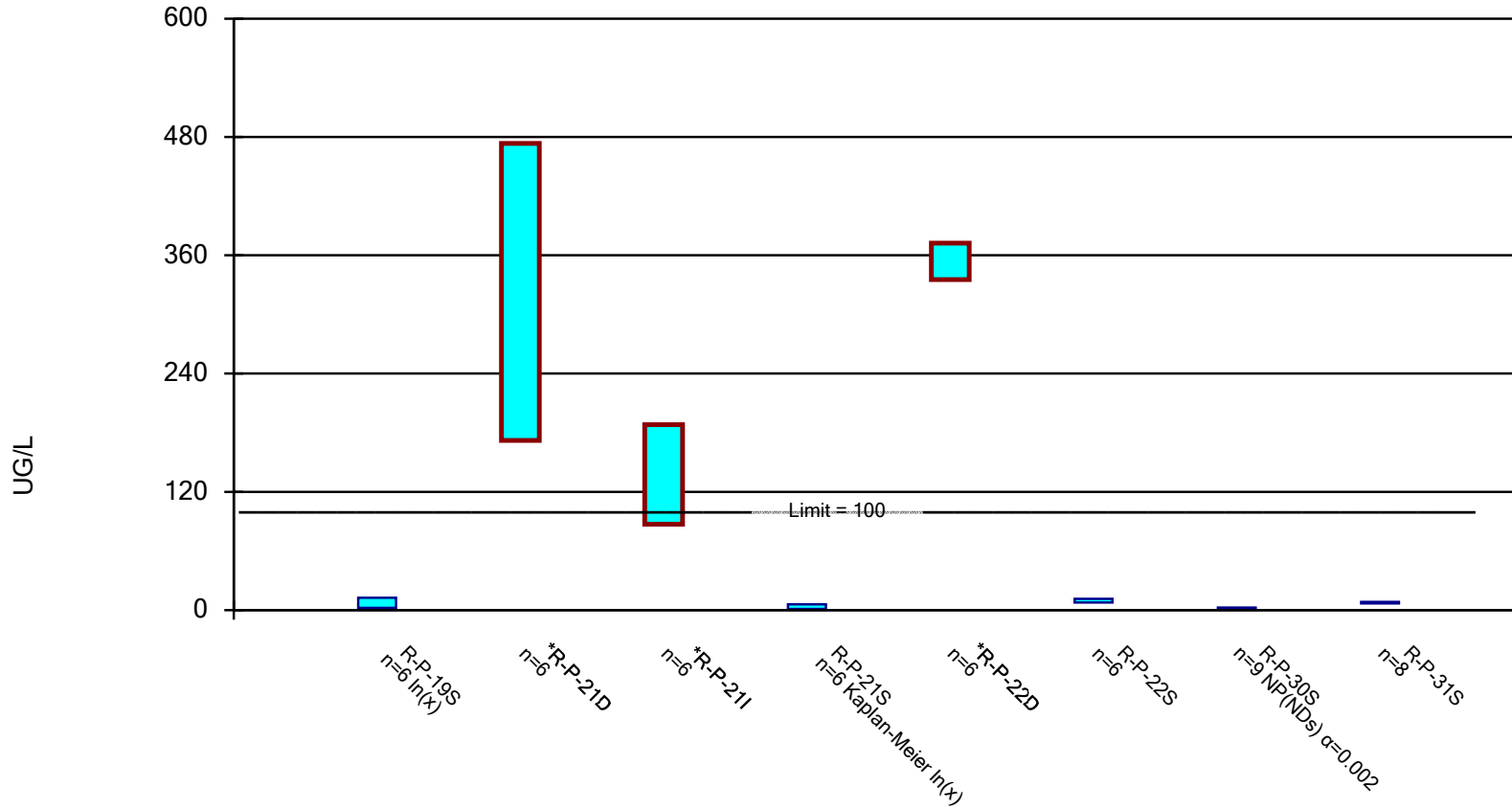


Constituent: MOLYBDENUM, TOTAL Analysis Run 7/1/2022 2:34 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

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.

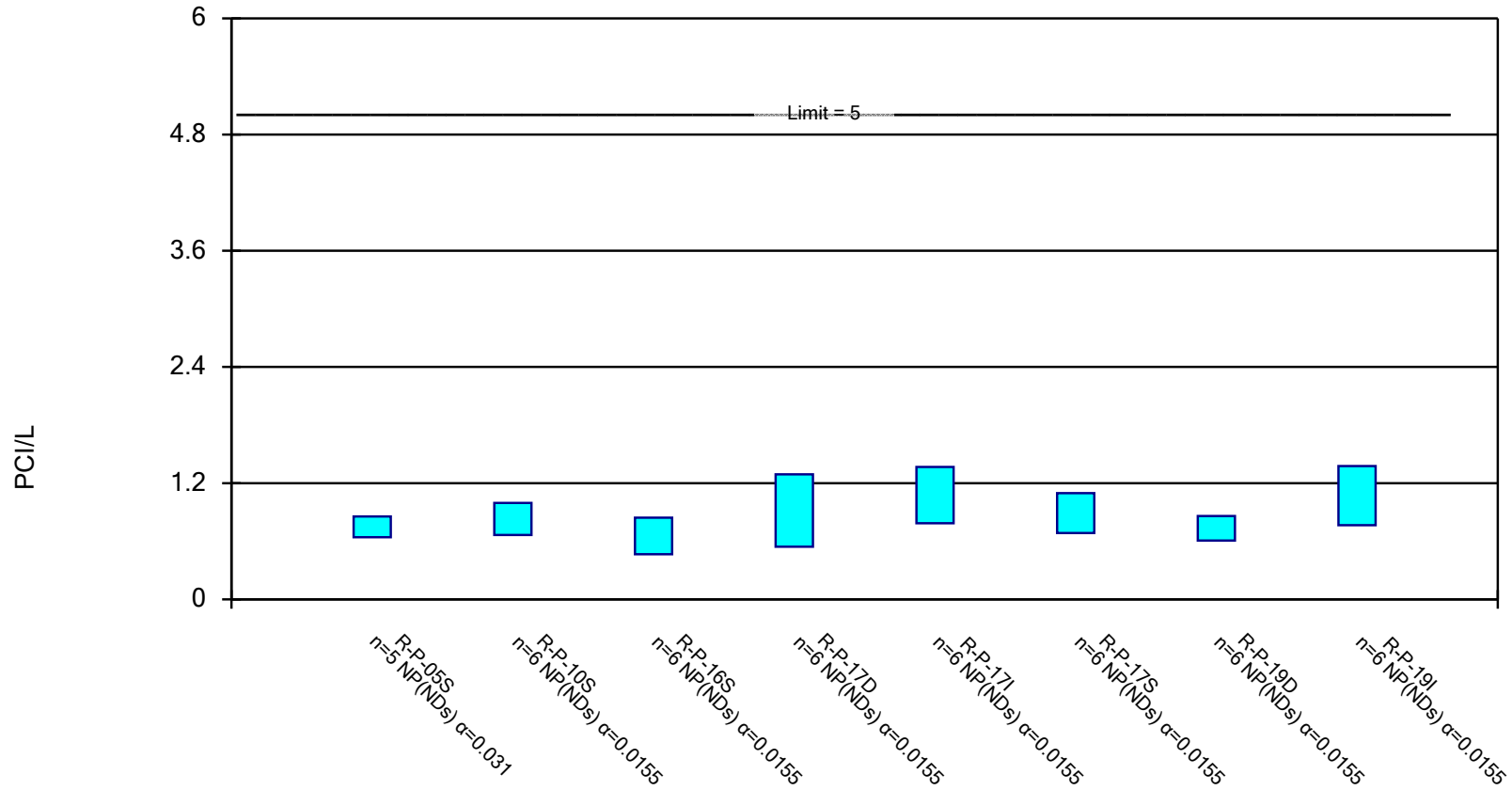


Constituent: MOLYBDENUM, TOTAL Analysis Run 7/1/2022 2:34 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

Non-Parametric Confidence Interval, Corrective Action Mode

Compliance Limit is not exceeded.

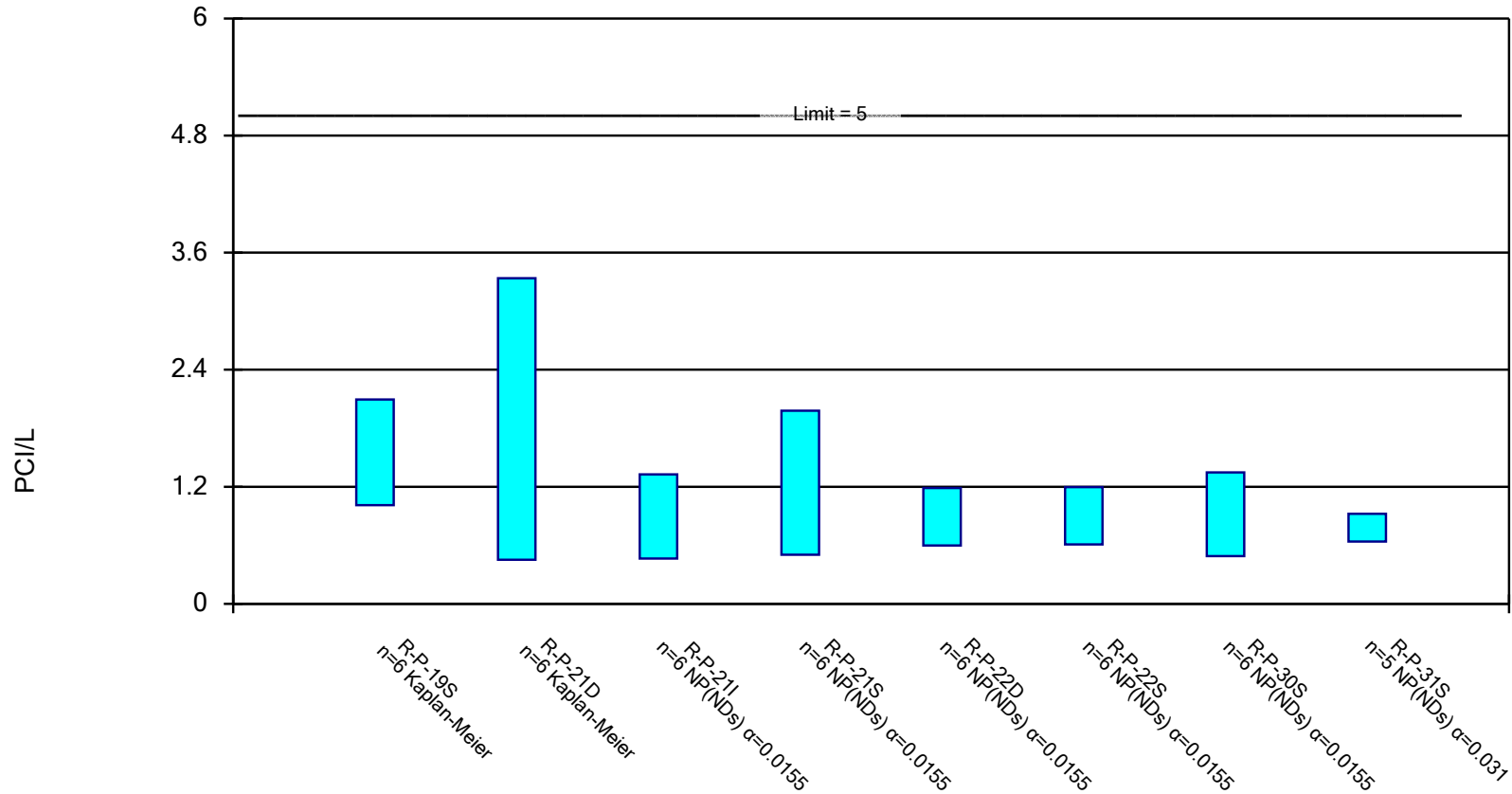


Constituent: RADIUM [226 + 228] Analysis Run 7/1/2022 2:34 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC 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.

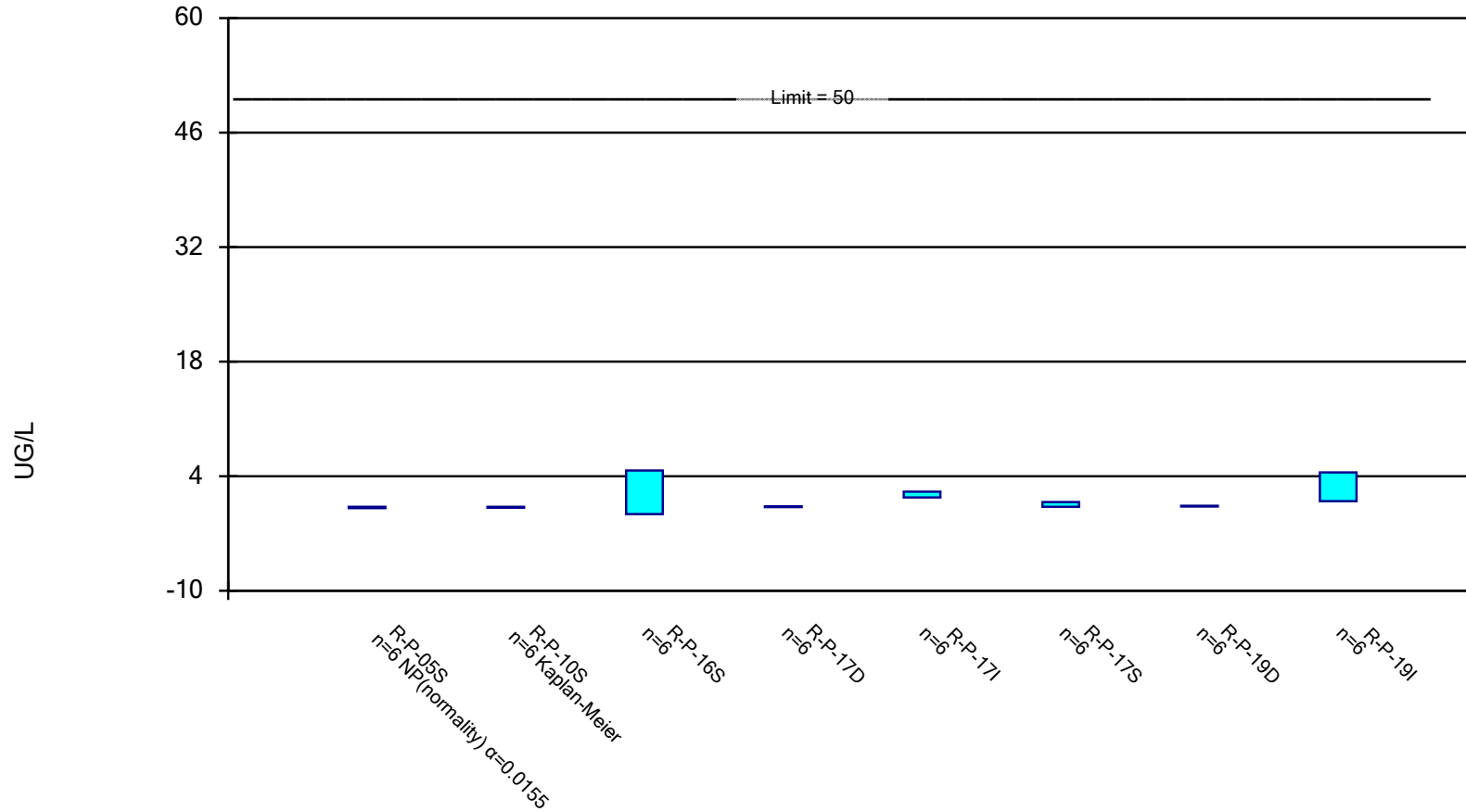


Constituent: RADIUM [226 + 228] Analysis Run 7/1/2022 2:34 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

Parametric and Non-Parametric (NP) Confidence Interval, Corrective Action Mode

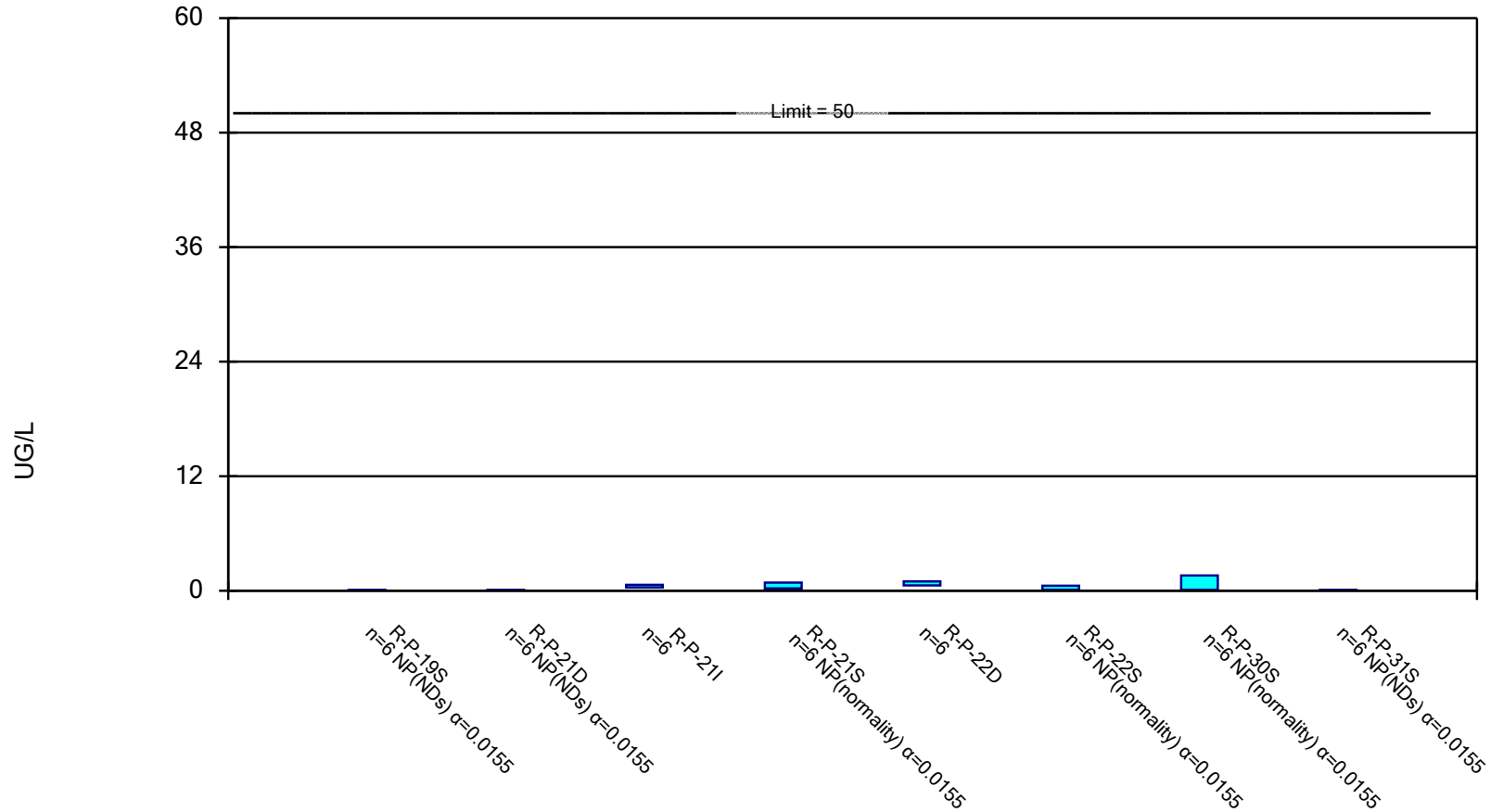
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: SELENIUM, TOTAL Analysis Run 7/1/2022 2:35 PM View: Corrective Action
Rush Island E.C. Client: Ameren Data: RIEC 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 7/1/2022 2:35 PM View: Corrective Action

Rush Island E.C. Client: Ameren Data: RIEC Data

Confidence Interval

Rush Island E.C. Client: Ameren Data: RIEC Data Printed 7/1/2022, 2:35 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
ANTIMONY, TOTAL (UG/L)	R-P-05S	0.06	0.0485	6	No	6	100	No	0.0155	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-P-10S	0.14	0.0485	6	No	6	66.67	No	0.0155	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-P-16S	0.14	0.0485	6	No	6	83.33	No	0.0155	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-P-17D	0.06	0.0485	6	No	6	100	No	0.0155	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-P-17I	0.622	0.2647	6	No	6	0	No	0.01	Param.
ANTIMONY, TOTAL (UG/L)	R-P-17S	0.23	0.0485	6	No	6	66.67	No	0.0155	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-P-19D	0.06	0.0485	6	No	6	100	No	0.0155	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-P-19I	5.4	2.3	6	No	6	0	No	0.0155	NP (normality)
ANTIMONY, TOTAL (UG/L)	R-P-19S	0.15	0.0485	6	No	6	83.33	No	0.0155	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-P-21D	0.06	0.0485	6	No	6	100	No	0.0155	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-P-21I	0.06	0.0485	6	No	6	100	No	0.0155	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-P-21S	0.19	0.0485	6	No	6	83.33	No	0.0155	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-P-22D	0.1955	0.07583	6	No	6	33.33	No	0.01	Param.
ANTIMONY, TOTAL (UG/L)	R-P-22S	0.06	0.0485	6	No	6	100	No	0.0155	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-P-30S	0.94	0.0485	6	No	6	83.33	No	0.0155	NP (NDs)
ANTIMONY, TOTAL (UG/L)	R-P-31S	0.06	0.0485	6	No	6	100	No	0.0155	NP (NDs)
ARSENIC, TOTAL (UG/L)	R-P-05S	182.3	140.7	30	Yes	6	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-P-10S	10.01	4.125	30	No	9	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-P-16S	2.24	1.138	30	No	9	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-P-17D	1.287	1.08	30	No	6	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-P-17I	68.99	47.11	30	Yes	6	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-P-17S	38.42	21.88	30	Yes	6	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-P-19D	0.8409	0.5724	30	No	6	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-P-19I	321.8	120.6	30	Yes	6	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-P-19S	27.45	12.18	30	No	6	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-P-21D	0.6322	0.4811	30	No	6	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-P-21I	5.9	5	30	No	6	0	No	0.0155	NP (normality)
ARSENIC, TOTAL (UG/L)	R-P-21S	135.8	14.66	30	Yes	6	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-P-22D	10.4	7.933	30	No	6	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-P-22S	6.19	0.8159	30	No	6	0	ln(x)	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-P-30S	2.362	0.8717	30	No	9	0	No	0.01	Param.
ARSENIC, TOTAL (UG/L)	R-P-31S	22.24	13.68	30	No	7	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-P-05S	201.3	155.7	2000	No	6	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-P-10S	192.6	100.7	2000	No	6	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-P-16S	117.1	42.55	2000	No	6	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-P-17D	107.2	99.73	2000	No	6	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-P-17I	20.94	12.3	2000	No	6	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-P-17S	170.7	59.61	2000	No	6	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-P-19D	102.6	59.19	2000	No	6	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-P-19I	15.68	10.22	2000	No	6	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-P-19S	610.3	249.7	2000	No	6	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-P-21D	505.6	65.03	2000	No	6	0	ln(x)	0.01	Param.
BARIUM, TOTAL (UG/L)	R-P-21I	39.2	23.6	2000	No	6	0	No	0.0155	NP (normality)
BARIUM, TOTAL (UG/L)	R-P-21S	637.4	239.6	2000	No	6	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-P-22D	77.76	63.17	2000	No	6	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-P-22S	238.1	129.2	2000	No	6	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-P-30S	111	81.18	2000	No	6	0	No	0.01	Param.
BARIUM, TOTAL (UG/L)	R-P-31S	180.3	116.9	2000	No	5	0	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	R-P-05S	0.031	0.0265	5	No	6	100	No	0.0155	NP (NDs)
CADMIUM, TOTAL (UG/L)	R-P-10S	0.2754	0.02965	5	No	6	0	No	0.01	Param.

Confidence Interval

Rush Island E.C. Client: Ameren Data: RIEC Data Printed 7/1/2022, 2:35 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
CADMIUM, TOTAL (UG/L)	R-P-16S	0.1762	0.01877	5	No	6	16.67	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	R-P-17D	0.2767	0.04733	5	No	6	33.33	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	R-P-17I	0.7242	0.2124	5	No	6	0	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	R-P-17S	0.09036	0.04297	5	No	6	50	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	R-P-19D	0.3798	0.03251	5	No	6	0	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	R-P-19I	0.6123	0.2077	5	No	6	0	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	R-P-19S	0.031	0.0265	5	No	5	100	No	0.031	NP (NDs)
CADMIUM, TOTAL (UG/L)	R-P-21D	0.1093	0.04298	5	No	6	50	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	R-P-21I	0.1037	0.04265	5	No	6	50	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	R-P-21S	0.142	0.02966	5	No	6	50	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	R-P-22D	0.1686	0.06943	5	No	6	0	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	R-P-22S	0.156	0.05764	5	No	6	0	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	R-P-30S	0.08334	0.04966	5	No	6	33.33	No	0.01	Param.
CADMIUM, TOTAL (UG/L)	R-P-31S	0.031	0.0265	5	No	6	100	No	0.0155	NP (NDs)
CHROMIUM, TOTAL (UG/L)	R-P-05S	0.6912	0.2587	100	No	6	16.67	ln(x)	0.01	Param.
CHROMIUM, TOTAL (UG/L)	R-P-10S	0.5	0.11	100	No	6	66.67	No	0.0155	NP (NDs)
CHROMIUM, TOTAL (UG/L)	R-P-16S	0.5	0.11	100	No	6	100	No	0.0155	NP (NDs)
CHROMIUM, TOTAL (UG/L)	R-P-17D	0.47	0.11	100	No	6	50	No	0.0155	NP (normality)
CHROMIUM, TOTAL (UG/L)	R-P-17I	1.074	0.7523	100	No	6	0	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	R-P-17S	0.447	0.177	100	No	6	33.33	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	R-P-19D	0.8807	0.2593	100	No	6	0	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	R-P-19I	0.9576	0.1491	100	No	6	0	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	R-P-19S	0.4705	0.1861	100	No	6	33.33	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	R-P-21D	0.5	0.11	100	No	6	83.33	No	0.0155	NP (NDs)
CHROMIUM, TOTAL (UG/L)	R-P-21I	0.5	0.22	100	No	6	16.67	No	0.0155	NP (normality)
CHROMIUM, TOTAL (UG/L)	R-P-21S	0.4341	0.1859	100	No	6	16.67	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	R-P-22D	1.736	0.8604	100	No	6	0	No	0.01	Param.
CHROMIUM, TOTAL (UG/L)	R-P-22S	0.5	0.11	100	No	6	66.67	No	0.0155	NP (NDs)
CHROMIUM, TOTAL (UG/L)	R-P-30S	0.5	0.11	100	No	6	83.33	No	0.0155	NP (NDs)
CHROMIUM, TOTAL (UG/L)	R-P-31S	0.4585	0.1455	100	No	6	50	No	0.01	Param.
COBALT, TOTAL (UG/L)	R-P-05S	0.75	0.39	6	No	5	100	No	0.031	NP (NDs)
COBALT, TOTAL (UG/L)	R-P-10S	3.611	0.7487	6	No	5	40	No	0.01	Param.
COBALT, TOTAL (UG/L)	R-P-16S	0.75	0.475	6	No	4	100	No	0.0625	NP (NDs)
COBALT, TOTAL (UG/L)	R-P-17D	0.75	0.39	6	No	5	100	No	0.031	NP (NDs)
COBALT, TOTAL (UG/L)	R-P-17I	0.75	0.39	6	No	5	100	No	0.031	NP (NDs)
COBALT, TOTAL (UG/L)	R-P-17S	3.273	0.9767	6	No	4	0	No	0.01	Param.
COBALT, TOTAL (UG/L)	R-P-19D	0.79	0.475	6	No	5	80	No	0.031	NP (NDs)
COBALT, TOTAL (UG/L)	R-P-19I	0.75	0.39	6	No	5	100	No	0.031	NP (NDs)
COBALT, TOTAL (UG/L)	R-P-19S	1	0.39	6	No	4	75	No	0.0625	NP (NDs)
COBALT, TOTAL (UG/L)	R-P-21D	0.75	0.475	6	No	5	100	No	0.031	NP (NDs)
COBALT, TOTAL (UG/L)	R-P-21I	0.75	0.39	6	No	5	100	No	0.031	NP (NDs)
COBALT, TOTAL (UG/L)	R-P-21S	3.074	1.046	6	No	5	20	No	0.01	Param.
COBALT, TOTAL (UG/L)	R-P-22D	0.75	0.475	6	No	5	100	No	0.031	NP (NDs)
COBALT, TOTAL (UG/L)	R-P-22S	3.47	1.53	6	No	5	0	No	0.01	Param.
COBALT, TOTAL (UG/L)	R-P-30S	0.75	0.475	6	No	5	100	No	0.031	NP (NDs)
COBALT, TOTAL (UG/L)	R-P-31S	0.75	0.475	6	No	5	100	No	0.031	NP (NDs)
FLUORIDE, TOTAL (MG/L)	R-P-05S	0.494	0.296	4	No	6	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-P-10S	0.58	0.06	4	No	6	16.67	No	0.0155	NP (normality)
FLUORIDE, TOTAL (MG/L)	R-P-16S	0.5823	0.1143	4	No	6	16.67	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-P-17D	0.7241	0.5793	4	No	6	0	No	0.01	Param.

Confidence Interval

Rush Island E.C. Client: Ameren Data: RIEC Data Printed 7/1/2022, 2:35 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
FLUORIDE, TOTAL (MG/L)	R-P-17I	2.289	1.778	4	No	6	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-P-17S	1.041	0.2759	4	No	6	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-P-19D	2.289	1.778	4	No	6	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-P-19I	1.92	0.9734	4	No	6	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-P-19S	0.3916	0.2584	4	No	6	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-P-21D	1.479	0.6741	4	No	6	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-P-21I	1.1	0.93	4	No	6	0	No	0.0155	NP (normality)
FLUORIDE, TOTAL (MG/L)	R-P-21S	0.4612	0.1654	4	No	6	16.67	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-P-22D	2.653	2.18	4	No	6	0	No	0.01	Param.
FLUORIDE, TOTAL (MG/L)	R-P-22S	0.46	0.06	4	No	5	20	No	0.031	NP (normality)
FLUORIDE, TOTAL (MG/L)	R-P-30S	0.44	0.16	4	No	6	0	No	0.0155	NP (normality)
FLUORIDE, TOTAL (MG/L)	R-P-31S	0.4467	0.34	4	No	6	0	No	0.01	Param.
LEAD, TOTAL (UG/L)	R-P-05S	4.1	1.9	15	No	6	83.33	No	0.0155	NP (NDs)
LEAD, TOTAL (UG/L)	R-P-10S	3.05	1.9	15	No	5	100	No	0.031	NP (NDs)
LEAD, TOTAL (UG/L)	R-P-16S	3.05	1.9	15	No	6	100	No	0.0155	NP (NDs)
LEAD, TOTAL (UG/L)	R-P-17D	3.9	1.9	15	No	6	83.33	No	0.0155	NP (NDs)
LEAD, TOTAL (UG/L)	R-P-17I	24.49	6.38	15	Yes	6	0	No	0.01	Param.
LEAD, TOTAL (UG/L)	R-P-17S	4.5	1.9	15	No	6	83.33	No	0.0155	NP (NDs)
LEAD, TOTAL (UG/L)	R-P-19D	2.3	1.9	15	No	6	100	No	0.0155	NP (NDs)
LEAD, TOTAL (UG/L)	R-P-19I	20.96	4.17	15	Yes	6	0	No	0.01	Param.
LEAD, TOTAL (UG/L)	R-P-19S	6.3	1.9	15	No	6	83.33	No	0.0155	NP (NDs)
LEAD, TOTAL (UG/L)	R-P-21D	3.05	1.9	15	No	6	100	No	0.0155	NP (NDs)
LEAD, TOTAL (UG/L)	R-P-21I	2.3	1.9	15	No	6	100	No	0.0155	NP (NDs)
LEAD, TOTAL (UG/L)	R-P-21S	8.9	1.9	15	No	6	66.67	No	0.0155	NP (NDs)
LEAD, TOTAL (UG/L)	R-P-22D	5.2	1.9	15	No	6	83.33	No	0.0155	NP (NDs)
LEAD, TOTAL (UG/L)	R-P-22S	4.7	1.9	15	No	6	83.33	No	0.0155	NP (NDs)
LEAD, TOTAL (UG/L)	R-P-30S	3.05	1.9	15	No	6	100	No	0.0155	NP (NDs)
LEAD, TOTAL (UG/L)	R-P-31S	3.05	1.9	15	No	6	100	No	0.0155	NP (NDs)
LITHIUM, TOTAL (UG/L)	R-P-05S	19.92	13.71	64.7	No	6	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	R-P-10S	23.24	12.46	64.7	No	6	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	R-P-16S	58.65	20.98	64.7	No	6	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	R-P-17D	42.51	35.66	64.7	No	6	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	R-P-17I	5.7	2.3	64.7	No	6	66.67	No	0.0155	NP (NDs)
LITHIUM, TOTAL (UG/L)	R-P-17S	42.17	22.46	64.7	No	6	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	R-P-19D	20.54	14	64.7	No	6	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	R-P-19I	20.59	8.606	64.7	No	6	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	R-P-19S	56.5	26.8	64.7	No	6	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	R-P-21D	249	140	64.7	Yes	6	0	No	0.0155	NP (normality)
LITHIUM, TOTAL (UG/L)	R-P-21I	23.37	15.53	64.7	No	6	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	R-P-21S	21.14	14.5	64.7	No	6	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	R-P-22D	27.57	24.96	64.7	No	6	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	R-P-22S	71.27	47.2	64.7	Yes	6	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	R-P-30S	36.39	33.11	64.7	No	6	0	No	0.01	Param.
LITHIUM, TOTAL (UG/L)	R-P-31S	11.49	4.658	64.7	No	6	33.33	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	R-P-05S	18.41	4.223	100	No	6	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	R-P-10S	118	60.3	100	Yes	9	0	No	0.002	NP (normality)
MOLYBDENUM, TOTAL (UG/L)	R-P-16S	34.86	11.64	100	No	9	0	ln(x)	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	R-P-17D	731	643.4	100	Yes	6	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	R-P-17I	144.9	95.01	100	Yes	6	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	R-P-17S	86.84	20.92	100	No	6	0	No	0.01	Param.

Confidence Interval

Rush Island E.C. Client: Ameren Data: RIEC Data Printed 7/1/2022, 2:35 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
MOLYBDENUM, TOTAL (UG/L)	R-P-19D	998.3	775.1	100	Yes	6	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	R-P-19I	318.3	142	100	Yes	6	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	R-P-19S	12.62	2.231	100	No	6	0	ln(x)	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	R-P-21D	473.5	172.2	100	Yes	6	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	R-P-21I	188.2	87.18	100	Yes	6	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	R-P-21S	5.886	1.141	100	No	6	33.33	ln(x)	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	R-P-22D	372.4	335.3	100	Yes	6	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	R-P-22S	11.53	7.738	100	No	6	0	No	0.01	Param.
MOLYBDENUM, TOTAL (UG/L)	R-P-30S	2.6	0.85	100	No	9	55.56	No	0.002	NP (NDs)
MOLYBDENUM, TOTAL (UG/L)	R-P-31S	8.365	6.86	100	No	8	0	No	0.01	Param.
RADIUM [226 + 228] (PCI/L)	R-P-05S	0.8555	0.642	5	No	5	100	No	0.031	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-P-10S	0.995	0.664	5	No	6	100	No	0.0155	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-P-16S	0.8435	0.4655	5	No	6	100	No	0.0155	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-P-17D	1.291	0.544	5	No	6	83.33	No	0.0155	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-P-17I	1.367	0.786	5	No	6	100	No	0.0155	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-P-17S	1.096	0.6855	5	No	6	100	No	0.0155	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-P-19D	0.861	0.6075	5	No	6	100	No	0.0155	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-P-19I	1.377	0.766	5	No	6	100	No	0.0155	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-P-19S	2.095	1.012	5	No	6	50	No	0.01	Param.
RADIUM [226 + 228] (PCI/L)	R-P-21D	3.338	0.4523	5	No	6	33.33	No	0.01	Param.
RADIUM [226 + 228] (PCI/L)	R-P-21I	1.327	0.465	5	No	6	100	No	0.0155	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-P-21S	1.98	0.5025	5	No	6	83.33	No	0.0155	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-P-22D	1.187	0.5985	5	No	6	100	No	0.0155	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-P-22S	1.196	0.609	5	No	6	83.33	No	0.0155	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-P-30S	1.347	0.4895	5	No	6	100	No	0.0155	NP (NDs)
RADIUM [226 + 228] (PCI/L)	R-P-31S	0.922	0.6385	5	No	5	100	No	0.031	NP (NDs)
SELENIUM, TOTAL (UG/L)	R-P-05S	0.25	0.09	50	No	6	33.33	No	0.0155	NP (normality)
SELENIUM, TOTAL (UG/L)	R-P-10S	0.2502	0.1498	50	No	6	50	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	R-P-16S	4.699	-0.6391	50	No	6	0	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	R-P-17D	0.3186	0.2181	50	No	6	0	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	R-P-17I	2.106	1.394	50	No	6	0	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	R-P-17S	0.8418	0.2615	50	No	6	0	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	R-P-19D	0.3899	0.2901	50	No	6	0	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	R-P-19I	4.457	0.9397	50	No	6	0	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	R-P-19S	0.09	0.09	50	No	6	100	No	0.0155	NP (NDs)
SELENIUM, TOTAL (UG/L)	R-P-21D	0.09	0.09	50	No	6	100	No	0.0155	NP (NDs)
SELENIUM, TOTAL (UG/L)	R-P-21I	0.6213	0.342	50	No	6	0	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	R-P-21S	0.85	0.24	50	No	6	0	No	0.0155	NP (normality)
SELENIUM, TOTAL (UG/L)	R-P-22D	0.9826	0.5507	50	No	6	0	No	0.01	Param.
SELENIUM, TOTAL (UG/L)	R-P-22S	0.52	0.09	50	No	6	50	No	0.0155	NP (normality)
SELENIUM, TOTAL (UG/L)	R-P-30S	1.6	0.09	50	No	6	50	No	0.0155	NP (normality)
SELENIUM, TOTAL (UG/L)	R-P-31S	0.09	0.09	50	No	6	100	No	0.0155	NP (NDs)

APPENDIX F

2022 Potentiometric Surface Maps



LEGEND

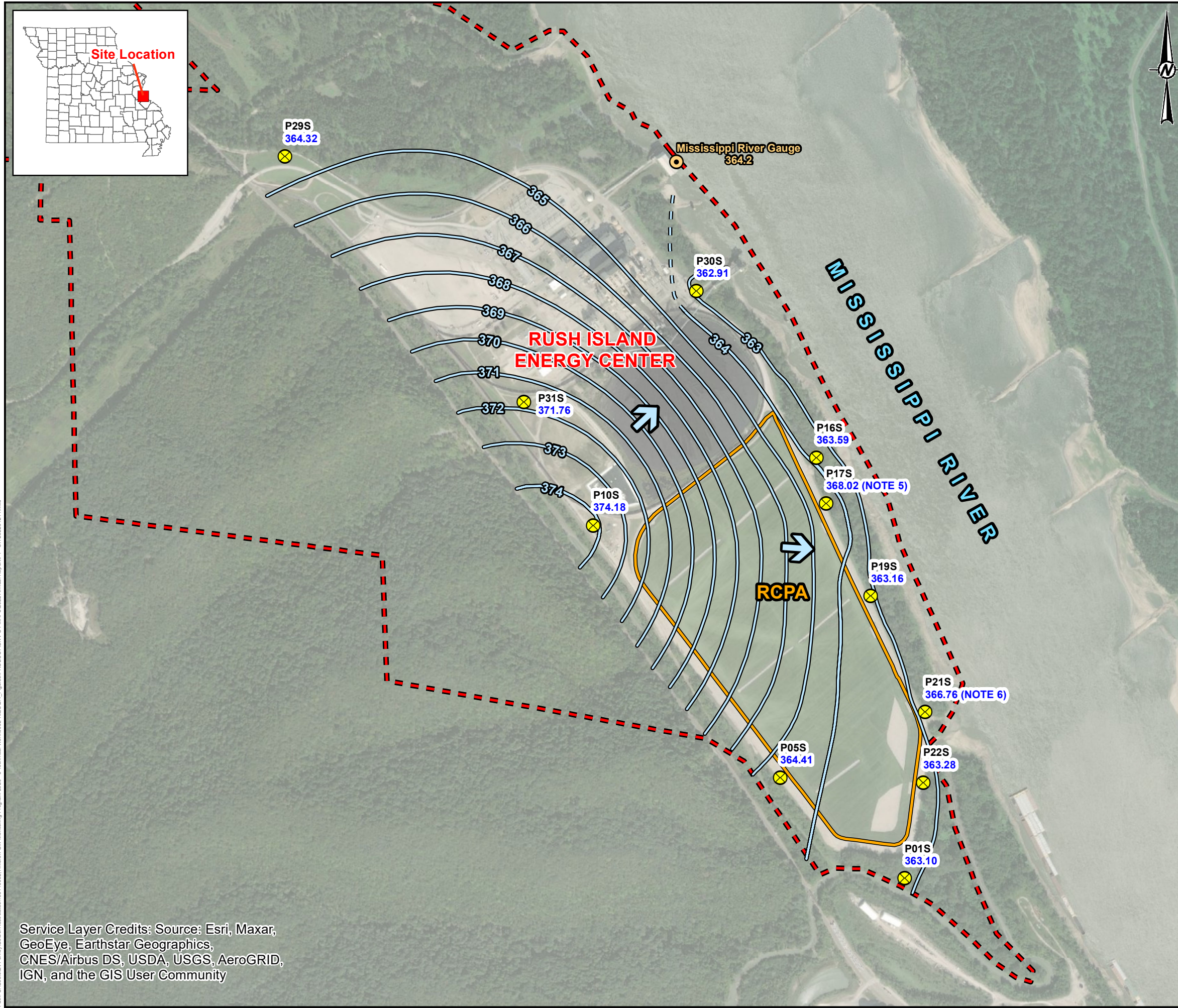
- Approximate Rush Island Energy Center Property
- Boundary
- RCPA Surface Impoundment

Ground/Surface Water Measurement

- Mississippi River Gauge
- Corrective Action Monitoring Well

Groundwater Elevation Contours

- Groundwater Elevation Contour (FT MSL)
- Inferred Groundwater Elevation Contour (FT MSL)
- ➔ Groundwater Flow Direction



NOTES

- 1.) ALL LOCATIONS AND BOUNDARIES ARE APPROXIMATE.
- 2.) GROUNDWATER ELEVATIONS DISPLAYED IN FT MSL (FEET ABOVE MEAN SEA LEVEL).
- 3.) GROUNDWATER ELEVATION MEASUREMENTS OBTAINED BY GOLDER.
- 4.) MISSISSIPPI RIVER LEVEL PROVIDED BY AMEREN.
- 5.) P17S WAS NOT USED IN POTENTIOMETRIC SURFACE MAP CONTOURING; WELL SCREEN INTERVAL IS IN LOWER PERMEABILITY AQUIFER MATERIALS AND ITS WATER LEVEL RESPONSE IS SLOWER THAN OTHER WELLS IN THE AQUIFER.
- 6.) P21S WAS NOT USED IN POTENTIOMETRIC SURFACE MAP CONTOURING DUE TO MEASUREMENT ERROR.

REFERENCES

- 1.) AMEREN MISSOURI RUSH ISLAND ENERGY CENTER, RUSH ISLAND PROPERTY CONTROL MAP, JANUARY 2012.
- 2.) COORDINATE SYSTEM: NAD 1983 STATE PLANE MISSOURI EAST FIPS 2401 FEET.



CLIENT
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PROJECT
 CCR GROUNDWATER MONITORING PROGRAM

TITLE
RCPA POTENTIOMETRIC SURFACE MAP - SHALLOW ALLUVIAL AQUIFER ZONE - FEBRUARY 14, 2022

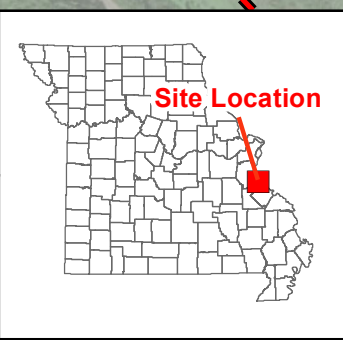
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wsp GOLDER	PREPARED	GTM
	DESIGN	JSI
	REVIEW	SSS
	APPROVED	MNH

PROJECT No. 153140604 PHASE 0002 **FIGURE F1**

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:



LEGEND

- - - Approximate Rush Island Energy Center Property Boundary
- RCPA Surface Impoundment

Ground/Surface Water Measurement Locations

- Mississippi River Gauge
- ⊕ CCR Rule Monitoring Well
- ⊗ Corrective Action Monitoring Well
- ⊕ Monitoring Well Used for Water Level Elevation Measurements Only

Groundwater Elevation Contour (FT MSL)

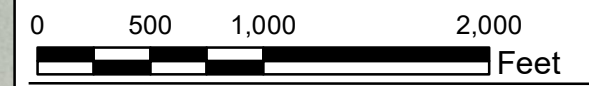
- Groundwater Elevation Contour (FT MSL)
- ➔ Groundwater Flow Direction

NOTES

- 1.) ALL LOCATIONS AND BOUNDARIES ARE APPROXIMATE.
- 2.) GROUNDWATER ELEVATIONS DISPLAYED IN FT MSL (FEET ABOVE MEAN SEA LEVEL).
- 3.) GROUNDWATER ELEVATION MEASUREMENTS OBTAINED BY GOLDER.
- 4.) MISSISSIPPI RIVER LEVEL PROVIDED BY AMEREN.

REFERENCES

- 1.) AMEREN MISSOURI RUSH ISLAND ENERGY CENTER, RUSH ISLAND PROPERTY CONTROL MAP, JANUARY 2012.
- 2.) COORDINATE SYSTEM: NAD 1983 STATE PLANE MISSOURI EAST FIPS 2401 FEET.



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PROJECT
 CCR GROUNDWATER MONITORING PROGRAM

TITLE
RCPA POTENTIOMETRIC SURFACE MAP - INTERMEDIATE ALLUVIAL AQUIFER ZONE - FEBRUARY 14, 2022

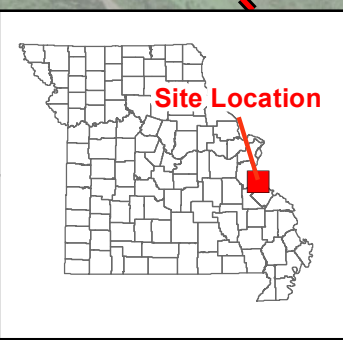
CONSULTANT	YYYY-MM-DD	2022-02-24
PREPARED	JSI	
DESIGN	JSI	
REVIEW	BTT	
APPROVED	MNH	

PROJECT No. 153140604 PHASE 0002 **FIGURE F2**

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Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:



LEGEND

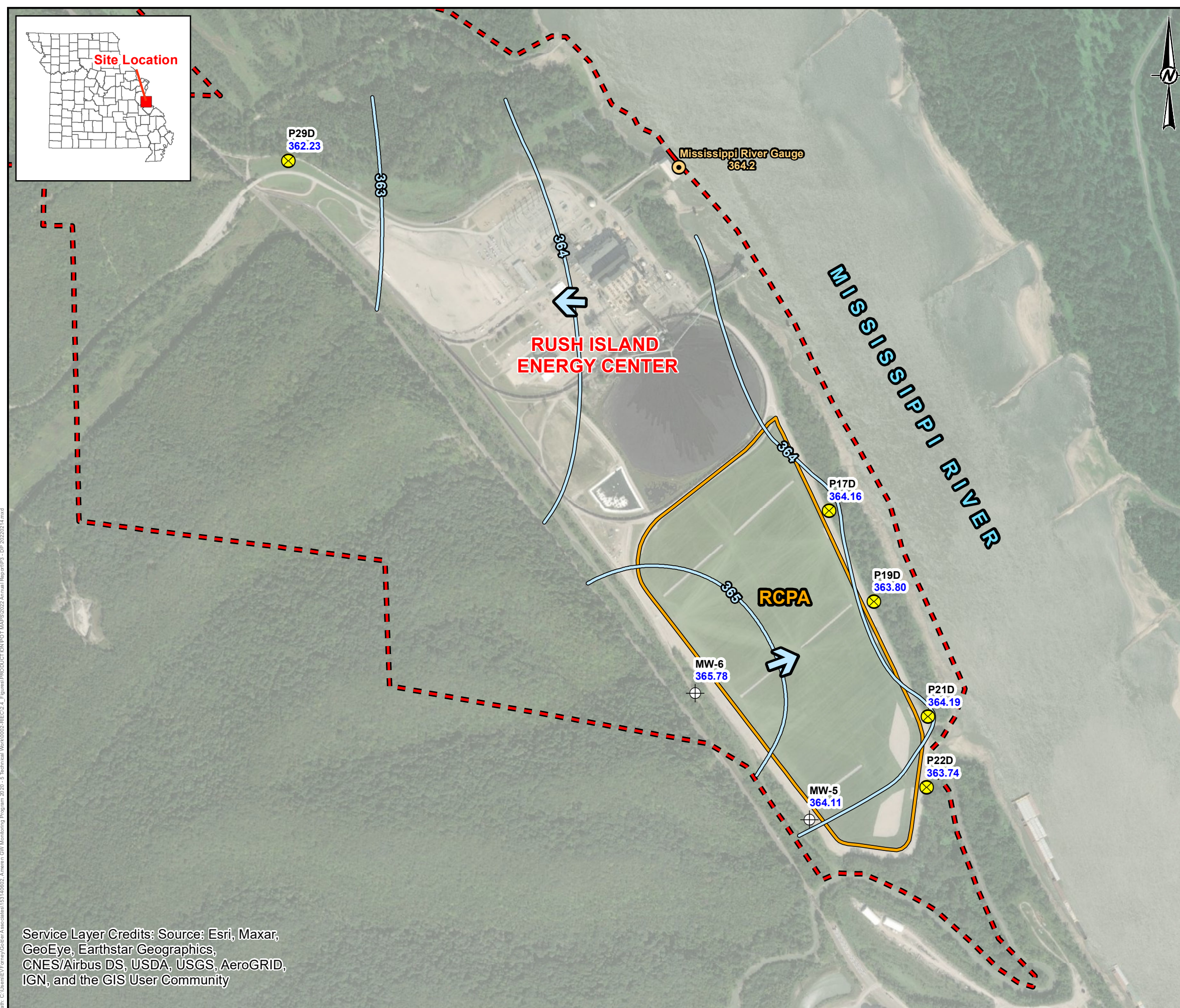
- - - Approximate Rush Island Energy Center Property Boundary
- RCPA Surface Impoundment

Ground/Surface Water Measurement

- Mississippi River Gauge
- ⊕ CCR Rule Monitoring Wells
- ⊗ Corrective Action Monitoring Well

Groundwater Elevation Contour (FT MSL)

- Groundwater Elevation Contour (FT MSL)
- ➔ Groundwater Flow Direction



NOTES

- 1.) ALL LOCATIONS AND BOUNDARIES ARE APPROXIMATE.
- 2.) GROUNDWATER ELEVATIONS DISPLAYED IN FT MSL (FEET ABOVE MEAN SEA LEVEL).
- 3.) GROUNDWATER ELEVATION MEASUREMENTS OBTAINED BY GOLDER.
- 4.) MISSISSIPPI RIVER LEVEL PROVIDED BY AMEREN.

REFERENCES

- 1.) AMEREN MISSOURI RUSH ISLAND ENERGY CENTER, RUSH ISLAND PROPERTY CONTROL MAP, JANUARY 2012.
- 2.) COORDINATE SYSTEM: NAD 1983 STATE PLANE MISSOURI EAST FIPS 2401 FEET.



CLIENT
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PROJECT
 CCR GROUNDWATER MONITORING PROGRAM

TITLE
**RCPA POTENTIOMETRIC SURFACE MAP - DEEP ALLUVIAL
 AQUIFER ZONE - FEBRUARY 14, 2022**

CONSULTANT	YYYY-MM-DD	2022-02-24
	PREPARED	GTM
	DESIGN	JSI
	REVIEW	SSS
	APPROVED	MNH

PROJECT No. 153140604 PHASE 0002 **FIGURE F3**

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:



LEGEND

- Approximate Rush Island Energy Center Property
- Boundary
- RCPA Surface Impoundment

Ground/Surface Water Measurement Locations

- Mississippi River Gauge
- Corrective Action Monitoring Well
- Monitoring Well Used for Water Level Elevation Measurements Only

Groundwater Elevation Contour (FT MSL)

- Groundwater Elevation Contour (FT MSL)
- ↗ Groundwater Flow Direction

NOTES

- 1.) ALL LOCATIONS AND BOUNDARIES ARE APPROXIMATE.
- 2.) GROUNDWATER ELEVATIONS DISPLAYED IN FT MSL (FEET ABOVE MEAN SEA LEVEL).
- 3.) GROUNDWATER ELEVATION MEASUREMENTS OBTAINED BY GOLDER.
- 4.) MISSISSIPPI RIVER LEVEL PROVIDED BY AMEREN.
- 5.) P17S WAS NOT USED IN POTENTIOMETRIC SURFACE MAP CONTOURING; WELL SCREEN INTERVAL IS IN LOWER PERMEABILITY AQUIFER MATERIALS AND ITS WATER LEVEL RESPONSE IS SLOWER THAN OTHER WELLS IN THE AQUIFER.

REFERENCES

- 1.) AMEREN MISSOURI RUSH ISLAND ENERGY CENTER, RUSH ISLAND PROPERTY CONTROL MAP, JANUARY 2012.
- 2.) COORDINATE SYSTEM: NAD 1983 STATE PLANE MISSOURI EAST FIPS 2401 FEET.



CLIENT
 AMEREN MISSOURI
 RUSH ISLAND ENERGY CENTER



PROJECT
 CCR GROUNDWATER MONITORING PROGRAM

TITLE
RCPA POTENTIOMETRIC SURFACE MAP - SHALLOW ALLUVIAL AQUIFER ZONE - APRIL 12, 2022

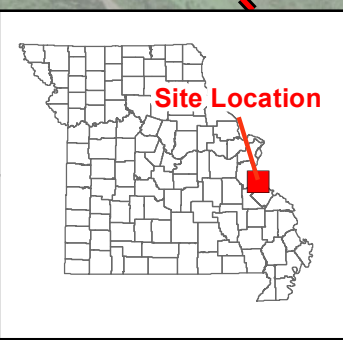
CONSULTANT	DATE
YYYY-MM-DD	2022-04-26
PREPARED	JSI
DESIGN	JSI
REVIEW	BTT
APPROVED	MNH

PROJECT No. 153140604 PHASE 0002 FIGURE **F4**

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:



LEGEND

- - - Approximate Rush Island Energy Center Property Boundary
- RCPA Surface Impoundment

Ground/Surface Water Measurement Locations

- Mississippi River Gauge
- ⊕ CCR Rule Monitoring Well
- ⊗ Corrective Action Monitoring Well
- ⊕ Monitoring Well Used for Water Level Elevation Measurements Only

Groundwater Elevation Contour (FT MSL)

- Groundwater Elevation Contour (FT MSL)
- ➔ Groundwater Flow Direction

NOTES

- 1.) ALL LOCATIONS AND BOUNDARIES ARE APPROXIMATE.
- 2.) GROUNDWATER ELEVATIONS DISPLAYED IN FT MSL (FEET ABOVE MEAN SEA LEVEL).
- 3.) GROUNDWATER ELEVATION MEASUREMENTS OBTAINED BY GOLDER.
- 4.) MISSISSIPPI RIVER LEVEL PROVIDED BY AMEREN.

REFERENCES

- 1.) AMEREN MISSOURI RUSH ISLAND ENERGY CENTER, RUSH ISLAND PROPERTY CONTROL MAP, JANUARY 2012.
- 2.) COORDINATE SYSTEM: NAD 1983 STATE PLANE MISSOURI EAST FIPS 2401 FEET.



CLIENT
AMEREN MISSOURI
RUSH ISLAND ENERGY CENTER



PROJECT
CCR GROUNDWATER MONITORING PROGRAM

TITLE
RCPA POTENTIOMETRIC SURFACE MAP - INTERMEDIATE ALLUVIAL AQUIFER ZONE - APRIL 12, 2022

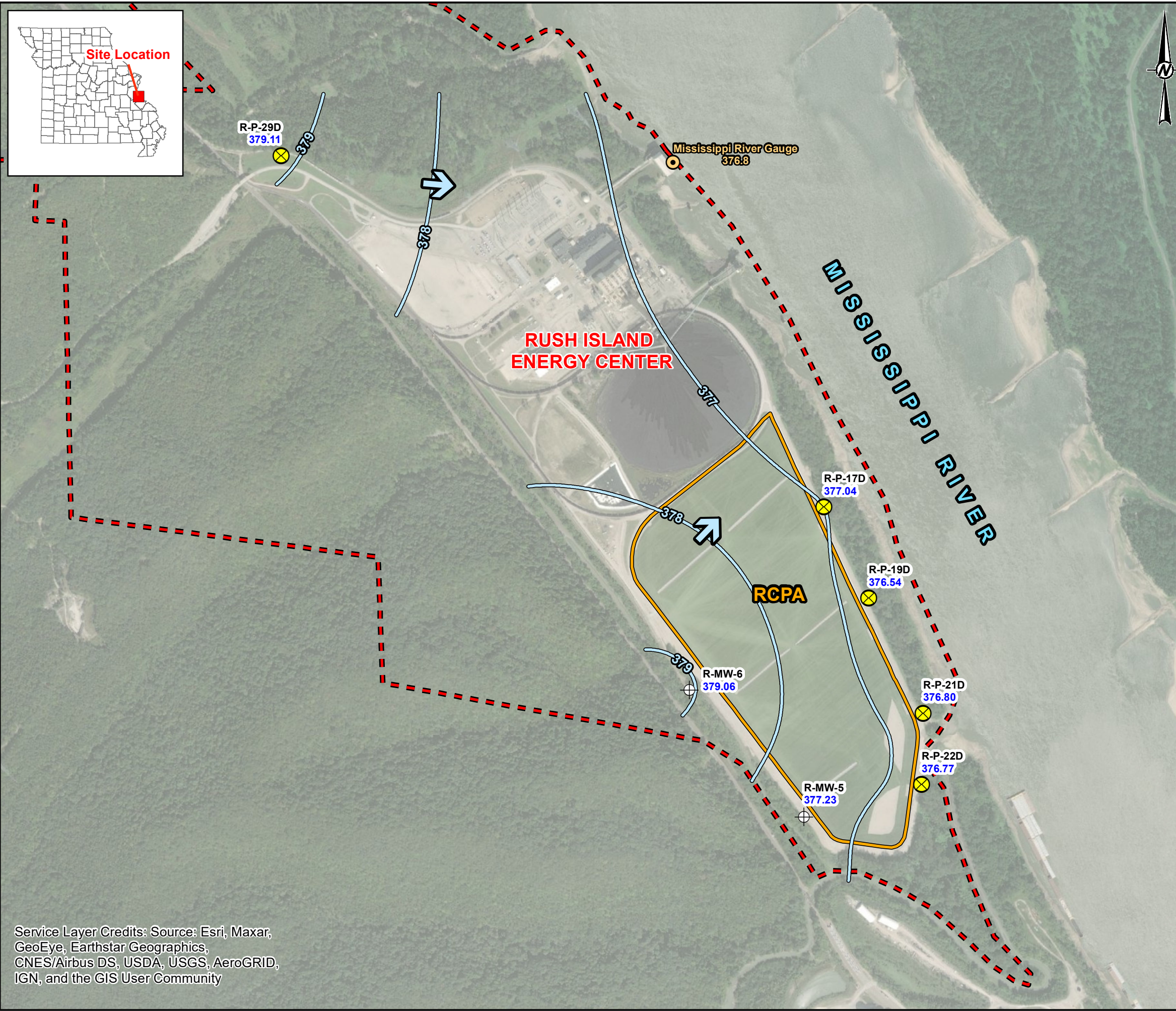
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	PREPARED	JSI
	DESIGN	JSI
	REVIEW	BTT
	APPROVED	MNH

PROJECT No. 153140604 PHASE 0002 FIGURE **F5**

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Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:



LEGEND

- Approximate Rush Island Energy Center Property Boundary
- RCPA Surface Impoundment
- Ground/Surface Water Measurement Locations**
 - Mississippi River Gauge
 - ⊕ CCR Rule Monitoring Well
 - ⊗ Corrective Action Monitoring Well
- Groundwater Elevation Contour (FT MSL)**
 - Groundwater Elevation Contour (FT MSL)
 - ➔ Groundwater Flow Direction

NOTES

- 1.) ALL LOCATIONS AND BOUNDARIES ARE APPROXIMATE.
- 2.) GROUNDWATER ELEVATIONS DISPLAYED IN FT MSL (FEET ABOVE MEAN SEA LEVEL).
- 3.) GROUNDWATER ELEVATION MEASUREMENTS OBTAINED BY GOLDER.
- 4.) MISSISSIPPI RIVER LEVEL PROVIDED BY AMEREN.

REFERENCES

- 1.) AMEREN MISSOURI RUSH ISLAND ENERGY CENTER, RUSH ISLAND PROPERTY CONTROL MAP, JANUARY 2012.
- 2.) COORDINATE SYSTEM: NAD 1983 STATE PLANE MISSOURI EAST FIPS 2401 FEET.



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PROJECT
 CCR GROUNDWATER MONITORING PROGRAM

TITLE
RCPA POTENTIOMETRIC SURFACE MAP - DEEP ALLUVIAL AQUIFER ZONE - APRIL 12, 2022

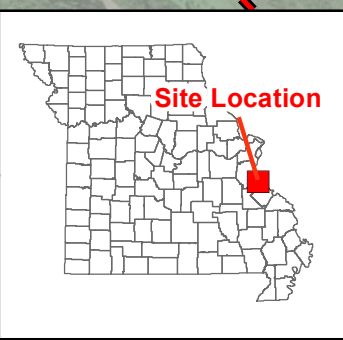
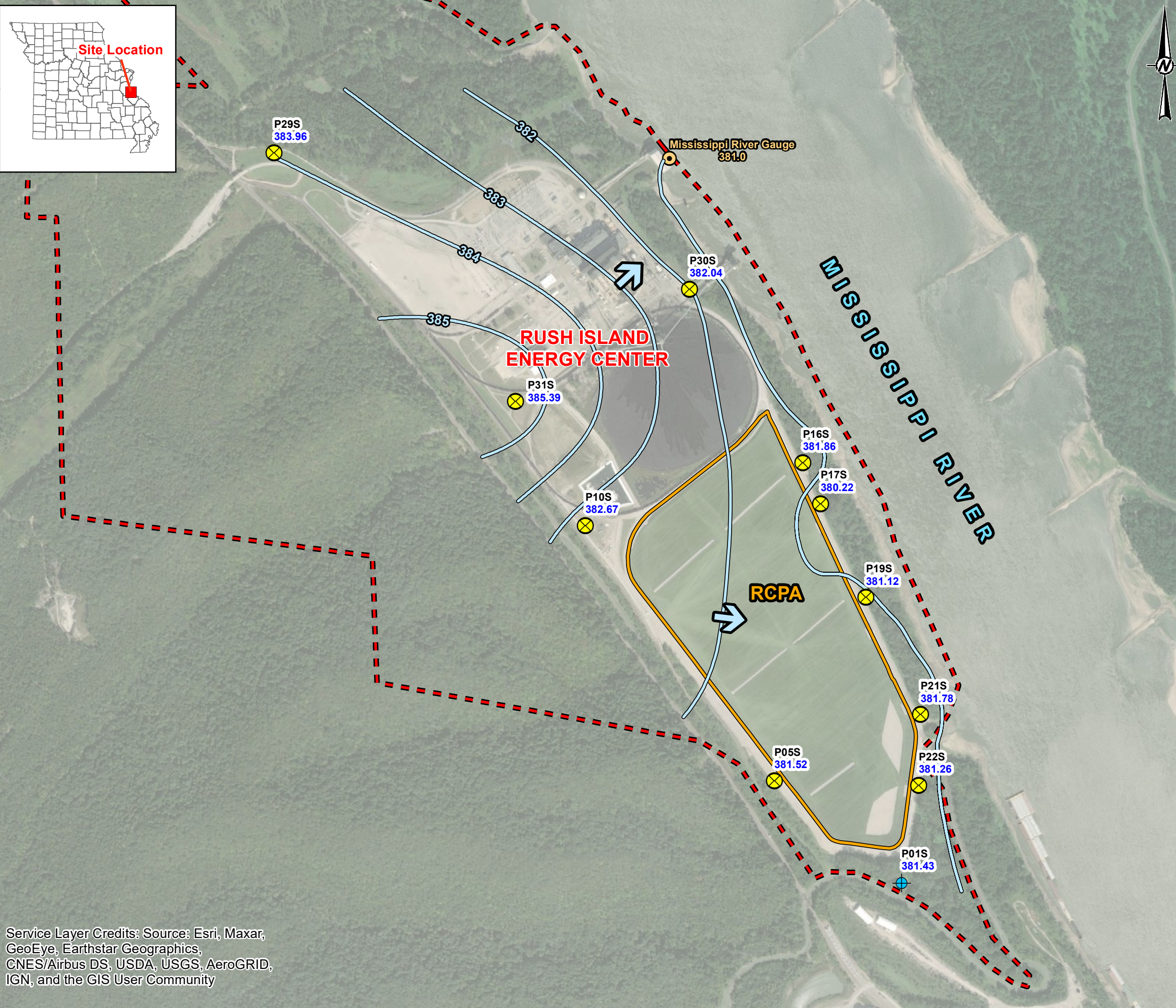
CONSULTANT	YYYY-MM-DD	2022-04-26
PREPARED	JSI	
DESIGN	JSI	
REVIEW	BTT	
APPROVED	MNH	

PROJECT No. 153140604 PHASE 0002 **FIGURE F6**

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Path: C:\Users\jgolder\Documents\153140604_02 - Ameren CCR GW Monitoring Program 2020 - APTIS Technical Work\002-21REC2-4 - Figures\PRODUCTION\DOT MAP S12022 Annual Report\F6 - 20220412.mxd

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: 11in



LEGEND

- Approximate Rush Island Energy Center Property
- Boundary
- RCPA Surface Impoundment

Ground/Surface Water Measurement Locations

- Mississippi River Gauge
- Corrective Action Monitoring Well
- Monitoring Well Used for Water Level Elevation Measurements Only

Groundwater Elevation Contour (FT MSL)

- Groundwater Elevation Contour (FT MSL)
- ↗ Groundwater Flow Direction

- NOTES**
- 1.) ALL LOCATIONS AND BOUNDARIES ARE APPROXIMATE.
 - 2.) GROUNDWATER ELEVATIONS DISPLAYED IN FT MSL (FEET ABOVE MEAN SEA LEVEL).
 - 3.) GROUNDWATER ELEVATION MEASUREMENTS OBTAINED BY GOLDER.
 - 4.) MISSISSIPPI RIVER LEVEL PROVIDED BY AMEREN.

- REFERENCES**
- 1.) AMEREN MISSOURI RUSH ISLAND ENERGY CENTER, RUSH ISLAND PROPERTY CONTROL MAP, JANUARY 2012.
 - 2.) COORDINATE SYSTEM: NAD 1983 STATE PLANE MISSOURI EAST FIPS 2401 FEET.



CLIENT
 AMEREN MISSOURI
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PROJECT
 CCR GROUNDWATER MONITORING PROGRAM

TITLE
RCPA POTENTIOMETRIC SURFACE MAP - SHALLOW ALLUVIAL AQUIFER ZONE - JUNE 8, 2022

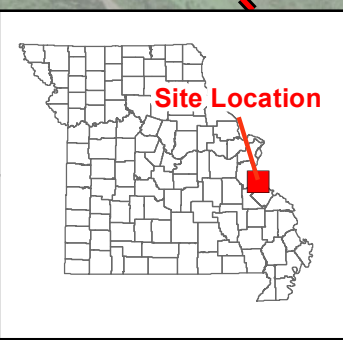
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wsp GOLDER	PREPARED	GTM
	DESIGN	JSI
	REVIEW	ETF
	APPROVED	MNH

PROJECT No. 153140604 PHASE 0002 **FIGURE F7**

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Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:



LEGEND

- - - Approximate Rush Island Energy Center Property
- - - Boundary
- RCPA Surface Impoundment

Ground/Surface Water Measurement Locations

- Mississippi River Gauge
- ⊕ CCR Rule Monitoring Well
- ⊗ Corrective Action Monitoring Well
- ⊕ Monitoring Well Used for Water Level Elevation Measurements Only

Groundwater Elevation Contour (FT MSL)

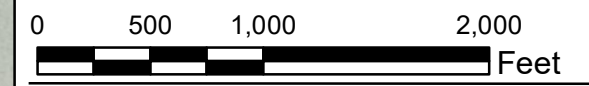
- Groundwater Elevation Contour (FT MSL)
- ➔ Groundwater Flow Direction

NOTES

- 1.) ALL LOCATIONS AND BOUNDARIES ARE APPROXIMATE.
- 2.) GROUNDWATER ELEVATIONS DISPLAYED IN FT MSL (FEET ABOVE MEAN SEA LEVEL).
- 3.) GROUNDWATER ELEVATION MEASUREMENTS OBTAINED BY GOLDER.
- 4.) MISSISSIPPI RIVER LEVEL PROVIDED BY AMEREN.

REFERENCES

- 1.) AMEREN MISSOURI RUSH ISLAND ENERGY CENTER, RUSH ISLAND PROPERTY CONTROL MAP, JANUARY 2012.
- 2.) COORDINATE SYSTEM: NAD 1983 STATE PLANE MISSOURI EAST FIPS 2401 FEET.



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PROJECT
 CCR GROUNDWATER MONITORING PROGRAM

TITLE
**RCPA POTENTIOMETRIC SURFACE MAP - INTERMEDIATE
 ALLUVIAL AQUIFER ZONE - JUNE 8, 2022**

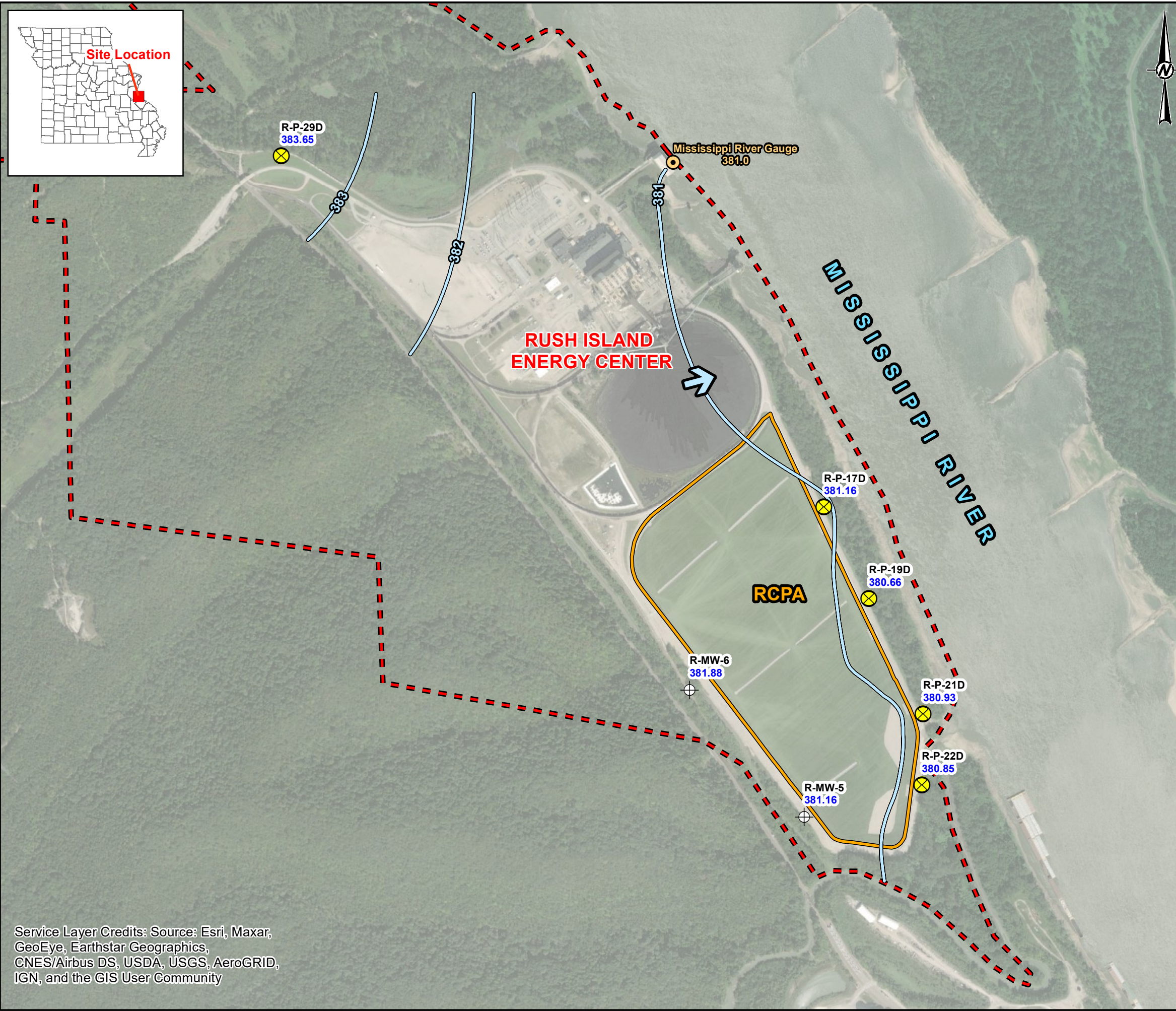
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wsp GOLDER	PREPARED	JSI
	DESIGN	GTM
	REVIEW	ETF
	APPROVED	MNH

PROJECT No. 153140604 PHASE 0002 **FIGURE F8**

Path: C:\Users\EV\Ferry\Golder\Assets\153140604_Ameren_GW_Monitoring_Program_2020 - 5_Technical\Map\002_RELOC_4_Figures\PRODUCT\ON_PLOT_MAPS\2022_Annual_Report\F8 - 20220613.mxd

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:



LEGEND

- - - Approximate Rush Island Energy Center Property
- - - Boundary
- RCPA Surface Impoundment

Ground/Surface Water Measurement Locations

- ⊙ Mississippi River Gauge
- CCR Rule Monitoring Well
- ⊗ Corrective Action Monitoring Well

Groundwater Elevation Contour (FT MSL)

- Groundwater Elevation Contour (FT MSL)

➔ Groundwater Flow Direction

NOTES

- 1.) ALL LOCATIONS AND BOUNDARIES ARE APPROXIMATE.
- 2.) GROUNDWATER ELEVATIONS DISPLAYED IN FT MSL (FEET ABOVE MEAN SEA LEVEL).
- 3.) GROUNDWATER ELEVATION MEASUREMENTS OBTAINED BY GOLDBER.
- 4.) MISSISSIPPI RIVER LEVEL PROVIDED BY AMEREN.

REFERENCES

- 1.) AMEREN MISSOURI RUSH ISLAND ENERGY CENTER, RUSH ISLAND PROPERTY CONTROL MAP, JANUARY 2012.
- 2.) COORDINATE SYSTEM: NAD 1983 STATE PLANE MISSOURI EAST FIPS 2401 FEET.



CLIENT
 AMEREN MISSOURI
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PROJECT
 CCR GROUNDWATER MONITORING PROGRAM

TITLE
RCPA POTENTIOMETRIC SURFACE MAP - DEEP ALLUVIAL AQUIFER ZONE - JUNE 8, 2022

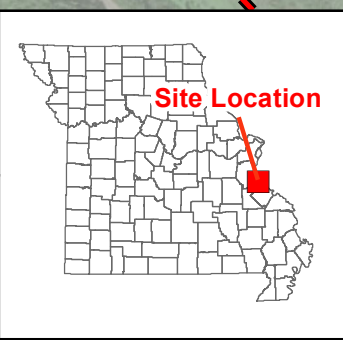
CONSULTANT	YYYY-MM-DD	2022-06-13
wsp GOLDBER	PREPARED	GTM
	DESIGN	JSI
	REVIEW	ETF
	APPROVED	MNH

PROJECT No. 153140604 PHASE 0002 **FIGURE F9**

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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LEGEND

- Approximate Rush Island Energy Center Property
- Boundary
- RCPA Surface Impoundment

Ground/Surface Water Measurement Locations

- Mississippi River Gauge
- Corrective Action Monitoring Well
- Monitoring Well Used for Water Level Elevation Measurements Only

Groundwater Elevation Contour (FT MSL)

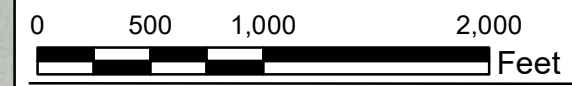
- Groundwater Elevation Contour (FT MSL)
- ➔ Groundwater Flow Direction

NOTES

- 1.) ALL LOCATIONS AND BOUNDARIES ARE APPROXIMATE.
- 2.) GROUNDWATER ELEVATIONS DISPLAYED IN FT MSL (FEET ABOVE MEAN SEA LEVEL).
- 3.) GROUNDWATER ELEVATION MEASUREMENTS OBTAINED BY GOLDER.
- 4.) MISSISSIPPI RIVER LEVEL PROVIDED BY AMEREN.
- 5.) P17S WAS NOT USED IN POTENTIOMETRIC SURFACE MAP CONTOURING; WELL SCREEN INTERVAL IS IN LOWER PERMEABILITY AQUIFER MATERIALS AND ITS WATER LEVEL RESPONSE IS SLOWER THAN OTHER WELLS IN THE AQUIFER.

REFERENCES

- 1.) AMEREN MISSOURI RUSH ISLAND ENERGY CENTER, RUSH ISLAND PROPERTY CONTROL MAP, JANUARY 2012.
- 2.) COORDINATE SYSTEM: NAD 1983 STATE PLANE MISSOURI EAST FIPS 2401 FEET.



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 AMEREN MISSOURI
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PROJECT
 CCR GROUNDWATER MONITORING PROGRAM

TITLE
RCPA POTENTIOMETRIC SURFACE MAP - SHALLOW ALLUVIAL AQUIFER ZONE - OCTOBER 31, 2022

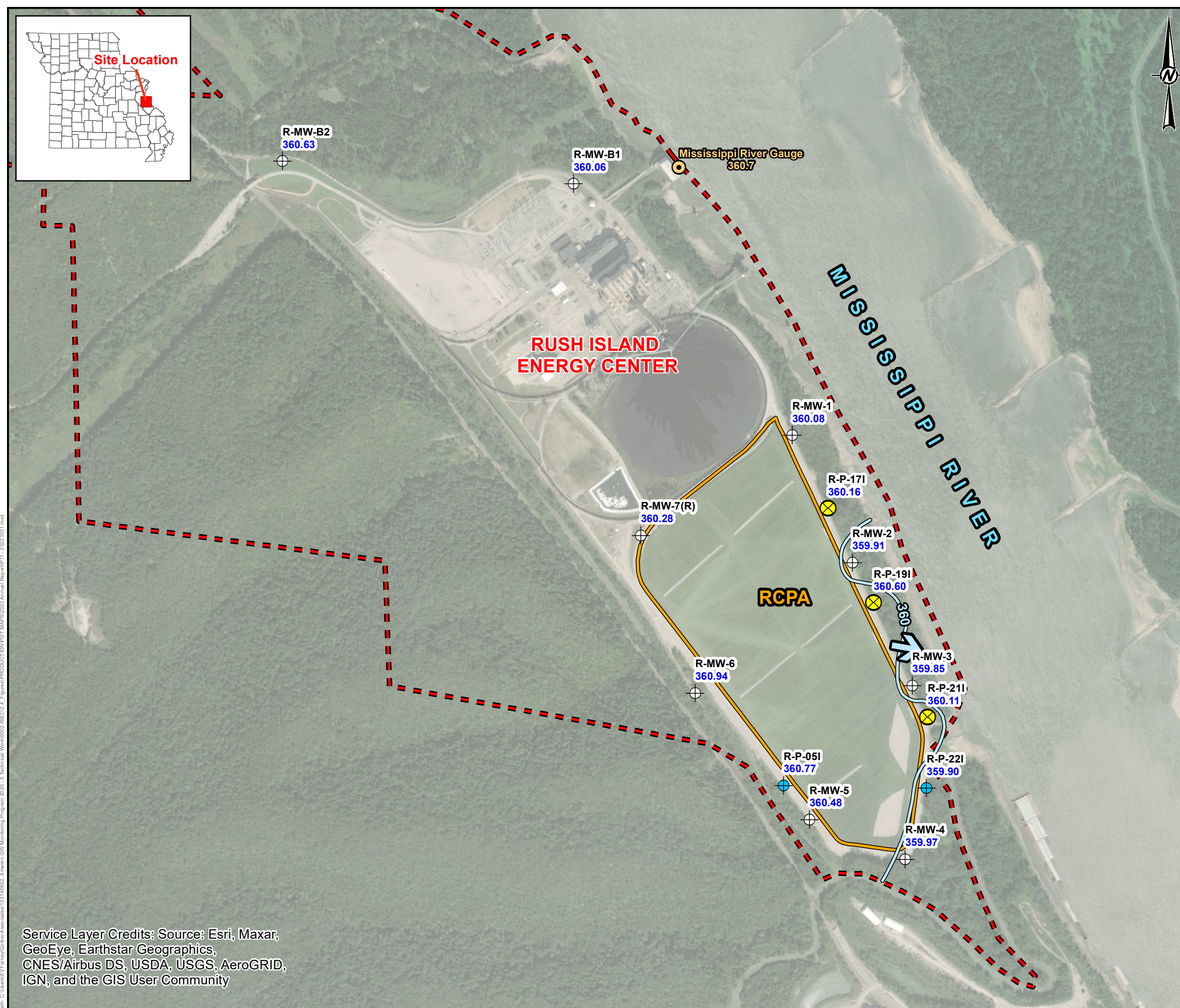
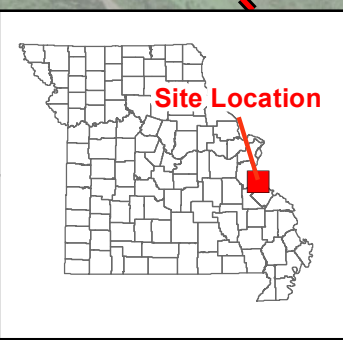
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	PREPARED	ETF
	DESIGN	JSI
	REVIEW	GTM
	APPROVED	MNH

PROJECT No. 153140604 PHASE 0002 **FIGURE F10**

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Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

1 in. IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:



LEGEND

- - - Approximate Rush Island Energy Center Property Boundary
- RCPA Surface Impoundment

Ground/Surface Water Measurement Locations

- Mississippi River Gauge
- ⊕ CCR Rule Monitoring Well
- ⊗ Corrective Action Monitoring Well
- ⊕ Monitoring Well Used for Water Level Elevation Measurements Only

Groundwater Elevation Contour (FT MSL)

- Groundwater Elevation Contour (FT MSL)
- ➔ Groundwater Flow Direction

NOTES

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- 2.) GROUNDWATER ELEVATIONS DISPLAYED IN FT MSL (FEET ABOVE MEAN SEA LEVEL).
- 3.) GROUNDWATER ELEVATION MEASUREMENTS OBTAINED BY GOLDER.
- 4.) MISSISSIPPI RIVER LEVEL PROVIDED BY AMEREN.

REFERENCES

- 1.) AMEREN MISSOURI RUSH ISLAND ENERGY CENTER, RUSH ISLAND PROPERTY CONTROL MAP, JANUARY 2012.
- 2.) COORDINATE SYSTEM: NAD 1983 STATE PLANE MISSOURI EAST FIPS 2401 FEET.



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PROJECT
CCR GROUNDWATER MONITORING PROGRAM

TITLE
RCPA POTENTIOMETRIC SURFACE MAP - INTERMEDIATE ALLUVIAL AQUIFER ZONE - OCTOBER 31, 2022

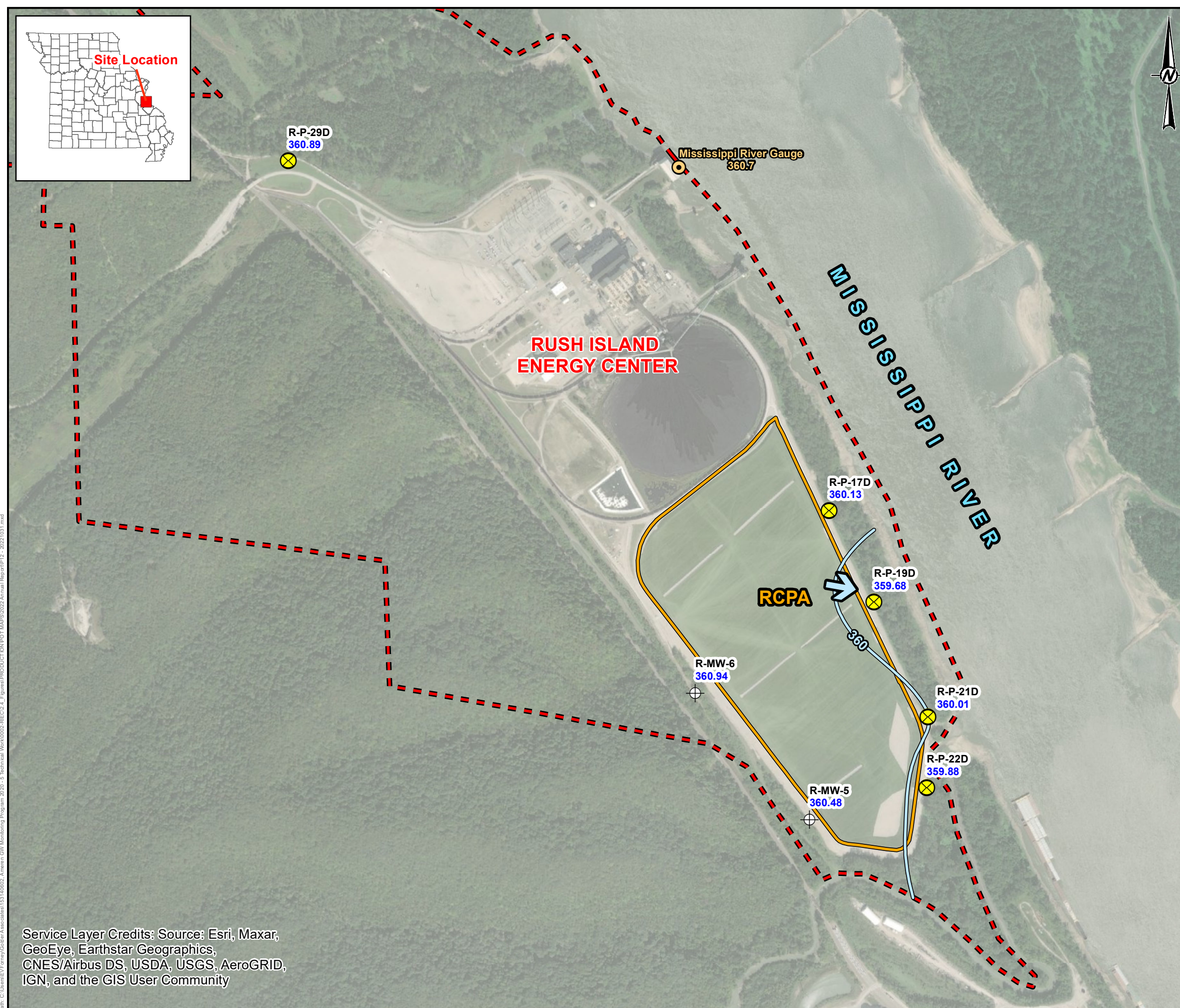
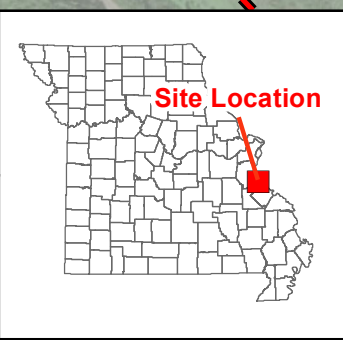
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	PREPARED	JSI
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	REVIEW	ETF
	APPROVED	MNH

PROJECT No. 153140604 PHASE 0002 **FIGURE F11**

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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LEGEND

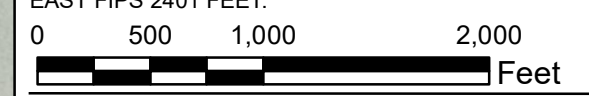
- Approximate Rush Island Energy Center Property Boundary
- RCPA Surface Impoundment
- Ground/Surface Water Measurement Locations**
 - Mississippi River Gauge
 - CCR Rule Monitoring Well
 - Corrective Action Monitoring Well
- Groundwater Elevation Contour (FT MSL)**
 - Groundwater Elevation Contour (FT MSL)
- Groundwater Flow Direction

NOTES

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REFERENCES

- 1.) AMEREN MISSOURI RUSH ISLAND ENERGY CENTER, RUSH ISLAND PROPERTY CONTROL MAP, JANUARY 2012.
- 2.) COORDINATE SYSTEM: NAD 1983 STATE PLANE MISSOURI EAST FIPS 2401 FEET.



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PROJECT
CCR GROUNDWATER MONITORING PROGRAM

TITLE
RCPA POTENTIOMETRIC SURFACE MAP - DEEP ALLUVIAL AQUIFER ZONE - OCTOBER 31, 2022

CONSULTANT	YYYY-MM-DD	2022-12-29
	PREPARED	ETF
	DESIGN	JSI
	REVIEW	GTM
	APPROVED	MNH

PROJECT No. 153140604 PHASE 0002 **FIGURE F12**

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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